# EURL-PH-AMR

# EU Reference Laboratory for public health on Antimicrobial Resistance

# 101194806

Deliverable number: D11.1

Deliverable name: Training plans: Good practice support activities (2025)

Funded by the European Union

## Document overview

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| Lead Beneficiary | SSI |
| Project website | - |

## Introduction

Prevention, preparedness and response planning and implementation are essential elements for effective monitoring, early warning of and combatting serious cross-border threats to health as stated in Regulation 2022/2371. Each year, the EURL-PH-AMR will carry out training activities that fall under the Article 11 of Regulation 2022/2371.

The aim of the training activities conducted in the context of the EURL-PH-AMR is to strengthen capacity, cooperation and coordination among public health laboratories in Europe to monitor and respond to health threats posed by antimicrobial resistance (AMR).

The purpose of the training activities is to equip personnel at public health laboratories with the necessary knowledge and skills to conduct high quality reference services, to improve infection preparedness and to communicate essential health data to national and international health/public health authorities and organisations.

In this document, we outline the training activities to be carried out in 2025 in the context of Deliverable 11.1 for members of EURGen-Net that are eligible for the grant agreement 101194806.

The training activity that will be conducted in 2025 in the context of D11.1 are:

- A virtual workshop to share strategies for surveillance of carbapenem-resistant Enterobacterales (CRE), carbapenem-resistant *Acinetobacter baumannii* (CRAb) and carbapenem-resistant *Pseudomonas aeruginosa* (CRPa) in European countries.
- A virtual simulation exercise (SimEx) to train the capacity to detect and respond to an *Escherichia coli* national outbreak scenario.
- An educational webinar to provide examples of good practice for antimicrobial susceptibility testing of CRE, CRPa and CRAb.
- A pilot surveillance exercise to promote the routine use of genomic data for public health surveillance of CRE.

These training activities have been devised based on the experience from the training activities conducted within the EURGen-RefLabCap project, a four-year project funded by the European Health and Executive Agency (HaDEA) that ended in December 2024 (Service Contract 2019 74 01: 'Provision of EU networking and support for public health reference laboratory functions for antimicrobial resistance in priority healthcare-associated infections') and the GenEpi-BioTrain programme, a four-year project funded by the European Centre for Disease Prevention and Control (ECDC) that started in 2023 (Framework Contract No ECDC/2022/024: 'Genomic epidemiology and public health bioinformatics trainings in the EU/EEA, the Western Balkans and Turkey'). The experience in conducting the training activities in these projects and the feedback by the participants have been useful to continuously improve the design of training activities for participants with different level of expertise and learning styles. In particular, it is clear that participants from public health institutes prefer a 'learn-by-doing' approach based on data from real-life situations. It is also important that the practical sessions include tasks of increasing difficulty, with basic tasks to be finalised by all participants and more advanced tasks to be finalised on a voluntary basis. Finally, we observed that participants are keen to share experiences about what works well and what could be improved in their procedures.

In the following pages, we provide an outline of each training activity.

Additionally, each training activity will include:

- Invitation:
    - suitable for identifying the participant(s) within the EURGen-Net network, including a programme outline and timetable.

    - sent out via email to invitees, with consortium partners and ECDC in CC, approximately three months before the event.

- Detailed agenda:
    - agreed among consortium partners and ECDC.
    - shared with invitees approximately one month before the event.
- Training materials (presentation and practical exercises):
    - made available on spaces dedicated to each training activity on the ECDC Learning Portal, and to be used both for self-learning and for cascading knowledge in the respective countries. Of note, the training materials will be in English, and it will be the responsibility of the end users to ensure the accuracy of the information should the materials be translated.
- Recordings of online activities:
    - made available on spaces dedicated to each training activity on the ECDC Learning Portal, and to be used both for self-learning and for cascading knowledge in the respective countries.
- Feed-back by the trainees:
    - structured to gather information relevant for planning and/or improving future activities.
- Short report of the training activity:
    - compiled by the organiser of the training activity, and including an overview of the conducted activity and suggestions by trainers and trainees to improve future training activities.
    - shared with participants and ECDC.

# Virtual workshop

## Strategies for surveillance of CRE, CRAb and CRPa in European countries

Objectives

After this virtual workshop, participants will be able to:

i. describe sampling strategies, laboratory methods and communication strategy for CRE, CRAb and CRPa surveillance in European countries.

ii. reflect on options for improvement of CRE, CRAb and CRPa surveillance nationally and internationally.

iii. contribute to discussion with national stakeholders to define differentiated aims for CRE, CRAb and CRPa surveillance.

Scope and topics

Recurrent questions from laboratories conducting CRE, CRAb and CRPa surveillance are: what are the aims of surveillance in different countries? What is the set up for obtaining isolates at the National Reference Laboratory/National Expert Laboratory (NRL/NEL)? Which carbapenem-resistant isolates warrant further testing by whole-genome sequencing (WGS)? How are surveillance results communicated? What works well and what could be improved at national and international level?

In this virtual workshop, we aim to answer these questions by sharing examples from laboratories in the EURGen-Net network.

The workshop will start with an introduction to the different use cases of CRE, CRAb and CRPa surveillance at European level, followed by presentations (max. 10 minutes) by each participating EURGen-Net member. For their presentations, network members will be given a short power-point template to ensure that a similar type of information is shared among countries.

Invitees

EURGen-Net members eligible for the grant 101194806.

Organiser

Statens Serum Institut (SSI).

Date and duration

11 and 13 June 2025. Two sessions of 3 h each.

# Virtual simulation exercise

## *Escherichia coli* national outbreak investigation

Objectives

After participating in this simulation exercise (SimEx), participants will be able to:

i. Apply cgMLST to *Escherichia coli* typing and assess its role in tracking outbreak-related strains.

ii. Use genomic analysis to support the definitions of outbreak cases and non-cases, considering the impact of presence/absence of antimicrobial resistance genes (ARGs) and mutations.

iii. Interpret genomic data, including resistance, to support outbreak investigations.

iv. Discuss appropriate public health measures based on genomic findings.

Scope and topics

This SimEx will be designed following the guidance by ECDC to plan, coordinate, conduct and evaluate simulation exercises in public health settings (ECDC, 2021).

This SimEx will guide participants through the investigation of an *E. coli* national outbreak scenario using core-genome multilocus sequence typing (cgMLST). Participants will work with genomic data to identify clusters, define outbreak cases, interpret findings, and assess their public health implications. The exercise will focus on data analysis, case definition, and response strategies.

Invitees

EURGen-Net members eligible for the grant 101194806. The invitees will be encouraged to extend the invitation to colleagues with whom they collaborate during outbreak investigations at national level.

Organiser

Technical University of Denmark (DTU).

Date and duration

Online sessions during the week from 8 to 12 September 2025, with self-work in between.

# Educational webinar

## Good practice for antimicrobial susceptibility testing of CRE, CRPa and CRAb

Objectives

After this educational webinar, participants will be able to:

i. Describe AST for relevant agents for CRE, CRPa and CRAb according to EUCAST methodology, including relevant quality control measures

ii. Explain screening for CRE, CRPa and CRAb according to the EUCAST guidelines on screening for resistance mechanisms

iii. Appraise the EURL-PH-AMR protocol on phenotypic testing for CRE

iv. Argue the advantages and limitations of phenotypic and genotypic AST, including the relevance of MICs within and outside of the wild type distributions

Scope and topics

- Introduction
- Part 1
  - Phenotypic AST methods (BMD and DD) and the relationship between zone diameters and MICs (general)
  - EUCAST methods for agents relevant for CRE, CRAb and CRPa (specific testing recommendations, QC, MIC-zone diameter correlations and warnings)
  - The importance of using materials of good quality (disk evaluation, media evaluation, target values etc)
- Part 2
  - MIC distributions and ECOFFs
  - Advantages and limitations of phenotypic AST – the relevance of MICs inside and outside wild type distributions
  - Relation between phenotype and genotype
- Part 3
  - Screening for resistance, general principles and EUCAST recommendations based on MIC and/or zone diameter ECOFFs
  - Screening for CRE, CRAb and CRPa based on recommendations in "Screening for resistance mechanisms"
  - Brief comment on alternative methods which lack standing with EUCAST: gradient tests, semi-automated AST methods, other methods
  - Relevant EUCAST documents
- Questions and discussion

Invitees

EURGen-Net members eligible for the grant 101194806.

Organiser

EUCAST Development Laboratory (EDL).

Date and duration

21 or 23 October 2025, 2h.

# Pilot surveillance exercise

## Pilot genomic surveillance of CRE

Objectives

After participating in the pilot genomic surveillance exercise, participants will be able to:

i. Define individual laboratory aims of the pilot genomic surveillance exercise
ii. Conduct laboratory procedures for WGS
iii. Use bioinformatics tools to analyse WGS data
iv. Conduct phenotypic AST to support the conclusions of the genomic data analysis
v. Interpret the phenotypic and WGS data
vi. Plan communication of results according to stakeholder groups (i.e. clinical laboratories, ministry, ECDC and/or scientific journal audience)

Scope and topics

The members of EURGen-Net eligible for the grant 101194806 will be invited to an online information meeting (1 h) to present the concept of the pilot genomic surveillance exercise, including overall aims and expected outcomes, and type of guidance and scientific and technical support that the EURL-PH-AMR can provide.

The pilot genomic surveillance exercise will aim to strengthen capacity for WGS-based genomic surveillance of CRE by supporting laboratories in the technical aspects of the ECDC CRE survey 2025. Members of EURGen-Net (eligible for the grant 101194806) can participate in this exercise on a voluntary basis.

Invitees

EURGen-Net members eligible for the grant 101194806.

Organiser

Statens Serum Institut (SSI).

Date and duration

The pilot surveillance exercise will be launched at the end of June 2025 with deadline for laboratories to decide upon participation by the end of August 2025. Duration of the exercise will depend on i) the number of countries interested in participating in this activity and requiring bespoke consultancy (under Work Package 8), ii) the skills and expertise for genomic epidemiology at the participating laboratories, and iii) the time that the laboratories can invest in this activity.