

WHO experience on antimicrobial resistance data sharing and analysis for policy-making in the European region

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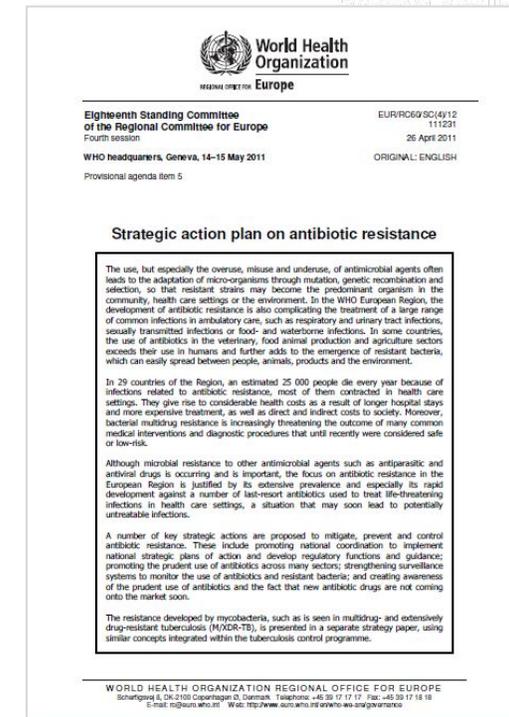
The 1st Regional Antimicrobial Resistance Data Sharing and Analysis (RADSA) Virtual Workshop – South Asia

European strategic action plan on antibiotic resistance (2011 – 2022)

WHO European action plan adopted by all 53 Member States

Recognizing

- AMR neglected in many countries of the region
- No systematic AMR surveillance in large part of the Region
- Need for intersectoral coordination
- International spread through travel and trade
- Need for international standards and data sharing



Surveillance in Europe

Antimicrobial Consumption



2001



ESAC

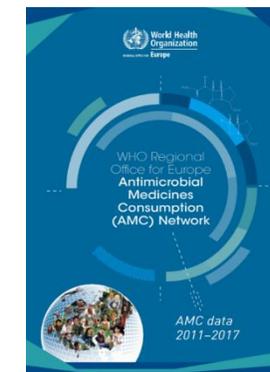
2011



ESAC-Net



2011



WHO AMC network

Surveillance in Europe

Antimicrobial Resistance



1998



EARSS

2010



World Health Organization
EARS-Net



2012

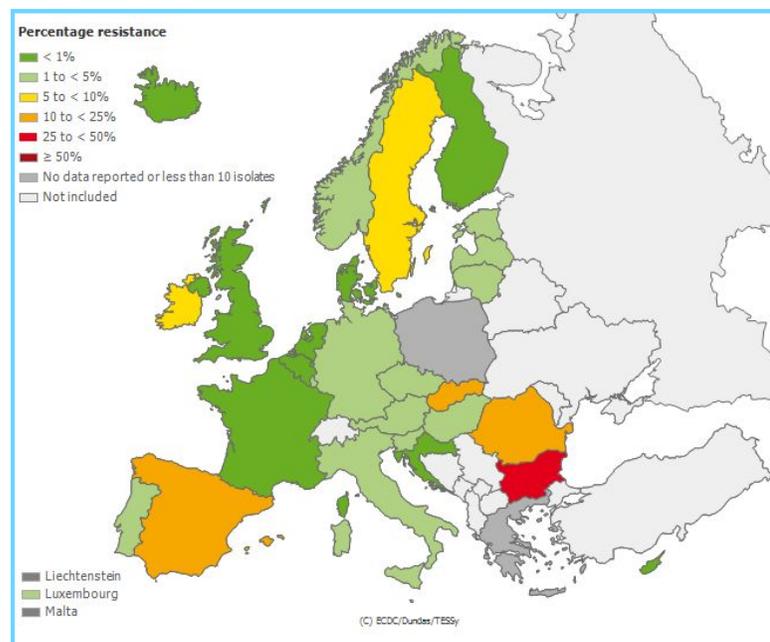


CAESAR network



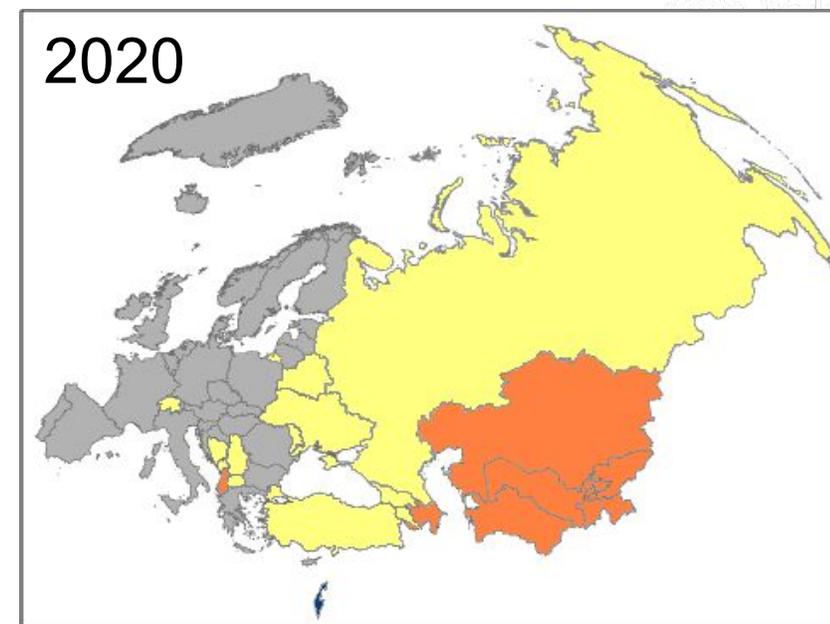
Expanding AMR surveillance throughout Europe

European Antimicrobial Resistance Surveillance Network (EARS-Net)



European Centre for Disease Prevention and Control

Central Asian and European Surveillance of AMR (CAESAR)



World Health Organization Regional Office for Europe

- Countries submitting data to CAESAR
- Countries building capacity for CAESAR participation
- Countries invited for CAESAR participation
- Countries participating in EARS-Net

Implementation activities

Training/capacity building

- Standardized laboratory methods
- Data management and analysis

Resources

- Protocols, templates, tools, videos
- Consultants/experts

Research/projects

Surveillance network activities



AMR surveillance data in the European region

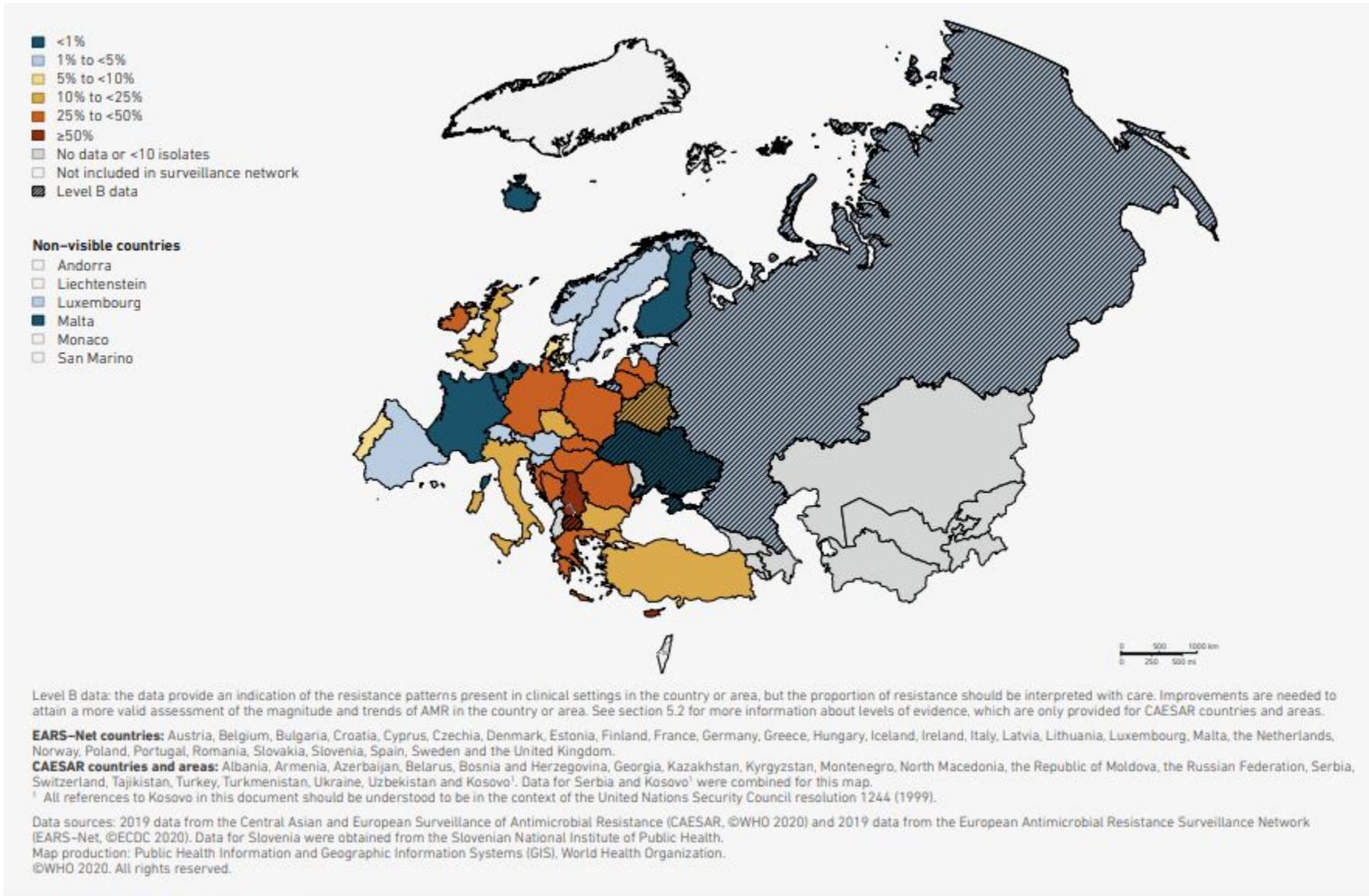


Fig. 2.10 Percentage of invasive *E. faecium* isolates resistant to vancomycin in the WHO European Region (EARS-Net and CAESAR), by country or area, 2019

Challenges

Sampling issues

- Low blood sampling frequency
- After repeated treatment failure
- Limited laboratory capacity for AST*
- Clinical microbiology not valued

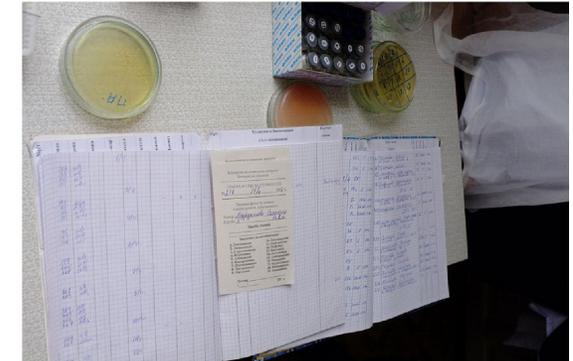
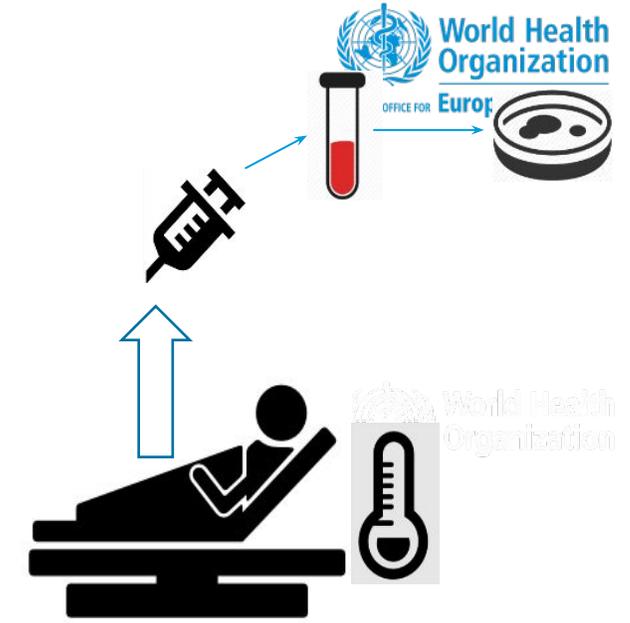
Data issues

- Paper-based records
- No laboratory information system

Quality issues

- Experience and expertise
- Availability of materials

* Antimicrobial susceptibility testing



Lessons learned

Issues

- AMR surveillance of blood stream infections is challenging in low-and middle-income countries
- No samples ► no data ► no surveillance
- Limited laboratory capacity is preventing routine testing
- Limited demand is hampering access to reasonably priced materials

Lessons

- AMR surveillance of urinary tract infections is easier, cheaper and can provide similar trends over time
- Start with increasing the sample flow
- Lab capacity-building is crucial to improve quality and turn-around time
- Create demand by stimulating routine sampling

Proof-of-Principle (PoP) projects

Objectives:

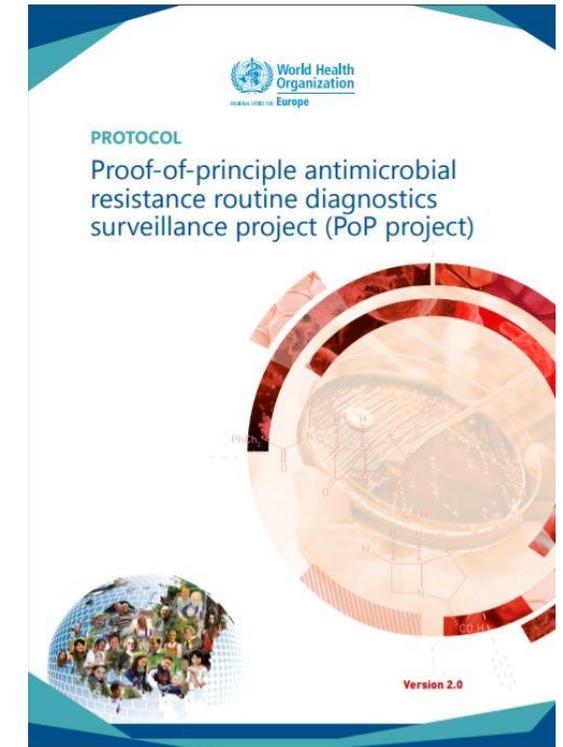
To stimulate routine sampling of patients

- Treatment decision-support

To improve quality of diagnostic support

- Capacity building in hospital laboratories
- Capacity building of National Reference Laboratory
- Improve communication and turn-around time

To initiate AMR surveillance



Lessons learned

Issues

- Quality of surveillance data may vary
 - Coverage
 - Sampling
 - Analysis
- Data only improves if used

Lessons

- Important to indicate quality of surveillance data in publications
 - Reader
 - Policy-makers
- Data should be published with appropriate disclaimer ... shortfalls ► focus areas

CAESAR data - Levels of evidence

Level A

- Data is representative of target population
- Laboratory results seem reliable

Level B

- Data is not representative of target population
- Laboratory results seem reliable

Level C

- Data is not representative of target population
- Laboratory results seem not entirely reliable



CAESAR data - Levels of evidence

		Armenia	Belarus	Bosnia and Herzegovina	Georgia	Montenegro	North Macedonia	Russian Federation	Serbia	Switzerland	Turkey	Ukraine	Kosovo ^a
Level of evidence		B	B	A	B	B	B	B	A	A	A	B	B
Surveillance system	Geographic coverage	+/-	+	+	+	+	+	+	+	+	+	+/-	+/-
	Hospital types	+/-	+	+	+	+	+	-	+	+	+	-	-
Sampling procedures	Selection of patients	-	-	+/-	-	-	-	-	+/-	+	+/-	-	-
	Sample size	-	+	+	-	-	-	+/-	+	+	+	-	-
Laboratory procedures	AST methods	+	+/-	+	+/-	+	+	+	+	+	+	+	+
	AST breakpoints	+	+/-	+	+/-	+	+	+	+	+	+	+	+

Lessons learned

Issues

- Countries have different levels of AMR surveillance capacity
 - Priorities
 - Resources (financial, human, technical)

Lessons

- Capacity-building efforts should be tiered and tailored
 - Awareness and policy dialogue
 - First things first

Phases towards national AMR surveillance

Phase 1

Situation: Limited routine laboratory diagnostics/health system
Support: PoP project/Basic capacity building/Quality Assessment

Phase 2

Situation: No national AMR surveillance, but a basis to built on
Support: Reference Lab support, setting up national AMR network

Phase 3

Situation: National surveillance system in place
Support: Strengthen national AMR surveillance: **CAESAR ► GLASS**

Making progress

More countries in European region able to collect AMR surveillance data

More integration of European surveillance systems

- Strong coordination between ECDC and WHO/Europe
- Representation in each other's coordination groups
- Joint ARHAI meeting(s)
- First full joint EARS-Net/CAESAR report in 2021

Tailored PoP projects to initiate and improve national AMR surveillance

More countries join GLASS to complete the global picture



Acknowledgments



WHO Country Offices

WHO Collaborating Centers

- AMR Epidemiology and Surveillance (NET)
- Capacity Building on AMR Surveillance and Research (RUS)
- Reference and Research on AMR and Healthcare Associated Infections (UNK)
- AMR Containment (SWE)

European Society for Clinical Microbiology and Infectious Diseases

Experts, consultants



Further reading

- [European strategic action plan on antibiotic resistance \(2011\)](#)
- [WHO Regional Office for Europe Antimicrobial Medicines Consumption \(AMC\) Network. AMC data 2011–2017\(2020\)](#)
- [Central Asian and European Surveillance of Antimicrobial Resistance. Annual report 2020](#)
- [Proof-of-principle antimicrobial resistance routine diagnostics surveillance project \(PoP project\)](#)
- [Central Asian and European Surveillance of Antimicrobial Resistance CAESAR Manual Version 3, 2019](#)
- [EUCAST instruction videos](#)



Thank you!



**World Health
Organization**

REGIONAL OFFICE FOR
Europe

ECDC – WHO/Europe Joint Meeting of the Antimicrobial Resistance,
Antimicrobial Consumption and Healthcare-Associated Infections Networks

Copenhagen, Denmark 13-15 June 2018