



**14<sup>th</sup> EURL *Campylobacter* workshop, 7-8  
October 2019, Uppsala, Sweden**

# **Update on *Campylobacter* monitoring results and on campylobacteriosis food- borne outbreaks in EU**

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Senior scientific officer

Trusted science for safe food

- Introduction
- Zoonoses-FBO monitoring/surveillance data according Dir 2003/99 and Reg 2073/2005:
  - strengths and weaknesses of the data collected
  - Improvements and achievements made during previous years
- Highlights from 2017 EUSR: some major observations (trends, sources) on *Campylobacter*
- Discussion/questions/proposals

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# Monitoring of zoonoses, FBO and AMR in the EU

- **Directive on the monitoring of zoonoses and zoonotic agents (2003/99/EC)**

- Publication of the annual EU Summary Report
- MSs have an **obligation** to report each year

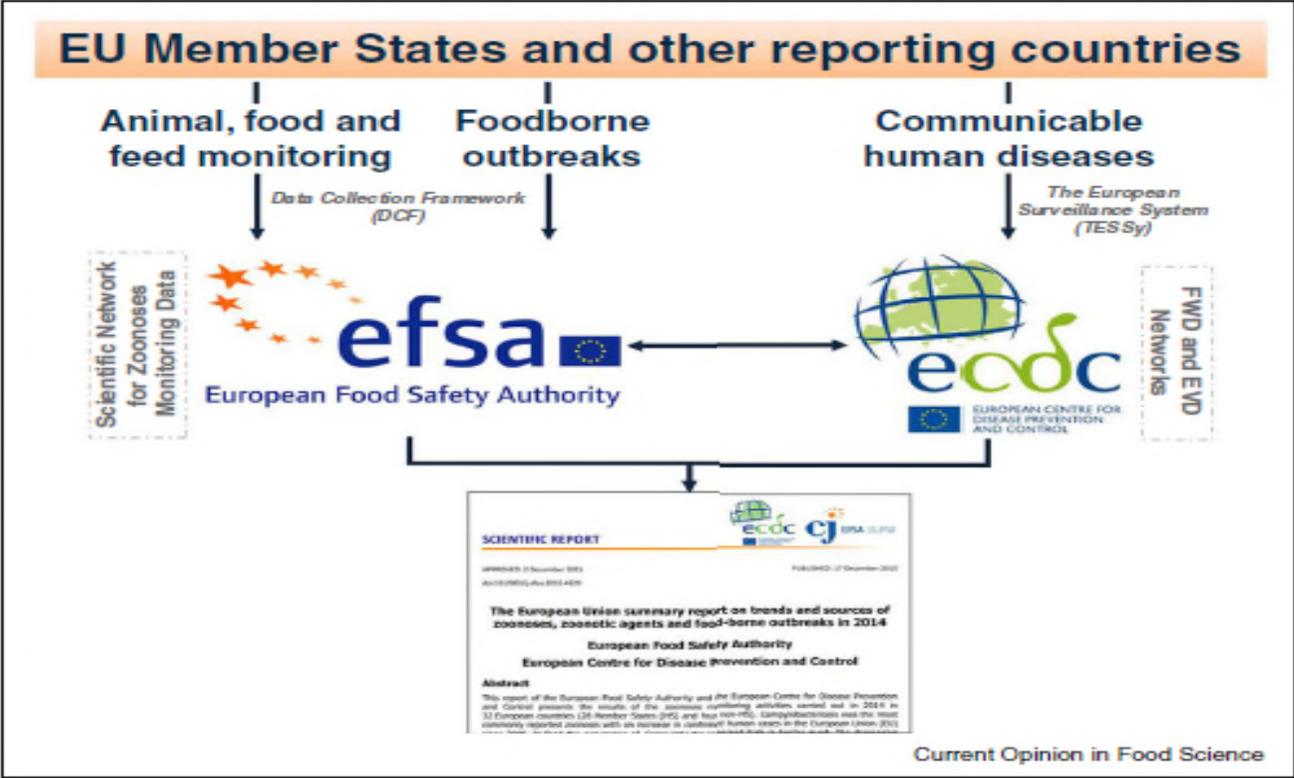
- **Data collection mandatory for 8 zoonotic agents**

*Salmonella* (+ antimicrobial resistance (AMR))  
*Campylobacter* (+ AMR)  
*Listeria monocytogenes*  
*Brucella*  
Tuberculosis due to *Mycobacterium bovis*  
Verotoxigenic *Escherichia coli*  
*Trichinella*  
*Echinococcus*

- **and also for food-borne outbreaks (FBOs)**
- **and susceptible animal populations**

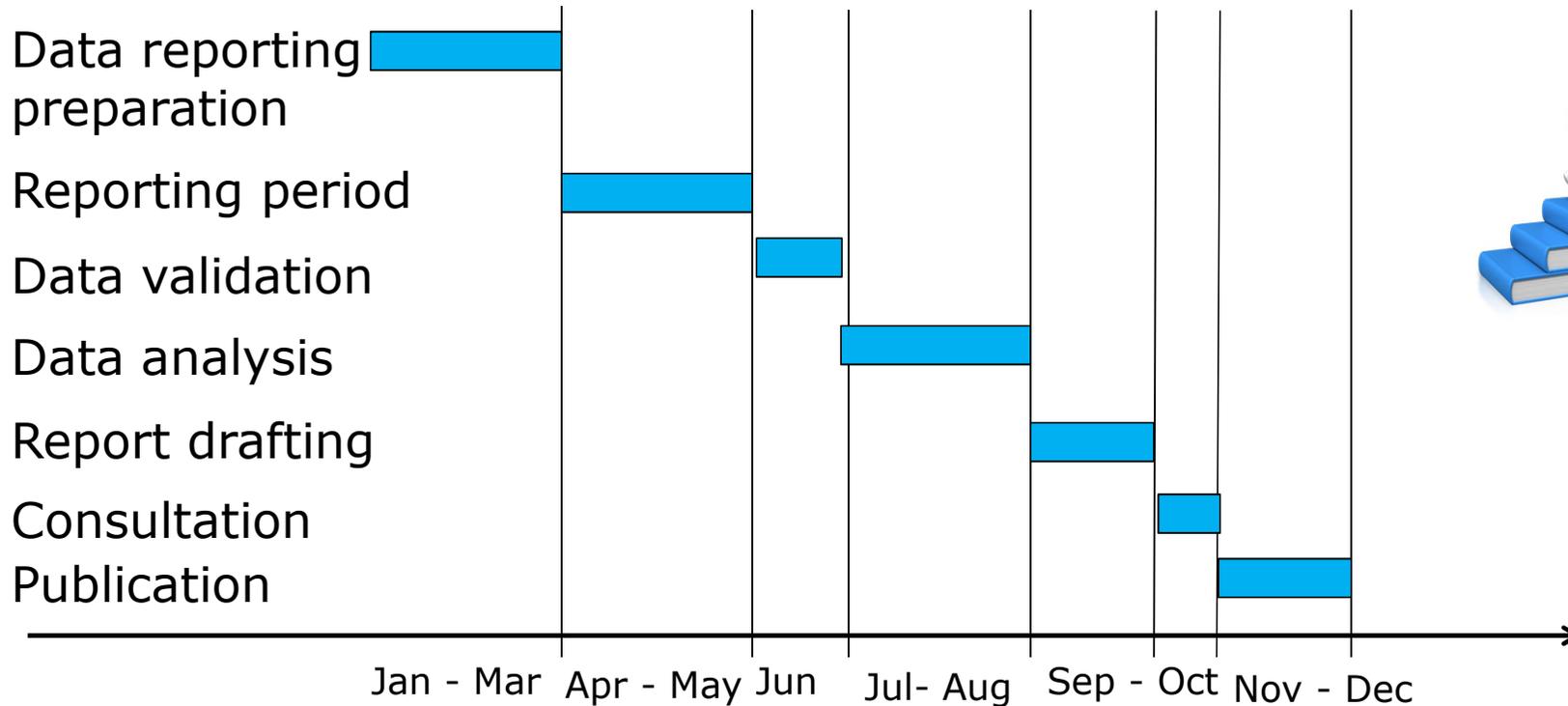
*In a number of cases, such as for example Salmonella in poultry, more specific and harmonised requirements are laid down how to monitor and report these zoonoses.*

# Data flow and EFSA's integrated approach for the production of the joint EFSA-ECDC EU Summary Reports (EUSRs)



Data flow and EFSA's integrated approach for the production of the joint EFSA-ECDC EU Summary Report on zoonoses and food-borne outbreaks in the EU. Note: FWD Network: European Food and Waterborne Diseases and Zoonoses Network; EVD Network: European Emerging and Vector-borne Diseases Network.

# EUSR, annual production cycle



Resources : staff of ECDC and of EFSA (BIOMO, DATA, AHAW, Risk Comm), contractors, co-data validation with EC colleagues G4 and G2 (*Salmonella* NCPs, other), ... MS

# EUSR zoonoses-FBO 2017 on WILEY platform



## EFSA JOURNAL

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### The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2017

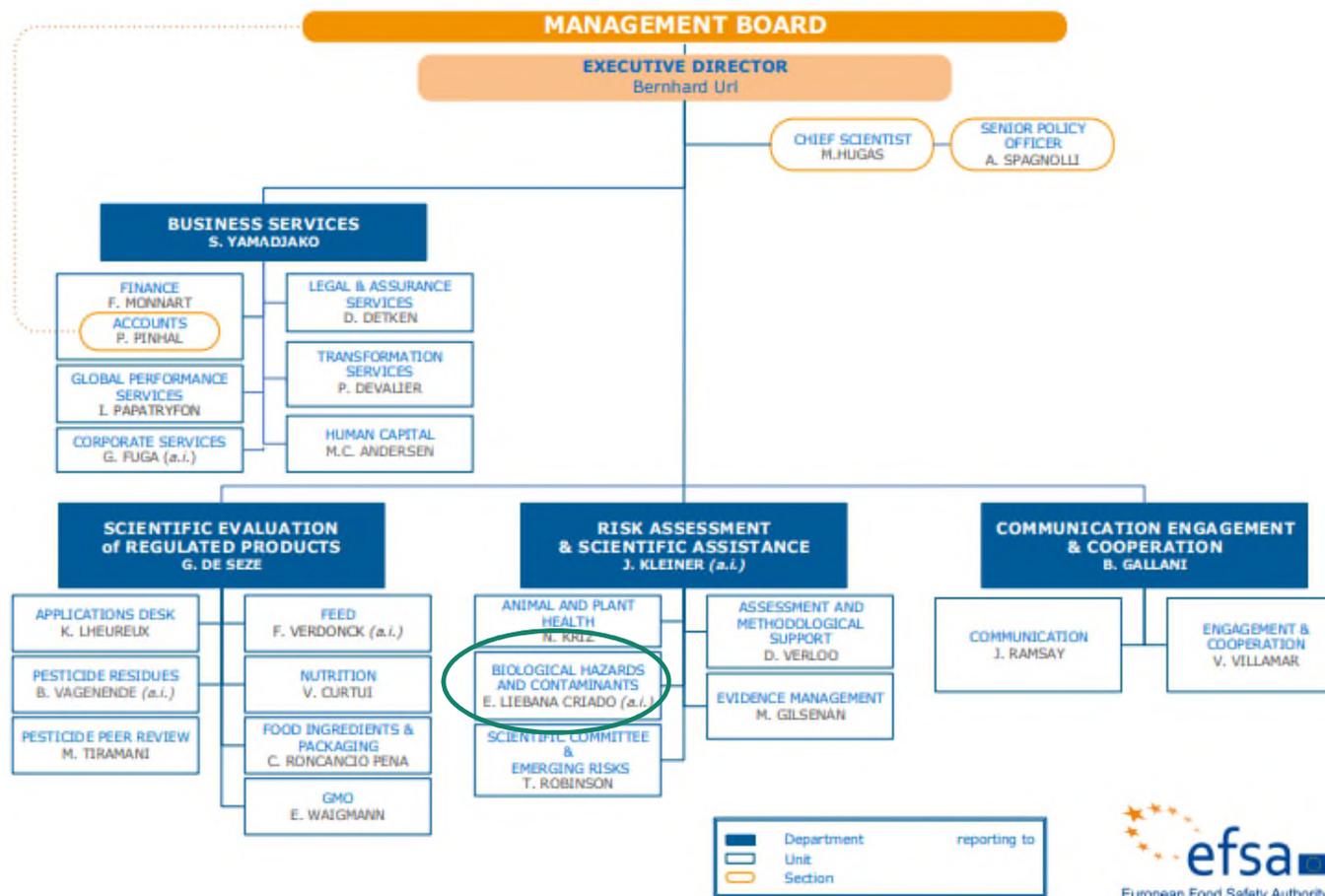
European Food Safety Authority and European Centre for Disease Prevention and Control (EFSA and ECDC)

First published: 12 December 2018 | <https://doi.org/10.2903/j.efsa.2018.5500>

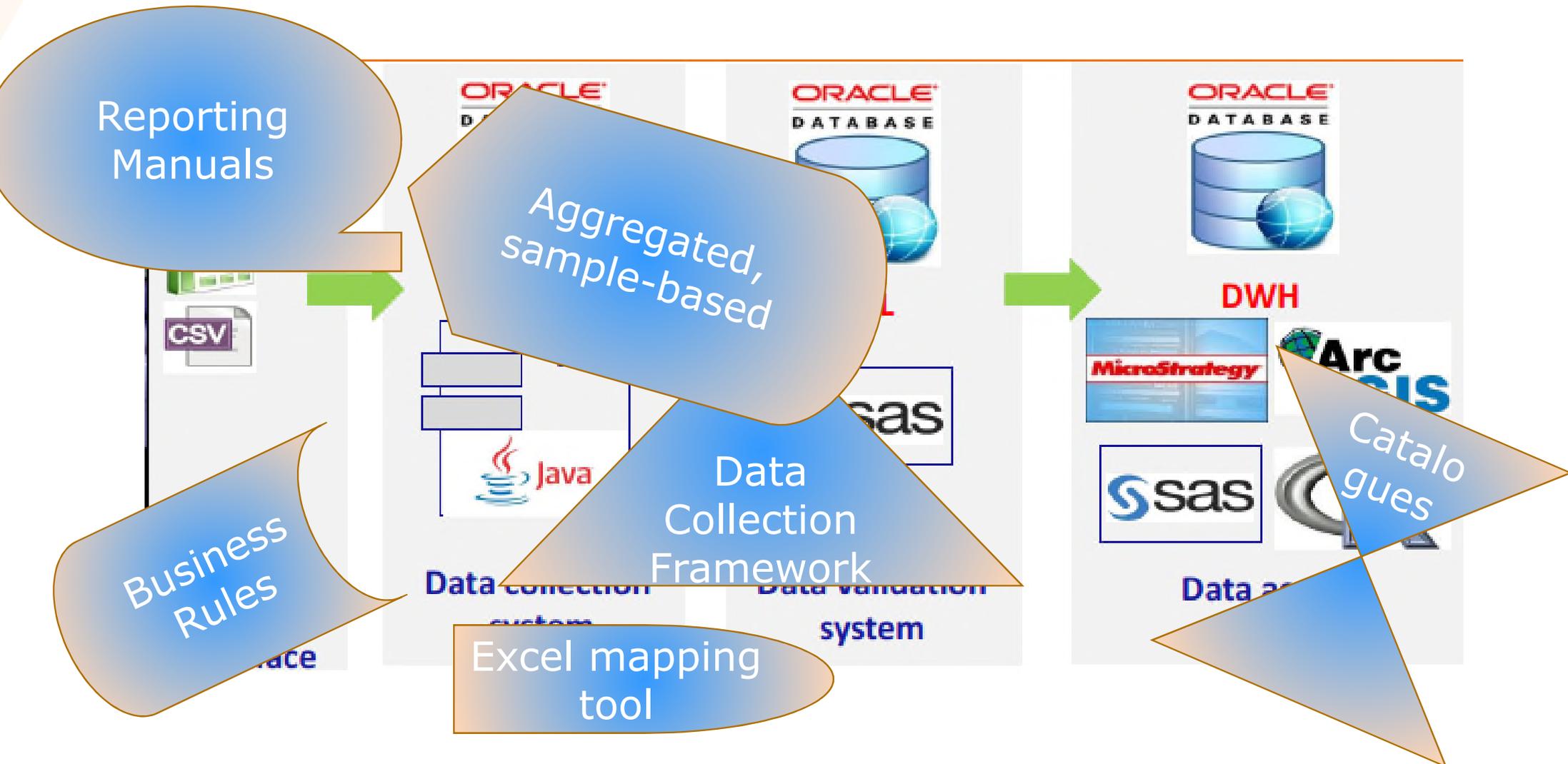
The screenshot shows a web browser window displaying the article page for 'The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2017'. The browser tabs include 'Launching/Awarding', 'EUSR Zoonoses\_FBO\_2018', 'A. CALL FOR TENDER DOCU...', 'The European Union summi...', and 'The European Union summi...'. The address bar shows the URL: <https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2018.5500>. The page header features the EFSA logo and 'Access by European Food Safety Authority EFSA' with a 'Login / Register' link. Below the header is a navigation bar with 'JOURNALS' and 'SUBJECTS' dropdown menus, and the website URL 'efsa.europa.eu'. The main content area displays the article title, authors (EFSA and ECDC), and publication date (12 December 2018). It includes a 'Correspondence' section with the email 'zoonoses@efsa.europa.eu' and a 'Requestor' section: 'European Commission'. The 'Acknowledgements' section thanks the members of the EFSA Scientific Network for Zoonoses Monitoring Data and the ECDC Food and Waterborne Diseases and Zoonoses Network, the ECDC Emerging and Vector-borne Diseases Network and the ECDC Tuberculosis Network, who provided the data and reviewed the report; the members of the Scientific Network for Zoonoses Monitoring Data for their endorsement of this scientific report; the EFSA staff members (Frank Boelaert, Yves Van der Stede, Anca Stoicescu, Glasi Amore, Kristina Nagy, Valentina Rizzi, Maria Teresa Da Silva Felicio, Winy Messers, Angel Ortiz Peirez, Michaela Hempen, Eleonora Sarro, Daniel Thomas and Frank Verdonck), the ECDC staff members (Taina Niskanen, Joanna Heussig, Hanna Merk and Joana Gomes Dias) and the EFSA contractors: the Istituto Zooprofilattico Sperimentale delle Venezie, Italy (and staff members: Lisa Barco, Marzia Mancin, Ilaria Patuzzi, Antonia Anna Lettini, Alessandra Longo, Carmen Losasso and Antonia Ricc), the Istituto Superiore di Sanita, Italy (and staff members: Stefano Morabito, Gala Scavia, Arnold Knijff, Rosangela Tozzoli, Ornella Moro, Monica Gianfranceschi, Elisabetta Suffredini, Ilaria Di Bartolo, Elisabetta Delibato, Fabrizio Annibaldi, Giovanni Ianiro and Antonella Maugliani), the European Union Reference Laboratory for Parasites (and staff members: Edoardo Pozio and Adriano Casulli), the WHO Collaborating Centre for the Epidemiology, Detection and Control of Cystic and Alveolar Echinococcosis (and staff member: Adriano Casulli), and the European Union Reference Laboratory for *Listeria monocytogenes* (the French agency for food, environmental and occupational health safety (ANSES) and staff members: L. Guiller, B. Felix and B. Lombard), for the support provided to this scientific report. Approved: 19 November 2018. The page also includes 'SECTIONS', 'PDF', 'TOOLS', and 'SHARE' options. The abstract section begins with: 'This report of the European Food Safety Authority and the European Centre for Disease Prevention and Control presents the results of zoonoses monitoring activities carried out in 2017 in 37 European countries (28 Member States (MS) and nine non-MS). Campylobacteriosis was the commonest reported zoonosis and its EU trend for confirmed human cases increasing since 2008 stabilised during 2013-2017. The decreasing EU trend for confirmed human salmonellosis cases since 2008 ended during...'. The Windows taskbar at the bottom shows the system tray with the date '15/01/2019' and time '18:46'.

<https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2018.5500>

## Organisational Structure on 01/09/2019



# Data reporting



# Some facts about the annual zoonoses and food-borne outbreaks report (EUSR)



- **Most downloaded** and **most cited** scientific outputs from EFSA
- Example of **co-creation** within EFSA (involvement of different units and teams such as BIOMO and BIOHAZ, DATA, AHAW, DTS and also contractors) and beyond (jointly with ECDC, but also with MS, EC)
- We have **recrafted** this data collection (domain) and rebranded this annual report

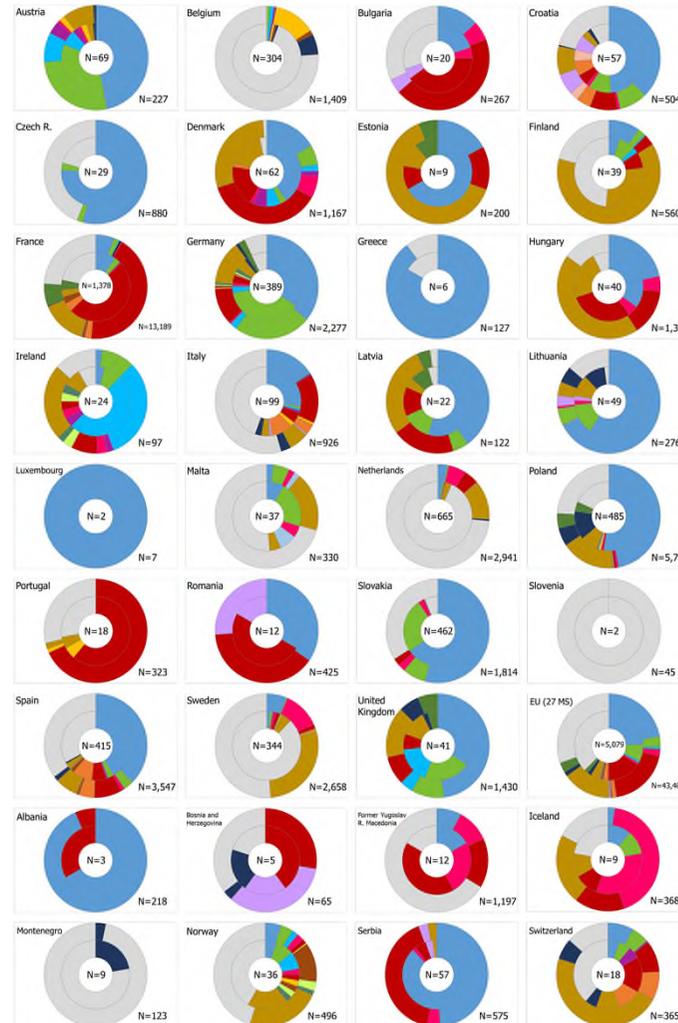
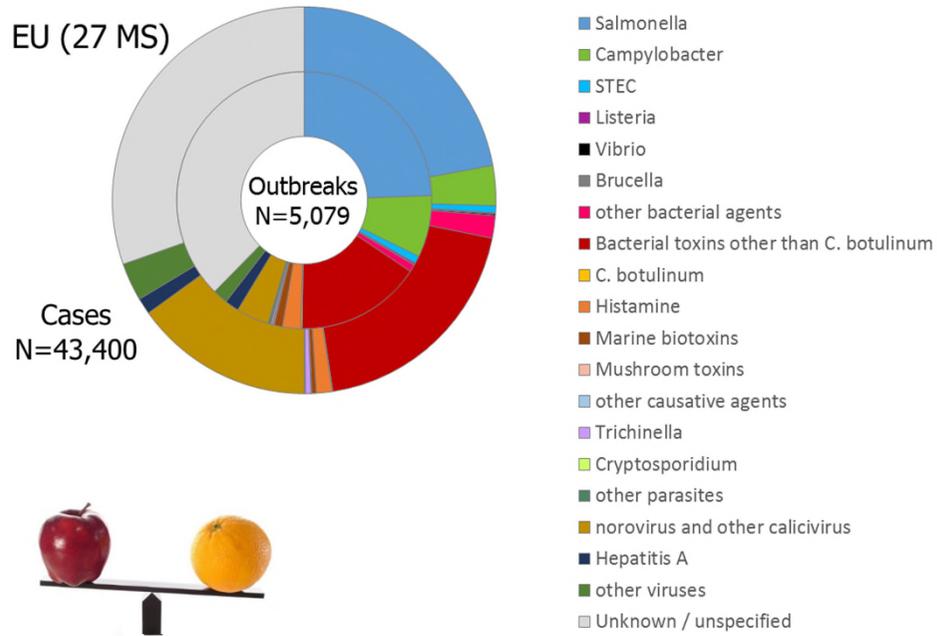
## Aspects of improvements / achievements



- **Timely** publication : since 2014, after the RASA reorganization, we reduced the production time from 15 to 11 months. This EUSR is now published within year, early December, as required by law.
- **Innovated and simplified contents** (all 17 chapters have stand-alone Abstract, Surveillance and monitoring, Results, Discussion and Related projects and links) and all data published on EFSA Knowledge junction.
- **Integrated analyses**, data mining and harmonised analyses across human and food/animal sections/sectors



# FBO surveillance data, EU, 2017



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# Aspects of improvements / achievements

- Monitoring data from food, animals, feed and food-borne outbreaks: **analyses according data quality** (strength of medical evidence)
- Transparent results support **law enforcement** actions:

**Table 14:** Comparisons of proportions (%) of *Salmonella*-positive single samples from pig carcasses, by sampler, based on eight reporting Member States, EU, 2017

Country	Competent authorities (CA)					Food Business Operator (FBOp)					p-value <sup>(a)</sup>	Interpretation
	Sample weight	Tested	Positive	%	CI <sub>95</sub>	Sample weight	Tested	Positive	%	CI <sub>95</sub>		
Belgium	600 cm <sup>2</sup>	1,048	57	5.44	[4.15; 6.99] <sup>(a)</sup>	600 cm <sup>2</sup>	4,774	112	2.35	[1.94; 2.82]	***	CA > FBOp
Bulgaria	400 cm <sup>2</sup>	734	2	0.27	[0.03; 0.98]	400 cm <sup>2</sup>	425	2	0.47	[0.06; 1.69]	NS	
	25 g	101	0	0	[0; 3.59] a	25 g	51	0	0	[0; 6.98] a	NS	
	tot	835	2	0.24	[0.03; 0.85]	tot	476	2	0.42	[0.05; 1.51]	NS	
Greece	400 cm <sup>2</sup>	64	1	1.56	[0.04; 8.4]	400 cm <sup>2</sup>	955	0	0	[0; 0.39] a	+	CA > FBOp
Italy	400 cm <sup>2</sup>	170	22	13.0	[8.2; 19.5]	4 cm <sup>2</sup>	14,186	221	1.56	[1.36; 1.78]	***	CA > FBOp
Netherlands	400 cm <sup>2</sup>	150	23	15.33	[9.98; 22.11]	100 cm <sup>2</sup>	5,308	413	7.78	[7.07; 8.53]		
	tot	150	23	15.33	[9.98; 22.11]	tot	5,308	413	7.78	[7.07; 8.53]	**	CA > FBOp
Poland	400 cm <sup>2</sup>	2,720	37	1.36	[0.96; 1.87]	400 cm <sup>2</sup>	3,128	0	0	[0; 0.12] a	***	CA > FBOp
Slovakia	400 cm <sup>2</sup>	2,299	22	0.96	[0.6; 1.45]	400 cm <sup>2</sup>	4,509	0	0	[0; 0.08] a	***	CA > FBOp
Spain	400 cm <sup>2</sup>	384	45	11.72	[8.68; 15.37]	400 cm <sup>2</sup>	2,746	176	6.41	[5.52; 7.39]	***	CA > FBOp
<b>Total (MS)</b>		<b>13,290</b>	<b>414</b>	<b>3.12</b>	<b>[2.82; 3.42]</b>		<b>36,082</b>	<b>924</b>	<b>2.56</b>	<b>[2.04; 2.73]</b>	<b>***</b>	<b>CA &gt; FBOp</b>

(a): One-sided, 97.5% confidence interval; p- value interpretation: NS: not significant; + < 0.10; \*\* < 0.01; \*\*\* < 0.001.

Results from Competent Authority more frequently positive compared to (Food Business) Operator samples

# Categorisation of data used in EUSRs

**Table 1:** Categorisation of data used in EUSR 2017 (adapted from Boelaert et al., 2016)

Category	Type of analyses	Type/comparability between MS	Examples
<b>I</b>	<b>Descriptive summaries at national level and EU level</b>	Programmed harmonised monitoring or surveillance	<i>Salmonella</i> national control programmes in poultry; bovine tuberculosis; bovine and small ruminant brucellosis; <i>Trichinella</i> in pigs at slaughterhouse; <i>Echinococcus granulosus</i> at slaughterhouse
	<b>EU trend watching (trend monitoring)</b>	Comparable between MS; results at EU level are interpretable	
	<b>Spatial and temporal trends analyses at the EU level</b>		
<b>II</b>	<b>Descriptive summaries at national level and EU level</b>	Not fully harmonised monitoring or surveillance	Food-borne outbreak data. Monitoring of compliance with process hygiene and food safety criteria for <i>L. monocytogenes</i> , <i>Salmonella</i> and <i>E. coli</i> according Reg. No. 2073/2005. Monitoring of Rabies
	<b>EU trend watching (trend monitoring)</b>	Not fully comparable between MS; caution needed when interpreting results at the EU level	
	<b>No trend analysis at the EU level</b>		
<b>III</b>	<b>Descriptive summaries at national level and EU level</b>	Non-harmonised monitoring or surveillance data with no (harmonised) reporting requirements	<i>Campylobacter</i> ; <i>Yersinia</i> ; Q-fever; <i>Francisella tularensis</i> ; West Nile virus; <i>Taenia</i> spp.; other zoonoses; <i>Toxoplasma</i>
	<b>No EU trend watching (trend monitoring)</b>	Not comparable between MS; extreme caution needed when interpreting results at the EU level	
	<b>No trend analysis at the EU level</b>		

# Categorisation of data used in EUSRs (2)

Much of the rationale of recrafting the EU zoonoses-FBO data collection and analyses relies on key articles like:

**Table I**  
**Appropriate use of models in the context of epidemiological knowledge and data quality** (47, 93, 96)

Epidemiological knowledge	Data quality and quantity	
	Poor	Good
Poor	Exploration of hypotheses	Hypothesis testing
Good	Simplified representation of past events, and guarded use for prediction of future events	Detailed representation of past events, and prediction of future events

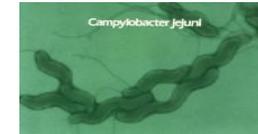
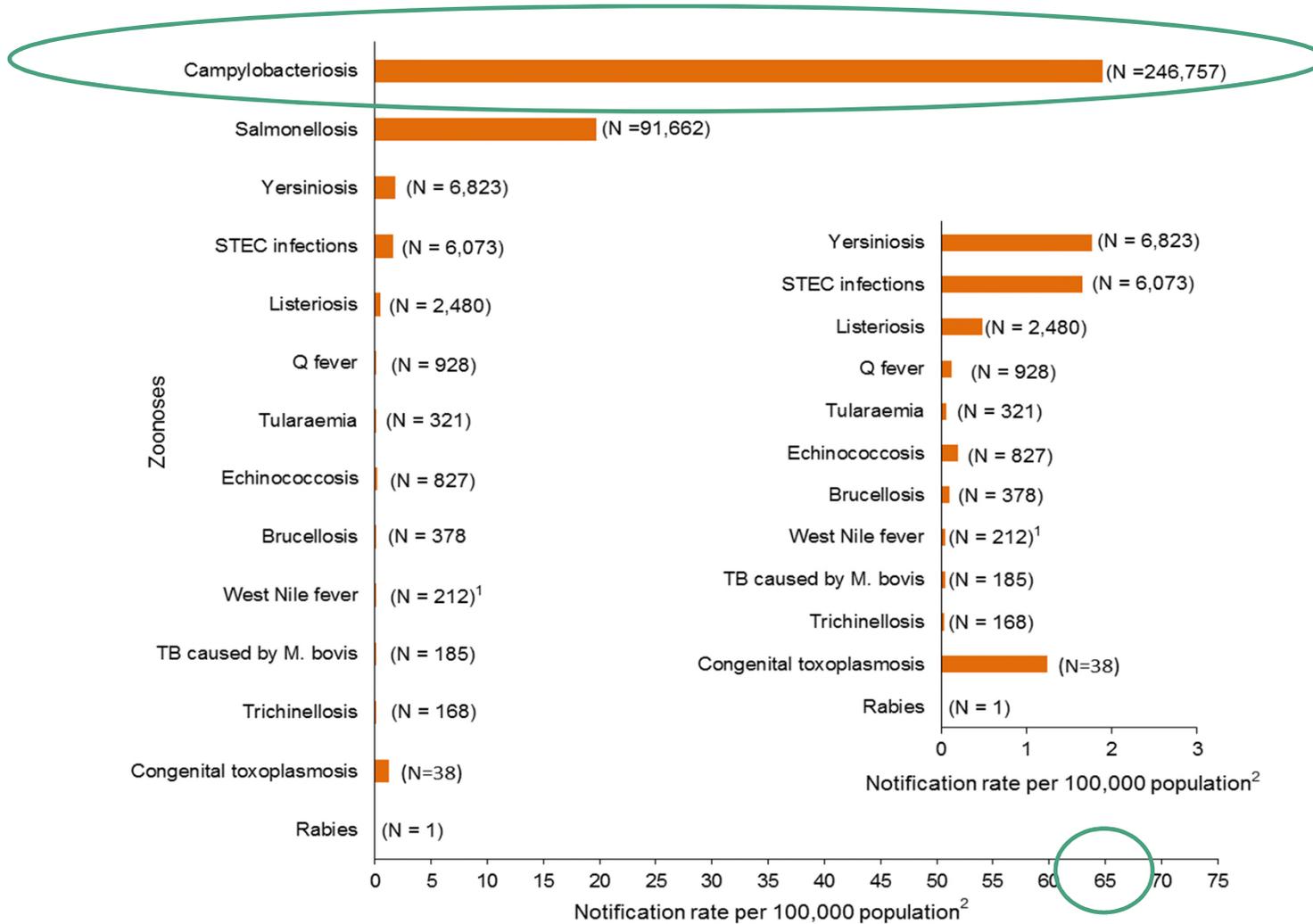
[Rev Sci Tech](#). 2006 Apr;25(1):293-311.

**Use and abuse of mathematical models: an illustration from the 2001 foot and mouth disease epidemic in the United Kingdom.**

[Kitching RP<sup>1</sup>](#), [Thrusfield MV](#), [Taylor NM](#).

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# Reported numbers and notification rates of confirmed human zoonoses in the EU, 2017



66.5

## Reported hospitalisation and case fatality rates due to zoonoses in confirmed human cases in the EU, 2017

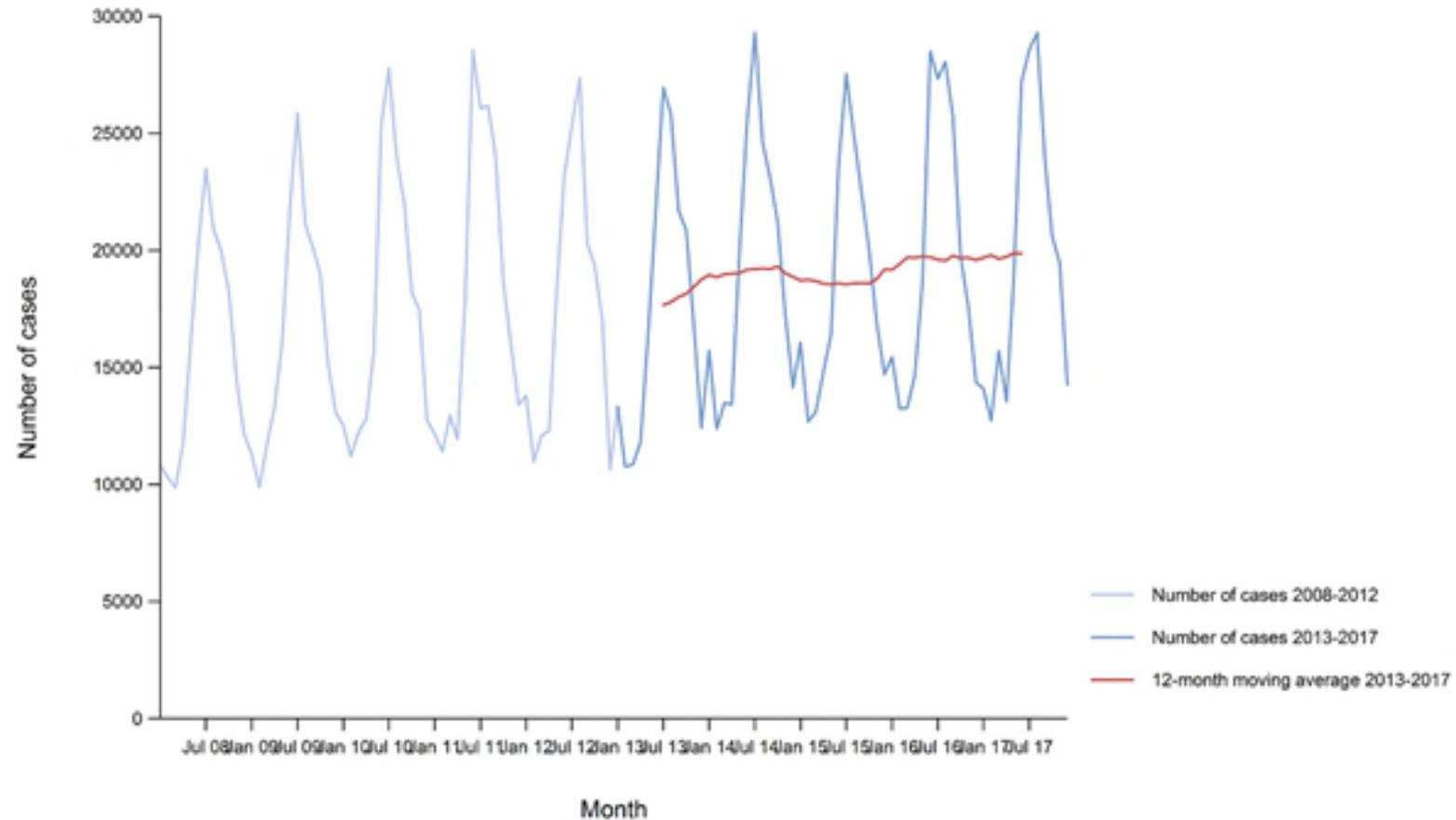


Disease	Number of confirmed <sup>(a)</sup> human cases	Hospitalisation				Deaths			
		Status available (%)	Number of reporting MSs <sup>(b)</sup>	Reported hospitalised cases	Proportion hospitalised (%)	Outcome available (%)	Number of reporting MSs <sup>(b)</sup>	Reported deaths	Case fatality (%)
Campylobacteriosis	246,757	27.6	17	20,810	30.5	72.8	16	45	0.04
Salmonellosis	91,662	43.1	14	16,796	42.5	67.8	17	156	0.25
Yersiniosis	6,823	27.1	14	616	33.4	65.5	15	3	0.07
STEC infections	6,073	41.0	18	933	37.5	66.1	21	20	0.33
Listeriosis	2,480	40.4	16	988	98.6	65.8	18	225	13.8
Q-fever	928	NA <sup>(c)</sup>	NA	NA	NA	56.0	10	7	1.55
Echinococcosis	827	31.2	14	140	54.3	30.1	14	1	0.40
Brucellosis	378	45.8	10	104	60.1	33.9	10	1	0.78
Tularaemia	321	38.3	9	76	61.8	51.1	9	1	0.6
West Nile fever <sup>(d)</sup>	212	72.2	8	134	87.6	98.6	9	25	12.0
Trichinellosis	168	44.6	9	56	74.7	40.5	9	0	0.0
Congenital toxoplasmosis	38	57.9	3	18	NA	63.2	3	0	0.0
Rabies	1	NA <sup>(c)</sup>	NA	NA	NA	0.0	0	NA	NA

# Campylobacteriosis in humans, EU, 2008-2017



There was a significantly increasing trend over the period 2008–2017; however, in the last 5 years (2013–2017) the EU/EEA trend has not shown any statistically significant increase or decrease.



# Campylobacteriosis in humans, EU, 2017



**Table 5:** Reported human cases of campylobacteriosis and notification rates per 100,000 population in the EU/EFTA, by country and year, 2013–2017

Country	2017					2016		2015		2014		2013	
	National coverage <sup>(a)</sup>	Data format <sup>(a)</sup>	Total cases	Confirmed cases & rates									
				Cases	Rate								
Austria	Y	C	7,204	7,204	82.1	7,083	81.5	6,258	73.0	6,514	76.6	5,731	67.8
Belgium	Y	A	8,649	8,649	76.2	10,055	88.9	9,066	80.7	8,098	–	8,148	–
Bulgaria	Y	A	196	195	2.7	202	2.8	227	3.2	144	2.0	124	1.7
Croatia	Y	C	1,694	1,686	40.6	1,524	36.4	1,393	33.0	1,647	38.8	0	0.0
Cyprus	Y	C	20	20	2.3	21	2.5	29	3.4	40	4.7	56	6.5
Czech Republic	Y	C	24,508	24,326	230.0	24,084	228.2	20,960	198.9	20,750	197.4	18,267	173.7
Denmark	Y	C	4,255	4,255	74.0	4,712	82.6	4,327	76.5	3,773	67.0	3,772	67.3
Estonia	Y	C	347	285	21.7	298	22.6	318	24.2	285	21.7	382	28.9
Finland	Y	C	4,289	4,289	77.9	4,637	84.5	4,588	83.8	4,889	89.7	4,066	74.9
France <sup>(b)</sup>	N	C	6,579	6,579	49.1	6,698	50.2	6,074	45.7	5,958	45.2	5,198	39.6
Germany	Y	C	69,414	69,178	83.8	73,663	89.6	69,829	86.0	70,571	87.4	63,280	78.6
Greece <sup>(c)</sup>	–	–	–	–	–	–	–	–	–	–	–	–	–
Hungary	Y	C	7,840	7,807	79.7	8,556	87.0	8,342	84.6	8,444	85.5	7,247	73.5
Ireland	Y	C	2,788	2,779	58.1	2,511	53.1	2,453	53.0	2,593	56.3	2,288	49.8
Italy <sup>(d)</sup>	N	C	1,060	1,060	–	1,057	–	1,014	–	1,252	–	1,178	–
Latvia	Y	C	61	59	3.0	90	4.6	74	3.7	37	1.8	9	0.4
Lithuania	Y	C	993	990	34.8	1,225	42.4	1,186	40.6	1,184	40.2	1,139	38.3
Luxembourg	Y	C	613	613	103.8	518	89.9	254	45.1	873	158.8	675	125.7
Malta	Y	C	231	231	50.2	212	48.8	248	57.8	288	67.7	246	58.4
Netherlands <sup>(e)</sup>	N	C	2,890	2,890	32.5	3,383	38.3	3,778	43.0	4,159	47.5	3,702	42.4
Poland	Y	C	874	874	2.3	773	2.0	653	1.7	650	1.7	552	1.4
Portugal	Y	C	602	596	5.8	359	3.5	271	2.6	–	–	–	–
Romania	Y	C	479	467	2.4	517	2.6	311	1.6	256	1.3	218	1.1
Slovakia	Y	C	7,057	6,946	127.8	7,623	140.5	6,949	128.2	6,744	124.5	5,845	108.0
Slovenia	Y	C	1,408	1,408	68.2	1,642	79.5	1,328	64.4	1,184	57.4	1,027	49.9
Spain <sup>(d)</sup>	N	C	18,860	18,860	–	15,542	–	13,227	–	11,481	–	7,064	–
Sweden	Y	C	10,608	10,608	106.1	11,021	111.9	9,180	94.2	8,288	85.9	8,114	84.9
United Kingdom	Y	C	63,304	63,304	96.2	58,911	90.1	59,797	92.2	66,716	103.7	66,382	103.9
<b>EU Total</b>	–	–	<b>246,823</b>	<b>246,158</b>	<b>64.8</b>	<b>246,917</b>	<b>66.3</b>	<b>232,134</b>	<b>62.9</b>	<b>236,818</b>	<b>66.5</b>	<b>214,710</b>	<b>61.4</b>

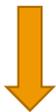
# FBO, and human campylobacteriosis cases, EU, 2017

EU/Non-EU	Country	Detailed causative agent	Outbreak strength Metrics	Yes				No				Total			
				Number of outbreaks	Number of Human cases	Number of hospitalised	Number of Deaths	Number of outbreaks	Number of Human cases	Number of hospitalised	Number of Deaths	Number of outbreaks	Number of Human cases	Number of hospitalised	Number of Deaths
EU	Austria	C. coli						2	4	1	0	2	4	1	0
EU	Austria	Campylobacter spp., unspecified						3	7	1	0	3	7	1	0
EU	Austria	C. jejuni						19	50	11	0	19	50	11	0
EU	Belgium	Campylobacter						3	11	6	0	3	11	6	0
EU	Belgium	C. jejuni						1	7	2	0	1	7	2	0
EU	Croatia	Campylobacter						2	7	3	0	2	7	3	0
EU	Croatia	C. jejuni						4	37	5	0	4	37	5	0
EU	Czech Republic	Campylobacter						1	17	1	0	1	17	1	0
EU	Denmark	C. jejuni		1	66	0	0	1	6	0	0	2	72	0	0
EU	Finland	Campylobacter spp., unspecified		1	9	2	0	1	2	2	0	2	11	4	0
EU	Finland	C. jejuni		1	2	0	0					1	2	0	0
EU	France	C. coli						3	6	0	0	3	6	0	0
EU	France	Campylobacter spp., unspecified		2	4	0	0	22	111	9	0	24	115	9	0
EU	France	C. jejuni		1	2	0	0	12	84	6	0	13	86	6	0
EU	Germany	Campylobacter		2	17	1	0	131	331	61	0	133	348	62	0
EU	Germany	C. jejuni		14	204	25	0					14	204	25	0
EU	Italy	C. jejuni						1	2	0	0	1	2	0	0
EU	Latvia	C. jejuni						3	6	3	0	3	6	3	0
EU	Lithuania	Campylobacter spp., unspecified						7	15	15	0	7	15	15	0
EU	Malta	Campylobacter						8	17	3	0	8	17	3	0
EU	Netherlands	Campylobacter spp., unspecified						5	12	1	0	5	12	1	0
EU	Poland	C. jejuni						1	2	0	0	1	2	0	0
EU	Slovakia	C. coli		1	7	0	0	7	9	2	1	8	16	2	1
EU	Slovakia	Campylobacter spp., unspecified						7	9	4	0	7	9	4	0
EU	Slovakia	C. jejuni		1	14	0	0	101	94	24	0	102	108	24	0
EU	Spain	C. coli						1	2	0	0	1	2	0	0
EU	Spain	Campylobacter spp., unspecified						2	23	0	0	2	23	0	0
EU	Spain	C. jejuni		1	3	1	0	7	82	8	0	8	85	9	0
EU	Sweden	Campylobacter						3	6	1	0	3	6	1	0
EU	Sweden	C. jejuni		1	2,165	0	0					1	2,165	0	0
EU	United Kingdom	Campylobacter spp., unspecified		8	130	8	0	1	16	1	0	9	146	9	0
EU	<b>Total</b>			<b>34</b>	<b>2,623</b>	<b>37</b>	<b>0</b>	<b>359</b>	<b>975</b>	<b>170</b>	<b>1</b>	<b>393</b>	<b>3,598</b>	<b>207</b>	<b>1</b>
<b>Total</b>				<b>34</b>	<b>2,623</b>	<b>37</b>	<b>0</b>	<b>359</b>	<b>975</b>	<b>170</b>	<b>1</b>	<b>393</b>	<b>3,598</b>	<b>207</b>	<b>1</b>

# FBO, by incriminated food vehicle, EU, 2010-2017

Distribution of strong-evidence outbreaks caused by *Campylobacter* (including strong-evidence waterborne outbreaks), by food vehicle

EU, 2010-2016 

EU, 2017 

EU	Food vehicle	Number of outbreaks	Number of outbreaks percentage
EU	Milk	18	52.9%
EU	Broiler meat (Gallus gallus) and products thereof	9	26.5%
EU	Dairy products (other than cheeses)	2	5.9%
EU	Other or mixed red meat and products thereof	2	5.9%
EU	Other, mixed or unspecified poultry meat and products thereof	2	5.9%
EU	Meat and meat products	1	2.9%
EU	<b>Total</b>	<b>34</b>	<b>100.0%</b>
<b>Total</b>		<b>34</b>	<b>100.0%</b>

EU	Food vehicle	Number of outbreaks	Number of outbreaks percentage
EU	Broiler meat (Gallus gallus) and products thereof	93	44.9%
EU	Milk	43	20.8%
EU	Other, mixed or unspecified poultry meat and products thereof	17	8.2%
EU	Mixed food	11	5.3%
EU	Tap water, including well water	8	3.9%
EU	Pig meat and products thereof	5	2.4%
EU	Bovine meat and products thereof	4	1.9%
EU	Other foods	4	1.9%
EU	Buffet meals	3	1.4%
EU	Cheese	3	1.4%
EU	Dairy products (other than cheeses)	3	1.4%
EU	Other or mixed red meat and products thereof	3	1.4%
EU	Meat and meat products	2	1.0%
EU	Turkey meat and products thereof	2	1.0%
EU	Eggs and egg products	1	0.5%
EU	Fish and fish products	1	0.5%
EU	Fruit, berries and juices and other products thereof	1	0.5%
EU	Sheep meat and products thereof	1	0.5%
EU	Unknown	1	0.5%
EU	Vegetables and juices and other products thereof	1	0.5%
EU	<b>Total</b>	<b>207</b>	<b>100.0%</b>
<b>Total</b>		<b>207</b>	<b>100.0%</b>

## *Campylobacter* monitoring results PHC chilled broiler carcasses, EU, 2017



There is now a *Campylobacter* process hygiene criterion (PHC) described in Regulation (EC) No 2017/1495 amending Regulation (EC) No 2073/2005 and in force since 1 January 2018. The criterion applies to food-business operator (FBOp) and the limits (1,000 CFU/g) apply to samples taken for official control (Reg. 882/2004) to verify whether the criteria have been met.

FBOp should use the criteria to validate and verify the correct functioning of their food safety management procedures based on HACCP principles and GMP. If a food exceeds the relevant criteria limit, corrective actions ought to be taken. **The reporting of official control monitoring data, which are collected by the Competent Authorities (CA), becomes mandatory from year 2020 onwards.**

2017 results ;

Spain was the only MS that reported quantitative monitoring data collected according to the PHC. Of the 150 neck skin samples from chilled broiler carcasses, 66 (44%) exceeded the limit and tested  $\geq 1,000$  CFU/g of which 53 (84%) ranged between 1,000 and 10,000 CFU/g and 13 tested  $> 10,000$  CFU/g. Overall, 56 samples out of the 66 that exceeded the limit of 1,000 CFU/g were reported as *C. jejuni*.

# Campylobacter general monitoring results food-animals, EU, 2017

**Table 8:** Summary of *Campylobacter* statistics related to major food categories and animal species, reporting Member States and non-Member States, EU, 2017

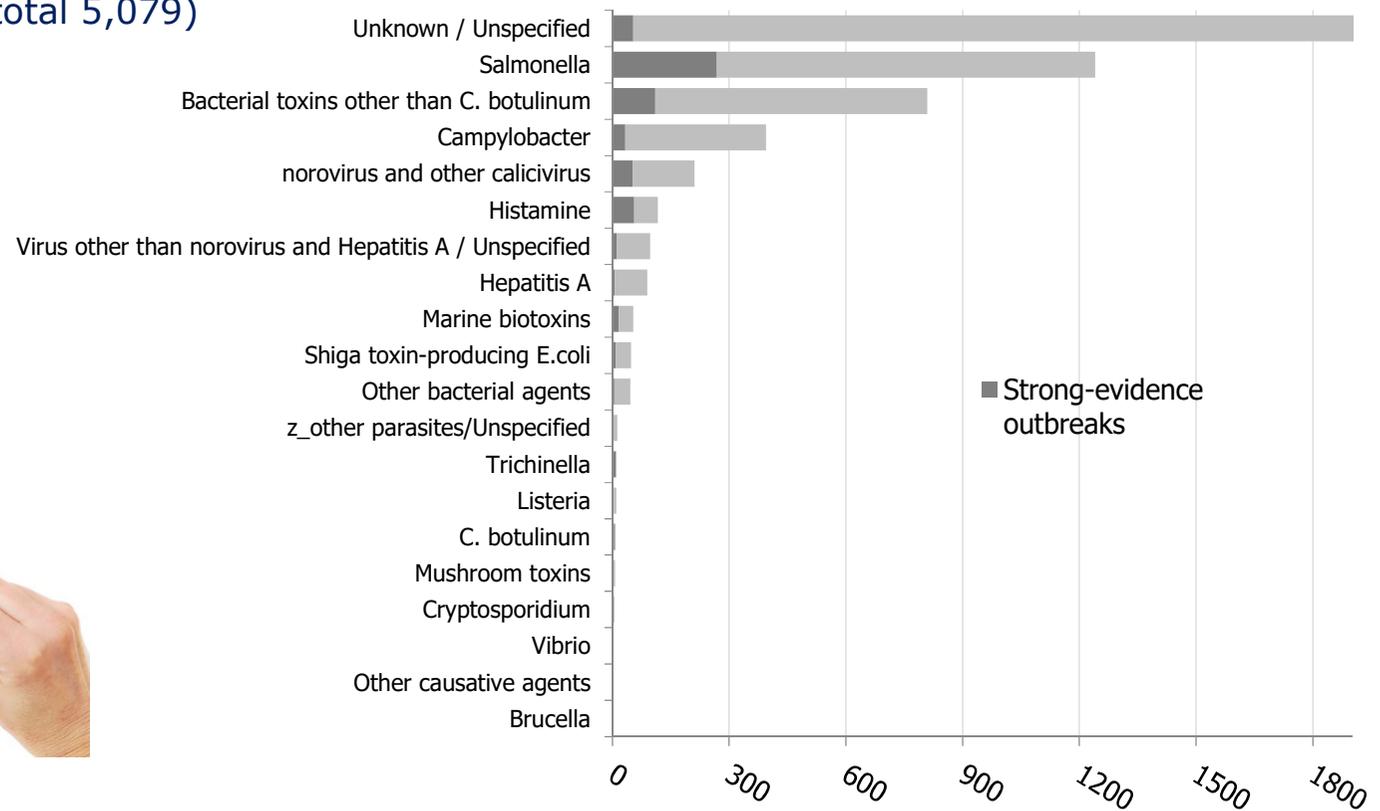
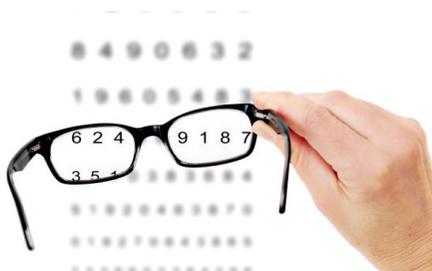
Food category	Animal species	Number of reporting (MS/non-MS)	Number of tested units <sup>(a)</sup> , EU	Proportion (%) of positive units, EU
<b>Fresh Meat</b>	Broilers	18/1	13,445	37.4
	Turkeys	10/1	1,028	31.5
	Poultry (other than Broilers and Turkey)	8/0	1,425	27.7
	Pigs	6/0	843	6.9
	Bovine animals	6/0	1,456	1.4
<b>Meat products, RTE</b>	Broilers	3/1	101	0
	Turkeys	1/0	11	0
	Pigs	5/0	178	1.1
	Bovine animals	2/0	16	0
	Unspecified	5/0	74	0
<b>Milk and milk products</b>	Milk	9/0	1,554	1.9
	Cheese	8/0	522	0.5
<b>Animals</b>	Broilers	6/2	10,077	12.3
	Turkeys	0/1	0	0
	Pigs	10/2	3,817	17.6
	Bovine animals	11/2	9,147	6.9
	Cats and dogs	7/2	1,176	29.3
	Other animals <sup>(b)</sup>	8/2	5,817	6.3

# FBO surveillance data, EU, 2017

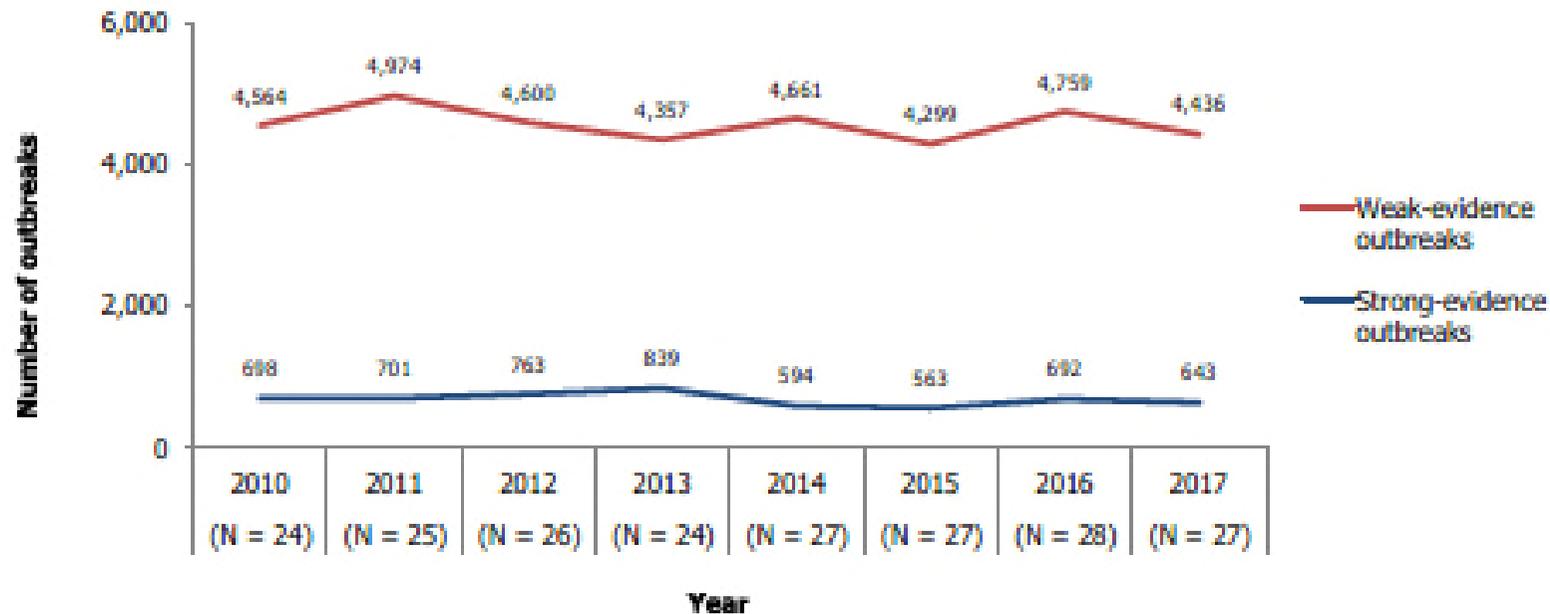
- 643 strong-evidence
- 4,436 weak-evidence

= number of FBO during 2017 (in total 5,079)

= average: ~ 100 FBO per week



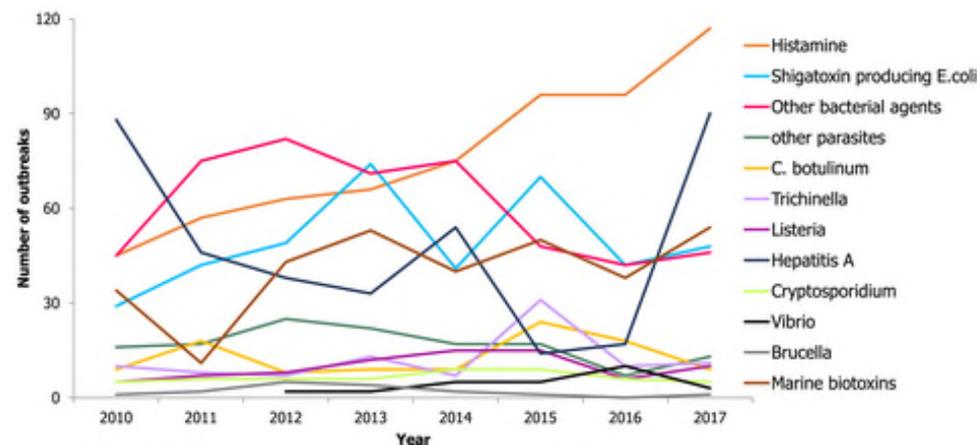
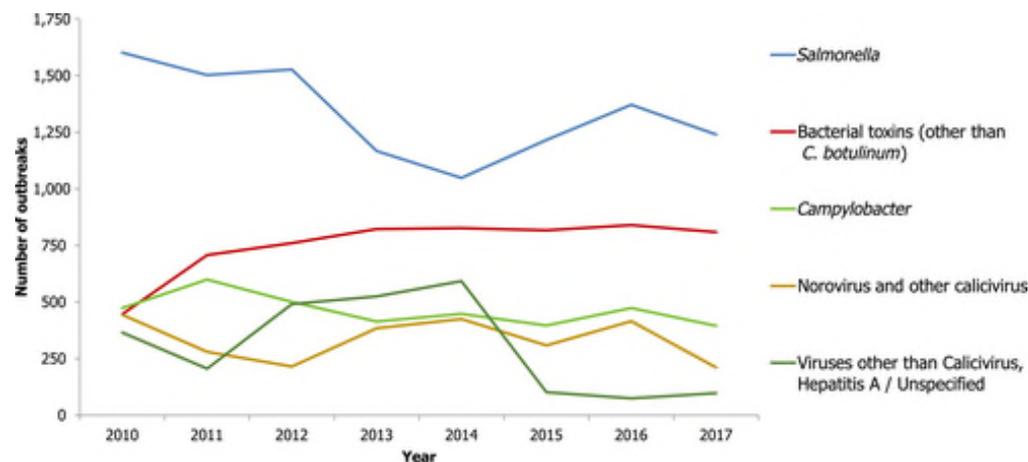
# FBO surveillance data, EU, 2010 - 2017



In 2017, 27 EU Member States (MS) reported in total 5,079 FBOs (372 less than 2016). Among the 43,400 involved cases, 4,541 hospitalisations and 33 deaths were reported.

# FBO surveillance data, by causative agent, EU, 2010 - 2017

Number of food-borne outbreaks reported in the EU Member States from 2010 to 2017, by causative agent



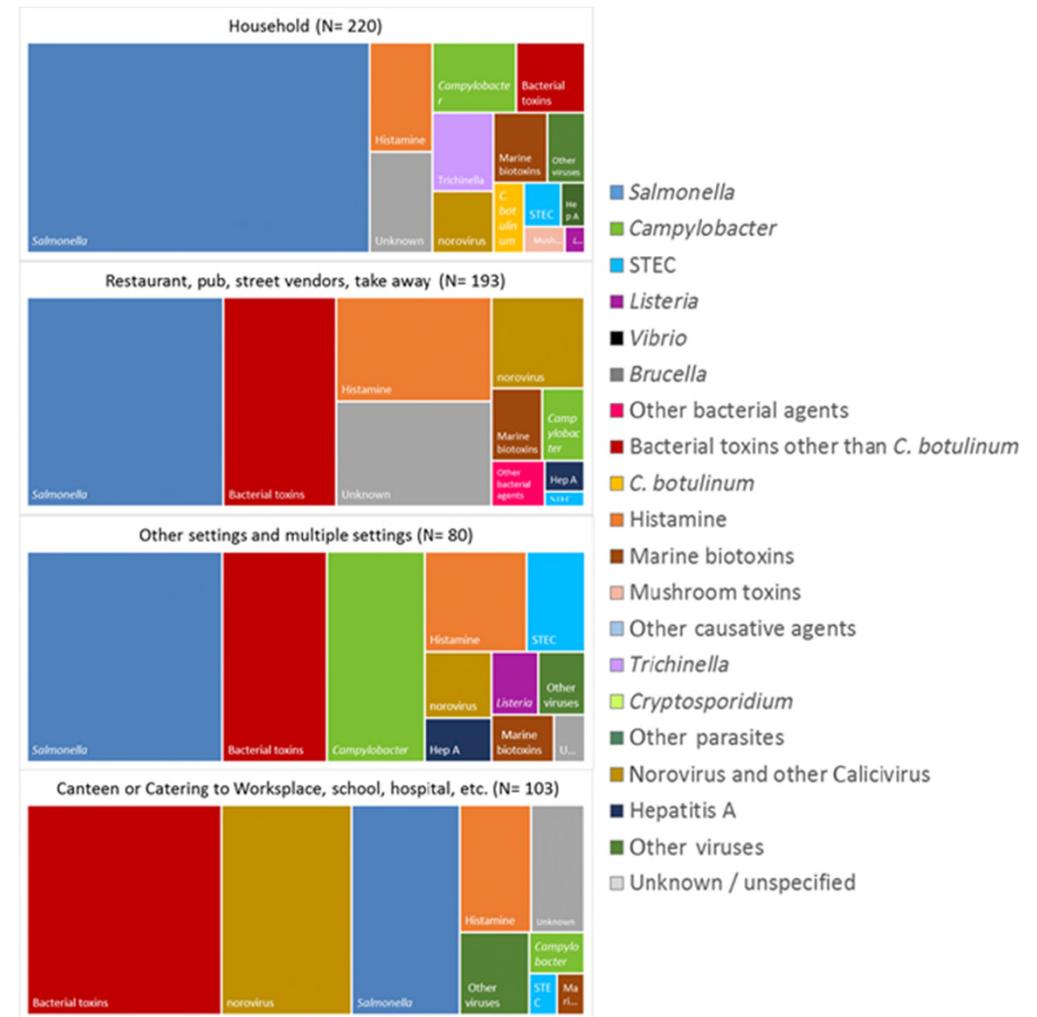
# FBO surveillance data, by setting, EU, 2017

What were the locations ('settings') where the food was consumed?

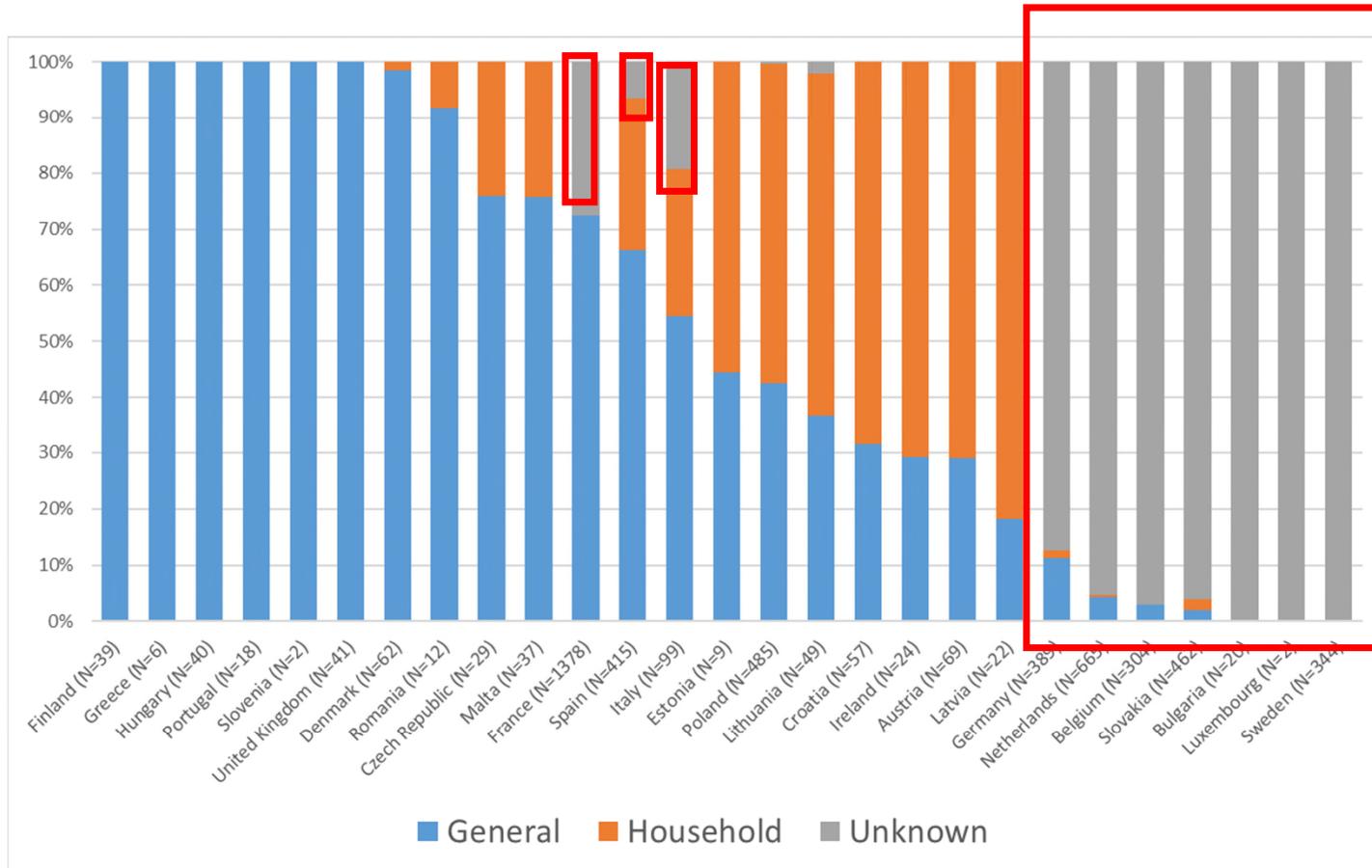
About one in three strong-evidence FBO happened at **home ('Household') (34.2%)**, followed by **'Restaurants, pubs, street vendors and take away' (30.0%)**, 'Canteen or catering to workplace, school, hospital' (16.0%) and 'Other settings' (such as farms, fairs and festivals, other) (12.4%).

What were the causative agents of strong-evidence FBO reported in those different settings?

They are shown in the figure to the right: in the home setting, the diversity of agents was largest and *Salmonella* was more frequently reported compared to other settings.



# Type of outbreaks reported by MS, EU, 2017



The **type of outbreaks is not reported for 2,507 FBO**, representing the 49,3% of total outbreaks reported in 2017

- *Introduction*
- *Zoonoses-FBO monitoring/surveillance data according Dir 2003/99 and Reg 2073/2005:*
  - *strengths and weaknesses of the data collected*
  - *Improvements and achievements made during previous years*
- *Highlights from 2017 EUSR: some major observations (trends, sources) on Campylobacter*
- **Discussion/questions/proposals**

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