

OPERATIONAL SUPPORT

A guide to EU Reference Laboratories for Public Health

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Scope of this document

This document provides an overview of the newly established EU Reference Laboratories for Public Health (EURLs), their core tasks and services, and the stakeholders involved, with the aim of supporting Member State laboratories in accessing and benefiting from the services available.

The roles and responsibilities of the primary stakeholders regarding EURLs are described in Table 1. Importantly, this does not change the roles of officially nominated national ECDC contact points in the ECDC Coordinating Competent Bodies: Structures, Interactions and Terms of Reference document, whose content always takes precedence.

Target audience

This document is intended for any potential EURL stakeholder who is seeking information or wants to know how to engage with an individual EURL, including officially nominated national ECDC contact points i.e. National Coordinators (NCs), National Focal Points (NFPs) and Operational Contact Points (OCPs), as well as national laboratories and public health authorities.

Background

Following the adoption of Regulation (EU) 2022/2371 on serious cross-border threats to health, the European Commission can designate EURLs. Article 15 provides the legal basis for EURLs and defines their role in strengthening diagnostic capacities, harmonising laboratory methods and supporting the use of consistent technical standards across Member States.

Each EURL is formally designated by the European Commission, providing a basis for continuity, long-term planning and strategic investment in laboratory capacity.

ECDC coordinates the EURL network, ensuring that their activities are aligned with EU-level surveillance, preparedness and response priorities and integrated with existing disease networks and national coordination structures. ECDC facilitates collaboration between EURLs, promotes harmonisation and addresses cross-cutting laboratory priorities, while individual EURLs provide the specialised scientific and technical support within their designated areas.

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By supporting the national laboratory systems that underpin infectious disease surveillance, EURLs contribute to stronger preparedness, earlier outbreak detection and faster response at both the national and EU level. They are an integral part of the EU Health Security Framework, complementing the work of ECDC, the Directorate-General for Health and Food Safety, the European Health and Digital Executive Agency, National Reference Laboratories or equivalent entities (NRLs), and laboratory- and surveillance networks.

While EURLs are intended to support, strengthen and complement national laboratory capacities, they should not replace them. They provide reference services, expertise and capacity-building where needs or gaps exist, to develop sustainable capacity within the EU national laboratory systems over time. While EURLs contribute to surveillance by improving diagnostics, laboratory methods and the quality and comparability of laboratory data, they do not operate national or EU surveillance systems. Their support is integrated into existing ECDC disease and public health networks, with interactions coordinated through established national structures, including the relevant NFPs and OCPs.

The EURLs should coordinate with other established EU Reference Laboratories in areas such as food, feed, animal and plant health and in vitro diagnostic medical devices where relevant, as well as with EU agencies including ECDC and the European Food Safety Authority (EFSA) to further support wider surveillance efforts.

Currently, the EURLs are financed by the EU4Health Programme, the EU's main funding instrument for health security and system strengthening. All countries participating in EU4Health at the time of the EURL grant agreement signature are eligible to benefit from the services offered by the EURLs. More information can be found here https://hadea.ec.europa.eu/programmes/eu4health_en.

Key EURL stakeholders

Table 1. Key EURL stakeholders at the national level

Stakeholder	Role and responsibilities with regards to EURLs
National Coordinators (NCs)	• has the responsibility to officially nominate ECDC contact points, including NFPs and OCPs that will act as the main contact points for each EURL (see Annex 1), to ensure national alignment with EURL activities.
National Focal Points (NFPs)*	• responsible for overseeing interactions between ECDC and Member States regarding activities related to their respective disease group or public health function. • advise NC in selection of suitable OCP(s). • when an OCP has not been designated for a specific EURL at the national level, the NFP acts as the main technical EURL contact point. • support organising national participation in EURL projects, training sessions, and quality assessments. • when training opportunities arise, NFPs together with the OCPs identify and nominate suitable staff from their institutions.
Operational Contact Points (OCPs) for microbiology of diseases relevant for each EURL*	• main technical contact point for the implementation of EURL activities. • keep information flowing smoothly between EURLs and relevant national and regional stakeholders to ensure they are aware of available EURL services and how to request them. • facilitate EURL services (e.g. available reference diagnostics and scientific advice) to regional stakeholders should the services not be available at the NRLs. • when training opportunities arise, OCPs together with the NFPs identify and nominate suitable staff from their institutions.
Regional laboratories and other stakeholders in participating countries	• may only access EURL services via relevant OCP/NFP in their country, while also benefiting indirectly from EURL activities delivered through collaboration with the NRLs. • should discuss services or support from an EURL with their NRLs or OCPs/NFPs.

**If no OCP(s) is nominated by NC, EURL communications will go to NFPs only, with the risk that the country may miss out on essential EURL activities. As such it is critical that NCs nominate relevant OCPs (see Annex 1)*

Core tasks of the EURLs

EURLs deliver a comprehensive set of services as defined in regulation 2022/2371, tailored to their respective pathogens together with the European Commission and ECDC, to support NRLs and public health systems in participating countries. These tasks may include, depending on the scope and topic of the EURL:

1. Reference diagnostics, including test protocols

EURLs develop, evaluate, validate, and disseminate harmonised laboratory methods and standardised diagnostic protocols that support the detection and characterisation of EU's priority pathogens. This ensures comparability of laboratory results for EU level surveillance. EURLs also perform reference diagnostic services, method verification support, and expert interpretation to assist national laboratories, particularly when new methodologies or challenging diagnostic situations arise.

2. Reference material resources

EURLs establish and maintain collections of reference materials, including control strains, reagents, quality control panels and other laboratory resources needed for method validation and verification, underpinning inter-laboratory quality assurance and method harmonisation.

3. External Quality Assessments (EQA)

EURLs design and organise EQAs and proficiency testing schemes to enable laboratories evaluate and demonstrate their technical competence. These exercises provide an objective measure of laboratory performance, identify potential gaps in analytical procedures, and support continuous quality improvement. The results help laboratories align their practices with European standards and ensure readiness to respond effectively during routine surveillance and public health emergencies. EQA programmes are regularly updated to address evolving diagnostic needs and are used to identify knowledge gaps, inform training priorities, and monitor the overall performance and preparedness of laboratory networks. For more information see Guide for EU-level EQAs for public health microbiology laboratories.

4. Scientific advice and technical assistance

EURLs provide expert guidance on laboratory methods related to surveillance activities and outbreak investigation, as well as emerging diagnostic challenges. They support laboratories to implement new technologies, troubleshoot complex analytical issues, and interpret laboratory findings in a public health context. During incidents of cross-border relevance or other urgent situations, EURLs can offer rapid technical assistance and specialised expertise to strengthen national and European response efforts. They also provide expert support to the European Commission and ECDC, contribute technical input to risk assessments, and advise on laboratory preparedness and bio-risk management.

5. Collaboration and research

EURLs manage laboratory activities within the disease networks coordinated by ECDC, and facilitate regular exchange of knowledge, expertise, and best practice across Europe. Regular network meetings organised by EURLs support joint efforts and the development of common approaches across laboratories. Through collaborative projects, technical working groups, and engagement with scientific partners and relevant international initiatives, the EURLs promote innovation in laboratory science and public health microbiology, as well as maximise synergies while avoiding duplication of effort. These activities contribute to developing and evaluating new approaches, ensuring that EU laboratory systems remain adaptable to evolving public health needs.

6. Monitoring, alert notifications, and outbreak support

Upon request from ECDC, the Directorate-General for Health and Food Safety, or individual countries, EURLs can support cross-border outbreak investigations by providing specialised laboratory expertise, reference testing, and advanced characterisation of pathogens through genomic and phenotypic analyses. To provide support for national outbreak investigations, the request should come from the affected country. EURLs may also facilitate collaboration between laboratories across countries, helping to ensure a coordinated and harmonised laboratory response to cross-border health threats.

During outbreak investigations, especially in the context of rare or unusually concerning pathogens, countries are encouraged to share relevant isolates and clinical specimens with the responsible EURL as early as possible. Further distribution of materials to Member States for reference purposes can be urgently needed and can take place in agreement with the providing Member State laboratory, while ascertaining that every recipient understands the scope of what is allowed. Early sharing enables rapid comparative analyses, assessment of links between cases and outbreaks, identification of unusual or emerging strains, and the provision of timely technical support to national authorities and ECDC.

7. Training

EURLs deliver comprehensive capacity-building programmes through workshops, webinars, technical exchange, twinning visits, and hands-on laboratory training. Training activities focus on the harmonised application of diagnostic and pathogen characterisation methods, quality management principles, data interpretation, and emerging laboratory technologies. By strengthening expertise across the NRLs, EURLs help ensure a high and consistent level of laboratory performance throughout the EU.

Data governance

Data ownership

As with data submitted by Member States to ECDC, ownership of materials (such as strains and samples) and data sent by Member States to the EURL remains with the sending/submitting country, unless otherwise agreed in an agreement between the data provider and the EURL. The EURL may make use of the data to fulfil their contractual obligations. Publication and other uses of the materials or data is not be authorised without the explicit consent of the material/data owner.

Data reporting

Laboratory results of EURL reference services are reported back confidentially to the laboratory requesting the service only.

Data generated by the EURL during a service to a Member State must be reported to ECDC for EU/EEA-level surveillance purposes by the Member State requesting the service, if relevant and, as instructed in the disease-specific ECDC reporting protocols or equivalent documentation (https://epipulse.ecdc.europa.eu/HelpPage – accessible for those with EpiPulse Cases reporting rights).

Acknowledgement of EURL support

EURL support received should be acknowledged by stakeholders in publications, e.g. by including the following statement:

> "Parts of this study, including *[brief description of the EURL involvement],* were supported by the European Union Reference Laboratory for Public Health on *[topic of the EURL]*, funded by the European Union."

More information about EURLs

- **ECDC EURL Landing Page:** https://www.ecdc.europa.eu/en/microbiology/european-reference-laboratories
- **European Commission EURL Landing Page:**
- https://health.ec.europa.eu/health-security-and-infectious-diseases/surveillance-and-early-warning/eu-reference-laboratories-public-health_en

Each EURL maintains a dedicated webpage with detailed information on its activities, protocols, and its contact information. These webpages can be accessed through the ECDC EURL Landing page: https://www.ecdc.europa.eu/en/microbiology/european-reference-laboratories

For general inquiries, reach out via **eurl-ph@ecdc.europa.eu**

Annex 1. Pathogen scope and ECDC Operational Contact Point and National Focal Point mapping for the EURLs for Public Health[1]

EURL	Main pathogens/scope	Operational Contact Point	National Focal Point
EURL-PH-AMR (Antimicrobial resistance in bacteria)	Antimicrobial resistance in bacteria, and diseases caused by them, including but not limited to: • carbapenem-resistant *Enterobacterales*, *A. baumannii and P. aeruginosa* Excl. antimicrobial resistance in • *Salmonella*, • *Campylobacter*, • *Neisseria gonorrhoeae*	• Diseases caused by antimicrobial-resistant microorganisms (AMR); • Antimicrobial-resistant isolates (AMR-ISO)	Antimicrobial resistance
EURL-PH-DIPE (Diphtheria & Pertussis)	• *Bordetella* spp.; • toxin-producing *Corynebacterium* spp.	• Pertussis; • Diphtheria	Vaccine-preventable diseases
EURL-PH-ERZV (Emerging, Rodent-borne & Zoonotic Viral pathogens)	• arenaviruses, • filoviruses, • hantaviruses, • henipaviruses, • lyssaviruses, • poxviruses, • viral "Disease X" (except those falling under EURL-PH-RESVIR)	Emerging, rodent-borne and zoonotic viral diseases	Emerging and vector-borne diseases
EURL-PH-FWDB (Food- & Water-borne Bacteria)	• *Campylobacter* spp. (incl. AMR), • *Listeria monocytogenes*, • *Salmonella* spp. (incl. AMR), • Shiga-toxin-producing *Escherichia coli* (STEC), • *Shigella spp. (incl. AMR)*; • *Vibrios spp.* • *Yersinia* spp. (excl. *Y. pestis)*	• Campylobacteriosis, *Campylobacter* isolates, • listeriosis, *Listeria* isolates, • salmonellosis, *Salmonella* isolates, • Verotoxigenic *E. coli* Infection (VTEC), *E. coli* isolates • shigellosis, • cholera, • yersiniosis	Food- and waterborne diseases and zoonoses
EURL-PH-FWDV (Food- & Water-borne Viruses)	• Hepatitis A virus (HAV), • Hepatitis E virus (HEV), • other food-/water-borne viruses of public health relevance	• Hepatitis A; • FWD viruses (not available yet)	Food- and waterborne diseases and zoonoses
EURL-PH-HEZB (High-risk, Emerging & Zoonotic Bacteria)	High-risk, emerging and zoonotic bacterial diseases including • *Burkholderia mallei* • *Burkholderia pseudomallei* • *Yersinia pestis* • *Rickettsia* spp. • *Francisella tularensis* • *Coxiella burnetii*	High-risk, emerging and zoonotic bacterial diseases (EVD), leptospirosis	Emerging and vector-borne diseases
	• Lyme neuroborreliosis	Lyme neuroborreliosis	
	• *Bacillus anthracis* • *Brucella* spp.	High-risk, emerging and zoonotic bacterial diseases (FWD)	Food- and waterborne diseases and zoonoses
	• *Leptospira* spp.	Leptospirosis	
EURL-PH-HP (Helminths & Protozoa)	*Echinococcus*, *Toxoplasma gondii*, *Trichinella*, *Plasmodium*; additionally *Cryptosporidium*, *Giardia*, *Leishmania*, *Strongyloides*, *Taenia solium*	Helminthiases and protozoal diseases	Food- and waterborne diseases and zoonoses; emerging and vector-borne diseases
EURL-PH-LEGI (*Legionella*)	*Legionella* spp.	Legionellosis	Legionnaires' disease
EURL-PH-RESVIR (Respiratory Viruses)	• influenza virus (seasonal, emerging/pandemic and human infections of zoonotic influenza) • SARS-CoV-2 • respiratory syncytial virus (RSV) • SARS-CoV • MERS-CoV • enterovirus D68 • adenovirus • human metapneumovirus, or • a novel respiratory virus (pathogen X scenario)	Disease Network: ERVI-Net	Viral respiratory diseases
EURL-PH-VBV (Vector-borne Viral Pathogens)	Orthoflaviviruses (DENV, WNV, TBEV, ZIKV etc.), alphaviruses (CHIKV, SINV, etc.), Bunyaviricetes (CCHFV, RVFV, TOSV etc.), other arboviruses	Vector-borne viral diseases	Emerging and vector-borne diseases

[1] For non-EU/EEA countries participating in EU-level communicable disease surveillance Contact Points for Operations (CPO) and NFP Observer