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DTU

FWD AMR· RefLabCap

Evaluation of regional and local laboratories capacities for detection and characterisation of *Salmonella* and *Campylobacter*

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Webinar, 23 November 2023

Agenda

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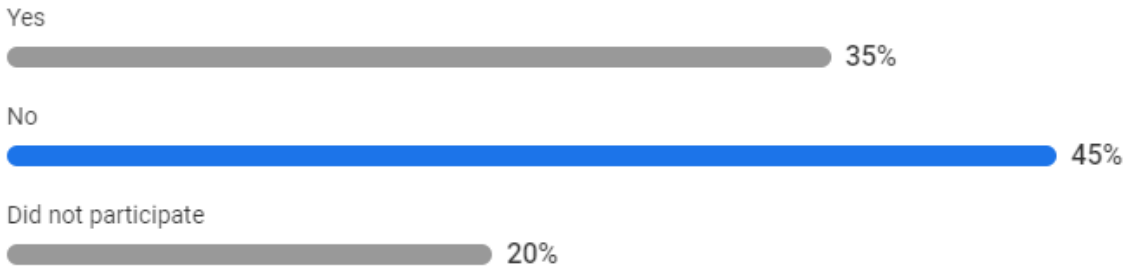
- Quiz
- Consolidated mapping report
- Quiz
- Support to NRLs for capacity building in regional and local laboratories
  - Training workshop in 12-13 March in Copenhagen
  - Webinars on specific topics

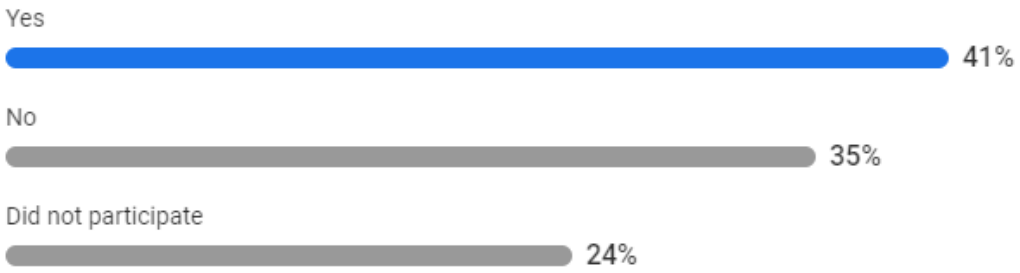
Quiz

Did you learn something new from the mapping exercise? 22

Did you already make any actions for improvements after the mapping exercise? 20



Did you disseminate/present the report to anyone in your country? 17



The outcome of the mapping exercise

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To be used:

- By NRLs
  - to inform and to provide advice to relevant stakeholders in own country
  - to use the information for regional and local laboratories' support

- By the project team
  - Train the trainers workshop in Copenhagen on 12-13 March 2024
  - Webinars in 2023 and 2024

Participation in the mapping exercise

- 21 NRLs from 19 countries participated in the mapping exercise in November 2022 to March 2023 and submitted mapping reports

Content of the consolidated mapping report

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- National system for diagnostics

- Laboratories performing primary diagnostics

- Human resources, laboratory equipment and funding

- Diagnostic methods for detection

- Characterisation methods

- Isolate referral and linking to cases

Identification of strengths, weaknesses and needs

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Strengths **Weaknesses** **Needs**

Common

- Most/majority indicate a proportion of >60%
- Common/frequent indicate a proportion of 40-60%

Specific

- Some/few indicate a proportion of <40%

Summary

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- In most of the countries, improvements are needed to ensure **well-functioning laboratory network** for *Salmonella* and/or *Campylobacter* surveillance.
- In many countries, NRLs are only part of the surveillance system. Often, the **NRLs are not empowered to coordinate a network** of local/regional laboratories that can support the national surveillance, and the NRLs **do not have a dedicated budget** for this.
- Often, there is **a need of dedicated financial resources** as well as **more focus at the national level** in supporting laboratory-based *Salmonella* and/or *Campylobacter* disease surveillance, and especially surveillance of AMR.
- Often, *Salmonella* diagnostics and surveillance is organised better than *Campylobacter* due to the **low prioritisation of *Campylobacter*** at the national level.

National system for diagnostics

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In most countries, the national surveillance is based on both species/serovar and AMR laboratory data provided by the local/regional laboratories and additional laboratory data provided by the NRL.

In most countries referral of *Salmonella* and *Campylobacter* positive samples or isolates to NRL is either voluntary or mandatory-voluntary depending on the status of the laboratory.

	Strengths	Weaknesses	Needs
Common	➢ good geographic coverage	➢ complex organisation and poor coordination of the surveillance ➢ gaps in the national policy/legislation/guidelines for the surveillance	➢ improvements to ensure a well-functioning laboratory network ➢ improvements at the national level to optimise the surveillance
Specific	➢ a well-functioning laboratory network	➢ poorly defined surveillance system workflows, tasks and roles ➢ only selected isolates are referred to NRL or there is no referral ➢ laboratory network is not established	

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Laboratories performing primary diagnostics

	Strengths	Weaknesses	Needs
Common	➢ capacity for *Salmonella* detection and characterisation for clinical purposes ➢ laboratories are accredited/certified for *Salmonella* and *Campylobacter* diagnostics	➢ no capacity to serotype all *Salmonella* serovars ➢ a lack of capacity for *Campylobacter* detection and characterisation ➢ poor participation in EQAs ➢ frequently QC materials are not used	➢ national guidelines on diagnostic procedures ➢ national requirements and funding for accreditation, quality assurance and provision of sample/isolate referral for reference testing ➢ guidance/support for sample/isolate referral for reference testing ➢ support for accreditation and quality assurance through laboratory visits, inter-laboratory comparisons, EQAs, etc.

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Human resources, laboratory equipment and funding

	Strengths	Weaknesses	Needs
Common	➢ adequate situation regarding the qualifications/skills of laboratory staff and availability of the equipment for diagnostics	➢ inadequate situation regarding human and financial resources for diagnostics	➢ continuous training of staff and advice from the NRL in the identified areas
Specific		➢ inadequate situation regarding the availability of laboratory quality management systems and efficient systems for equipment and reagent procurement	➢ evaluate current surveillance system workflow and identify the areas for improvements

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Diagnostic methods for detection

	Strengths	Weaknesses	Needs
Common	➢ adequate procedures and media for culture-based detection	➢ lack of national laboratory guidelines ➢ insufficient storage capacity for positive samples/isolates	➢ guidance with SOPs and training ➢ more efficient/rapid cultivation and molecular detection methods ➢ continuous harmonisation of testing strategy, methodology, and reagents across the laboratories.
Specific		➢ not optimal media for culture-based detection ➢ culture-independent testing without further confirmation by culture ➢ inadequate isolate storage conditions	➢ national guidelines for long-term storage and for referral of positive samples/isolates to NRL

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Characterisation methods

	Strengths	Weaknesses	Needs
Common	➢ good methodological capabilities for patient management needs ➢ AST aligned with the EUCAST guidelines	➢ poor capacity for *Salmonella* serotyping ➢ not optimal methods for phenotypic testing of AMR. ➢ insufficient antimicrobial panel for EU level surveillance ➢ molecular methods are not used for detection of AMR	➢ continuous development of the capacities and method harmonisation for characterisation for surveillance ➢ improvements in the isolate referral systems for surveillance

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Isolate referral and linking to cases

	Strengths	Weaknesses	Needs
Common	➢ all or selected *Salmonella* positive isolates are referred for confirmation and/or further characterisation ➢ laboratory data is reported for infection control and/or local surveillance purposes ➢ Laboratory Management Information System (LIMS) is widely used	➢ poor referral of *Campylobacter* isolates ➢ poor organisation of routine sampling, sample submission practices, selection, and frequency of referral ➢ incomplete patient data making it difficult to link laboratory data with cases ➢ gaps in the information flow due to lack of the national electronic databases/systems for data sharing.	➢ increase the awareness of isolate referral and provide guidance for isolate and data referral ➢ development and implementation of the national integrated digital system for data sharing

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Areas of NRL advice to PH authorities

- Improvements to ensure a well-functioning laboratory network
- National initiatives to optimise the surveillance
- National requirements and funding for:
  - quality assurance and accreditation
  - provision of sample/isolate referral for reference testing
- Improvements in the isolate referral systems for surveillance
- Development and implementation of the national integrated digital system for data sharing

Areas of NRL support for capacity building in the laboratory network

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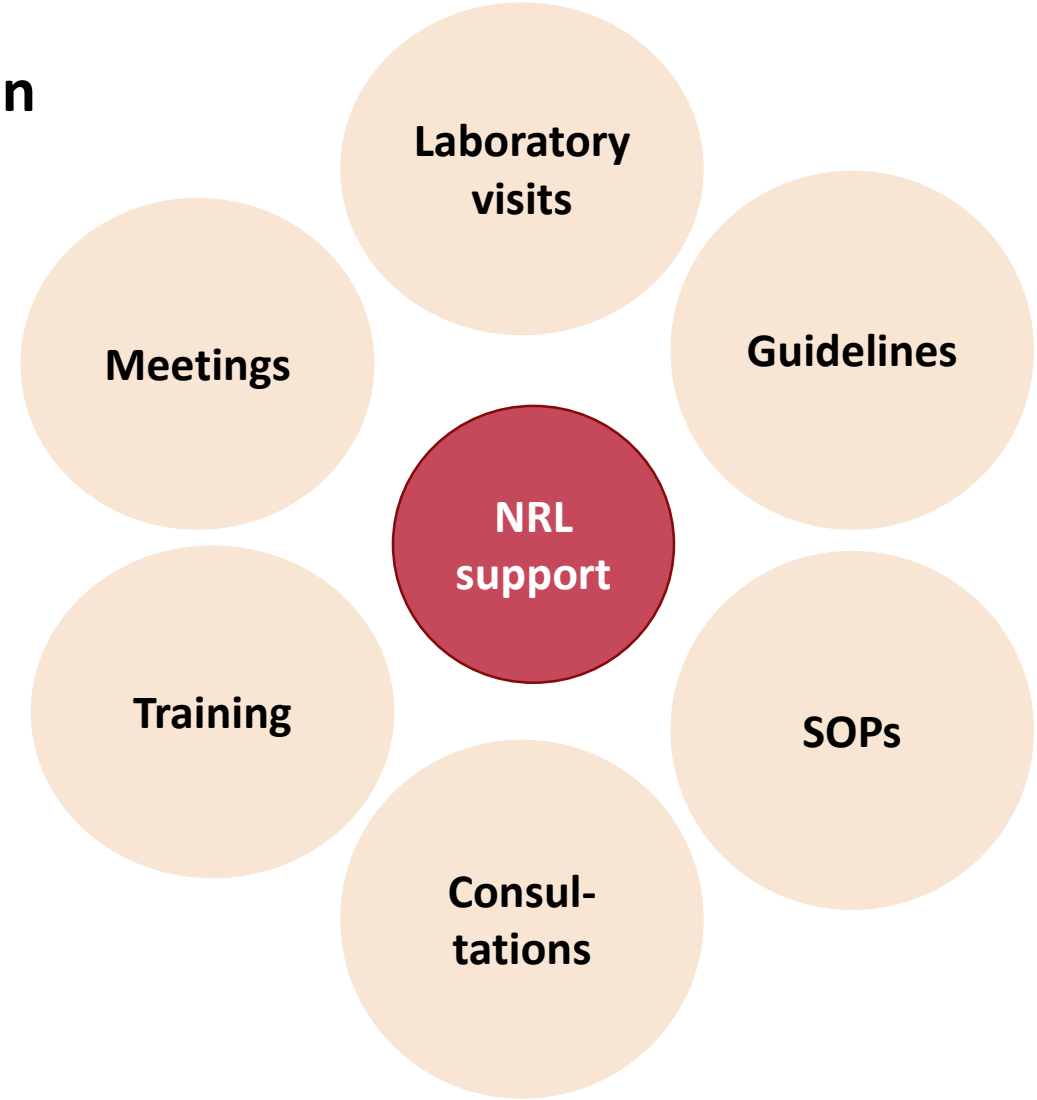
- **Methods for detection and characterisation**
  - More efficient/rapid
  - Harmonisation
- **Quality assurance and control**
  - Control materials
  - EQAs
  - Accreditation
- **Storage and referral**
  - Positive samples/isolates
  - Data



Quiz

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In which areas of support to regional and local laboratories you need more detailed guidance from FWD AMR-RefLabCap?