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The 5 NRL core functions in the EURGen-RefLabCap laboratories and introduction to the break-out groups

RESULTS FROM THE QUESTIONNAIRE ON PUBLIC HEALTH LABORATORY CAPACITY FOR CRE AND CCRE (SUMMER 2021)

Provision of EU networking and support for public health reference laboratory functions for

AMR in priority healthcare-associated infections

Service contract no. SC 20197401

Funded by the European Union



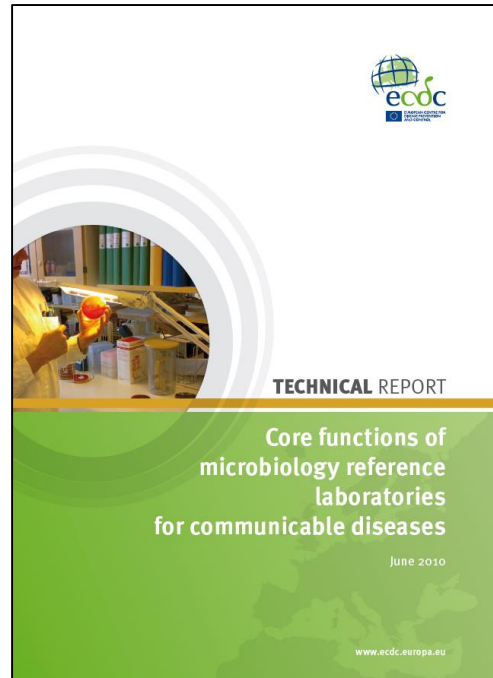
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- ❖ Publicly available reports (by ECDC, WHO, EC, national institutes) on National Reference Laboratory (or equivalent) functions for AMR and more specifically CRE and CCRE were reviewed by SSI/DTU (May 2021)
- ❖ Available up-to-date information differed greatly between countries
- ❖ For many indicators of capacity there was no information available at country-level

- ❖ It was concluded that there was a need to obtain **comparable and up-to-date information** on NRL capacity for CRE and CCRE in the **37 EURGen-RefLabCap countries** as:
 - Many reports dated back from 2018
 - AMR awareness is rising globally and new national policies and strategies have been developed in recent years
 - Implementation of WGS is underway across the world

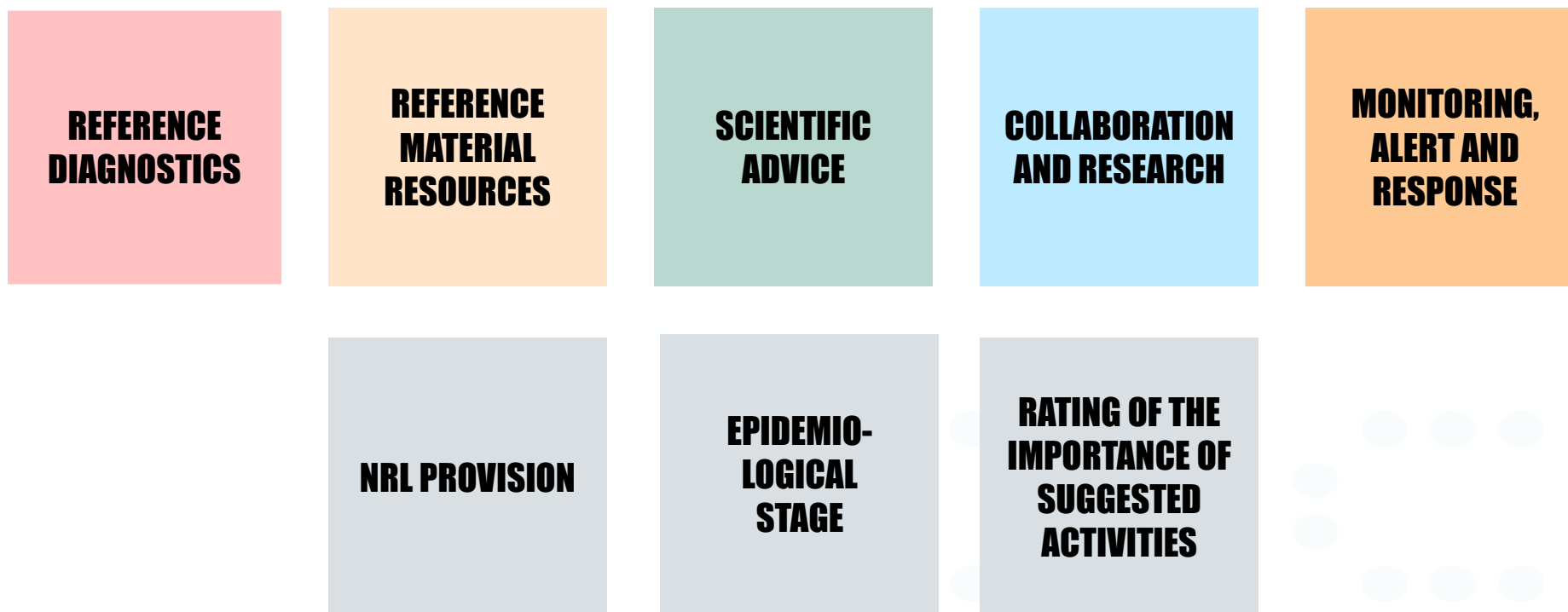


- ❖ The questionnaire was completed by the coordinators in all 37 countries in July-September 2021
- ❖ It addressed the **5 National Reference Laboratory (NRL) core functions** as defined by ECDC:



1. Reference diagnostics*
2. Reference material resources
3. Scientific advice
4. Collaboration and research
5. Monitoring, alert and response*

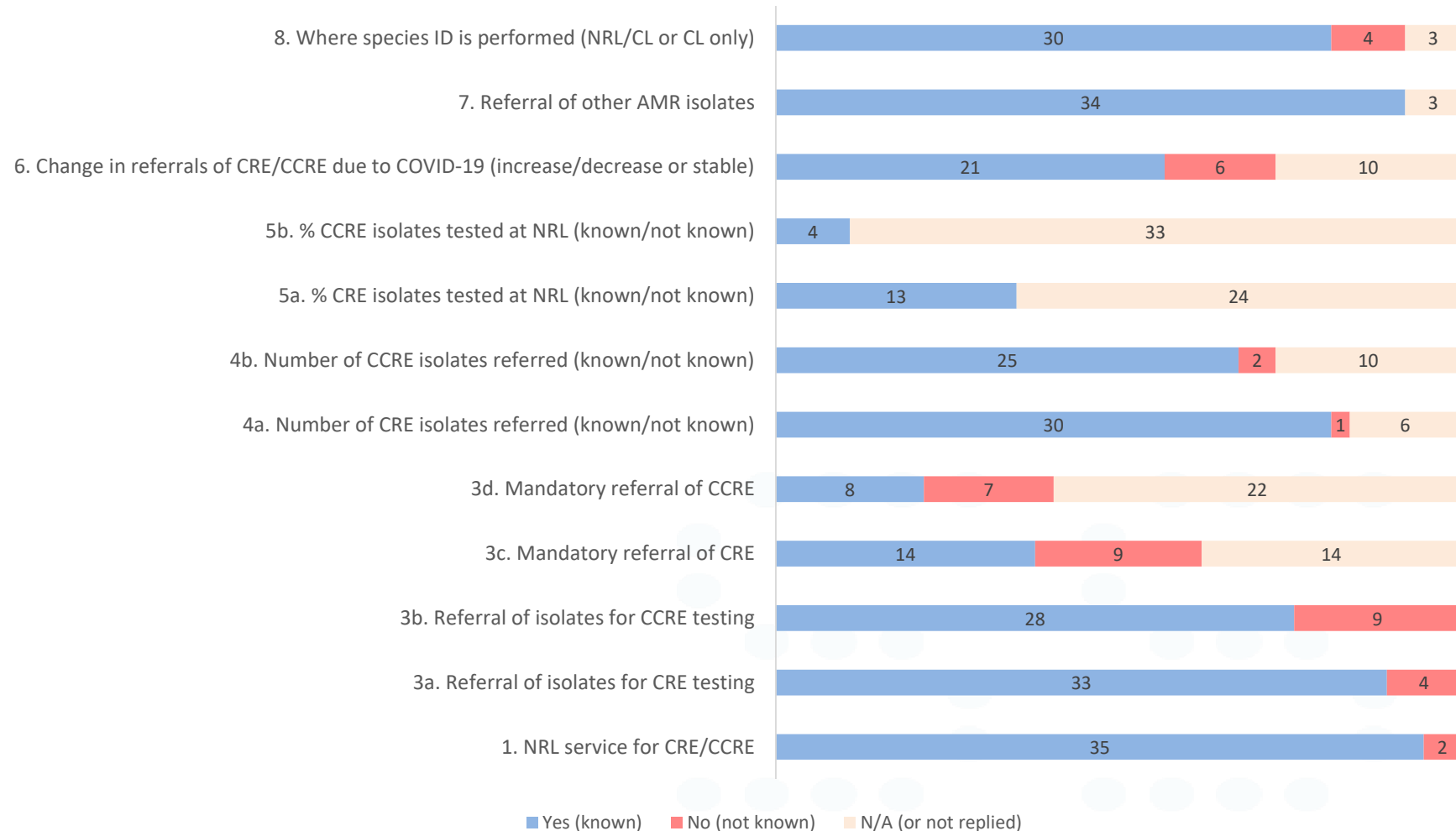
- ❖ Additional information was collected on: the NRL setup, epidemiological stage and rating of training activities
- ❖ Answers were analysed for each country. Particular importance was given to **i) availability of WGS for CRE/CCRE reference diagnostic functions** and **ii) CRE/CCRE monitoring, alert and response set-up in the countries.**



The questions were aimed at **gaining more detailed and up-to-date information on the current situation** in each of the participating countries in order to **plan the activities of the entire network** and to identify a **number of priority countries**

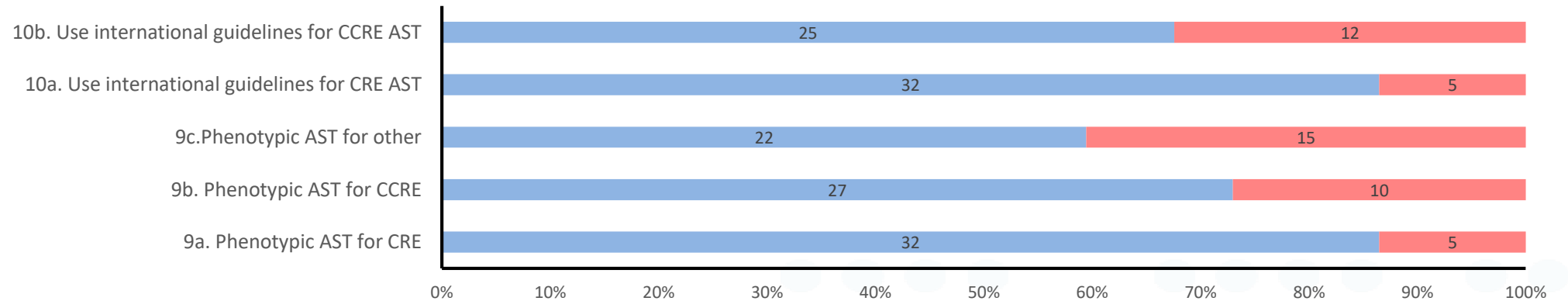
NRL provision and activity

NRL PROVISION



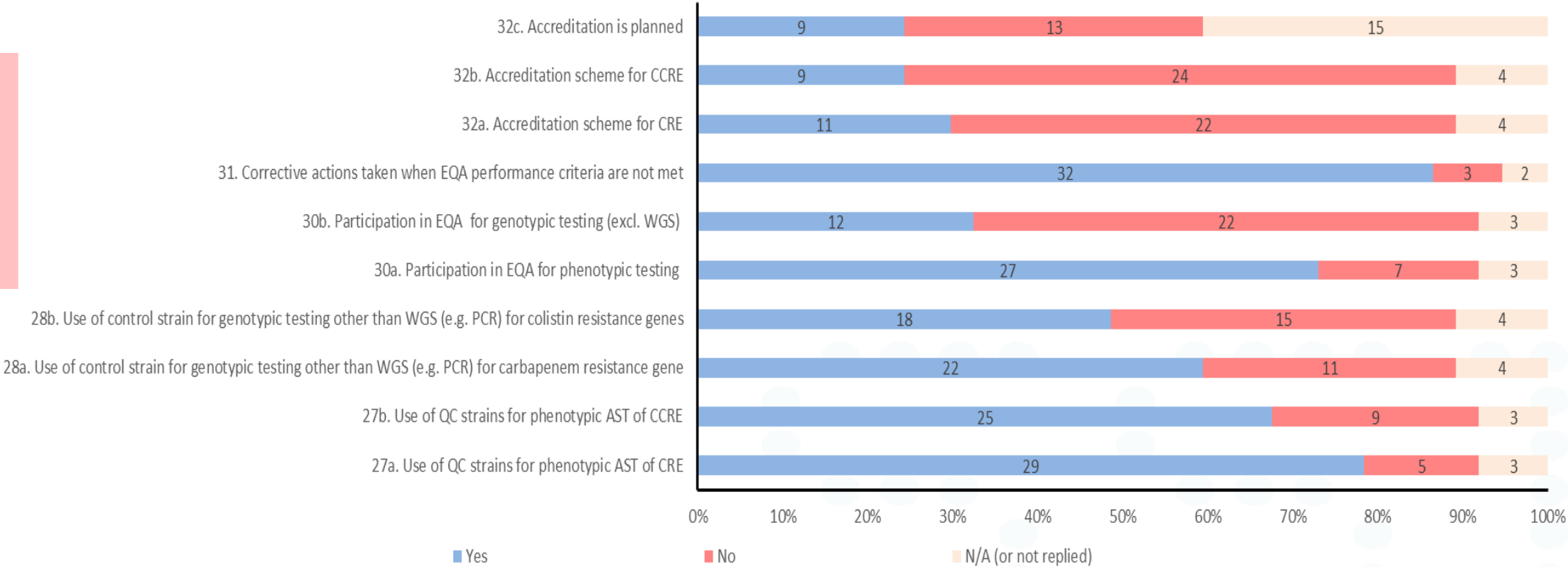
REFERENCE
DIAGNOSTICS

Phenotypic AST



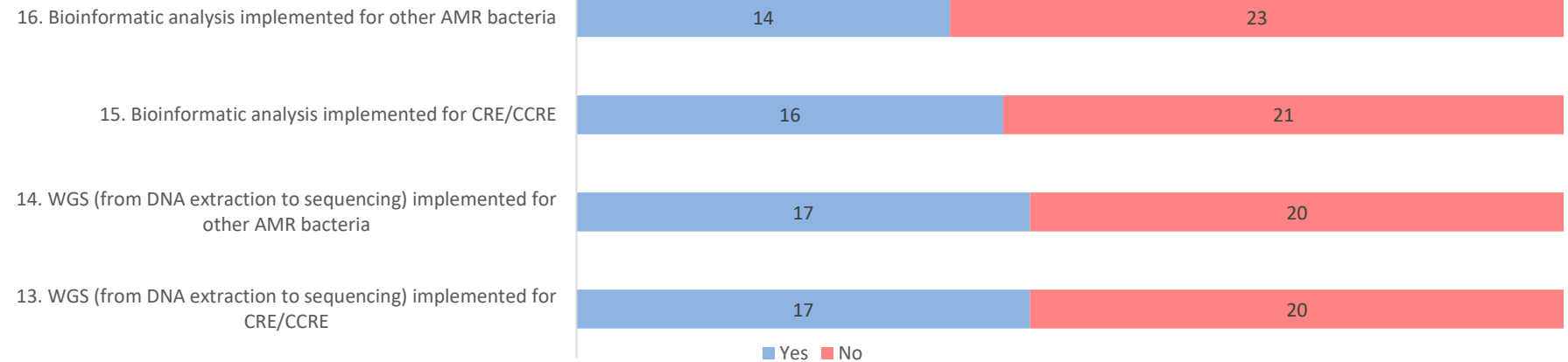
**REFERENCE
DIAGNOSTICS**

NRL commitment to quality assurance



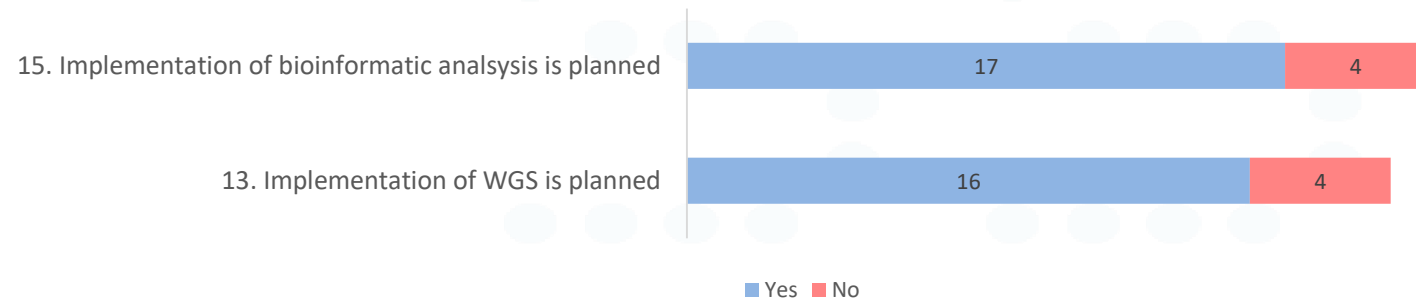
IMPLEMENTATION OF WGS FOR SURVEILLANCE AND OUTBREAK DETECTION

Implementation of WGS for reference purposes



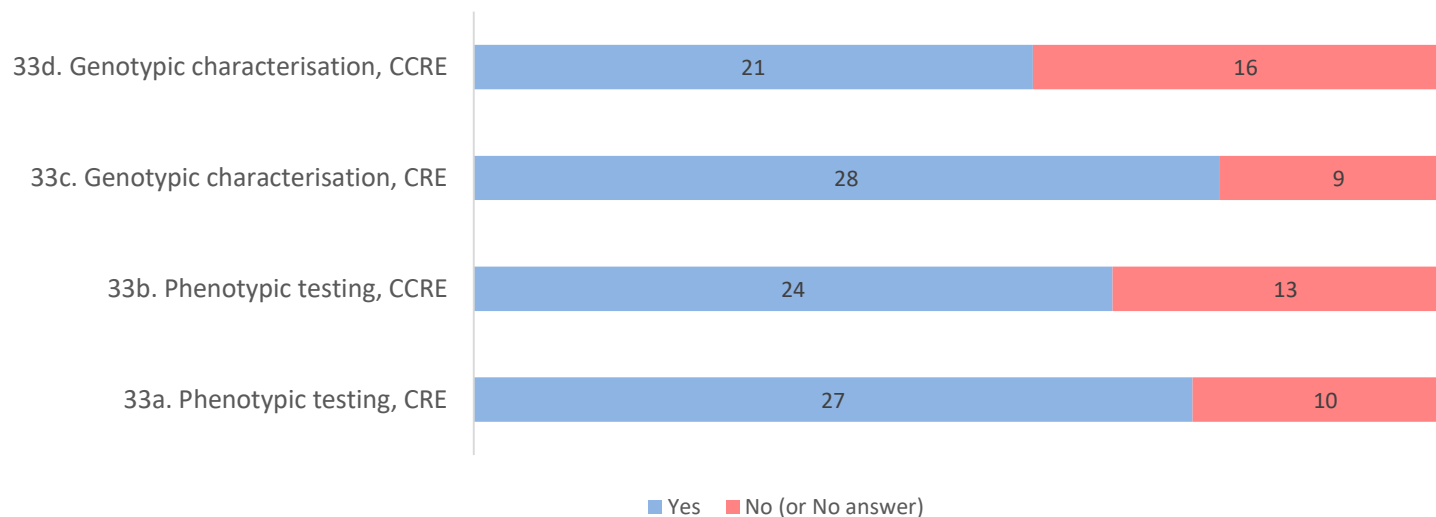
**REFERENCE
DIAGNOSTICS**

Planning to implement WGS and bioinformatics (among those that currently don't use WGS)

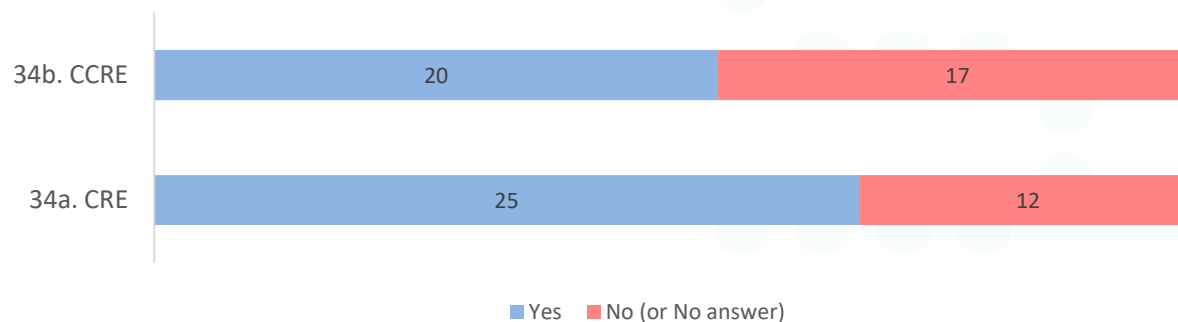


**REFERENCE
MATERIAL
RESOURCES**

The NRL holds and maintains a collection of reference material

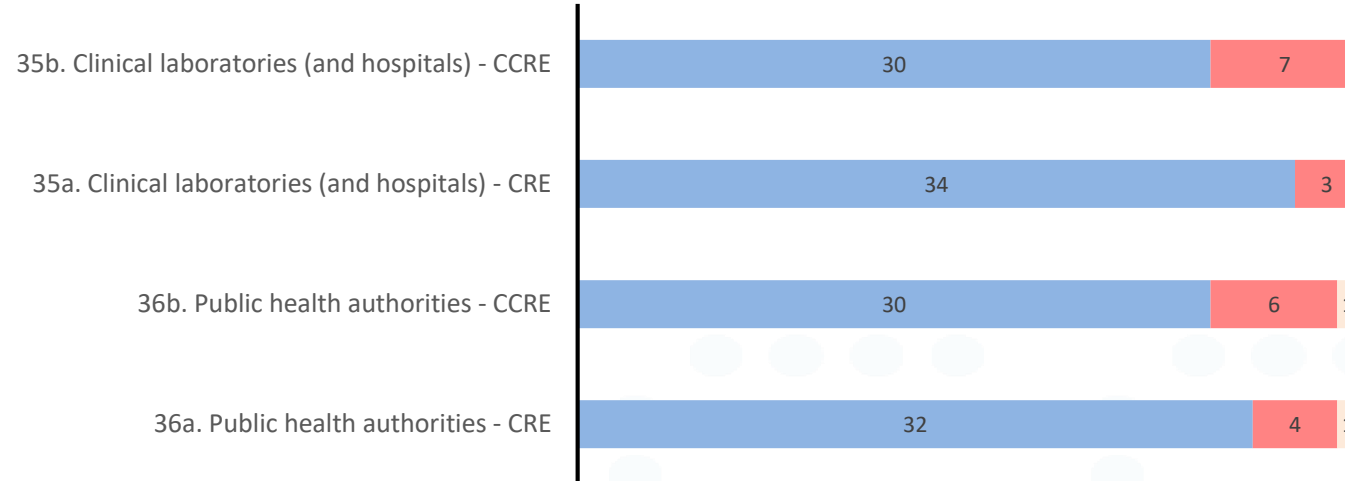


The NRL shares the reference material with the clinical laboratories



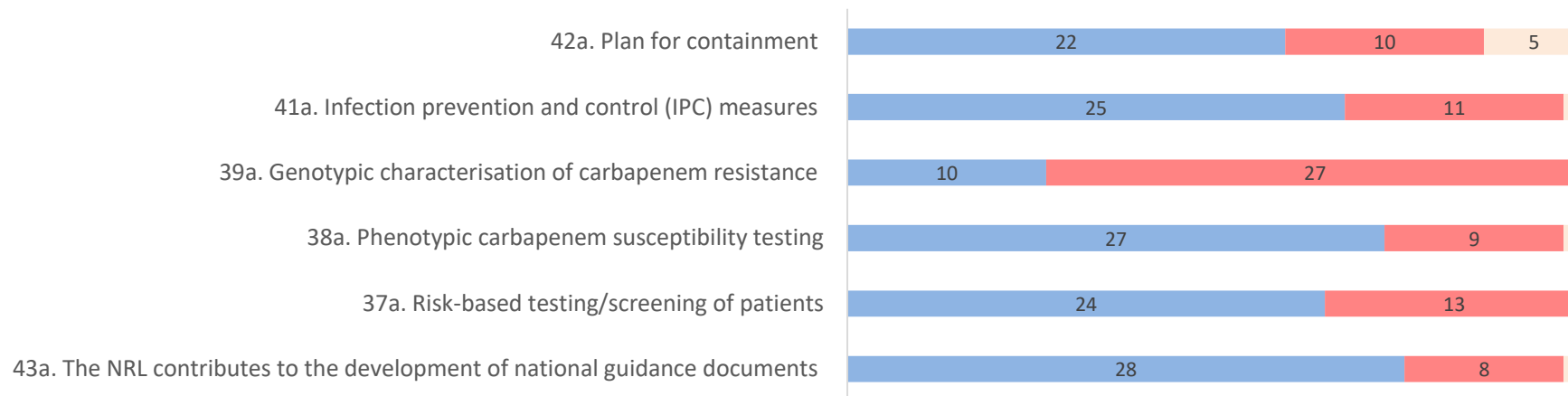
**SCIENTIFIC
ADVICE**

The NRL provides scientific advice for interpretation and relevance of laboratory findings to:

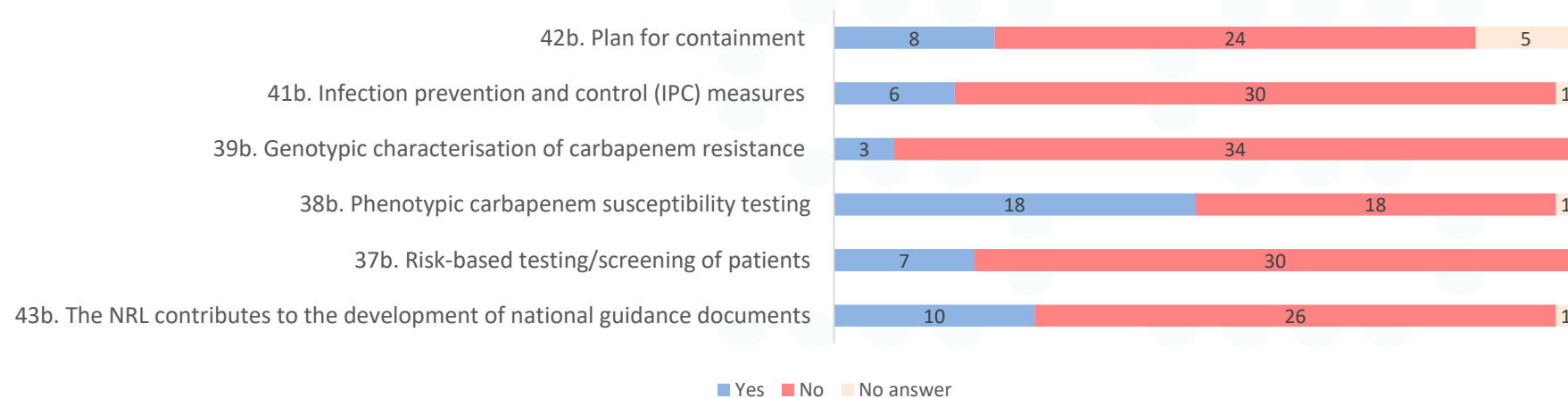


SCIENTIFIC
ADVICE

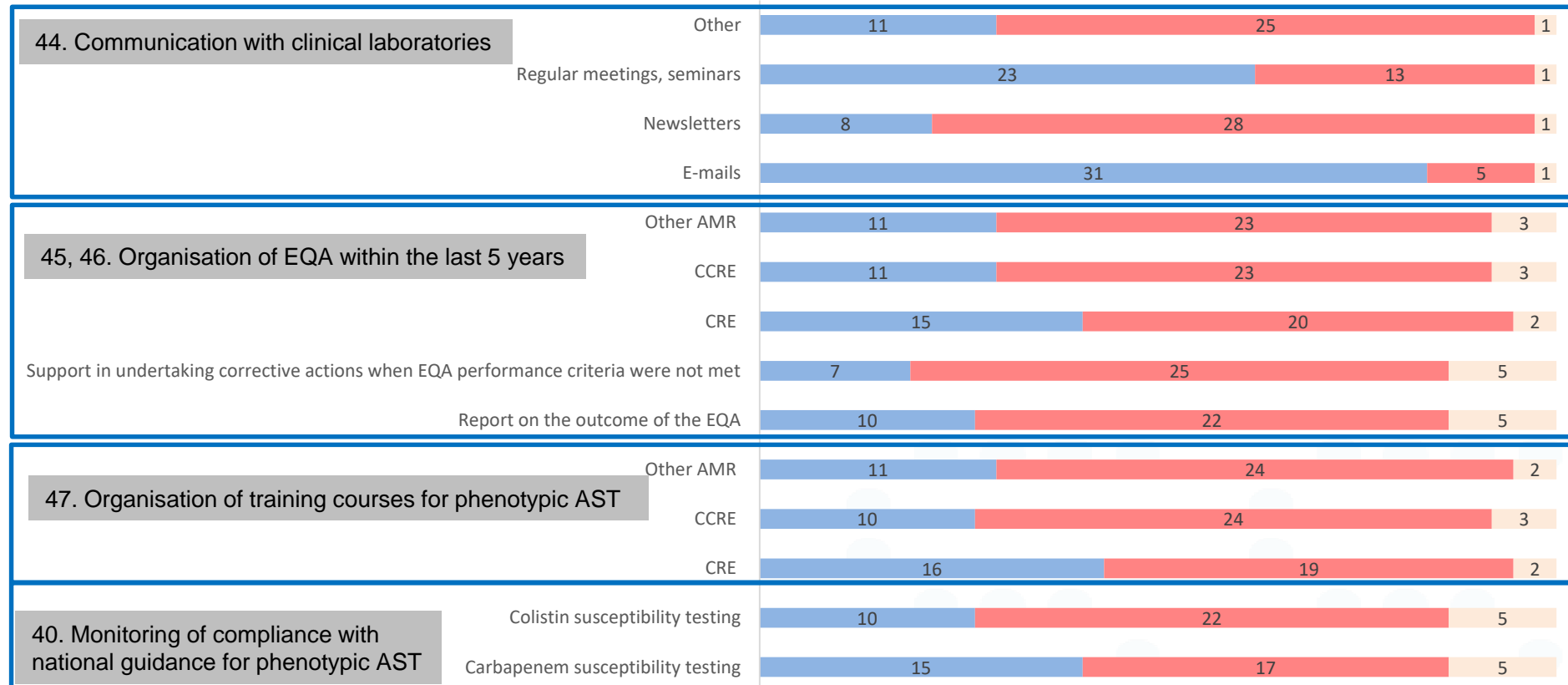
Availability of national guidance documents for CRE



Availability of national guidance documents for CCRE



Activities organised by the NRL for clinical laboratories in the national network

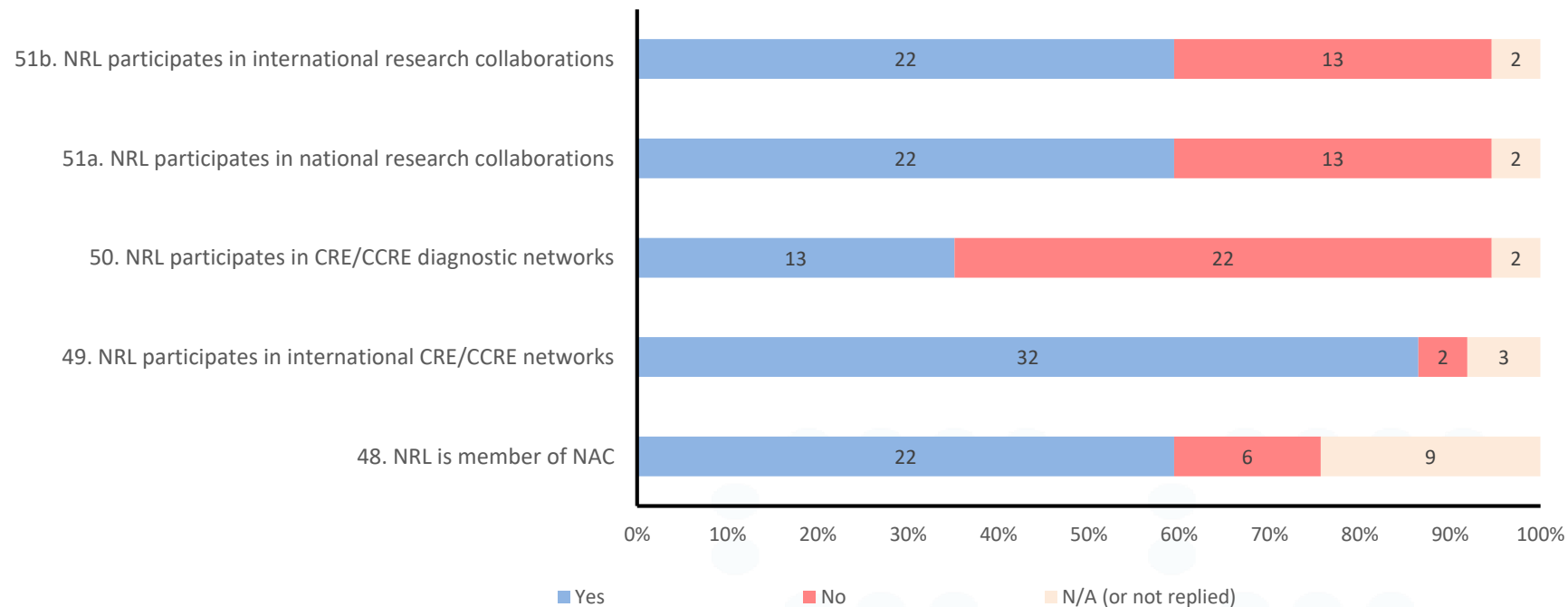


■ Yes ■ No ■ No answer

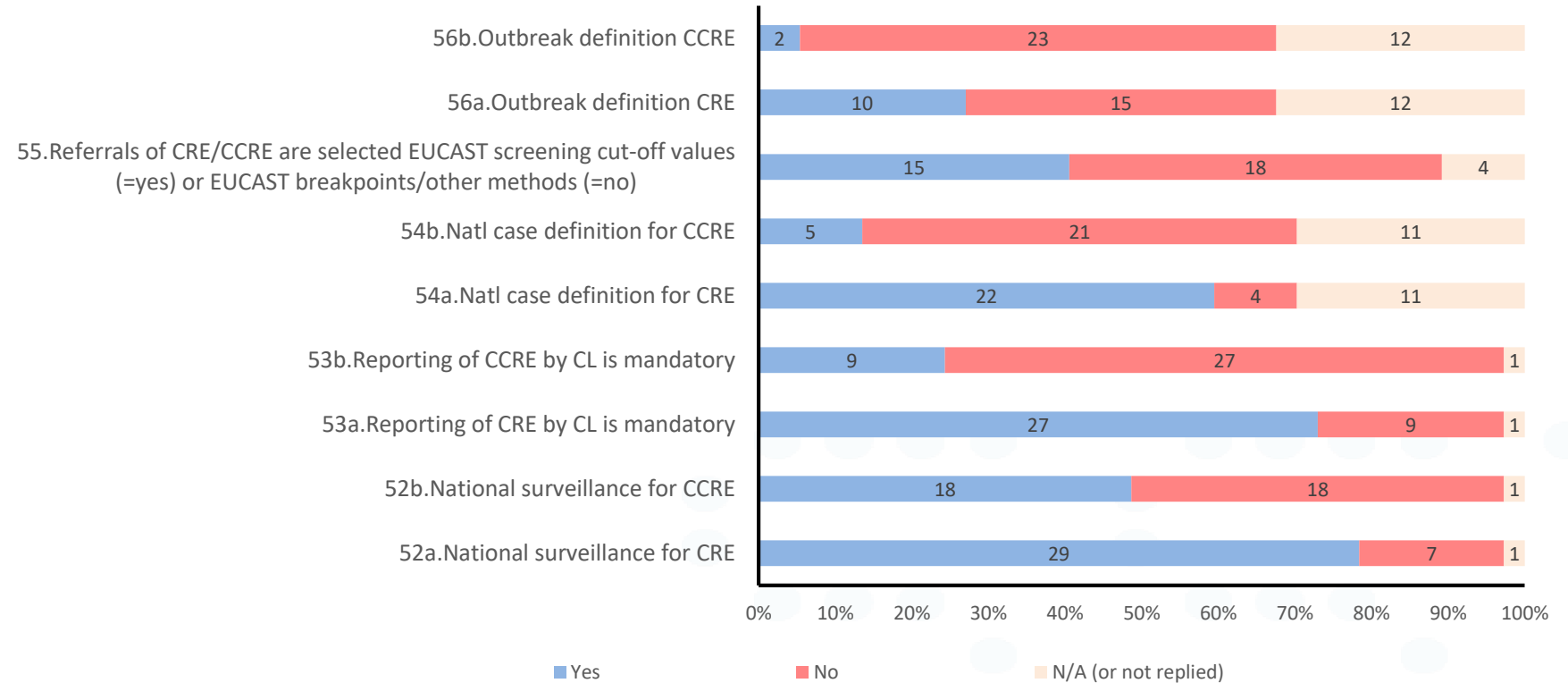
**SCIENTIFIC
ADVICE**

COLLABORATION AND RESEARCH

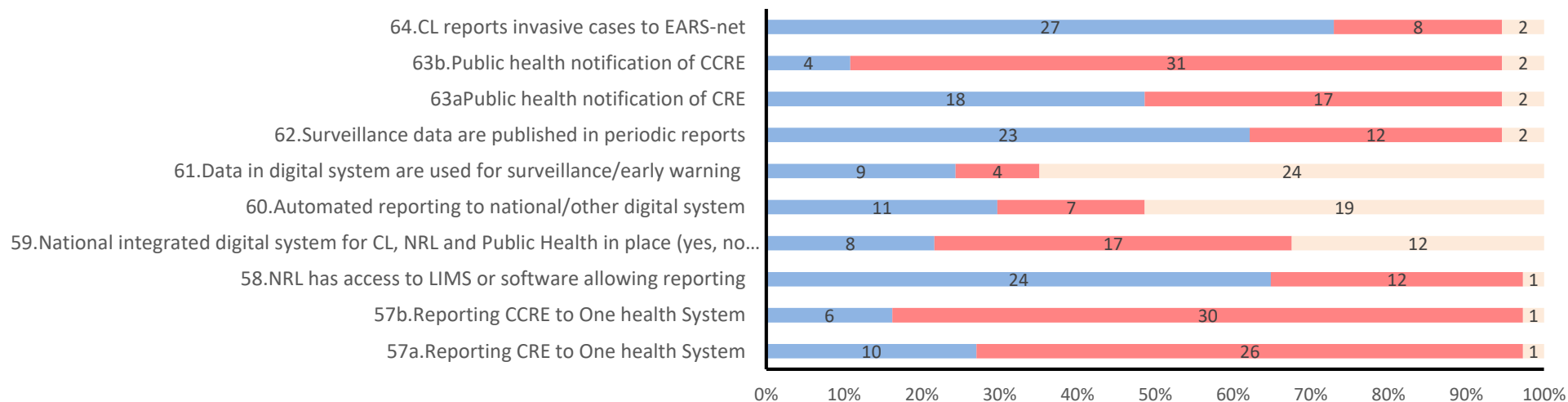
Collaboration and research



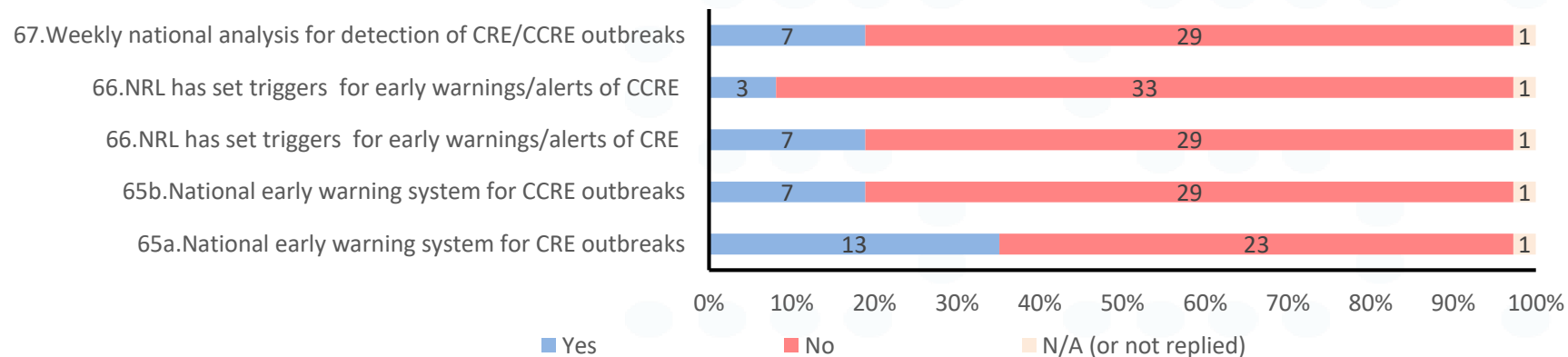
Surveillance and monitoring of outbreaks

**MONITORING,
ALERT AND
RESPONSE**

Surveillance data collection and reporting



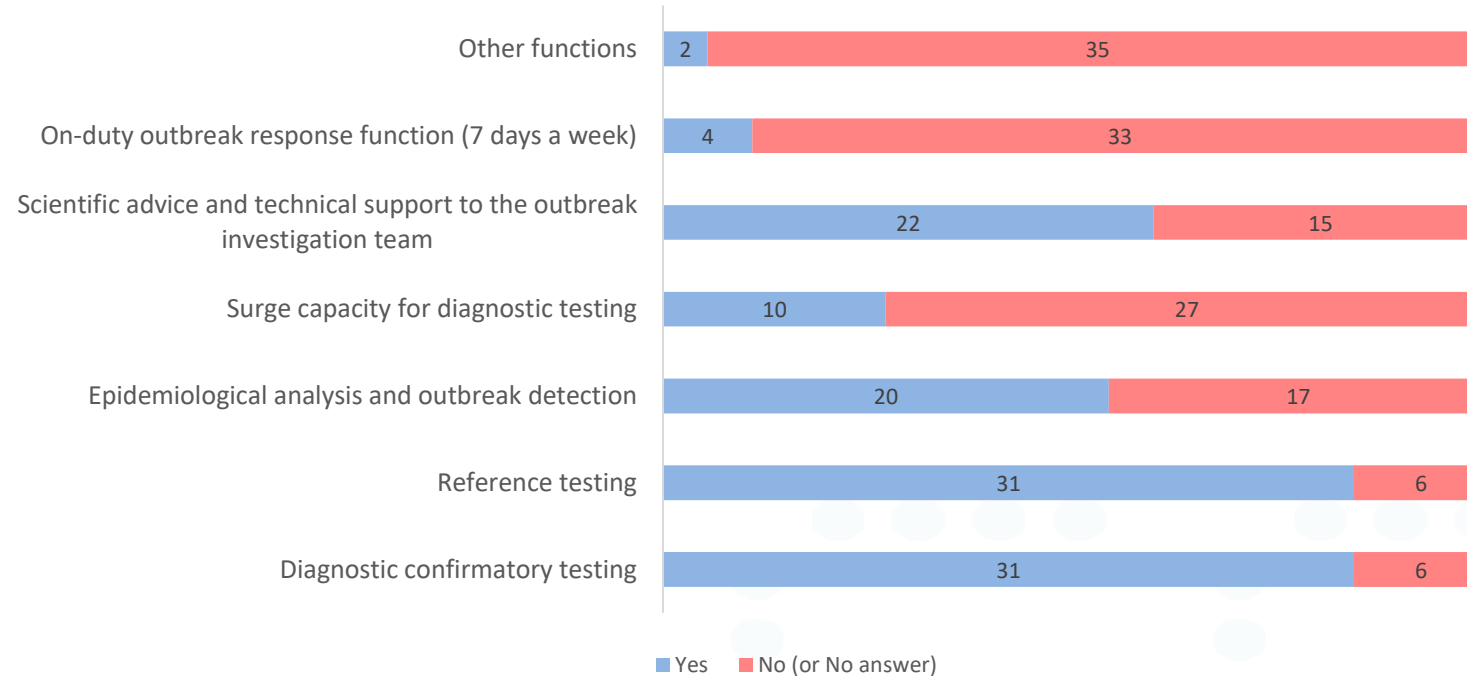
Alert and warning systems



**MONITORING,
ALERT AND
RESPONSE**

**MONITORING,
ALERT AND
RESPONSE**

Outbreak support function undertaken (Q69)



EPIDEMIOLOGICAL STAGE: CRE

EPIDEMIO- LOGICAL STAGE

Epidemiological stage - CRE	Number of countries	Countries
Stage 0 – no cases reported	0	None
Stage 1 – sporadic occurrence	3	Iceland, Kosovo*, Luxembourg
Stage 2a – single hospital outbreak	3	Latvia, Norway, Sweden
Stage 2b – sporadic hospital outbreaks	2	Hungary, Netherlands
Stage 3 – regional spread	5	Austria, Czechia, Finland, Germany, Slovakia
Stage 4 – inter-regional spread	9	Belgium, Bulgaria, Croatia, Denmark, France, Poland, Romania, Serbia, Spain
Stage 5 – endemic situation	7	Cyprus, Greece, Ireland, Italy, Malta, Portugal, Turkey
Information not available	8	Albania, Bosnia-Herzegovina, Estonia, Lithuania, Moldova, Montenegro, North Macedonia, Slovenia

**All references to Kosovo should be understood to be in the context of the United Nations Security Council resolution 1244 (1999)*

EPIDEMIOLOGICAL STAGE: CCRE

EPIDEMIO- LOGICAL STAGE

Epidemiological stage - CCRE	Number of countries	Countries
Stage 0 – no cases reported	1	Latvia
Stage 1 – sporadic occurrence	12	Austria, Cyprus, Czechia, Denmark, Germany, Hungary, Iceland, Ireland, Luxembourg, Malta, Norway, Sweden
Stage 2a – single hospital outbreak	0	None
Stage 2b – sporadic hospital outbreaks	0	None
Stage 3 – regional spread	1	Serbia
Stage 4 – inter-regional spread	2	Bulgaria, Greece
Stage 5 – endemic situation	2	Italy, Romania
Information not available	19	Albania, Belgium, Bosnia-Herzegovina, Croatia, Estonia, Finland, France, Kosovo*, Lithuania, Moldova, Montenegro, Netherlands, North Macedonia, Poland, Portugal, Slovakia, Slovenia, Spain, Turkey

**All references to Kosovo should be understood to be in the context of the United Nations Security Council resolution 1244 (1999)*

REFERENCE DIAGNOSTICS

- ❖ All but two countries had "NRL/expert" services set up for CRE/CCRE (referrals systems varied).
- ❖ There was variation in the **commitment to quality assurance** for phenotypic and genotypic methods.
- ❖ **20 countries had not yet implemented WGS-based NRL services** – 16 countries had plans of implementing WGS in the near future.

SCIENTIFIC ADVICE

- ❖ Scientific advice on the interpretation of laboratory results was frequently provided by the NRLs, **but there were gaps in the availability of national guidance on laboratory testing, IPC measures, containment plans** etc.
- ❖ **Gaps in NRLs outgoing/outreaching expert functions** towards the clinical labs in their countries (e.g. organisation of EQA, training activities on methodologies, proactive communication, compliance monitoring on AST).

MONITORING, ALERT AND RESPONSE

- ❖ National surveillance and public health notification of CRE/CCRE were in place in many countries - but more often for CRE than for CCRE.
- ❖ NRLs in 12 countries did not report their data periodically in reports to their users – **surveillance data are for action!**
- ❖ **Gaps in NRLs having national "early warning systems"** and **weekly analysis of national data** - This leads to a risk of outbreaks developing without being detected nor controlled.
- ❖ **Gaps in public health response functions** (NRL preparedness, outbreak investigation and support, response duty)