

## FWD AMR-RefLabCap in Estoni

### Overview of ECDC Pilot WGS study in Estonia

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## Health Board Laboratory of Communicable D





# Surveillance of Salmonella & Campylobacter in Estonia

- 1
- All positive Salmonella & Campylobacter isolates/samples are sent to NRL
- 2
- Additional serotyping and AST is performed at NRL
- 3
- All isolates are stored long-term at NRL
- 4
- Sequencing is performed asap in case suspected outbreaks

#### 1. Number of isolates

	2021	2022	2023	2024 Jan, Feb
Salmonella isolates	310	255	227	22
Campylobacter isolates	370	298	354	41

#### 2. Number of isolates

	2021	2022	2023
Salmonella isolates	8	22	100
Campylobacter isolates	0	0	50

## Aim of the pilot study – to get a more sophisticated overview of the strains circulating in Estonia

### ECDC SALMONELLA and CAMPYLOBACTER WGS PR

- 100 Salmonella isolates all isolates collected by mid 2
- 50 *Campylobacter* isolates representative selection of strains from mid 2023 (all *C.coli*; region, age, gender)

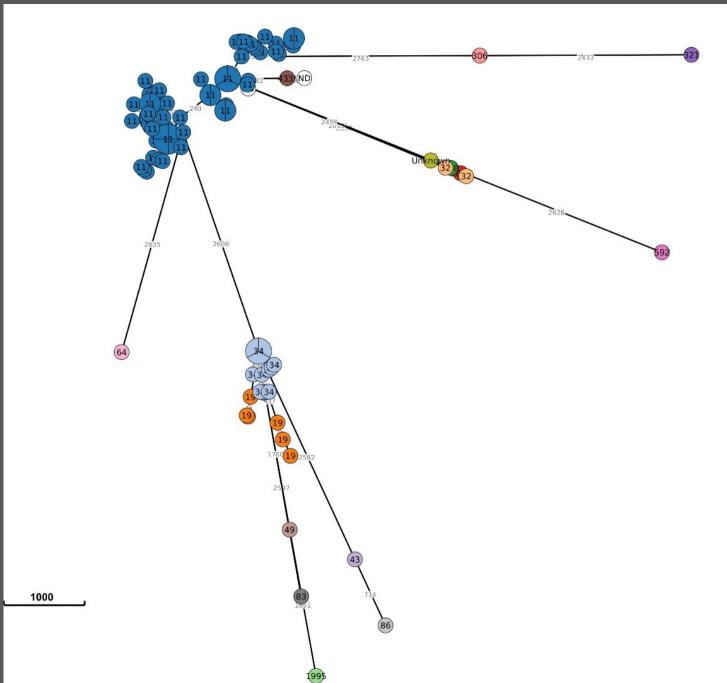
## Laboratory capacity

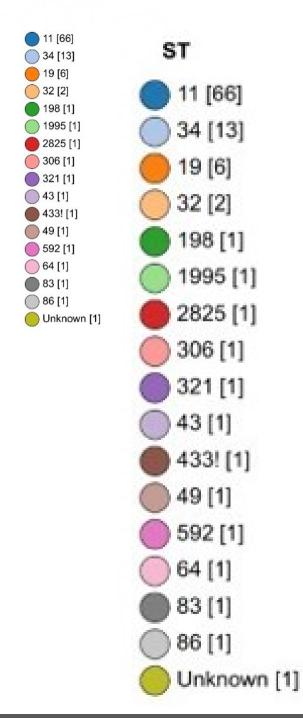
- Clinical Microbiology (AST, serotyping)
- Molecular methods manual/auto extraction of genomic DNA
- WGS (sequencing temporarily outsourced in-house)

#### Salmonella WGS RESULTS

	Name	Spe	cies	ST	Predict	Predicted	Predicted	Predicted	Gene	Sequence	Flem	Ele	Elem	Class	Subclass	%	%
		960			ed	serotype		serotype	symbol	name		men		Ciass	Juneiuss	Cove	
					antigeni	1	profile	(Seqsero	.,		subty		subt			rage	to
					c profile		(Seqsero	2)			pe		ype			of	reference
					(Seqser		2)	_,				,,,,,	,,,,,				sequence
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	NG-A0362_1735	55 Salmo	onella	11	9:g,m:-	Enteritidis	9:g,m:-	Enteritidis									
	NG-A0362_1736				4:b:1,2	Paratyphi B	4:b:1,2	Paratyphi		tartrate+							
	NG-A0362_1736				9:g,m:-	Enteritidis	9:g,m:-	Enteritidis									
	NG-A0362_1737				9:g,m:-	Enteritidis	9:g,m:-	Enteritidis									
	NG-A0362_1737					Enteritidis	9:g,m:-	Enteritidis									
39	NG-A0362_1738	29 Salmo	onella	49	4:z10:1,2	Haifa	4:z10:1,2	Haifa									
40	NG-A0362_1738	75 Salmo	onella	321	3,10:e,h:	Muenster	3,10:e,h:1	Muenster									
41	NG-A0362_1739	38 Salmo	onella	11	9:g,m:-	Enteritidis	9:g,m:-	Enteritidis									
42	NG-A0362_1740	32 Salmo	onella	11	9:g,m:-	Enteritidis	9:g,m:-	Enteritidis	tet(A)	tetracyclir	AMR	AMR	AMR	TETRACYC	TETRACYC	100	99,75
43									blaTEM-13	broad-spe	AMR	AMR	AMR	BETA-LAC	BETA-LAC	100	100
44									gyrA_D87	Salmonell	POINT	AMR	POIN	QUINOLOI	QUINOLO	100	99,89
64	NG-A0362_1740	Salmo	onella	11	9:g,m:-	Enteritidis	9:g,m:-	Enteritidis									
65	NG-A0362_1740	70 Salmo	onella	11	9:g,m:-	Enteritidis	9:g,m:-	Enteritidis									
66	NG-A0362_1741	35 Salmo	onella	86	4:b:1,2	Paratyphi B	4:b:1,2	Paratyphi	В								

#### **SALMONELLA** WGS RESULTS MSTree





#### Campylobacter WGS RESULTS

Name	Species	ST	Gene symbol	Sequence name
	Campylobacter jejuni strain CJ071CC464, complete genome		tet(O)	tetracycline resistance ribosomal protection protein Tet(O)
110 710002	cumpyiosacter jejam stram esovice to the complete genome	101	50S L22 A103V	
			gyrA T86I	Campylobacter quinolone resistant GyrA
			blaOXA-193	OXA-61 family class D beta-lactamase OXA-193
NG A0262	Campylobacter jejuni subsp. jejuni strain GB19 chromosome, complete gend	61	blaOXA-193	OXA-61 family class D beta-lactamase OXA-193
				·
	Campylobacter jejuni strain CJ515CC45, complete genome	45	blaOXA-184	OXA-184 family class D beta-lactamase OXA-184
NG-A0362	Campylobacter jejuni strain CJ071CC464, complete genome	464	50S_L22_A103V	Campylobacter macrolide resistant 50S L22
			gyrA_T86I	Campylobacter quinolone resistant GyrA
			blaOXA-193	OXA-61 family class D beta-lactamase OXA-193
			tet(O)	tetracycline resistance ribosomal protection protein Tet(O)
NG-A0362	Campylobacter jejuni subsp. jejuni S3, complete genome	2133	blaOXA	OXA-61 family class D beta-lactamase
NG-A0362	Campylobacter jejuni strain CJ071CC464, complete genome	464	tet(O)	tetracycline resistance ribosomal protection protein Tet(O)
			50S_L22_A103V	Campylobacter macrolide resistant 50S L22
			gyrA_T86I	Campylobacter quinolone resistant GyrA
			blaOXA-193	OXA-61 family class D beta-lactamase OXA-193
NG-A0362	Campylobacter jejuni strain CJ071CC464, complete genome	464	50S_L22_A103V	Campylobacter macrolide resistant 50S L22
			gyrA_T86I	Campylobacter quinolone resistant GyrA
			blaOXA-193	OXA-61 family class D beta-lactamase OXA-193
			tet(O)	tetracycline resistance ribosomal protection protein Tet(O)
NG-A0362	Campylobacter jejuni strain CJ071CC464, complete genome	464	50S_L22_A103V	Campylobacter macrolide resistant 50S L22

#### Campylobacter WGS RESULTS MSTree ST **464** [22] 464 [22] 1055 [2] 122 [2] 1055 [2] 42 [2] 213 6461 122 [2] Unknown [2] 10044 [1] 42 [2] 1707 [1] 2066 [1] Unknown [2] 2133 [1] 2254 [1] 10044 [1] 45 [1] 583 [1] 1707 [1] 9741 1035 5-125 627 50 WH 649 61 [1] 6222 [1] 2066 [1] 6461 [1] 825 [1] 2133 [1] 827 [1] 832 [1] 2254 [1] 872 [1] 45 [1] 9741 [1] 9897 [1] 583 [1] 61 [1] 6222 [1] 6461 [1] 2254 825 [1] 827 [1] 832 [1] 500 872 [1] 9741 [1] 9897 [1]

## Plans for actions

Cooperation with epidemiologists

Cooperation with vet.lab

Wider analysis on the possible clust

Reporting to EpiPulse



# Thanks for listening Any Questions?

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