WGS for surveillance of antimicrobial resistance

Feedback from countries

3rd High Level Technical Consultation and Meeting on Surveillance of Antimicrobial Resistance and Use for Concerted Actions

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WGS for surveillance of antimicrobial resistance

- Benefits and limitations of current WGS technologies for AMR surveillance
- Results of an analysis of application of WGS to single bacterial pathogens for AMR surveillance
- Outline the requirements for building new WGS laboratories or upgrading existing laboratories
- Addresses laboratory at different levels and complexity

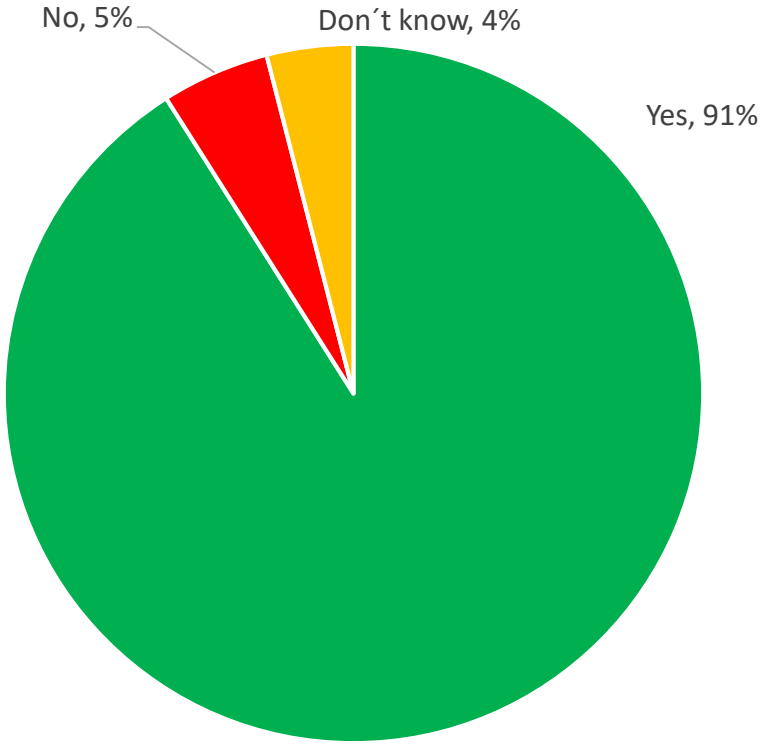
57 countries responded

Africa	**3** (5.3%)
Americas	**15** (26.3%)
Eastern Mediterranean	**21** (36.8%)
Europe	**11** (19.3%)
South-East Asia	**3** (5.3%)
Western Pacific	**4** (7.0%)

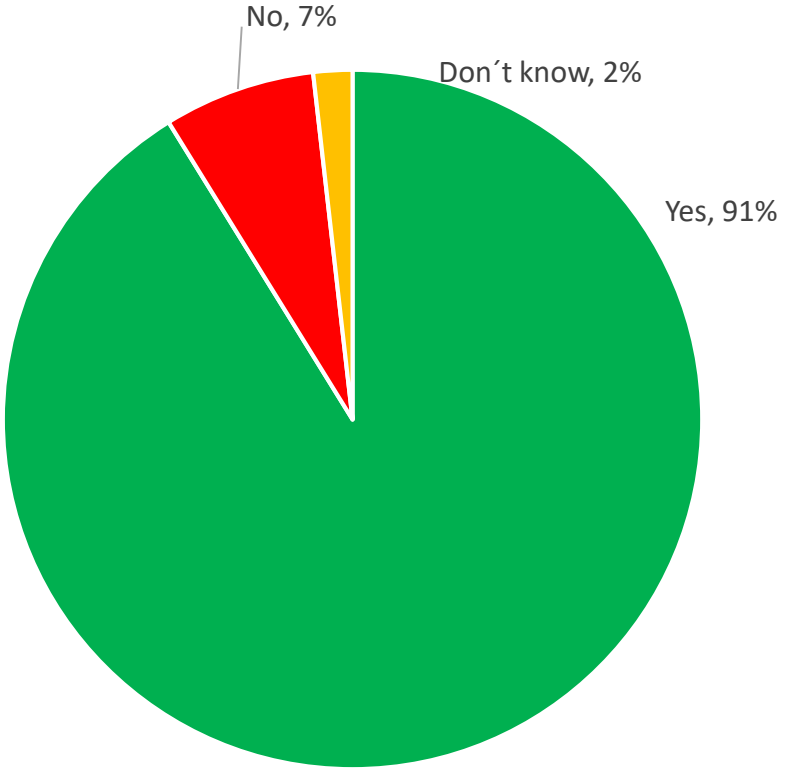
Low & lower-middle income	**16** (28.1%)
Upper-middle income	**20** (35.1%)
High income	**21** (36.8%)

GLASS countries	**43** (75.4%)
Non-GLASS countries	**14** (24.6%)

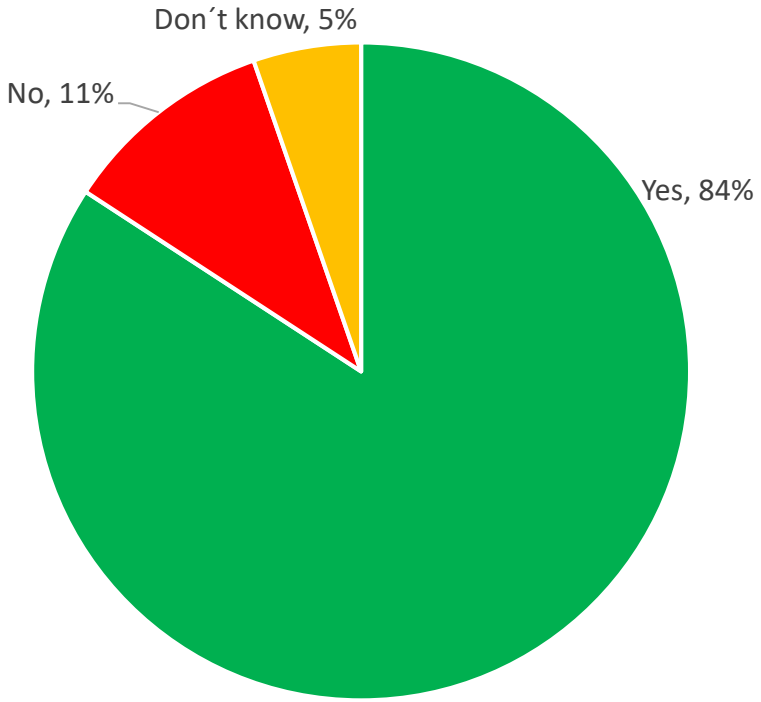
Q1: Does the document *WGS for surveillance of antimicrobial resistance* provide clear guidance on the application of whole genome sequencing (WGS) as a tool for AMR surveillance?



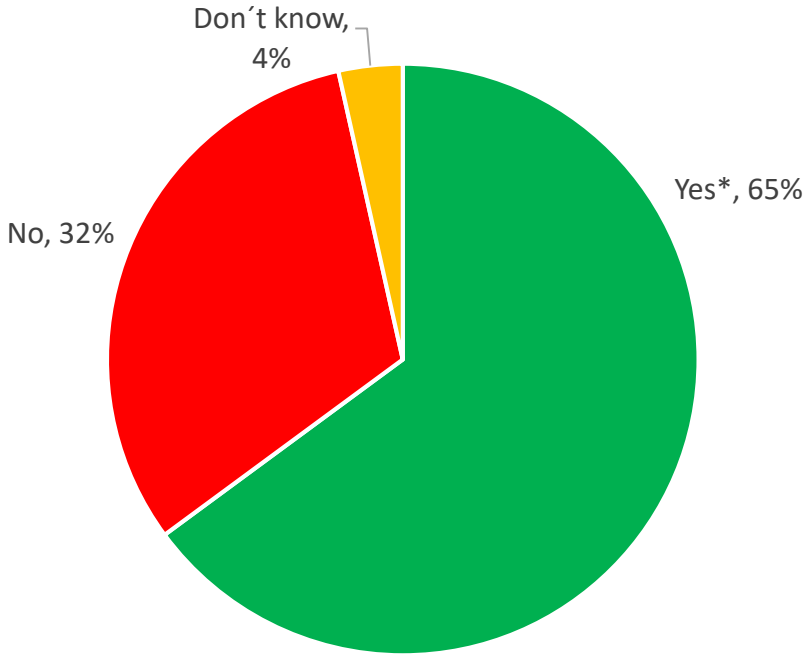
Q2: Does the document *WGS for surveillance of antimicrobial resistance* present useful and practical examples for implementing WGS in support of AMR surveillance?



Q3: Do you find the document *WGS for surveillance of antimicrobial resistance* useful for assisting with enhancing the national AMR surveillance system in your country?

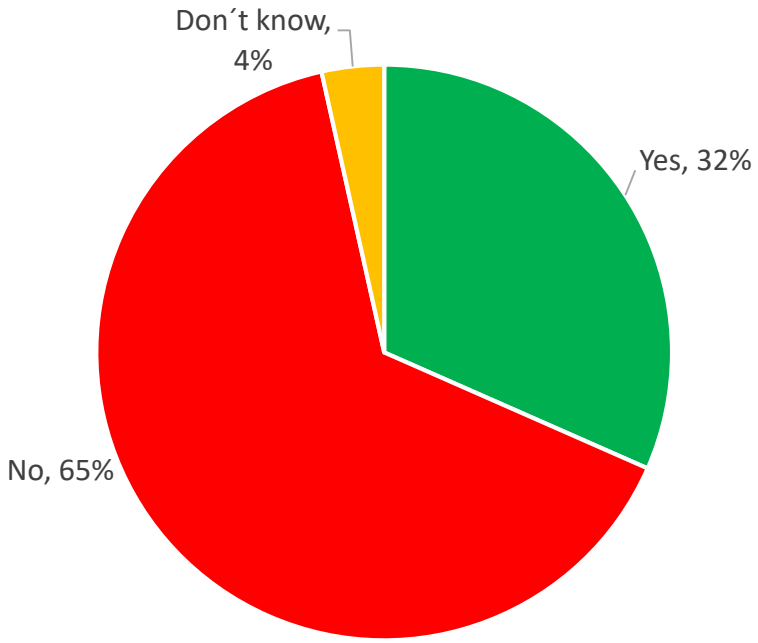


Q4: Is the AMR national surveillance system in your country applying any type of molecular methods targeting specific resistance genes in support to phenotypic methods?



* Described methods included Conventional PCR, RT PCR, FilmArray, GeneXpert, Sanger Sequencing, WGS, PFGE, Lateral Inmunocromatography, MLST, RFLP and SNP Allelic discrimination

Q5: Is the AMR national surveillance system in your country applying WGS in support of AMR surveillance?

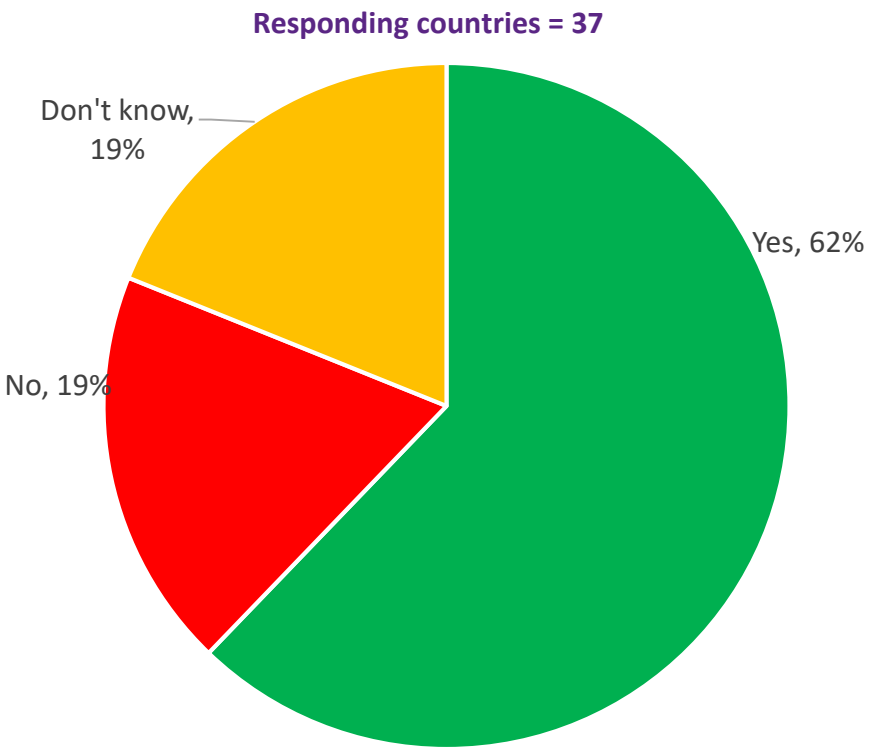


Yes

Requirements mentioned by countries that successfully implemented WGS

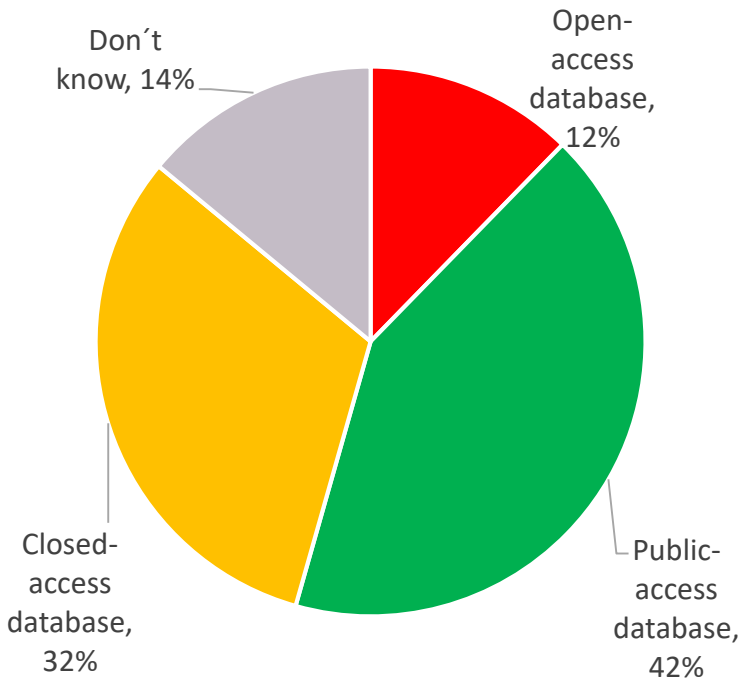
- A dedicated budget for microbiology laboratories that considers all technical requirements.
- Long-term planning and strategies for surveillance and the role of the national coordinator
- Clear procedures for data sharing, managing and confidentiality for patient metadata.
- Implementation of an optimized safe, standardized workflow.

Sub-question 5.1: If your response is 'No': Is the application of WGS within your national AMR surveillance system being considered?



Yes	• Several countries stated that they would need support from WHO to facilitate the application of WGS in their national AMR surveillance system, with diverse requirements according to their current situation
No	• Limitations regarding financial support and technical training • Lack of WGS equipment and reagents

Question 6: ....Standardised databases are available for the storage of genomic and AMR data, but due consideration must be given to the type of database to be used (open, public or closed access). GLASS envisages the inclusion of sequencing data in the future. Please indicate which type of database you would advise GLASS to use.



Open-access database: data for which the providers do not retain rights.
Public-access database: a tool or database that may be used for free but only by those people who require access (e.g. public health officials and epidemiologists). Access may be approved upon registration.
Closed-access database: a database that may be accessed only by individuals who have been granted access. The sequence data providers require that only non-publicly accessible databases be used, and members of a network may collaborate and share information, but sequences are not accessible to the general public. There is no open registration.

Additional comments you have on the document Whole Genome Sequencing for surveillance of antimicrobial resistance

- Several countries provided additional comments and suggestions for improvement of the protocol, and specific requests for support
- All the comments were positive and useful, several countries described their current situation with the use of WGS and future plans. We have taken special note on the limitations for the wide application of WGS.
- As some countries are still sending their feedback, a more detailed overview of the feedback will be included in the final report that will be distributed after the consultation meeting.

Thank you!