



EULabCap country profile

CZECH REPUBLIC

Report on 2015 data

Version 1, 15 December 2016

Executive summary for Czech Republic

What are the key questions of EULabCap survey?

Does the EU/EEA public health microbiology system possess the critical capabilities and adequate level of core capacity to provide timely and reliable information on pathogen detection and characterisation for effective infectious disease prevention, alert and control at Member State and EU/EEA level and how does it progress over time?

How well was your country performing in 2015?

Overall, Czech Republic provided data for 100% of the indicators. With an overall EULabCap index of 8.4/10, in 2015 as compared with 8.0 in 2014, data provided by the Czech Republic indicated a high and improving level of capability/capacity for their public health microbiology system.

On the positive side: the Czech Republic showed a high overall performance, as compared with other EU/EEA countries, indicated by scores in the top quartile for the majority of the indicators. For all key diseases surveyed, diagnostic testing guidelines were available at the national level and their clinical use was monitored except for antenatal screening of congenital infections and for diagnostic of *Clostridium difficile* infection. There was indication of excellent implementation of EU standards for antimicrobial susceptibility testing, and very good provision of reference diagnostic confirmation services, antimicrobial resistance monitoring and strong networking capacity for laboratory-based surveillance at national level.

For attention: Clinical laboratory licencing and quality accreditation schemes could be strengthened. Laboratory participation in EU disease network activities could be further improved.

How did your country progress compared to previous years?

Improvement: In 2015, the diagnostic testing capacity to confirm new pulmonary tuberculosis cases by culture and drug susceptibility testing improved. National reference laboratories had full access to BSL3 facilities for their operations and participated in the European Gonococcal Antimicrobial Surveillance Programme (Euro-GASP). Although no operational contact point for microbiology was nominated for *Listeria monocytogenes* isolates typing, Czech Republic participated in FWD Urgent Inquiries (UI).

Country profile report on EU Laboratory Capability Monitoring System (EULabCap)

Purpose of the EULabCap monitoring system

The ECDC strategic multi-annual programme (2014–2020) aims to strengthen the capability and capacity of the EU public health microbiology system to provide the timely and reliable information that underpins infectious threat detection, assessment and surveillance at Member State and EU level for effective prevention and control of infectious diseases [1]. To ascertain how well this is delivered, ECDC, in close collaboration with the National Microbiology Focal Points (NMFP) and the Advisory Forum, has developed the EULabCap system for monitoring key public health microbiology capabilities and capacity for surveillance and epidemic preparedness. The EULabCap EU/EEA reports [2, 3] and the EULabCap country profile reports aim to help policymakers identify possible areas for action. To support this, individual countries may ensure the dissemination of their EULabCap country profile reports.

What is this report about?

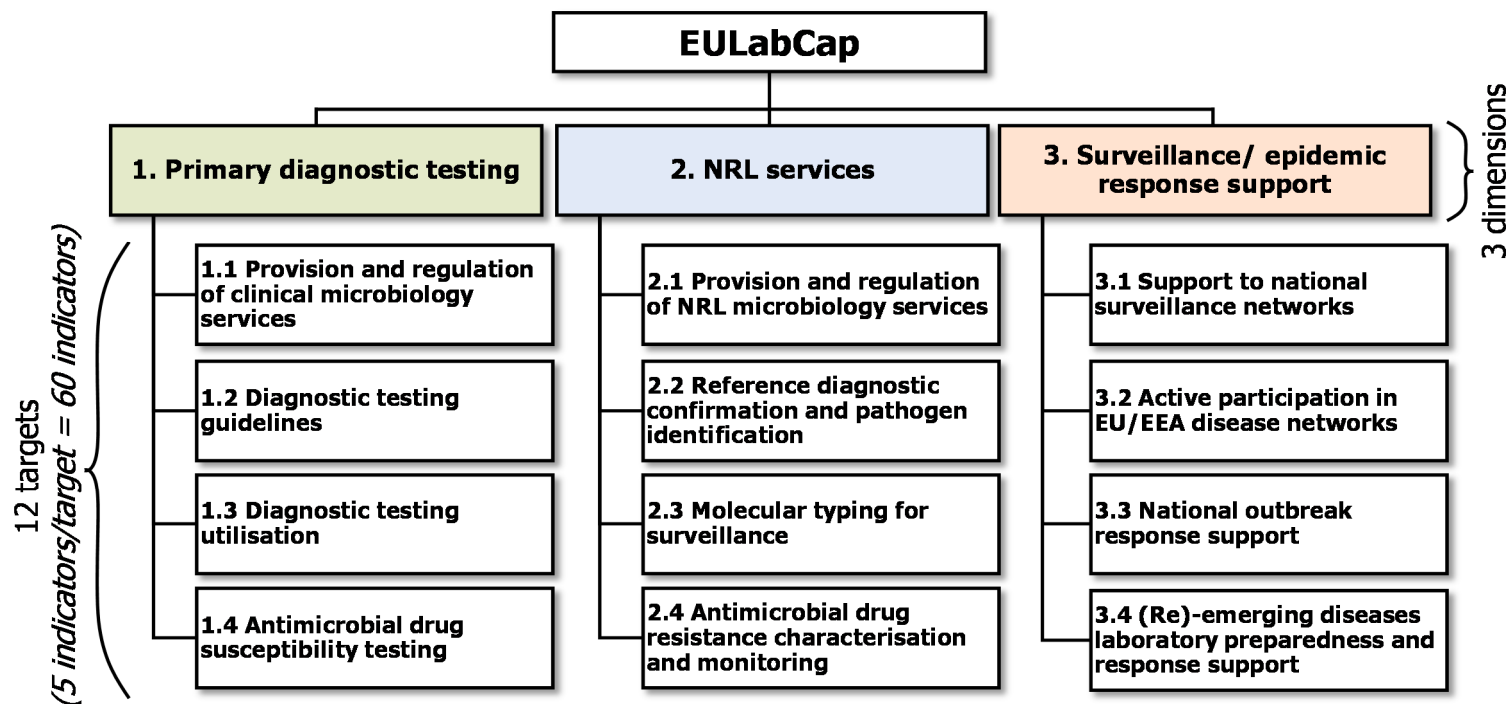
This EULabCap country profile report compares the 2015 indicator scores of Czech Republic with those achieved in previous surveys and benchmarks Czech Republic in comparison to all the EU/EEA countries in 2015. The main areas with low 2015 scores, or score changes between 2013 and 2015, are identified to inform national authorities on the possible impact of capacity strengthening actions and health system reforms.

EULabCap survey methodology

Survey tool

The EULabCap monitoring tool combines 60 technical indicators grouped into 12 targets which are distributed across the following three public health microbiology system dimensions: primary diagnostic testing, national microbiology reference laboratory (NRL) services and laboratory-based surveillance and epidemic response support (Figure 1) [2].

Figure 1. Structural overview of the EULabCap indicators as grouped by dimension and target.



Data collection

A mixed method was used for data collection and scoring. To minimise the data reporting burden for the Member States, information for 19 indicators was retrieved by ECDC from data sets accessible in The European Surveillance System (TESSy) and EU disease network reports. The NMFP used a questionnaire to collect information from their country for the remaining 41 indicators. Data underwent a round of validation the NMFP [2].

Scoring system

Each indicator was scored at three levels: low (0, "No or limited capability/capacity"), intermediate (1, "Partial capability/ capacity", e.g. below the EU target, or partial compliance) and high (2, "Complete capability/ capacity", e.g. EU target reached, or high compliance). Indicators for which data were not available from or not applicable (NA) to the country were not scored [2].

Data analysis and interpretation

Aggregated EULabCap indices were calculated for each target and dimension as the mean of component indicator scores, converting index values on a scale of 0–10. Overall EULabCap system indices per country were graded qualitatively at three performance levels: low (0 to 5.9), intermediate (6.0 to 7.9) and high (8.0 to 10).

Data completeness was calculated as a percentage of missing data (NA) for each indicator per country. As NA values were not included in the calculation of the target index, the performance estimates for these targets can be biased towards either under-, or over-estimation of performance. Trends over time should be interpreted with caution for indicators that underwent minor modifications between surveys (see footnotes to tables 1-3).

References

1. European Centre for Disease Prevention and Control. ECDC strategic multi-annual programme 2014–2020. Stockholm: ECDC; 2014.
2. European Centre for Disease Prevention and Control. EU Laboratory Capability Monitoring System (EULabCap) – Report on 2013 survey of EU/EEA country capabilities and capacities. Stockholm: ECDC, 2016.
3. European Centre for Disease Prevention and Control. EU Laboratory Capability Monitoring System (EULabCap) – Report on 2014 survey of EU/EEA country capabilities and capacities. Stockholm: ECDC, 2016.

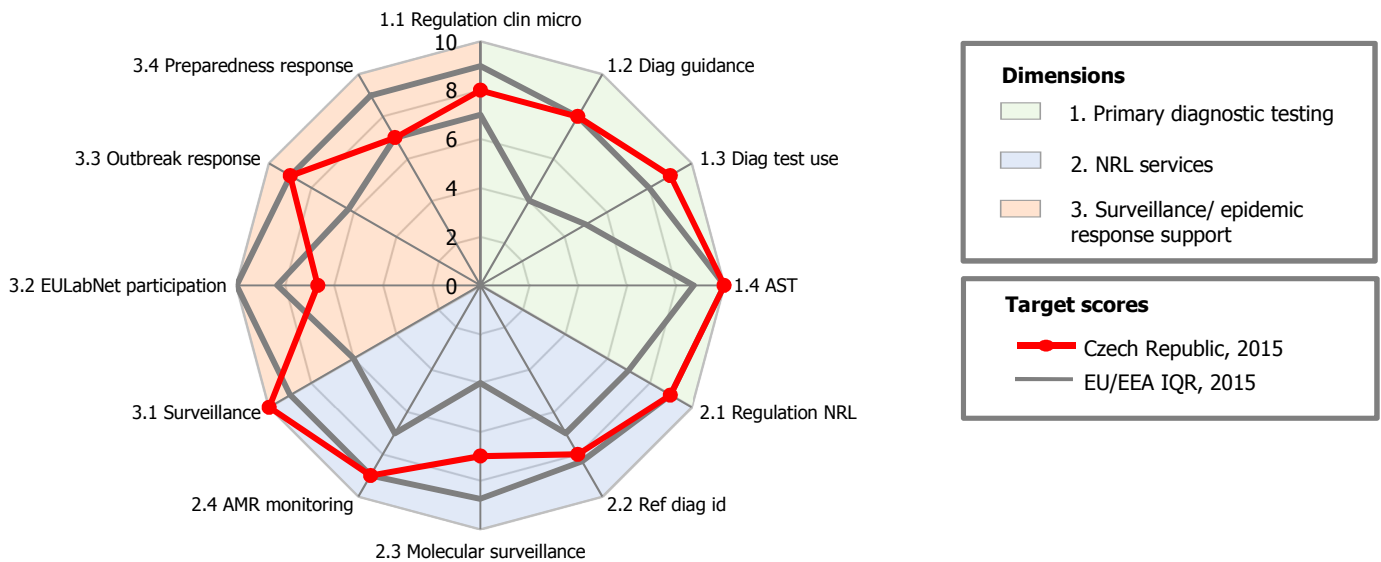
For more information

Visit our website: <http://ecdc.europa.eu/en/healthtopics/microbiology/microbiology-activities/laboratory-capability/Pages/default.aspx>, or contact us at: EU.LabCap@ecdc.europa.eu.

Results

Your country scores by target compared to EU/EEA countries in 2015. The radar graph in Figure 2 shows the 2015 survey scores for Czech Republic (in red) and the EU/EEA interquartile range (IQR, in grey) for each of the 12 targets within the 3 EULabCap dimensions.

Figure 2. EULabCap 2015 scores by target for your country as compared to EU/EEA.



Your country indicator scores and distribution for all EU/EEA countries in 2015, by system dimension. The three figures (Figures 3-5) show the scores for Czech Republic in 2015 in comparison with the EU/EEA score distribution by dimension (Figure 3, "Primary diagnostic testing", Figure 4, "National Reference Laboratory Services", and Figure 5, "Surveillance and epidemic response support"). Each bar graph displays the total number of countries by indicator score. The scores for Czech Republic for the 60 indicators are displayed in the adjacent column.

Your country target and indicator scores by survey year (2013-15) and system dimension.

The three tables (Tables 1-3) show the mean scores for Czech Republic in 2013, 2014 and 2015 for targets and indicators by dimension. To facilitate comparison with the EU/EEA mean, country indicators values were converted to a maximum of 10 (i.e. score 0=0, score 1=5, and score 2=10).

Figure 3. Dimension "Primary diagnostic testing" – indicator score distribution for EU/EEA countries and for Czech Republic, 2015.

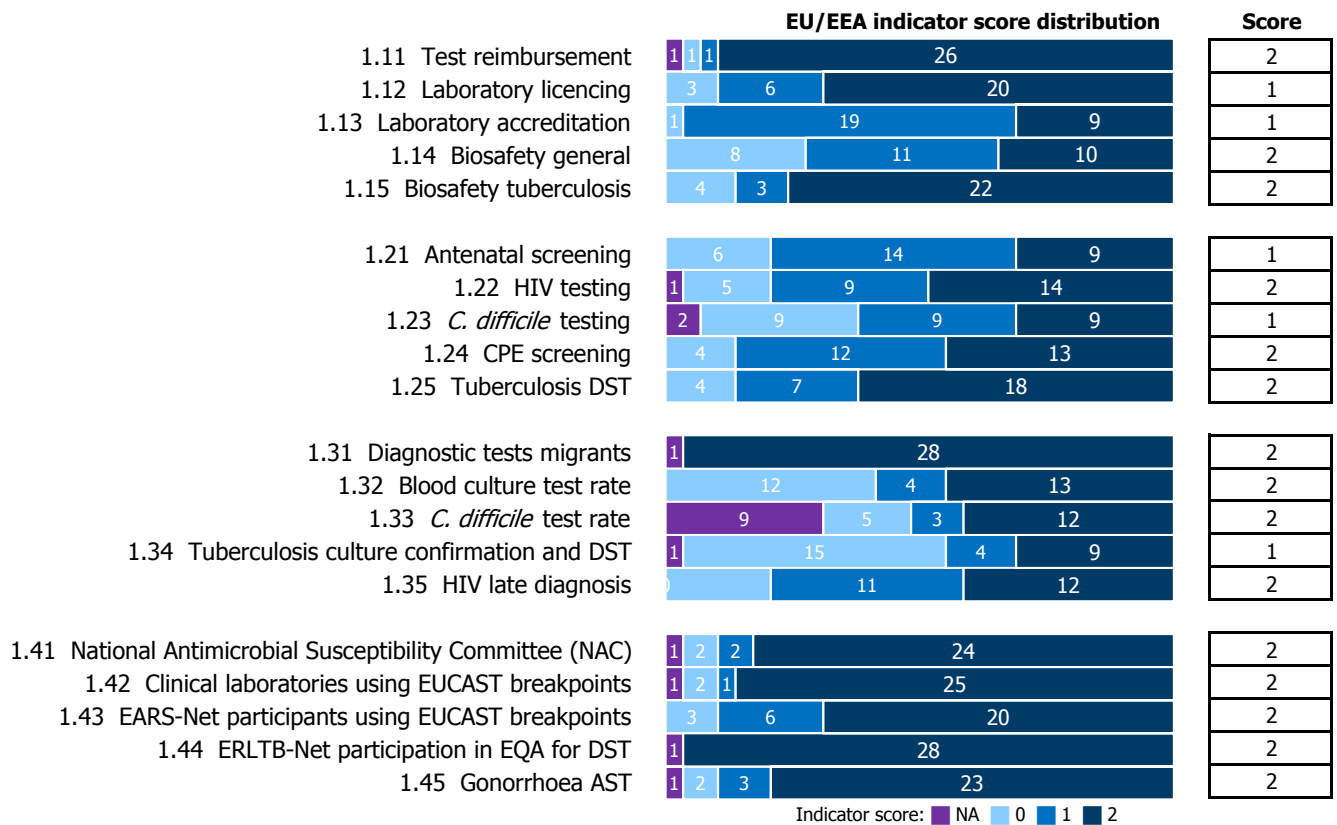


Table 1. Dimension "Primary diagnostic testing" – indicator scores and mean target scores for Czech Republic by year, 2013 - 2015.

Dimension 1 - Primary diagnostic testing	Mean 2013	Mean 2014	Mean 2015
Target 1.1 Provision and regulation of clinical microbiology services	7.0	8.0	8.0
1.11 Test reimbursement	10.0	10.0	10.0
1.12 Laboratory licencing	5.0	5.0	5.0
1.13 Laboratory accreditation	5.0	5.0	5.0
1.14 Biosafety general	10.0	10.0	10.0
1.15 Biosafety tuberculosis	5.0	10.0	10.0
Target 1.2 Diagnostic testing guidelines	8.0	8.0	8.0
1.21 Antenatal screening	5.0	5.0	5.0
1.22 HIV testing	10.0	10.0	10.0
1.23 <i>C. difficile</i> testing	5.0	5.0	5.0
1.24 CPE screening	10.0	10.0	10.0
1.25 Tuberculosis DST	10.0	10.0	10.0
Target 1.3 Diagnostic testing utilisation	5.0	8.0	9.0
1.31 Diagnostic tests migrants	10.0	10.0	10.0
1.32 Blood culture test rate	5.0	10.0	10.0
1.33 <i>C. difficile</i> test rate	0.0	10.0	10.0
1.34 Tuberculosis culture confirmation and DST	0.0	0.0	5.0
1.35 HIV late diagnosis	10.0	10.0	10.0
Target 1.4 Antimicrobial drug susceptibility testing	8.0	10.0	10.0
1.41 National Antimicrobial Susceptibility Committee (NAC)	10.0	10.0	10.0
1.42 Clinical laboratories using EUCAST breakpoints	10.0	10.0	10.0
1.43 EARS-Net participants using EUCAST breakpoints	10.0	10.0	10.0
1.44 ERLTB-Net participation in EQA for DST	10.0	10.0	10.0
1.45 Gonorrhoea AST	0.0	NA	10.0

Note

Indicator 1.33. The score was calculated by ECDC based on raw data in 2014 and 2015, and by self-scoring in 2013.

Figure 4. Dimension "National Reference Laboratory services" – indicator score distribution for EU/EEA countries and for Czech Republic, 2015.

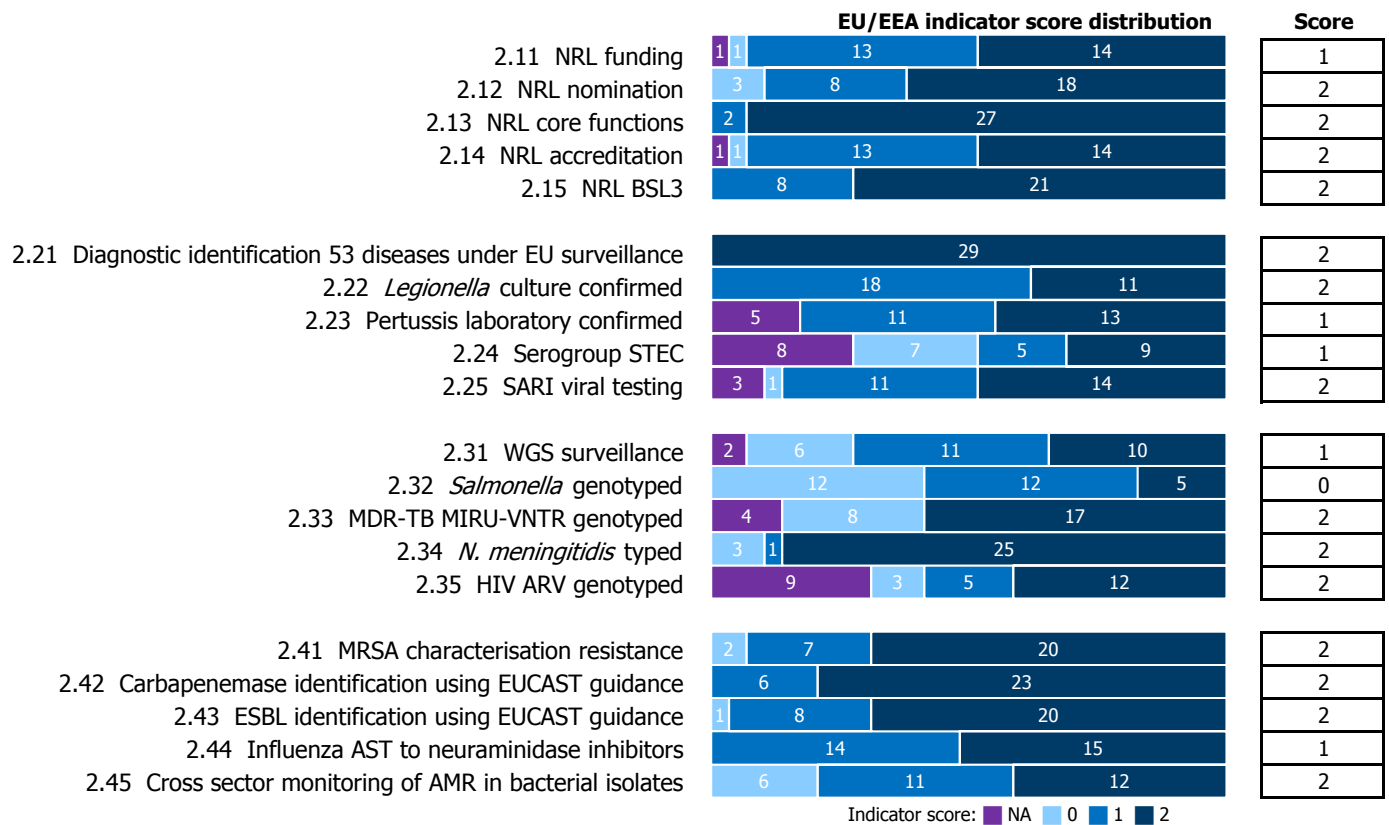


Table 2. Dimension "National Reference Laboratory services" - indicator scores and mean target scores for Czech Republic by year, 2013 -2015.

Dimension 2 - National Reference Laboratory services	Mean 2013	Mean 2014	Mean 2015
Target 2.1 Provision and regulation of NRL microbiology services	8.0	8.0	9.0
2.11 NRL funding	5.0	5.0	5.0
2.12 NRL nomination	10.0	10.0	10.0
2.13 NRL core functions	10.0	10.0	10.0
2.14 NRL accreditation	10.0	10.0	10.0
2.15 NRL BSL3	5.0	5.0	10.0
Target 2.2 Reference diagnostic confirmation and pathogen identification	9.0	8.0	8.0
2.21 Diagnostic identification 53 diseases under EU surveillance	5.0	10.0	10.0
2.22 Legionella culture confirmed	10.0	10.0	10.0
2.23 Pertussis laboratory confirmed	10.0	5.0	5.0
2.24 Serogroup STEC	10.0	5.0	5.0
2.25 SARI viral testing	10.0	10.0	10.0
Target 2.3 Molecular typing for surveillance	7.0	7.0	7.0
2.31 WGS surveillance	0.0	5.0	5.0
2.32 Salmonella genotyped	NA	0.0	0.0
2.33 MDR-TB MIRU-VNTR genotyped	NA	10.0	10.0
2.34 N. meningitidis typed	10.0	10.0	10.0
2.35 HIV ARV genotyped	5.0	10.0	10.0
Target 2.4 Antimicrobial drug resistance characterisation and monitoring	9.0	9.0	9.0
2.41 MRSA characterisation resistance	10.0	10.0	10.0
2.42 Carbapenemase identification using EUCAST guidance	10.0	10.0	10.0
2.43 ESBL identification using EUCAST guidance	10.0	10.0	10.0
2.44 Influenza AST to neuraminidase inhibitors	5.0	5.0	5.0
2.45 Cross sector monitoring of AMR in bacterial isolates	10.0	10.0	10.0

Note

Indicator 2.13. The score was calculated by ECDC based on raw data in 2014 and 2015, and by self-scoring in 2013.

Indicator 2.24. The score calculation formula was modified to include non-typeable STEC strains in the numerator in 2014 and 2015.

The data were collected at national level by the NMFP in 2015 and retrieved as reported to ECDC in 2013-14.

Indicator 2.34. The score calculation formula was modified to include partial typing results in the numerator in 2014 and 2015.

Indicator 2.35. The score was calculated by ECDC based on raw data in 2014 and 2015, and by self-scoring in 2013.

Figure 5. Dimension "Surveillance/epidemic response support" – indicator score distribution for EU/EEA countries and for Czech Republic, 2015.

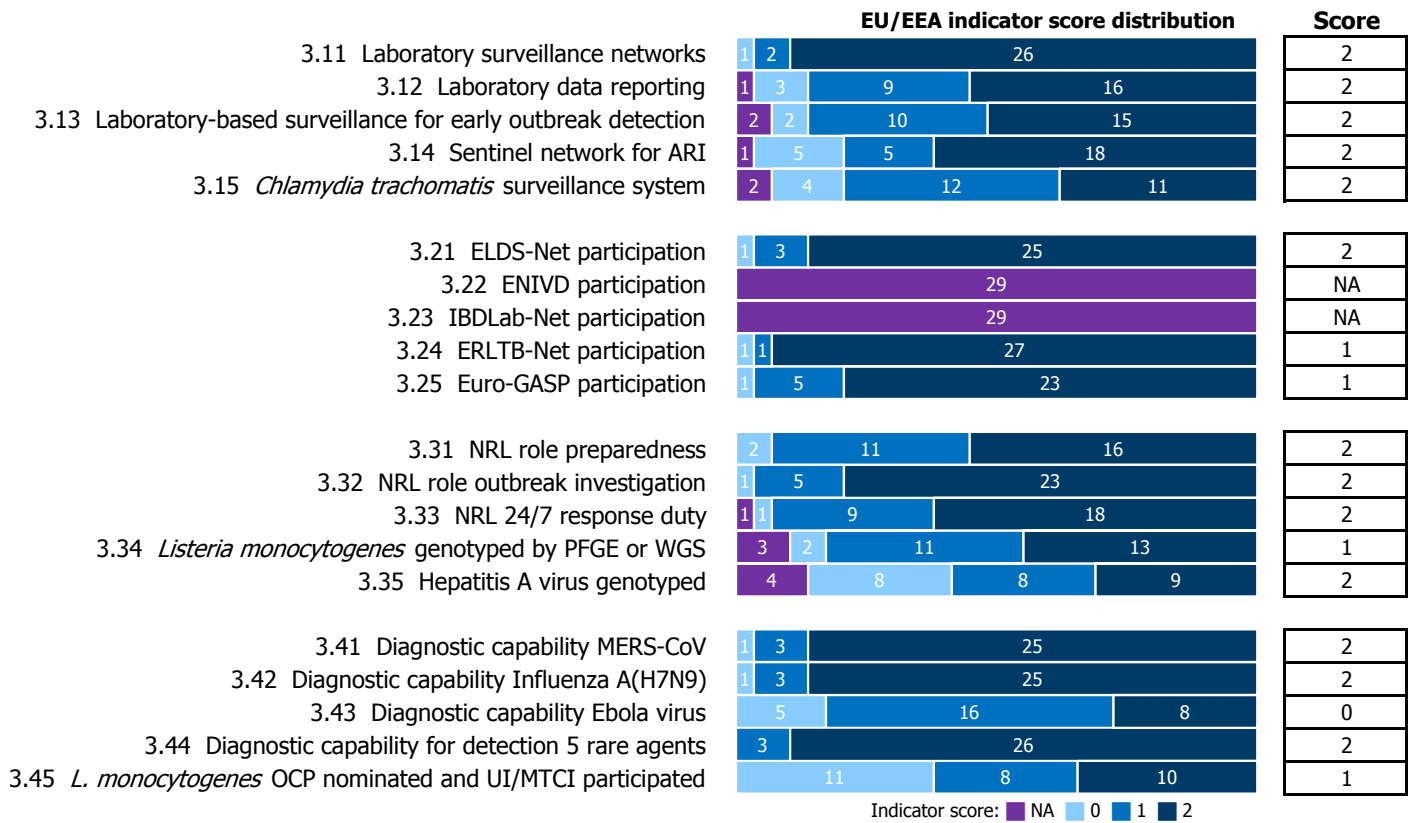


Table 3. Dimension "Surveillance/epidemic response support" – indicator scores and mean target scores for Czech Republic by year, 2013 -2015.

Dimension 3 - Surveillance/epidemic response support	Mean 2013	Mean 2014	Mean 2015
Target 3.1 Support to national surveillance networks	8.0	10.0	10.0
3.11 Laboratory surveillance networks	10.0	10.0	10.0
3.12 Laboratory data reporting	5.0	10.0	10.0
3.13 Laboratory-based surveillance data for early outbreak detection	10.0	10.0	10.0
3.14 Sentinel network for ARI	10.0	10.0	10.0
3.15 <i>Chlamydia trachomatis</i> surveillance system	5.0	10.0	10.0
Target 3.2 Active participation in EU/EEA disease networks	8.0	5.0	6.7
3.21 ELDS-Net participation	10.0	10.0	10.0
3.22 ENIVD participation	10.0	5.0	NA
3.23 IBDLab-Net participation	10.0	NA	NA
3.24 ERLTB-Net participation	10.0	5.0	5.0
3.25 Euro-GASP participation	0.0	0.0	5.0
Target 3.3 National outbreak response support	6.0	9.0	9.0
3.31 NRL role preparedness	5.0	10.0	10.0
3.32 NRL role outbreak investigation	10.0	10.0	10.0
3.33 NRL 24/7 response duty	5.0	10.0	10.0
3.34 <i>Listeria monocytogenes</i> genotyped by PFGE or WGS	0.0	5.0	5.0
3.35 Hepatitis A virus genotyped	10.0	10.0	10.0
Target 3.4 (Re)-emerging diseases laboratory preparedness and response support	6.0	6.0	7.0
3.41 Diagnostic capability MERS-CoV	10.0	10.0	10.0
3.42 Diagnostic capability Influenza A(H7N9)	10.0	10.0	10.0
3.43 Diagnostic capability Ebola virus	0.0	0.0	0.0
3.44 Diagnostic capability for detection 5 rare agents	10.0	10.0	10.0
3.45 <i>Listeria monocytogenes</i> OCP nominated and UI or MTCI participated	0.0	0.0	5.0

Note

Indicator 3.22. This indicator was not applicable in 2015 due to interruption of the scored activities.

Indicator 3.23. This indicator was not applicable in 2014 and 2015 due to interruption of part of the scored activities.

Indicator 3.34. The scoring was modified in 2014 and 2015 to include the higher resolution typing method (WGS).

Indicator 3.44. Due to interruption of the scored activity in 2015, the 2014 data were used as a proxy in the 2015 survey.