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Survey 'Collection of information from NRLs on sequencing of *Campylobacter jejuni* and *C. coli* on sequencing of *Campylobacter* isolates'

EURL-*Campylobacter* workshop 2024
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01 Background

The European Commission is reflecting on making whole genome sequencing (WGS) mandatory within the frame of epidemiological investigations of foodborne outbreaks (Article 8 Directive 2003/99/EC), including submission of this information to the EFSA and ECDC One Health WGS System.

To further explore this possibility, DG SANTE asked the *EURL-Campylobacter*, *EURL-Lm*, *EURL-Salmonella* and *EURL-E. coli* to collect information from the EU MS NRLs on WGS analysis of these pathogens at MS level.



02 Survey organisation

- Survey open 25 April - 24 May
- Expected one reply per MS
- All questions concerned *C. jejuni* and *C. coli* - but ok to reply for *Campylobacter spp.*
- Questions on WGS on isolates from human clinical cases were optional



03 Survey results

- Received 19 responses (representing 19 EU MS)
- Question 1: Does the NRL-*Campylobacter* perform WGS analysis on *Campylobacter*?
- 15 of 19 respondents perform both sequencing and bioinformatic analysis at the facility of the NRL. Two additionally outsource sequencing



Question 2: What is the average cost (excluding VAT) in Euros (for performing WGS of *Campylobacter* at your NRL-*Campylobacter* (or through outsourcing)?

Include all steps: DNA extraction and preparation, quality assessment, library preparation and assessment, sequencing and bioinformatic analysis



Responses were in the range of €80-€450 (some indicated it was without staff costs)

- Estimation difficult since it also depend on number of samples analysed per run and the sequencing technology used.

Likely an average range of €200-300 per sample if covering all costs.

Question 3: Please estimate the average total number of WGS analysis on *Campylobacter* isolates derived from food, feed, food-plant environment and animals carried out each year (or 2023).

If you can, please also include information from official laboratories/food-business operators.

Responses in the range of 0-750 analysis per year.

Question 4: Please provide the average total number of WGS analysis on *Campylobacter* isolates derived from humans, carried out each year (or 2023).

Optional question.

Data provided by 7 responders.

Responses in the range of 0-1000

Question 5: Please indicate the number of WGS analysis on *Campylobacter* isolates derived from food, feed, food-plant environment and animals, related to *Campylobacter* foodborne outbreak investigations that are carried out each year (or 2023).

If you can, please also include information from official laboratories/food-business operators.

Responses in the range of 0-100 analysis per year, but several 0-5 or 0-10.

Two responded that all isolates are sequenced.

Question 6: Please indicate the number of WGS analysis on *Campylobacter* isolates derived from humans, related to *Campylobacter* foodborne outbreak investigations that are carried out each year (or 2023).

Optional question.

Data provided by 7 responders.

Responses in the range of 0-200 analysis per year, but several 0-5 or 0-10.

One responded that all isolates are sequenced.

Question 7: Please estimate the number of WGS analysis on *Campylobacter* isolates derived from food, feed, food-plant environment and animals, that would need to be carried out if WGS would be mandatory within the frame of foodborne outbreak investigations.

Responses in the range of 3-2000 analysis per year. Large variation between responses (median value 20 WGS analysis per year).

Question 8: Please estimate the number of WGS analysis on *Campylobacter* isolates derived from humans, that would need to be carried out if WGS would be mandatory within the frame of foodborne outbreak investigations.

Optional question.

Data provided by 5 responders.

Responses in the range of 30-2000 analysis per year.

Question 9: Please estimate the number of maximum annual WGS analysis on *Campylobacter* for which the technical capacity currently exists at the NRL-*Campylobacter* for isolates derived from food, feed, food-plant environment and animals (can also include outsourcing).

Large variation in responses in the range of 15-1000 per year or 200-400 isolates per week.

- Limitations mentioned: budget, availability of staff to prepare the samples and conduct the bioinformatic analysis.
- Laboratories can prioritize a high burden over a short period of time but cannot remain those resources over a full year.

Question 10: Please estimate the number of maximum annual WGS analysis on *Campylobacter* for which the technical capacity currently exists for isolates derived from humans.

Optional question.

Responses very similar to question no. 9.

Thank you!

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Photo: Linda Svensson, SVA



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