FWD AMR·
RefLabCap

Food- and Waterborne Diseases Antimicrobial Resistance – Reference Laboratory Capacity

FWD AMR RefLabCap

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AGENDA

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- 1. General introduction to the FWD AMR-RefLabCap project

- 2. Introduction to a questionnaire to be answered by all participants
  - Questions, answers, clarifications in relation to the questionnaire
  - Link to survey by email; deadline 21 September 2021

- 3. First network meeting: 30/11- 1/12 2021 at SSI in Copenhagen
  - Input for the contents is welcome
  - Online/hybrid will be considered

FWD AMR-RefLabCap

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Provision of EU networking and support for public health reference laboratory functions for antimicrobial resistance in *Salmonella* and *Campylobacter* in human samples

- The project is run under a contract with HaDEA on behalf of DG SANTE and in close cooperation with ECDC
- 4-year project: 2021-2024

- Contractors:
  - Statens Serum Institut (SSI)
    - Project leader: Eva Møller Nielsen, Section of Foodborne Infections
      - Susanne Schjørring, Egle Kudirkiene, Jeppe Boel, Malgorzata Ligowska-Marzeta
  - National Food Institute, Technical University of Denmark (DTU)
    - René Hendriksen, Research group for global capacity building
      - Birgitte Helwigh

OBJECTIVES

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- Support countries to enhance the validity and accuracy of surveillance data in order to inform concerted actions against AMR at EU level and enable better detection and control of cross border threats to human health from AMR

- AMR in *Salmonella spp* and *Campylobacter spp* in human samples

- Cooperation with ECDC, DG SANTE and when relevant also EFSA and EURLs

- Participants:
  - Countries participating in the EU Health programme
  - Candidate and potential candidate countries, other funding

OVERVIEW OF TASKS

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Networking and capacity building activities provided to national public health reference laboratories to improve their functions for AMR surveillance of human *Salmonella* and *Campylobacter* infections

Modernisation of methods for diagnostics, typing and AMR by using whole genome sequencing (WGS)

Activities to support the role of NRLs for public health to work with and **build capacities in the regional and local laboratories** in their own countries

Two pathogens: *Salmonella* spp and *Campylobacter* spp in humans

A specific focus on countries where capacities are less well developed

Establishing a laboratory network

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Network meetings, workshops, online presentations

- exhange of experience, best practice, inspiration
- discussions on NRL requirements, protocols, feedback on activities

Website: Protocols, guidance docs, training material, links

Project website: www.fwdamr-reflabcap.eu

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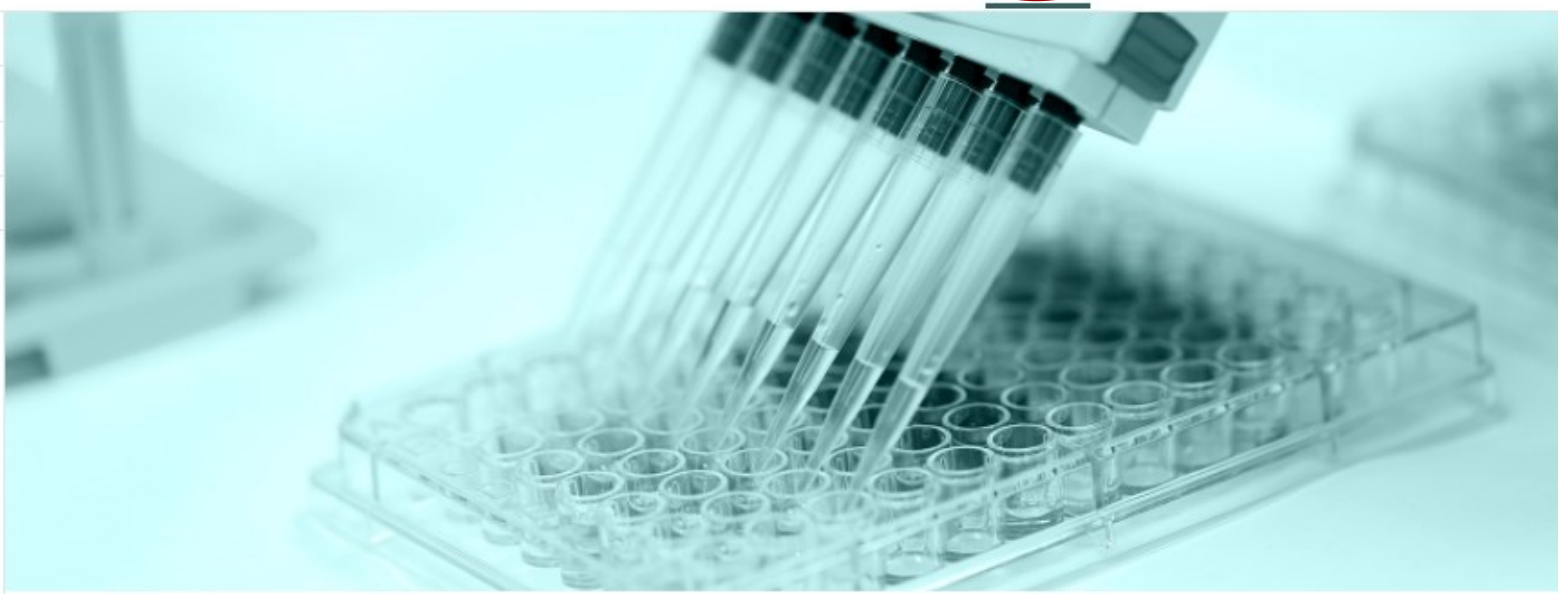
News

7 September - online meeting
26 August 2021

Welcome to FWD AMR-RefLabCap
12 May 2021

12 May 2021
Welcome to FWD AMR-RefLabCap

Protocols and guidelines
Other networks
Antimicrobial resistance
Organisations



Home / Resources

Resources

Material of relevance for the FWD AMR-RefLabCap Network participants.

Updated 31 May 2021

In the menu to the left, you can find protocols, guidelines and training material of relevance for the FWD AMR-RefLabCap project, including material developed during this 4-year project. In addition, we have collected links to homepages related to the topic antimicrobial resistance as well as relevant organisations and networks.

Instructions

Links to other EQAs

Home / EQAs / Links to other EQAs

Links to other EQAs

List of External Quality Assessments (EQAs) not directly under the FWD AMR-RefLabCap project.

Updated 1 June 2021

Almost every year ECDC offers the Member States participation in the AST-EQAs (Salmonella and Campylobacter) and Typing EQAs (Salmonella, STEC and Listeria). See the list of EQAs at ECDC webpage for an overview and EQAs specifically related to antimicrobial susceptibility testing listed here.

Recently published reports related to foodborne pathogens are listed below

External quality assessment on species identification and antimicrobial susceptibility testing of *Campylobacter*

AST-Campylobacter EQA-4
AST-Campylobacter EQA-3

External quality assessment on species identification and antimicrobial susceptibility testing of *Salmonella*

AST-Salmonella EQA-4
AST-Salmonella EQA-3

External quality assessment scheme for *Salmonella* typing

Salmonella EQA-9
Salmonella EQA-8
Salmonella EQA-7
Salmonella EQA-6
Salmonella EQA-5
Salmonella EQA-4

Events

Here, we announce network meetings, workshops, training courses, etc. Contact us at fwdamr@ssi.dk for further information.

Updated 26 August 2021

7 September 2021 14:00-15:00 – online meeting

General introduction to the project and introduction to a capacity survey to be conducted in September 2021 among all participating laboratories.

Online meeting for representatives from all laboratories in the FWD AMR-RefLabCap network. Invitations were sent to the listed contact emails on 25 August 2021.

30 November – 1 December 2021 (tentative) – Network meeting at SSI, Copenhagen, Denmark

First network meeting with the aim of facilitating exchange of information and good practice between the participating national reference laboratories. Planned activities of the project will be presented and discussed.

The 2-day meeting is planned as a physical meeting at SSI for two representatives from each country as well as representatives from relevant EURLs in the food safety area. The meeting might be changed to an online meeting or a hybrid online/physical meeting depending on possible travel

NRL functions and gap analysis

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- Minimum and optimal requirements in PH NRL functions
  - Recommended coverage of surveillance
  - Sampling and testing frequency
  - Epi-situations for isolation & referral of isolates from primary to national level
  - Methodological and resource capacity and capability requirements at all levels
- Identify capacity/capability gaps in all countries
  - Existing information
  - Survey in network

Capacity building

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- Capacity building activities for all NRLs
  - Lab training courses
  - Workshops and surveillance exercises on integrated WGS-based surveillance
- Tailored support to ´priority countries`
  - country visits
  - action plans

Modernisation of methods

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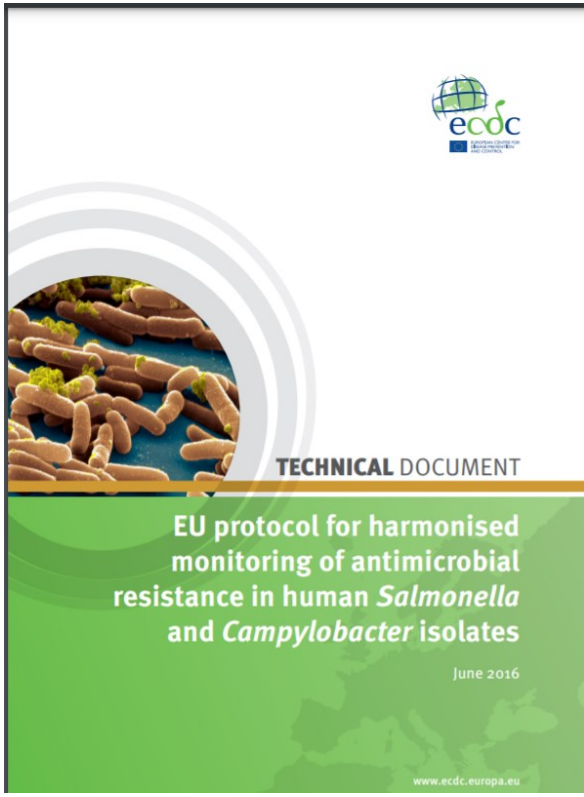
- Propose optimal methodologies for AMR detection, integrated into WGS-based surveillance for cluster detection
  - Existing guidance and literature, incl. bioinformatics and databases
    - Seek consensus experts/ECDC/EFSA/EUCAST
  - Set of common methods and standard protocols for national surveillance
    - Agreement in network

- Review/amend existing EU protocol for AMR surveillance to include genetic AMR determinants



European Centre for Disease Prevention and Control. EU protocol for harmonised monitoring of antimicrobial resistance in human Salmonella and Campylobacter isolates – June 2016. Stockholm: ECDC; 2016.

Implementation of WGS – training and EQAs

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- Multi-disciplinary training workshops and webinars for PH epidemiologists and microbiologists
  - integration of WGS into national AMR surveillance and outbreak investigation
- EQAs of WGS-based resistome profiling
  - 3 rounds for all NRLs
- Inter-laboratory ring-trials of bioinformatics pipelines for prediction of AMR

Support NRLs to build capacities in local/regional labs

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- Support all NRLs in mapping the regional/local labs' capacities for detection and characterization of *Salmonella* and *Campylobacter*
  - Strengths/weaknesses and gaps/further needs for each country
- Support NRLs to carry out regional capacity building (≥16 MSs)
  - Physical and online meetings and workshops
  - Learning material
  - Ongoing individual support
- Support NRLs to establish national network of labs
- Model protocol for national surveillance of AMR in Salm/Campy
- Guidance for internal QC schemes for reference AMR testing

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Coming activities

Survey on technical capability/capacity in NRLs

- September 2021

Network meetings in Copenhagen

2 representatives per country

- Autumn 2021
- Spring 2023
- Autumn 2024

EQA for WGS-based resistome profiling

- Autumn 2022 + 2023 + 2024

Inter-lab ring-trials, bioinformatics pipelines for AMR prediction

- Autumn 2022 + 2023 + 2024

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Activities 2022-24

Laboratory courses in phenotypic testing

Multidisciplinary training for public health micro+epi

- AMR surveillance and integration of WGS

Country visits, ‘priority countries’ – technical support and action plans

Support to NRLs to:

- map regional/local labs’ capacity (gaps/needs)
- carry out capacity building at regional/local level (16 countries)
    - workshops, webinars, etc.

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WWW. FWDAMR-RefLabCap.EU

Contact the FWD AMR-RefLabCap team:

fwdamr@ssi.dk

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Malgorzata Ligowska-Marzeta
Eva Møller Nielsen

DTU-Food:
Birgitte Helwigh
René Hendriksen

INTRODUCTION TO THE QUESTIONNAIRE

Egle Kudirkiene

September 7, 2021

BACKGROUND INFORMATION

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- **Review on existing information on capacities and capabilities at the country level for:**
  - Antimicrobial susceptibility testing
    - ✓ EU-AMR, GLASS, CAESAR, EU-LabCap reports, EQAs
  - Molecular strain typing
    - ✓ ECDC technical and zoonoses reports, ECDC surveys, EURL reports, EQAs

Mostly based on information from 2016 – 2019

We need an updated information and specifically from laboratories within the FWD AMR- RefLabCap network

THE AIM OF THE SURVEY

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- To **complete the information** on the capacity and capability of phenotypic AST and genotypic AMR prediction of *Salmonella* and *Campylobacter* as well as molecular strain typing

- The results and assessments of the questionnaire will be used to inform a **capacity building plan and training activities** for participating countries in FWD AMR-RefLabCap project

- An aggregated **summary of the findings will be presented** to participating laboratories at the network meetings

THE CONTENT OF THE QUESTIONNAIRE

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1. Laboratory identification	2. National public health laboratory services	3. Phenotypic and genotypic testing of antimicrobial resistance	4. National surveillance of antimicrobial resistance	5. Molecular strain typing	6. WGS capacity, capability status and capacity building plans
• Laboratory Name • Contacts • Organisms: *Salmonella* *Campylobacter*	• Primary diagnostics • Services and support to local/regional laboratories	• Methods and protocols in use • Antimicrobials tested • The purpose of testing • Isolate selection for testing • The extent of testing	• Antimicrobials included in surveillance • Data/sample material collection from local/regional laboratories • Confirmatory testing • Timing of testing and storage of isolates • Data sharing and reporting • The extent of testing	• Methods in use (e.g. MLVA, PFGE, WGS) • The purpose of typing (e.g. surveillance, outbreaks) • The extent of testing	• Current WGS activities • Types of analyses performed • Bioinformatics resources, tools and pipelines in use • Plans for implementation of WGS • Wishes for the support and training

HOW TO COMPLETE THE QUESTIONNAIRE

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Launching date - 7th September

- You will receive an invitation email with a unique link/per contact person with a Username and a Password

1. Welcome to FWD AMR-RefLabCap survey!

The questionnaire is composed of six sections and 50 questions in total. All the questions need to be answered before you can proceed to the next question (choose or type NA, when possible, if the question is not relevant for you).

The questionnaire is aimed at the appointed contact person for the FWD AMR-RefLabCap project; however, the questionnaire can be saved and the link shared with colleagues if relevant.

When filling in the questionnaire, you have the following options:

- Click "**Options**" and "**Pause**" to save your answers and finish at a later time (using the same link)
- Click "**Options**" and "**Print**" to print your answers or save to a file. This can be done at any time, but before pressing "Submit results"
- Click "**Previous**" to go back to the questions you have already answered
- Click "**Options**" and "**Go to..**" to go back to a specific page

Note: After pressing "**Submit results**" you will not be able to review your answers.

Any comments can be written at the end of the form.

If you need help, you are welcome to contact us at fwdamr@ssi.dk or call us at +45 32688341/+4532683317

Submission of completed questionnaire – 21st September

EXAMPLE 1 – ORGANISMS

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Does your laboratory perform AMR testing on bacterial isolates?

Select all relevant answers (*Salmonella* spp.)

- [x] Yes, phenotypic testing of AMR
- [x] Yes, genotypic testing of AMR
- [ ] None of the above

Does your laboratory perform AMR testing on bacterial isolates?

Select all relevant answers (*Campylobacter* spp.)

- [ ] Yes, phenotypic testing of AMR
- [x] Yes, genotypic testing of AMR
- [ ] None of the above

EXAMPLE 2 – ROUTING

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- Yes, **to genotypic or phenotypic** testing of AMR (Salmonella and Campylobacter)
  - **1st level** - four general questions about testing of AMR (Salmonella and Campylobacter)

- Yes, **to phenotypic testing** (Salmonella)
  - **2nd level** - three questions about phenotypic testing of AMR (Salmonella)

- Yes, **to genotypic testing** (Salmonella and Campylobacter)
  - **3rd level** – questions about genotypic testing of AMR (Salmonella and Campylobacter)

EXAMPLE 3 – TEXT FIELD FOR DETAILS

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Which methods does your laboratory use for phenotypic testing of AMR?

Select all relevant answers (*Salmonella* spp.)

- [ ] Automated system (e.g. Vitek)
- [x] Commercial broth microdilution (e.g. Sensititre/Trek)
- [ ] In-house broth microdilution
- [ ] Agar dilution
- [ ] Gradient strips (e.g. Etest)
- [ ] Disk diffusion
- [x] Other (please specify)

'own text' or 'NA'

(19/4000)

EXAMPLE 4 – COMPLEX QUESTIONS

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Which tools for AMR prediction from WGS data does your laboratory routinely use ?

Select all relevant answers (*Salmonella* spp.)

AMRFinderPlus Standard database ☑	AMRFinderPlus Custom database ☐	NA ☐
CARD Standard database ☑	CARD Custom database ☐	NA ☐
ResFinder Standard database ☑	ResFinder Custom database ☐	NA ☐
PointFinder Standard database ☑	PointFinder Custom database ☐	NA ☐
ARG-ANNOT Standard database ☐	ARG-ANNOT Custom database ☐	NA ☑
MEGARes Standard database ☐	MEGARes Custom database ☐	NA ☑

Other tools (*Salmonella* spp., please specify) AMRFinderPlus and ARG-ANNOT databesas using Re

I don't know (please indicate why) we do not analyze data ourselves/we use ResFinder to

OTHER NOTES

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- Number of isolates tested in 2019 or 2020 (covid-19 effect)

When answering the questions please provide the information/data from recent years, e.g. you can choose 2020, however if 2020 was atypical due to covid-19 pandemic or data is not available then use information/data from 2019

- Some questions about testing of AMR may seem repetitive:
  - Phenotypic and genotypic testing of AMR is about technical capability to perform the testing of AMR
  - National surveillance of AMR is to know what is done for the purpose of surveillance

CONTACT FOR SUPPORT

STATENS SERUM INSTITUT

- Email: fwdamr@ssi.dk

- Phone:
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