18° annual workshop of the EU NRL for *E. coli*

Some take home messages

ECDC

More than 7,000 cases of infections in 2022

566 HUS cases reported

1280 hospitalization

28 deaths

Surveillance systems not homogeneous: underestimation

EFSA

2021: Data

Sample tested increased in 2021 BUT:

Characterisation was limited (less than 10% of virulotypes; around 30% serotyped)

Molecular typing data collection now active and used to investigate events with One Health approach

Users' network established

Pipeline's code available fro users

Functionalities available for users BUT:

Uneven contribution from MSs

Management of non-compliances for STEC in Food

Dishomogeneous approach across Europe

Affects the data collections both on humand and non human sides

Not all countries test for STEC in Food

Not all countries that test for STEC in food take actions upon non compliance detected

Many countires waiting for the EC to deliver guidance/regulations

Why no Microcrietria for STEC out there?

STEC infection transmission routes and animal reservoirs (Eelco Franz)

Source attribution (NL) of STEC infections: Some 10% of cases of unknown attribution (animal species)

Mixed clusters (human/non human) are rare in the NL

Transmission routes other than food (at least for sporadic cases)?

Inter human (including MSM)

Non zoonotic hybrid strains (tEPEC-STEC; EAEC-STEC)

Environmental transmission (cattle and other small ruminants density), what route of transmission?

STEC and fresh produce: Size matters!

Outbreaks related to pet food (high prevalence of STEC in PF in the UK)

EQA Public health (Nadia Boisen)

25% of cases of STEC infections in the EU with no isolate in 2021

EQA for public health labs by SSI (2022-2025)

Characterisation of isolates (Serotypes, Virulotypes and Stx genes subtyping + cluster analysis-WGS)

N of labs 27 (26 completed the analyses)

Good scores for serotyping and *stx* subtyping, excellent scores for virulotyping, good performance in cluster analysis

Revision of ISO TS 13136:2012

The process at CEN is progressing (EURL lead)

Standard in two parts: 1) Detection and 2) Characterisation of isolates

The draft of both documents are ready but the standards need to be validated before they are published.

Several options available: to go with or without the validation data or to keep the standard as an ISO TS etc... under voting

Agreement on a validation plan between the experts, but we don't have an entity that will bear the burden of organizing the studies, yet (no budget in sight).

EURL PTs: PT34

Sprouts spent irrigation water

46 labs in the PT round (EU, non EU, Italian OL)

Still «problematic matrix» with high background flora. Strong inhibition of the contaminant STEC's growth

Good performance of the NRLs in testing SIW but high load of STEC O157 was necessary for the test to work

It's in the 2073 regulation, but what value of this testing????

EURL PTs: PT35

Strain characterisation. 36 participants (EU+non EU)

14 target serogroups: Satisfactory performance, particularly when WGS was used to type strains

Virulotyping (including other pathotypes): Good performance with

typical STEC vir genes, but problems in identifying other genes (e.g. *ipaH* of *sta*) including for some labs using WGS

Cluster analysis: Voluntary. Results interpreted by the NRLs (SNPs or cgMLST), EURL evaluation on their ability to reconize clusters: Excellent performance!

Inter EURL WG on NSG

Capacity building:

Update of the documents produced by the WG

Training 2° joint training on bioinformatics (RIVM)

A position paper published in 2023

A webinar on the organization of PTs on NGS

Science meets policy conferences – 2020- 2023- ??

Update on Shiga toxin subtyping
(Nadia Boisen)

Wide diversity in the stx2 group:impacts on the methods to detect the subtypes

Beside the known associations with severe disease (e.g. stx2a), **What the many new subtypes (stx2a to stx2o and counting) add to our knowledge of the pathogenicity of STEC?**

Have a safe journay back home and see you in 2024