ECDC **CORPORATE**

Annual Report of the Director

2018

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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
Decision No 1082/2013/EU	Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health
DG NEAR	Directorate-General for Neighbourhood and Enlargement Negotiations
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	Epidemiology path of the ECDC fellowship programme
EPIS	Epidemic Intelligence Information System
EpiNorth	Cooperation Project for Communicable Disease Control in Northern Europe
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 European Union

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

In November 2018, I became the new Chair of ECDC's Management Board. As Chair, I take great joy in introducing the Director's Annual Report 2018, which highlights the work done by the Centre last year. I would also like to congratulate Zofija Mazej Kukovič on her election as Deputy Chair of the Management Board. She will be representing the European Parliament in this important body.

One major achievement of the Management Board in 2018 was the launch of the third independent external evaluation of the Centre for the period 2013–2017. The evaluation will provide insights into the progress made since the previous evaluation five years ago, but it will also point out ECDC's current challenges. The Management Board also approved the terms of reference for the evaluation and appointed a Management Board External Evaluation Steering committee. The final report is expected for July 2019.

In 2018, ECDC continued to provide support for the Member States and the European Commission by:

- delivering 35 rapid risk assessments that provided input for risk management at the EU and national levels;
- launching a new version of the 'Early Warning and Response System' that adheres to the requirements of Decision No 1082/2013/EC and has several new and improved features;
- publishing a new EULabCap report that showed how quickly capability gaps between laboratories in the different Member States are shrinking.

ECDC also produced a number of practical tools that provide countries with evidence-based input and support policy-making at all levels. The new tools can be accessed from the ECDC website and include a vaccine scheduler, modelling tools, evolving situations maps, an interactive disease atlas, disease databases, and guidance documents.

Looking at ECDC's achievements, I really look forward to the next two years of the Board's mandate. It will be an interesting time for the Centre, which will see the results of the Centre's external evaluation, a new long-term strategy, the election of a new European Parliament, and a new European Commission. The Management Board will remain at the heart of the discussions and accompany these changes, while at the same time ensuring that the Centre carries out its missions and its tasks in accordance with the conditions laid down in the Founding Regulation.

Dr Anni-Riitta Virolainen-Julkunen

Chair of the ECDC Management Board

5 March 2019

Introduction by the Director

In early April 2018, ECDC finished its move from Tomtebodaskolan, its old headquarters, to a modern facility in the Solna–Frösunda neighbourhood.

Along with the move to the new building, ECDC started to discuss a number of changes that will shape the future of the Centre over the next few years:

- We initiated work on a long-term strategy, covering the period 2021 to 2027.
- The Management Board initiated the third external evaluation of the Centre, which will cover 2013 to 2017 and will provide feedback as the basis for recommendations for the future.
- We started a discussion with our stakeholders on two innovative projects: *e-health and digital technologies* and *Foresight*; these projects will get started in 2020.
- Internally, I launched the 'Next Generation ECDC' initiative, which will reshape the internal organisation of the Centre and increase efficiency.

In 2018, ECDC continued to support the Member States and the European Institutions in the area of communicable diseases: we responded to 31 requests from the Commission and the European Parliament, over 200 documents were published on the ECDC website, and we sent an expert to the Democratic Republic of the Congo to support the Directorate-General for European Civil Protection and Humanitarian Aid Operations during the Ebola outbreak.

In addition to its many projects in the field of communicable diseases, ECDC continued to focus on three priority areas:

- Vaccinations – which have shown their overwhelming effectiveness – are currently being challenged by a small but vocal part of the population. ECDC assisted the European Commission with scientific evidence for a new Council Recommendation on vaccine-preventable diseases (December 2018).
- Antimicrobial resistance. Promoting the prudent use of antibiotics is essential. In 2018, an ECDC report showed that bacteria resistant to antimicrobials kill 33 000 Europeans every year; antimicrobial resistance also incurs costs of approximately one billion euros per year.
- United Nations Sustainable Development Goals. In areas where ECDC and the UN work towards the same goals, for example HIV and TB, we have started aligning our monitoring with the targets set in the Sustainable Development Goals.

A number of major projects were started in 2018, for example the reengineering of our surveillance systems, the outsourcing of IT capacity, and the redesign of the Early Warning and Response System. Whole genome sequencing, which is revolutionising the way we survey diseases, will be increasingly integrated into disease monitoring and disease surveillance.

ECDC strengthened collaboration with its external partners. Products jointly produced with the WHO Regional Office for Europe are now co-branded, and cooperation with the CDCs of Africa and China has intensified since their visits at ECDC in 2018. We are also networking with EU agencies: ECDC took over as chair of the Network of EU Agencies in September 2018 and will be chairing the Network until February 2020. This provides an excellent opportunity to engage in knowledge exchange with our sister agencies and help us align our processes, with tangible benefits for our day-to-day work.

Dr Andrea Ammon

Director of ECDC

5 March 2019

Executive summary

Overview: 2018 at a glance

ECDC delivered 89% of the outputs promised in its Single Programing Document 2018–2021.

ECDC core functions: main achievements

Surveillance. The interactive online *Surveillance Atlas of Infectious Diseases* now includes 56 diseases. In 2018, antimicrobial consumption data were added. ECDC supported the preparation of an implementing act to Decision No 1082/2013/EU by providing case definitions for Lyme neuroborreliosis, dengue, chikungunya and Zika. The Centre reached an agreement with the Member States for handling pathogen data for whole genome sequencing (WGS), including storage, analysis and dissemination of WGS data. ECDC's surveillance system reengineering project was launched, and a number of milestones were implemented. The project will run until 2021. ECDC continued the evaluation of EPHESUS, a surveillance system for influenza, Legionnaire's disease, seven priority food- and waterborne diseases, antimicrobial consumption, anthrax, botulism, cholera, malaria, plague, viral haemorrhagic fevers, and SARS. A joint meeting of National Focal Points for surveillance and microbiology took place.

Epidemic intelligence. In 2018, 377 events were detected through epidemic intelligence, applying criteria set by the EU Early Warning and Response System (EWRS) on public health threats. ECDC invested in social media and crowd sourcing technologies to detect outbreaks. ECDC, WHO and JRC participated in an evaluation of the Epidemic Intelligence for Open Sources platform. The Centre supported the screening of a number of mass gathering events. More than 3 600 users have installed the *Threat Report* app for mobile devices and downloaded over 25 000 documents since its release.

Scientific advice. ECDC continued to implement its scientific strategy, which includes a policy for open access publications and authorship. In 2018, ECDC published around 200 scientific outputs on its website, including five large public health guidance documents and 86 scientific papers in peer-reviewed journals. In addition, ECDC responded to 31 scientific requests from the European Commission and the European Parliament. ECDC revised and piloted its IRIS 2.0 tool for the prioritisation of scientific outputs and launched an updated version of its Scientific Advice Repository and Management System (SARMS) to capture all scientific outputs produced by ECDC. ESCAIDE, ECDC's flagship scientific conference, attracted around 600 participants from 50 countries.

Microbiology. In 2018, ECDC revised its laboratory support priorities and published its public health microbiology strategy for 2018–2022. The Centre published its biannual report of microbiology capabilities for national and EU-wide surveillance and epidemic preparedness (EULabCap). The EULabCap index reached 7.5/10 for 2016, showing fair to high capacity levels and a reduction in the capacity gaps between countries. A summary of the report was published in the OECD 'Health at Glance' report. ECDC started implementing its external quality assessment strategy 2017–2020. The Centre revised its roadmap for molecular typing, based on a new strategic framework for the integration of molecular typing into European surveillance and multi-country outbreak investigations. This strategic framework foresees a common platform for sequence-based data management and analysis. ECDC also conducted a survey in Member States which assessed the automated upload of laboratory information to disease surveillance databases.

Preparedness. ECDC continued to provide technical support to the European Commission on a number of tasks linked to the implementation of Article 4 of Decision No 1082/2013/EU on serious cross-border threats to health. During the year, ECDC produced several practical tools to support the Member States in the area of preparedness assessment and planning, notably the Health Emergency Preparedness Self-Assessment tool (HEPSA), a community preparedness report, and a cross-sectoral bio-risk awareness and mitigating training. The Centre published guidance on best-practice recommendations for conducting after-action reviews. Together with Italy, it organised a one-day training event on how to design and run of simulation exercises, followed by a simulation exercise. ECDC also supported Romania in developing a national preparedness plan.

Response. The Centre produced 35 rapid risk assessments (RRA), 32 of which were published, while three were only distributed to the European Commission and the National Focal Points for Response. ECDC also published 16 epidemiological updates. The Centre released an improved version of the EWRS (Early Warning and Response System) in September 2018. ECDC updated 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 a response mission to support the efforts by the Directorate-General for European Civil Protection and Humanitarian Aid Operations in response to the Ebola outbreak in the Democratic Republic of Congo.

Public health training. In 2018, 37 fellows graduated (26 from the ECDC Fellowship Programme, which includes EPIET and EUPHEM, and 11 from EPIET-associated programmes), while 434 external participants followed the

continuous professional development courses offered to Member States. This included four new online courses and updated courses in the ECDC Virtual Academy (EVA). An external evaluation of the ECDC Fellowship Programme began in 2018. ECDC conducted a survey among members of the Association of Schools of Public Health in the European Region (ASPHER) to map their curriculum in communicable disease prevention and control. A capacity building initiative on One Health was initiated. Also new was the Global Laboratory Leadership Programme, a partnership between WHO, FAO, OIE, ECDC, US CDC and APHL. ECDC also has an active role in the design of the Global Field Epidemiology Roadmap, an initiative of The Task Force for Global Health, parent organisation of TEPHINET.

International relations. ECDC further strengthened its relationship with the WHO Regional Office for Europe. The respective work programmes were discussed and reviewed. Co-branding with WHO Europe was extended to all joint products (reports, press releases and presentations). The Centre continued to provide technical support to pre-accession countries. As part of this support, ECDC adapted the methodology and survey of the EULabCap to the needs of pre-accession countries (ENLabCap). The results showed the need to strengthen public health microbiology laboratory capacity in these countries. Upon request from the European Commission, ECDC assessed communicable disease prevention, surveillance and disease control systems in the Kosovo[1]. The Centre prepared an action plan with Ukraine and assisted North Macedonia in developing a country plan to follow up on assessments performed in 2015 and 2016. Collaboration agreements with major centres for disease control were signed and contact points were appointed. The Directors of the China and Africa CDCs visited ECDC to initiate formal cooperation.

Country support. Following the annual call for support requests, ECDC received eight requests from Member States. ECDC provided training courses on vaccine acceptance, infection control and patient safety, and supported the production of a national preparedness plan. Estonia, Latvia, Lithuania, Poland, Romania benefited from ECDC support. Beneficiary countries expressed their satisfaction with the mechanism. To improve the alignment between the country support mechanism and the ECDC planning cycle, the annual call for support requests will be integrated into the consultation for the preparation of the Single Programing Document from 2019 onwards.

Health communication. ECDC published 214 reports in 2018; 638 713 website sessions were recorded. The Twitter account continued to grow (+19%). The Centre provided a professional press office and intensified its work with health journalists. ECDC provided EU-wide communication response to a number of public health issues, such as outbreaks of West Nile fever and measles. 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 7.1, and it ranked fifth among infectious disease journals. In 2018, the journal received over 700 submissions; 213 items 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'. Editorial team members visited several scientific conferences and interacted with their contributors. A session on artificial intelligence for communicable diseases was organised during the ESCAIDE conference.

ECDC Disease Programmes: major achievements

Antimicrobial Resistance and Healthcare-Associated Infections (AMR and HAI). ECDC published the first estimates of the health burden caused by infections with antibiotic-resistant bacteria for the EU/EEA (2015 data). The study showed that each year, 33 000 people die from an infection due to bacteria resistant to antibiotics. Seventy-five per cent of the burden of infections with bacteria resistant to antibiotics in Europe is due to healthcare-associated infections. On European Antibiotic Awareness Day, an ECDC-organised awareness day, ECDC published the results of two point-prevalence surveys of healthcare-associated infections and antimicrobial use in acute care hospitals and in long-term care facilities in the EU/EEA. A joint meeting of the networks for the surveillance of antimicrobial resistance, antimicrobial consumption, and of healthcare-associated infections was organised jointly with WHO Europe; 300 Member State representatives and experts attended. ECDC continued to improve its Directory of online resources for the prevention and control of AMR and HAI. ECDC performed country visits in Bulgaria, Norway, and the United Kingdom to discuss AMR issues and continued to act as a key contributor to the Transatlantic Taskforce on Antimicrobial Resistance. ECDC also contributed to the EU Joint Action on AMR and HAI (EU-JAMRAI).

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[1] 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.

Emerging and Vector-Borne Diseases. ECDC monitored the West Nile virus outbreak, which was the largest in European history. The Centre prepared rapid risk assessments on major EVD outbreaks, such as Ebola, dengue and chikungunya. A pilot field study to support the appraisal and comparison of vector control strategies for West Nile fever in Europe was repeated in 2018. In addition, three field studies on control of invasive mosquitoes were conducted (dengue, chikungunya and Zika). Weekly updates and maps on West Nile virus infections in Europe are available on the ECDC website. ECDC and EFSA continued to collect data on arthropod vectors (insects) for both human and animal diseases. ECDC continued publishing maps on its website for mosquitoes, ticks and sandflies.

Food- and Waterborne Diseases and Zoonoses. During 2018, 77 urgent inquiries (53 in 2017) were posted on the EPIS-FWD platform. ECDC and EFSA assessed the public health risk of a major multi-country outbreak of *Listeria monocytogenes* that caused a number of fatalities. Epidemiology and laboratory data, confirmed by whole genome sequencing, showed that frozen vegetables were the likely source of the outbreak which has been affecting Austria, Denmark, Finland, Sweden and the United Kingdom since 2015. ECDC and EFSA published two annual reports: 1) trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2017, and 2) antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2016. An ELDSNet meeting was held in Lyon, France. ECDC and EFSA organised a preparedness workshop for a multi-country food safety/public health incident for six countries. ECDC conducted the first cluster analysis from the molecular typing database hosted by TESSy. The ECDC FWD professional exchange programme (FWDEEP) continued. ECDC funded external quality assessments for *Listeria, Salmonella, Campylobacter*, and STEC, and organised a proficiency test for *Listeria monocytogenes* whole genome assembly.

HIV, Sexually Transmitted Infections and Viral Hepatitis. ECDC and WHO organised a joint HIV surveillance network meeting, with significant involvement of UNAIDS, to review the progress towards the UN Sustainable Development Goals. ECDC participated in an International AIDS Conference in Amsterdam where it conducted, and contributed to, several sessions. The HIV response monitoring (Dublin Declaration) was reviewed and aligned with the targets of the Sustainable Development Goals. ECDC launched its HIV estimates accuracy modelling tool. The Centre successfully piloted a new surveillance system for HIV drug resistance in nine EU countries. An expert meeting was organised jointly with UNAIDS to discuss the delivery of pre-exposure prophylaxis (PrEP) in order to prevent HIV infections across Europe for most at-risk individuals. ECDC published an integrated HIV and hepatitis B and C testing guidance: the expansion of testing beyond the current settings would increase uptake and reduce the proportion of people who are infected but unaware of their status. On the occasion of World Hepatitis Day, ECDC launched the first interactive online database for prevalence studies on hepatitis B and hepatitis C. ECDC also piloted a new sero-prevalence survey protocol for hepatitis C to better assess the true burden of the disease in three countries.

Influenza and other Respiratory Viruses. ECDC drafted an opinion on non-pharmaceutical interventions during a pandemic, which showed limited evidence of efficacy. ECDC and WHO Europe continued their joint influenza surveillance; during influenza season, surveillance results are published weekly. ECDC improved its surveillance systems in 2018 by strengthening the surveillance of severe diseases and adding genome-based surveillance to its routine surveillance. An evaluation of the influenza and SARS surveillance systems as well as an evaluation of the Influenza and other Respiratory Viruses (IRV) Programme was conducted. As in the years before, ECDC and EFSA published the quarterly joint situation assessment report on avian influenza, which is available on the ECDC website. The Centre published a report on influenza vaccination policies and coverage, which showed limited progress and insufficient vaccination coverage among the elderly in Europe. A report on the estimate of vaccine effectiveness between 2015 and 2018 was published. The Centre also conducted a review of national pandemic preparedness plans.

Tuberculosis. On World TB Day on 24 March 2018, ECDC and WHO presented the joint annual report on tuberculosis surveillance and monitoring in Europe. As part of this project, ECDC supported five WHO high-priority countries: Bulgaria, Estonia, Latvia, Lithuania, and Romania through exchange visits and training courses. A new, similar project will start in 2019, addressing needs in all Member States. The Centre published a guidance document for the programmatic management of latent TB infection. ECDC also published an update of the EU standards for TB care in all EU languages. In April, a project aimed at providing evidence on whole genome sequencing for TB was launched. Thirteen peer-reviewed articles on TB were published in scientific journals.

Vaccine-Preventable Diseases. ECDC provided technical evidence and scientific input to the European Commission for a draft Council Recommendation presented in April and adopted in December. The Centre continued to support the measles elimination goal, with rapid risk assessments and monthly measles updates. In 2018, ECDC established an EU collaboration to support the National Immunisation Technical Advisory Groups (NITAGs). The objective is to strengthen scientific collaboration and exchange across Europe. In November, ECDC published a handbook on designing and implementing immunisation information systems. ECDC collaborated with the newly established Joint Action on Vaccination, which is co-funded by CHAFEA, the Consumers, Health, Agriculture and Food Executive Agency. ECDC reached out to stakeholders through their professional associations to raise awareness of vaccination benefits. The surveillance system for pertussis and invasive pneumococcal disease was further improved. The EU Vaccine Scheduler tool continued to be one of the most visited features on ECDC website.

Other ECDC areas of activity: major achievements

General management. The Management Board elected its new Chair and Deputy Chair. The Board adopted a revised independence policy for non-staff and endorsed a corresponding internal procedure. ECDC launched its third external evaluation, which will be coordinated by a steering committee comprised of Management Board members. The result of the evaluation is expected for mid-2019.

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 both the operational and the strategic level. Between September 2018 and February 2019, ECDC chaired the network of the European Agencies. ECDC continued to invest in partnerships with individual Member States and maintained close collaboration with its host country Sweden. ECDC participated in the annual European Health Forum in Gastein, Austria. An annual exchange of views between the Director of ECDC and the ENVI Committee of the European Parliament took place. The Annual Meeting for Directors of the Coordinating Competent Bodies convened in March 2018 at ECDC. The participants provided input on ECDC's strategic priorities (2020–2025).

Resource management. In April 2018, ECDC moved to new premises. As of 31 December 2018, ECDC employed 271 staff members. The Centre reached a low vacancy rate of 3.2%. Budget execution in terms of commitment appropriations at year-end reached 98.53%; payment appropriations at year-end reached 81.21%. The use of electronic workflows for procurement, based on e-PRIOR, helped to complete 142 procurement procedures. ECDC also put in place four new internal electronic workflows to ensure faster and more efficient processes. ECDC also reviewed two internal key processes with the 'lean methodology'. ECDC continued to improve and strengthen its internal processes, in particular for contract management and project management. Internal communication and knowledge services improved in 2018.

Information and communication technologies. In 2018, ECDC relocated to new premises and in the process had to upgrade its IT systems. Despite the complexities of the move, all systems and workstations were up and running on the first day of moving into the new building. In September 2018, ECDC launched a major update of the EWRS system, following a request from the European Commission. The surveillance system reengineering project is now in full swing, following the roadmap adopted in 2017. The Centre also began externalising some of its IT services. This should increase ECDC's IT capacity and provide access to broader skillsets and technologies.

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-fifth meeting on 20–21 March 2019, the Management Board approved the final version of the Annual report 2018.

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 '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
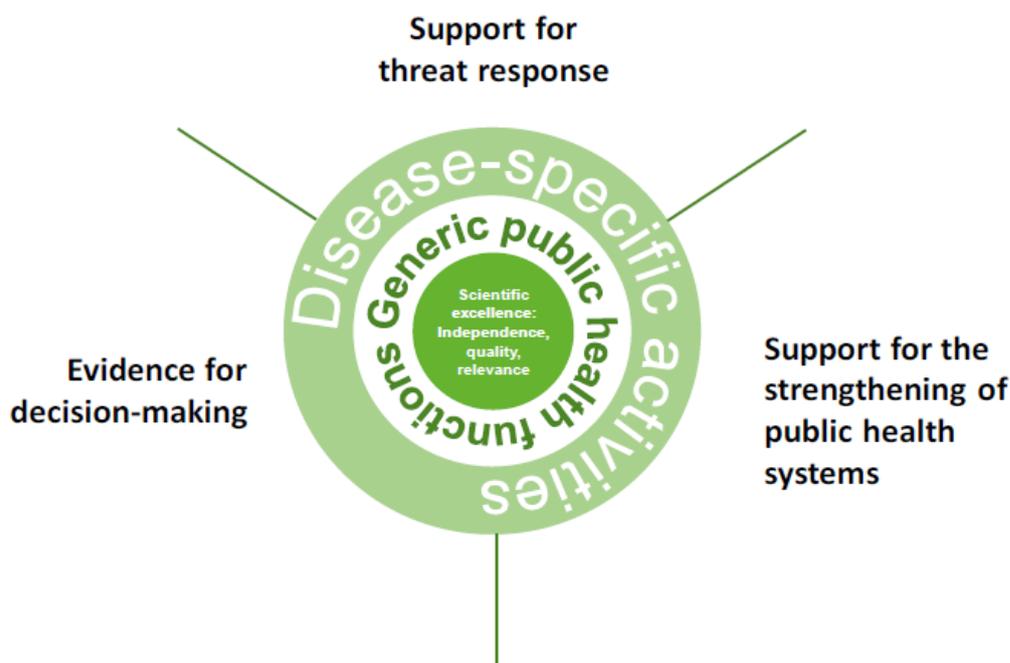
How we work

- 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 2020	Verification	Result 2018
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	93% Only 7 % cancelations.
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	27 448 users and 96,900 page views 35,863 downloads* +18%
3	Support efficient decision-making by enabling the sharing of evidence and expertise	Impact factor of Eurosurveillance	>3	Journal Citation Reports, Thomson Reuters, SCImago	7.1
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 finding 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 2018. Data to be provided as from 2019, using a dedicated tool.
6	Timely detect serious cross border health threats	Number of connections on CDTR	At least +10% per year	ECDC website statistics	348 websites/social media sites linked to the CDTR issues**
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 35 persons in 2018 (In total 9 376 downloads*) +16.5%
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 Timeliness of digitalised key processes Percentage of budget committed (C1) and percentage of payments executed (C1) in the same year as the commitment	>85% 80% processes on time 100% committed; 80% paid minimum	Management Information System As per list of key processes (covers processes for which digitalisation has been completed) Monthly monitoring report	89.1% Four electronic workflows available. One used in 2018 (request for service/ procurement) Average process time divided by two after digitalisation. 98.53% of budget committed 81.21% of budget paid

* Note that downloads from users who did not accept the cookie consent are not counted.

** For comparison with previous years, since June 2017 only portal usage data related to users that accepted the cookie consent were recorded (at least >50% decrease in numbers)

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 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 2018

The ECDC online Surveillance Atlas of Infectious Diseases lets users access surveillance data on nearly all EU-reportable diseases and pathogens. In 2018, antimicrobial consumption was added to the Atlas. By the end of the year, the Atlas covered 56 diseases and health issues as well as indicators of data quality. It was accessed by over 27 000 users with nearly 100 000 page views. Depending on the disease, datasets are available by week, month or year.

In 2018, ECDC supported the preparation of an implementing act on surveillance to Decision No 1082/2013/EU on serious cross-border health threats. Lyme neuroborreliosis, dengue, chikungunya, and Zika virus infections became reportable at the EU/EEA level. Several case definitions were updated to account for current diagnostic practices and for better alignment with WHO case definitions. A new general case definition for bloodstream infections due to specific pathogens was also included. With the endorsement of the Member States Comitology Committee, the Commission Implementing Decision (EU) 2018/945 was adopted on 22 June 2018.

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

ECDC reached a final agreement with the Member States on a European model for handling data pathogen WGS data. The agreement covers how to handle the storage, analysis and dissemination of WGS data from Member States for surveillance, outbreak detection and response. Using the experience gained in the COMPARE project (which was funded by the EU Horizon 2020 programme[2]), a pilot project on food- and waterborne pathogens started in eight Member States. If successful, the model could be extended to all countries and additional pathogens. ECDC has been using WGS data for outbreak detection and investigation since 2016. This proved effective in better delimiting outbreaks and in identifying and controlling sources. ECDC offers, at no cost, WGS services to Member States that cannot afford it. This offer covers multinational outbreaks of selected food- and waterborne diseases. ECDC will continue to subsidise WGS services until all Member States have developed sufficient national capacity to conduct WGS analyses.

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[2] https://ec.europa.eu/programmes/horizon2020/en: EU Framework Programme for Research and Innovation 2014–2020

Number of countries that benefited from ECDC WGS services (by pathogen), 2015–2018
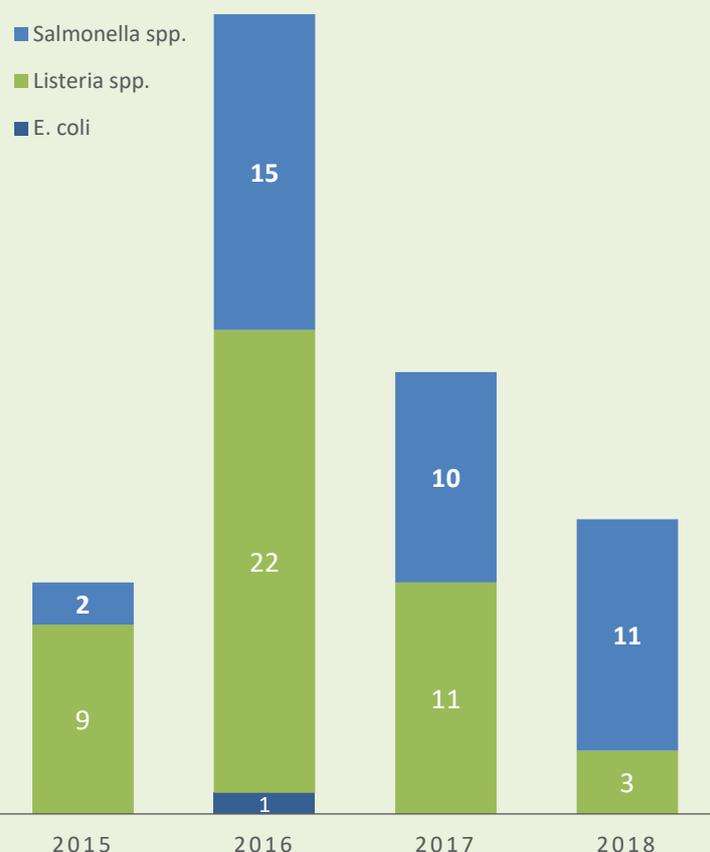
ECDC is currently working on a surveillance system reengineering (SSR) project which will last until 2021. In 2018, ECDC achieved the first milestones listed in the SSR roadmap. A business intelligence tool (Qlik Sense) was set. Two R packages were published for detecting signals from surveillance data and generating surveillance reports. TESSy was upgraded to host whole genome sequencing data. A remote storage solution was established for sensitive data on healthcare-associated infections. ECDC acquired tools for optical character recognition and for the extraction of data from graphs. Another tool was selected to extract, transform, and load data to replace TESSy data flows and reduce maintenance cost. Furthermore, ECDC started building a new surveillance portal that (in 2020) will allow Member States to perform all surveillance operations from a single entry point.

ECDC continued the evaluation of the EU/EEA surveillance systems, as part of EPHESUS, a four-year project (2017–2020) aimed at evaluating all infectious disease surveillance systems at the EU level. Goals include efficient and effective surveillance systems that generate information for public health action. In 2018, ECDC completed the evaluation of the surveillance systems for influenza, Legionnaires' disease, seven priority food- and waterborne diseases, antimicrobial consumption, anthrax, botulism, cholera, malaria, plague, viral haemorrhagic fevers and SARS.

A joint meeting of the ECDC National Focal Points (NFPS) for Surveillance and for Microbiology took place in 2018. Discussions focused on how to monitor and support Member State compliance with the implementing act on surveillance, on the role of ECDC in supporting Member States in the area of e-health for surveillance, and on surveillance standards. ECDC also held a joint session for the NFPs for Surveillance and the NFPs for Microbiology.

Indicators for surveillance

No.	Objective	Indicator	Target 2018	Verification	Result 2018
1	Complete the optimisation of technical surveillance platforms and processes identified as part of the SSR project in 2015 and 2016	Degree of implementation of the SSR roadmap (developed in 2017) for upgrading the surveillance informatics tools.	Elements in place: • Data warehouse • Dataset management solution • Business Intelligence tools and R server installed and connected with data warehouse	Monitoring of SSR project milestones.	Data warehouse in progress (to be available in March 2019) Business intelligence tools and R server installed Surveillance portal framework developed
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	11 surveillance systems evaluated in 2018 including influenza, Legionnaires' disease, seven priority food- and waterborne diseases, and antimicrobial consumption. HIV and AMR surveillance standards in progress.
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.	13 peer reviewed scientific articles published.
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 • Shiga toxin-producing Escherichia coli • Salmonella • Carbapenemase producing enterobacteriaceae, • Invasive N. meningitidis • Antibiotic resistant N. gonorrhoea • Multidrug-resistant Mycobacterium tuberculosis	Monitoring of milestones against roadmap	All milestones completed as per roadmap 2018: • Listeria surveillance protocol and TESSy upgrade: WGS operational for outbreak investigation, • Shiga toxin-producing Escherichia coli: WGS operational for outbreak investigation, • Salmonella: WGS operational for outbreak investigation, • Carbapenemase producing enterobacteriaceae: analytical platform defined and project ongoing, • Invasive N. meningitidis: surveillance protocol and analytical platform in place, for operationalisation in 2019 , • Antibiotic resistant N. gonorrhoeae: analytical platform defined and project ongoing • Multidrug-resistant Mycobacterium tuberculosis: monitoring of progress of international validation of WGS-based identification, drug resistance prediction and typing nomenclature

1.2 Epidemic intelligence

Context

Monitoring and assessing threats to health in Europe from infectious diseases are core tasks of ECDC. The European Commission and 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 2018

In 2018, ECDC invested in social media and crowd sourcing technologies to detect outbreaks (e.g. analysis of queries in Wikipedia).

ECDC participated with WHO and the Joint Research Centre in the evaluation of the Epidemic Intelligence for Open Sources platform, which allows worldwide detection of all hazards publicly available in open source media. ECDC was deeply involved in the Early Alert and Response project of the Global Health Security Action Group

The Centre supported the screening of mass gathering events, for example the Winter Olympic Games in South Korea, the FIFA World Cup in Russia, and the Hajj in Saudi Arabia. In addition, ECDC published CDTR editorials about the Chinese New Year, the Umrah and released recommendations for participants of outdoor festivals.

More than 3 600 users (2 700 in 2017) have installed the *Threat Report* app for mobile devices (https://ecdc.europa.eu/en/publications-data/threat-reports-app) and downloaded over 25 000 ECDC documents since its release (17 000 in 2017).

ECDC developed training activities on 'One Health' with professionals from the Food and Agriculture Organisation (FAO) (see also 4.1 Public health training).

Indicators for epidemic intelligence

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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 They are also included in e.g. CDTR, ECDC reports, publications	n/a Platform still under development in 2018 so data will be available only as from 2019 onwards
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 assessment 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.

2. Scientific support

2.1 Scientific advice

Context

The ability to produce independent evidence-based scientific advice that is scientifically sound, useful and timely is one of the ECDC's foremost tasks, which is highly valued by its stakeholders. 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 information source. 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 improving 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, and exchange expertise and information. At the EU level, ECDC develops robust relationships with EU institutions, EU agencies responsible for risk assessment (e.g. through the EU-ANSA network of scientific advice in EU agencies), and contributes to EU networks such as EMERGE3.

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 research and methodology developments 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 2018

In 2018, ECDC continued to implement its scientific strategy. ECDC published around 200 scientific outputs in 2018, including five large public health guidance documents (see detailed list in Annex 8). In addition, 86 scientific papers were published in peer-reviewed journals.

As a public funded agency, ECDC wants to ensure that all its scientific outputs are freely available, on its website and on scientific journal websites as 'gold-standard'[4] open access. In 2018, 85% of ECDC publications in peer-reviewed journals were in open access.

In 2018, ECDC responded to 31 formal scientific requests from the European Commission (of which 10 forwarded from members of the European Parliament).

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[3] EMERGE: 'Efficient response to highly dangerous and emerging pathogens at the EU level'. Coordinated by the Robert Koch Institute, the Joint Action EMERGE is a network of about 40 diagnostic laboratories focused on risk group 3 bacteria and risk groups 3 and 4 viruses, and aims to coordinate and ensure effective response to infectious disease outbreaks at EU level and abroad.

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

Figure 2. **Number of formal external requests answered**
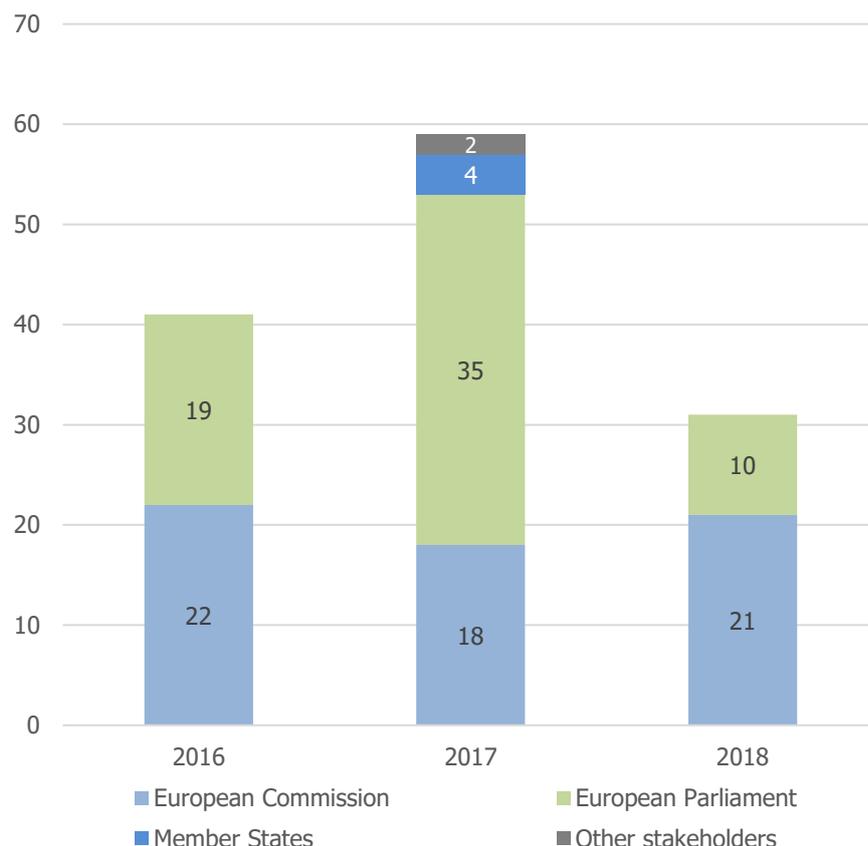
ECDC revised its IRIS 2.0 tool for prioritisation of scientific outputs; IRIS advises on the strategic direction of the Centre's activities, including the identification of activities that could be downscaled. IRIS considers four dimensions that guide the prioritisation of ECDC actions: the issue (i.e. what is relevant for public health in Europe through collective engagement), the resources (are the potential benefits worth the investment), the impact (will this help protect/improve public health) and solidarity (does this reduce health inequalities in Europe). The Centre piloted IRIS 2.0 during the Advisory Forum in September when it successfully assessed two new projects: 'Foresight' and 'E-health'.

ECDC also launched an updated version of its Scientific Advice Repository and Management System (SARMS) to capture all scientific outputs. Now the system supports the production, sharing, peer reviewing, clearance, editing and monitoring of all ECDC scientific outputs, including rapid risk assessments. It allows for the monitoring of quality and timeliness, increases transparency of, and compliance to, workflows, and fosters internal collaboration.

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 2018 is available in Part II (a).

In 2018, ECDC continued to deliver training courses on evidence-based practices and decision-making: 10 ECDC staff members and 30 experts from Member States participated in two four-day training workshops. The feedback received from participants was consistently positive. Another 21 experts from Member States joined the one-day course offered back to back with ESCAIDE 2018.

The 2018 ESCAIDE conference (https://www.escaide.eu/en) took place in Malta and attracted almost 600 delegates from 50 countries; 497 abstracts (381 in 2017) were submitted. The conference consisted of five plenary sessions and 24 parallel sessions with 86 oral presentations and 138 poster presentations. Dr John Nkengasong, Director of the Africa CDC delivered a keynote speech; Dr Christian Drosten, Chair of the Institute of Virology at the Charité Berlin, spoke on 'New diseases in the old world'.

Figures 3 and 4. Impact factor of scientific publications and average number of citation per article

Average impact factor of
ECDC scientific publications

Average number of citations
for each article
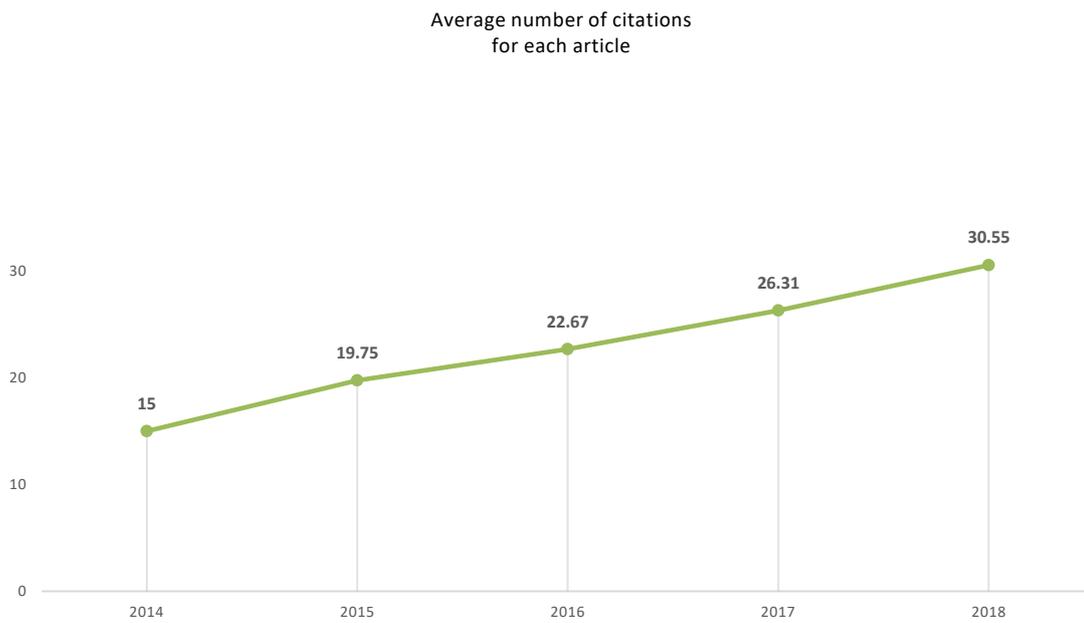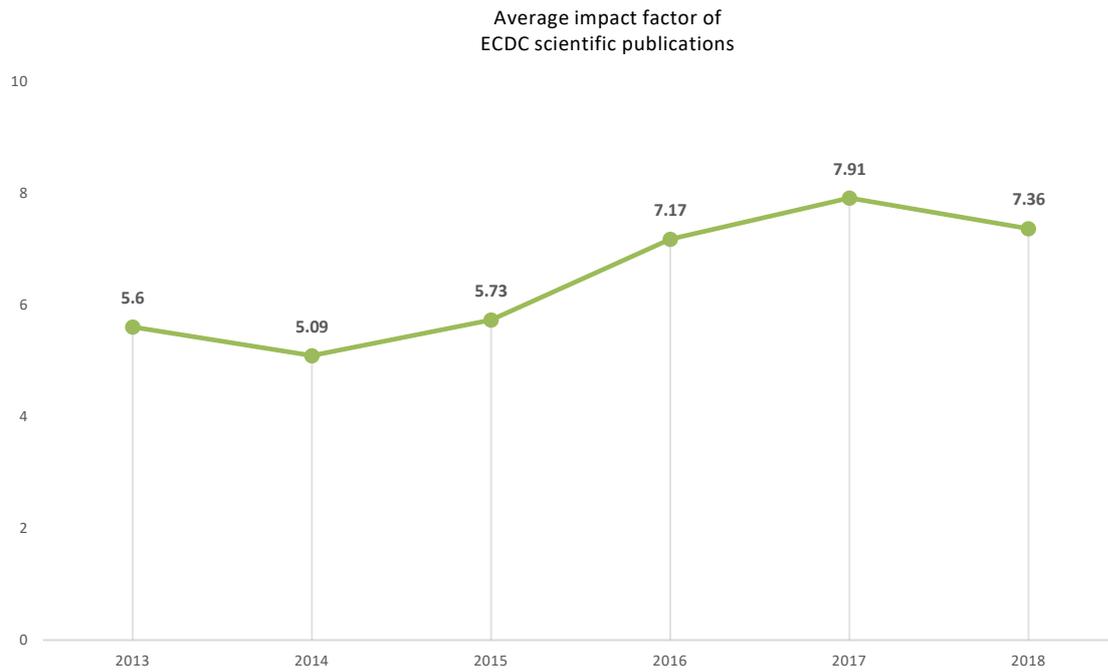
Indicators for scientific advice

No.	Objective	Indicator	Target 2018	Verification	Result 2018
7	Ensure integrity of ECDC's scientific activities in relation to technical and scientific content, methods, and internal policies and processes. Ensure that the Centre's scientific activities are published, disseminated and easily accessible to all.	• Proportion of ECDC scientific outputs processed through SARMS, following the respective workflows and templates	At least 90%	SARMS	60% (the new version of SARMS was only launched in June 2018)
		• 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.	93% There was only 7 % cancelation. (57% published 9% on its way (under clearance, submitted, in revision) and 27% in production.
		• Proportion of ECDC peer-reviewed articles, published as gold standard open access in scientific journals	At least 90%	ECDC Library. Citations base on scientific databases such as Scopus, PubMed and Embase	85%
		• 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	7.36
		• Average number of citations per publication**	> 15 in the 5 years following publication		30.55
		• Proportion of abstracts submission and participants from EU/EEA at ESCAIDE	At least 70%	ESCAIDE registrations, abstract database and evaluation and work plan	87% of participants from EU/EEA countries
		• Rating evaluations of ESCAIDE as 'excellent' or 'good'	At least 75% of the respondents		87% 2
		• Meeting with EU key partners in public health research and risk assessment	At least one per year	e.g. EU-ANSA, JRC etc.	
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	96.5%

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 now part of routine practices at point-of-care. Whole genome analysis is transforming microbiological diagnostics and typing, revealing novel markers of virulence and drug resistance. There is, however, still a need to assess their accuracy and public health usefulness. In addition, national reference laboratories need access to training and external quality assessment (EQA) schemes for novel technologies to ensure comparability and accuracy of surveillance data.

The ECDC's microbiology support function assists the Centre's network of partners in the Member States to maintain and further develop their public health microbiology capacity, based on the monitoring of their individual

capacity in countries and the collective EU capacity. ECDC and several laboratory networks linked to the Centre's Disease Programmes organise EQA schemes to evaluate the proficiency of laboratories to test key pathogens and drug resistance characteristics. In the area of microbiology, ECDC and its networks agreed on an updated roadmap for the gradual, coordinated and cost-efficient introduction of data generated by molecular typing technologies for EU-level surveillance and outbreak investigations.

Results achieved in 2018

In 2018, ECDC revised its laboratory support priorities jointly with the Member States and published its Public health microbiology strategy for 2018–2022. It focuses on five priorities:

- facilitating the technology transition to optimise EU-wide use of whole genome sequencing;
- benchmarking public health microbiology services and promoting best practices across the EU and beyond;
- further strengthening the EU public health microbiology capacity;
- strengthening the cross-sectorial and inter-agency integration of laboratory–based EU surveillance; and
- developing synergies with EU innovative laboratory methods and eHealth initiatives.

In 2018, ECDC accordingly carried out technical support activities, conducted 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 for epidemic preparedness (see below).

Measuring European microbiology laboratory capabilities

In April 2018, ECDC published its biannual report of microbiology laboratory capabilities for the national and EU-wide surveillance of communicable diseases and epidemic preparedness based on a set of agreed indicators (EULabCap). All EU/EEA countries participated. The EULabCap index, which expresses the microbiology capacity of Member States in the area of public health, reached 7.5/10 in 2016, indicating a fair to high capacity level. It also showed a reduction in the capacity gaps between countries. The results showed that Member States are moving fast toward the 2020 objectives.

OECD published a summary of the EULabCap benchmarking results in its 2018 'Health at a Glance' report[5], which was produced with the assistance of the European Commission (see Figure below).

Figure 5. Composite index of national public health laboratory capacities, EU (EEA in brackets), 2016

Country	Score
France	9.6
United Kingdom	9.0
Denmark	8.9
Sweden	8.5
Belgium	8.4
Ireland	8.4
Netherlands	8.3
(Norway	8.3)
Czech Republic	8.2
Slovak Republic	8.1
Spain	8.1
Slovenia	7.9
Finland	7.7
Bulgaria	7.5
EU 28	**7.5**
Estonia	7.4
Hungary	7.2
Luxembourg	7.2
Germany	7.1
Austria	7.1
Croatia	7.1
Italy	6.8
Malta	6.8
Lithuania	6.4
(Iceland	6.4)
Greece	6.3
Latvia	6.3
Romania	6.0
Poland	5.9
Cyprus	5.6

Maximum score: 10
Source: ECDC, OECD

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[5] https://read.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-europe-2018_health_glance_eur-2018-en#page200

ECDC started implementing its external quality assessment (EQA) strategy (2017–2020); the strategy defines standard criteria for the prioritisation of topics and performance indicators to evaluate the usefulness, service quality, cost efficiency, and public health added-value of each EQA. In 2018, ECDC coordinated ten EQAs for the laboratories that belong to the EU network of laboratories.

In 2018, ECDC thoroughly revised its roadmap for molecular typing in a new 'strategic framework for integration of molecular and genomic typing into European surveillance and multi-country outbreak investigations, 2019–2021' after a three-year survey of the Member States' capacity for whole genome sequencing (WGS) in disease surveillance and outbreak investigations. The new strategic framework foresees the gradual implementation of a common European platform for sequence-based data management and analysis, managed by ECDC, to ensure real-time sharing, analysis and reporting of WGS-based typing data (influenza, listeriosis, salmonellosis, STEC infection, invasive meningococcal infection, and MDR-TB). Additionally, data will be collected for multi-country outbreaks investigations and for sentinel surveillance of transmissible antimicrobial resistance. The platform will have an interface connecting it with an EFSA database for microbial typing (food safety).

Figure 6. **Expansion of WG-based typing in Europe, 2015–2017**

■ WGS-based typing used routinely for national surveillance of at least one human pathogen

■ Not used for public health operations but planned for 2019

■ No plans for implementation within the next three years
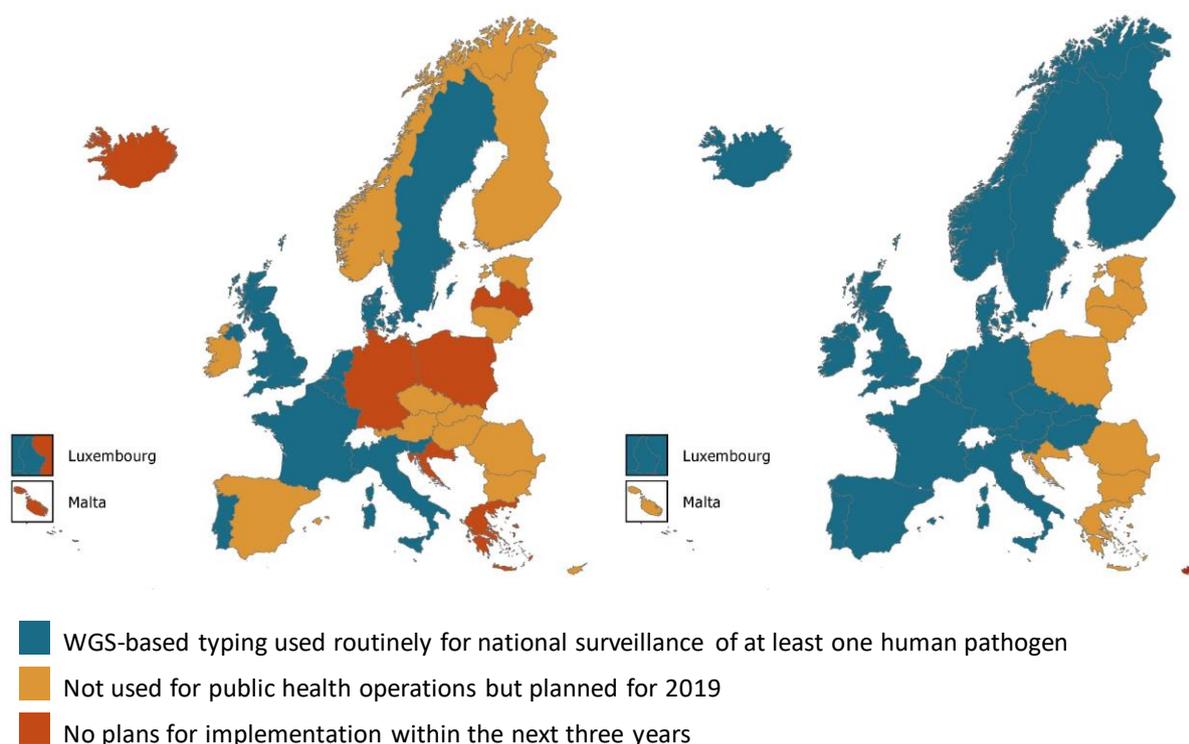
In 2018, ECDC started implementing the memorandum of understanding with the EMERGE Joint Action project, funded by the Consumers, Health, Agriculture and Food Executive Agency (CHAFEA), ensuring cooperation between ECDC and the EMERGE laboratory networks. ECDC also supported CHAFEA in the preparation of a new Joint Action (SHARP) on preparedness.

ECDC conducted a survey among all Member States on automated reporting of laboratory information to surveillance databases.

Indicators for microbiology support

No.	Objective	Indicator	Target 2018	Verification	Result 2018
10	Implementation of the ECDC microbiology strategy to support the development of sufficient microbiology capacity within the EU, to detect, prevent and manage infectious threats.	Proportion of Member States finding EULabCap country reports useful for their lab infrastructures and processes improvement	At least 70% of Member States reporting practical use of annual EULabCap report	Report from annual survey on Competent Bodies' feedback on usefulness of EULabCap report	77% (23/30) Member States finding the EULabCap reports useful. (Source: EULabCap report 2018).

Table 1. Summary of microbiology support activities 2018, by ECDC Disease Programme, section and technical area

ECDC Disease Programme or section	Network or project	Pathogens covered	Microbiology support activities (2018)								
			External quality assessment	Training	Strain collection	Supranational reference services	Laboratory support to outbreak response	Molecular or WGS typing	Advice and technical guidance	Laboratory capacity assessment	Microbiology technology assessment
ARHAI	EARS-Net	*Streptococcus pneumoniae, Staphylococcus aureus, Enterococcus faecalis, E.faecium, Escherichia coli, Klebsiella pneumoniae, Pseudomonas aeruginosa, Acinetobacter baumannii complex*	●								
	EUCAST	Antimicrobial-resistant bacteria and fungi		●					●	●	●
	ECDIS-Net II	*Clostridium difficile*	●					●	●	●	
	EURGen-Net EURGenCCRE survey	Carbapenem-resistant *Escherichia coli, Klebsiella pneumoniae,*	●	●	●	●		●	●	●	
EVD	EVD-LabNet	Emerging viral pathogens, Yellow fever virus	●	●		●	●	●	●		
FWD	FWD-Net	*Salmonella enterica,* Shiga toxin-producing *E. coli, Listeria monocytogenes, Campylobacter jejuni/coli*	●	●		●	●	●	●		●
	EuroCJD	Variant Creutzfeldt–Jakob disease (vCJD)				●			●		
IRV	ERLI-Net	Influenza virus	●	●	●	●		●	●		
HSH	Euro-GASP	*Neisseria gonorrhoeae*	●		●	●		●	●	●	
	HIVDR (pilot project)	Drug-resistant HIV						●	●	●	
VPD	EDSN	*Corynebacterium diphteriae*		●		●			●		
	EUpert-LabNet	*Bordetella pertussis*	●	●					●		●
	IBD-LabNet	*Neisseria menigitidis Streptococcus pneumoniae, Haemophilus influenzae*	●					●			
TB	ERLTB-Net EUSeqMyTB (pilot project)	*Mycobacterium tuberculosis* complex	●	●	●	●	●	●	●		●
EPM	Routine molecular typing operations; WGS-data sharing platform	*Listeria monocytogenes, Salmonella enterica,* Shiga toxin-producing *E. coli, Klebsiella pneumoniae*					●	●			
MCS	EU WGS capacity and strategic framework	Pathogens in the roadmap version 2.1, 2016–2019; strategic framework 2019–2021						●	●	●	●
	Survey on automated laboratory data reporting for surveillance	EU notifiable disease agents and antimicrobial resistance								●	

Legend: See list of abbreviations

3. Preparedness and response

3.1 EU and country preparedness support

Context

Preparedness planning is a priority for ECDC. Preparedness planning, the identification of current gaps in preparedness capacity, and capacity building are critical if the EU and its Member States are to respond effectively to major epidemics and other serious cross-border health threats. Recent international threats showed the importance of relying on good scientific evidence for preparedness activities, engaging in enhanced cooperation with critical sectors, and sharing good practices across countries. The European Commission and the Member States, via the Health Security Committee, have committed to working together to further improve preparedness and ensure that preparedness plans in Europe are interoperable between countries and sectors. Decision No 1082/2013/EU on serious cross-border threats to health, especially Article 4 on preparedness and response planning, establishes an ambitious agenda for cooperation between Member States and the European Commission, for which ECDC provides technical support.

Results achieved in 2018

ECDC continued to provide technical support to the European Commission on the implementation of Article 4 of Decision No 1082/2013/EU on serious cross-border threats to health. After collecting Member State input, ECDC produced the second triennial report (2014–2017) on Member State preparedness. The report, endorsed in June 2018 by the Health Security Committee (HSC), identified a number of gaps in terms of intersectoral cooperation, business continuity planning and capacities. The report will serve to identify future priorities with regard to country support.

ECDC finalised a number of practical tools to support the Member States in the area of preparedness assessment and planning:

- The Health Emergency Preparedness Self-Assessment tool (HEPSA) was published in May 2018 and is available in all EU languages. It aims to support professionals in the area of emergency planning and event management in public health organisations to self-assess preparedness infrastructure/functions and identify possible gaps.
- A community preparedness report, complete with case studies on tick-borne diseases in the Netherlands and Spain and an aggregated report. Visits to Iceland and Ireland on food- and waterborne diseases were conducted, to discuss community preparedness for public health events. The objective is to show how communities (local communities, citizen associations) collaborate with institutions in charge of preparedness and response during public health emergencies. This project will result in a guidance document in 2019.
- An intersectoral biorisk awareness and mitigation training course, covering aspects related to health emergency services, civil protection and law enforcement (in collaboration with EUROPOL). After addressing the eastern European countries in 2017, the 2018 course targeted western European countries. Fifty-one participants from 14 countries attended the course in April 2018 in Olhão, Portugal. A handbook on bioterrorism will be published in 2019.

Supporting Romania to develop its national preparedness plan

In collaboration with WHO, ECDC supported Romania to develop its national preparedness plan for communicable diseases, following a request addressed to ECDC's country support mechanism. The proposed plan is now awaiting approval by the Parliament.

In collaboration with the Italian Ministry of Health, ECDC organised one-day training event on how to design and run simulation exercises, followed by a simulation exercise on antimicrobial resistance. Twelve countries participated in the events: eight EU Member States, three pre-accession countries, and Ukraine.

ECDC also published a guidance document on best-practice recommendations for conducting after-action reviews[6] to enhance public health preparedness. The objective is to propose a standardised approach to conduct post-event assessments in order to draw lessons for future events.

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[6] https://ecdc.europa.eu/sites/portal/files/documents/public-health-preparedness-best-practice-recommendations.pdf

In December 2018, the Centre organised an expert meeting on evidence-based decision-making in public health crises. This two-year project will result in a guidance document in 2020.

ECDC experts participated in five simulation exercises, co-hosted by the European Commission, ECDC and other EU agencies. The main objective was to improve interinstitutional cooperation and assess cross-sectoral hybrid threats outside of public health.

Indicators for EU and country preparedness support

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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	Report submitted to the European Commission in March 2018 and endorsed by the Health Security Committee in June 2018
12	Strengthen preparedness in countries by pointing out gaps in preparedness plans and providing action plan.	Number of review of Member State preparedness plans	5 EU/pre-accession countries preparedness plans reviewed by ECDC	Technical reports published on ECDC website	Seven preparedness plans reviewed by ECDC: Netherlands, Romania, Spain, Lithuania (jointly with WHO), Ireland, Iceland, Kosovo (as part of pre-accession assessment)

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's experts and the EU Early Warning and Response System on public health threats, which ECDC operates on behalf of the European Commission, are key resources to support the EU-level response to cross-border health threats. ECDC public health experts support the European Commission and Member States in the area of emergency response.

ECDC prepares and publishes rapid risk/outbreaks assessments, aimed 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. They also include options for response. As outbreaks or public health events develop, ECDC may issue updated risk assessments.

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. The importance of the public health emergency plan and preparedness activities were further emphasised by Decision No 1082/2013/EU.

Results achieved in 2018

In 2018, the Centre produced 35 rapid risk assessments, 32 of which were published, while three were only distributed to the European Commission and the National Focal Points for Response. The threats included topics such as Ebola in the Democratic Republic of the Congo (5), dengue (4), listeria (4) *Salmonella* (2), yellow fever in Brazil (2), carbapenem-resistant Enterobacteriaceae (2), West Nile virus, and a number of healthcare-associated infections (Annex 8).

ECDC also published 16 epidemiological updates, three of which related to the West Nile fever outbreaks in the EU and three related to the ongoing EVD outbreak in the Democratic Republic of the Congo.

ECDC updated its methodology and templates for rapid risk assessments. The objective is to simplify the process, facilitate the identification of external experts (including their declarations of independence) and improve the engagement of the Member States. To facilitate the preparation of rapid risk assessments, ECDC developed an online training course for Member States and public health experts.

Figure 7. **Number of rapid risk assessments published per year**

In 2018, ECDC detected 377 events (411 in 2017) that met the criteria set in the EU Early Warning and Response System on public health threats. Seventy-one of the detected threats led to the monitoring of a new threat (69 in 2017). Of all events, 235 (62%) originated in the EU (56% in 2017). 102 EWRS messages and 130 comments were posted. Seven EWRS messages were classified as alert notifications, and 95 as other information; 17 resulted in opening a new threat assessment in the Threat Tracking Tool (TTT).

New version of the EU Early Warning and Response System on public health threats (EWRS)

The Early Warning and Response System of the European Union is a tool with restricted access for monitoring public health threats in the EU. Access and posting are confidential and can only be accessed by ECDC, the Member States and the European Commission. The EWRS is used to address unusual or unexpected threats, threats that present a risk of significant incidence or mortality, or threats that may exceed national response capacities.

ECDC developed an updated version of the EWRS in September 2018. 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 update included the following additions:

- A module for the reporting of threats (better management of new threats).
- A situation awareness module (beta version, final release in 2019) which provides an overview of the current threat by offering maps, epidemiological analyses, and other epidemiological data.
- A module on incident management that allows for the exchange on information on response measures in the Member States.

ECDC continued to publish its weekly Communicable Disease Threats Report (CDTR). The CDTR summarises outbreak information gathered through epidemic intelligence activities. The CDTR is also available through 348 websites/social media sites that feature a direct link to ECDC's CDTR page.

ECDC supported DG ECHO[7] with the deployment of an expert in Democratic Republic of the Congo to contribute to the response activities for the outbreak of Ebola.

To support the investigation of multi-country outbreaks, ECDC released 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 of 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 by substances of human

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[7] European Civil Protection and Humanitarian Aid Operations

origin and evaluated the risk of parasitic and fungal disease transmission by substances of human origin and produced scientific articles on these topics.

ECDC's new Emergency Operations Centre (EOC) has been operational since May 2018. The epidemic intelligence team now have their workstations in close proximity to, or directly in, the EOC. Thanks to technological upgrades, the EOC has increased its epidemic intelligence capacity and also added additional channel for videoconferencing so that more ECDC experts can participate in meetings and conferences. ECDC was able to test the new EOC during the PACE 2018 simulation exercise.

ECDC was re-appointed as a member of the steering committee of the Global Outbreak Alert and Response network (GOARN) until 2022. The annual meeting of the NFPs for Preparedness and Response took place. Topics included travel medicine, One Health, and the new requirements for the Events Management System.

Indicators for response and emergency operations

No.	Objective	Indicator	Target 2018	Verification	Result 2018
13	Provision of relevant, timely and quality rapid risk assessment to support the risk management carried out by the Member States and the European Commission	• Average number of downloads per RRA • Level of satisfaction of the RRA by ECDC stakeholders	+ 10% increase >75% satisfaction on usefulness and impact	Timeliness: RRA statistics. Source SARMS (internal database on external scientific advice requests) Survey among the members of the Health Security Committee (only for 2018)	Average number of downloads per RRA: on average 35 persons downloaded an ECDC rapid risk assessment in 2018; 9 376 downloads total*. (* Downloads from users who did not accept the cookie consent are not counted.) Timeliness: 31 RRA, have been published by the date agreed upon at the Round Table meetings, 2 have been delayed less than one week 2 (Rapid Outbreak Assessments produced together with EFSA), delayed for more than one week. Survey conducted among HSC members in 2018. Satisfaction was high 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% 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 depends on a competent workforce at all levels. ECDC's has the mandate to coordinate and support training programmes in order to ensure that Member States have a sufficient number of trained specialists[8]. The ECDC Public Health Training Strategy 2015[9] sets three objectives:

- Strengthen and maintain the workforce in the Member States and at the EU level through the training of key national experts to ensure adequate capacity for communicable disease preparedness, prevention, detection, assessment and control (in countries and across borders). This is ensured through the ECDC Fellowship Programme, a two-year learning-by-doing programme, with a field epidemiology (EPIET) and a public health microbiology (EUPHEM) path; and the Continuous Professional Development Programme (CPDP) that targets mid-career and senior public health professionals.
- Strengthen and maintain a network of European and global training partners, to support capacities for training at local, subnational, national and community levels (national institutes for public health, national reference laboratories, schools for public health, NFPs for public health training, and global partners such as ASPHER, TEPHINET, and WHO). ECDC provides the scientific leadership for MediPIET[10], a field-epidemiology training programme in the Mediterranean region.
- Support training in the Member States by providing a common virtual training infrastructure, the ECDC Virtual Academy (EVA) and an online collaborative platform (FEM Wiki).

Results achieved in 2018

In 2018, 37 fellows graduated from the ECDC Fellowship Programme and the EPIET-associated programmes (cohort 2016). At year's end, 82 fellows were enrolled (41 from cohort 2017 and 41 from cohort 2018). The Programme operates in public health institutes and laboratories located in EU/EEA countries. It includes 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 Programme started in 2018 and will be finalised in 2019.

ECDC carried out its Continuous Professional Development Programme (Summer School, senior exchange visits, e-learning opportunities, and dedicated training courses; 434 participants in total). In 2018, ECDC launched a capacity and needs assessment for 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), a platform for online learning, piloted four new online courses and organised three editions of existing ones; 790 people enrolled, and 142 graduated with a certificate.

In 2018, ECDC signed a new contract with the European Commission to support MediPIET (third cohort 2019). ECDC will remain the scientific coordinator of the programme.

In 2018, ECDC collaborated with ASPHER in organising the first meeting of the network of public health schools in Europe to exchange experiences and develop joint activities. ECDC published a catalogue of courses on prevention and control of communicable diseases in Europe with the support of ASPHER, and supported ASPHER in identifying the core competencies needed from professionals working in the field of communicable diseases.

The collaboration with different institutions continued. Together with the Food and Agriculture Organization (FAO), ECDC contributed to develop competencies for frontline field epidemiology training for veterinarians. We jointly designed the Global Laboratory Leadership Programme, with WHO, FAO, OIE, the US CDC and the American Association of Public Health Laboratories. ECDC is active member of the Coalition of Partners, an initiative aimed to strengthening essential public health services and capacities across the WHO European Region.

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[8] Article 9 (6) of the ECDC Founding Regulation and Article 4 of Decision No 1082/2013/EU
[9] https://ecdc.europa.eu/en/publications-data/ecdc-public-health-training-strategy
[10] 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.

Table 2. **Modules and participants, ECDC Training Programme**

Programme	Topic / track	Participants	Total
Fellowship Programme	EPIET cohort – EU-track 2017 EPIET/EUPHEM cohort – Member States track 2017 EUPHEM cohort – EU-track 2017 EPIET-associated programmes	11 13 6 11	82
	EPIET cohort – EU-track 2018 EPIET/EUPHEM cohort – Member States track 2018 EUPHEM cohort – EU-track 2018 EPIET-associated programmes)	12 11 5 13	
CPDP/short courses	Summer School	38	268
	Public Health Emergency Preparedness Pilot Course	22	
	Control of multidrug-resistant microorganisms (MDRO)	31	
	Whole Genome Sequencing for *M. tuberculosis*	39	
	Communication about tuberculosis to general public and use of social media, advocacy and communication to local government and policymakers	20	
	Cross-sectoral biorisk awareness and mitigation training (ECDC–EUROPOL), second edition	47	
	Simulation exercise design and implementation	20	
	Methods and tools for evidence-based practice and decision-making	51	
CPDP exchange visits	Senior exchange visits + TB exchange visits + FWDEEP exchange visits	1 + 20 + 3	24
Online courses (ECDC Virtual Academy – EVA)	Cross-border public health data sharing – pilot	6	142*
	PRECEPT online course – pilot	16	
	Introduction to outbreak investigation: pilot course (pilot and course)	67	
	Rapid risk assessment e-learning pilot	19	
	Writing and reviewing scientific abstracts: a field epidemiology focus, fourth edition	15	
	Influenza vaccination among healthcare workers – assess and communicate to improve uptake; third edition	19	
MediPIET (scientific coordination)	No cohort in 2018 – renewal of the contract	-	-
TOTAL			**514**

* Number of people who completed the e-learning courses and received a certificate; the actual number of participants was higher

Indicators for public health training

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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 nationally and cross-border.	A. Number of people trained, per Member State, per core function* B. Participant satisfaction with ECDC training activities. C. Number of scientific articles of public health relevance by EPIET/EUPHEM fellowship during and 2 years after graduation. D. Number of Fellowship graduates working in Public Health per Member State, per discipline (absolute and proportional)	A. 40 fellows in 2 cohorts included in ECDC fellowship, >300 participants to CPDP training activities (short courses, e-learning and senior exchange) B. >75% satisfaction C. > 50% increase compared to the 2-year period before entering the programme. D. Reduction of the gaps identified by the Training Needs Assessment	A. From ECDC training database (CRM): number of trained people B. Course evaluation C. Database + ECDC Virtual Academy (EVA) platform, bibliometrics (PubMed, Scopus) D. ECDC Virtual Academy (EVA): follow up of graduates (profile updates), Linkedin, PubMed, CCB	A. 37 fellows graduated in 2018: 19 EPIET (9 EU track, 10 Member States track, 11 from associated programmes) and 7 EUPHEM (all EU track) 434 external experts trained in the CPDP courses (including 138 through online courses, and 24 in exchange visits) B. Satisfaction: • ECDC Fellowship Programme (EPIET/EUPHEM): not available • Short courses: 86% (data from four courses: Control of multidrug-resistant organisms in healthcare settings (92%); Simulation exercise design and implementation (90%); WGS for TB (82%); Comm. TB (83%); four-day evidence-based methods workshop (80%); one-day EBM Workshop (88%) C. Number of scientific articles: • Increase/decrease of publications: 3.5 times (350% increase) • Average number of annual publications per fellow before fellowship: 2.3 • Average number of annual publications per fellow in the two years after fellowship: 7.8 (Source: PubMed, Scopus, out of 27 [ECDC-funded] fellows in Cohort 2014) D. Number of graduates working in public health per Member State: Data not available
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: no dedicated survey in 2018

Figure 8. ECDC fellowship programme: number of participants per cohort, 2012–2018
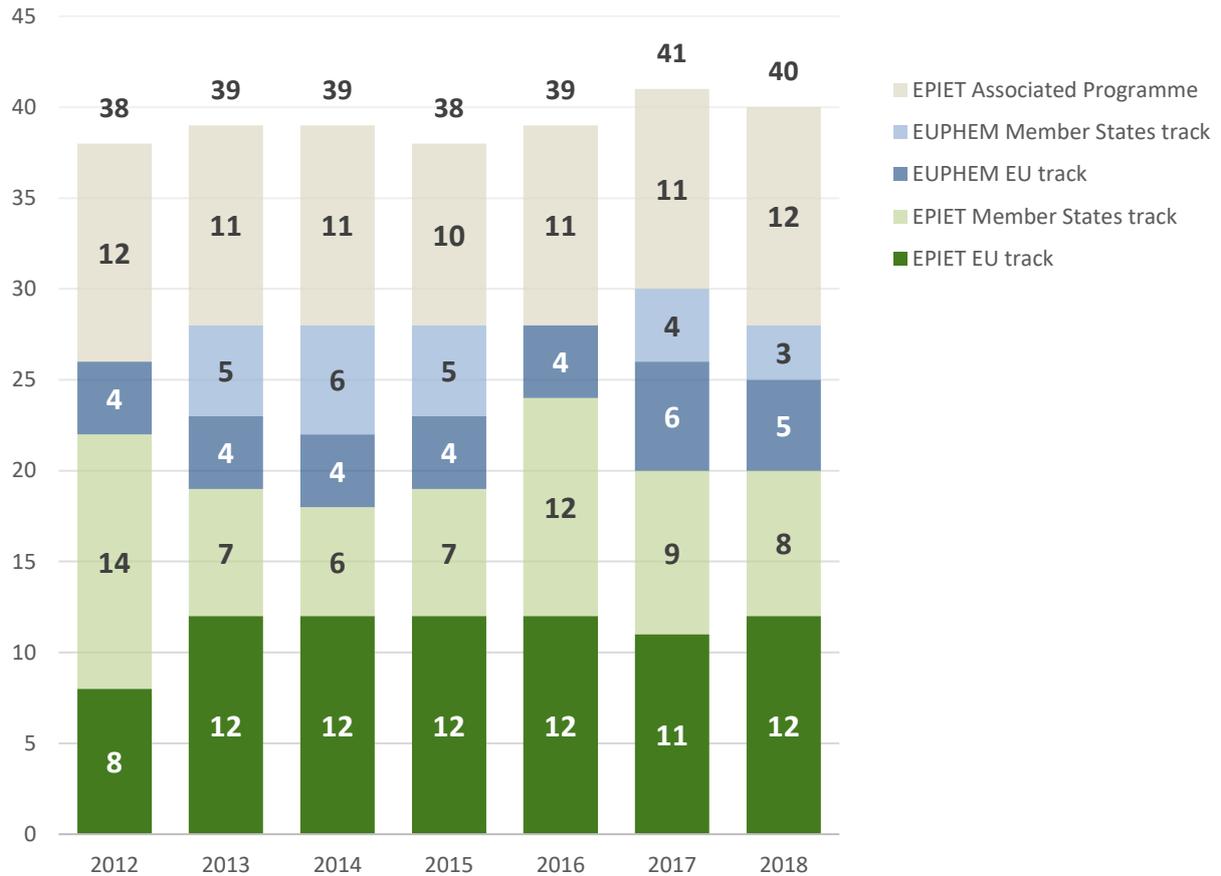
Figure 9. Number of participants in ECDC training activities, 2012–2018
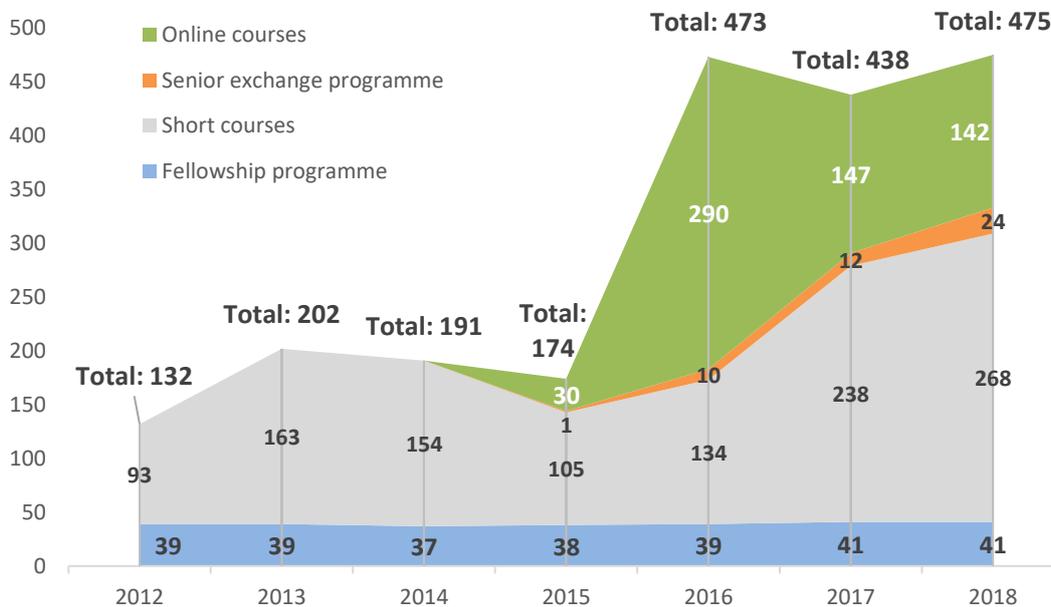
Note: Graph shows the number of people who completed the e-learning courses and received a certificate; the actual number of participants was higher

Figure 10. **Total EU-track fellows (sent and hosted) per country since start of the Fellowship programme**

Sent EPIET-EU   Sent EUPHEM-EU   Hosted EPIET-EU   Hosted EUPHEM-EU
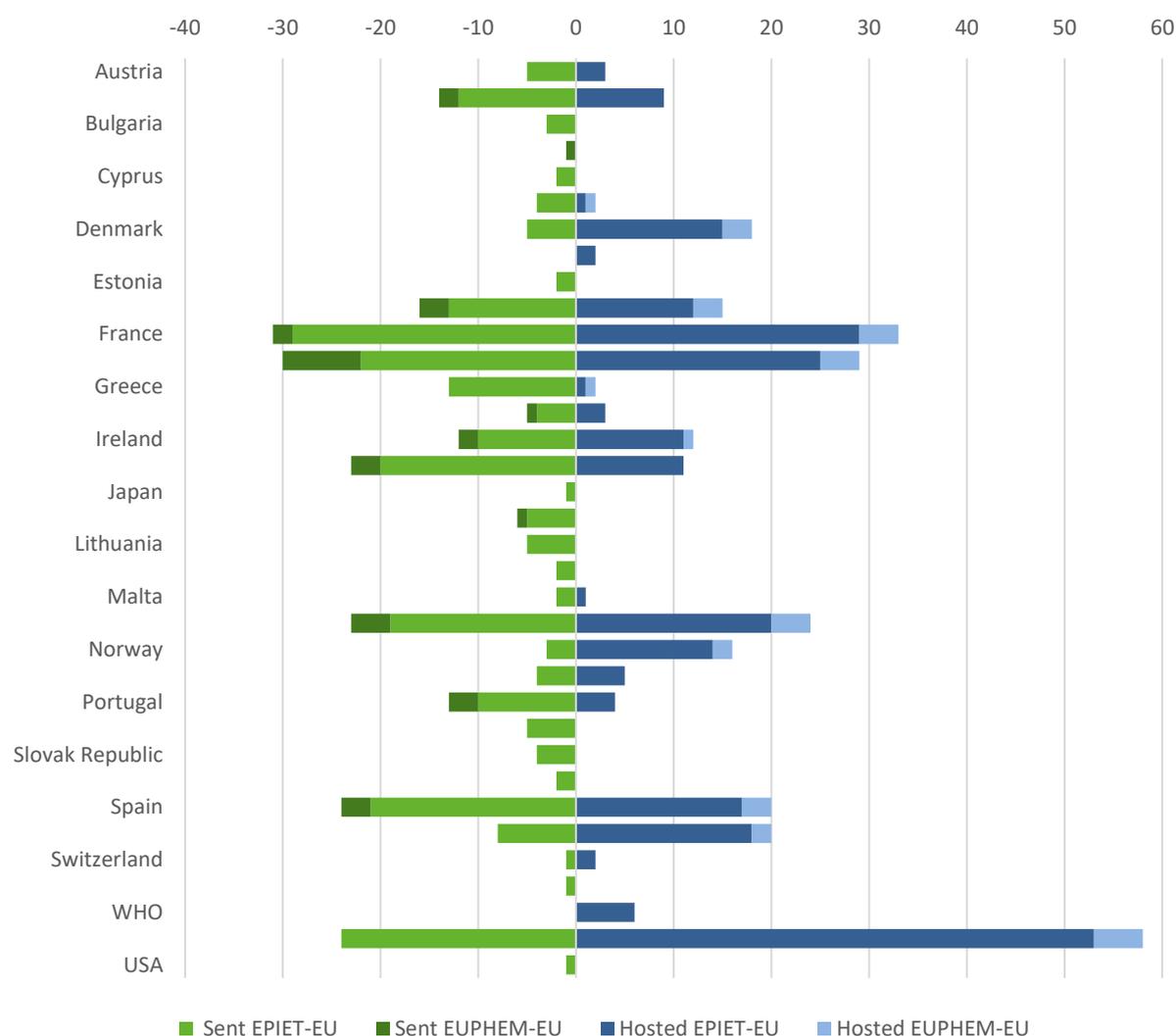
4.2 International relations

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 pre-accession countries and the European Neighbourhood Policy partner countries is also essential. ECDC works with public health authorities in these countries to bring them into the field of 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. Following a mid-term review of ECDC's international relations policy, the Management Board adopted the new *International relations policy 2020* in 2017 (published in January 2018) that includes major changes, e.g. the mobilisation of ECDC experts outside of the EU in public health emergencies.

Results achieved in 2018

In January 2018, the Director of ECDC visited the WHO Regional Office for Europe where both Directors approved the principles of collaboration. In October 2018, during their annual technical coordination meeting, ECDC and WHO Europe assessed the implementation of the 2018 joint plan of actions (a full report will follow in 2019) and reviewed the planning for 2019. A co-branding agreement between ECDC and WHO Europe was approved and extended to all joint products (reports, press releases and presentations).

The year 2018 marked the 10th anniversary of the collaboration with the EU pre-accession countries. ECDC continues to provide technical support to EU pre-accession countries by inviting national experts to ECDC network meetings and trainings. In 2018, ECDC organised 14 technical cooperation events for EU pre-accession countries with attendance of 97 participants. Within the framework of a pilot project, EU pre-accession countries have already begun to submit data to ECDC's TESSy system on a small number of clearly defined diseases. The European Commission (Directorate-General for Neighbourhood and Enlargement Negotiations) ensures the financial support through the Instrument of Pre-Accession Assistance.

Assessing microbiology laboratory capacities and capabilities to enhance control of infectious diseases in the Western Balkan countries

Well-functioning public health microbiology laboratories are essential for the early detection and control of infectious diseases and improved health security in Europe. As part of its support to pre-accession countries, ECDC adapted its EULabCap methodology to the needs of EU pre-accession countries (ENLabCap). In order to help Western Balkan countries strengthen their national capacities, the Centre introduced an annual monitoring routine to gauge the capacity and capability levels for public health microbiology, which supports disease surveillance and epidemic preparedness. This includes benchmark tests and comparisons against the EU level for pre-accession countries. The 2017 results showed a low, but steadily increasing capability/capacity level of the public health microbiology system in the majority of Western Balkan countries.

Upon request from the European Commission, ECDC assessed the system for communicable disease prevention, disease surveillance, and disease control in Kosovo[11]. A team of ECDC and EU Member State experts conducted the assessment during a country visit, with the participation of officials from the European Commission. The team held more than 70 review meetings and visited 28 institutions in 12 municipalities. ECDC still monitors public health development in pre-accession countries and supplied post-assessment briefings to the European Commission. ECDC also assisted North Macedonia in developing a post-assessment action plan.

ECDC continued its technical cooperation with the EU's European Neighbourhood Policy countries. Following-up on the assessment of Ukraine in 2015, ECDC prepared an action plan of joint activities, which will be implemented as from 2019.

ECDC further intensified its cooperation with major national public health institutes and centres for disease control by establishing formalised bilateral partnerships. A network of contact points was created, covering all CDCs and several international partner organisations.

Dr George F. Gao, Director of the China CDC visited ECDC with a delegation in November 2018; a common action plan was agreed. Discussions were also initiated with Dr John Nkengasong, Director of the Africa CDC, who visited ECDC in February 2018.

Indicators for international relations

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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%
18	Support the progressive integration of EU pre-accession and European Neighbourhood Policy partner countries into ECDC activities, 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	85% (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% respondents very satisfied or satisfied with opportunities of technical cooperation in different areas of ECDC activities

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[11] 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.

No.	Objective	Indicator	Target 2018	Verification	Result 2018
19	Strengthen the cooperation and partnership with the major CDC-s across the globe through formal bilateral agreements with ECDC	- Proportion of partner CDCs for which Focal Points have been designated	100%	CRM, International Relations Section statistics	100%
		- Proportion of partnership agreements for which evaluations are conducted	75% of memoranda of understanding/partnerships evaluated		
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 to measure satisfaction of countries on ECDC/WHO collaboration and joint outputs	N/A as no stakeholder survey was conducted

4.3 Country support

Context

ECDC provides the Member States with training activities, conducts assessments, holds peer reviews, helps with the sharing of experiences and good practices, develops toolkits and guidance documents, and secures laboratory capacity support to Member States. Occasional, these activities lacked coordination and did not sufficiently focus on the countries' actual needs. The second external evaluation of ECDC encouraged the Centre to gain a better understanding of national health systems and the needs of individual countries. To achieve this, the evaluation recommended a dedicated support framework.

In 2016, the Management Board adopted a new strategy for country support. It defines how ECDC should meet national public health needs and support national capacities and capabilities in a sustainable fashion. The strategy also outlines a coordinated approach to assess national public health needs, identify priorities, and build capacity. The objectives are:

- to define – with the Member States – the needs and opportunities in countries and regions;
- to agree with the Coordinating Competent Bodies and the Advisory Forum on country-driven transparent methods for the determination of priorities for ECDC country support activities;
- to plan and implement – together with the Coordinating Competent Bodies – cost-efficient, structured ways to support public health activities in the Member States.

Recommended activities include training courses, sharing of experiences and best practices, country capacity strengthening, laboratory support, surveillance support, and support to policymaking. ECDC launched a first pilot call in 2017 and the second annual call in 2018.

Results achieved in 2018

Following the annual call for Member State support requests, the Centre received eight requests from four countries. The requests were evaluated using the ECDC IRIS tool. Details were clarified with the beneficiary countries. Solutions on how to meet the countries' needs were discussed with ECDC's Disease Programmes and the relevant sections in-house. The requests mainly covered needs for trainings and exchange visits. To address the requests received in 2017 and 2018, ECDC will organise two multi-country training activities and produce materials on vaccine acceptance (childhood vaccinations in Estonia, Lithuania, and Romania) and infection control and patient safety in Latvia, Lithuania, Poland, and Romania.

Additionally, ECDC supported Romania in drafting its national preparedness plan and Lithuania in developing a national guideline on integrated care for tuberculosis.

To align the country support mechanism with the ECDC work planning cycle, from 2019 onwards, the annual call – in the form of a dedicated request to the CCBs – will constitute an integral part of the regular consultation for the preparation of the ECDC Single Programming Document. Additionally, ECDC wants to upgrade the functionalities of its CRM system to reflect this approach and add information on its interactions with Member States.

Figure 11. Number of requests by area and type of support
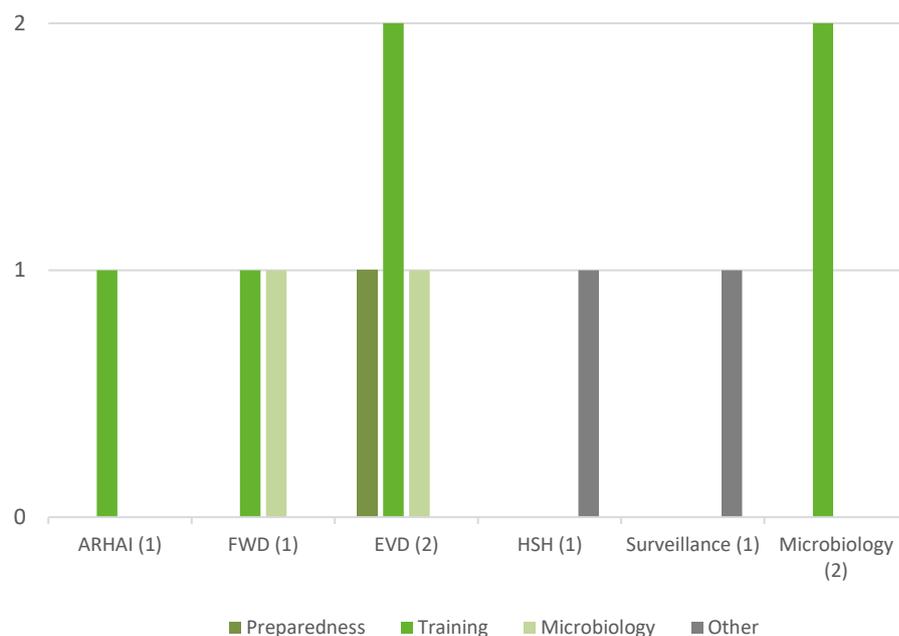
Indicator for country support

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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	N=4/5 (80%) countries were 'very satisfied' (Satisfaction scale from 1 to 4. Among Member States, whose requests was fulfilled and closed.)

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 the coordination of risk and crisis communication, based on robust and independent evaluation of public health risks, 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.

The ECDC Communication Strategy, adopted in 2016, outlines the vision and the objectives of ECDC communication until 2020. As from 2018, this area also covers ECDC corporate and internal communication activities.

Results achieved in 2018

ECDC published over 200 reports in 2018 (Annex 8), including rapid risk assessments and regular surveillance reports. In 2018, joint branding was extended to all joint ECDC–WHO reports and activities. The publications newsletter had 3 729 subscriber in 2018, 417 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, 638 713 website sessions were recorded for 2018, compared with 1 281 596 in 2017[12]. The number of followers on ECDC's corporate Twitter account (@ECDC_EU) grew by 19 percent, with over 4 000 new followers in 2018. ECDC's dedicated Twitter account on outbreaks (@ECDC_Outbreaks) grew, from 3 659 followers to 5 543 followers by the end of 2018, representing a 51 per cent increase on 2017.

Media analyses show that 10 047 (8 292 in 2017)[13] media clippings mentioning ECDC were published in the EU in 2018 (both print and online, excluding social media), an increase of 21%; potential audience reach was 100.6 million citizens (about 19.6% of the EU population). Disease surveillance, vaccines, outbreaks, measles, and antimicrobial resistance were the most popular topics mentioned in the news.

Figure 12. **Referencing of ECDC in media in Europe: number of clippings (online publications and print articles)**

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[12] This drop can be explained by the fact that visitors who do not explicitly agree to the use of cookies cannot be tracked. This practice was introduced in June 2017.

[13] 95.2% neutral, 4.3% positive, 0.3% negative, 0.2% mixed.

Figure 13. Referencing of ECDC in media in Europe: tone of media clippings
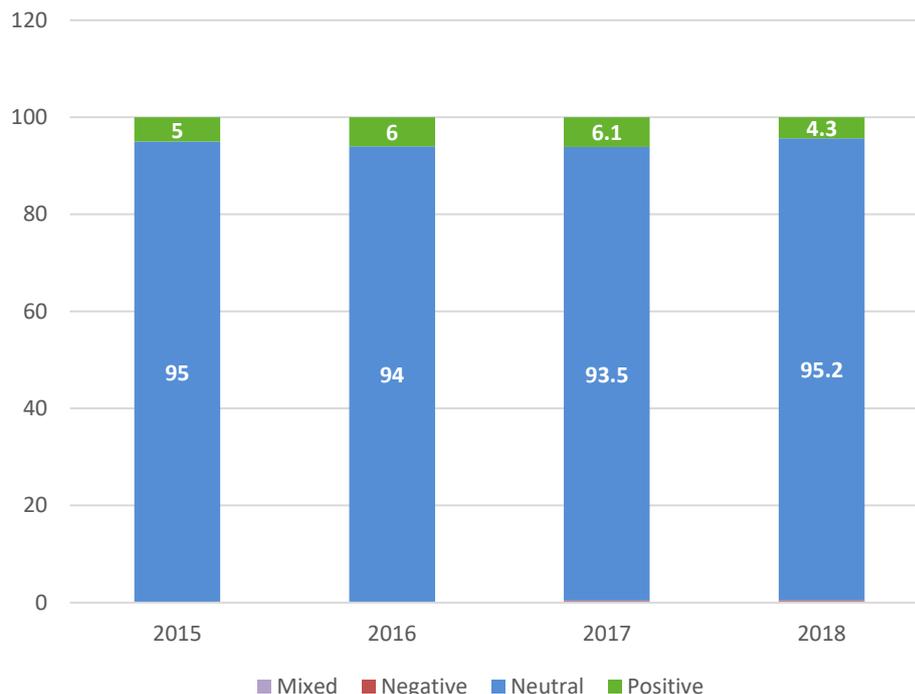
The co-branding with WHO Europe was extended to all joint products to allow consistency of the format of joint reports, joint press releases and joint presentations.

Throughout the year, ECDC provided a professional press office service and intensified the work with health journalists. In close cooperation with the European Commission, the Health Security Committee as well as the WHO Regional Office for Europe, ECDC provided EU-wide communication response to public health issues, such as the outbreaks of the West Nile virus and measles.

ECDC developed a number of communication campaigns, using traditional media, social media, video, toolkits, infographic visuals and PowerPoint materials, which can be reused by Member States in their language during various occasions, such as the European Antibiotic Awareness Day, the European Immunisation Week, the World TB day.

Over 40 countries across Europe participated in the eleventh edition of the European Antibiotic Awareness Day (18 November 2018). Ahead of the event, a press briefing with a keynote speech by Commissioner for health, Vytenis Andriukaitis, was organised. The Day was marked by national events and campaigns on prudent antibiotic use under the heading 'One Health to Keep Antibiotics Working'. ECDC continued to collaborate with WHO Europe for the World Antibiotic Awareness Week.

ECDC supported WHO Europe in developing a template for risk communication planning. During 2018, ECDC assessed country capacity for risk communication on measles and vaccination in Romania, and on antimicrobial resistance in Norway and the United Kingdom. In March 2018, a simulation exercise was organised with the national focal points (NFP) for communication, on risk communication, to test the communications capacities at EU and country levels.

Indicators for health communication

No.	Objective	Indicator	Target 2018	Verification	Result 2018
22	Ensure that ECDC 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 (2) Perception of timeliness, usability and usefulness of ECDC outputs	+5% web visitors +10% followers on Twitter Favourable perception of at least 75% respondents	Web and social metrics used for verification Perception study	(1) 638,713 website sessions were recorded for 2018, compared with 1,281,596 in 2017. There was 50% decrease is due to the launch of the new website in June 2017 and the cookie consent banner (visitors who do not explicitly agree with the use of cookies cannot be tracked, leading to 70%/80% decrease in users). The number of followers on ECDC's corporate Twitter account (@ECDC_EU) grew by 19%, with over 4 000 new followers in 2018. ECDC's dedicated Twitter account on outbreaks (@ECDC_Outbreaks) grew, from 3 659 followers in 2017 to 5 543 followers by the end of 2018 (51% increase), a trend that is observed among all ECDC Twitter accounts. (2) Not available for 2018
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 to previous year	Media monitoring	+21% The media analysis shows that 10 047 (vs. 8,292 in 2017) media clippings mentioning ECDC were published in the EU in 2018 (both published and online, excluding social media) with a potential audience reach of 6.9 million citizens. Surveillance, vaccines, outbreaks, measles, AMR were the most often reported topics. Tone of the clippings: 95.2% neutral, 4.3% positive 0.3% negative, 0.2% mixed
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 • Indicators aligned with Communication strategy	Not available in 2018

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 2018

The Journal remained an attractive outlet for public health experts and scientists, which is reflected by the number and quality of submissions: the total number of submissions reached 727 in 2018 (2017: 901; 2016: 864), an average of 61 per month. The 2018 acceptance rate of 26% was similar to previous years. In total, Eurosurveillance published 213 items: 182 articles (52 rapid communications, 115 regular articles, and 15 in other categories such as editorials, letters, and meeting reports). Thirty-two news items were published.

Europe remains the geographical focus of submitted and published articles. As in previous years, the Journal published several articles from countries outside of Europe that were of general relevance for public health and/or impacted Europe. *Eurosurveillance* received submissions from 31 of the 33 countries represented on its Board, and from some 70 countries overall.

Some 500 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 7.1, and it ranked fifth 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* sixth among 478 journals in the medicine category: public health, environmental and occupational health.

The Journal is active on Twitter and expanded its social media activities to the professional network LinkedIn.

To support ongoing or emerging threats, *Eurosurveillance* covered events such as the outbreak of *Salmonella* Argona associated with internationally distributed infant milk products in France, the West Nile virus transmission season in Europe, and the upsurge of enteroviruses associated with severe illness in a number of European countries. The Journal also provided timely communication on influenza vaccine effectiveness. The Journal covered issues such as vaccination, HIV/AIDS and antimicrobial resistance. A special issue was dedicated to the 'Screening and prevention of infectious diseases in newly arrived migrants in Europe'. Special print editions were distributed at international conferences.

Discussing the status and future of artificial intelligence in epidemiology

A scientific seminar on 'Artificial intelligence (AI) in epidemiology: a reality in 2018?' was held during the ESCAIDE conference in November 2018. It attracted more than 130 participants and raised a lot of attention. A keynote speaker and scientific panel explored the opportunities and challenges of AI and concluded that in the field of infectious diseases, concrete examples of self-learning applications with some freedom of decision-making are still scarce. Discussions with the audience brought forward that now is a good time to tackle basic questions on ethics, infrastructure and training needs for epidemiologists and (public health) microbiologists related to AI. Such questions need to be addressed in an interdisciplinary collaboration with computer scientists, ethicists, social scientists and many others.

During 2018, in order to ensure transparency and quality, the editors and the editorial Board refined the Journal's policies. Also available are concise instructions for authors of articles on disease surveillance and outbreaks.

Figure 14. **Eurosurveillance impact factor**
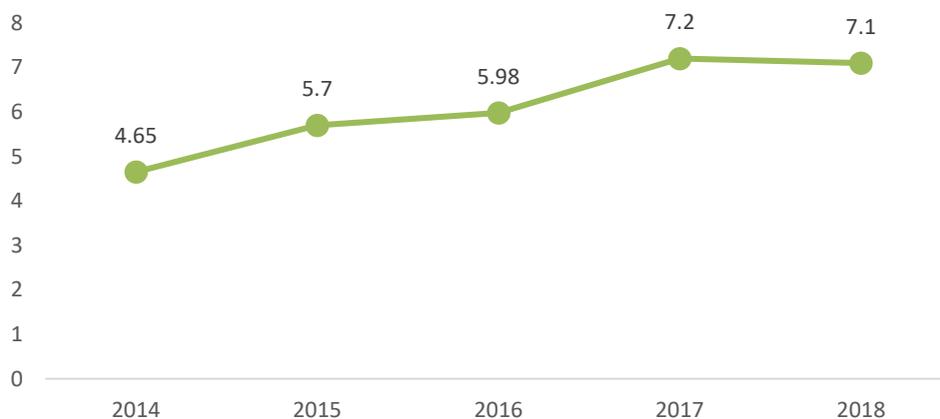
Indicators for *Eurosurveillance*

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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 (218 items) published in 2018
		Impact factor for *Eurosurveillance* and journal rank positioning in quartile 1	Impact factor >3	Journal citation reports, SCImago, Citescore	IF = 7.1 CiteScore ranked *Eurosurveillance* 6 among 478 journals in its category. In the SCImago journal rank, *Eurosurveillance* featured in the top 25 per cent in four categories (medicine general, virology, public health, environmental and occupational health).

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]). In 2017, the European Commission adopted the European One Health Action Plan against Antimicrobial Resistance. European initiatives[15] 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. Up until recently, Member States did not share guidance, best practices or success stories in preventing and controlling AMR and HAIs. ECDC and its partners are working to change this.

Results achieved in 2018

ECDC prepared and contributed to rapid risk assessments on AMR, healthcare-associated infection events/outbreaks, emergence of ceftazidime-avibactam resistance in carbapenem-resistant Enterobacteriaceae, *Candida auris*, multidrug-resistant *Staphylococcus epidermidis*, extensively drug-resistant *Neisseria gonorrhoeae*, and influenza-associated invasive pulmonary aspergillosis.

Estimating the burden of antibiotic-resistant bacteria and the prevalence of healthcare-associated infections and antimicrobial use in European healthcare

ECDC published the first estimates of the health burden of infections with antibiotic-resistant bacteria[16] for the EU/EEA in 2015, measured in number of cases, attributable deaths, and disability-adjusted life-years (DALYs). The study showed that each year, 33 000 people die from infections due to bacteria resistant to antibiotics. The burden of these infections – in DALYs – is comparable to that of influenza, tuberculosis and HIV/AIDS combined and has increased since 2007. Seventy-five per cent of the burden of infections with bacteria resistant to antibiotics in Europe is healthcare-associated.

On European Antibiotic Awareness Day, ECDC published the results[17] of two point-prevalence surveys (2016–2017) of healthcare-associated infections and antimicrobial use in acute care hospitals and in long-term care facilities in the EU/EEA. The surveys show that the prevalence of healthcare-associated infections and antimicrobial use varies between countries and that, overall, there is room for improvement. Healthcare-associated infections remain a serious issue, with 8.9 million cases occurring each year in both hospitals and long-term care facilities. On any given day, one in three patients receives at least one antimicrobial. Not all of these drugs or drug combinations are medically necessary and may contribute to the spread of AMR in the EU/EEA.

On 13–15 June, a joint WHO–ECDC meeting of the networks for the surveillance of antimicrobial resistance (EARS-Net; CAESAR, which is operated by the WHO Regional Office for Europe), antimicrobial consumption (ESAC-Net; AMC Network, which is run by the WHO Regional Office for Europe) and healthcare-associated infections (HAI-Net) took place in Copenhagen. The meeting gathered 300 representatives and experts from EU Member States, EU pre-accession countries, and countries of the WHO European Region.

To support the dissemination and sharing of best practices and effective strategies, ECDC updated its directory of online resources for the prevention and control of AMR and HAIs, which includes guidance documents from EU and

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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://ec.europa.eu/health/amr/sites/amr/files/amr_action_plan_2017_en.pdf

[16] https://www.sciencedirect.com/science/article/pii/S1473309918306054?via%3Dihub

[17] https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2018.23.46.1800394

international agencies, professional societies, and EU Member States. ECDC also contributed to the EU Joint Action on AMR and healthcare-associated infections (EU-JAMRAI)[18], both as a member of the Advisory Committee and of the Stakeholder Forum, and by supporting several of the work packages.

On 18 November, in conjunction with WHO's World Antibiotic Awareness Week (12–18 November), ECDC organised the 11th European Antibiotic Awareness Day 2018 to raise awareness about the threat to public health posed by antibiotic resistance, emphasising again the importance of prudent antibiotic use. ECDC conducted country visits in Bulgaria, Norway, and the United Kingdom to discuss AMR issues and provide an objective assessment of the situation in the countries, based on factual observations, conclusions and suggestions. ECDC also continued to act as a key contributor to TATFAR, the Transatlantic Taskforce on Antimicrobial Resistance, a collaborative effort of the EU, the United States, Canada and Norway in the field of AMR.

6.2 Emerging and Vector-Borne Diseases

Context

Emerging and vector-borne diseases are always challenging because of 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, the spread of invasive mosquitoes, and the 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 such as blood transfusion authorities. ECDC also collects data to help public health experts understand the factors that could trigger sudden outbreaks.

Results achieved in 2018

In May 2018, the 10th Ebola virus disease outbreak started in the Democratic Republic of the Congo. It quickly became the largest and longest outbreak in the country, and the second largest on record. ECDC monitored the outbreak and released several rapid risk assessments.

Addressing West Nile virus infections in Europe

During the 2018 transmission season, case numbers increased: the total number of reported autochthonous infections in 2018 (2 083) exceeded, by far, the total number from the previous seven years (1 832). Compared with the 2017 transmission season, there was a 7.2-fold increase. The outbreak was a timely reminder that West Nile virus is a re-emerging pathogen in Europe and that Europe needs to strengthen its preparedness.

In August, ECDC published an analysis of the situation in *Eurosurveillance* and released a rapid risk assessment. The virus affected eleven EU countries: Austria, Bulgaria, Croatia, Cyprus, the Czech Republic, France, Greece, Hungary, Italy, Slovenia and Romania. Further analyses will take place in 2019 to identify the factors associated to the outbreak.

ECDC is currently developing a West Nile virus modelling tool to assist countries in determining the risk of virus transmission to humans. The tool aims to allow the appraisal and comparison of vector-control strategies against West Nile fever in Europe. It attempts to anticipate and predict West Nile virus activity by mathematically modelling transmission.

During 2018, ECDC prepared, or contributed to, rapid risk assessments on emerging and vector-borne diseases outbreaks such as dengue, yellow fever, monkeypox, West Nile virus infections and malaria.

In 2018, Lyme neuroborreliosis was added to the diseases under surveillance in the EU. ECDC contributed to the case definition. Member States already began collecting surveillance data, which will be reported to TESSy starting next year.

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[18] 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 to reduce HCAI.

ECDC continued its practice of publishing European distribution maps on its website for mosquitoes, ticks and sandflies. The maps are published regularly to provide ECDC stakeholders, the scientific community and the general public with updated information on the distribution and surveillance of disease vectors.

The Centre developed a modelling tool to support decision-making for the surveillance and control of *Aedes* mosquitos transmitted viruses (dengue, chikungunya and Zika). The modelling tool, complemented by field studies in Italy, Greece and Albania, provided significant results on mosquito control and reduction activities. A report will be published in 2019.

Procurement for a new four-year VectorNet project was launched. The project will be managed by ECDC and EFSA. One of its goals is to collect and consolidate data on arthropod vectors (insects) for human and animal disease. A contract with a new consortium is expected in 2019.

Under the EVDlabnet network, ECDC supported an external quality assurance for molecular detection of yellow fever viruses and a training course on the laboratory diagnostics and surveillance of rodent-borne viral infections.

In September, the Centre gathered its annual network of 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 in this area is to improve EU-level surveillance to ensure timely public health actions. New technologies, for example looking at pathogens' genomes through whole genome sequencing, allow detection of cases potentially linked to a common source. This approach has an enormous potential to improve the response to cross-border 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 2018

In 2018, 77 'urgent inquiries' (53 in 2017) were posted on the EPIS-FWD platform. This is the highest number of 'urgent inquiries' since the launch of the platform in 2010. Salmonellosis was the most frequently reported disease (32), followed by VTEC infections (9), listeriosis (9), and hepatitis A (9). Of these signals, 12 were verified by WGS as multi-country events. ECDC published five joint rapid outbreak assessments with EFSA (3 on *Listeria* and 2 on *Salmonella*) and six epidemiological updates. In addition, ECDC sent out 12 notification summaries (9 on listeria and 3 on salmonella) to inform risk managers in the Member States and at the EU level.

In 2018, ECDC and EFSA published two reports: 1) trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2017, and 2) antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2016. While campylobacteriosis continues to be the most commonly reported gastrointestinal disease, salmonella bacteria were the most common cause of food-borne outbreaks, particularly in meat products and eggs. There was an average of 100 reported food- and waterborne outbreaks per week in EU in 2017. Cases of listeriosis are still on the rise, particularly among populations at risk (elderly, pregnant women, and persons with weakened immune systems). The total number of reported cases of travel-associated Legionnaire's diseases (TALD) in 2018 remained at the same heightened level as in 2017, compared with 2016. An annual meeting of ELDSNet network was held in Lyon, France, in August 2018.

Using WGS to assess the public health risk of a major multi-country outbreak of *Listeria*

ECDC and EFSA assessed the public health risk of a major multi-country outbreak of *Listeria monocytogenes* that caused 47 recorded cases, nine of which were lethal. Epidemiology and laboratory evidence, confirmed by whole genome sequencing (WGS), indicated that frozen corn and other frozen vegetables were the likely sources of the outbreak that affected Austria, Denmark, Finland, Sweden and the United Kingdom. ECDC and

EFSA published a joint rapid outbreak assessment in March; an update was released in July 2018. The outbreak assessment led to extensive control measures in the food industry in the affected Member States, demonstrating the usefulness of WGS and the value of collaboration between public health authorities and food safety networks.

ECDC further strengthened the Member States' public health capacity to respond to multi-country listeriosis outbreaks by organising a multi-disciplinary WGS training workshop in January 2018 for 11 participants from six countries (Bulgaria, Czech Republic, Estonia, Poland, Slovakia and Slovenia). In May 2018, ECDC and EFSA organised a preparedness workshop for a multi-country food safety/public health incident for 51 representatives from six countries (Austria, Czech Republic, Hungary, Poland, Slovenia and Slovakia), also involving communication experts. In December 2018, ECDC contributed to a simulation exercise for managing a cross-border food safety events organised by the European Commission. The ECDC FWD Professional Exchange Programme continued to offer hands-on learning opportunities for public health experts. The curriculum covers the development of skills and competences for improved public health laboratory capabilities, disease surveillance, and response to food- and waterborne outbreaks.

In 2018, ECDC conducted the first cluster analysis from the joint ECDC-EFSA molecular typing database, hosted in TESSy. The cluster analysis led to an 'urgent inquiry' by ECDC and further investigations are ongoing with Member States, EFSA and the European Union Reference Laboratory (EURL) for *Listeria monocytogenes*. The European Commission mandated ECDC and EFSA to assess the options for upgrading the joint database with WGS data. The report is expected by the end of April 2019.

ECDC funded external quality assessment (EQA) schemes for *Listeria, Salmonella, Campylobacter*, and STEC in 2018 and organised a proficiency test for *Listeria monocytogenes* whole genome assembly.

6.4 HIV, Sexually Transmitted Infections and Viral Hepatitis

Context

As disparate as sexually transmitted infections, viral hepatitis and HIV may seem, they have a number of commonalities, such as the links to sexual behaviour, deprived or poor communities, heavy stigma and, in some cases, marginalised and discriminated members of communities affected most by infection. These diseases have a tendency to persist as silent epidemics (several persisting in chronic infectious states), with resulting 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. Such data are essential to inform EU policymakers on the real burden and the effectiveness of measures to stop and/or reduce harm. Dedicated national programmes on HIV, sexually transmitted infections (STI) and viral hepatitis also need significant advocacy to be resourced adequately; disease-specific data may help support this advocacy.

Results achieved in 2018

ECDC and the WHO – with significant involvement of UNAIDS – organised a joint HIV surveillance network meeting in March in order to review the progress towards achieving the UN Sustainable Development Goal targets, the fast-track initiative to eliminate AIDS, and the progress in achieving the UNAIDS global target of '90/90/90: treatment for all'[19].

Contributing to the International AIDS Conference in Amsterdam

In July, ECDC participated in the International AIDS Conference, the largest global health conference, which takes place every other year. ECDC presented a number of datasets, including the 2018 estimates for continuum of care in Europe, based on the latest data for the monitoring of the 2004 Dublin Declaration to fight HIV/AIDS in Europe and Central Asia (http://www.euro.who.int/en/health-topics/communicable-diseases/hivaids/policy/guiding-policy-documents-and-frameworks-for-whoeuropes-work-on-hiv/dublin-declaration-on-partnership-to-fighthivaids-in-europe-and-central-asia). Apart from contributing to a variety of sessions, ECDC also conducted several workshops and satellite sessions, including the following:

- Addressing inequalities in the continuum of care in Europe and Central Asia
- HIV and co-infections in populations at risk

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[19] By 2020, 90% of all people living with HIV will know their HIV status. By 2020, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy. By 2020, 90% of all people receiving antiretroviral therapy will have viral suppression. See http://www.unaids.org/en/resources/909090

- A leadership workshop on eliminating the virus transmission in MSM: what has worked and what to replicate.

In 2018, the tool for monitoring the HIV response, based on the Dublin Declaration, was reviewed. As a result, data collection was reduced, data were more closely aligned with the Global AIDS Monitoring tool used by UNAIDS, and data were better aligned with the monitoring of the SDG target. In addition, a new hepatitis monitoring system, aligned with the WHO global monitoring activities, was piloted and launched.

In November, ECDC launched its HIV Estimates Accuracy modelling tool[20], a new application that uses statistical methods to calculate adjusted estimates from HIV surveillance data, taking into account the issues of missing data variables and reporting delay. The Centre also successfully piloted a new surveillance system for HIV drug resistance with nine EU countries, based on the WHO action plan on drug resistance 2017–2021.

In November, an expert meeting – organised jointly with UNAIDS – with representatives from 22 European countries discussed the delivery of pre-exposure prophylaxis in preventing HIV across Europe for at-risk individuals.

ECDC published an integrated HIV/hepatitis B and C testing guidance in November[21]. To reach more efficiently the estimated nine million Europeans living with chronic hepatitis B or C and the people unaware of their HIV infection, the document advises to expand testing to community-based settings in order to increase testing uptake and thus reduce the proportion of infected people who are unaware of their status. It also promotes self-testing and self-sampling as alternative strategies for some target populations.

On occasion of World Hepatitis Day, ECDC launched the first online interactive prevalence databases of published studies on hepatitis B[22] and C[23]. The two databases provide prevalence estimates for population groups and countries based on studies on hepatitis B and C published over the last ten years.

In 2018, ECDC piloted a new sero-prevalence survey protocol for hepatitis C to better assess the true burden of the disease in Bulgaria, Finland and Italy. The results are currently being analysed to give the Member States a clear idea of the prevalence of hepatitis C in their population.

The Centre published a first analysis of molecular typing of antimicrobial resistant gonorrhoea, which highlighted the main concerns towards the emergence of more resistant strains.

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[24], 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, in line with Decision No 1082/2013/EU on serious cross-border threats to health.

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).

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[20] https://ecdc.europa.eu/en/publications-data/hiv-estimates-accuracy-tool
[21] https://ecdc.europa.eu/en/publications-data/public-health-guidance-hiv-hepatitis-b-and-c-testing-eueea
[22] https://ecdc.europa.eu/en/all-topics-zhepatitis-btools/hepatitis-b-prevalence-database
[23] https://ecdc.europa.eu/en/all-topics-zhepatitis-ctools/hepatitis-c-prevalence-database
[24] Council Recommendation 2009/1019/EU of 22 December 2009 on seasonal influenza vaccination

Given the nature of these diseases, 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 2018

In 2018, ECDC drafted an expert opinion on non-pharmaceutical interventions during a pandemic, 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 opinion will be published in 2019.

ECDC and WHO 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 the surveillance for respiratory syncytial viruses, an estimation of the burden of disease for influenza, a severity assessment of pandemic influenza, and the strain selection process for influenza vaccines.

ECDC improved its surveillance systems in 2019 by strengthening the surveillance of severe disease and genome-based surveillance, as part of its routine surveillance, involving more countries and data. The surveillance systems for influenza and SARS were evaluated under the EPHESUS programme. Another evaluation focussed on the IRV Disease Programme; the final report will be available in 2019.

ECDC monitors zoonotic influenza viruses and other emerging respiratory viruses in real time through its epidemic intelligence function. In 2018, ECDC and EFSA continued the publication the quarterly situation assessment report on avian influenza.

ECDC published a report[25] on influenza vaccination coverage for seasons 2015–2016 and 2016–2017, based on data from the VENICE[26] network. The Centre also published an update on influenza vaccination and antiviral recommendations in the EU/EEA Member States for 2017–2018. The report showed limited progress in vaccination coverage among the elderly in Europe, which remains insufficient. ECDC also continued funding the external I-MOVE network[27], which provides estimates of seasonal influenza vaccine effectiveness in Europe.

In 2018, ECDC published a peer-reviewed article on national pandemic preparedness plans in the Member States.

ECDC continued coordinating the European Influenza Surveillance Network (EISN) and the European Reference Laboratory Network for Human Influenza (ERLI-Net). ECDC provided technical support for the laboratory testing of influenza viruses. External quality assessment of laboratories in 2018 showed that the ability to detect viral strains in Europe is at a high level.

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 have medium and high burdens 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- and high-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 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 WHO 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.

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25 https://ecdc.europa.eu/en/publications-data/seasonal-influenza-vaccination-antiviral-use-eu-eea-member-states

26 Vaccine European New Integrated Collaboration Effort. The VENICE network's objective is to collect, share and disseminate information on national immunisation programmes through a network of professionals, provide information useful to build up methodologies, and provide guidance for improving the overall performance of the immunisation systems in the EU/EEA.

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

Results achieved in 2018

In May 2018, ECDC organised the first meeting of the TB prevention and control network. 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. ECDC supported the Member States by making materials and documents available for their national World TB day campaigns.

Supporting the five high priority countries for TB in Europe

A three-year project aimed at supporting five WHO high-priority TB countries (Bulgaria, Estonia, Latvia, Lithuania, and Romania) was completed in 2018. It consisted of training activities and exchange visits to assist these countries in the prevention and control of (multidrug-resistant) TB. In 2018, the Centre organised the following activities:

- Communication training course in Lithuania for the general public: social media, advocacy and communication to local governments and policymakers;
- an exchange visit in the Netherlands on TB infection control; experts from all five countries attended;
- a consultation for Lithuania on the development of national guidelines on integrated care for TB.

Qualitative interviews conducted with the National Focal Points for Tuberculosis from all five countries showed that the project was received positively. Positive feedback was also received from project participants.

ECDC published a guidance document on the programmatic management of latent tuberculosis infection. The document provides options on how to identify risk groups, establish the necessary provisions for TB detection, initiate TB treatment, deliver services, and raise awareness. The Centre also published an update of the European Union Standards for Tuberculosis Care (ESTC) in all EU languages. The ESTC help health professionals and providers of TB care achieve high-level standards in tackling TB. Two other guidance documents with a substantial TB component were published in 2018, one on active case finding of communicable diseases in prison settings and one on screening and vaccination for infectious diseases in newly arrived migrants.

In April, ECDC hosted the kick-off meeting of a project aimed at strengthening the utilisation of WGS of *Mycobacterium tuberculosis* for public health purposes. Member State participants attended a training workshop on WGS. Through the project, EU Member States can provide strains for sequencing or sequencing data to help establish analysis and reporting standards, introduce standardised whole genome sequencing methodology, collect proposals for a genotype nomenclature, and ensure data comparability within the EU/EEA.

In September, ECDC contributed to a United Nations meeting on the fight against TB and provided input to the final political declaration through the European Commission. ECDC also organised a workshop at the annual Gastein meeting on 'Will we meet the target of the SDG for health in 2030: actions needed in the areas of AIDS and TB'.

ECDC published thirteen peer-reviewed publications on TB in scientific journals (e.g. *Eurosurveillance, BMC Public Health, European Respiratory Journal, Lancet Infectious Diseases, International Journal of TB and Lung Diseases*), on topics such as screening of TB in migrants, TB outbreak investigation, and ESTC.

ECDC continued to coordinate the TB surveillance network, the network of TB laboratories 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 in some cases also extended. ECDC supports the Commission and the Member States in addressing EU-wide challenges with regard to vaccine-preventable diseases and vaccination. It 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. ECDC 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); and
- 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 elderly) 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 2018

In 2018, ECDC provided technical evidence and scientific input to support the European Commission in developing the draft Council Recommendation presented in April 2018.

The Centre published a rapid risk assessment on measles and provided monthly measles updates, intended as 'data for action' in order to raise awareness on vaccination and support efforts by the Member State to reach the WHO measles elimination goal as well as the goals set out in the WHO European Vaccine Action Plan 2014–2020.

In 2018, ECDC established a collaboration network to support the national immunisation technical advisory groups in the Member States. These are independent committees in charge of the assessment of scientific evidence on vaccines and immunisation that formulate recommendations on national vaccination policies. The objective is to strengthen and improve the efficiency and effectiveness of scientific evidence assessment across Europe. The network, established in 2018, will hold its first meeting in 2019.

Supporting Member States in designing and implementing national immunisation systems

In November, ECDC published a handbook on designing and implementing immunisation information systems. Following a report in 2017 that highlighted substantial disparities between countries, the handbook provides guiding principles and good practices for all aspects of immunisation information systems, from development to implementation. The handbook also contributes to ECDC's continuous assessment of the potential benefits of e-health in the area of communicable diseases.

ECDC collaborated with the newly established 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.

During the second meeting of the technical advisory committee, communications specialists, immunisation experts, and key stakeholders (such as European healthcare professionals) discussed communications strategies on how to increase vaccination coverage rates in Europe.

ECDC also reached out to stakeholders through their professional associations (healthcare workers, nurses, and hospitals associations) to strengthen awareness of vaccination by participating in events such as the conference of the European Society for Paediatric Infectious Diseases and the conference of the European Public Health Association.

The sentinel surveillance system for pertussis and invasive pneumococcal disease was further improved. Surveillance is carried out through hospital-based networks in which laboratory experts, epidemiologists and clinicians work together to rapidly detect and diagnose pertussis and IPD cases. The goal is to keep track of the impact and effectiveness of vaccinations and monitor antimicrobial resistance and changes in serotypes.

The EU Vaccine Scheduler continued to be one of the most popular features on ECDC's web portal in 2018, with more than 26 556 users (52 000 in 2017) and over 158 708 page views (224 000 in 2017)[28].

In October, ECDC supported the WHO Regional Office for Europe to organise a post-outbreak simulation exercise on the containment of the polio virus during the eradication phase.

Finally, ECDC supported the European Immunisation Week 2018, in close coordination with WHO Europe.

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[28] The decrease is most likely due to the cookie consent message on the ECDC website that was introduced in 2017; visitors who do not explicitly agree with the use of cookies cannot be tracked.

Common indicators for all Disease Programmes

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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	This will be part of the DPs evaluation reports. In 2018, two evaluations were carried out, for the FWD and IRV Disease Programmes. The final report will be available in March 2019. An evaluation of the TB Disease Programme was launched at the beginning of 2019.
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)	This will be part of the DPs evaluation reports. In 2018, two evaluations were carried out, for the FWD and IRV Disease Programmes. The final report will be available in March 2019. An evaluation of the TB Disease Programme was launched at the beginning of 2019.

7. Management

7.1 General management

Context

Providing the Centre with strategic direction, leadership and good governance is essential. The Director, who is responsible for general management, leads this area of activity, supported by the Office of the Director.

ECDC's Founding Regulation provides for two governing bodies, the Management Board and the Advisory Forum. The Corporate Governance Section in the Office of the Director is mainly responsible for ensuring the delivery of substantive, logistical and programmatic support for meetings of the Management Board, the Advisory Forum, the Audit Committee, and the Coordinating Competent Bodies. Through its work, the Section has an impact on the Centre's ability to take key management and programme decisions forward.

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. The 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 2018

In November 2018, the Management Board elected Dr Anni Virolainen-Julkunen, Member, Finland, as the new Chair. Ms Zofija Mazej Kukovič, Member for the European Parliament, became the new Deputy Chair of the Management Board.

The Management Board adopted a revised independence policy for non-staff and endorsed the related internal procedure. The Board also adopted an independence policy for staff, submitted to the European Commission for approval, in accordance with Article 110 of the Staff Regulations.

In March 2018, the Management Board discussed and approved the draft terms of reference of the third external evaluation, which was launched in August 2018. The final report is expected for July 2019.

The Director launched a new internal initiative entitled 'Next generation ECDC' to pave the way for the future of ECDC. This entails a long-term strategy (2021–2027, to be adopted by the management Board in 2019) and a review of the Centre's internal organisational structure, and a review of its systems. In 2018, a management charter was introduced.

ECDC finalised the Single Programming Document (SPD) 2019, which was approved by the Management Board, and prepared the final draft of the SPD 2020, which was sent to the EU institutions for consultation in January 2019, in accordance with the Framework Financial Regulations. The SPD contains the strategic objectives/staff policy plan for the next three years, the annual work plan, and the annual draft budget.

As far as declarations of interests go, the Centre, in 2018, lacked only a very small percentage of declarations: 4% of the appointed MB members/alternates did not file, 11% of the appointed AF members/alternates failed to submit, and 1% of the external experts at meetings did not submit a declaration of interest.

Figure 15. Percentage of declarations of interest
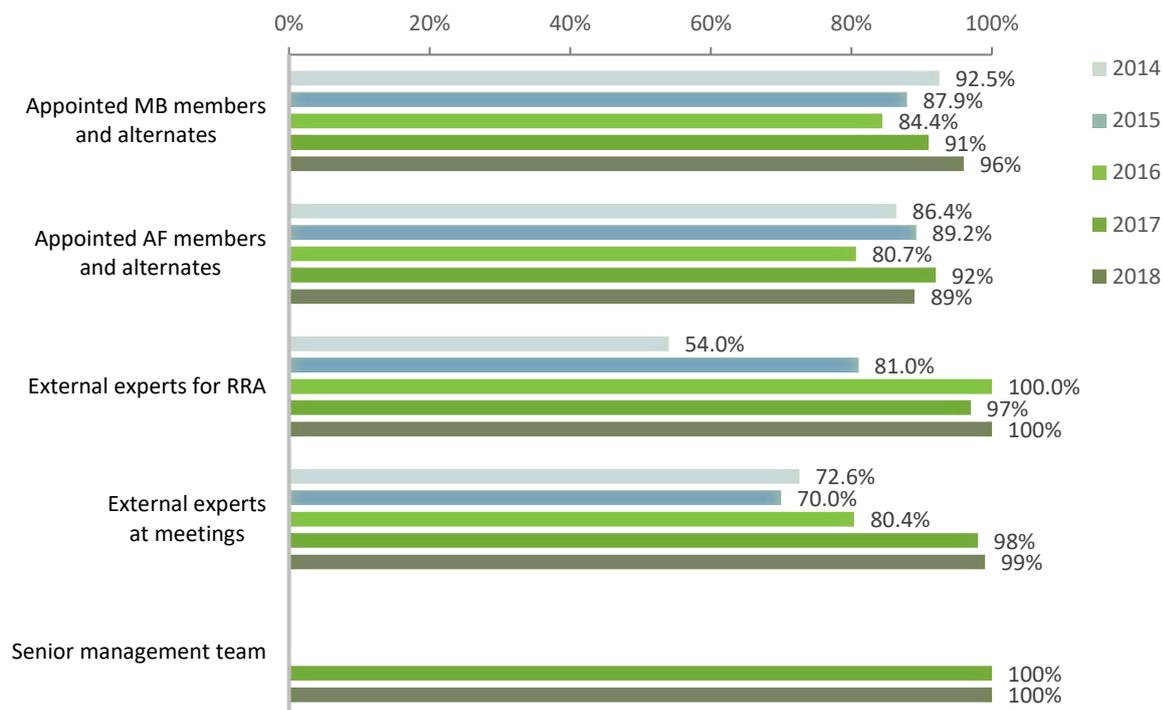
Indicators for general management

No.	Objective	Indicator	Target 2018	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: 96% • appointed Advisory Forum members and alternates: 89% • Senior Management Team: 100% • External experts • External experts for rapid risk assessment: 100% • External experts at meetings: 99%

7.2 Collaboration and cooperation with EU institutions and Member States

Context

ECDC's mandate is to operate as the hub of a network organisation. Most of the disease prevention and control resources ECDC draws on – 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 support collaboration and improve the flow of information 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 those of other EU bodies, primarily the European Commission's Directorate-General for Health and Food Safety (DG SANTE). The Centre also has contacts with other European Commission DGs, e.g. the Directorate-General for Research and Innovation, the Directorate-General for European Neighbourhood Policy and Enlargement Negotiations, and the Directorate-General for Humanitarian Aid and Civil Protection. ECDC is active in the EU Agencies Network, which

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shares best practice, 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, as 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 2018

Maintaining and improving coordination with the Member States and the European Commission remained a top priority. In 2018, 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 operational and the strategic level. Since 2017, an annual joint ECDC/DG SANTE management team meeting is taking place to align strategies and foster synergies.

The annual exchange of views between the Director of ECDC and the ENVI Committee of the European Parliament took place in January 2018. ECDC also participated in several exchanges of views and conferences in the European Parliament. The Centre continued to invest in partnerships with individual Member States and maintained close collaboration with its host country Sweden. In March 2018, during the ECDC move into new premises, the Swedish Ministry of Health hosted the Management Board meeting, where the Minister made an introduction. In 2018, ECDC received several visits including from members of the European Parliament, from the Swedish national Parliament and from the Swedish Ministry of Health.

As in previous years, ECDC participated in the annual European Health Forum in Gastein, Austria (EHFG). The EHFG provides a platform for discussions within the field of public health and healthcare for approximately 600 policymakers and public health professionals. In 2018, the Centre organised a workshop on 'Will we reach the United Nations Sustainable Development Goal (SDG) for health by 2030 and the targets set for HIV/AIDS, hepatitis and tuberculosis?', with around 80 participants.

The Annual Meeting for Directors of the CCBs convened in March 2018 at ECDC. The participants discussed and provided input in relation to the development of ECDC's strategic priorities (2020–2025), and subsequently conveyed their respective essential national priorities in regards to public health in general and in the field of technological developments in particular. The delegates also took part in an interactive session that identified priorities for inclusion in the programme of the Joint Strategy Meeting, planned to take place in the first half of 2020. Lastly, the participants shared their perspectives on how ECDC can enhance the value of its stakeholder management.

ECDC continued to collaborate with other European agencies, in particular with EFSA, EMA, EMCDDA, and CHAFEA, the European Commission's executive agency. As from September 2018, ECDC is chairing the network of EU agencies. The Agencies network provides a forum for coordination, information exchange and agreement of common positions on issues of mutual interest of among EU Agencies. As such, the network strengthens the voice of the EU Agencies and promotes good governance. ECDC will chair the Agencies network until February 2020.

Indicators for collaboration and cooperation

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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 of representatives of Member States.	75% of questionnaires completed provided ratings of very good to excellent.	Measure to be integrated into the questionnaire	Data not available from meetings questionnaires as not yet aggregated

7.3 Resource management

Context

The main objective is to provide the structure, means, services and expertise to manage ECDC's human and financial resources in the most efficient and effective way. By nature, some of the main long-term strategic goals remain constant, e.g. ensuring the reliability of the accounts and the legality and regularity of the underlying transactions.

ECDC constantly aims to improve its administrative and operational processes to support ECDC core activities. This includes continuing the clarification of roles and responsibilities, increased knowledge sharing and staff training. The objective is to strengthen the Centre's ability to deliver tangible benefits for public health in Europe. One of the main objective is to achieve a paperless administration through processes automation in order to reduce the administrative burden, ensure compliance, and save resources.

Results achieved in 2018

In April 2018, ECDC moved to new premises, which provide staff and visiting stakeholders with a safe, environmentally friendly and cost-effective workspace. This involved a lot of preparatory work from several parts of the organisation and was time-consuming, but resulted in a smooth transition to the new building in accordance with the defined schedule.

As of 31 December 2018, ECDC employed 271 staff members. Almost all EU Member States are represented among the Centre's staff (with Luxembourg and Croatia being the exceptions). The Centre reached a low vacancy rate of 3.2 % (including job offers accepted). For temporary agents, the vacancy rate was 1.7 %. 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 2018 and 2019.

Budget execution in terms of commitment appropriations at year-end reached 98.53%, equivalent to EUR 57.1 million. The budget execution in terms of payment appropriations at year-end reached 81.21%, equivalent to EUR 47.1 million.

The use of electronic workflows for procurement, based on the European Commission's DIGIT application e-PRIOR, and improvements in procurement monitoring, helped to complete 142 procurement procedures in 2018. ECDC also put in place four new internal electronic workflows in other areas to ensure faster and more efficient processes. Addition, the review of two internal key processes based on the 'lean methodology' took place in order to simplify and optimise the organisation of external meetings, and the planning process.

ECDC organised 130 operational meetings for external participants and supported 724 business trips for staff in 2018.

ECDC continued to improve and strengthen its internal processes, in particular for contract management and project management. Regular training sessions on contract management were provided for staff interacting with ECDC's contractors. ECDC's intranet-based library of processes was further improved.

Internal communication and knowledge services improved in 2018. ECDC conducted an evaluation of its intranet and started the evaluation of his document management system. New functions were added to the document and knowledge management systems. The ECDC library expanded its selection and improved its services.

Figure 16. **Budget execution**
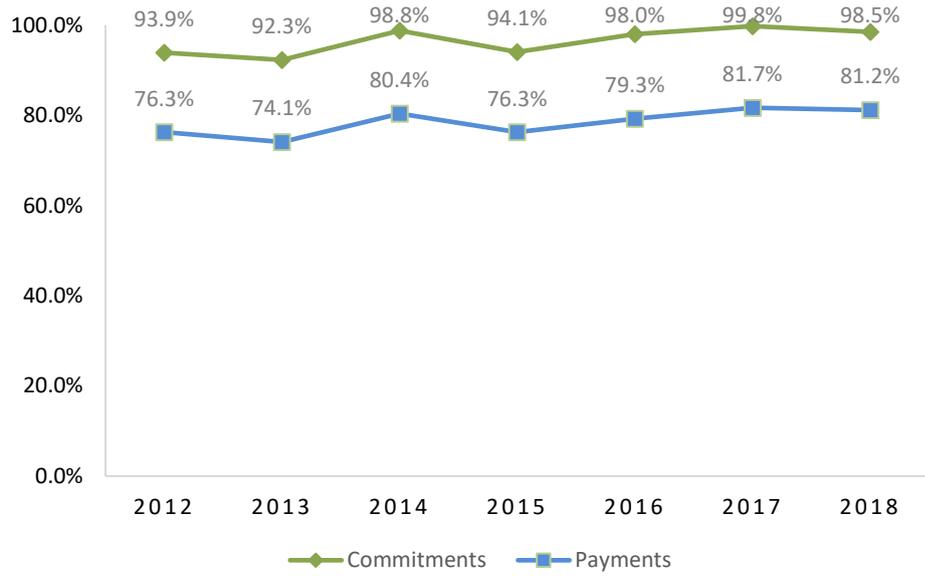
Figure 17. **Work programme implementation**
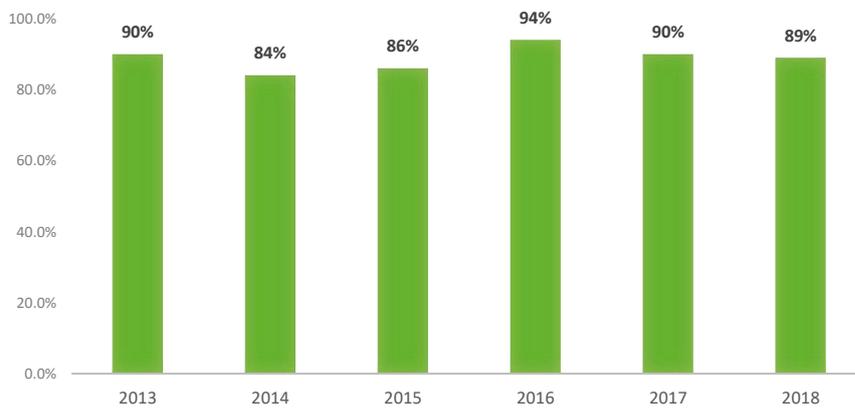
Indicators for resource management

No.	Objective	Indicator	Target 2018	Verification	Result 2018
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	98.53% of budget committed 81.21% of payments executed
		Percentage of invoices paid within the time limits of the ECDC Financial Regulation	95%		93%
		Rate of cancellation of payment appropriations	5%		2.41%
		Rate of outturn	5%	Dividing the balance of the outturn 2018 by the total revenue	3.23%
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	89% of activities implemented (86 % fully completed, 2.8% partly) 1.6% delayed, 6.7% postponed to 2019 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	1.7 % vacancy rate (177 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	Engagement index 52% in 2017.
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 the following strategic principles. By 2020, information technologies (IT) will be a strategically governed and responsive service provider enabling ECDC's mandate with fit-for-purpose, interoperable, sustainable, innovative and best-value-for-money services. The Centre provides daily provision of IT services that enable ECDC to fight communicable diseases. As a principle, the 'business drives the IT strategy' and 'the IT strategy guides the IT decision-making'

Results achieved in 2018

In 2018, ECDC relocated in new premises, which provided an opportunity to carry out a major upgrade of the IT systems. With the support of the ICT Unit, all systems and work stations were up and running for all staff, from the first day of the move.

In September 2018, ECDC launched a major update of the EWRS system, following a request from the European Commission. The interface and functionalities of the system were improved. The Commission and the Member States expressed their appreciation of this updated version.

ECDC started the implementation of the new surveillance system reengineering (SSR) project, according to the roadmap adopted in 2017, which foresees the implementation of new core surveillance IT solutions for 42 projects over four years (see also Section 1.1).

ECDC started the process to externalise gradually some of its IT services (software development, consultancy services for IT project management and business analysis, infrastructures and quality assessment). Four related procurements were prepared or signed. The expected benefit of the outsourcing is to provide ECDC with increased capacity to deliver projects and access to broader skillset, technologies and expertise.

ECDC's ICT services fulfilled the performance standards set in the service level agreement (SLA) with its internal users and the European Commission. Ninety-five per cent of the 7 055 requests and incidents were fulfilled in time; 11 of the 32 business applications under the SLA had an uptime of 100% (lowest uptime: 99.93%); 25of the 31 infrastructure back-end systems had an uptime of 100% (lowest uptime: 99.91%). ECDC handled 259 change requests and tested and deployed 187 application releases or new applications.

ECDC maintains approximately 32 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. **Non-exhaustive list of mission-relevant IT solutions**

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 that provides 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.
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.

System/application	Description
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 2018	Verification	Result 2018
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		25/31 infrastructure services and backend systems had an uptime of 100%; lowest uptime = 99.91% 11/32 applications had an uptime of 100%; lowest uptime = 99.93% 97.4% of 3 729 requests) and 93.1% of 3 326 incidents were handled (SLA target)

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Part II (a). Management

1 Governing bodies

1a Management Board

During its 44th meeting in November 2018, the Management Board elected Dr Anni Virolainen-Julkunen, Member, Finland, as the new Chair, and Ms Zofija Mazej Kukovič, Member representing the European Parliament, as new Deputy Chair of the ECDC Management Board.

Due to ECDC's move to new premises in April 2018, the Management Board convened its 42nd meeting in March 2018 in the Government Offices of Sweden. At this occasion, the Swedish Minister for Health and Social Affairs, Annika Strandhäll, gave a welcome address at the beginning of the second meeting day. In her address, the Minister emphasised the importance of EU cooperation in the area of infectious diseases.

In 2018, the Management Board adopted the ECDC Independence Policy for Staff and the revised Independence Policy for non-Staff. The Board also approved the revised Rules of Procedure of the Management Board and agreed to set up a Working Group tasked to develop a draft Code of Conduct of the Management Board. A first draft was presented to the Board in November and the final Code of Conduct is expected to be adopted in March 2019. The Management Board also endorsed the ECDC Anti-Fraud Strategy (2018–2020) and the Internal Audit Service (IAS) Strategic Internal Audit Plan 2018–2020. The Board further approved the ECDC Public Health Microbiology Strategy 2018–2022.

The Management Board also discussed the Terms of Reference of the Third External Evaluation, subsequently approved via written procedure. Following the selection of the contractor, the External Evaluation was launched in August 2018. During the year, the Board received regular updates on the process from the Chair of the Management Board External Evaluation Steering Committee (MEES). An interim evaluation report is expected to be delivered in February 2019.

Following the legal obligations, during the course of 2018, the Management Board approved the Annual Report of the Director 2017 and endorsed the Final Annual Accounts 2017. The Board also approved the ECDC Single Programming Document 2019 and the Budget and Establishment Table 2019, and discussed the ECDC Single Programming Document 2020–2022.

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.

During the course of 2018, the AF endorsed five large and complex scientific advice documents, adding significant value through their comments. The Advisory Forum also contributed significantly to the Centre's thinking on ongoing activities such as supporting vaccination policy, the control and prevention of measles, and the implementation of new genomic diagnostic technologies for surveillance. They also helped to shape the Centre's thinking on future activities such as the ECDC foresight, e-health in the area of communicable diseases, and the support to Member States in meeting the commitments set out in the United Nations political declaration on the fight against tuberculosis. A significant amount of the Advisory Forum's time in 2018 was devoted to providing advice and opinions on a range of evaluations of surveillance and disease programme activities, as well as providing input to the development of the intervention logic model for the third external evaluation of ECDC. This is an important function of the Advisory Forum, the members of which have the broad-ranging knowledge and experience of both the practice and theory of infectious disease control that provides an essential 'sense-check' on the design and conclusions of evaluations of ECDC's activities and outputs. Another important contribution of the Advisory Forum in 2018 was its thoughtful and enthusiastic input into discussions on the revision of the IRIS protocol for assessing ECDC's priorities.

The Advisory Forum has also been effective in challenging the Centre's thinking on important strategic issues. It provided feedback on the draft of the ECDC Preparedness and Response Strategy, expressed the need to simplify

the system and reduce the burden on Member States for the evaluation of the healthcare-associated infection surveillance system indicates, and advised on the revision of proposals for monitoring hepatitis B and C.

As in previous years, members of the Advisory Forum also raised issues of common concern to those working in the domain of infectious disease prevention and control within the EU. In 2018, a particular issue discussed at their request was on the implications on the implementation of the new General Data Protection Regulations (GDPR).

2 Major events

15 January	First visit of Dr Andrea Ammon to the WHO Regional Office for Europe, Copenhagen
17 January	Visit to ECDC by the Embassy of Belgium in Stockholm and the Belgian Parliamentary Group for Health Care, Stockholm
23-24 January	Visit to ECDC by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), Stockholm
1 February	ECDC Director's Annual Hearing before ENVI Committee of the European Parliament, Brussels
1 February	ECDC Director's exchange of views with the Commission and the ENVI Committee of the European Parliament on Lyme disease, Brussels
19 February	Visit to ECDC of Dr John Nkengasong, Director, Africa CDC, Stockholm
22 February	Meeting of the Head of Agencies (handover of the Coordination of the EU Agencies Network to Frontex and ECDC), Brussels
1 March	Frontex meeting, official handover (EUAN), Warsaw
5 March	Visit to ECDC of the Danish Health Authority, Stockholm
19 March	Visit to ECDC by Mr Xavier Prats-Monné, Director General, DG SANTE, Stockholm
20-21 March	42nd meeting of the ECDC Management Board, ECDC, Stockholm
21-22 March	Annual meeting for Directors of ECDC Coordinating Competent Bodies (CCB), Stockholm
17 April	ECDC Senior Management visit to the Folkhälsomyndigheten, Stockholm
20 April	Director's presentation at the XXIII Symposium for Travel Medicine organised by the German Ministry of Foreign Affairs, Berlin
23-24 April	IANPHI meeting, Warsaw
26 April	Meeting of the network of National ECDC Correspondents in the EU pre-accession countries, ECDC, Stockholm
15 – 16 May	53rd meeting of the ECDC Advisory Forum, ECDC, Stockholm
23 – 24 May	Meeting of the Network of the Heads of Agencies, Sopot
28 May	Visit to ECDC by Professor Jon Abramson, former Chair of US ACIP and WHO SAGE, Stockholm
30 May	Visit to ECDC by the Swedish EU committee of the Swedish Parliament, Stockholm
31 May	EHFG Expert Advisory Committee, Brussels
12 June	Visit to ECDC by the Let's End Hep C (LEHC) Dashboard, Stockholm
14 June	Visit to ECDC by the Government Offices of Sweden, primarily from the Swedish Ministry of Health and Social Affairs, ECDC, Stockholm
19-20 June	43rd meeting of the ECDC Management Board, Stockholm
19 June	38th meeting of the ECDC Audit Committee, Stockholm
22 June	Health Security Plenary meeting, Luxembourg
27 June	ECDC delegation visit to Norwegian Institute of Public Health, Oslo
27 June	Visit to ECDC by the French delegation of Members of the European Parliament, ECDC, Stockholm
29 June	Senior Official Meeting of the EU Commission and WHO, Geneva
13 July	Participation in the Public Health Event at the Public Health School, Munich
17–20 September	WHO 68th session of the Regional Committee, Rome

25–26 September	54th Meeting of the ECDC Advisory Forum, Stockholm
28 September	Conference on 'Building the European Health System', Chamonix Mont-Blanc
3–5 October	European Health Forum, Gastein
10 October	Head of Agencies meeting, Brussels
5-6 November	Annual Meeting of the International Association of National Public Health Institutes (IANPHI), London
8 November	Visit of Dr George F. Gao, Director of the Chinese Center for Disease Control and Prevention, ECDC, Stockholm
13–14 November	44th Meeting of the ECDC Management Board, ECDC, Stockholm
15 November	European Antibiotic Awareness Day, Brussels
21–23 November	European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE), Saint Julian's
5-6 November	Presentation at the Annual Meeting of the International Association of National Public Health Institutes (IANPHI)
3 December 2018	Hearing on the financial discharge of all EU Agencies in the Budgetary and Control Committee of the European Parliament, Brussels
4 December 2018	Presentation in the European Parliament on viral hepatitis elimination and the importance of Europe-wide monitoring, Brussels
12 December 2018	Meeting with the Head of Representation, European Commission Representation in Sweden, Stockholm
17 December 2018	Visit to ECDC by the Ambassador of Hungary in Sweden, Stockholm

3 Budgetary and financial management

Fund source C1 (current year appropriations)

Budget execution in terms of commitment appropriations at year-end reached 98.5%, equivalent to EUR 57.1 million.

Budget execution in terms of payment appropriations at year-end reached 81.2%, equivalent to EUR 47.1 million.

Information on transfers and amending budgets

The Director exercised her right to amend the budget within the limitations of Article 27.1 of ECDC's Financial Regulation and approved net budget transfers for EUR 2.9 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 million to 2019 (EUR 10.4 million to 2018).

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 92.4%, equivalent to EUR 9.7 million.

Procurement procedures

The Procurement section dealt with a significant number of procedures. Eighteen open calls for tenders were published. 4 framework partnership agreements and 30 specific grant agreements were concluded. In addition, 67 negotiated procedures and 23 reopening procedures were completed. Regular Committee on Procurement, Contracts and Grants (CPCG) meetings were held, resulting in the issuance of 31 CPCG Opinions.

Interest charged by suppliers through late payments (> 30 days): EUR 805.39.

Summary information on budgetary operations for the year

The core budget of the Centre for 2018 (EUR 58 million) remained at approximately the same level as in the previous year.

For additional information see Annex 6, annual accounts (Document MB 45/09): 'Report on budget and financial management of the European Centre for Disease Prevention and Control'.

4 Human resources management

The Centre continued to adopt the 'Implementing rules to the staff regulations', following the revised Staff Regulations (in areas such as working conditions).

The majority of the Centre's jobs (77.2%) are related to the implementation of activities linked to the Centre's operational work. 15.8% of the jobs belong to 'administrative support and coordination', while 7.0% 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. There were initially four DCG (political matters, business services, disease prevention and control, and resource allocation), each with a different membership in order to benefit from a broad range of staff contributing to decisions and knowledge management and bring the most relevant expertise to each discussion. The Heads of Unit are part of all DCG. A first assessment of the efficacy of the DCG was undertaken in late 2018 and some changes in the membership are foreseen for 2019.

Quality management and planning activities are a crucial part of the ECDC management and control system. ECDC has a Multiannual Strategic Work Programme for the period 2014–2020 (SMAP). The implementation of the SMAP at mid-term was reviewed by the Management Board in November 2016. To avoid overlap with the three-year multiannual part of the Single Programming Document (SPD), it was decided to monitor ECDC's progress only through the SPD as from 2017. A set of indicators approved in January 2014 as part of the SMAP is reported each year to the Management Board to assess the implementation of the SPD. The Management Board revised the set of indicators in November 2017, for the SPD 2018–2020. ECDC internally monitors the Annual Work Programme projects and activities on a quarterly basis, and its implementation is reported to the Management Board 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. Since the beginning of 2017, the Financing Decision (list of procurements), part of the SPD, is revised at each meeting of the Management Board to update the list of procurements.

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. A monthly dashboard of operational key data on budget execution and implementation of the Work Programme is communicated monthly 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. Should the Deputy Head of Unit be unavailable, the authority returns to the Director. Thereby, a very limited number of persons act as AO/AODs in ECDC. The AODs 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 2018, 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 at its 43rd meeting in November 2018, which will form the basis for the ECDC internal control system from 2019 onwards. In 2018, however, ECDC relied on its existing system, which is described in broad terms and highlighting some key components below.

ECDC has a set of internal control standards (ICS) which specify the requirements, actions and outcomes necessary to build an effective system of internal control that can provide reasonable assurance on the achievement of ECDC's objectives (see further description in 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. In 2018, new internal procedures became effective, for example, on grants for an action; information management and governance; procurement planning, monitoring and reporting; and project governance and management.

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 (Title 1 and 2 expenditure) and the budget officer (Title 3 expenditure) and ex-ante verification of payments by the financial verification officer for payments, all in the Finance and Accounting Section.

In accordance with ICS 8, 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 2018, 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 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 2018, the two verifications selected in the GVP 2017 were contracted out to an external audit firm.

A policy on ex-post verifications of financial transactions has been in place since 2012 to supplement the ex-ante verifications described above, the work of the European Court of Auditors and the Internal Audit Service. An ex-post plan for verification of financial transactions is normally developed every year but had to be postponed in 2018, due to unforeseen resource constraints.

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 2018, the IAS commenced its audit on preparedness and response in accordance with the strategic internal audit plan; and the report is expected in Q1 2019. 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[29] for 2017, indicating that the accounts are reliable and the transactions underlying the accounts are legal and regular.

Furthermore, the ECA did not provide any comments in its final report for 2017, which is a rare occurrence.

The ECA audit of the 2018 annual accounts is ongoing. The first part of the audit was performed in November 2018. The audit will be finalised during spring 2019, and a draft report will be available by June 2019 the latest.

8 Follow-up of recommendations and action plans for audits

ECDC successfully implemented a number of observations during 2018 and at the end of the year, only one important IAS observation remained officially open (from the 2015 internal audit on data management in ECDC). The observation was implemented in January 2019 and reported to the IAS for review.

The only outstanding issue with the ECA is the 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 this context, ECDC continues to carefully analyse the advantages/disadvantages, in liaison with the ECA, of introducing differentiated budget appropriations, including the risks of 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 will be finalized in 2019.

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 18 April 2018 in respect of the implementation of the budget of 2016.

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[29] 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.

Table. 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(2018) 0142 , paragraph 1	Acknowledges from the Centre that, following the Court's comments on various weaknesses found regarding the transparency of the Centre's procurement procedures, the Centre has changed the format and process it uses to create the financing decision for its procurements; calls on the Centre to report to the discharge authority on the implementation of this procedure;	Since November 2016, ECDC has changed the format and process to create the Financing Decision for its procurements as part of its annual work programme. Changes in the procurement plan are systematically monitored and updates to the Financing Decision are submitted for approval to the Management Board before procedures are launched. In addition, for negotiated procedures, which do not require prior publication of a contract notice in the Official Journal, an ex-ante publicity notice inviting interested candidates to come forward with a request to participate in the procedure is published. A note to the file template has been created to also document the budget estimation for procedures below 25.000 EUR. A minimum threshold for the financial capacity is now added to the procurement documents for each procedure.	Implemented The actions taken by ECDC have been reviewed by the IAS and the audit observation was formally closed in June 2018
P8_TA-PROV(2018) 0142 , paragraph 9	Notes with concern that, as regards the total number of posts occupied on 31 December 2016, the gender balance ratio was 62 % female to 38 % male; notes, furthermore, the gender balance ratio of 60 % and 40 % in the Management Board;	Although the Centre had an overall gender balance ratio of 62 % female staff and 38 % male staff at the end of 2016, the Centre had the opposite ratio of 62.5 % male staff and 37.5 % female staff in the highest posts (Temporary agents AD8-AD15). The highest proportion of female staff members is among contract staff and it is a challenge to receive male applications for support functions. The Centre is working towards a better gender balance ratio in the higher grades. At the end of 2017, the overall gender ratio remained stable, but the ratio in the higher grades had slightly changed with a decrease in male staff to 60% and an increase of female staff to 40 %. Worth noting is that for AD staff overall (this is the staff category with most of the Centre's operational experts) the ratio is 52 % male staff members and 48 % female staff members. Regarding the Centre's Management Board, the male/female ratio as of 31 December 2016 was : MB members (male): 50% MB members (female): 50% The members of the ECDC Management Board have been designated by each European Union Member State in accordance with Preambles 11, 12 and Article 14 of the Founding Regulation. Under Article 14 of the same Regulation, the European Parliament shall designate two representatives to the Management Board of the ECDC, the European Commission appoints three members. According to Article 14, "the members of the Board should be appointed in such a way as to secure the highest standards of competence and a broad range of relevant expertise."	Ongoing
P8_TA-PROV(2018) 0142 , paragraph 18	Observes that, in addition to the internal procedure on meetings with the pharmaceutical industry, an internal procedure on the conclusion of memoranda of understanding and collaboration agreements with third parties is under development; calls on the Centre to report to the discharge authority on the progress made in that process;	Draft procedures and templates have been prepared. The procedures are currently in the formal internal adoption process.	Ongoing
P8_TA-PROV(2018) 0142, paragraph 27	Takes note that the IAS performed an audit on the procurement process in the Centre in May 2016; is furthermore concerned by the fact that the final report was issued in October 2016 and that it included three 'very important' observations and two 'important' observations; acknowledges that the Centre prepared an action plan which was to be implemented throughout 2017; calls on the Centre to report to the discharge authority on the implementation of this action plan;	ECDC has implemented all the actions agreed in the action plan with the IAS by Q4 2017.	Implemented All the audit observations were formally closed by the IAS in June 2018.

Reference	Observation of the Discharge Authority	Response and measures taken by ECDC	Status/Reference
P8_TA-PROV(2018) 0142 , paragraph 28	Notes that in spring of 2016, the Centre forwarded a new building project proposal to the Parliament and Council which was presented to Parliament's Committee on Budgets and to the Budget Committee of the Council, and received a favourable opinion from both institutions; takes note that on 26 July 2016, the Centre signed a new lease agreement and will therefore be moving to new premises in the first half of 2018	ECDC signed a lease agreement for new premises in July 2016 and moved to the new premises in April 2018.	For information only

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 Second Independent External Evaluation of ECDC, conducted by a consortium led by Rome-based consultancy Economisti Associati, was concluded in 2014. The report looked at the period 2008–2012. In response to the evaluation, the Management Board adopted a set of recommendations in its June 2015 meeting. Based on the recommendations of the Board, ECDC developed an action plan for the implementation of actions, approved by the Management Board in November 2015. In November 2017, ECDC presented to the Board the final report on the implementation of the actions. The second external evaluation is available on the ECDC website:
http://www.ecdc.europa.eu/en/aboutus/Key%20Documents/ECDC-external-evaluation-2014.pdf

In 2018, ECDC started its third external independent evaluation. A working group, the 'Management Board External Evaluation Steering Committee (MEES)', composed of representatives of the Member States, the European Commission and the European Parliament steers the evaluation, which was outsourced to an external contractor. The final report is expected for July 2019. The Management Board will issue recommendations based on the final evaluation report.

Internal evaluations

In 2015, ECDC adopted a procedure for the internal evaluation of its work. Every year, several of ECDC's projects or products will be 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 be conducted ex-post and should be part of a multi-annual plan approved by the Director. 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, after consultation of the relevant internal stakeholders.

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).
- PHE evaluations, CMMI, individual appraisals, as they follow dedicated methodologies.

In addition, the Financial Regulation (Art. 29(5)) requires regular ex-ante, interim or ex-post evaluations for certaininterventions[39].

The following internal evaluations have been conducted:

- In 2015, ECDC assessed the governance of its IT.
- In 2016, an evaluation was done on the deployment of ECDC experts in West Africa.
- In 2017, ECDC started to evaluate all its Disease Programmes with the development of a common protocol for all Disease Programme evaluations. The first two programmes evaluated in 2018 were IRV and FWD, for which the final reports are expected in 2019.
- An internal evaluation of ECDC's intranet took place in 2018 and the evaluation of the document management system started.

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 with only 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 here lie in 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.

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 2018, ECDC has again assisted the European Commission in analysing the 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 and 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 high level of redundancy ensures 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 commenced in 2018 and will be finalized in 2019. 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, to meet the present and future needs of trained 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, which 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, which provides advance information to the European Commission and the Member States on major communication outputs. A new communication strategy was adopted by the Management Board in 2016.

1.1.7 Collaboration and cooperation with EU institutions, Member States 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) as well as with other EU agencies. ECDC's International Relations Policy 2014–2020 was endorsed by the ECDC Management Board in 2014, and based on the outcome of the mid-term review finalised at the beginning of 2017, revised ECDC International Policy 2020, was approved by the ECDC Management Board in November 2017. It sets the priorities and objectives for ECDC actions in this field. This policy is fully aligned with existing EU policies and the ECDC Strategic Multiannual Plan 2014–2020 (SMAP). ECDC's relationships with the EU Member States are the basis of its 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.

In external relations, there is a reputational risk connected to how ECDC and its collaboration with external partners is perceived. As regards the work with the EU pre-accession countries, ECDC carried out a second stakeholder survey in 2018. There is also a risk that cooperation with ECDC creates more burden than it adds value, and that ECDC fails to properly balance activities related to EU Member States. Choosing inappropriate partners for collaboration can also hurt the reputation of the Centre. 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 international activities with funding from the European Commission. The grant-based funding for the work with the European Neighbourhood Policy (ENP) partner countries finished at the end of 2016, and since that, ECDC has used other Commission funding mechanisms, in particular TAIEX, to continue the collaboration. However, this non-sustainability of funding endangers the relations, which have been successfully

built up over the last years. ECDC has since 2013 been scientifically supporting MediPIET, a training programme and network covering 18 accession and ENP countries, funded by the European Commission. The second phase of the programmes was successfully closed in 2017, and an additional two-year extension was signed.

In 2012, ECDC introduced a new way of official relations with the EU Member States and EEA/EFTA countries (through one national Coordinating Competent Body), with the National Coordinator, and with the EU pre-accession and European Neighbourhood Policy (ENP) partner countries through the National Correspondent. At ECDC, the coordination of activities is carried out by the International Relations section in the Director's Office. 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 human and financial resources, business travel and meetings organisation services, facilities and logistics services, sound legal advice and internal control coordination. ECDC has therefore implemented a number of procedures and defined reporting requirements to make sure the support provided is appropriate, e.g. real-time dashboards, detailed yearly procurement plans, monthly reporting for budget execution, 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. 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 in that are ensuring the resources needed (human and financial) and proper management of external service providers. ECDC is mitigating that risk with continuous quality improvement initiatives, strengthening the IT PMO function, service-level agreements for the IT service delivery and real-time monitoring of the infrastructure.

1.1.10 Risk assessment for 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 2018).

2 Compliance and effectiveness of internal control standards

Since 2006, ECDC has internal control standards (ICS) in place. These standards specify the necessary requirements, actions and expectations needed to build an effective system of internal control which allows gauging the achievement of ECDC's objectives. These control standards were developed along the lines of the European Commission's Internal Control Standards, which are based on the International Committee of Sponsoring Organizations of the Treadway Commission (COSO) standards.

The ICS cover 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 is made up of a number of requirements to be met. For each such requirement, ECDC has identified what is 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 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. ECDC has implemented all the ICS.

As noted above, the Management Board adopted a revised Internal Control Framework at its 43rd meeting in November 2018, which will form the basis for the ECDC internal control system from 2019 onwards and will replace the ICS.

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 results of the assessment of the implementation of Internal Control Standards.
- The results of the risk self-assessment exercises.
- The 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 results of the ex-post verifications of financial transactions (not performed in 2018).
- 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.

Part V. Declaration of assurance

2018 Declaration of Assurance by the Director of ECDC

I, the undersigned, Andrea Ammon, Director of ECDC,

In my capacity as authorising officer,

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

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 agency.

Stockholm,   2019 -02- 2 5   2019

Andrea Ammon

Director

Management Board's analysis and assessment

The Management Board has assessed the Annual Report of the Director for the financial year 2018. 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 for 2017: 89.1%, with 86.3% of the activities fully implemented and 2.8% partly. As an example, ECDC prepared 35 rapid risk assessments, 32 of which were published. ECDC responded to 35 scientific requests from the European Commission and the European Parliament.

In 2018, ECDC moved smoothly to new premises, for increased efficiency. ECDC started the implementation of the roadmap for the Surveillance Systems reengineering project (SSR), which will optimise the surveillance platforms and processes, reduce the burden for Member States and ensure higher quality of data. In 2018, ECDC also delivered a new version of the Early Warning and Response System (EWRS), with a more intuitive interface and new functionalities that were appreciated by the European Commission and the Member States.

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 Europe and other EU agencies for a strengthened response to the threat of communicable diseases in Europe.

ECDC continued to further support the Member States and the European Commission in the area of preparedness and decision 1082/2013/EC on serious cross-border health threats.

While giving high priority to the areas of vaccine-preventable diseases, antimicrobial resistance, and contribution to the Sustainable Development Goals (SDGs), ECDC continued to implement actions to prevent and address a wide range of communicable diseases areas across Europe, as set in its mandate. It provided data, analysis and scientific outputs for guidance, and a number of practical tools, directly useable by the Member States to give scientific evidence and input to support decision-making at EU and national levels.

The Management Board launched the third independent external evaluation of ECDC, for which the final report is expected mid-2019.

The Annual Report 2018 follows the common template to all EU agencies to ensure comparability with other EU agencies by the discharge authority, including the results of the key performance indicators set in the Single Programming Document (SPD 2018–2020). It also includes – in Annex 1-b – a systematic review of the implementation of the expected outputs set in the SPD, adopted by the Management Board in November 2017.

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 2018.

Expected outputs 2018	Implemented	Comments
Strategy 1.1 Surveillance		
1. Improved technical surveillance platforms and processes;	Yes	
2. Surveillance system evaluation reports as per project plan	Yes	
3. EU/EEA surveillance standards and monitoring indicators for surveillance systems evaluated in 2017/18.	Postponed to 2019	Needs funding for standard template
4. Peer-reviewed scientific articles analysing surveillance data in depth.	Yes	
5. Molecular surveillance data analysis integrated into surveillance outputs.	Partly	Done according to roadmap; still need to be integrated into routine surveillance
Strategy 1.2. Epidemic intelligence		
1. Daily Round Table report and weekly CDTR	Yes	
2. Annual meeting of the NFP for threat detection	Yes	
3. Strategy for use of crowd (social media) sources for epidemic intelligence;	Yes	
4. Pilot of an external crowdsourcing analysis tool	Postponed	Work has started but not a priority
5. Protocol designed and run to evaluate crowd-sourcing tools within the epidemic intelligence field	Postponed	Work has started but not a priority
6. Annual threat report produced in time and following the quality standards of ECDC	Yes	
7. Determinants platform established and providing data	Yes	Work still ongoing
Strategy 2.1 Scientific advice		
1. At least three high-quality ECDC scientific advice outputs published on the Centre's website and as open access publication in peer-reviewed scientific journals (see disease programme specific chapters).	Yes	
2. All ECDC scientific advice clearly categorised, by the end of 2018, into expert opinion, systematic review and 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 on EU and Member State level.	Yes	
3. ECDC Scientific Advice Repository and Management System (SARMS) further improved to allow internal and external users access to information on ongoing and finalised requests and related ECDC work, as well as direct submission of formal requests according to Article 7 of the ECDC Founding Regulation. • Portal and advanced search functionalities developed. • Full integration of the declarations of interest and other ECDC systems (e.g. expert directory) to further enhance compliance with the Centre's independence policy.	Yes	
4. Two workshops in methods and tools for evidence-based practice and decision-making for ECDC staff and ECDC partners at EU and country level.	Yes	
5. PRECEPT – project on assessing and grading the evidence in communicable diseases – finalised; related products, e.g. handbook and e-learning course, available on the ECDC website and through the ECDC Virtual Academy.	Yes	
6. ECDC prioritisation tool, IRIS, further developed and improved. By the end of 2018, IRIS will be available in an easy-to-apply version for use at different levels of decision-making and priority setting at ECDC and made available to Member States and other stakeholders if requested.	Yes	
7. 2018 edition of the European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE 2018) to be hosted outside of Stockholm, Sweden.	Yes	
Strategy 2.2 Microbiology		
1. Disease-specific network laboratory capacity building activities, including EQA schemes;	Yes	
2. Country support laboratory capacity building activities;	Yes	
3. Evaluation of progress 2013-16 of EU public health microbiology capabilities and capacities including appraisal of impact of EU and country capacity support actions and publication of EULabCap performance report 2016.	Yes	2015–2017
4. EU reference laboratory technical specifications and requirements published for selected human pathogens, including cost-effective provision of External Quality Assessment schemes, taking into account reference laboratory activities in place as part of WHO networks and frameworks.	Yes	
5. Evaluation of molecular and genomic-based typing EU surveillance and outbreak investigation operations 2015-17	Yes	

Expected outputs 2018	Implemented	Comments
6. Revision of roadmap for integration of molecular and genomic typing into EU-wide surveillance as prioritised with the Member States in consultation with the Molecular Typing for Surveillance Task Force	Yes	
7. Scientific Opinion and Technical guidance on use of whole genome sequencing technology for surveillance of communicable disease and antimicrobial resistance	Yes	
8. Online searchable information tool on specialist laboratory testing capacities available for sharing resources between Member States (EULabServe);	Cancelled	Lack of need expressed by Member States
9. Web portal microbiology publications and repository of resources.	Yes	
Strategy 3.1 EU and Country Preparedness Support		
1. Report on (revised) Art.4 template survey	Yes	
2. Based on an agreement with WHO, activities aligned for improving the implementation and monitoring of country response capacities under IHR, by supporting national preparedness planning.	Yes	
3. Technical guidance and tools in support of national health emergency preparedness planning;	Partly	Done but not published, waiting for finalisation of work on the community preparedness work - 2020 (for inclusion)
4. Technical support to the Preparedness Working Group under the Health Security Committee and IHR;	Yes	
5. Direct support for countries' preparedness planning based on needs assessments in a country-specific and regional (multi-country) approach;	Yes	
6. Two regional (multi-country) training workshops conducted on a set of proofing tools (simulation exercise planning, critical incident review, and assessment protocols)	Yes	
7. 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.	Yes	
8. Annual NFP meeting focused on application of methodologies in different contexts and outcome of applied research projects.	Yes	
9. Links established with European research groups on public health preparedness.	Yes	
Strategy 3.2 Response and emergency and operations		
1. Timely Rapid Risk Assessments for specific threats, according to the criteria defined in the decision 1082/2013/EU, and requests from the Round Table, the European Commission and the Member States.	Yes	
2. Mechanisms and procedures established to ensure the proper participation of Member States in the production of RRA	Yes	
3. ECDC missions to support Member States and neighbouring countries during outbreaks of infectious diseases and epidemics	Yes	
4. Validate the mechanism from which ECDC and Member States public health experts, actively participate in international missions together with ECHO and civil protection officials, in coordination with WHO	Partly	Work was done, but still not yet validated. Expected in 2019
5. Improve the functionalities and operation of the EWRS with a new version of this system	Yes	
Strategy 4.1 Training		
1. More efficient and fully integrated administrative routines	Yes	
2. Better use of professional human resources	Yes	
3. Enhanced cross-discipline collaboration	Yes	
4. ECDC summer school	Yes	
5. Core course and specific courses as defined by the CCB networks	Yes	
6. Senior exchange programme	Yes	
7. E-learning courses continuously added	Yes	
8. Network of ASPHER schools of public health with a profile of communicable diseases control established and working closely with ECDC	Yes	
9. Core competencies defined and curricula developed by joint ECDC/CCB/ASPHER working groups	Yes	
Strategy 4.2 Coordinated country support		
1. Country support agreements based on the new mechanism.	Yes	
Strategy 4.3 International relations		
1. Technical Assessment Report with post-assessment recommendations	Yes	
2. ECDC advice to countries already assessed in developing post-assessment action plans and its contribution to the implementation of planned actions. of countries already assessed	Yes	
3. Regional meeting on communicable diseases for National ECDC Correspondents and other key stakeholders in EU pre-accession countries	Partly	

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Expected outputs 2018	Implemented	Comments
4. Improved reporting on selected and mutually agreed EU notifiable communicable diseases to ECDC surveillance and epidemic intelligence systems (TESSy, EPIS) as per EU acquis at the level of minimum ECDC requirements for data/information submission	Postponed to 2019	Lack of human resources
5. Follow-up of projects under European Neighbourhood Instrument (ENI) or other financial instruments initiated and implementation started if granted by the European Commission.	Cancelled	No grant in 2018
6. Monitoring of post-assessment action plans of the assessed countries	Yes	Ukraine
7. Reviewed set of processes for joint activities (e.g. joint reports, coordinated surveillance) under collaboration framework with WHO Europe	Yes	
8. Annual coordination meeting(s) with CDC in non-EU countries having a Memorandum of Understanding with ECDC	Postponed to 2019	Lack of human resources
9. To be decided based on the decision on how to act upon the Ebola deployment evaluation recommendations.	Yes	Internal procedure finalised Deployment of one expert in Democratic Republic of the Congo
Strategy 5.1 Health Communication		
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 new website.	Yes	
2. Media coverage of ECDC in European media specialising in public health;	Yes	
3. Communication support to output from ECDC experts in scientific journals;	Yes	
4. Communication support to ESCAIDE.	Yes	
5. Capacity building activities (e.g. ECDC materials, workshops) in the area of risk and crisis communication	Yes	
6. Technical support to and joint activities with the communication working group under the Health Security Committee	Yes	
7. Support to national health communication campaign activities, notably the European Antibiotic Awareness Day.	Yes	
Strategy 5.2 Eurosurveillance		
1. 50 issues published (weekly on Thursdays)	Yes	
2. One scientific seminar on the margins of an international conference (preferably ESCAIDE)	Yes	
3. Regular provision of information through Twitter, Wikipedia, and another social media platform, to be determined	Partly	Mostly with Linkedin
4. Presentations during ECDC meetings and at training activities and in national PH institutes	Yes	
5. Moderation of ECDC scientific (abstract) writing courses	Yes	
6. Educational article series in Eurosurveillance	Yes	Material produced ad hoc only, not as a series, due to staff limited capacity
Strategy 6.1 Antimicrobial resistance and healthcare-associated infections - ARHAI		
Key outputs on AMR		
1. EARS-Net: Updated public database and online summary report on surveillance of AMR (2017 data)	Yes	
2. EARS-Net: External quality assessment of the performance of laboratories that report to EARS-Net	Yes	
3. ESAC-Net: Updated public database and online summary report on surveillance of antimicrobial consumption (2017 data)	Yes	
4. ESAC-Net: Report on antimicrobial consumption in acute care hospitals in EU/EEA Member States	Postponed to 2019	Due to lack of human resources
5. EARS-Net and ESAC-Net (together with HAI-Net): Improvement of the quality and availability of surveillance data for AMR and antimicrobial consumption to enable meaningful comparisons between countries and across networks with better use and integrated analysis of existing data	Yes	
6. Start work on the 3rd Joint Interagency Antimicrobial Consumption and Resistance Analysis Report (JIACRA) with antimicrobial consumption and AMR data analysed in a One Health perspective	Yes	
7. Start work on ECDC comprehensive report on AMR (to be published in 2019)	Yes	Work done. Publication of the report in 2020
8. In accordance with the ECDC roadmap for integration of genomic/molecular typing surveillance, continued molecular typing surveillance of carbapenemase-producing Enterobacteriaceae (CPE) as part of the 2nd European Survey of Carbapenemase-Producing Bacteria	Yes	
9. 4th Joint meeting of the ARHAI Networks: EARS-Net and ESAC-Net (together with HAI-Net)	Yes	
10. Guidance for screening for multidrug-resistant (MDR) bacteria in healthcare settings started, including a priority list, according to defined criteria, of MDR bacteria for which patients should be screened	Cancelled	Due to lack of human resources

Expected outputs 2018	Implemented	Comments
11. Expert contribution to the EMA/Antimicrobial Advice Ad Hoc Expert Group (AMEG): new mandate to update the advice on the impact on public health and animal health of the use of antibiotics in animals (categorisation of antimicrobials and early hazard characterisation) (One Health)	Yes	
12. Country visits to discuss AMR issues jointly with DG SANTE/F and upon invitation from Member States (up to 6 country visits in a One Health perspective)	Yes	3 country visits
13. Support to the European Commission on the implementation of its 2nd Action Plan on AMR;	Yes	
14. Close collaboration with Member States on their Joint Action on AMR (and HAIs)	Yes	
15. Support WHO on the implementation of the Global Action Plan on AMR	Yes	
16. Contribution to the Transatlantic Task Force on AMR (TATFAR), in particular start work on TATFAR Action 2.2 on a common system for sharing and analysing bacterial resistance patterns for pathogens identified as urgent and serious threats and on TATFAR Action 2.5 on guidance for detection of outbreaks or concerning resistance trends and appropriate response	Yes	
17. Close collaboration with OECD, in particular on its estimates of the economic burden of AMR	Yes	
18. Participation in the expert group of the Northern Dimension Partnership on Public Health and Social Well-being (NDPHS)	Cancelled	No invitation received
19. 11th European Antibiotic Awareness Day (EAAD), 18 November 2018, in partnership with the 4th WHO World Antibiotic Awareness Week	Yes	
Key outputs on HAIs		
22. HAI-Net: Report on the 2nd Point prevalence survey of HAI and antimicrobial use in European acute care hospitals 2016–2017	Yes	
23. HAI-Net: Report on the 3rd Point prevalence survey in European long-term care facilities 2016–2017	Yes	
24. HAI-Net: Updated public databases and online summary reports on surveillance of: - surgical site infections (HAI-Net SSI), - infections acquired in intensive care units (HAI-Net ICU) - Clostridium difficile infections (HAI-Net CDI);	Yes	
25. HAI-Net (together with EARS-Net and ESAC-Net): Improvement of the quality and availability of surveillance data for HAIs to enable meaningful comparisons between countries and across networks with better use and integrated analysis of existing data	Yes	
26. 4th Joint meeting of the ARHAI Networks: HAI-Net (together with EARS-Net and ESAC-Net)	Yes	
27. Support to training of healthcare workers for the prevention and control of HAIs, and control of multidrug-resistant micro-organisms in health care settings (one short course)	Yes	
28. Further implementation of the ECDC directory of online resources for the prevention and control of HAIs and AMR	Yes	
Strategy 6.2 Emerging and Vector-borne Diseases – EVD		
1. Scientific advice for ad-hoc risk assessments in the EU/EEA;	Yes	
2. Modelling tool developed to support the decision-making process for surveillance and vector control of dengue, chikungunya and Zika virus infection in Europe: field validation of the tool in the field with a pilot study	Yes	
3. Modelling tool developed to appraise and compare vector control strategies against West Nile fever in Europe: revision of the model after the pilot study and development of a web-based application	Yes	
4. Scientific advice and guidance on tick-borne diseases	Yes	Shared with national Focal Points
5. Assessment of the effects of social and environmental changes, such as vector distribution and the current dynamics of global air-traffic patterns	Postponed to 2019	Delayed due to lack of resources
6. Scientific advice on vector control strategies for EVDs	Postponed to 2019	As results of the Aedes Risk project are promising, it was decided to postpone this to present it in more details in 2019.
7. Risk assessment for tick-borne encephalitis transmission through substances of human origins (SoHO) in the EU and development of a preparedness plan for the authorities responsible for SoHO if needed	Yes	
8. Support to Member States in identifying specific competences needed for EVDs (training)	Postponed to 2019	It was a request from a Member State. Postponement to 2019 at the request of the local organisers.

Expected outputs 2018	Implemented	Comments
9. Participation in ad-hoc country visits to assess preparedness and response plans for EVDs	Postponed to 2019	It was a request from a Member State. Postponement to 2019 at the request of the local organisers.
10. In-depth analysis of TESSy data and dissemination of publications with integration of animal and/or vector data based on the One Health approach where appropriate	Yes	Analysis was done, publication expected in 2019
11. Support to Member States with the implementations of options for Lyme neuroborreliosis in the EU	Yes	
12. Cross-sectional survey for Lyme borreliosis to better assess the importance of the different target conditions	Cancelled	Now that the notification is obligatory this work doesn't make sense
13. Timely surveillance of mosquito-borne diseases	Yes	
14. Data collection on disease vectors and their related pathogens for updated vector distribution maps (mosquitoes, ticks and sandflies) and ad-hoc support in entomological expertise (in collaboration with EFSA via an outsourced network, VectorNet)	Yes	
15. Assess current and emerging threats to human health from communicable diseases, in particular (re-emerging) vector-borne and other viral infectious diseases.	Yes	
16. Conduct External Quality Assessment (EQA) on viral pathogens covered by the programme	Yes	
17. Provide short training courses to improve the diagnostic capability of EU expert laboratories	Yes	
Strategy 6.3 Food- and Waterborne Diseases and zoonoses - FWD		
1. European Union Summary Report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks 2017, EFSA-ECDC joint report	Yes	
2. European Union Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food 2017, EFSA-ECDC joint report	Yes	
3. Contribution to Annual Epidemiological Report FWD chapters	Yes	
4. Scientific advice on Listeria risk in institutional settings, in close collaboration with EFSA and Member States	Postponed to 2019	Lack of human resources
5. Integration of questionnaire tool for FWD surveillance in close collaboration with Member States	Yes	
6. Scientific support for the development of Surveillance Atlas for AMR in Salmonella and Campylobacter	Yes	
7. Review of the needs to revise CJD surveillance as agreed with Member States	Yes	
8. Work initiated on Campylobacter infections and water/climate-related transmission	Yes	
9. Scientific communications; peer-reviewed publications, outbreak reports;	Yes	
10. Monthly report on TALD cases	Yes	
11. Regular cluster reports of listeriosis, salmonellosis and VTEC infection	Yes	
12. Monthly serotype signal reports	Yes	
13. Joint investigation on epidemiology of persistent Salmonella MLVA types, multidisciplinary team with EFSA and Member States	Yes	
14. ELiTE 3 (global analysis)/ Joint investigation on epidemiology of persistent genotypes of Listeria monocytogenes strains, multidisciplinary team with EFSA and Member States	Cancelled	Abandoned by decision to reallocate resources for the SSR project
15. EFSA-ECDC joint crisis preparedness workshop	Yes	
16. External quality assessments services for typing of Listeria monocytogenes (pending on budget availability), Salmonella (pending on budget availability), verocytotoxin-producing E. coli, for antimicrobial resistance of Salmonella and Campylobacter, and for Legionnaires' disease (procurement process started in 2017)	Yes	
17. Capacity building opportunities through the FWD Expert Exchange Programme (FWDEEP)	Yes	
18. FWD network meeting, if possible back-to-back with European Union Reference Laboratory for Salmonella	Postponed to 2019	
19. ELDSNet (European Legionnaires' Disease Surveillance Network) meeting	Yes	
20. Collaborative activities with WHO Regional Office for Europe	Yes	
21. Collaboration with PulseNet International, US CDC	Yes	
Strategy 6.4 HIV, Sexually Transmitted Infections and viral Hepatitis – HSH		
1. Country missions in support of specific requests by Member States to help improve the national surveillance systems	Yes	Cyprus, Luxembourg
2. Reports with clear EU-wide priorities agreed during the HIV	Yes	

Expected outputs 2018	Implemented	Comments
3. Reports and possible scientific manuscripts on the estimated incidence and prevalence of HIV and hepatitis C in the EU based on new modelling methods and prevalence databases.	Partly	Work done, report to be published in 2019
4. Reports and possible scientific manuscripts based on data from the new EU-wide sentinel systems to monitor STI, HCV and HBV-related morbidity and mortality in the EU/EEA;	Postponed	Only sentinel system on hepatitis, due to lack of human resources
5. Coordination of the surveillance networks, with annual coordination committee meetings, and production of the joint HIV surveillance report with WHO	Yes	
6. HIV, hepatitis, STIs and gonorrhoeal antimicrobial resistance final surveillance data analysis posted on the atlas, published in annual surveillance reports, prepared as outputs for World AIDS Day and World Hepatitis Day and several scientific manuscripts, presentations or abstracts for conferences;	Yes	
7. External quality assessments and training performed to improve the national diagnostic capacity on gonorrhoeal antimicrobial resistance	Yes	
8. Final hepatitis sero-prevalence survey protocol and pilot report;	Delayed	Work under development: took longer than expected, due to lack of budget. Expected in 2019
9. Reports and possible scientific manuscripts on HIV Drug Resistance trends in the EU/EEA	Yes	
10. Report on the impact evaluation and update of the guidance on prevention of Blood Borne Virus (BBV) among People Who Inject Drug (PWID) jointly with EMCDDA including a decision on what needs to be updated	Yes	
11. Technical report following the expert meeting on prevention and control of BBV in prison settings jointly with EMCDDA	Yes	
12. Updated online European HIV/STI/HEP Test Finder jointly with AIDS Action Europe	Yes	
13. Participation in and presentation of various papers at the main meetings or conferences organised by the key partners identified in this objective and various invitations to them to participate in the relevant ECDC meetings	Yes	
14. Country missions, wherever appropriate including experts from WHO or EMCDDA, to provide technical support to Member States in dealing with specific problems or threats depending on the specific requests of the Member States and the resources available	Yes	
15. Several reports on monitoring the response to HIV in Europe in collaboration with WHO and UNAIDS	Yes	
16. Technical report with a scientific analysis of the problems posed by chemsex and possible options for mitigating these	Cancelled	Deprioritised for other requests (PreP)
17. Scientific Guidance on HIV Testing (updated)	Yes	
18. Provide technical support backed by scientific evidence to assist Member States in implementing PrEP (pre-exposure prophylaxis)	Yes	
19. Technical report with a scientific analysis of the latest developments in STI testing, including point of care tests	Delayed	Under development: the contractor needed more time than expected
20. Scientific Guidance on hepatitis B and C testing, in collaboration with key stakeholders such as WHO and EMCDDA	Yes	
21. Technical report on measuring the impact of national STI and hepatitis prevention and control strategies most likely jointly with WHO	Delayed	Under development: to be published in 2019. Focus on STIs only. delay due insufficient quality of draft from contractor
22. A framework and a standardized methodology for the monitoring of the HIV and Hepatitis continuum of care metrics	Yes	
23. World AIDS Day (1/12/18) event with a variety of external communication activities and outputs adapted according to a separate annual plan based on the most important issues of the time	Yes	
24. World Hepatitis Day (28/07/18) event with a variety of external communication activities and outputs adapted according to a separate annual plan based on the most important issues of the time	Yes	
25. A high profile event/session at the International AIDS Conference in Amsterdam	Yes	
26. Participation in and presentation of various papers at various other meetings or conferences organised by influential key partners	Yes	
Strategy 6.5 Influenza and other Respiratory Viruses - IRV		
1. Weekly high-quality (with established standards and definitions, including mortality monitoring) and high-impact surveillance reports on FluNewsEurope.org during the season	Yes	

Expected outputs 2018	Implemented	Comments
2. Strengthened routine surveillance mechanism for monitoring of genetic and antigenic viral characteristics, severe respiratory disease, risk factors and influenza mortality	Yes	
3. Timely and high-quality risk assessment and scientific advice on emerging respiratory pathogens.	Yes	
4. Relevant support to international outbreak assessment missions	n/a	Not requested
5. Quarterly joint reports under EFSA mandate (Mandate M-2017-0062, Ares (2017) 982773-23/02/2017) on avian influenza viruses.	Yes	
6. Online training and wet lab courses organised and offered to Member State network members	Yes	
7. Timely vaccine effectiveness estimates available to stakeholders	Yes	
8. Preparedness case studies or country visits done	n/a	No request received from countries for case studies or visits
9. Regional pandemic preparedness workshop/exercise completed	Yes	
10. Expert meeting held to review the evidence on effectiveness of non-pharmaceutical countermeasures against seasonal and pandemic influenza transmission	Yes	
11. Production at least one peer review publication on the analysis and interpretation of data submitted to ECDC in open access scientific journals.	Yes	Nine
12. Presentations at least one international conference by each IRV expert.	Yes	
Strategy 6.6 Tuberculosis - TB		
1. Coordination of the surveillance sub-network	Yes	
2. TB monitoring and surveillance in Europe report 2018, jointly produced by ECDC and the WHO Regional Office for Europe	Yes	
3. Report on assessment of TB underreporting through inventory studies	Yes	To be published in 2019
4. Report on MDR TB molecular typing for surveillance	Cancelled	Deprioritised due to lack of human resources
5. Coordination of the laboratory sub-network (European Reference Laboratory for Tuberculosis Network)	Yes	
6. Annual meeting of the European Reference Laboratory Network	Yes	Replaced by kick-off meeting on WGS with same participants
7. Training of laboratory experts	Yes	
8. Updated 'Handbook on TB laboratory diagnostic methods for the European Union	Yes	To be published in 2019
9. External Quality Assessment report	Yes	
10. Information on Whole Genome Sequencing of multidrug-resistant TB cases	Yes	
11. Coordination of the TB Prevention and Control sub-network	Yes	
12. First meeting of the Prevention and Control sub-network	Yes	
13. Training and/or exchange visits for persons involved in TB prevention and control in the high priority countries	Yes	
14. Country visit(s) and/or consultancies at the request of the Member State	Yes	
15. Update of the European Union Standards for Tuberculosis (ESTC)	Yes	
16. Support to the European Commission and the EU Member States	Yes	
Strategy 6.7 Vaccine-preventable diseases - VPD		
1. Develop scientific advice and guidance on new vaccines and vaccination strategies (e.g. pneumococcal vaccines for adults, herpes zoster, meningococcal B vaccine)	Delayed	Initiated in 2018; delayed due to lack of resources and higher priority given to NITAG, which took more time than initially expected
2. Conduct epidemiological studies on the burden of VPDs across different age groups and looking at the life-course	Cancelled	Cancelled due to competing priorities
3. Develop scientific evidence and policy options and facilitate country exchange in the area of life-course vaccination, with a view to support countries considering the development and implementation of immunisation programmes across different age groups	Yes	
4. Pilot and implement platform for scientific products sharing in support of NITAGs (National Immunization Technical Advisory Groups) in the Member States	Yes	
5. Provide country-specific support to improve capability to implement electronic immunisation information systems	Yes	
6. Implement actions concerning database updates, vaccine scheduler updates and changes in NIPs	Yes	
7. Continue monitoring action on VPDs in migrant populations in Member States and develop scientific advice as needs arise	Yes	
8. Continue collaboration with other key EU bodies, particularly the European Medicines Agency (EMA)	Yes	

Expected outputs 2018	Implemented	Comments
9. Coordinate the VPD Disease Network and interaction with key external partners, particularly WHO Regional Office for Europe	Yes	
10. Continue to provide data from active hospital-based sentinel surveillance systems for pertussis as well as for invasive pneumococcal disease continued in order to assess the impact and effectiveness of vaccines for both diseases, and serotype replacement for pneumococci	Yes	
11. Update the interactive ECDC Surveillance Atlas of Infectious Diseases as a surveillance tool with data and analyses on all VPD incidence and rates in Member States	Yes	
12. Develop data and analyses for measles and rubella (targeted for global elimination) on a monthly basis, as well as in-depth analysis reports twice during the year	Yes	
13. Develop and publish Annual Epidemiological Report/VPD Section	Yes	
14. Develop peer review publications based on outcomes and findings from analysis and interpretation of surveillance data	Yes	
15. Provide support to Member States in updating their polio preparedness plans in the eradication phase upon request	Yes	
16. Provide technical support to strengthen planning and control measures for such diseases measles, rubella, and poliomyelitis, and capacity for outbreak investigation and response based on country needs and upon request	Yes	
17. Finalise good practice guide on outbreak investigation and surveillance system strengthening, particularly, inter alia, in view of improving capacity to achieve WHO elimination goals for measles and rubella	Yes	
18. Pilot project on meningococcal clusters identification in the EU through real-time reporting of isolates in EMERT	Yes	
19. IBD, Diphtheria and Pertussis laboratory accreditation process maintained through EQAs	Yes	
20. Twinning exchanges and training workshops in order to maintain and build capacity for lab and molecular surveillance	Yes	
21. Evidence and knowledge generated to support Member State capacity to monitor trends in vaccine acceptance and build public trust in vaccination programmes	Postponed to 2019	Work is ongoing. Postponed to 2019
22. Communication toolkits for healthcare workers and immunisation programme managers supporting vaccination activities focussed on reaching vaccine-hesitant groups	Postponed to 2019	Work is ongoing. Postponed to 2019
23. Technical support to national health communication campaigns activities, notably by fostering the establishment of a European Vaccine Awareness Day, and by continuing to support the WHO Regional Office for Europe in the European Immunisation Week through ECDC outputs	Yes	
24. Monitor and evaluate key projects led by external key institutional stakeholders in areas falling under the objectives of the DP as to secure alignment, cross-fertilisation, and identify opportunities to build efficiencies	Yes	
25. Provide scientific and technical input required from the DP on actions being implemented as part of the 2014 EPSCO Council Conclusions on Vaccination as an Effective Tool in Public Health and beyond (e.g. EU-funded projects, Joint Actions, EMA Vaccine Working Party activities, etc.) upon request	Yes	
26. Develop VPD Core Competences training programme based on key skill gaps identified by target group based on Member State needs	Postponed to 2019	Postponed to 2019 due to lack of resources and lower priority
MANAGEMENT		
Strategy 7.1 General Management		
1. Preparation of a long-term strategy for ECDC	Yes	Work has started. Approval expected in 2019
2. Implement the organisation-wide Enterprise Architecture framework	Yes	
3. Monitor the implementation of the SPD 2018	Yes	New module in MIS to improve the monitoring
4. All processes are simplified to efficiently support ECDC missions	Yes	Done as part of lean project
5. All Declarations of Interest timely checked, using an electronic submission and storage system	Yes	
6. Further improve collaboration and cooperation between ECDC and the Member States, including all stakeholders, by facilitating focused strategic partnerships to forge complementary synergies	Yes	
7. AF, CCB and MB meetings smoothly implemented	Yes	
Strategy 7.2 Collaboration and cooperation		
1. ECDC Director's annual exchange of views with the ENVI Committee of the European Parliament and, upon request, appearance before Parliamentary Committees	Yes	

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Expected outputs 2018	Implemented	Comments
2. Bi-annual visit to ECDC of an ENVI Committee delegation	n/a	Visit took place in 2017. Next one envisaged in 2019
3. Provision of scientific opinions as requested by EP	Yes	
4. Information on ECDC activities and of the Centre's disease-specific areas in a format useful for making decisions	Yes	
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	Yes	
6. Liaison on a regular basis with key persons at the Ministry of Health and Social Affairs (contact person, State Secretary, Minister)	Yes	
7. Sharing of experiences, evidence and expertise with the Swedish authorities	Yes	
8. ECDC participation and interaction in the European Health Forum Gastein	Yes	
9. Activities of ECDC support and complement the work of DG SANTE and CHAFEA	Yes	
10. Strategic planning meeting with DG SANTE to align the work	Yes	
11. Processes in place to ensure alignment of planning, reporting, and monitoring of joint work.	Yes	
Strategy 7.3. Resource management		
1. Provide the annual accounts of the Centre;	Yes	
2. Ensure the preparation of draft, approved and amending budgets	Yes	
3. Perform financial initiation and ex-ante verification and Provide financial advice and support to all Units of the Centre	Yes	
4. Management and operating model that ensure that ECDC's day to day activities are aligned with ECDC's strategic priorities	Yes	
5. 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	Yes	
6. 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	Partly	KPIs in place; operational indicators available in some areas but not yet for the whole ECDC
7. Continuous improvement culture based on Lean, quality and project management methodologies in order to increase efficiency, free up staff time and improve decision-making;	Yes	
8. eAdministration programme as a unique continuous improvement frame for all administrative process automation related initiatives in close collaboration with the European Commission	Yes	
9. Finalisation of ECDC new premises fitting-out, removal, business continuity management plans and restoration of old premises to the original conditions	Yes	
10. Increased opportunities for scientific and non-scientific staff to develop and utilise their skills in the most effective ways and increase self-awareness of their roles and responsibilities	Yes	
11. 'Field Deployment Support Programme' – supported by external expertise in preparing ECDC staff for field missions and upon return from the deployment	Postponed 2019	The support through the existing contracts for the medical and counselling services has proven to be adequate to accommodate the upcoming requests (on a small scale). New contracts established in 2018 could be utilised to offer a broader frame of support. In 2019, ECDC will establish a frame relevant for support to staff in PHE operations and in field deployments
12. Health and wellbeing support to staff in PHE operations and field deployments in cooperation with the medical and counselling service providers	Yes	
13. Early assessment of the procurement needs, at planning stage of the Single Programming Document;	Yes	
14. Reviewed internal guidance materials to choose and handle procurement and grant procedures most efficiently including procurement, grant, contract and agreement management training workshops and information sessions for ECDC partners	Yes	
15. Grant Verification Plan 2017 for EPIET/EUPHEM activities and individual audit reports	Yes	

Expected outputs 2018	Implemented	Comments
16. 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)	Yes	
17. Development of 'policy lines' for access to information handled by ECDC to support the independence of ECDC's scientific outputs. Effective support to the creation, distribution, retention and final disposition of information across the Centre, in accordance with legislation, regulations and leading business practices	Yes	
18. Support information sharing throughout the organisation including partners and stakeholders to reinforce ECDC's corporate culture and ECDC staff's knowledge of EU institutions	Yes	
Strategy 7.4 Information and Communication Technology		
1. Maintained and secure infrastructures and applications, hosted as per SLA requirements	Yes	
2. Minimal disruption of ICT services during migration to the new ECDC building	Yes	
3. Existing systems maintained as per ICT work plan commitments	Yes	
4. New systems developed as per ICT work plan commitments	Yes	
5. Main processes defined clearly indicating roles and responsibilities	Yes	
6. IT continuous improvement plan defined for 2018 and actions implemented	Yes	
7. Procurement framework for new sourcing model	Yes	

Annexes

Annex 1. Implementation of the Work Programme 2018

89% of the activities of the Work Programme for 2018 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 2017.

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
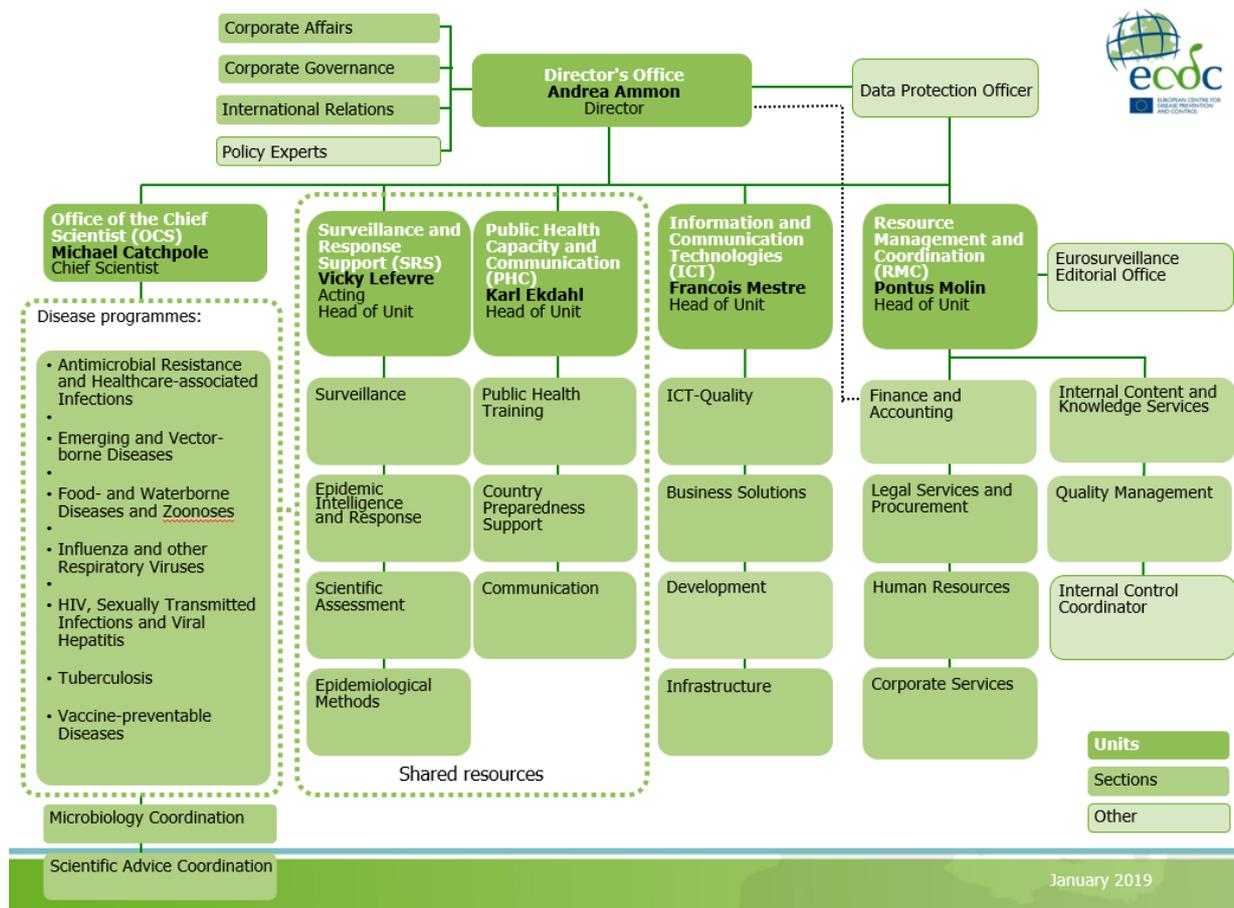
Annex 4. Establishment plan

ECDC establishment table 2018

Category and grade	Establishment plan in voted EU budget 2018	
	Officials	TA
AD 16		
AD 15		1
AD 14		4
AD 13		5
AD 12		10
AD 11		10
AD 10		25
AD 9		25
AD 8		20
AD 7		26
AD 6		
AD 5		
Total AD		126
AST 11		0
AST 10		2
AST 9		2
AST 8		3
AST 7		10
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		
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: Senior 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 12	Support
Head of Human Resources	TA	AD 8	Support
Head of Finance	TA	AD 8	Support (Head of Finance and Accounting)
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)

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)
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	**17.3%**	**15.8**
Administrative support	16.7%	14.0
Coordination	0.6%	1.8
Operational	**74.8%**	**77.2**
Top-level operational coordination	2.7%	3.0
Programme management and implementation	61.9%	64.0
Evaluation and impact assessment	0.0%	0.0
General operational	10.1%	10.2
Neutral	**7.9%**	**7.0**
Finance/control	7.9%	7.0
Linguistics	0.0%	0.0

Annex 5. Human and financial resources by activity

The activity-based budget (ABB) provides an overview of human and financial resources by activity.

Strategies and groups	FTEs	Admin support	Total FTEs	Title 1	Title 2	Title 3	TOTAL
1. Surveillance and epidemic intelligence	**20.5**	**8.1**	**28.6**	**3,136,228**	**524,782**	**1,146,068**	**4,807,078**
Surveillance	**14.9**	**5.9**	**20.8**	**2,370,232**	**381,301**	**1,046,633**	**3,798,166**
1. Public health surveillance	4.5	1.9	6.5	659,820	118,347	634,412	1,412,579
2. Molecular surveillance	1.8	0.8	2.6	242,174	46,849	149,768	438,791
3. Methods to support disease prevention and control	1.5	0.6	2.1	258,980	38,518	262,453	559,951
4. Management and administrative support	7.1	2.6	9.7	1,209,258	177,586	-	1,386,844
Epidemic intelligence	**5.6**	**2.2**	**7.8**	**765,996**	**143,482**	**99,435**	**1,008,912**
1. Epidemic intelligence	5.3	2.1	7.4	729,988	135,317	49,743	915,047
2. Rapid assessment of public health events	0.1	0.0	0.1	10,321	2,222	49,692	62,235
3. Programme Management and Implementation	0.2	0.1	0.3	25,687	5,943		31,630
2. Scientific support	**10.7**	**3.9**	**14.6**	**1,661,590**	**267,246**	**716,716**	**2,645,552**
Scientific advice	**8.1**	**2.8**	**11.0**	**1,221,217**	**201,629**	**655,069**	**2,077,916**
1. Scientific advice coordination	1.8	0.7	2.6	270,014	47,090	91,286	408,389
2. Research coordination and studies	0.6	0.2	0.8	99,437	14,777	43,583	157,797
3. Scientific liaison activities	1.2	0.5	1.6	151,741	30,103	478,051	659,895
4. Management and administrative support	4.6	1.4	6.0	700,025	109,660	42,149	851,834
Microbiology support	**2.5**	**1.1**	**3.6**	**440,373**	**65,617**	**61,646**	**567,637**
1. Microbiology support	2.5	1.1	3.6	440,373	65,617	61,646	567,637
3. Preparedness and response	**4.2**	**1.8**	**6.0**	**585,175**	**110,648**	**156,465**	**852,288**
Preparedness	**0.3**	**0.1**	**0.4**	**46,647**	**7,782**	**15,730**	**70,160**
1. EU preparedness	0.2	0.1	0.3	31,964	5,333	15,730	53,026
2. Programme Management and Implementation	0.1	0.0	0.1	14,683	2,450		17,133
Response	**3.9**	**1.7**	**5.6**	**538,528**	**102,866**	**140,735**	**782,129**
1. Support to EU outbreaks	2.0	0.8	2.8	270,159	51,829	112,688	434,676
2. Emergency operations	0.2	0.1	0.3	29,715	5,130	-	34,845
3. Management and administrative support	1.8	0.7	2.5	238,654	45,907	28,047	312,608
4. Training and capacity building	**20.3**	**8.0**	**28.3**	**2,806,538**	**518,495**	**4,260,917**	**7,585,950**
Training	**12.8**	**5.0**	**17.8**	**1,758,699**	**326,823**	**3,784,436**	**5,869,958**
1. Fellowships EUPHEM -EPIET	6.1	2.5	8.7	794,497	158,960	3,394,536	4,347,994
2. Training networks	1.8	0.7	2.5	269,638	45,926	231,175	546,739
3. e-learning	1.1	0.4	1.5	148,055	26,908	48,000	222,963
4. Programme Management and Implementation	3.8	1.3	5.1	537,121	93,507	110,725	741,353
5. MediPiet	0.1	0.0	0.1	9,388	1,522	-	10,910
Coordinated Country Support	**5.9**	**2.2**	**8.1**	**837,346**	**148,752**	**383,268**	**1,369,366**
1. Coordinated Country Support	3.9	1.5	5.4	505,234	99,993	383,268	988,496
2. Programme Management and Implementation	1.9	0.7	2.7	332,111	48,758	-	380,870
International relations	**1.6**	**0.7**	**2.3**	**210,493**	**42,921**	**93,212**	**346,626**
1. Cooperation with the World Health Organisation (WHO)	0.1	0.0	0.1	10,086	2,406		12,492
2. Working with non-EU Countries	1.5	0.7	2.2	200,407	40,515	93,212	334,134
5. Communication	**16.6**	**6.6**	**23.2**	**2,124,577**	**426,444**	**496,554**	**3,047,575**
Public Health Communication	**10.8**	**4.3**	**15.0**	**1,297,709**	**275,954**	**436,032**	**2,009,694**
1. Press, media and Information services	3.0	1.2	4.2	367,507	77,241	226,861	671,608
2. Editorial services	1.9	0.8	2.8	240,287	50,849		291,136
3. Web portal and extranets	3.6	1.3	5.0	407,018	91,096	40,191	538,305
4. Translations	0.0	0.0	0.0	70,864	229	168,980	240,074
5. Country support on risk communication	0.2	0.1	0.3	30,928	5,160	-	36,088
6. Management and administrative support	0.6	0.3	0.9	94,316	16,277		110,593
7. Internal communication	1.3	0.6	1.9	156,280	35,102		191,382
Eurosurveillance	**5.8**	**2.4**	**8.2**	**757,377**	**150,490**	**60,522**	**968,390**
1. Eurosurveillance	5.6	2.3	7.9	703,248	144,254	60,522	908,025
2. Management and administrative support	0.2	0.1	0.3	54,129	6,236	-	60,365
6. Disease programmes	**36.7**	**15.4**	**52.1**	**5,604,360**	**956,194**	**6,618,720**	**13,179,275**
1. Antimicrobial resistance and healthcare-associated infect	**8.3**	**3.5**	**11.8**	**1,394,376**	**216,639**	**1,334,614**	**2,945,629**
2. Emerging and vector borne diseases - EVD	**3.2**	**1.4**	**4.6**	**500,960**	**84,118**	**394,623**	**979,701**
3. Food- and Waterborne Diseases and Zoonoses - FWD	**6.4**	**2.7**	**9.1**	**996,421**	**167,016**	**672,601**	**1,836,037**
4. HIV, Sexually Transmitted Infections and viral Hepatitis - I	**5.9**	**2.5**	**8.3**	**882,389**	**153,160**	**1,134,149**	**2,169,699**
5. Influenza and other Respiratory Viruses - IRV	**2.3**	**1.0**	**3.3**	**323,815**	**59,799**	**982,009**	**1,365,623**
6. Tuberculosis - TB	**4.4**	**1.8**	**6.2**	**660,375**	**113,340**	**560,165**	**1,333,880**
7. Vaccine Preventable Diseases - VPD	**5.3**	**2.1**	**7.4**	**719,998**	**136,192**	**1,540,559**	**2,396,748**
Generic Disease Programmes Expenses	**1.0**	**0.4**	**1.4**	**126,027**	**25,929**		**151,957**

7. General Management	**98.2**	**54.4**	**5,439,158**	**3,116,253**	**4,845,878**	**13,401,289**
General Management	**10.2**	**2.1**	**282,912**	**410,573**	**-**	**693,485**
1. General management	1.8	1.2	211348.1	22,658		234005.9
2. Organisation Governance meetings	1.7	0.0	55,632	122,976		178608.0
3. Strategic Advice	0.2	0.0	0.0	241,800		241800.0
4. Programme Management and Implementation	6.5	0.9	-40255.2	23,139		-17115.8
Collaborations	**2.7**	**0.4** -	**12,831**	**52,598**	**76,231**	**115,998**
1. ECDC in the 'family' of European Institutions and Bodies	0.4	0.0	-	46,176	6,308	52,484
2. Working with the European Union Member States	1.4	0.0	-	-	67,923	67,923
3. Stakeholders and networking	0.2	0.0	-	-	2,000	2,000
4. Programme Management and Implementation	0.6	0.4	27,756	6,422	-	34,178
Independence Policy	**0.9**	**0.8**	**63,205**	**14,073**		**77,278**
1. Ensuring independence	0.9	0.8	63,205	14,073	-	77,278
Resources Management	**58.1**	**44.4**	**4,208,420**	**2,101,585**	**501,791**	**6,811,796**
1. Human Resources	10.5	10.4	979,584	486,004	-	1,465,588
2. Finance and Accounting	14.2	14.1	1,311,064	433,499	-	1,744,563
2. Legal and procurement	9.4	4.7	395,476	171,393	-	566,869
3. Planning and monitoring	4.7	1.8	236,678	230,259	-	466,937
4. Internal Control	0.6	0.6	107,290	42,074	-	149,363
5. Internal Content and Knowledge Services	4.8	4.4	374,601	490,454	501,791	1,366,846
6. Corporate Services	10.4	5.2	409,378	189,693	-	599,072
7. Management and administrative support	3.4	3.2	394,348	58,210	-	452,558
Information and Communication Technologies (ICT)	**26.4**	**6.8**	**801,233**	**537,424**	**4,267,856**	**5,606,512**
1. Software services	7.4	0.0	-	383,381	2,239,756	2,623,137
2. Hosting, operating, maintenance, administration and se	8.8	5.6	593,673	132,173	2,028,099	2,753,945
3. Management and Administrative support	10.2	1.2	207,560	21,870		229,430
Generic expenses not related to core work	**32.1**	**32.1**	**3,578,030**	**588,959**		**4,166,989**
Activity carried over from previous year	1.1	1.1	119,812	19,524		139,336
Ad hoc request (not included in Annual Work programme)	4.9	4.9	568,543	90,503		659,046
Contribution to core Units work	1.9	1.9	220,301	34,003		254,304
Contribution to DP work	3.0	3.0	342,556	54,397		396,953
Non-core and administrative tasks, including training	19.5	19.5	2,125,808	358,404		2,484,212
Preparation of activity for next year	1.6	1.6	183,183	28,997		212,180
Public Health Emergency (PHE)	0.2	0.2	17,828	3,131		20,958
Time not worked or not reported*	**40.7**	**40.7**	**6,813,594**	**746,237**		**7,559,832**
Total	**280.0**	**280.0**	**31,749,250**	**7,255,260**	**18,241,318**	**57,245,828**

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 ABB in the Single Programming Document. Since 1 January 2016, ECDC staff members have been recording their working time per activity. The first columns (FTEs) reflects time recorded per activity by staff in the Human Resources system Allegro. The column 'Administrative support' reflects the administrative support for operations, considered as operational work following the benchmarking exercise.

Annex 6. Final annual accounts 2018 of the European Centre for Disease Prevention and Control

See (draft/final) annual accounts: Report on budget and financial management of the European Centre for Disease Prevention and Control (MB document MB45/07). For details, see: https://ecdc.europa.eu/en/about-usour-key-documents/financial-documents

Annex 7. ECDC MB/AF/Coordinating Competent Bodies

Members and Alternates of the ECDC Management Board

Austria	Dr Berhard Benka	Member
	Mag Martina Brix	Alternate
Belgium	Mr Lieven De Raedt[30]	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[31]	Alternate
Czech Republic	Mgr Eva Gottvaldová	Member
	Dr Jozef Dlhý	Alternate
Denmark	Ms Bolette Søborg	Member
	Nomination pending	Alternate
Estonia	Ms Heli Laarmann[32]	Member
	Ms Merike Jürilo[33]	Alternate
Finland	Dr Anni-Riitta Virolainen-Julkunen	Member
	Dr Taneli Puumalainen	Alternate
France	Dr François Bourdillon	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[34]	Member
	Mr Daniel Shine[35]	Alternate
Italy	Nomination pending[36]	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 Judith Elsinghorst	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
Spain	Dr Elena Andradas Aragones	Member
	Dr Maria Araceli Arce Arnáez	Alternate
Sweden	Dr Johan Carlson	Member
	Mr Andreas Johansson[37]	Alternate

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[30] Appointed Member in replacement of Dr Daniel Reynders as of October 2018
[31] Appointed Alternate in replacement of Mrs Eleni Zannetou as of October 2018
[32] Appointed Member in replacement of Ms Merike Jürilo as of May 2018
[33] Appointed Alternate in replacement of Ms Kärt Sõber as of May 2018
[34] Appointed Member in replacement of Mr Michael Smith as of October 2018
[35] Appointed Alternate as of October 2018
[36] Dr Raniero Guerra member until January 2018
[37] Appointed Alternate in replacement of Dr Mårten Kivi as of November 2018

United Kingdom	Ms Emma Reed[38]	Member
	Dr Morwenna Carrington[39]	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
	Mr Cornelius Schmaltz[40]	Member
	Ms Barbara Kerstiens[41]	Alternate
Iceland (EEA/EFTA)	Dr Sveinn Magnússon[42]	Member
	Ms Margrét Björnsdóttir	Alternate
Liechtenstein (EEA/EFTA)	Dr Marina Jamnicki Abegg	Member
Norway (EEA/EFTA)	Dr Karl-Olaf Wathne	Member
	Mr Torstein Lindstad[43]	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	Member
	Dr Natalia Kerbo	Alternate
Finland	Dr Mika Salminen	Member
	Dr Carita Savolainen-Kopra[44]	Alternate
France	Dr Jean-Claude Desenclos	Member
	Dr Bruno Coignard	Alternate
Germany	Dr Osamah Hamouda	Member
	Nomination pending	Alternate
Greece	Dr Sotirios Tsiodras	Member
	Dr Agoritsa Baka[45]	Alternate
Hungary	Ms Zsuzsanna Molnár[46]	Member
	Ms Ágnes Hajdu[47]	Alternate
Ireland	Dr Kevin Kelleher	Member
	Dr Derval Igoe	Alternate
Italy	Dr Silvia Declich	Member
	Dr Giuseppe Ippolito	Alternate
Latvia	Dr Jurijs Perevoščikovs	Member

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[38] Appointed Member as of March 2018
[39] Appointed Alternate in replacement of Dr Ailsa Wight as of October 2018
[40] Appointed member in replacement of Ms Line Matthiessen-Guyader as of October 2018
[41] Alternate from January to September 2018, nomination pending
[42] Member from January to November 2018, nomination pending
[43] Alternate from January to June 2018, nomination pending
[44] Appointed Alternate as of March 2018 in replacement of Dr Outi Lyytikäinen
[45] Alternate from January to March 2018, nomination pending
[46] Appointed Member as of March 2018
[47] Appointed Alternate as of March 2018 in replacement of Ms Emese Szilágyi

	Dr Irina Lucenko[48]	Alternate
Lithuania	Dr Loreta Ašoklienė	Member
	Ms Nerija Kuprevičienė	Alternate
Luxembourg	Dr Isabel De La Fuente Garcia	Member
	Professor Friedrich Muehlschlegel[49]	Alternate
Malta	Dr Charmaine Gauci	Member
	Dr Tanya Melillo Fenech	Alternate
Netherlands	Prof Dr Jaap van Dissel	Member
	Dr Susan van den Hof[50]	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 Isabel Noguer	Alternate
Sweden	Dr Anders Tegnell	Member
	Dr Birgitta Lesko	Alternate
United Kingdom	Dr Paul Cosford	Member
	Professor John Watson[51]	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	Member
Montenegro (candidate country)	Dr Zoran Vratnica	Observer
Norway (EEA/EFTA)	Dr Frode Forland	Member
	Dr Line Vold[52]	Alternate
Serbia (candidate country)	*Nomination pending*	
The former Yugoslav Republic of Macedonia (candidate country)	Nomination pending	
Turkey (candidate country)	MD Gamze Aktuna	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[53] P		Member
European Public Health Association	Dr Aura Timen[54]	Member
Steering Committee AIDS Action Europe	Mr Aigars Ceplitis[55]	Alternate
European Association of Hospital Pharmacists	Ms Inese Sviestina[56]	Alternate

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[48] Alternate from January to April 2018, nomination pending

[49] Appointed Alternate as of April 2018

[50] Appointed Alternate as of December 2018

[51] Appointed Alternate as of September 2018

[52] Appointed Alternate in replacement of Dr Hanne Nøkleby as of December 2018

[53] Appointed Member as of July 2018

[54] Appointed Member as of July 2018

[55] Appointed Alternate as of July 2018

[56] Appointed Alternate as of July 2018

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
Czech Republic	**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	**Hellenic Center for Disease Control and Prevention** Agrafon Street 3-5 15123 Marousi http://www.keelpno.gr +302105212870
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 8. ECDC outputs published in 2018

Risk assessments

January

Rapid risk assessment: Outbreak of yellow fever in Brazil

Joint Rapid Outbreak Assessment: Multi-country outbreak of Salmonella Agona infections linked to infant formula

March

Rapid risk assessment: Outbreak of yellow fever in Brazil, Third update.

Rapid risk assessment: Risk of measles transmission in the EU/EEA

Rapid risk assessment: Acute encephalitis associated with infection with Borna disease virus 1, Germany

April

Rapid risk assessment: Hospital-acquired malaria infections in the European Union

Rapid risk assessment: Dengue outbreak in Réunion, France

Rapid risk assessment: Candida auris in healthcare settings – Europe

May

Rapid risk assessment: Mass gathering event, FIFA World Cup, Russia 2018

Rapid risk assessment: Ebola virus disease outbreak in Equateur Province, Democratic Republic of the Congo, First update

Rapid risk assessment: Multi-country outbreak of hepatitis A virus genotype IA infections affecting EU countries in 2018

Rapid Risk Assessment: Extensively drug-resistant (XDR) Neisseria gonorrhoeae in the United Kingdom and Australia

June

Rapid risk assessment: Carbapenem-resistant Enterobacteriaceae – first update

Rapid risk assessment: Emergence of resistance to ceftazidime-avibactam in carbapenem-resistant Enterobacteriaceae

July

Rapid outbreak assessment: Multi-country outbreak of Salmonella Agona infections possibly linked to ready-to-eat food

Carbapenemase-producing (OXA-48) Klebsiella pneumoniae ST392 in travellers previously hospitalised in Gran Canaria, Spain

Rapid risk assessment: Dengue outbreak in Réunion, France

Multi-country outbreak of Listeria monocytogenes serogroup IVb, multi-locus sequence type 6, infections linked to frozen corn and possibly to other frozen vegetables – first update

August

Rapid risk assessment: Severe respiratory disease associated with Middle East respiratory syndrome coronavirus (MERS-CoV), 22nd update

Rapid risk assessment: Early large increase in West Nile virus infections reported in the EU/EEA and EU neighbouring countries

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

Rapid risk assessment: Public health risks related to communicable diseases during the 2018 Hajj, Saudi Arabia, 19–24 August 2018

September

Rapid risk assessment: Monkeypox cases in the UK imported by travellers returning from Nigeria, 2018

Rapid risk assessment: Cholera outbreak in Algeria, 2018

October

Rapid Outbreak Assessment: Multi-country outbreak of Listeria monocytogenes sequence type 8 infections linked to consumption of salmon products

Rapid Risk Assessment: Local transmission of dengue fever in France and Spain

Rapid Risk Assessment: Ebola virus disease outbreak in North Kivu and Ituri Provinces, Democratic Republic of the Congo

November

Rapid risk assessment: Multidrug-resistant Staphylococcus epidermidis

Rapid risk assessment: Influenza-associated invasive pulmonary aspergillosis, Europe

December

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

Technical reports

January

EU/EEA capacity for the surveillance of hepatitis B and C using molecular methods

February

External quality assessment scheme for Bordetella pertussis serology 2016

March

Mathematical modelling of programmatic screening strategies for latent tuberculosis infection in countries with low tuberculosis incidence

Cost-effectiveness analysis of programmatic screening strategies for latent tuberculosis infection in the EU/EEA

Guidelines for presentation of surveillance data

April

EU Laboratory Capability Monitoring System (EULabCap): Report on 2016 survey of EU/EEA country capabilities and capacities

May

Towards One Health preparedness

Social determinants and risk factors in tuberculosis surveillance in the EU/EEA

Molecular typing of Neisseria gonorrhoeae – a study of 2013 isolates

June

HEPSA – health emergency preparedness self-assessment tool, User guide

Laboratory testing of non-partner sperm donors

Field sampling methods for mosquitoes, sandflies, biting midges and ticks

July

Strategy for the external quality assessment of public health microbiology laboratories

ECDC study protocol for genomic-based surveillance of carbapenem-resistant and/or colistin-resistant Enterobacteriaceae at the EU level

Systematic review on the prevention and control of blood-borne viruses in prison settings

August

Handbook on tuberculosis laboratory diagnostic methods in the European Union - Updated 2018

Synergies in community and institutional public health emergency preparedness for tick-borne diseases in Spain and the Netherlands

Synergies in community and institutional public health emergency preparedness for tick-borne diseases in the Netherlands

Synergies in community and institutional public health emergency preparedness for tick-borne diseases in Spain

ECDC country preparedness activities, 2013-2017

September

Monitoring the use of whole-genome sequencing in infectious disease surveillance in Europe 2015–2017

Generic protocol on enhanced surveillance for invasive pneumococcal disease at the EU/EEA level

Hepatitis B and C epidemiology in selected population groups in the EU/EEA

October

Eighth external quality assessment scheme for Salmonella typing

Laboratory procedures for diagnosis and typing of human Clostridium difficile infection

Programmatic management of latent tuberculosis infection in the European Union

Review of reviews and guidelines on target groups, diagnosis, treatment and programmatic issues for implementation of latent tuberculosis management

November

External quality assessment of laboratory performance – European Antimicrobial Resistance Surveillance Network (EARS-Net), 2017

The importance of vector abundance and seasonality

Retrospective surveillance and enhanced case-finding of congenital rubella syndrome cases

Handbook on designing and implementing an immunisation information system

December

Seasonal influenza vaccination and antiviral use in EU/EEA Member States

Hepatitis B and C testing strategies in healthcare and community settings in the EU/EEA

Best practice recommendations for conducting after-action reviews to enhance public health preparedness

Surveillance reports

February

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, 2018

Surveillance report: Avian influenza overview (November 2017 – February 2018)

April

Measles and rubella surveillance - 2017

May

Surveillance of antimicrobial consumption in Europe 2013-2014

Incidence and attributable mortality of healthcare-associated infections in intensive care units in Europe, 2008-2012

June

Surveillance report: Avian influenza overview (February – May 2018)

August

Gonococcal antimicrobial susceptibility surveillance in Europe, 2016

November

Surveillance of antimicrobial resistance in Europe 2017

Joint WHO/ECDC influenza virus characterisation report, summary of TESSy virus characterisation data 2017/18

HIV/AIDS surveillance in Europe 2018 - 2017 data

December

The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2017

ECDC/EFSA joint report: Avian influenza overview August – November 2018

Published quarterly.

Mission reports

January

ECDC country visit to Spain to discuss antimicrobial resistance issues

June

ECDC country visit to Romania to discuss antimicrobial resistance issues

July

ECDC country visit to Belgium to discuss antimicrobial resistance issues

November

ECDC country visit to Malta to discuss antimicrobial resistance issues, 3-7 July 2017

Corporate publications

January

ECDC international relations policy 2020

June

ECDC public health microbiology strategy 2018–2022

Achievements, challenges and major outputs 2017: Highlights from the Annual Report of the Director

Annual Report of the Director - 2017

October

Long-term Surveillance Strategy 2014-2020 (revised)

December

Catalogue of courses on prevention and control of communicable diseases

Scientific advice

May

Public health guidance on active case finding of communicable diseases in prison settings

July

Public health guidance on prevention and control of blood-borne viruses in prison settings

Guidance in brief: Prevention and control of blood-borne viruses in prison settings

September

European Union Standards for Tuberculosis Care - 2017 update

November

Public health guidance on HIV, hepatitis B and C testing in the EU/EEA

December

Public health guidance in brief on HIV, hepatitis B and C testing in the EU/EEA

Public health guidance on screening and vaccination for infectious diseases in newly arrived migrants within the EU/EEA

Regular publications

Influenza virus characterisation, summary Europe (9 issues in 2018)

Measles and rubella monitoring (13 issues in 2018)

Communicable disease threats report (50 issues in 2018)

Annual Epidemiological Report (AER) series on all diseases with an ECDC surveillance mandate. The following AER chapters were published in 2018:

Tularaemia - Annual Epidemiological Report for 2015

Tick-borne encephalitis - Annual Epidemiological Report for 2015

Congenital toxoplasmosis - Annual Epidemiological Report for 2015

Dengue fever - Annual Epidemiological Report for 2015

Ebola and Marburg fevers - Annual Epidemiological Report for 2015

Malaria - Annual Epidemiological Report for 2015

Shigatoxin/verocytotoxin-producing Escherichia coli (STEC/VTEC) infection - Annual Epidemiological Report for 2015

Cryptosporidiosis - Annual Epidemiological Report for 2015

Chikungunya fever - Annual Epidemiological Report for 2015

Seasonal influenza - Annual Epidemiological Report for 2016-17 season

Zoonotic influenza - Annual Epidemiological Report for 2016

Anthrax - Annual Epidemiological Report for 2015

Botulism - Annual Epidemiological Report for 2015

Brucellosis - Annual Epidemiological Report for 2015

Campylobacteriosis - Annual Epidemiological Report for 2015

Giardiasis - Annual Epidemiological Report for 2015

Leptospirosis - Annual Epidemiological Report for 2015

Listeriosis - Annual Epidemiological Report for 2015

Salmonellosis - Annual Epidemiological Report for 2015

Shigellosis - Annual Epidemiological Report for 2015

Typhoid and paratyphoid fever - Annual Epidemiological Report for 2015

Yersiniosis - Annual Epidemiological Report for 2015

Surgical site infections – Annual Epidemiological Report for 2016

Healthcare-associated infections acquired in ICUs – Annual Epidemiological Report for 2016

Tuberculosis – Annual Epidemiological Report for 2016

Clostridium difficile infections - Annual Epidemiological Report for 2016

Hepatitis A - Annual Epidemiological Report for 2015

Cholera - Annual Epidemiological Report for 2015

Antimicrobial consumption - Annual Epidemiological Report for 2014

Antimicrobial consumption - Annual Epidemiological Report for 2015

Antimicrobial consumption - Annual Epidemiological Report for 2016

Tick-borne encephalitis - Annual Epidemiological Report for 2016

Pertussis - Annual Epidemiological Report for 2016

Gonorrhoea - Annual Epidemiological Report for 2016

Diphtheria - Annual Epidemiological Report for 2016

Lymphogranuloma venereum - Annual Epidemiological Report for 2016

Congenital syphilis - Annual Epidemiological Report for 2016

Chlamydia infection - Annual Epidemiological Report for 2016

Antimicrobial resistance (EARS-Net) - Annual Epidemiological Report for 2014

Hepatitis B - Annual Epidemiological Report for 2016

Hepatitis C - Annual Epidemiological Report for 2016

Communicable disease threats to public health in the European Union - Annual Epidemiological Report for 2016

Brucellosis - Annual Epidemiological Report for 2016

Shiga-toxin/verocytotoxin-producing *Escherichia coli* (STEC/VTEC) infection - Annual Epidemiological Report for 2016

Invasive pneumococcal disease - Annual Epidemiological Report for 2016

Legionnaires' disease - Annual Epidemiological Report for 2016

Invasive meningococcal disease - Annual Epidemiological Report for 2016

Haemophilus influenzae - Annual Epidemiological Report for 2016

HIV and AIDS - Annual Epidemiological Report for 2016

Mumps - Annual Epidemiological Report for 2016

Tetanus - Annual Epidemiological Report for 2016

Poliomyelitis - Annual Epidemiological Report for 2016

Dengue - Annual Epidemiological Report for 2016

Chikungunya virus disease - Annual Epidemiological Report for 2016

Yellow fever - Annual Epidemiological Report for 2016

Hantavirus infection - Annual Epidemiological Report for 2016

Plague - Annual Epidemiological Report for 2016

Rabies - Annual Epidemiological Report for 2016

Lassa fever- Annual Epidemiological Report for 2016

Smallpox - Annual Epidemiological Report for 2016

Giardiasis (lambliasis) - Annual Epidemiological Report for 2016

Zika virus infection - Annual Epidemiological Report for 2016

Seasonal influenza - Annual Epidemiological Report for 2017 - 2018

Echinococcosis - Annual Epidemiological Report for 2016

Antimicrobial consumption - Annual Epidemiological Report for 2017

Communicable disease threats to public health in the European Union - Annual Epidemiological Report for 2017

Cholera - Annual Epidemiological Report for 2016

Crimean–Congo haemorrhagic fever - Annual Epidemiological Report for 2016

Ebola and Marburg fevers - Annual Epidemiological Report for 2016

Rift Valley fever - Annual Epidemiological Report for 2016

Listeriosis - Annual Epidemiological Report for 2016

Cryptosporidiosis - Annual Epidemiological Report for 2016

Typhoid and paratyphoid fevers - Annual Epidemiological Report for 2016

Shigellosis - Annual Epidemiological Report for 2016

Campylobacteriosis - Annual Epidemiological Report for 2016

Annex 9. Exceptional negotiated procedures conducted in 2018

Reference	Title	Type of procedure RAP art. 134(1)	Amount	Contractor	Contract reference
NP/2018/OCS/9918	Structural determinants of sexually-transmitted infections among sex workers	(b)	EUR 20 000	David Stuckler	ECD.8622
NP/2018/DIR/9988	ECDC organised a session at the annual European Health Forum Gastein	(b)	EUR 198 000	European Health Forum Gastein	ECDC/2018/026

European Centre for Disease Prevention and Control (ECDC)

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