

2 TECHNICAL SPECIFICATIONS

2.1 General background

In order to accomplish the task to strengthen laboratory-based surveillance, ECDC aims to promote the harmonisation and the quality assessment of laboratory diagnostic methods used by the European laboratory networks. ECDC coordinates External Quality Assessment (EQA) exercises across public health microbiology laboratories with the objective to foster the quality and comparability of the surveillance data reported to the European Surveillance System (TESSy), and thereby promote threat detection capability for emerging and epidemic diseases in the European Union (EU) and the European Economic Area (EEA).

In recent years, whole-genome sequencing (WGS) has become an ultimate typing tool to detect and characterise FWD outbreaks with increased discriminatory power. It is expected that WGS will eventually become the sole standard method for genotyping of FWD pathogens for public health purposes. The "ECDC strategic framework for integration of molecular and genomic typing into European surveillance and multi-country outbreak investigations for 2019-21" indicates the selected FWD (*Salmonella enterica*, Shiga Toxin-producing *Escherichia coli* (STEC), and *Listeria monocytogenes*) for establishing operational EU-wide real-time surveillance systems, enhanced by WGS. In 2019, ECDC extended its centralised data collection capabilities by implementing the WGS data collection for *L. monocytogenes*. Implementing routine sequence-based surveillance for *Salmonella* and STEC continues according to the framework. This data is essential to support the objectives of the molecular enhanced-surveillance for FWD including early detection of multi-country outbreaks to trigger outbreak investigations, and to monitor the spread of virulent strains.

Data analysis and interlaboratory comparability of WGS data can be challenging for the national public health reference laboratories due to different methods and schemes used. To assess the data quality produced in the laboratories and to support the high quality, comparable data submissions to TESSy, this tender focuses on supporting analyses performed with relevant molecular typing methods for the selected FWD pathogens. The EQA schemes should provide important information on the laboratory performance capability at the European level and offer opportunities to identify common sources of variation in the testing so that corrective trouble shooting can be provided to the participants. Regular monitoring of results will allow the evaluation of the progress and continuous capacity building.

ECDC is now launching the second call for tender for an EQA scheme for molecular typing including cluster detection by WGS for *Salmonella*, STEC and *L. monocytogenes* with the purpose of supporting the molecular enhanced -surveillance and outbreak investigations in the EU/EEA, and to foster the quality and comparability of the surveillance data reported to TESSy.

2.2 Scope and objectives

The **scope** of this call is the provision of EQA schemes to support molecular typing-enhanced surveillance of *Salmonella* (Lot 1), STEC (Lot 2) and *L. monocytogenes* (Lot 3) (see section 2.1)

The overall **objectives** of this call for tender are:

1. Improve harmonisation of the typing methods and typing capability within the public health laboratories of the EU/EEA and the EU enlargement (candidate and potential candidate) countries;
2. Promote production and submission of high quality molecular typing data to TESSy;
3. Provide support to laboratories failing to obtain correct results or facing issues;