

33. SPECIFIC TERMS OF REFERENCE FOR THE NRC FOR SHIGA-TOXIN PRODUCING *ESCHERICHIA COLI*

AIMS

- Each National Reference Centre (NRC) must meet both the general and the specific terms of reference.
- In the specific terms of reference, the NRC tasks dedicated to each selected pathogen or group of pathogens are described.
- These aim to guarantee the knowledge, the know-how and the epidemiological surveillance expertise of each NRC.
- The task list is not exhaustive and can be modified in function of the requirements and the evolution of knowledge and techniques.
- In the event a NRC is unable to perform a specific task, this can be subcontracted to preserve the knowledge in the NRC. If this is the case, quality of the subcontracted task has to be proven and assured.
- Each list of specific terms of reference is divided into three parts: 1) a reminder of the specific missions, 2) a description of the tasks that the NRC must be able to do including the competencies and 3) a list of the tasks that will be asked in a particular context.
- The type of analysis indicated for each specific pathogen in each particular situation (diagnosis or confirmation, typing, sensitivity to antimicrobial substances, virulence...) is defined.
- The collaboration with national and international surveillance systems (e.g. ECDC) and when relevant with other reference centres (European Medicines Agency, food safety reference centres, veterinary reference centres, ...) is also a priority.

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SPECIFIC MISSIONS

1. To confirm the diagnosis of infection with a Shiga-toxin producing *E. coli* (STEC).
2. To monitor circulating strains by performing microbial typing.
3. To participate in national surveillance, transfer microbiological data (through e-health reporting) and contribute to the presentation and interpretation of the results in a public health approach.
4. To interact with epidemiologists and other NRC's with the aim to sustain/adapt the use of the various outputs (with regards to quality of care, recommendations for control/prevention, ...).

THE NRC MUST BE ABLE TO (LEVEL OF COMPETENCES)

1. Cultivate STEC or to detect Stx toxins or genes from human fecal samples.
2. Biochemically confirm suspect strains.
3. Determine the virulence type of the strains on basis of the presence of virulence genes including at least : *eae*, *stx1* and the *stx2* subtypes.
4. Look for the major human serotypes.
5. Determine the presence of the H7 antigen for serotype O157.
6. Confirm the Shiga-toxin production (cell cytotoxicity or immunological methods).
7. Type the isolated and characterized strains using standardized methods (PFGE, MLST, cgMLST, ...).
8. Have access to whole genome sequencing and expertise in species specific bioinformatics analysis.
9. Manage a collection of representative strains.

TASKS THAT WILL BE ASKED IN A PARTICULAR CONTEXT

1. To systematically confirm the diagnosis by classical and molecular techniques in order to obtain the following data: STEC, virulence type (at least : *eae*, *stx1* and the *stx2* subtypes), serotype.
2. To collect relevant epidemiological data by mean of the request form: food borne, source of contamination, grouped cases, clinical diagnosis (HUS, diarrhoea), age ...
3. To collaborate with the reference lab of national animal and food safety agencies (one health perspective) and participate to a joint output report.
4. To collaborate with the European (EFSA) food safety agencies.
5. When an outbreak is suspected/detected, to perform most important typing technique with a useful turnaround time.
6. To participate to ECDC activities and in particular to the European network FWD.
7. To ensure a good representativeness for surveillance purposes, including geographical coverage when relevant.