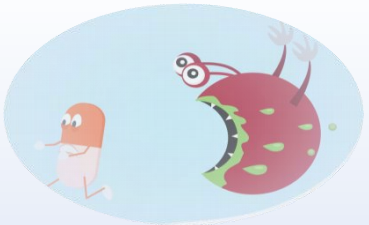
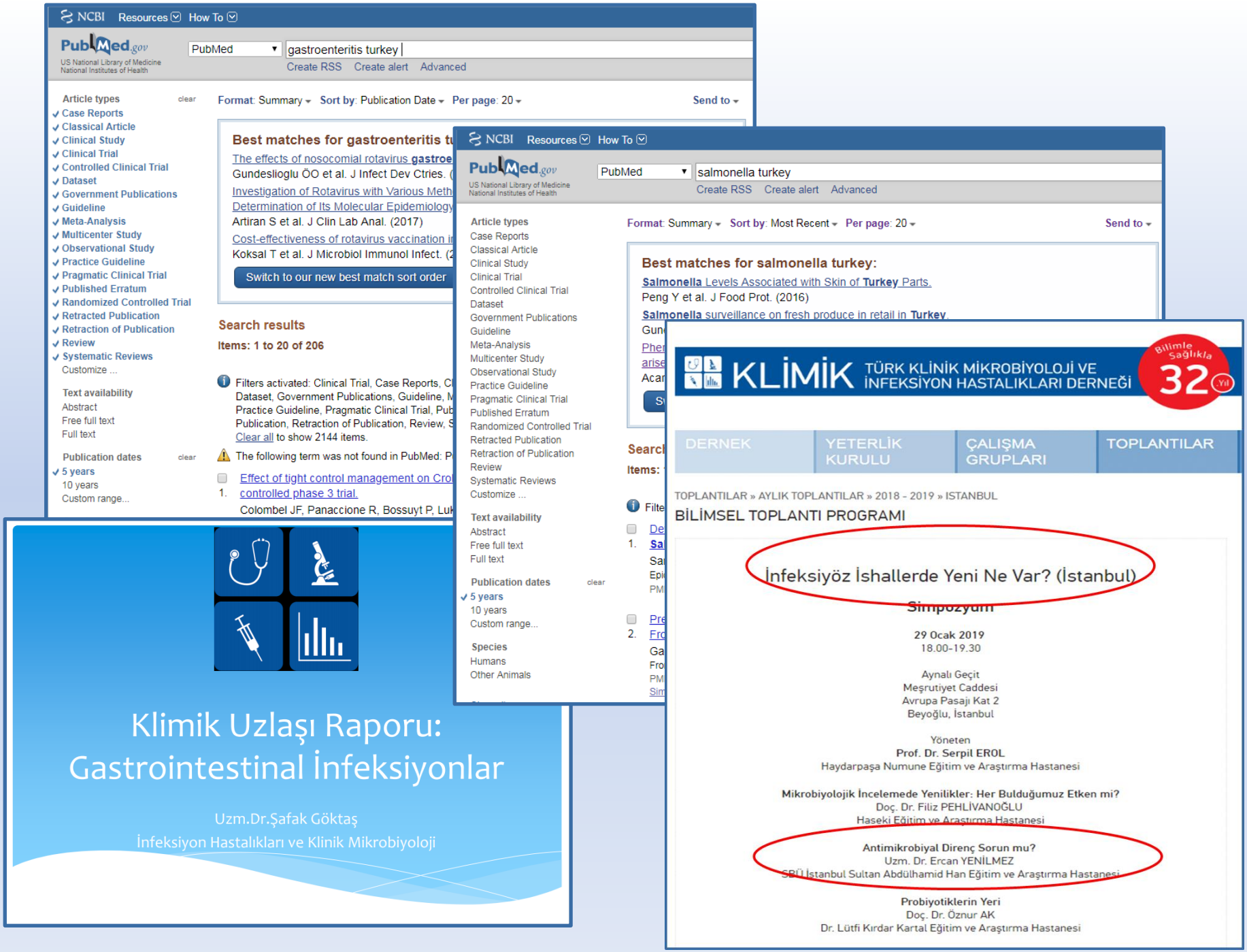


İnfeksiyöz İshaller

Antimikrobiyal Direnç Sorun Mu?

Dr. Ercan YENİLMEZ
Sultan Abdulhamid Han EAH, İstanbul

KLİMİK TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ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Salmonella Levels Associated with Skin of Turkey Parts.
Peng Y et al. J Food Prot. (2016)
Salmonella surveillance on fresh produce in retail in Turkey.
Klimik Uzlaşı Raporu:
Gastrointestinal İnfeksiyonlar
Uzm.Dr.Şafak Göktaş
İnfeksiyon Hastalıkları ve Klinik Mikrobiyoloji
KLİMİK
TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ
Bilimle Sağlıkla 32 Yıl
DERNEK
YETERLİK KURULU
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Uzm. Dr. Ercan YENİLMEZ
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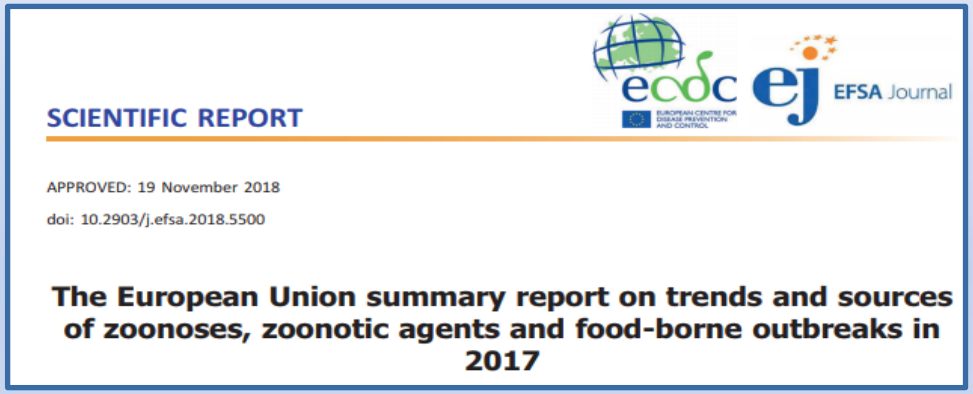
Probiyotiklerin Yeri
Doç. Dr. Öznur AK
Dr. Lütfi Kırdar Kartal Eğitim ve Araştırma Hastanesi

SCIENTIFIC REPORT

ADOPTED: 2 February 2018

doi: 10.2903/j.efsa.2018.5182

The European Union summary report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2016

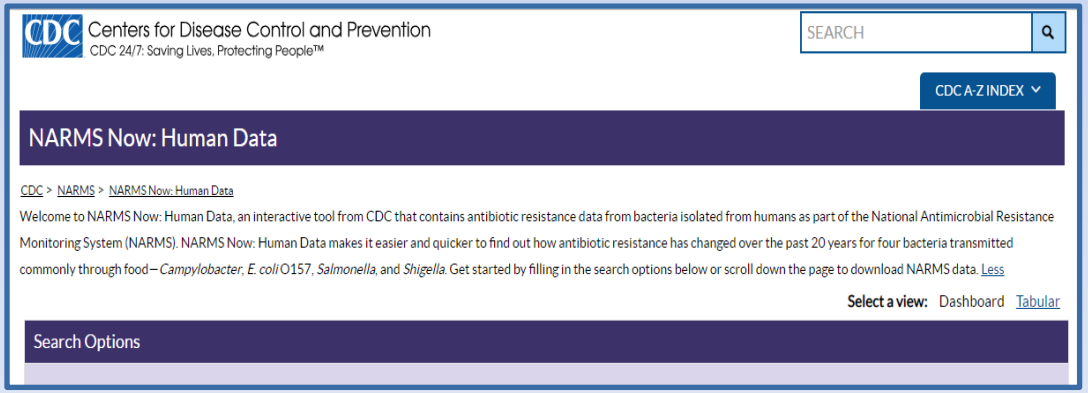


SCIENTIFIC REPORT

APPROVED: 19 November 2018

doi: 10.2903/j.efsa.2018.5500

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



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SEARCH

CDC A-Z INDEX

NARMS Now: Human Data

CDC > NARMS > NARMS Now: Human Data

Welcome to NARMS Now: Human Data, an interactive tool from CDC that contains antibiotic resistance data from bacteria isolated from humans as part of the National Antimicrobial Resistance Monitoring System (NARMS). NARMS Now: Human Data makes it easier and quicker to find out how antibiotic resistance has changed over the past 20 years for four bacteria transmitted commonly through food—*Campylobacter*, *E. coli* O157, *Salmonella*, and *Shigella*. Get started by filling in the search options below or scroll down the page to download NARMS data. Less

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- *Camphylobacter* türleri
- *Salmonella* türleri
- *Shigella* türleri
- *Yersinia* türleri
- Enterit ilişkili *E. Coli* türleri
- *Clostridioides difficile* *

GSBL

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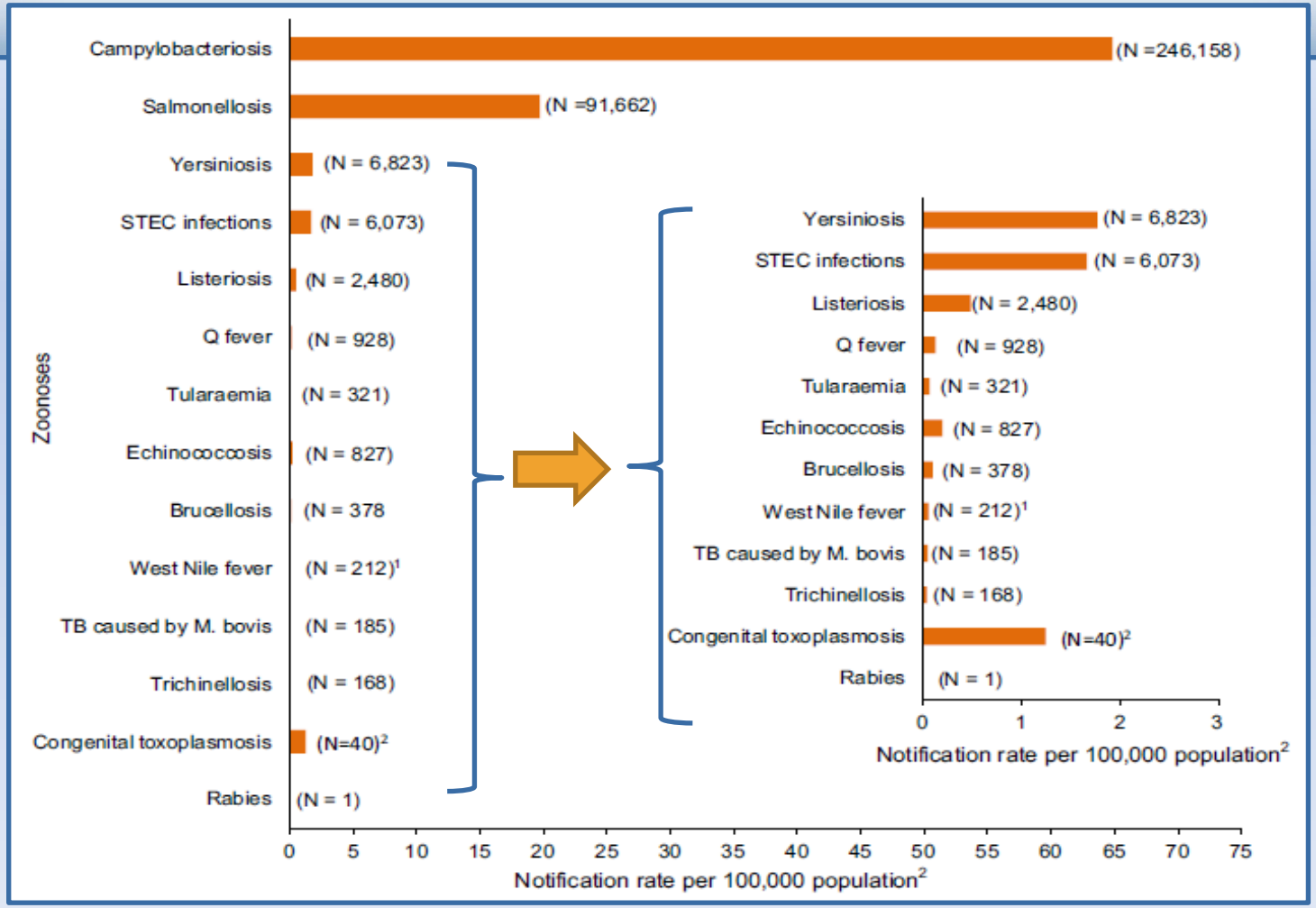
SCIENTIFIC REPORT

EFSA Journal

APPROVED: 19 November 2018

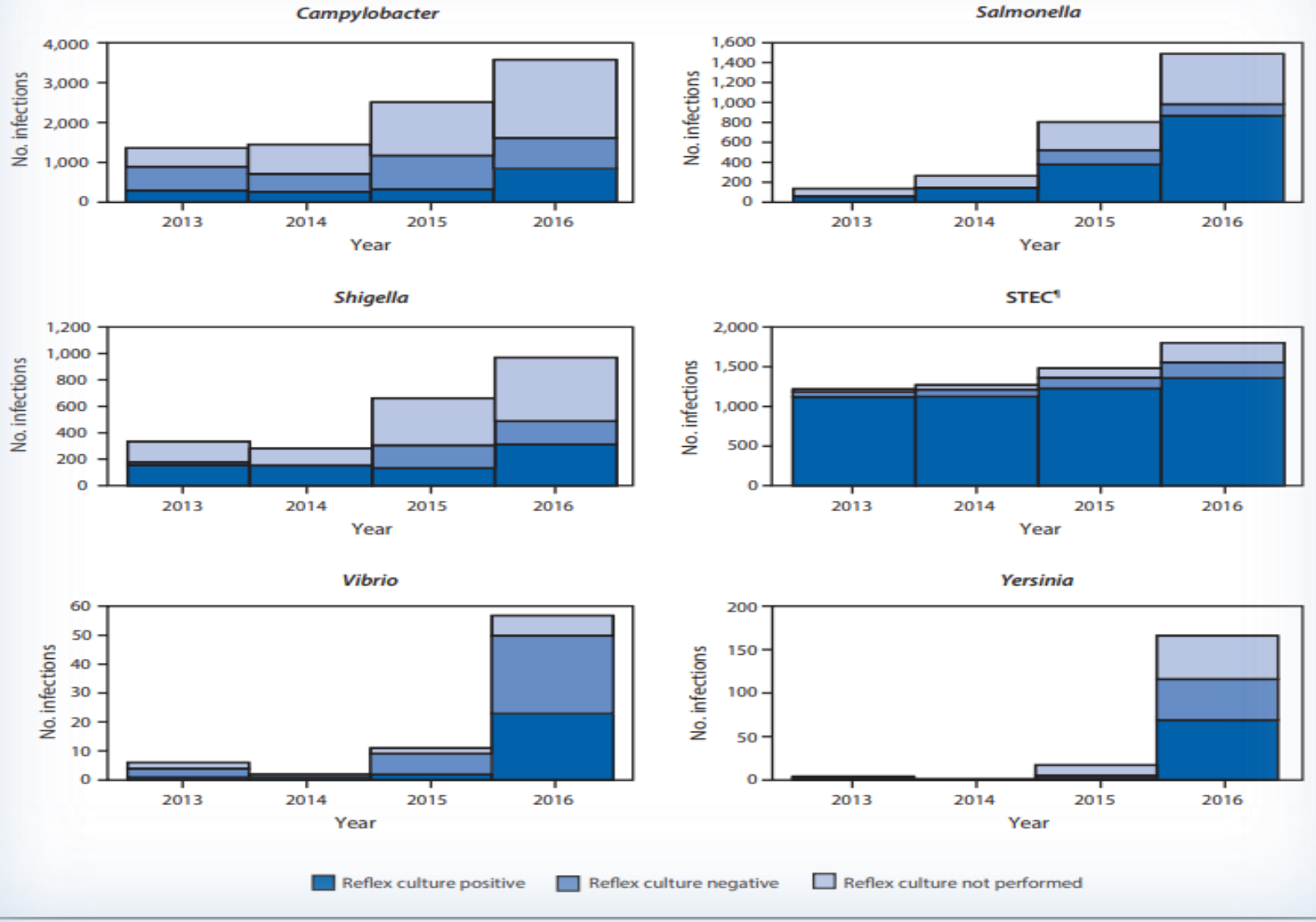
doi: 10.2903/j.efsa.2018.5500

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



Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
Weekly / Vol. 66 / No. 15
April 21, 2017

FIGURE. Number of infections with positive culture-independent diagnostic test (CIDT) results,* by pathogen, year, and culture status — FoodNet, 10 U.S. sites,† 2013–2016§



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Journal of Travel Medicine, 2017, Vol 24, Suppl 1, S13–S16
doi: 10.1093/jtm/tax003
Review

Review

Etiology of travellers' diarrhea

Z.D. Jiang[1,*] and H.L. DuPont[2]

[1]School of Medicine, University of Texas, Houston, TX, USA and [2]Houston School of Public Health, The University of Texas, and Medical School, Center for Infectious Diseases, Houston, TX, USA

Table 2. Identification of enteric pathogens from patients with TD by conventional detections, data obtained from 11 published literatures[3,4,6–15] between 2010 and 2016

Enteric pathogens	Latin America	Southeast Asia
No bacterial pathogens	28%	35%
Bacterial pathogens	72%	80%
Single pathogens	34%	41%
EAEC	38%	17%
ETEC	42%	28%
Shigella	4%	13%
Campylobacter	2%	16%
Salmonella	2%	5%
Norovirus	10%	3%
Giardia	3%	9%
Cryptospridium	4%	2%

Volume 9 • Number 1 • March 2018

JOURNAL OF CLINICAL AND EXPERIMENTAL INVESTIGATIONS

RESEARCH ARTICLE

2018

Akut Gastroenterit Etkenlerinin Moleküler Yöntemlerle Saptanması

[1] İstanbul Gelişim Tıp Laboratuvarları, İstanbul, Türkiye
[2] İzmir Katip Çelebi Üniversitesi Tıp Fakültesi Tıbbi Mikrobiyoloji AD, İzmir, Türkiye
[3] Sağlık Bilimleri Üniversitesi Tepecik Eğitim Araştırma Hastanesi, İzmir, Türkiye

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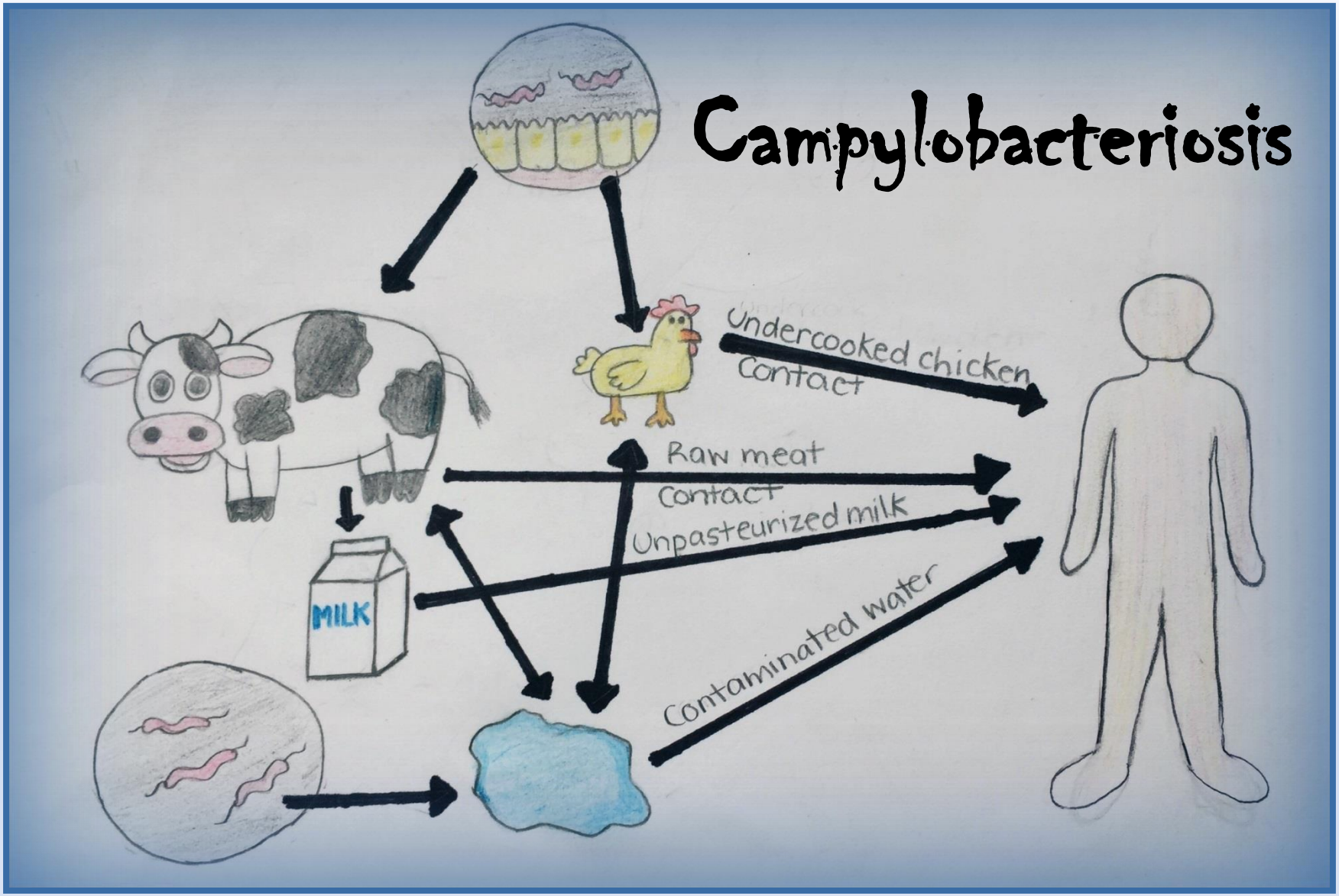
E-mail: aaksoygokmen@hotmail.com

Tablo 1. Tekli enfeksiyon etkenlerinin dağılımı

Bakteriyel etkenler	**n (%)**
Salmonella spp.	108 (23)
EHEC	14(6)
Clostridium difficile toxin B	8 (3,5)
Campylobacter spp.	8 (3,5)
Aeromonas spp.	7 (3)
Yersinia enterocolitica	2 (0,8)
Enterotoxigenic E. coli (ETEC)	2 (0,8)
Toplam	**149 (31,6)**
Paraziter etkenler	
Giardia lamblia	18 (7,8)
Dientamoeba fragilis	6 (2,6)
Cryptosporidium	2 (0,8)
Toplam	**26 (5,5)**
Viral etkenler	
Norovirus (GI/GII/GIV)	11 (4,7)
Astrovirus	4 (1,7)
Toplam	**15 (3,2)**


Campylobacteriosis
Undercooked chicken
Contact
Raw meat
Contact
Unpasteurized milk
MILK
Contaminated water

SCIENTIFIC REPORT

APPROVED: 19 November 2018

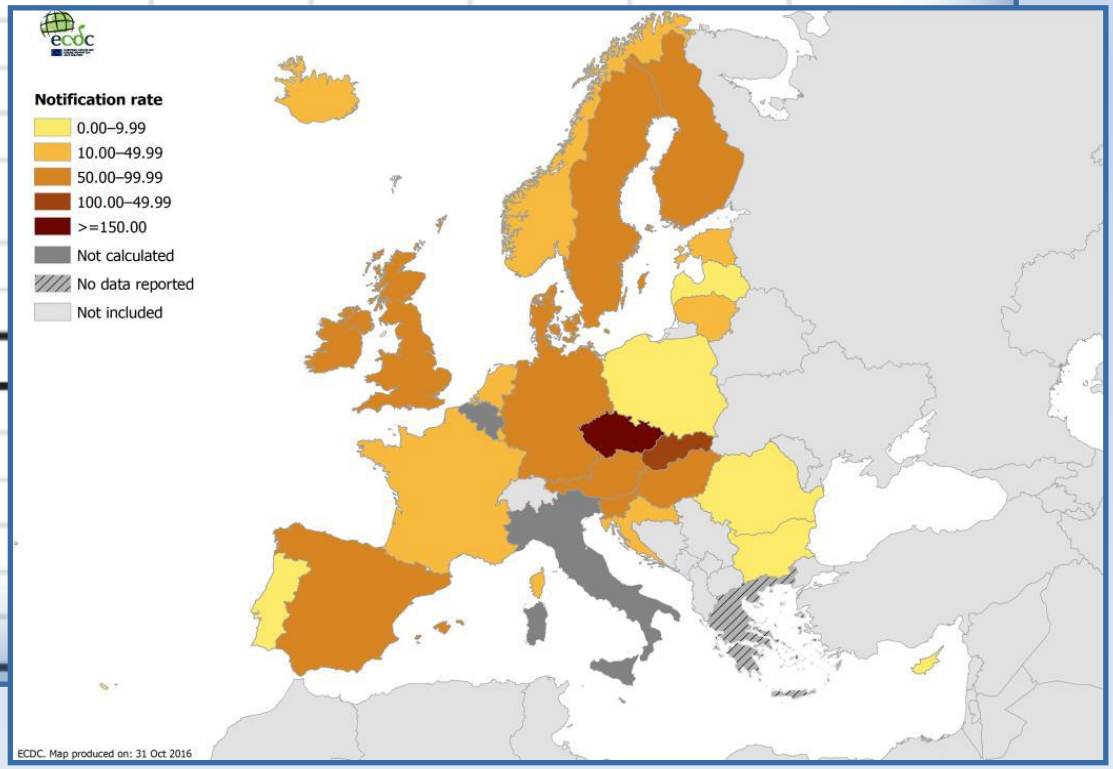
doi: 10.2903/j.efsa.2018.5500

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)

Tab … in the

	2017	2016	2015	2014	2013	Data source
Humans						
Total number of confirmed cases	246,158	246,917	232,134	236,818	214,710	ECDC
Total number of confirmed cases/100,000 population (notification rates)	64.8	66.3	62.9	66.5	61.4	ECDC
Number of reporting MS						
Infection acquired in the EU						
Infection acquired outside the EU						
Unknown travel status or unknown country of infection						
Number of outbreak-related cases						
Total number of outbreaks						
Food[a]						
Meat and meat products[b]						
Number of sampled units						
Number of reporting MS						
Milk and milk products[c]						
Number of sampled units						
Number of reporting MS						



Campylobacter İnfeksiyonları

- **Kinolonların kümes hayvanlarında kullanımı** insanlarda kinolon-dirençli *Campylobacter* suşlarının gelişiminden sorumlu
- ABD'de direnç oranları Avrupa'ya göre daha düşük
- ABD'de seyahat ile ilişkili enfeksiyonlarda yüksek direnç
- Avrupa'da seyahat ile ilişkili *Campylobacter* infeksiyonlarının %4.1'i Türkiye ile ilişkili

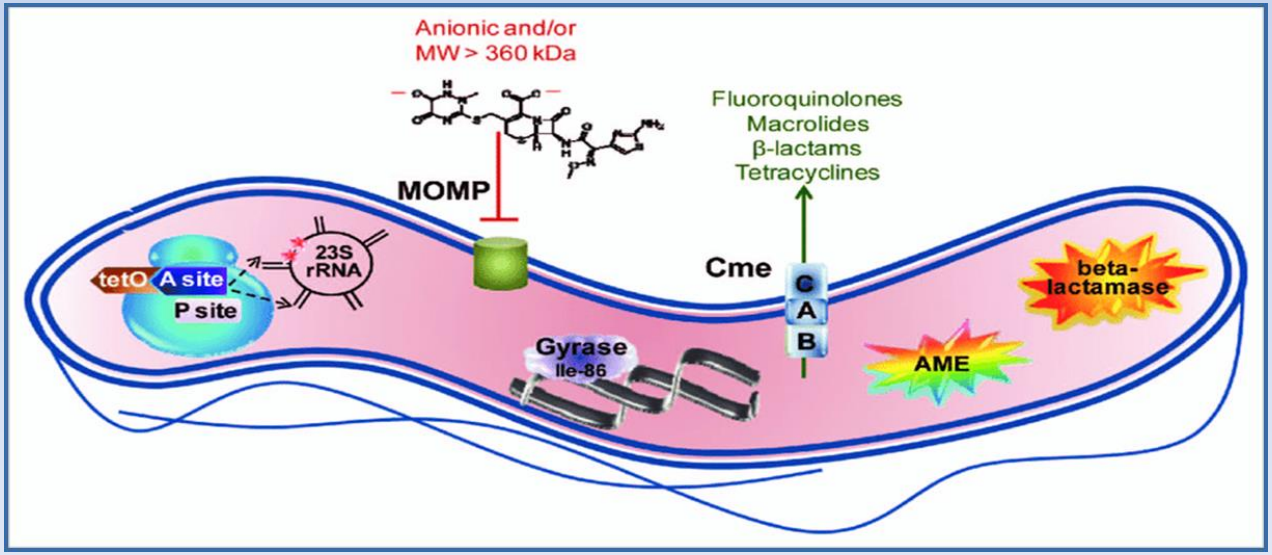


Table 32: Antimicrobial resistance in *Campylobacter jejuni* from humans per country in 2016

Country	Gentamicin		Co-amoxiclav		Ciprofloxacin		Erythromycin		Tetracyclines	
	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res
Austria	376	0.3	–	–	376	71.5	376	0	376	41.5
Cyprus	–	–	–	–	38	86.8	38	0	38	86.8
Denmark	294	0.7	–	–	294	33.3	294	1.0	294	16.0
Estonia	–	–	–	–	194	91.2	196	0	196	63.8
Finland[a]	–	–	–	–	2,923	61.0	2,776	2.8	1,097	44.2
France[b]	5,108	0.3	5,614	0.2	5,616	55.3	5,615	0.6	5,390	46.8
Italy	74	4.1	–	–	80	85.0	80	3.8	80	67.5
Lithuania[b]	–	–	–	–	289	86.9	329	6.1	275	63.6
Luxembourg	–	–	457	4.8	457	63.2	457	0.2	457	46.2
Malta	7	NA	8	NA	134	55.2	133	5.3	8	NA
Netherlands[b]	–	–	–	–	2,401	56.1	2,102	1.9	1,715	39.0
Portugal	167	0.6	–	–	167	94.0	167	6.6	167	82.0
Romania	18	0	18	0	18	77.8	18	0	18	44.4
Slovakia[b]	34	2.9	109	2.8	639	51.8	862	1.0	665	27.2
Slovenia	–	–	–	–	1,192	66.4	1,193	0.4	1,192	37.2
Spain	265	1.1	–	–	265	84.5	265	2.6	265	78.5
United Kingdom[b]	32	0	–	–	7,593	44.4	7,092	3.3	3,381	36.3
Total (17 MSs)	**6,375**	**0.4**	**6,206**	**0.6**	**22,676**	**54.6**	**21,993**	**2.1**	**15,614**	**42.8**
Iceland[b]	–	–	–	–	60	13.3	60	0.0	–	–
Norway	173	0.6	–	–	171	41.5	173	11.6	173	19.7

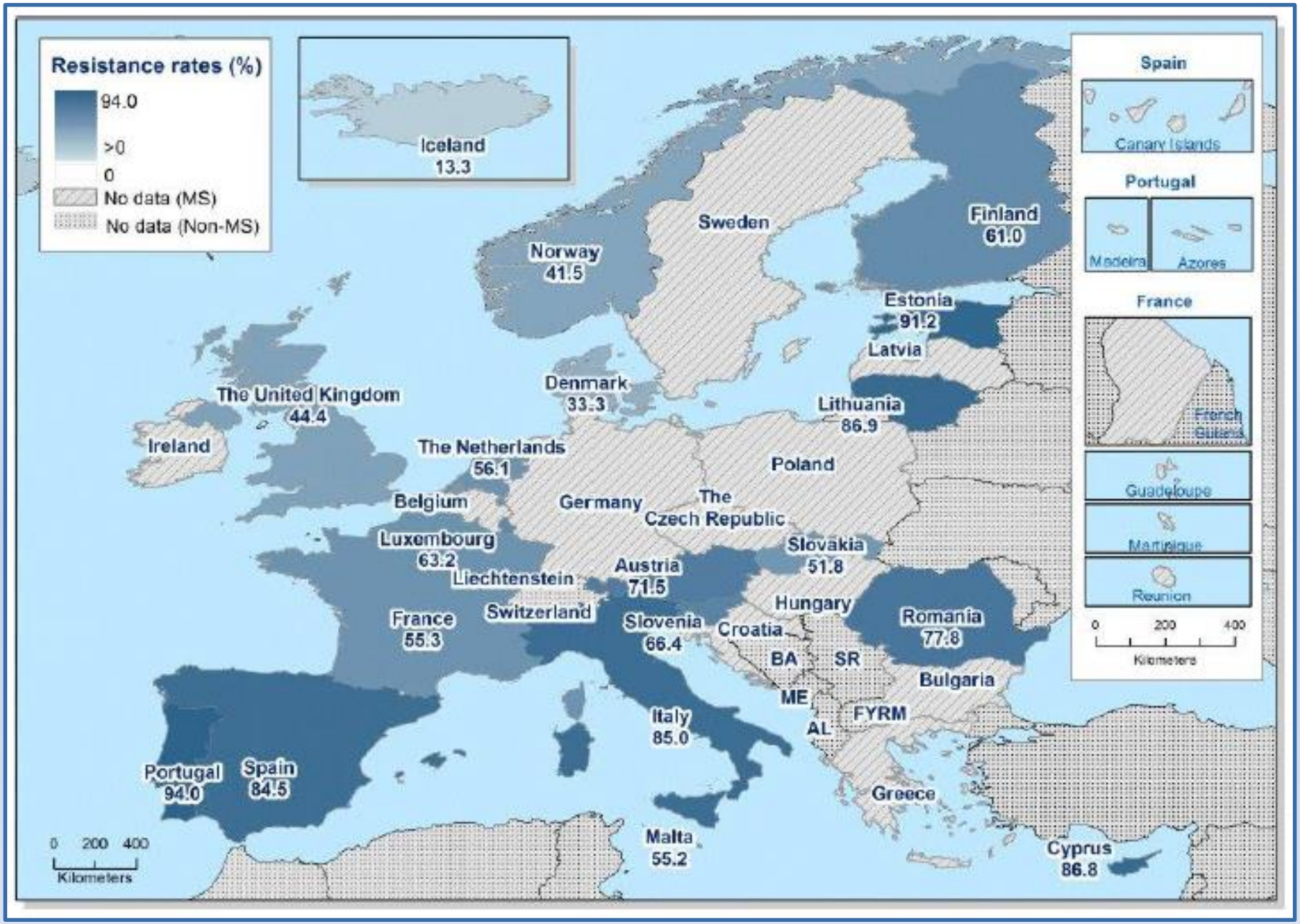


Figure 66: Distribution of **ciprofloxacin** resistance among **Campylobacter jejuni** from **human** cases in 2016

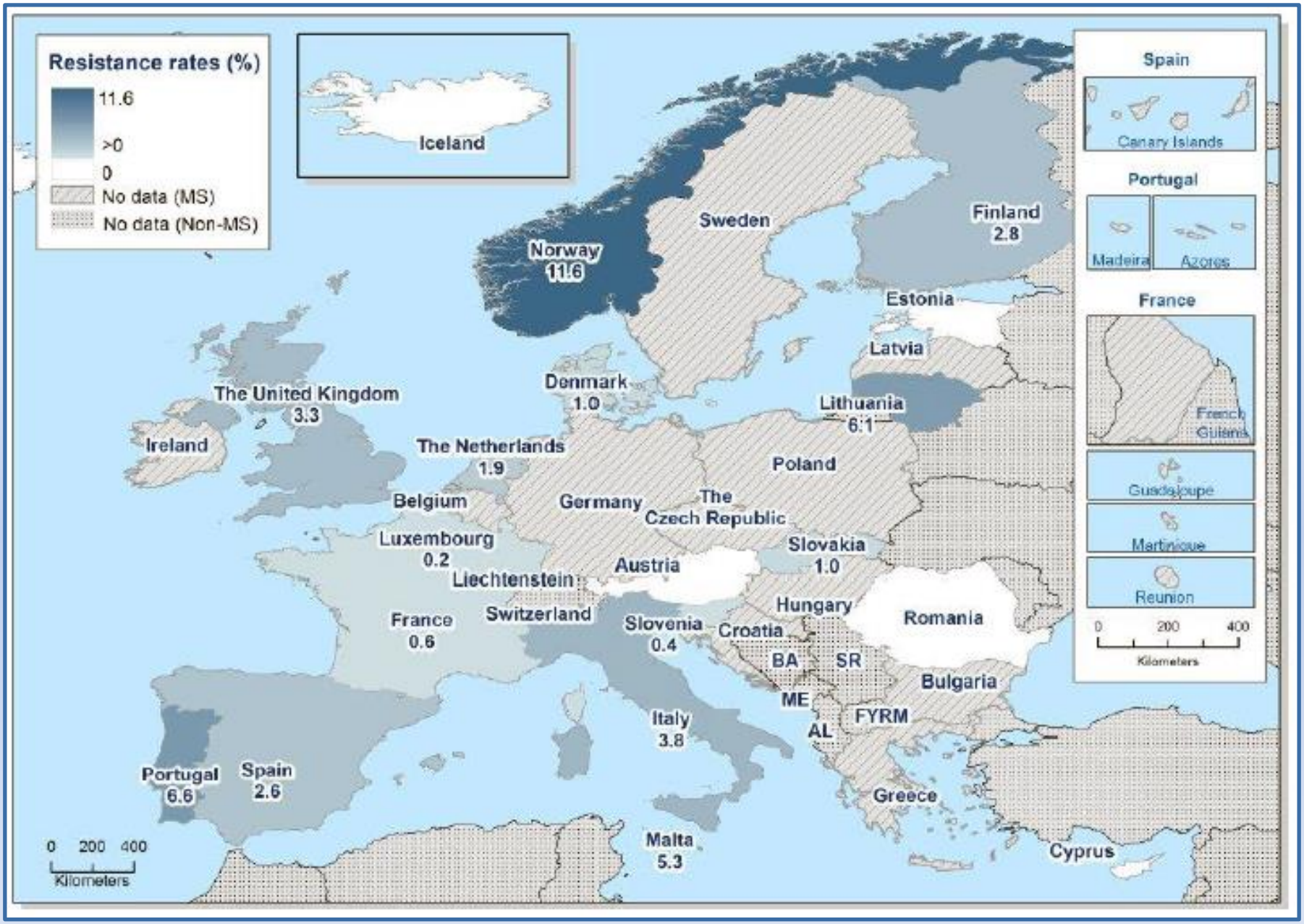


Figure 67: Distribution of **erythromycin** resistance among **Campylobacter jejuni** from **human** cases in 2016

Table 34: Antimicrobial resistance in *Campylobacter coli* from humans per country in 2016

Country	Gentamicin		Co-amoxiclav		Ciprofloxacin		Erythromycin		Tetracyclines	
	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res
Austria	37	2.7	–	–	37	81.1	37	2.7	37	67.6
Cyprus	–	–	–	–	7	NA	7	NA	7	NA
Estonia	–	–	–	–	19	89.5	19	63.2	19	73.7
Finland[a]	–	–	–	–	272	84.6	263	22.8	143	69.2
France[b]	797	1.6	881	0.5	882	67.0	881	6.4	851	77.3
Italy	9	NA	–	–	11	100	11	27.3	11	90.9
Lithuania[b]	–	–	–	–	41	92.7	41	17.1	40	80.0
Luxembourg	–	–	53	26.4	53	84.9	53	13.2	53	81.1
Malta	6	NA	6	NA	61	70.5	61	9.8	7	NA
Netherlands[b]	–	–	–	–	164	65.2	146	9.6	107	65.4
Portugal	34	0	–	–	34	100	34	50.0	34	91.2
Romania	16	0	16	0	16	31.3	16	0	16	18.8
Slovakia[b]	1	NA	24	12.5	53	60.4	64	4.7	66	37.9
Slovenia	–	–	–	–	130	66.2	130	2.3	130	47.7
Spain	38	5.3	–	–	38	84.2	38	23.7	38	84.2
United Kingdom[b]					747	44.3	678	11.1	360	35.6
Total (16 MSs)	**938**	**1.7**	**980**	**2.7**	**2,565**	**63.8**	**2,479**	**11.0**	**1,919**	**64.8**
Iceland[b]	–	–	–	–	1	NA	1	NA	–	–
Norway	10	0	–	–	10	80.0	10	10.0	10	90.0

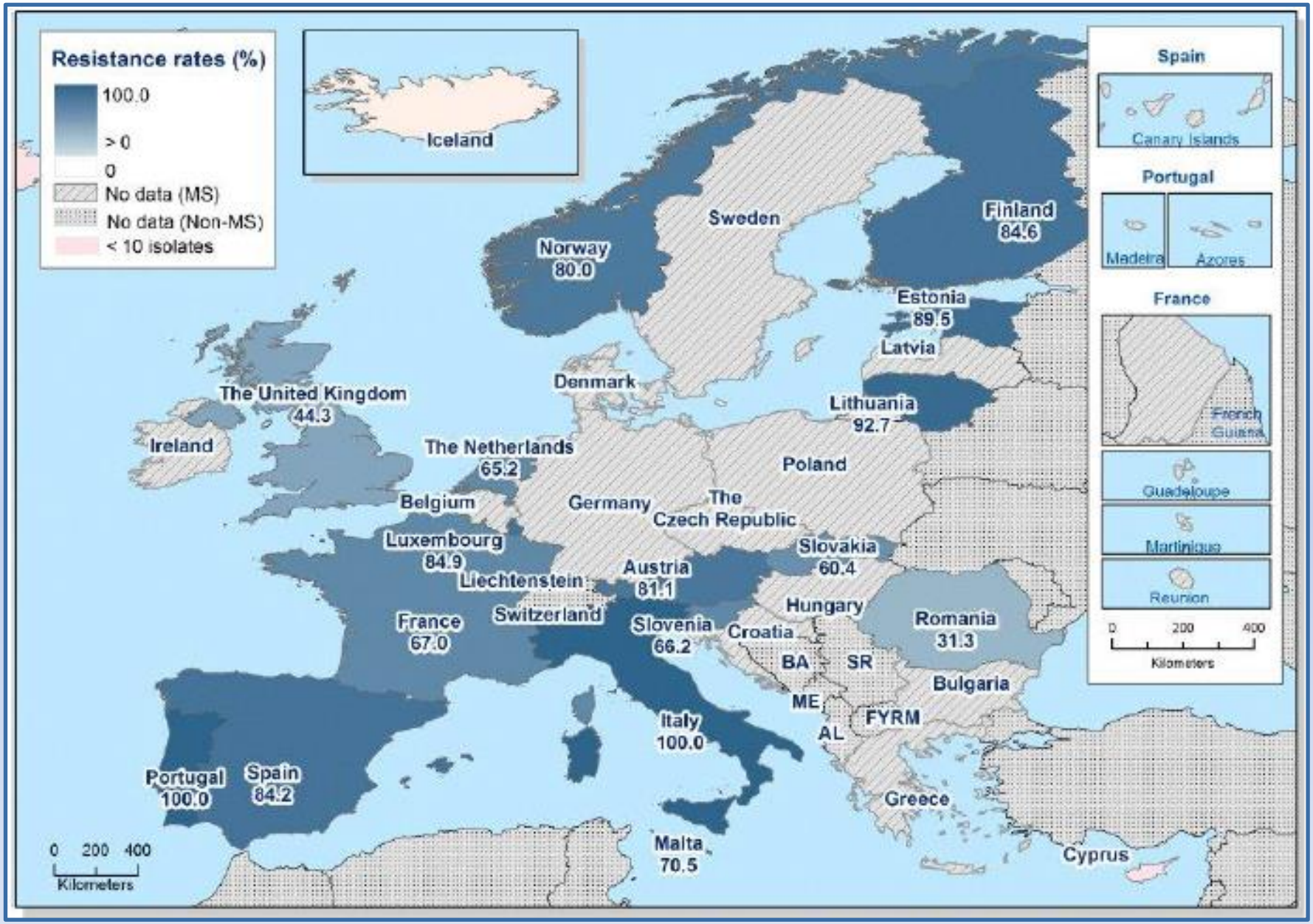


Figure 71: Distribution of **ciprofloxacin** resistance among **Campylobacter coli** from **human** cases in 2016

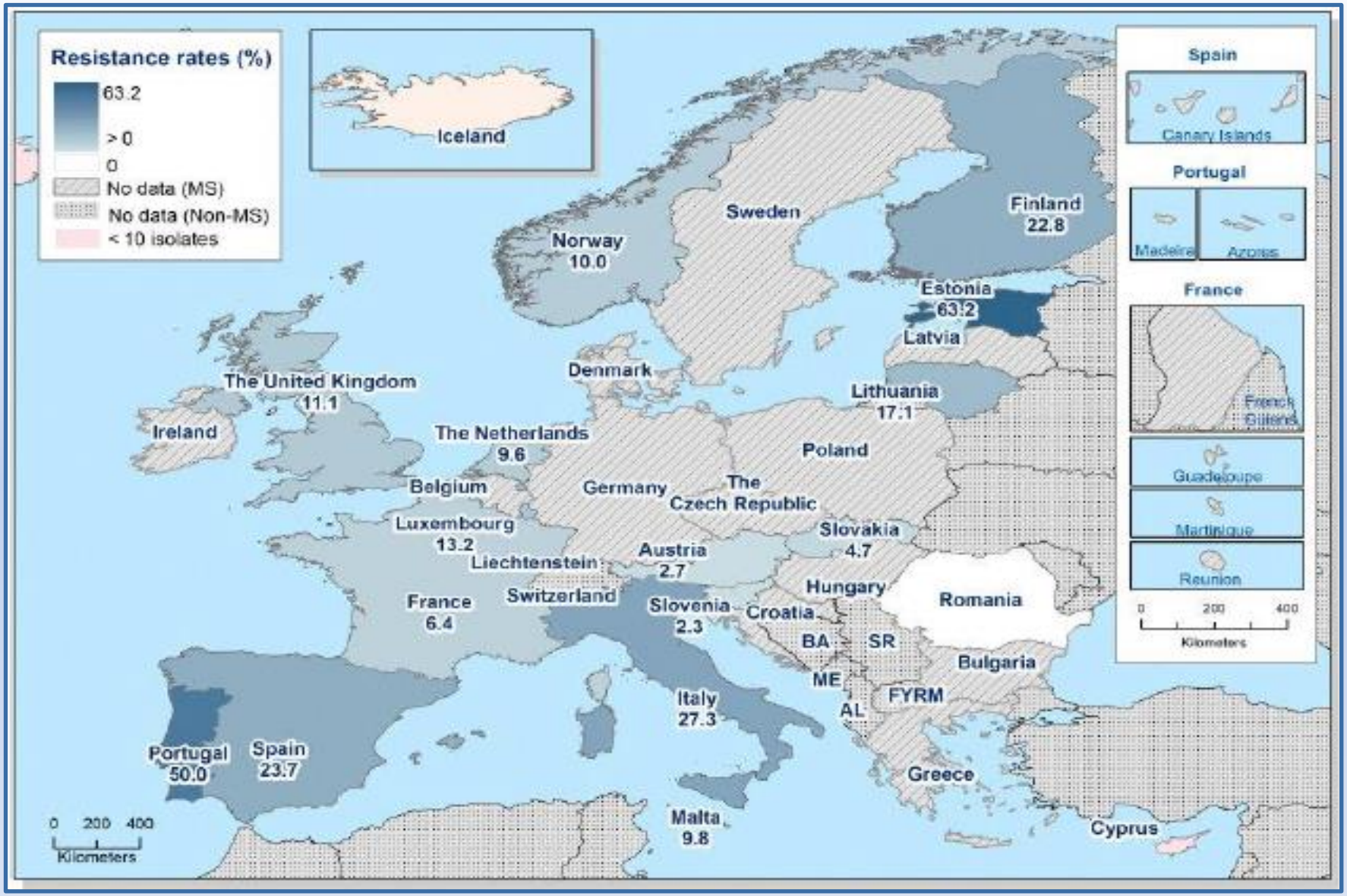


Figure 72: Distribution of **erithromycin** resistance among **Campylobacter coli** from **human** cases in 2016

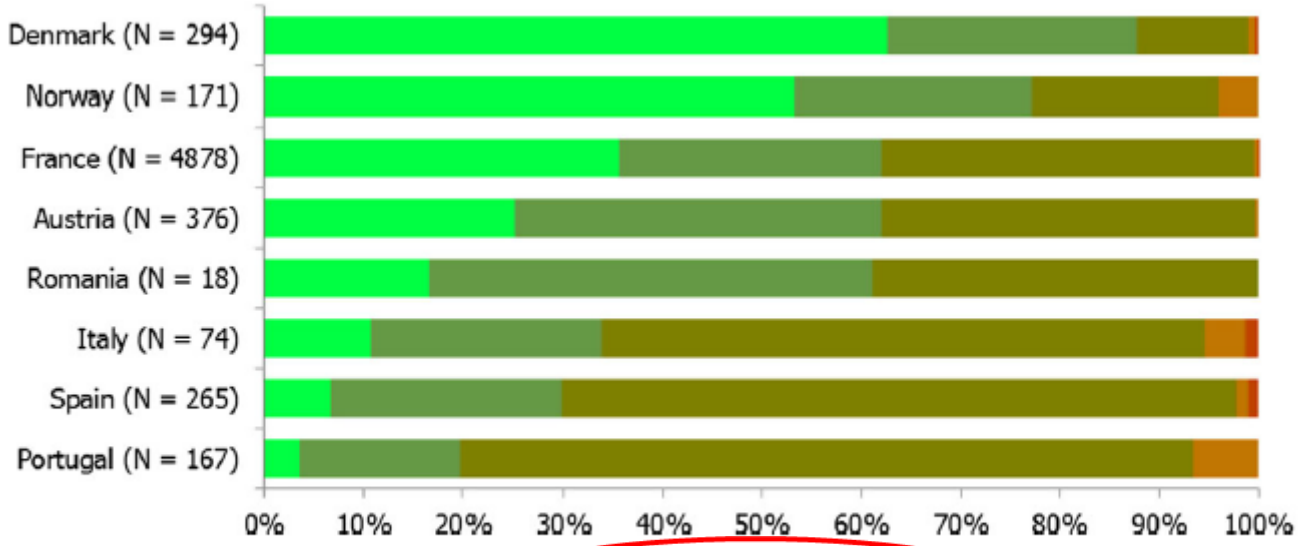


Figure 70: Frequency distribution of *Campylobacter jejuni* isolates from humans completely susceptible or resistant to one to four antimicrobial classes in 2016

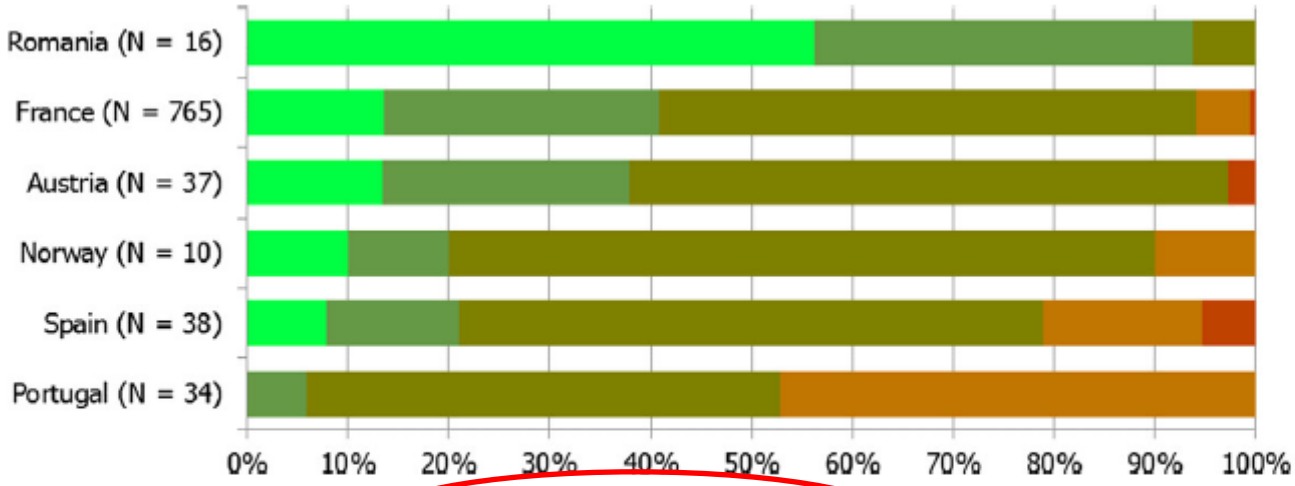


Figure 75: Frequency distribution of *Campylobacter coli* isolates from humans completely susceptible or resistant to one to four antimicrobial classes in 2016

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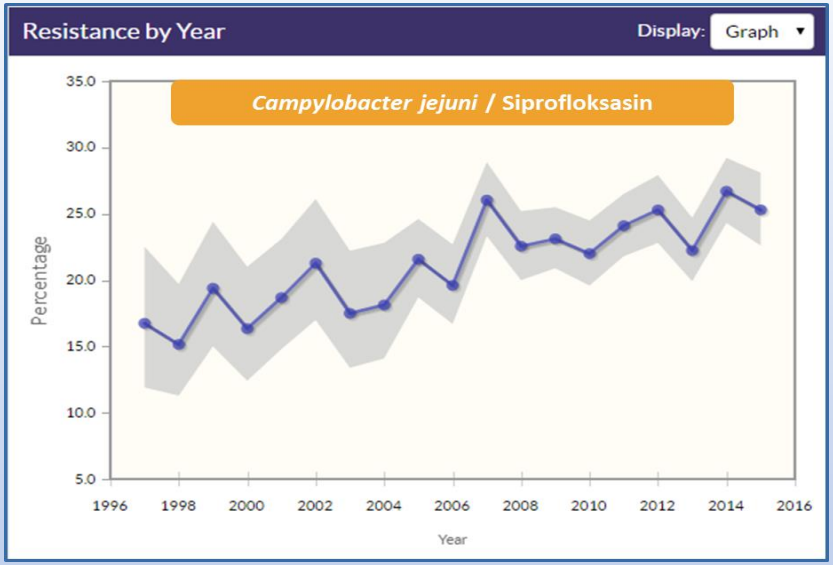

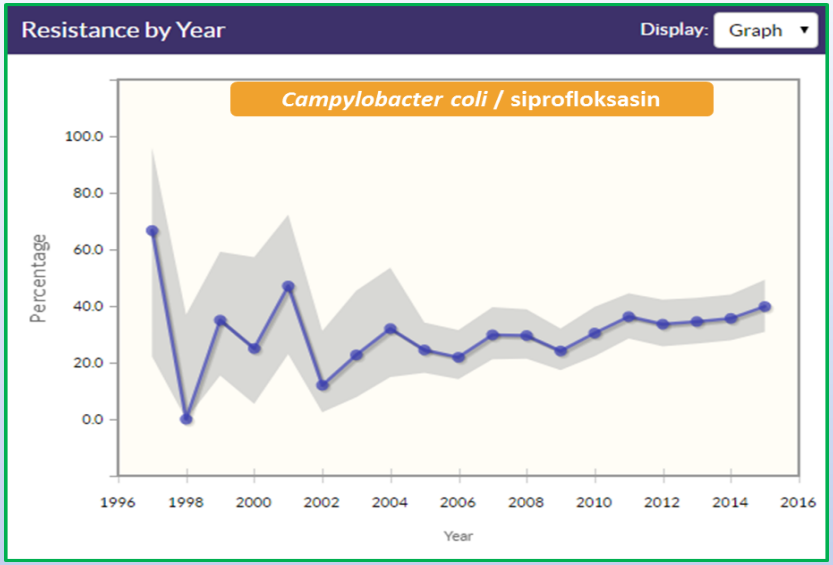

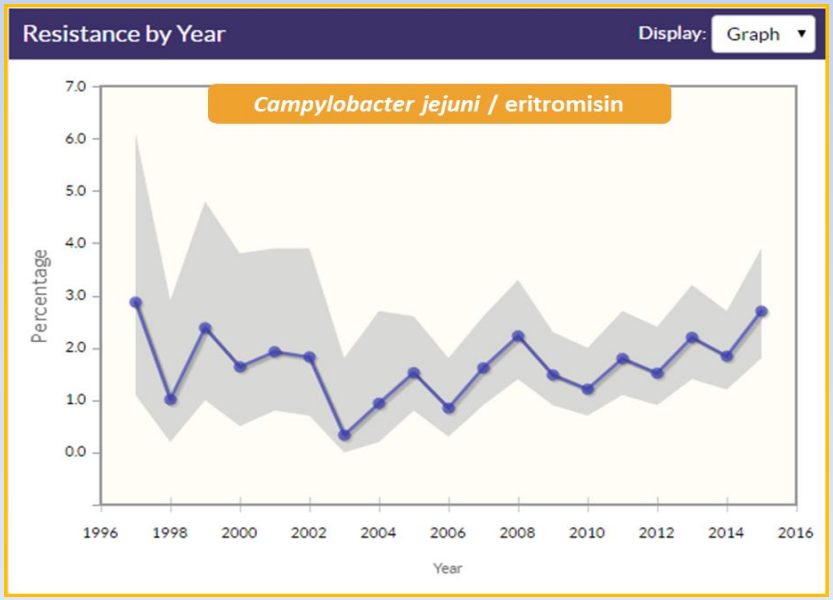

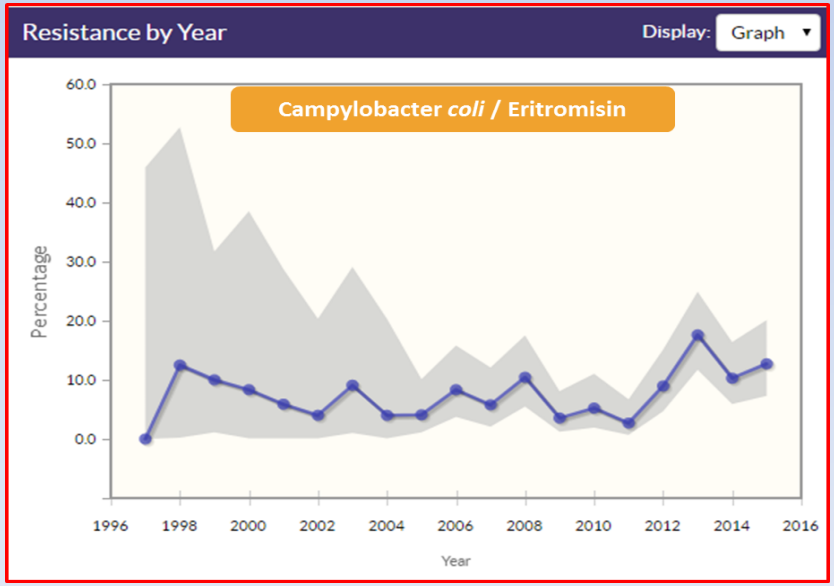

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2018

J Med Microbiol. 2018 Dec 12. doi: 10.1099/jmm.0.000890. [Epub ahead of print]

Antibiotic resistance of Campylobacter jejuni isolates recovered from humans with diarrhoea in Turkey.

Kayman T[1], Abay S[2], Aydin F[2], Şahin O[3].

Author information

Abstract

PURPOSE: This study was aimed at investiga
erythromycin in clinical isolates of Campyloba

METHODOLOGY: MIC values of each antibiot
screened by PCR and analysed by subsequer

RESULTS: From a total of 152 C. jejuni isolates tested, 113 (74.3%), 38 (25%) and 9 (5.9%) were found to be resistant to ciprofloxacin, tetracycline and erythromycin, respectively. Sequence analysis of ciprofloxacin-resistant isolates showed that all resistant strains (n=113) carried Thr-86-Ile substition in the gyrA gene, which is the most frequently observed mutation in fluoroquinolone-resistant Campylobacter. All of the tetracycline-resistant isolates (n=38) carried the tetO gene. All of the erythromycin-resistant isolates (n=9) harboured the point mutation A2075G in the 23S rRNA gene, which is the most common mutation conferring macrolide resistance in C. jejuni.

CONCLUSION: The phenotypic susceptibility testing results were found to agree well with those obtained by genetic detection methods for the C. jejuni isolates tested. The findings of this study showed a very high level of resistance to ciprofloxacin and to a lesser extent to tetracycline while resistance to erythromycin remained at a low level. Thus, erythromycin may be considered as the first choice for treatment of Campylobacter infections in this geographical region when indicated.

- 152 C.jejuni
- %73 siprofloksasin, %25 tetrasiklin, %6 eritromisin dirençli
- Siprofloksasin-R : *gryA* gen (DNA Giraz) bölgesinde mutasyon

  Tetrasiklin R: *tetO* gen

  Eritromisin-R: 23S rRNA gen bölgesinde nokta mutasyonu

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Akut gastroenterit ön tanılı hastalarda campylobacter türlerinin yeri ve antimikrobiklere duyarlılıklarının araştırılması

Çiftçi, Nurullah

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Date: 2016

2016

TEZ ÇALIŞMASI

Çizelge 3.2. *Campylobacter* ve *Salmonella* izolatlarının yaşlara göre dağılımı.

Yaş	*Campylobacter*		*Salmonella*		TOPLAM	
	Sayı	(%)	Sayı	(%)	Sayı	(%)
0-2	10	(23,8)	7	(28)	17	(25,4)
3-5	7	(16,7)	5	(20)	12	(17,9)
6-10	9	(21,4)	4	(16)	13	(19,4)
11-20	6	(14,3)	1	(4)	7	(10,4)
21-40	7	(16,7)	6	(24)	13	(19,4)
41 ve üzeri	3	(7				
TOPLAM	**42**	(1				

Çizelge 3.4. *Campylobacter* suşlarının antimikrobiyallere duyarlılıkları.

Bakteri	Eritromisin		Tetrasiklin		Siprofloksasin	
	Duyarlı	(%)	Duyarlı	(%)	Duyarlı	(%)
C. jejuni (41)	39	(95,1)	27	(65,9)	15	(36,6)
C. coli (1)	1	(100)	1	(100)	1	(100)
Toplam	40	(95,2)	28	(66,7)	16	(38,1)

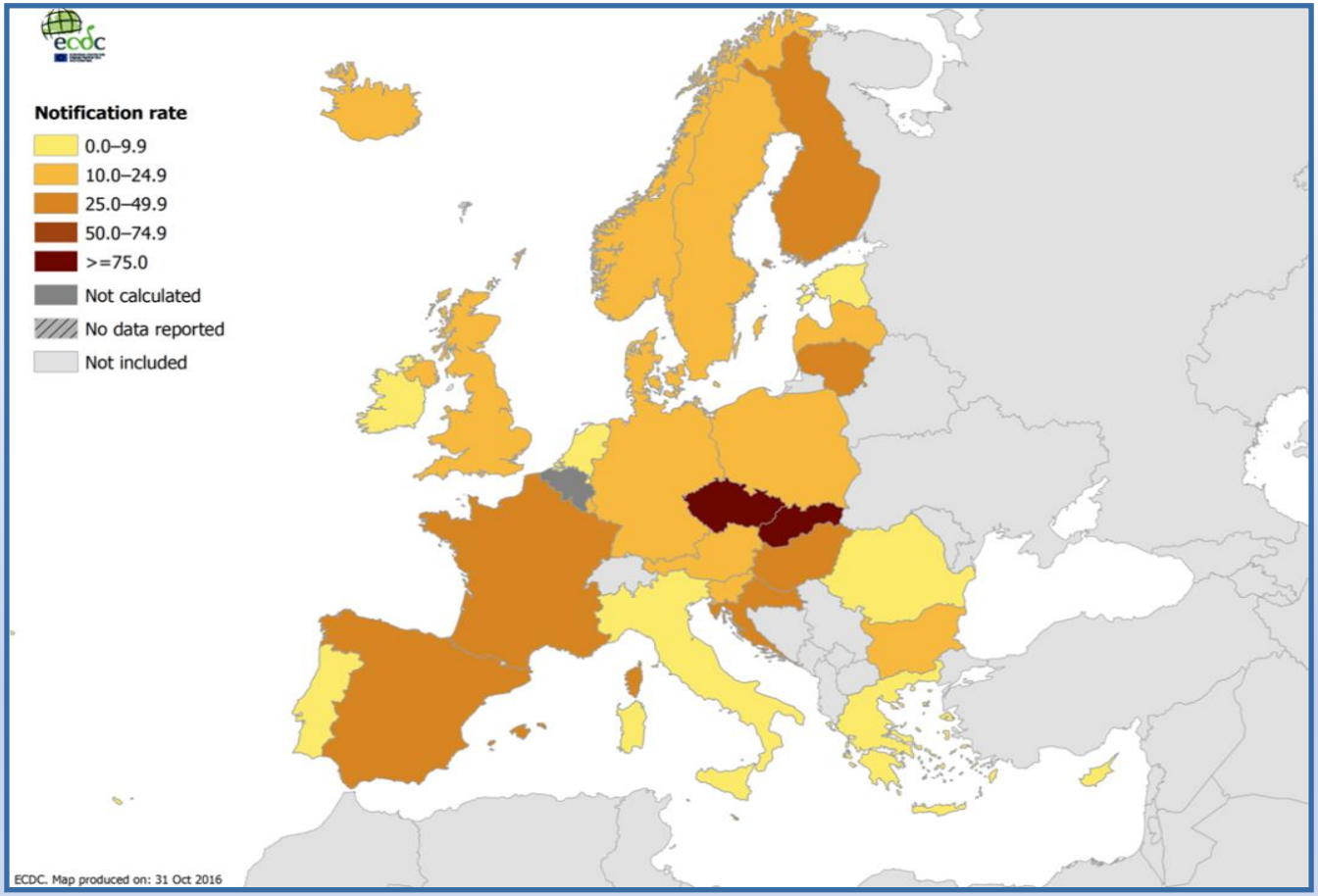
1980 1990 2000 2010

Duyarlı

AMP- R

SXT- R
Kloramfenikol- R
Tetrasiklin- R
Çoklu ilaç-R

CIP-R
GSBL

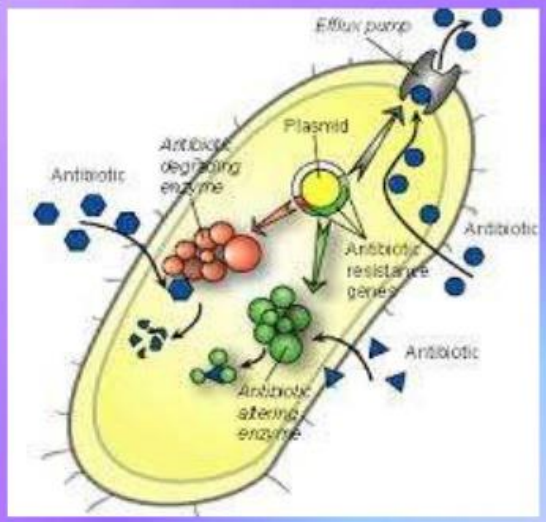


- Görülme oranı AB ortalaması 100.000 kişe'de 19.7
- Çekya ve Slovakya en sık (100.000'de 108 ve 106 olgu)
- **Yaklaşık 8bini seyahat ile ilişkili (%8.2 Türkiye)**

Direnç

Mechanisms of quinolone resistance

1. Gyrase and Topoisomerase Gene Mutations
2. Alterations in Efflux
3. Cell Membrane Alternations
4. Plasmid-mediated Resistance (pMG252)



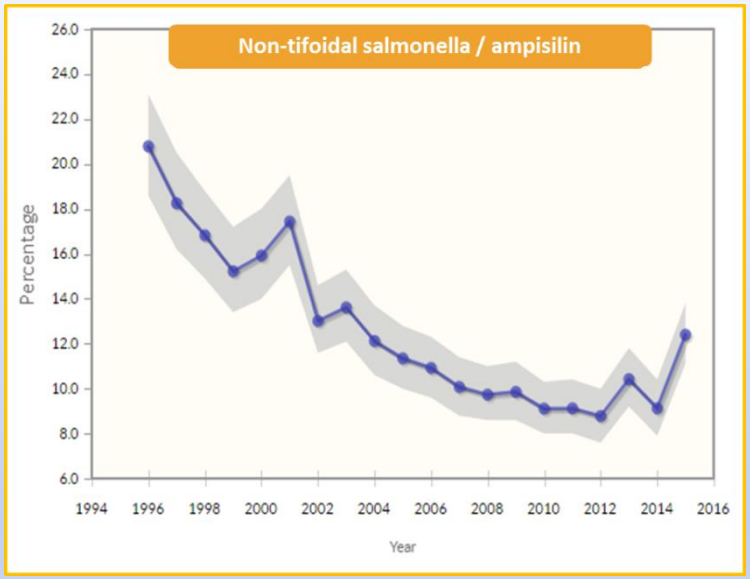
GSBL (**CTX-M**, TEM, SHV) /*ampC*

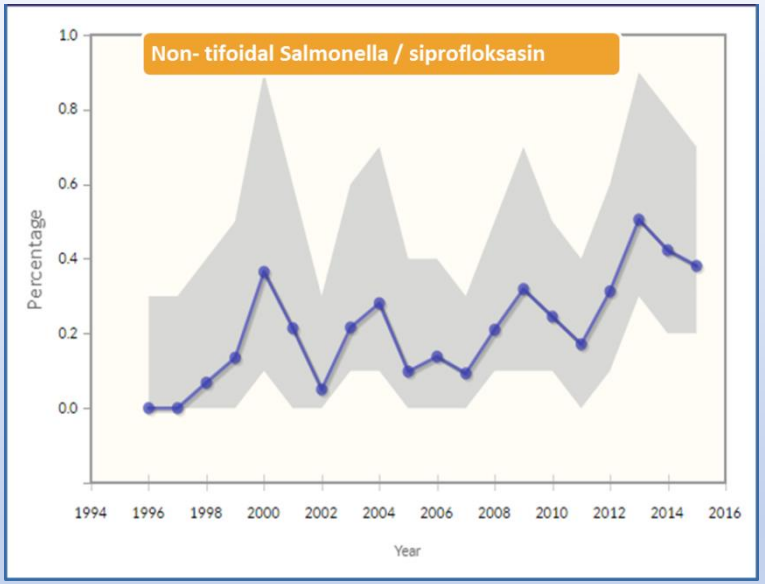
Tüm sefalosporinlere direnç

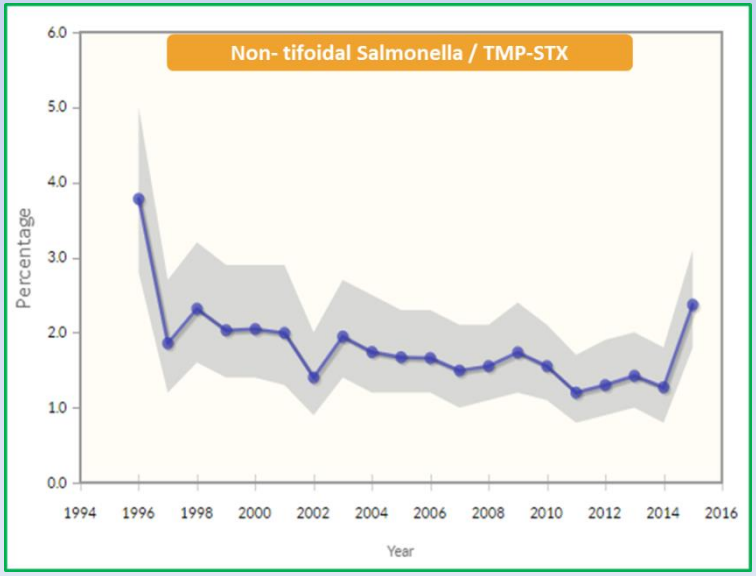
Karbapenemaz???

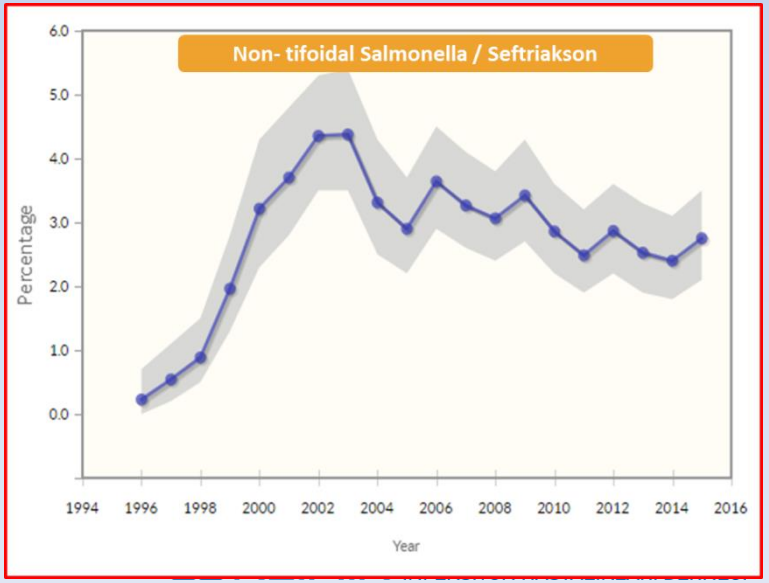
Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

NARMS Now: Human Data









SCIENTIFIC REPORT

ADOPTED: 2 February 2018

doi: 10.2903/j.efsa.2018.5182

The European Union summary report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2016

European Food Safety Authority and
European Centre for Disease Prevention and Control

EUSR on AMR in zoonotic and indicator bacteria from humans, animals and food 2016, doi: 10.2903/j.efsa.2018.5182

KLİMİK TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ

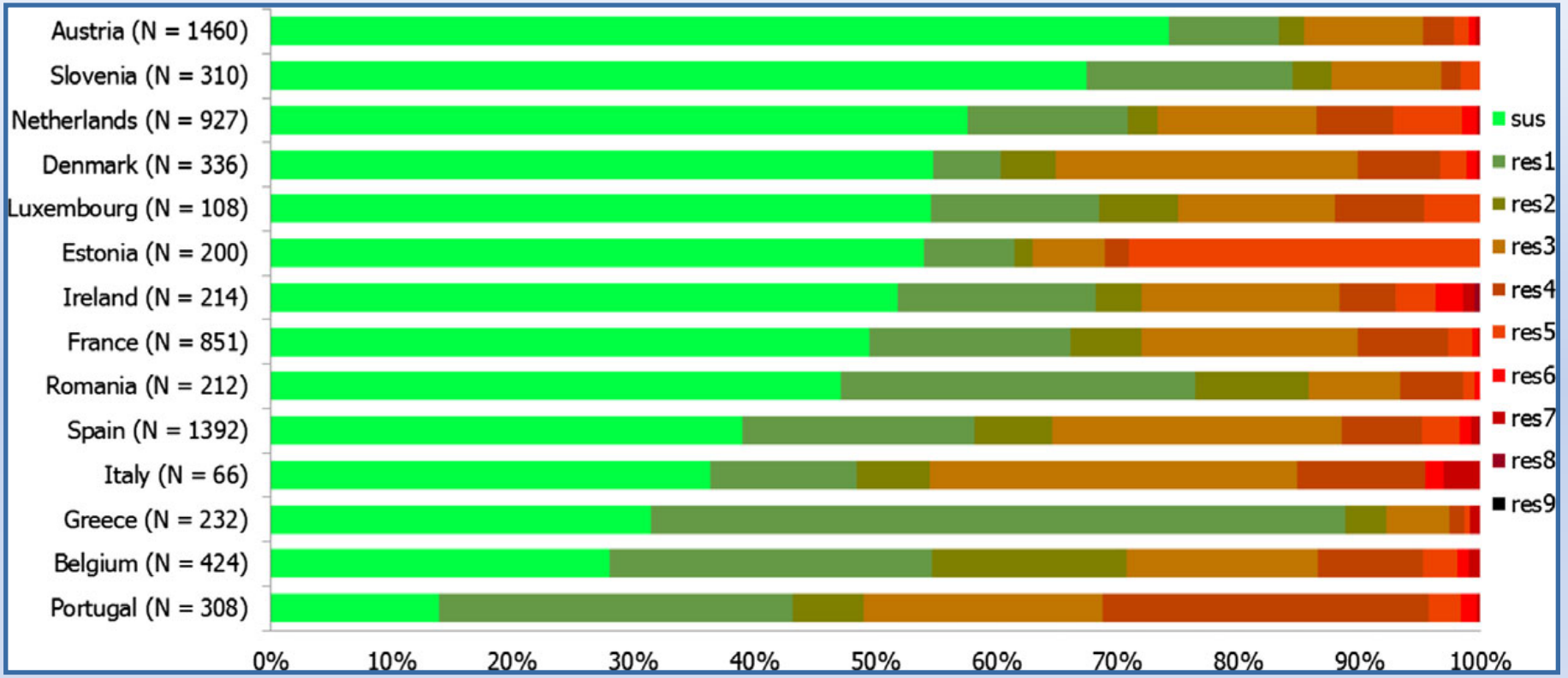
Table 10: Antimicrobial resistance in *Salmonella* spp. (all non-typhoidal serovars) from humans per country in 2016

Country	Gentamicin		Chloramphenicol		Ampicillin		Cefotaxime		Ceftazidime		Meropenem		Tigecycline	
	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res
Austria	1,460	1.2	1,460	2.9	1,460	13.2	1,460	0.5	1,460	0.5	1,460	0	1,460	0
Belgium	984	2.2	983	7.2	983	42.5	984	1.7	982	1.2	982	0	–	–
Cyprus	105	4.8	–	–	106	24.5	34	2.9	106	0.9	102	0	1	NA
Denmark	336	1.8	336	6.3	336	40.2	336	0.3	336	0.3	336	0	336	0.6
Estonia	203	1.5	203	3.0	203	35.5	200	0	204	0	202	0	–	–
Finland	240	0.8	240	4.6	240	25.0	240	2.1	–	–	240	0	–	–
France	852	0.8	852	5.3	852	29.8	852	0.5	852	0.2	851	0	852	0.8
Germany[a]	2,007	2.3	2,007	6.1	2,008	43.4	2,008	1.5	2,007	0.9	2,007	0	–	–
Greece	246	0.8	246	1.2	246	8.1	246	0.8	246	0.8	245	0	–	–
Hungary[a]	414	2.2	417	11.8	417	67.4	417	0.7	416	9.6	416	0	–	–
Ireland	214	4.2	214	7.0	214	29.4	214	1.9	214	1.9	214	0	214	0.5
Italy	66	4.5	66	9.1	66	47.0	66	0	66	0	66	0	–	–
Latvia[a]	–	–	–	–	26	15.4	27	3.7	–	–	–	–	–	–
Lithuania[a]	356	0.6	469	1.5	1,020	24.5	847	0.6	469	1.1	288	0	–	–
Luxembourg	108	0.9	108	3.7	108	26.9	108	0	108	0.9	108	0	–	–
Malta[a]	–	–	–	–	180	29.4	180	7.8	180	7.8	181	0	–	–
Netherlands	927	2.3	927	7.8	927	29.4	927	1.2	927	1.1	927	0	927	1.2
Portugal	308	1.3	308	7.5	308	52.9	308	0.3	308	0.3	308	0	308	0.3
Romania	212	1.9	212	2.4	212	25.5	212	1.4	212	1.4	212	0	–	–
Slovakia[a]	–	–	6	NA	790	8.2	201	2.0	8	NA	7	0	–	–
Slovenia	311	0.3	311	0.6	311	11.6	311	0	311	0	311	0[a]	–	–
Spain	1,418	1.1	1,417	6.5	1,419	37.4	1,416	1.6	1,415	0.5	1,401	0	–	–
United Kingdom[a]	–	–	2,095	11.6	3,454	23.1	1,295	1.0	749	4.4	844	0	–	–
Total (MSs 23)	**10,767**	**1.7**	**12,877**	**6.5**	**15,886**	**29.5**	**12,889**	**1.2**	**11,576**	**1.4**	**11,708**	**0**	**4,098**	**0.5**
Iceland[a]	–	–	23	0	23	60.9	1	NA	–	–	–	–	–	–
Norway	223	2.2	84	16.7	223	20.6	223	0.9	223	0.9	223	0	–	–

Table 10: Antimicrobial resistance in *Salmonella* spp. (all non-typhoidal serovars) from humans per country in 2016 (devamı)

Country	Nalidixic acid		Ciprofloxacin[b]		Azithromycin		Colistin		Sulfamethoxazole[d]		Trimethoprim		Co-trimoxazole		Tetracycline	
	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res
Austria	1,460	13.3	1,100	14.7	–	–	–	–	1,460	15.1	1,460	2.7	–	–	1,460	15.6
Belgium	984	13.9	984	17.1	982	0.2	–	–	984	41.8	424	16.5	–	–	984	39.1
Cyprus	–	–	–	–	–	–	68	0	–	–	–	–	–	–	35	31.4
Denmark	336	3.0	336	4.5	336	1.2	336	3.9	336	37.8	336	6.0	–	–	336	38.1
Estonia	153	43.1	203	36.0	–	–	202	0.5	203	35.0	203	30.5	–	–	202	37.6
Finland	240	24.6	240	26.3	–	–	–	–	–	–	240	5.4	–	–	240	22.5
France	852	10.3	851	11.0	852	1.1	852	7.5	852	41.4	852	6.2	–	–	852	30.9
Germany[a]	2,006	11.7	2,007	2.2	–	–	–	–	–	–	–	–	2,006	7.2	2,003	27.1
Greece	246	6.1	246	2.0	–	–	–	–	246	62.6	233	4.3	–	–	246	7.3
Hungary[a]	–	–	419	6.0	–	–	–	–	–	–	417	6.5	417	12.5	417	68.3
Ireland	214	18.7	214	22.9	214	2.3	52	0	214	27.1	214	7.9	–	–	214	31.3
Italy	66	7.6	66	4.5	–	–	–	–	66	62.1	66	9.1	66	9.1	66	48.5
Latvia[a]	–	–	27	0	–	–	–	–	–	–	–	–	1	NA	–	–
Lithuania[a]	362	12.4	743	6.9	–	–	–	–	–	–	366	4.9	1,018	2.8	361	19.9
Luxembourg	–	–	108	7.4	–	–	–	–	108	35.2	108	11.1	108	8.3	108	32.4
Malta[a]	–	–	180	11.7	–	–	–	–	–	–	–	–	–	–	–	–
Netherlands	927	14.3	927	16.2	927	0.8	927	7.8	927	29.6	927	5.6	–	–	927	28.7
Portugal	308	17.9	308	14.6	308	1.0	–	–	308	74.0	308	22.4	–	–	308	53.2
Romania	212	20.8	212	11.8	–	–	–	–	212	25.5	212	7.1	212	3.8	212	14.2
Slovakia[a]	–	–	351	5.1	–	–	–	–	–	–	–	–	234	0.9	514	6.0
Slovenia	–	–	310	14.5	–	–	–	–	311	18.0	311	3.5	311	1.9	311	13.2
Spain	1,414	17.9	1,418	14.8	–	–	–	–	1,416	44.1	1,414	9.5	–	–	1,418	38.2
United Kingdom[a]	1,096	15.1	3,572	10.2	–	–	–	–	499	21.2	1,813	8.6	814	10.6	633	29.9
Total (MSs 23)	**10,876**	**14.2**	**14,822**	**11.0**	**3,619**	**0.8**	**2,437**	**6.2**	**8,142**	**34.6**	**9,904**	**7.9**	**5,187**	**6.6**	**11,847**	**29.2**
Iceland[a]	–	–	23	4.3	–	–	–	–	–	–	–	–	23	0	–	–
Norway	–	–	223	24.7	84	1.2	–	–	–	–	–	–	223	6.7	84	44.0

Figure 11: Frequency distribution of **Salmonella spp.** isolates from **humans** completely susceptible or resistant to one to nine antimicrobial classes in 2016



N: total number of isolates tested for susceptibility against the whole common set of antimicrobials for Salmonella; sus: susceptible to all antimicrobial classes of the common set for Salmonella; res1–res9: resistance to one up to nine antimicrobial classes of the common set for Salmonella.

EUSR on AMR in zoonotic and indicator bacteria from humans, animals and food 2016, doi: 10.2903/j.efsa.2018.5182

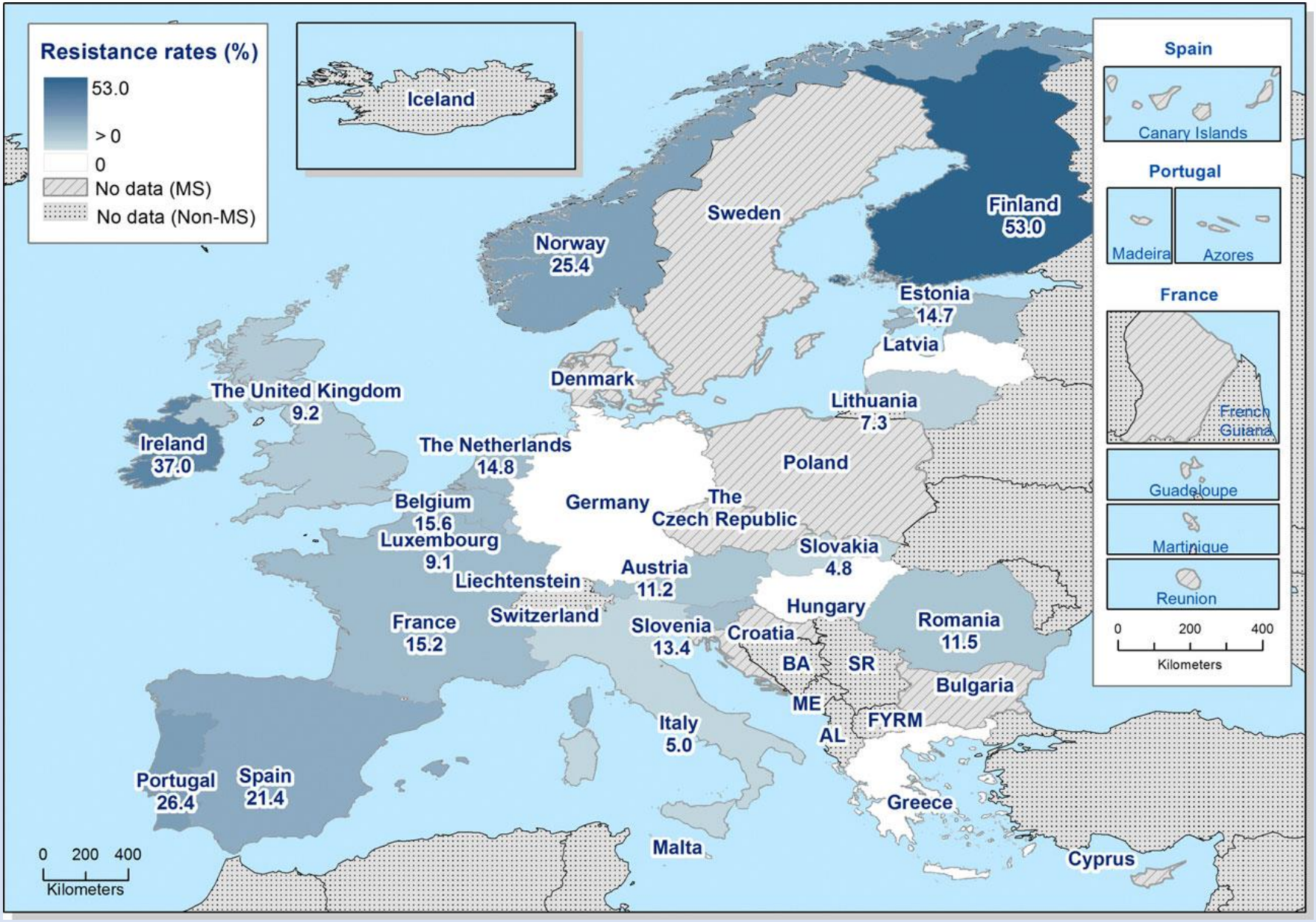
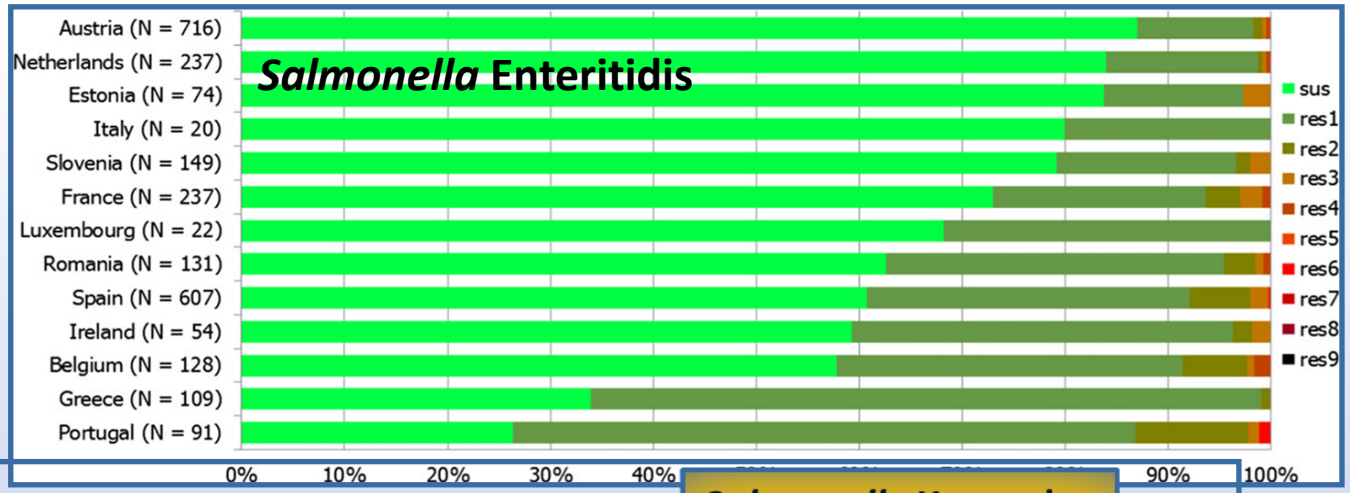
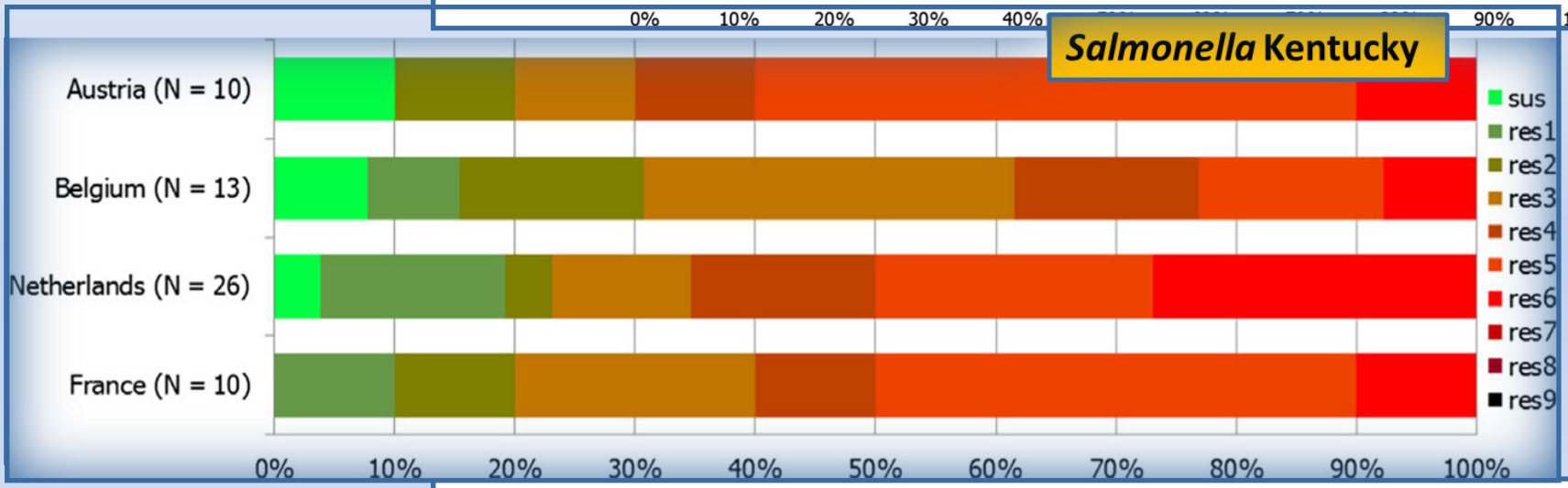
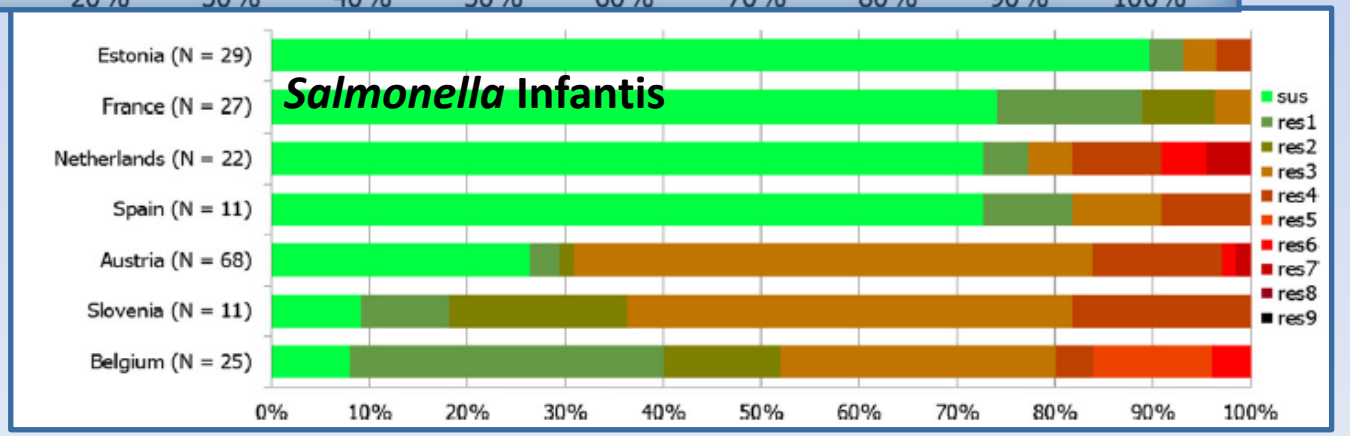


Figure 12: Spatial distribution of **ciprofloxacin** resistance among **S. Enteritidis** from human cases, EU/EEA MSs, 2016


Salmonella Enteritidis
Austria (N = 716)
Netherlands (N = 237)
Estonia (N = 74)
Italy (N = 20)
Slovenia (N = 149)
France (N = 237)
Luxembourg (N = 22)
Romania (N = 131)
Spain (N = 607)
Ireland (N = 54)
Belgium (N = 128)
Greece (N = 109)
Portugal (N = 91)
0%
10%
20%
30%
40%
90%
100%
sus
res1
res2
res3
res4
res5
res6
res7
res8
res9


Salmonella Kentucky
Austria (N = 10)
Belgium (N = 13)
Netherlands (N = 26)
France (N = 10)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
sus
res1
res2
res3
res4
res5
res6
res7
res8
res9


Salmonella Infantis
Estonia (N = 29)
France (N = 27)
Netherlands (N = 22)
Spain (N = 11)
Austria (N = 68)
Slovenia (N = 11)
Belgium (N = 25)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
sus
res1
res2
res3
res4
res5
res6
res7
res8
res9

İnsanlardaki *S.* Kentucky izolatlarındaki direnç durumu

- İnsanlardaki 7.sık serovar
- EU/EEA ülkelerinde 2017 yılında 617 olgu
- Gentamisin (44.7%), sulfonamidler (68.7%), ampisilin (71.0%), tetrasiklin (71.6%), siprofloksasin(85.8%) ve nalidiksik asid (87.3%) dirençli
- Siprofloksasin dirençli *S.* Kentucky ST198 türü Avrupa'da 2010 yılından beri yayılım göstermekte***
- Sefotaksim ve seftazidim direnç seviyeleri de yüksek (15.5% ve 17.1%)
- GSBL-üreten S. Kentucky vakaları da dört ülkede rapor edilmiş durumda.

Table 9: Occurrence of high-level resistance to ciprofloxacin (MIC ≥ 4 mg/L) in *Salmonella* serovars isolated from humans in 2016, 5 MSs

Serovar	N	High-level resistance to ciprofloxacin (MIC ≥ 4 mg/L)	
		n	%
***S.* Agona**	29	2	6.9
***S.* Derby**	34	1	2.9
***S.* Kentucky**	43	37	86.0
***S.* Potsdam**	3	1	33.3
***S.* Saintpaul**	30	1	3.3
Not specified	27	3	11.1
Other	2,510	0	0
Total (5 MSs)	2,676	45	1.7

MIC: minimum inhibitory concentration; MS: Member State.

Table 62: ESBL and AmpC phenotypes and genotypes in *Salmonella* spp. isolates from humans by serovar, 2016

Serovar	Tested for CTX and/or CAZ	CTX- and/or CAZ-R	Phenotype								Genotype
			ESBL		AmpC		AmpC + ESBL		Atypical phenotype		
	N	N	N	%	N	%	N	%	N	%	
Agona	41	1	1	2.4							CTX-M-15
Anatum	11	1			1	9.1					DHA-1
Blockley	4	1	1	25.0							
Braenderup	29	1	1	3.4							CTX-M-1
Enteritidis	2,302	7	5	0.2							CTX-M-1, CTX-M-3, CTX-M-5, CTX-M-15 (2), TEM-1
Haifa	18	1	1	5.6							CTX-M-1, CTX-M-9
Infantis	220	5	5	2.3							CTX-M-1 (3), CTX-M-9, TEM
Kentucky	92	16	15	16.3							CTX-M-9/14-like (1)
Minnesota	1	1							1	100	CMY-2
Monophasic Typhimurium 1,4,[5],12:i:-	892	18	12	1.3							CTX-M-1-like, CTX-M-9 (4), CTX-M-15 (2), CTX-M-32, CTX-M-55, SHV-12 (3), TEM-1 (7)
Newport	118	1	1	0.8							
Saintpaul	94	2	2	2.1							SHV-12
Typhimurium	990	20	14	1.4	2	0.2					CMY-2 (2), CTX-M-1 (6), CTX-M-5 (1), CTX-M-9 (3), CTX-M-9/14 (3), OXA-1 (1), TEM-1 (6)

ESBL: extended-spectrum β-lactamase; N = isolates with this phenotype; %: percentage of isolates with this phenotype from the total tested; CTX: cefotaxime; CAZ: ceftazidime; MSs: Member States; R: resistant.

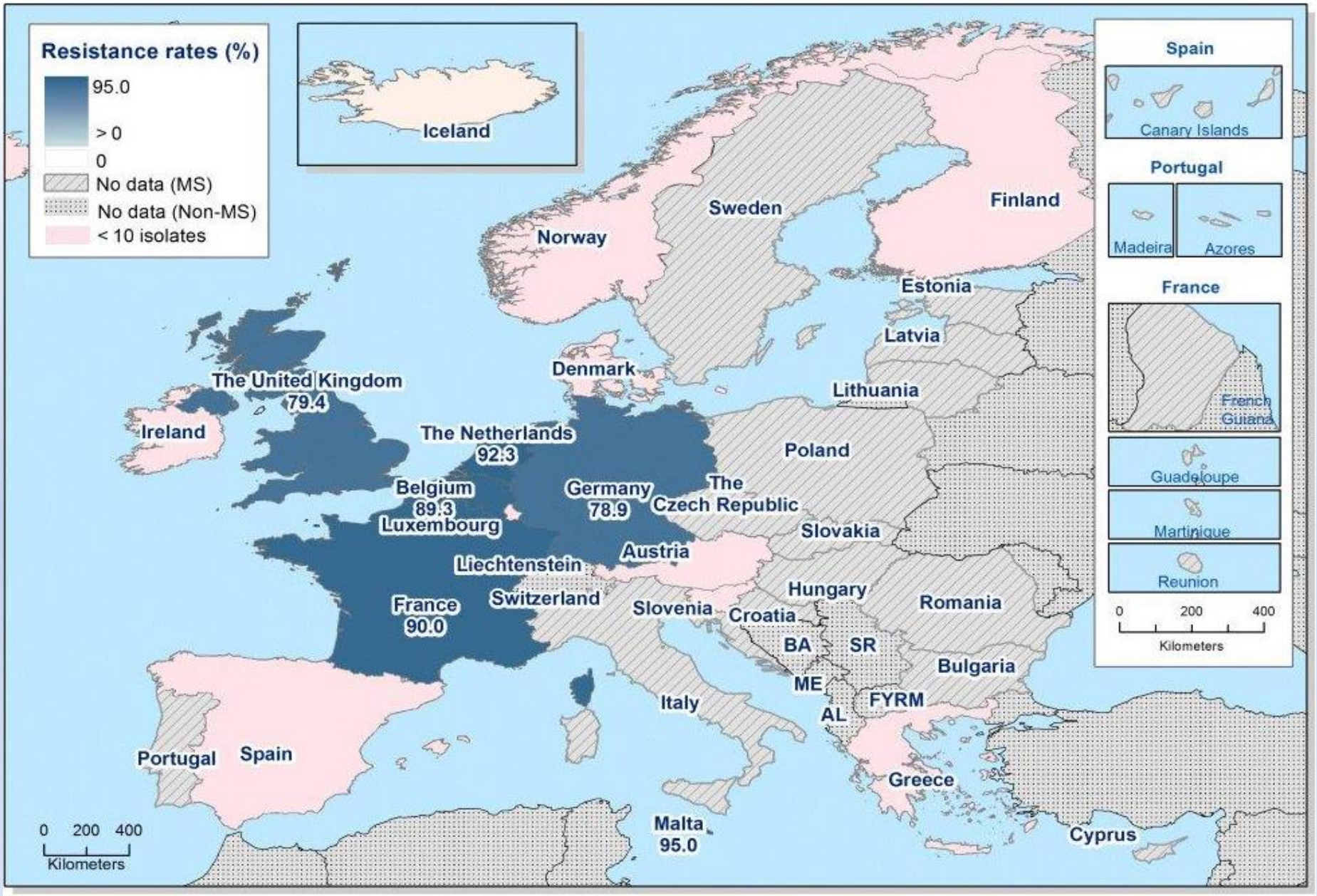


Figure 24: Spatial distribution of **ciprofloxacin** resistance among **S. Kentucky** from human cases, EU/EEA MSs, 2016

Mikrobiyol Bul. 2016 Oct;50(4):598-605.

[Bacteremia caused by ciprofloxacin-resistant Salmonella serotype Kentucky: a case report and the review of literature].

[Article in Turkish]

Müderris T[1], Ürkmez FY, Küçüker ŞA, Sağlam MF, Yılmaz GR, Güner R, Güleşen R, Açıkgöz ZC.

⊕ Author information

Abstract

Salmonella infections can be seen in four clinical types, namely gastroenteritis, bacteremia/sepsis, enteric fever and carriage. These infections can result in uncomplicated diarrhea in most cases, but can lead to invasive disease requiring antimicrobial therapy and can be life-threatening in elderly or immunocomprimised patients. Broad-spectrum cephalosporins and fluoroquinolones are crucial options in the treatment of the invasive infections. Ciprofloxacin resistance is rarely seen in non-typhoid Salmonella enterica isolates, and only in S. Typhimurium, S. Choleraesuis and S. Schwarzengrund. In this report, we aimed to discuss a patient infected with ciprofloxacin-resistant Salmonella Kentucky under the light of data from our country and the world. A 52-year-old male patient wih acute myocardial infarction was hospitalized in intensive care unit of cardiovasculer surgery for left ventricular assist device (LVAD) implantation for the treatment of left ventricular disfunction. On the seventh day of LVAD and coronary artery bypass grafting (CABG), the patient presented high fever and productive cough. His physical examination revealed hyperemia around the insertion point of right jugular central venous catheter (CVC) and a serous discharge from the insertion point of LVAD located just below the inferior edge of sternum. Empiric IV cefoperazone/sulbactam (SCF) therapy was started with the prediagnosis of pneumonia and bloodstream infection. The blood samples taken from peripheral veins and CVC, and swabs taken from LVAD insertion point for culture when the patient was febrile, revealed the growth of bacteria with S type and lactose-negative colonies on EMB and SS media. Biochemical characteristics of the isolate were as follows: lactose fermentation negative, H_2S positive, IMVIC (-,+,-,+), urease negative, lysine/ornithine decarboxylase positive and motile. The bacteria was then identified as Salmonella enterica serotype Kentucky (8,20:i:z6) by agglutination tests. Antibiotic susceptibility tests were conducted according to CLSI guidelines and it was found as ampicillin- and ciprofloxacin-resistant. Ciprofloxacin resistance of the isolate was confirmed with E-test. Stool culture was performed to investigate the source of infection, and S. Kentucky was isolated. On the 15th day of SCF treatment, LVAD was taken out, and tissue cultures taken from the fibrillar tissues between pericardial layers during surgery, also yielded S. Kentucky growth. On the second day of SCF therapy the patient's fever returned normal and on the seventh day, CBC and CRP values were normalized. Nevertheless, the clinical situation of the patient worsened gradually and on the 40th day he was intubated due to low oxygen saturation and pleural effusion. His antibiotherapy was stopped on 42nd day as the blood cultures were negative and his clinical situation was attributed to cardiac failure. The patient died four days after the antibiotherapy has stopped due to cardiac reasons. To our knowledge, this is the first reported case infected with ciprofloxacin-resistant Salmonella Kentucky in our country.

Türk Mikrobiyol Cem Derg 42(3):85-92, 2012
doi:10.5222/TMCD.2012.085

2012

Araştırma

Ulusal Enterik Patojenler Laboratuvar Sürveyans Ağına (UEPLA) Dâhil Olan Bir Üniversite Hastanesinin Deneyimleri: Dört Yıllık *Salmonella, Shigella* ve *Campylobacter* Verileri

Dolunay GÜLMEZ *, Deniz GÜR **, Gülşen HASÇELİK *, Revasiye GÜLEŞEN ***, Belkıs LEVENT***

Tablo 4. *Salmonella, Shigella* ve *Campyloba* antimikrobik direnç oranları (%).

	Salmonella	*Shigella*
Ampisilin	11,7	58,8
Siprofloksasin	3,5	5,6
Nalidiksik asit	16,7	16,7
Kloramfenikol	3,7	18,8
Trimetoprim-sülfametaksazol	5,8	72,2
Eritromisin	-	-
Tetrasiklin	-	-

Tablo 5. *Salmonella, Shigella* ve *Campylobacter* suşlarında farklı antimikrobik gruplarına direnç oranları (%).

	Direnç paterni*	n (%)	Dirençli suş sayısı ve direnç görülen antimikrobikler**
Salmonella (n=171)	Tek antimikrobiğe direnç	27 (15,8)	11 AMP 16 Q
	İkili direnç	12 (7)	5 Q ve SXT 2 AMP ve Q 2 AMP ve SXT 1 AMP ve C 1 Q ve C 1 SXT ve C
	Üçlü direnç	3 (1,7)	2 AMP, Q ve C 1 AMP, SXT ve C
	Dörtlü direnç	1 (0,6)	1 AMP, Q, SXT ve C***
Shigella (n=18)	Tek antimikrobiğe direnç	5 (27,8)	1 AMP 4 SXT
	İkili direnç	9 (50)	6 AMP ve SXT 1 AMP ve Q 2 SXT ve Q
	Üçlü direnç	2 (11,1)	1 AMP, Q ve C 1 AMP, SXT ve C
Campylobacter (n=44)	Tek antimikrobiyale direnç	30 (68,2)	29 Q 1 TE
	İkili direnç	7 (15,9)	7 Q ve TE

TÜRKİYE'NİN GÜNEYİNDEKİ BİR TATİL BÖLGESİNDE İZOLE EDİLEN SALMONELLA SUŞLARINDA ANTİMİKROBİYAL DİRENÇ ORANLARI

2016

Haluk Erdoğan[1], Aşkın Erdoğan[2], Hande Arslan[1]

[1]Başkent Üniversitesi Tıp Fakültesi, İnfeksiyon Hastalıkları ve Klinik Mikrobiyoloji AD, Ankara

[2]Başkent Üniversitesi Tıp Fakültesi, Gastroenteroloji BD, Ankara

ÖZET

Amaç: *Sal*
besin kayı
Bu çalışma
Alanya'da
mikrobiya

Materyal
2013 tarih
Araştırma
rın gaita ö
alınmış ve
-80°C'de s
"Clinical a
kriterlerine göre disk difüzyon yöntemi ile çalışılmıştır. Ampisilin, trimetoprim-sulfametoksazol, tetrasiklin, kloramfenikol, nalidiksik asit, siprofloksasin ve seftriakson direnci araştırılmıştır. Kalite kontrolünde *Escherichia coli* ATCC 25922 suşu kullanılmıştır.

Bulgular: Kırk ikisi yerleşik halk ve 21'i ziyaretçi hastadan olmak üzere toplam 63 ardışık *Salmonella* suşu değerlendirmeye alınmıştır. Serogrup D1 (%65,1) en sık saptanan serogrup olup bunu serogrup B (%22,2), A (%7,9), C1 (%1,6) ve C2-C3 (%3,2) izlemiştir. Ampisilin, tetrasiklin, trimetoprim-sulfametoksazol ve kloramfenikol direnci sırasıyla %15,9, %15,9, %14,3 ve %11,1 bulunmuştur. Siprofloksasin ve seftriakson direnci saptanmamış, fakat nalidiksik asit direnci %14,3 olarak bulunmuştur. Yerleşik halk ile ziyaretçilerde izole edilen *Salmonella* suşlarının antimikrobiyal direnç oranları arasında anlamlı bir fark saptanmamıştır (p>0,05).

Sonuç: Bu çalışma ciddi seyretme riski olan ve Alanya'ya seyahat öyküsü bulunan hastaların *Salmonella* enfeksiyonlarının ampirik tedavisinde siprofloksasin ve seftriaksonun güvenle kullanılabileceğini düşündürmektedir. Bununla birlikte *Salmonella* suşlarındaki yüksek nalidiksik asit direnci ise kaygı vericidir.

Anahtar kelimeler: Diyare, seyahat ilişkili ishal, *Salmonella*, antimikrobiyal direnç. **Nobel Med 2016; 12(1): 30-34**

- Seftriakson – 0
- Siprofloksasin – 0
- Nalidiksik asit - %14.3
- Ampisilin - %15.9
- TMP-STX – 14.3

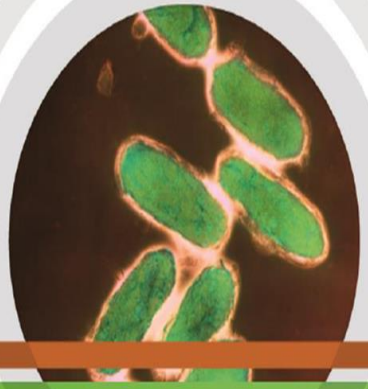
Kayseri Bölgesinde Soyutlanan *Salmonella* Serovarlarının Dağılımı ve Antimikrobiyal Duyarlılıkları

Klimik Dergisi - 2017

Distribution and Antimicrobial Resistance of Salmonella *Serovars Isolated in Kayseri Region*

Aycan Gündoğdu[1], Hüseyin Kılıç[1], Ayşegül Ulu-Kılıç[2], Ömür Mustafa Parkan[1], Zeynep Türe[2]
[1]Erciyes Üniversitesi, Tıp Fakültesi, Tıbbi Mikrobiyoloji Anabilim Dalı, Kayseri, Türkiye
[2]Erciyes Üniversitesi, Tıp Fakültesi, İnfeksiyon Hastalıkları ve Klinik Mikrobiyoloji Anabilim Dalı, Kayseri, Türkiye

Kültür Materyali		*S.enteritidis*	*S. typhimurium*	
Dışkı	8	23	7	5
Kan	13	4	2	1
İdrar	2	0	1	0
Apse/yara yeri	2	0	0	0
Antibiyotik Direnci	**Sayı (%)***	**Sayı (%)**	**Sayı (%)**	**Sayı (%)**
Ampisilin	15 (53.4)	14 (51.9)	7 (70)	3 (50)
Trimetoprim-Sülfametoksazol	4 (18.8)	1 (3.7)	0	1 (16.7)
Kloramfenikol	0	0	0	1 (16.7)
Siprofloksasin	3 (11.1)†	0	1 (10)	0
Sefotaksim	3 (11.1)	0	1 (10)	1 (16.7)



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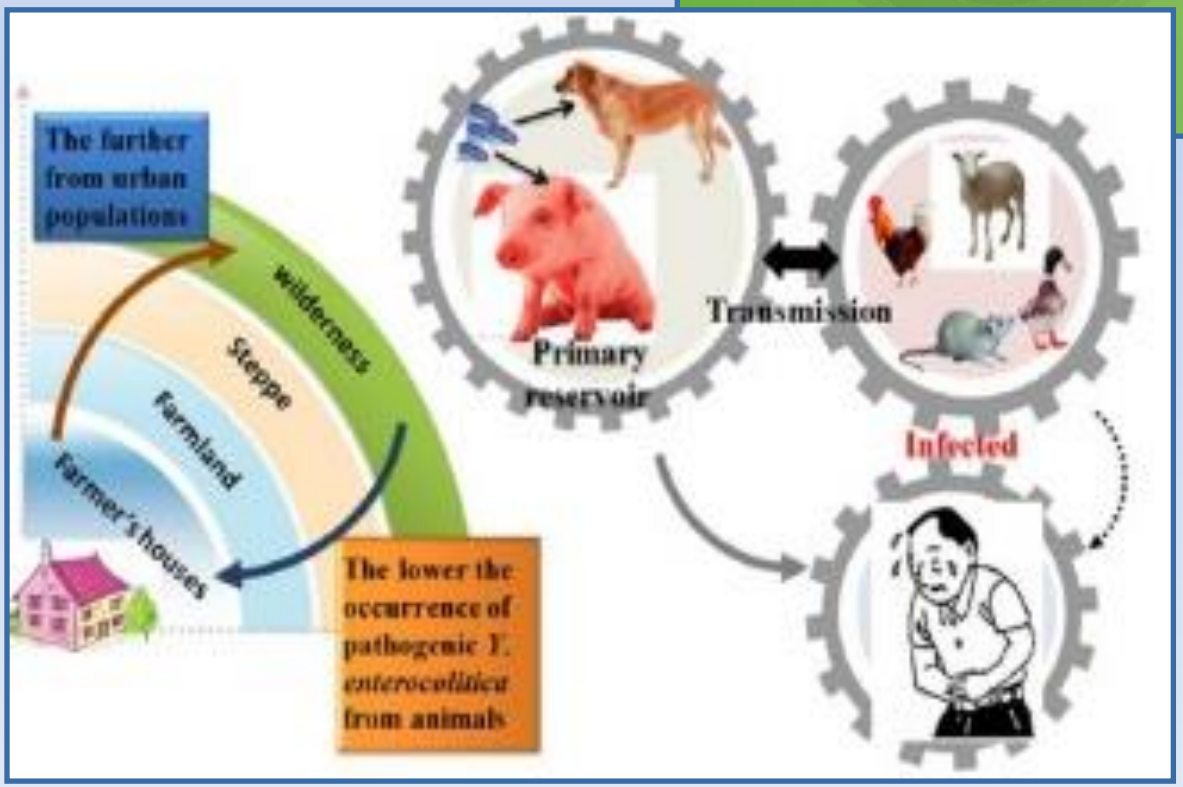
SURVEILLANCE REPORT

Annual Epidemiological Report

Yersiniosis



KLİMİK TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ

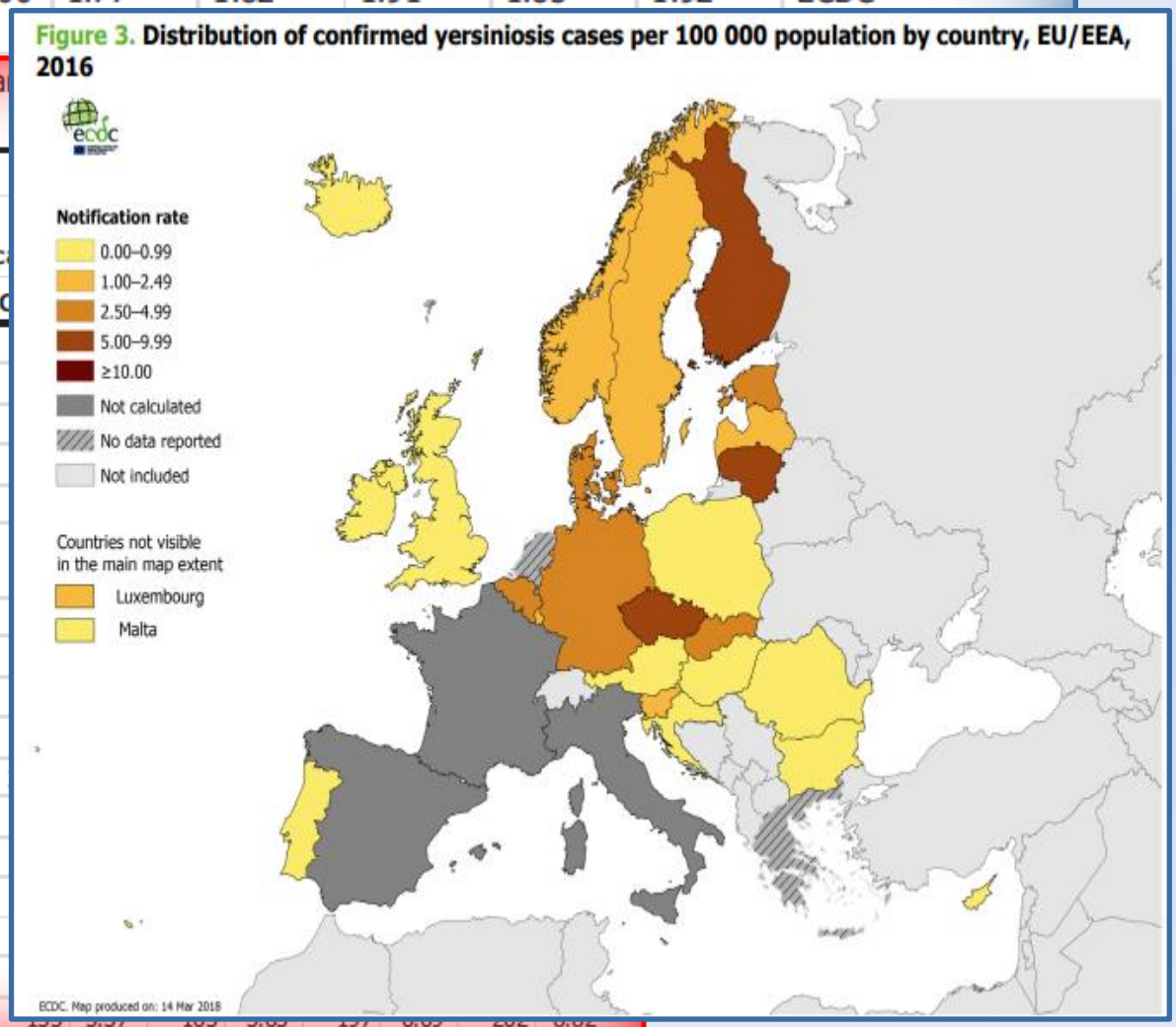
Table 36: Summary of *Yersinia* statistics related to humans, major food categories and major animal species, EU, 2013–2017

	2017	2016	2015	2014	2013	Data source
Humans						
Total number of confirmed cases	6,823	6,888	6,928	6,435	6,352	ECDC
Total number of confirmed cases/100,000 population (notification rates)	1.77	1.82	1.91	1.83	1.92	ECDC

Table 37: Reported human cases of yersiniosis a and year, 2013–2017

Country	2017					
	National coverage[a]	Data format[a]	Total cases	Confirmed cases & rates c		
				Cases	Rate	C
Austria	Y	C	95	95	1.08	
Belgium	Y	A	317	317	2.79	
Bulgaria	Y	A	17	17	0.24	
Croatia	Y	C	29	29	0.70	
Cyprus	Y	C	0	0	0.00	
Czech Republic	Y	C	611	611	5.78	
Denmark	Y	C	206	206	3.58	
Estonia	Y	C	43	43	3.27	
Finland	Y	C	423	423	7.69	
France[b]	N	C	738	738	–	
Germany	Y	C	2586	2579	3.13	
Greece[c]	–	–	–	–	–	
Hungary	Y	C	30	30	0.31	
Ireland	Y	C	6	6	0.13	
Italy[b]	N	C	8	8	–	
Latvia	Y	C	47	47	2.41	
Lithuania	Y	C	174	174	6.11	

Figure 3. Distribution of confirmed yersiniosis cases per 100 000 population by country, EU/EEA, 2016



- Siprofloksasin, 3.kuşak sefalosporinler ,TMP-SMZ, kloramfenikol, gentamisin birinci seçenek ilaçlar, direnç yok
- Nalidiksik asit (1. kuşak kinolon) direnci artmakta; İspanya'da %23 direnç

İntrensik direnç:

- Genelllikle kromozomal olarak kodlanan b-laktamaz genleri *blaA* ve *blaB* kaynaklı
- Ampisilin, tikarsilin, amoksisilin-klavulanat, sefazolin ve sefalotin (CLSI)
- Sefamandol ve sefoksitin (EUCAST)

Kafkas Univ Vet Fak Derg
16 (Suppl-A): S107-S112, 2010

RESEARCH ARTICLE

Incidence and Pathogenicity of *Yersinia enterocolitica* Isolates from Foods in Turkey [1]

Abamüslüm GÜVEN * Çiğdem SEZER * Berna DUMAN AYDIN *
Nebahat BİLGE ORAL * Leyla VATANSEVER *

Table 3. *Isolat*
Tablo 3. *Gıdal*
bilgisi)

Foods
Raw milk
Raw milk
Raw milk
Raw milk
Cheese
Cheese
Cheese
Ice cream
Ice cream
Chicken meat
Chicken meat
Chicken meat
Minced meat
Meat

Table 2. *Antimicrobial susceptibility test results of pathogenic Y. enterocolitica isolated from food samples*
Tablo 2. *Patojenik Y. enterocolitica izolatlarının antimikrobiyel duyarlılık test sonuçları*

Antimicrobial Agent	Numbers of Isolates (%)		
	Susceptible	Intermediate	Resistant
Amikacin (30 mcg) (Oxoid CTO 107B)	7 (38.8)	3 (16.6)	8 (44.4)
Amoxycillin/Clavulanic acid (30 mcg) (Oxoid CTO 223B)	6 (33.3)	7 (38.8)	5 (27.7)
Ampicillin (10 mcg) (Oxoid CTO 003B)	- (0)	8 (44.4)	10 (55.5)
Cefoperazone (75 mcg) (Oxoid CTO 249B)	1 (5.5)	6 (33.3)	11 (61.1)
Cefotaxime (30 mcg) (Oxoid CTO 166B)	13 (72.2)	5 (27.7)	- (0)
Cephazolin (30 mcg) (Oxoid CTO 011B)	- (0)	- (0)	18 (100)
Ciprofloxacin (5 mcg) (Oxoid CTO 425B)	18 (100)	- (0)	- (0)
Chloramphenicol (30 mcg) (Oxoid CTO 013B)	18 (100)	- (0)	- (0)
Clindamycin (2 mcg) (Oxoid CTO 064B)	- (0)	- (0)	18 (100)
Furazolidone (15 mcg) (Oxoid CTO 448B)	4 (22.2)	- (0)	14 (77.7)
Gentamicin (10 mcg) (Oxoid CTO 024B)	6 (33.3)	- (0)	12 (66.6)
Imipenem (10 mcg) (Oxoid CTO 455B)	18 (100)	- (0)	- (0)
Kanamycin (5 mcg) (Oxoid CTO 025B)	1 (5.5)	- (0)	17 (94.4)
Netilmicin (30 mcg) (Oxoid CTO 225B)	10 (55.5)	3 (16.6)	5 (27.7)
Streptomycin (10 mcg) (Oxoid CTO 047B)	1 (5.5)	- (0)	17 (94.4)
Sulphamethoxazole/trimethoprim (25 mcg) (Oxoid CTO 052B)	18 (100)	- (0)	- (0)
Tetracycline (30 mcg) (Oxoid CTO 041B)	15 (83.3)	2 (11.1)	1 (5.5)
Ticarcillin (75 mcg) (Oxoid CTO 167B)	7 (38.8)	5 (27.7)	6 (33.3)
Ticarcillin/Clavulanic acid (85 mcg) (Oxoid CTO 449B)	17 (94.4)	1 (5.5)	- (0)
Trimethoprim (5 mcg)	11 (61.1)	- (0)	7 (38.8)

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SURVEILLANCE REPORT

Annual Epidemiological Report for 2016

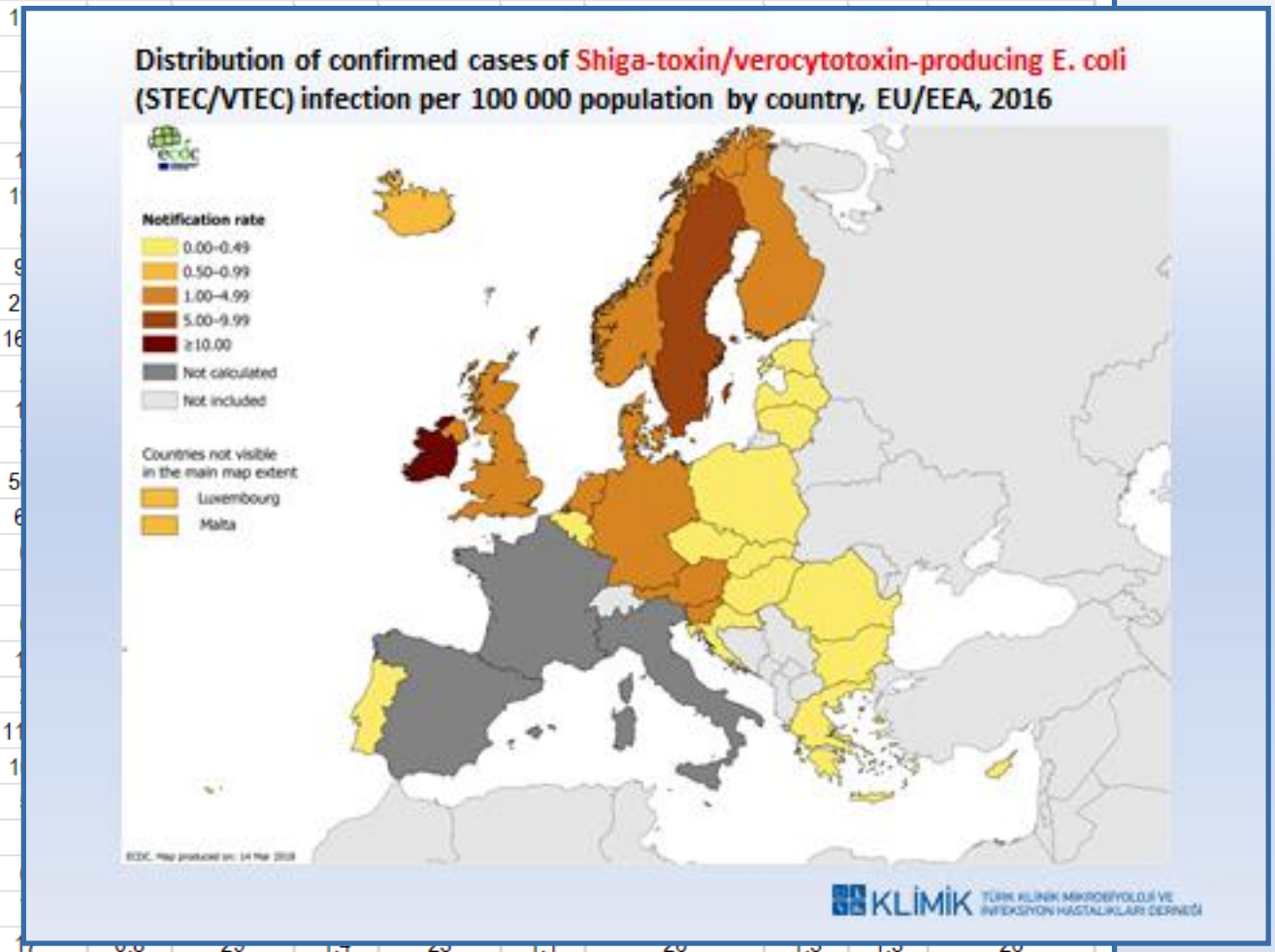
Shiga-toxin/verocytotoxin-producing *Escherichia coli* (STEC/VTEC) infection

Key facts

- In 2016, 6 619 confirmed cases of infections with Shiga-toxin/verocytotoxin-producing *Escherichia coli* (STEC/VTEC) were reported in the EU/EEA.
- The EU/EEA notification rate was 1.8 cases per 100 000 population.
- The highest rates of confirmed cases were observed in 0–4-year-old children (9.0 cases per 100 000 population).
- The EU/EEA notification rate was stable during the period 2012–2016.
- The highest notification rates were reported in Ireland, Sweden, the Netherlands and Denmark.

Table 1. Distribution of confirmed cases of Shiga-toxin/verocytotoxin-producing *E. coli* (STEC/VTEC) infection (STEC/VTEC) infection, EU/EEA, 2012–2016

Country	2012		2013		2014		2015		2016			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Austria	130	1.5	130	1.5	131	1.5	107	1.2	177	2.0	2.2	177
Belgium	105	0.9	1									
Bulgaria	0	0.0										
Croatia	0	0.0										
Cyprus	0	0.0										
Czech Republic	9	0.1	1									
Denmark	199	3.6	1									
Estonia	3	0.2										
Finland	32	0.6	9									
France	208	-	2									
Germany	1573	2.0	16									
Greece	0	0.0										
Hungary	3	0.0	1									
Iceland	1	0.3										
Ireland	412	9.0	5									
Italy	50	-	6									
Latvia	0	0.0										
Liechtenstein	.	.										
Lithuania	2	0.1										
Luxembourg	21	4.0	1									
Malta	1	0.2										
Netherlands	1049	6.3	11									
Norway	75	1.5	1									
Poland	3	0.0										
Portugal	-	-										
Romania	1	0.0										
Slovakia	9	0.2										
Slovenia	29	1.4	17	0.8	29	1.4	23	1.1	26	1.3	1.3	26
Spain	32	-	28	-	50	-	86	-	51	-	-	51
Sweden	472	5.0	551	5.8	472	4.9	551	5.7	638	6.5	6.5	638
United Kingdom	1337	2.1	1164	1.8	1324	2.1	1328	2.0	1373	2.1	2.1	1374
EU/EEA	**5756**	**1.7**	**6148**	**1.8**	**6054**	**1.7**	**6151**	**1.7**	**6619**	**1.8**	**1.9**	**6789**



NARMS Now: Human Data

CDC > NARMS > NARMS Now: Human Data

Welcome to NARMS Now: Human Data, an interactive tool from CDC that contains antibiotic resistance data from bacteria isolated from humans as part of the National Antimicrobial Resistance Monitoring System (NARMS). More

Select a view: Dashboard Tabular

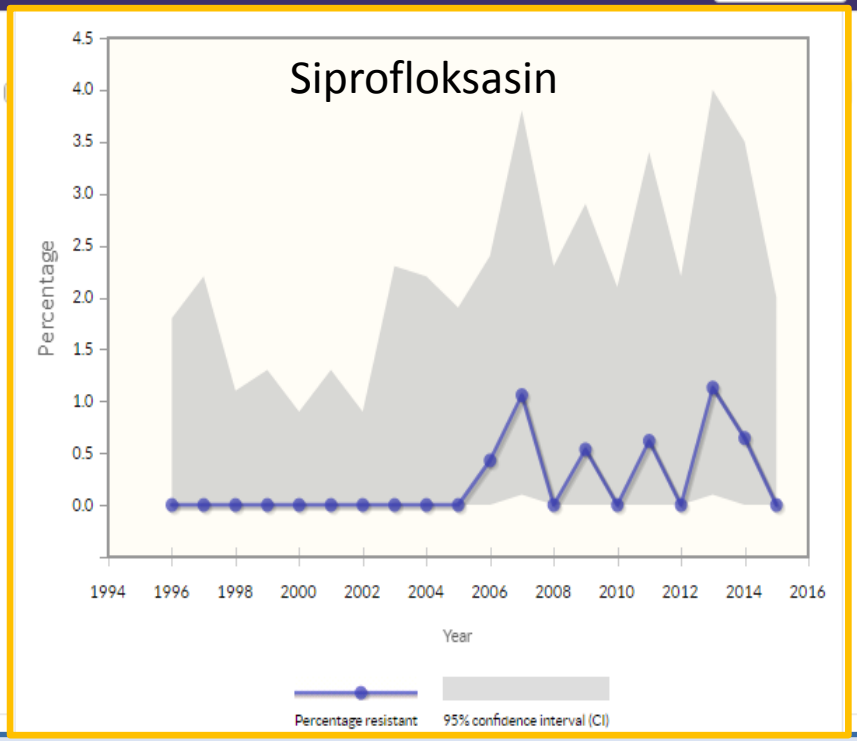
Search Options

Bacteria *E. coli O157* | Antibiotic ampicillin | From 1996 | To 2015 | States All

Resistance By State

Display: U.S. Map

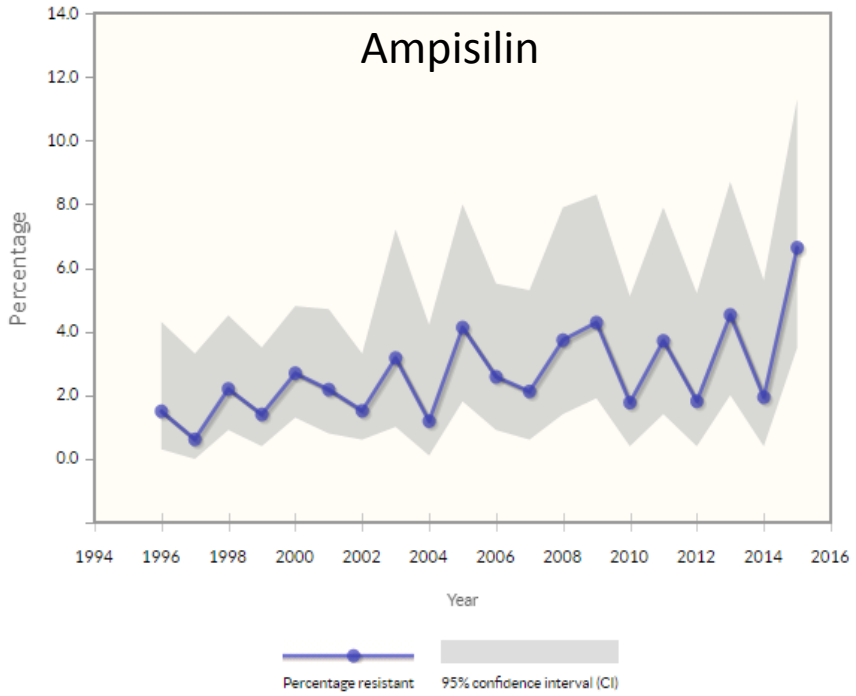
Siprofloksasin



Resistance by Year

Display: Graph

Ampisilin



KLİMİK TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ

EMERGING INFECTIOUS DISEASES®

Emerg Infect Dis. 2017 Sep; 23(9): 1609–1611.
doi: 10.3201/eid2309.170523

PMCID: PMC5572870
PMID: 28820370

Antimicrobial Drug–Resistant Shiga Toxin–Producing *Escherichia coli* Infections, Michigan, USA

2017 - USA

Antimicrobial drug resistance in 353 clinical Shiga toxin–producing *Escherichia coli* isolates, by serotype, Michigan, USA, 2010–2014*

		No. (%) isolates			
Serotype	No. isolates	Any resistance	Ampicillin resistance	Ciprofloxacin resistance	SXT resistance
O157	146	8 (5.5)	7 (4.8)	0 (0)	5 (3.4)
Non-O157	207	23 (11.1)	19 (9.2)	1 (0.5)	9 (4.3)
O26	53	4 (7.6)	4 (7.6)	0 (0)	1 (1.9)
O45	50	6 (12.0)	5 (10.0)	0 (0)	2 (4.0)
O103	75	6 (8.0)	5 (6.7)	1 (1.3)	4 (5.3)
O111	29	7 (24.1)	5 (17.2)	0 (0)	2 (6.9)

2017 - İngiltere

J Antimicrob Chemother 2017; **72**: 145–152
doi:10.1093/jac/dkw371 Advance Access publication 27 September 2016

Journal of Antimicrobial Chemotherapy

Antimicrobial resistance in Shiga toxin-producing *Escherichia coli* serogroups O157 and O26 isolated from human cases of diarrhoeal disease in England, 2015

Table 2. phenoty antimicr

Antibioti

AMP
CAZ/CTX
TMP
SUL
AZM
CHL
CIP
TET
GEN
STR

Table 1. Resistance genes identified in STEC O157 and

Resistance gene	Antibiotic class
strA [*aph(3′)-Ib*]	aminoglycosides
strB [*aph(6′)-Id*]	aminoglycosides
aadA1	aminoglycosides
aadA2	aminoglycosides
aadA17	aminoglycosides
aadD [*aph(4)-Ia*]	aminoglycosides
aac(3)-IVa	aminoglycosides
bla_{TEM-1}	β-lactams
$bla_{TEM-191}$	β-lactams
$bla_{TEM-117}$	β-lactams
$bla_{TEM-122}$	β-lactams
bla_{OXA-1}	β-lactams
$bla_{CTX-M-3}$	β-lactams
$bla_{CTX-M-15}$	β-lactams
sul1	folate synthesis inhibitors
sul2	folate synthesis inhibitors
dfrA1	folate synthesis inhibitors
dfrA7	folate synthesis inhibitors
dfrA8	folate synthesis inhibitors
dfrA14	folate synthesis inhibitors
mph(A)	macrolides
mph(B)	macrolides
floR	phenicols
catA1	phenicols
qnrS1	quinolones
gyrA 83:S-L	quinolones
gyrA 100:Y-C	quinolones
tet(A)	tetracyclines

Table 4. Proportion of isolates harbouring at least one AMR gene and the association with travel in the week prior to the onset of symptoms

AMR	Cases (n=430)	Number of resistant isolates (%): foreign travel (n=150)	Number of resistant isolates (%): no foreign travel (n=280)	Fisher's exact P
Resistance to at least one antimicrobial	81 (18.8)	40 (26.7)	41 (14.6)	0.005
β-Lactams	59 (13.7)	30 (20.0)	29 (10.4)	0.008
Aminoglycosides	70 (16.3)	36 (24.0)	34 (12.1)	0.002
Fluoroquinolones[a]	11 (2.6)	9 (6.0)	2 (0.7)	0.001
Trimethoprim	38 (8.8)	15 (10.0)	23 (8.2)	0.593
Tetracyclines	62 (14.4)	29 (19.3)	33 (11.8)	0.043
Sulphonamides	68 (15.8)	35 (23.3)	33 (11.8)	0.002
Chloramphenicol	9 (2.1)	6 (4.0)	3 (1.1)	0.07
Macrolides[b]	10 (2.3)	7 (4.7)	3 (1.1)	0.037

RNEĞİ

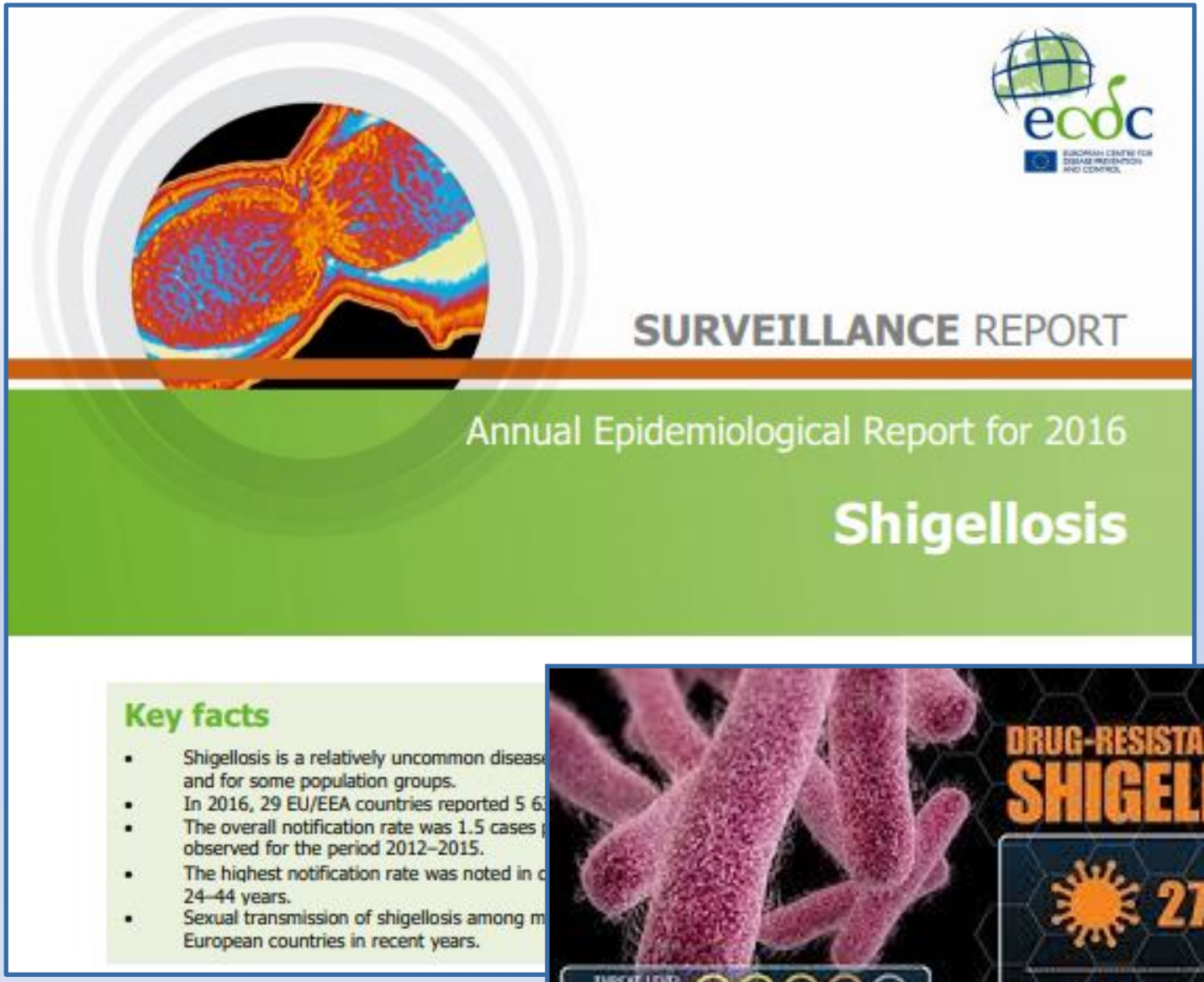
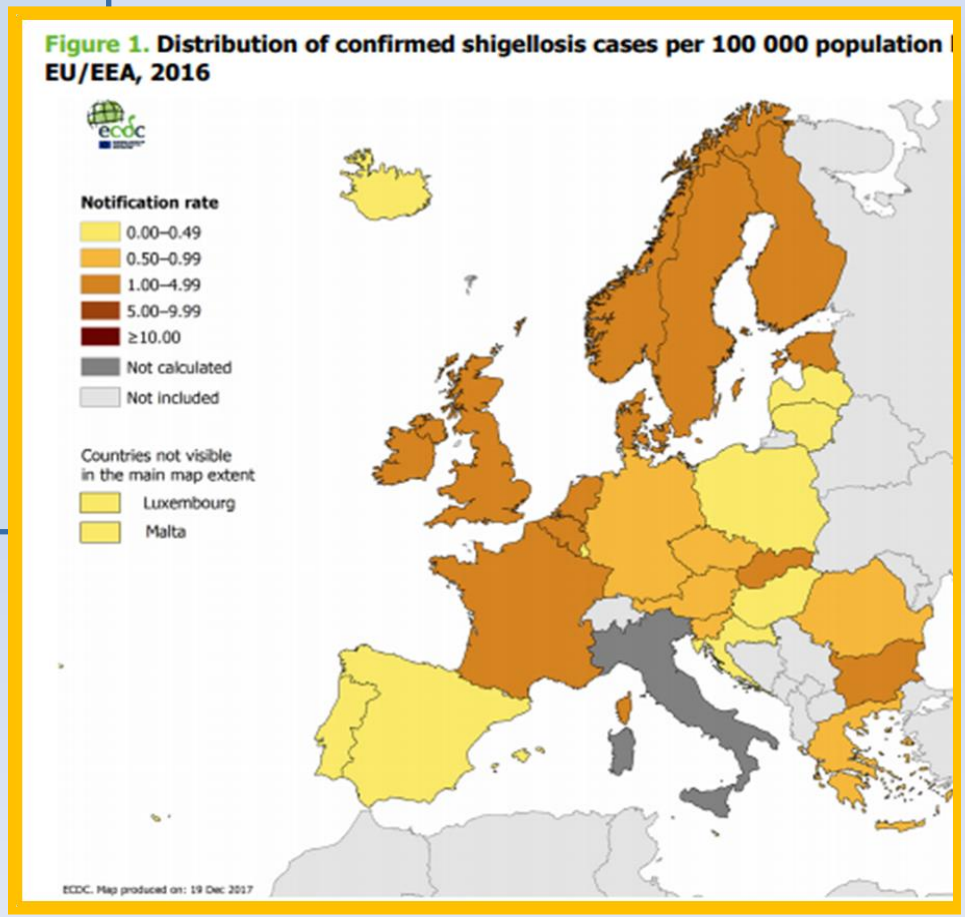

ecdc
SURVEILLANCE REPORT
Annual Epidemiological Report for 2016
Shigellosis
Key facts
Shigellosis is a relatively uncommon disease
and for some population groups.
In 2016, 29 EU/EEA countries reported 5 6
The overall notification rate was 1.5 cases
observed for the period 2012–2015.
The highest notification rate was noted in c
24–44 years.
Sexual transmission of shigellosis among m
European countries in recent years.
DRUG-RESISTANT
SHIGELLA
27,000
500,000
40

Table 1. Distribution of confirmed shigellosis cases, EU/EEA, 2012–2016

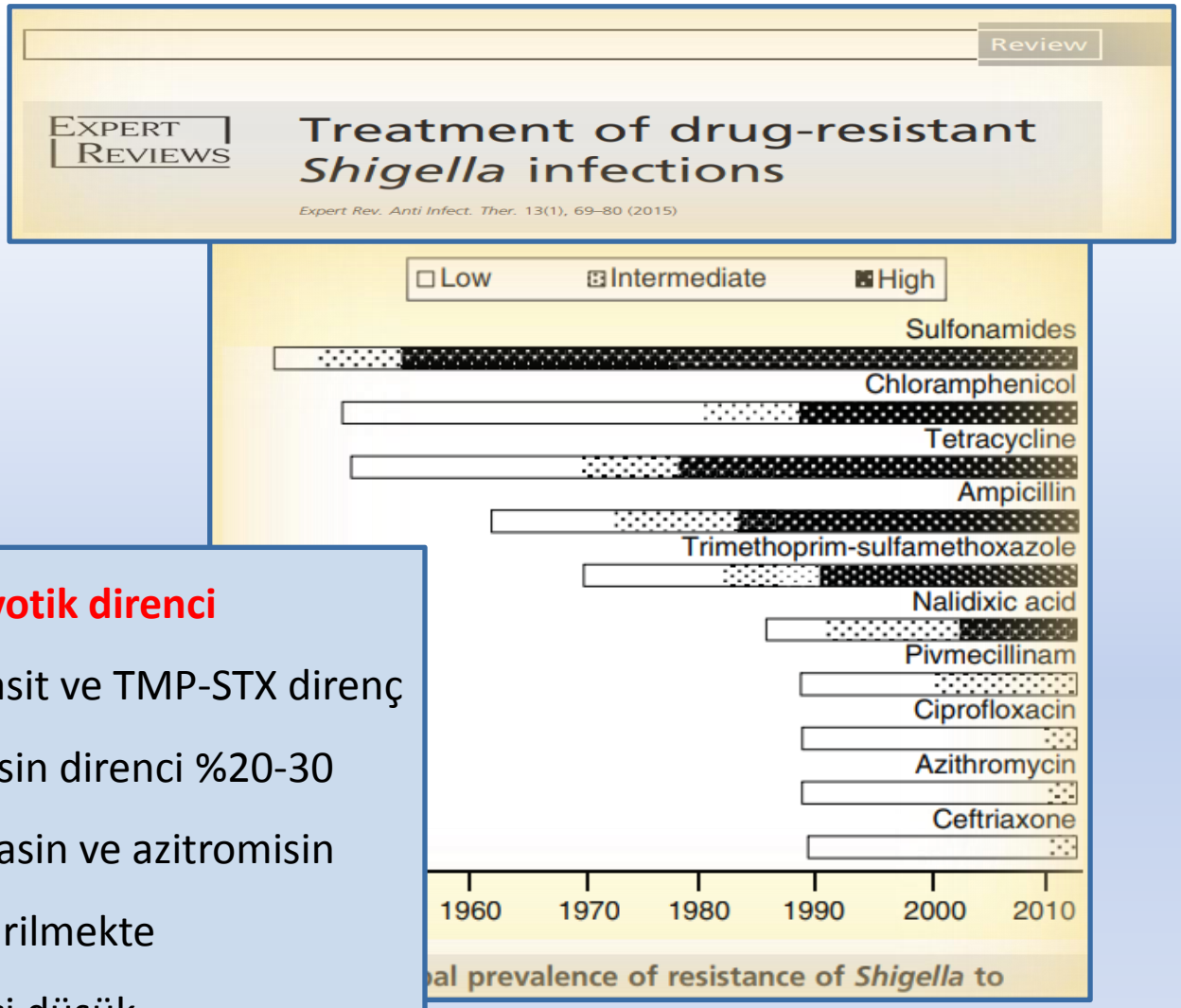
Country	2012		2013		2014		2015		2016			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Austria	57	0.7	70	0.8	75	0.9	96	1.1	62	0.7	0.8	62
Belgium	340	3.1	323	2.9	403	3.6	391	3.5	353	3.1	3.1	353
Bulgaria	777	10.6	486	6.7	512	7.1	410	5.7	291	4.1	4.4	291
Croatia	26	0.6	19	0.4	0	0.0	12	0.3	6	0.1	0.1	6
Cyprus	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0.1	1
Czech Republic	266	2.5	247	2.3	92	0.9	88	0.8	68	0.6	0.6	70
Denmark	105	1.9	109	1.9	110	2.0	170	3.0	212	3.7	3.9	212
Estonia	34	2.6	12	0.9	10	0.8	12	0.9	17	1.3	1.3	17
Finland	88	1.6	111	2.0	89	1.6	86	1.6	59	1.1	1.1	66
France	686	2.4	662	2.3	873	3.0	822	2.8	828	2.8	2.9	828
Germany	523	0.7	562	0.7	509	0.6	553	0.7	418	0.5	0.5	426
Greece	89	0.8	112	1.0	90	0.8	78	0.7	72	0.7	0.7	72
Hungary	32	0.3	39	0.4	7	0.1	65	0.7	23	0.2	0.3	23
Iceland	1	0.3	0	0.0	2	0.6	1	0.3	0	0.0	0.0	0
Ireland	29	0.6	45	1.0	53	1.2	88	1.9	84	1.8	1.8	84
Italy	30	-	19	-	24	-	26	-	20	-	-	20
Latvia	3	0.1	2	0.1	8	0.4	12	0.6	3	0.2	0.2	3
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.	.
Lithuania	52	1.7	32	1.1	21	0.7	24	0.8	13	0.5	0.5	13
Luxembourg	14	2.7	23	4.3	12	2.2	3	0.5	1	0.2	0.2	1
Malta	0	0.0	2	0.5	0	0.0	1	0.2	2	0.5	0.5	2
Netherlands	450	2.7	382	2.3	335	2.0	444	2.6	428	2.5	2.6	440
Norway	77	1.5	104	2.1	93	1.8	85	1.6	83	1.6	1.6	83
Poland	13	0.0	19	0.0	41	0.1	18	0.0	15	0.0	0.0	15
Portugal	10	0.1	2	0.0	5	0.0	33	0.3	13	0.1	0.1	18
Romania	354	1.8	156	0.8	147	0.7	168	0.8	129	0.7	0.7	130
Slovakia	449	8.3	256	4.7	222	4.1	191	3.5	145	2.7	2.7	150
Slovenia	25	1.2	10	0.5	18	0.9	34	1.6	17	0.8	0.9	17
Spain	264	0.6	141	0.3	230	0.5	293	0.6	180	0.4	0.4	208
Sweden	328	3.5	335	3.5	324	3.4	311	3.2	232	2.4	2.4	232
United Kingdom	2 021	3.2	2 076	3.2	2 226	3.5	2 208	3.4	1 856	2.8	2.9	1 856
EU/EEA	**7 143**	**1.8**	**6 356**	**1.6**	**6 531**	**1.7**	**6 723**	**1.7**	**5 631**	**1.5**	**1.5**	**5 699**

Shigella türlerinde antibiyotik direnci

- Giderek artan direnç önemli problem
- Tedavide antibiyotik duyarlılığı çalışılması özellikle de direnç açısından risk gruplarında mutlaka önerilmekte
- Risk grupları:
  - Asya ve Afrika'daki infeksiyonlar
  - Seyahat öyküsü
  - HIV pozitifler
  - MSM



Shigella infection: Treatment and prevention in adults, www.uptodate.com



Shigella türlerinde antibiyotik direnci

- Asya ve Afrika'da nalidiksik asit ve TMP-STX direnç oranları %65-80, siprofloksasin direnci %20-30
- Asya ve Fransa'da siprofloksasin ve azitromisin direnç oranlarında artış bildirilmekte
- ABD'de siprofloksasin direnci düşük
- Azalmış duyarlılık gösteren (MIC: 0.12 - 1 mcg/mL) suşlardaki artış çok daha belirgin

Shigella infection: Treatment and prevention in adults, www.uptodate.com

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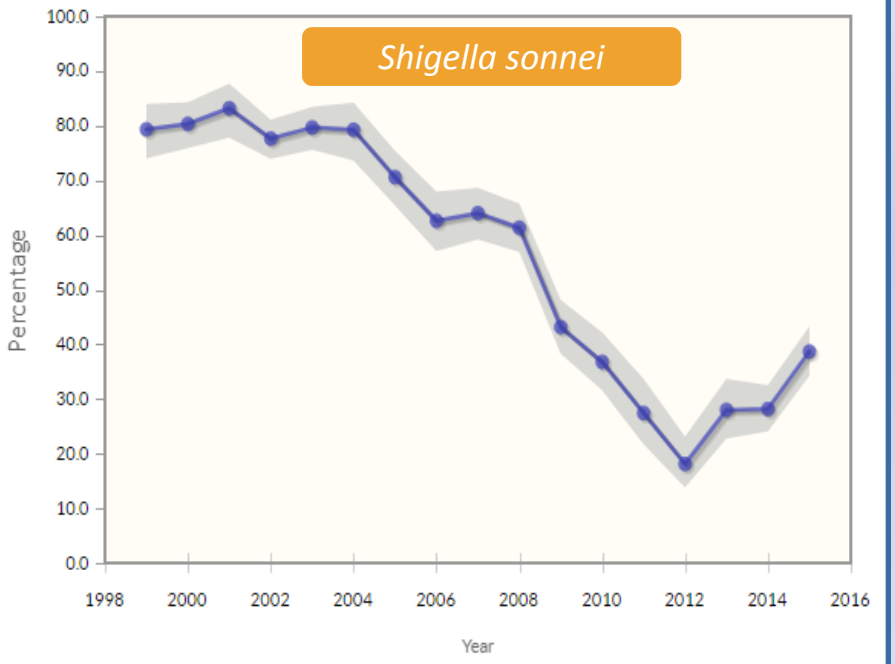
Ampisilin Direnci

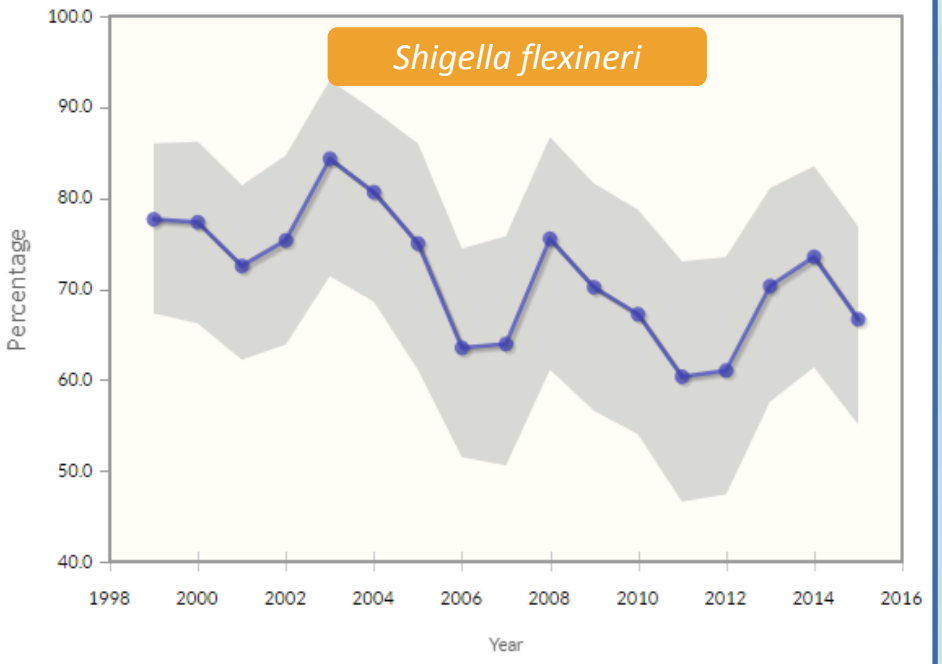
Resistance by Year

Display: Graph

Shigella sonnei



Shigella flexineri



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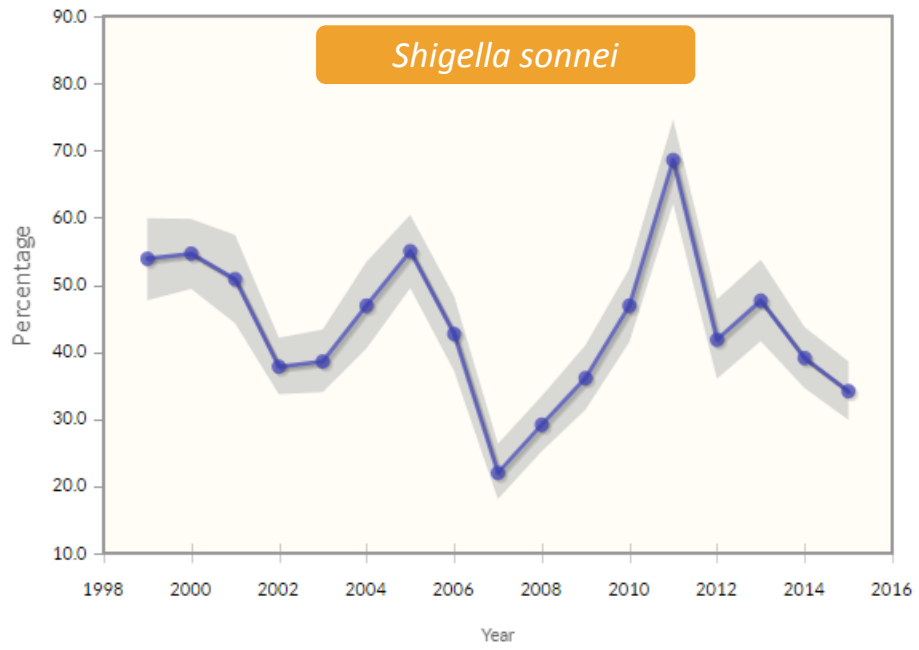
NARMS Now: Human Data

TMP-STX Direnci

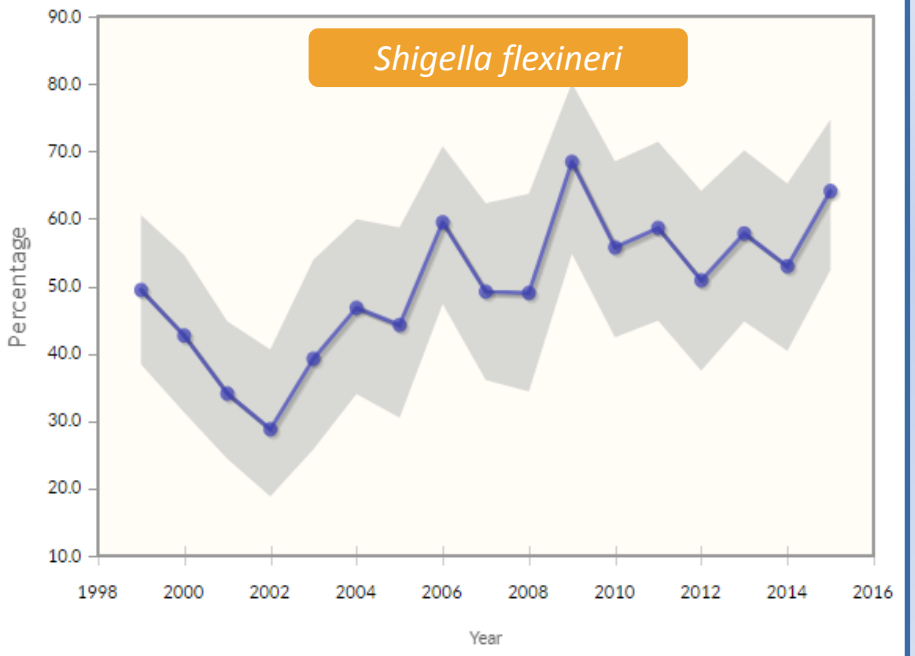
Resistance by Year

Display: Graph

Shigella sonnei



Shigella flexineri



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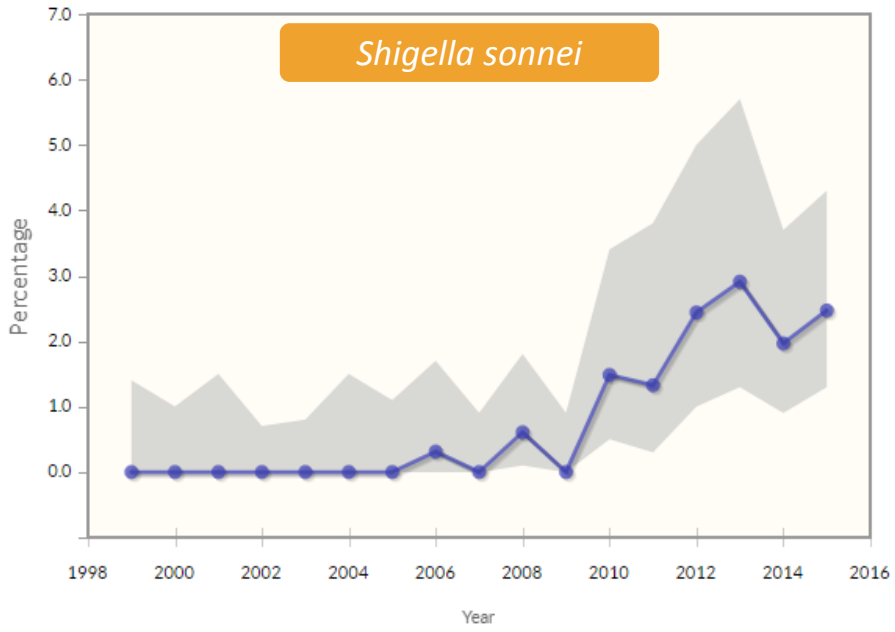
Siprofloksasin Direnci

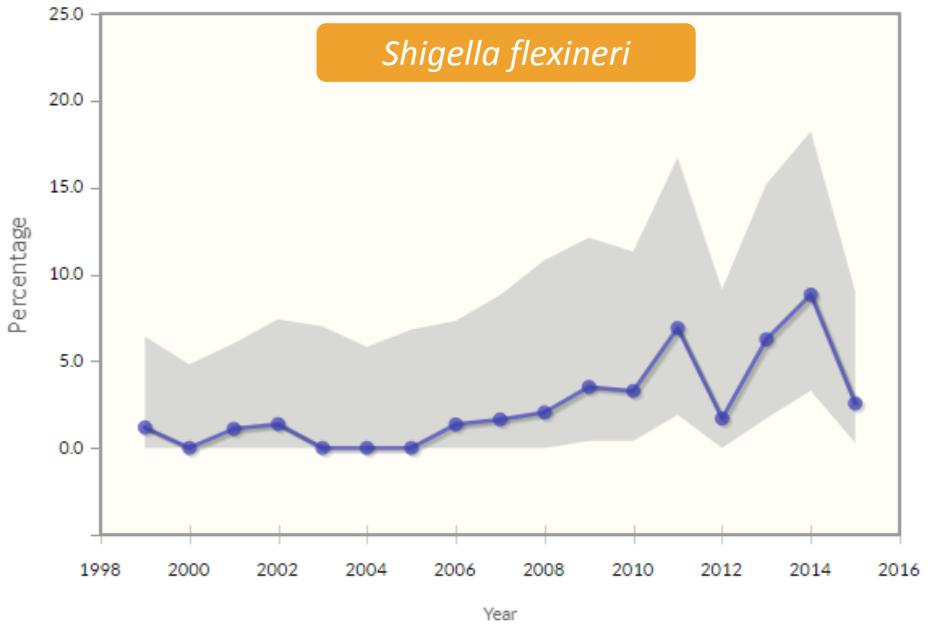
Resistance by Year

Display: Graph

Shigella sonnei



Shigella flexineri



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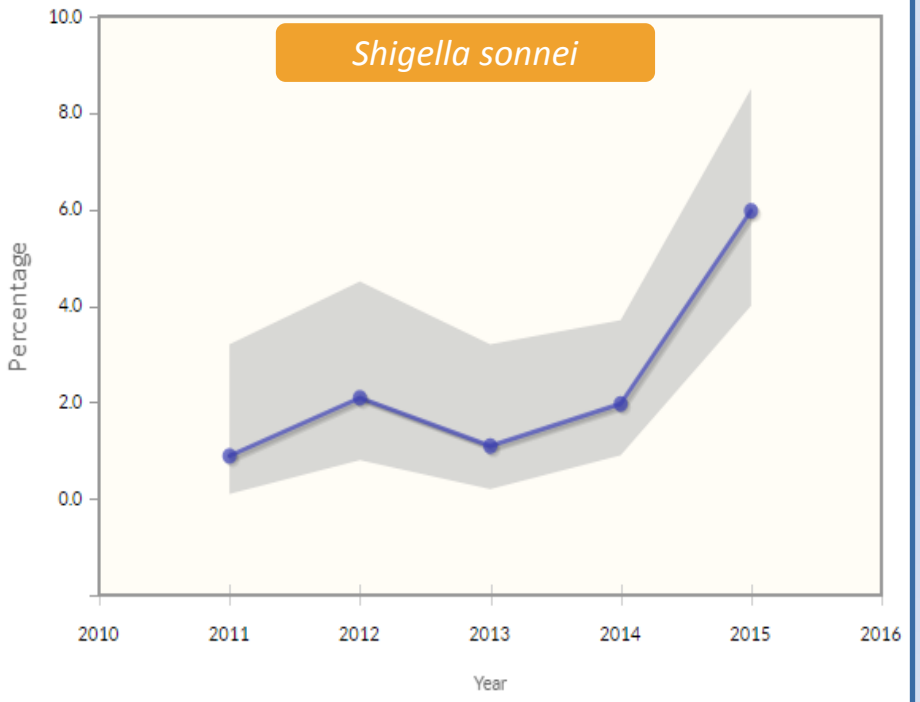
NARMS Now: Human Data

Azitromisin Direnci

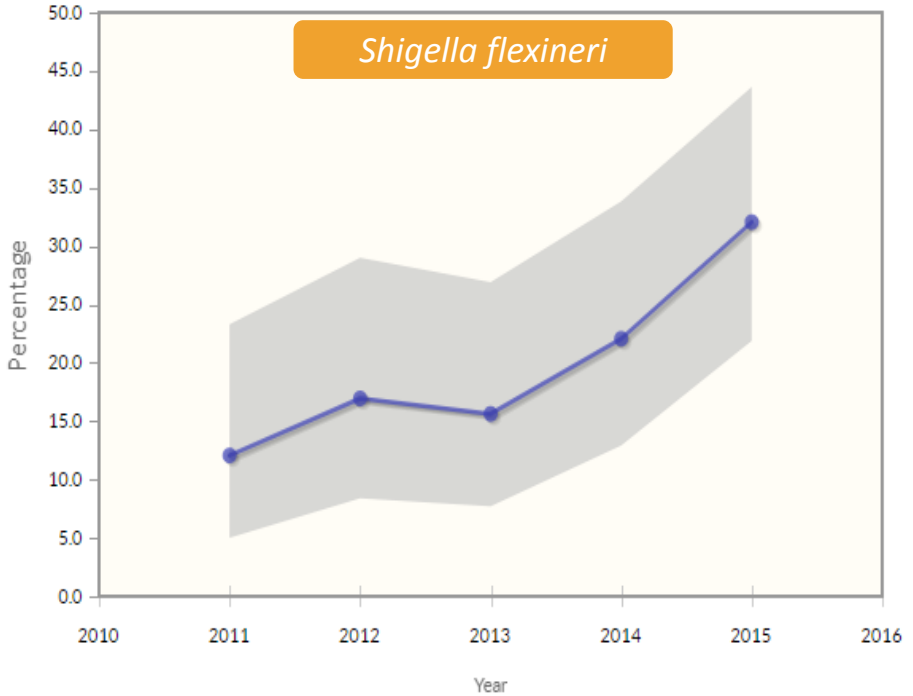
Resistance by Year

Display: Graph

Shigella sonnei



Shigella flexineri



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Rapid co

Ongo
who h
2009–

M L Borg[1],
I Simms[6],

FIGURE 1

Cases of *Shigella f*
September – Dece

A Un

Number of cases

0 1 2 3 4 5 6 7 8

1-10 11-

FIGURE 2

Shigella flexneri cases with no or unknown travel history stratified by year and sex, England and Wales, 2001–2011 (n=3,352)

2008 2009 2010 2011

e (n=43)
(n=40)

en

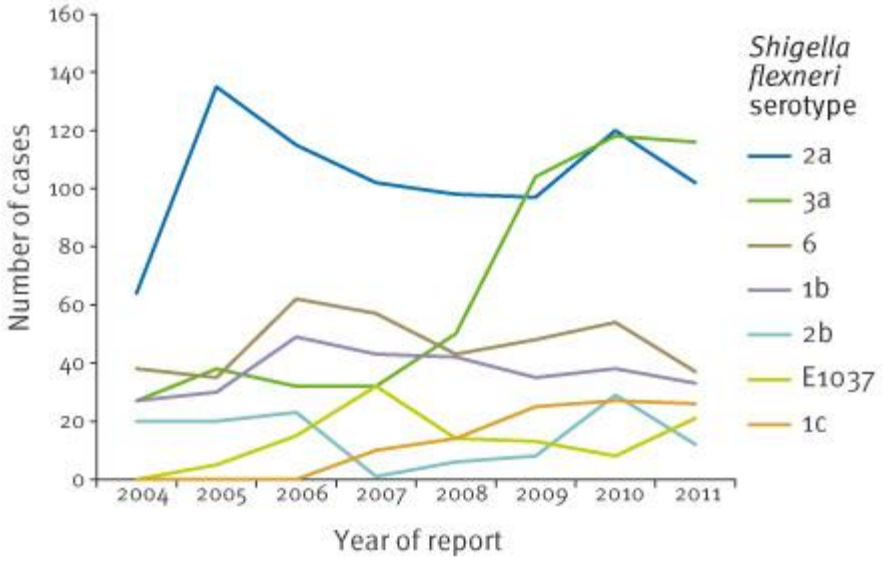
ase (LabBase 2),
ed Kingdom.

61-70

Age group (years)

FIGURE 4

Shigella flexneri serotype by year of report for cases with *S. flexneri* infection with no or unknown travel history, England and Wales, 2004-2011 (n=2,350)



Source: National reference laboratory database (GDW- Gastro Data Warehouse), Health Protection Agency, Colindale, United Kingdom.

[a] The gender and ag

Source: National reference laboratory database (GDW- Gastro Data Warehouse), Health Protection Agency, Colindale, United Kingdom.
National laboratory reporting database (LabBase 2), Health Protection Agency, Colindale, United Kingdom.

KLİMİK TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ

Eurosurveillance Eur

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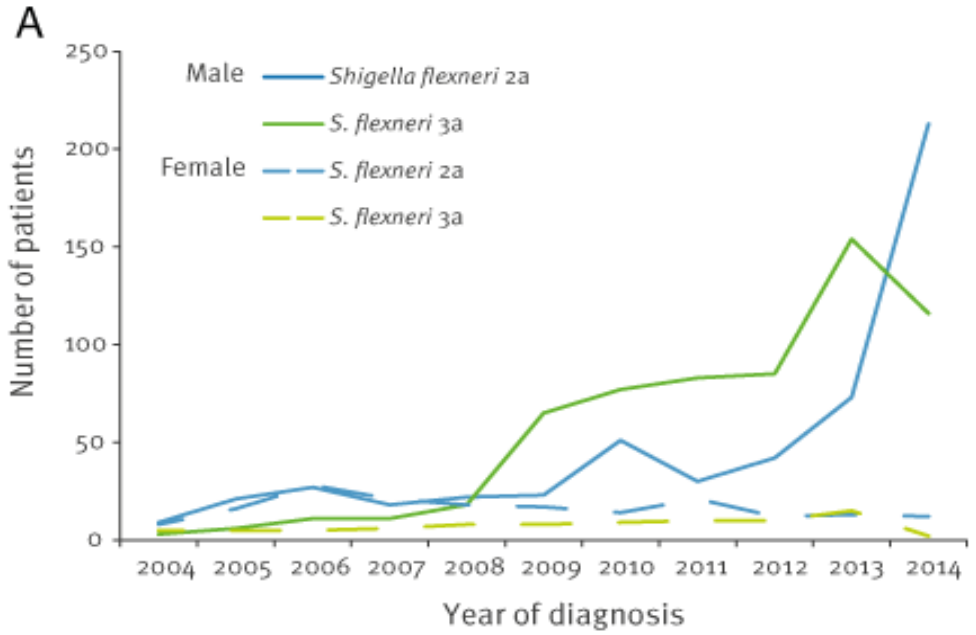
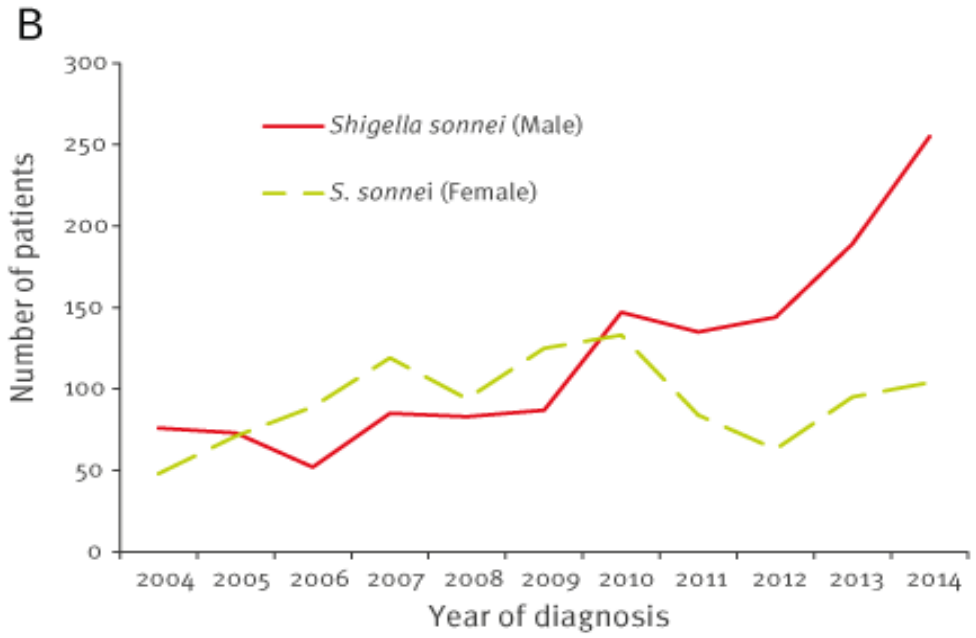
Rapid communications

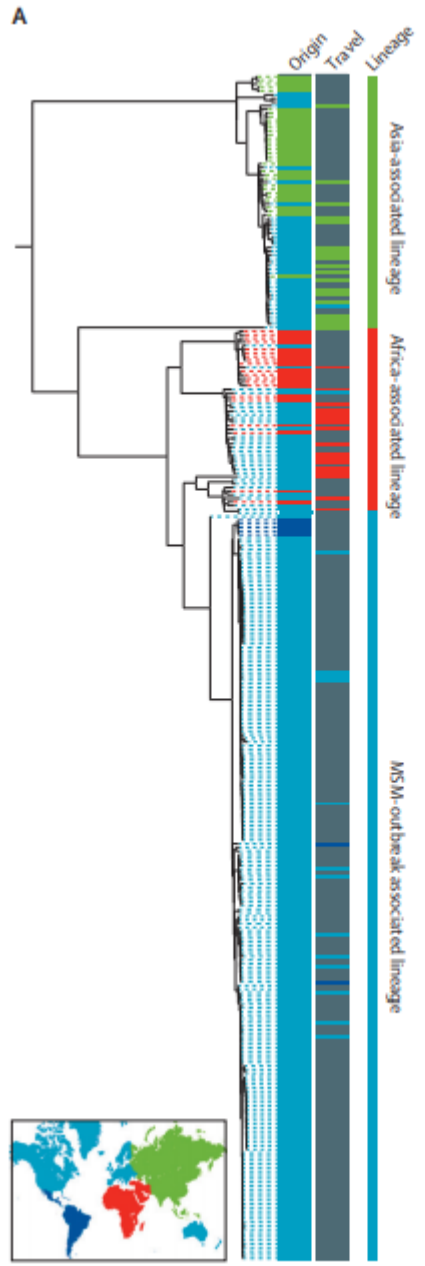
Intensified shigellosis epidemic
transmission in men who have se
flexneri and S. sonnei in Englan
2015

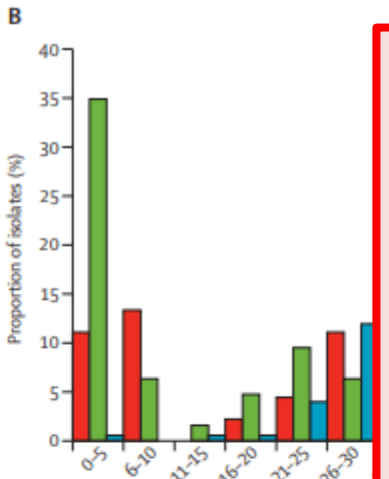
I Simms[1], N Field[1,2], C Jenkins[3], T Childs[1], V L Gilbart[1], T J

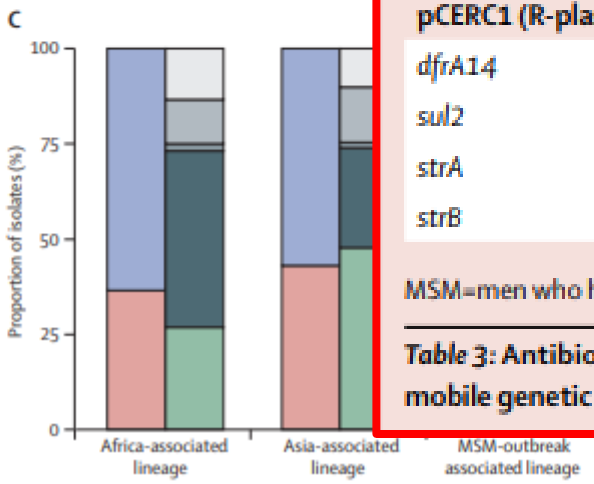
**Surveillance data suggest an intensification of the
who have sex with men (MSM) in England with se
transmission between MSM might have accounte
3a and *S. flexneri* 2a, and *S. sonnei* diagnoses. Clin
enteric infections to facilitate prompt diagnosis a**











	Associated resistances
Shigella resistance locus multidrug resistance element	
bla_{OXA-1}	β-lactams
catA1	Chloramphenicol
aadA1	Aminoglycosides
tet(B)	Tetracyclines
pKSR100 (conjugative R-plasmid)	
erm(B)	Macrolides (erythromycin)
mph(A)	Macrolides (azithromycin)
bla_{TEM}	β-lactams
pKSR100 integron	
dfrA17	Trimethoprim
sul1	Sulfonamides
aadA5	Aminoglycosides
pCERC1 (R-plasmid)	
dfrA14	Trimethoprim
sul2	Sulfonamides
strA	Aminoglycosides
strB	Aminoglycosides

MSM=men who have sex with men.

Table 3: **Antibiotic resistance genes and associated resistances on mobile genetic elements in the MSM-associated outbreak lineage**

Contents lists available at SciVerse ScienceDirect

International Journal of Infectious Diseases

journal homepage: www.elsevier.com/locate/ijid

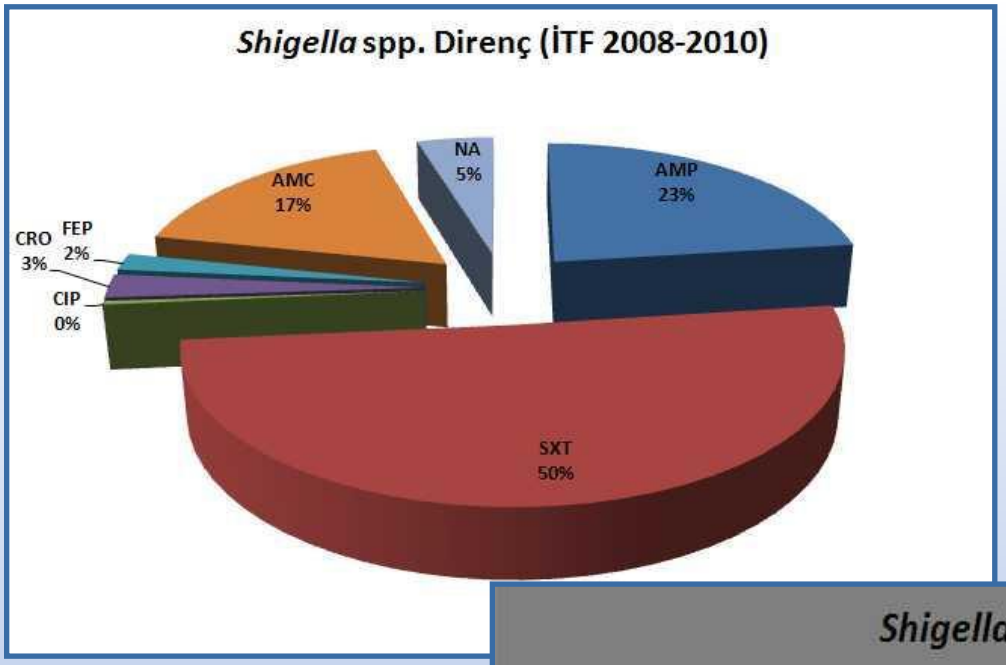
2012

Clinical characteristics and antibiotic resistance of Shigella gastroenteritis in Ankara, Turkey between 2003 and 2009, and comparison with previous reports

Elif Nursel Özmert [a], Osman Tolga İnce [a,*], Emel Örün [b], Songül Yalçın [a], Kadriye Yurdakök [a], Deniz Gür [c]

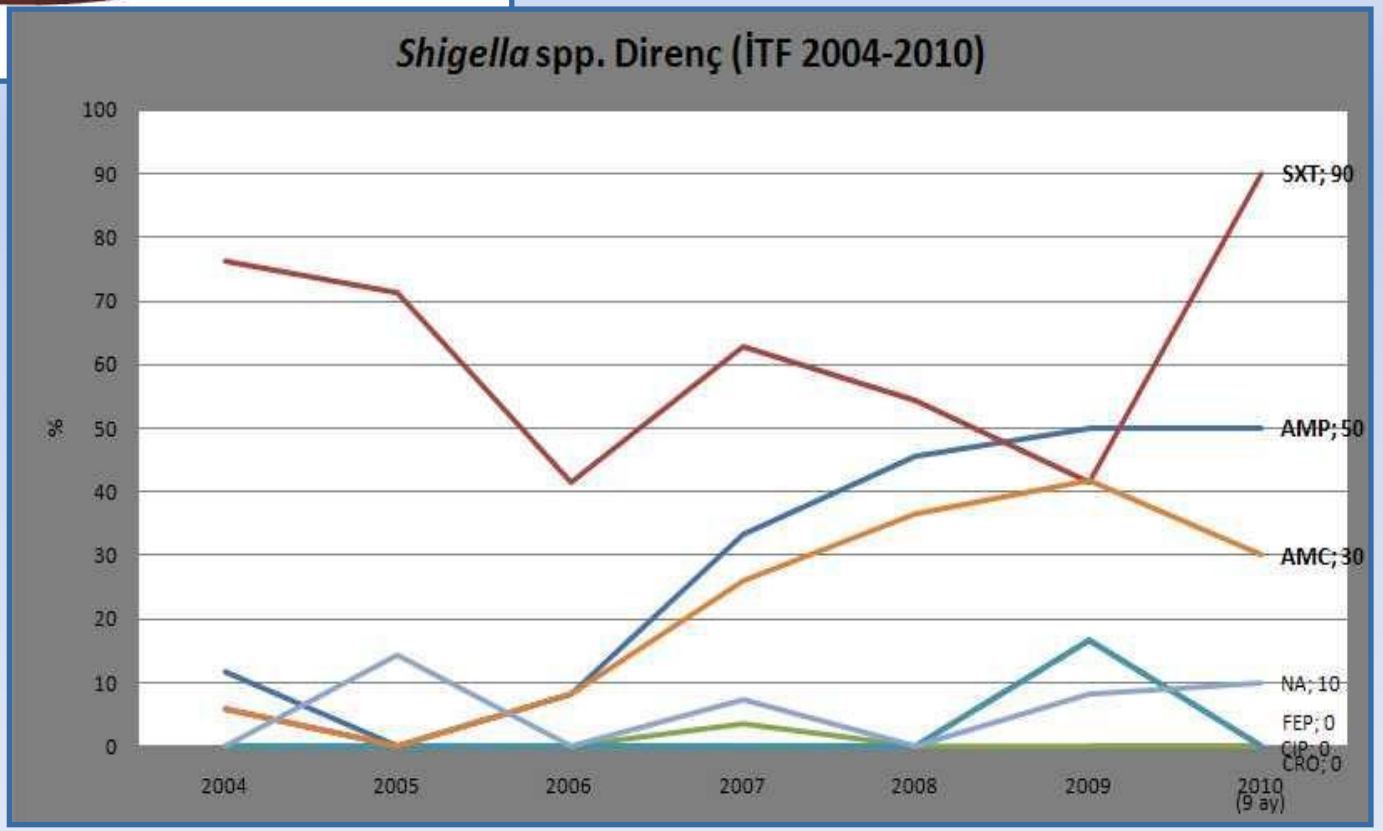
Table 3
Antibiotic resistance pattern between the years 2003 and 2009 according to the Shigella species

Antibiotic	*Shigella sonnei*, *n* (%)	*Shigella flexneri*, *n* (%)	Total, *n* (%)
TMP–SMX	116/162 (71.6)	14/24 (58.3)	130/186 (69.9)
Nalidixic acid	6/173 (3.5)	3/19 (15.8)[a]	9/192 (4.7)
Ampicillin	65/207 (31.4)	18/25 (72)[b]	83/232 (35.8)
Ciprofloxacin	0/208 (0)	0/25 (0)	0/233 (0)
MDR	56/209 (26.8)	11/25 (44)	67/234 (28.6)



İÜ Tıp Fak

- 2009-2010
- Çoklu ilaç direnci %50



2014

Braz J Microbiol. 2014; 45(3): 845–849.
Published online 2014 Oct 9.
PMCID: PMC4204968
PMID: 25477917

Drug resistance profiles and clonality of sporadic *Shigella sonnei* isolates in Ankara, Turkey

Birgul Kacmaz,[1] Ozlem Unaldi,[2] Nedim Sultan,[3] and Riza Durmaz[2,4]

‣ Author information ‣ Article notes ‣ C

This article has been cited by other a

43 *Shigella sonnei* (2004-2006 arası)

- Direnç oranları: Baktrim (%95), ampisilin (%12), amp-sulb (%2), siprofloksasin (%12), seftriakson ve sefepim (%12)
- 5 ESBL (+): 1 izolat SHV-12, 4 izolat CTX-M-15

Abstract

The aims of this study were to inves
(ESBLs), and molecular epidemiologic
sulbactam, amoxicillin-clavulanate, chloramphenicol, and ciprofloxacin were the most active antibiotics. Five isolates harbored bla_{SHV-12}, bla_{TEM-1} and $bla_{CTX-M-15}$. More than 90% of the isolates had an indistinguishable pulsotype.

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Clostridioides (formerly Clostridium) difficile infection in adults: Clinical manifestations and diagnosis

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Topic Outline

SUMMARY

INTRODUCTION

CLINICAL MANIFESTATIONS

Diarrhea with colitis

- Nonsevere disease
- Severe and fulminant colitis

Recurrent disease

Asymptomatic carriage

Unusual presentations

DIAGNOSIS

Clostridioides (formerly Clostridium) difficile infection in adults: Clinical manifestations and diagnosis

Authors: J Thomas Lamont, MD, Ciarán P Kelly, MD, Johan S Bakken, MD, PhD
Section Editor: Stephen B Calderwood, MD
Deputy Editor: Elinor L Baron, MD, DTMH

Contributor Disclosures

All topics are updated as new evidence becomes available and our peer review process is complete.
Literature review current through: Nov 2018. | **This topic last updated:** Oct 25, 2018.

INTRODUCTION — *Clostridioides* (formerly *Clostridium*) *difficile* is a spore-forming, toxin-producing, gram-positive anaerobic bacterium that causes antibiotic-associated colitis. It colonizes the human intestinal tract after the normal gut flora has been disrupted (frequently in association with antibiotic therapy). *C. difficile* infection (CDI) is one of the most common health care-associated infections and a significant cause of morbidity and mortality, especially among older adult hospitalized patients.

Anaerobe. 2016 Aug;40:95-9. doi: 10.1016/j.anaerobe.2016.06.008. Epub 2016 Jun 28.

Reclassification of Clostridium difficile as Clostridioides difficile (Hall and O'Toole 1935) Prévot 1938.

Lawson PA[1], Citron DM[2], Tyrrell KL[2], Finegold SM[3].

Author information

Abstract

The recent proposal by Lawson and Rainey (2015) to restrict the genus Clostridium to Clostridium butyricum and related species has ramifications for the members of the genera that fall outside this clade that should not be considered as Clostridium sensu stricto. One such organism of profound medical importance is Clostridioides difficile that is a major cause of hospital-acquired diarrhea and mortality in individuals. Based on 16S rRNA gene sequence analysis, the closest relative of Clostridium difficile is Clostridium mangenotii with a 94.7% similarity value and both are located within the family Peptostreptococcaceae that is phylogenetically far removed from C. butyricum and other members of Clostridium sensu stricto. Clostridium difficile is Clostridium mangenotii each produce abundant H2 gas when grown in PYG broth and also produce a range of straight and branched chain saturated and unsaturated fatty acids with C16:0 as a major product. The cell wall peptidoglycan contains meso-DAP as the diagnostic diamino acid. Based on phenotypic, chemotaxonomic and phylogenetic analyses, novel genus Clostridioides gen. nov. is proposed for Clostridium difficile as Clostridioides difficile gen. nov. comb. nov. and that Clostridium mangenotii be transferred to this genus as Clostridioides mangenotii comb. nov. The type species of Clostridioides is Clostridioides difficile.

Clin Microbiol Infect. 2018 Jul;24(7):724-731. doi: 10.1016/j.cmi.2017.10.008. Epub 2017 Oct 21.

2018 Fidaxomicin

The ClosER study: results from a three-year pan-European longitudinal surveillance of antibiotic resistance among prevalent Clostridium difficile ribotypes, 2011-2014.

Freeman J[1], Vernon J[2], Pilling S[2], Morris K[3], Nicholson S[2], Shearman S[2], Longshaw C[4], Wilcox MH[5]; Pan-European Longitudinal Surveillance of Antibiotic Resistance among Prevalent Clostridium difficile Ribotypes Study Group.

⊕ Author information

Abstract

OBJECTIVES: ...nidazole and vancomyci... ...ued surveillance to... ...e ribotype distrib... ...of fidaxomicin.

METHODS: Be... ...ng, toxin testing and sus... ...mphenicol and tigecycline...

	Years	M	V	FDX	RIF	MXF	CLINDA	IMI	CHLOR	TIG
Sensitive (%)	Y1	97.9	96.7	100.0	80.5	58.7	37.6	62.7	92.9	100.0
	Y2	98.1	98.8	100.0	82.1	64.5	29.1	77.3	93.1	100.0
	Y3	96.9	99.8	100.0	86.8	66.0	18.3	78.1	91.5	100.0
	All years	**97.9**	**98.6**	**100.0**	**83.2**	**63.1**	**29.0**	**72.6**	**92.8**	**100.0**
Intermediately sensitive (%)	Y1	2.0	2.4		6.0	1.8	12.4	30.1	3.5	
	Y2	1.3	0.6		3.7	1.0	13.7	19.7	2.6	
	Y3	2.6	0.1		1.5	0.5	17.4	19.7	5.1	
	All years	**1.9**	**1.1**		**3.9**	**1.1**	**14.4**	**23.3**	**3.7**	
Resistant (%)	Y1	0.1	0.9		13.5	39.5	49.8	7.2	3.6	
	Y2	0.1			13.7	34.1	56.7	2.3	3.7	
	Y3	0.5	0.1		11.6	33.5	64.3	2.2	3.4	
	All years	**0.2**	**0.1**		**13.0**	**35.8**	**56.6**	**4.0**	**3.6**	

Mikrobiyol Bul. 2017 Jul;51(3):236-246. doi: 10.5578/mb.57467.

[Antimicrobial susceptibilities and molecular characterization of toxin-positive Clostridium difficile isolates: the first report on the presence of hypervirulent strains from Turkey].

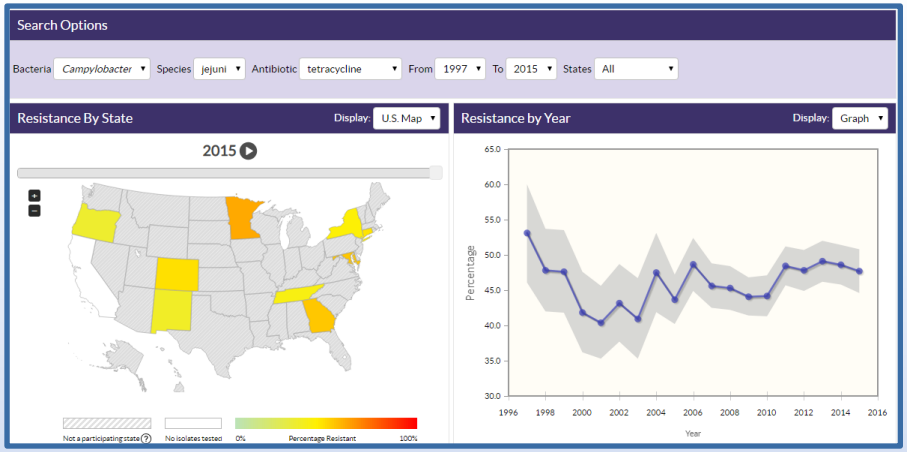
[Article in Turkish]

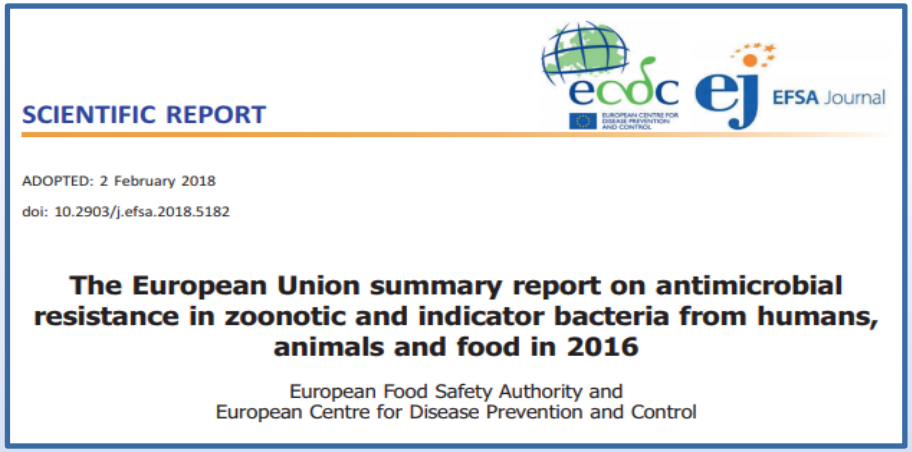
Salman E[1], Levent B, Karahan ZC.

Author information

Abstract

Clostridium difficile infection is one of the most important hospital-acquired infections. Infections caused by hypervirulent C.difficile strains which produce toxins at high levels, have higher morbidity and mortality rates, more complications and relapses. They are characterized by higher sporulation ratios and resistance rates for fluoroquinolones. In order to prevent serious morbidities, mortalities and remarkable increase in health costs, highly pathogenic C.difficile strains must be identified before causing severe outbreaks. The aim of this study was to determine the antimicrobial susceptibilities and molecular characteristics of 61 C.difficile strains isolated by culture from toxin-positive fecal samples of patients who were admitted to three different laboratories in Ankara, between September 2012 and November 2014. Antimicrobial susceptibilities were determined by using gradient test strips and results were interpreted according to the current CLSI and EUCAST criteria. The presence of toxin genes was investigated by polymerase chain reaction (PCR), and mutations in the tcdC gene were determined by sequence analysis following PCR amplification. Genetic characterization of one hypervirulent strain was performed by Public Health Institution of Turkey using the GenoType CDiff (Hain Lifescience, Germany) test. All strains were susceptible to vancomycin and metronidazole. Three (4.9%) isolates were resistant to moxifloxacin with a minimum inhibitory concentration (MIC) of > 8 µg/ml. The MIC50 and MIC90 values for erythromycin and clindamycin were 1.5-3 µg/ml, and 2-4 µg/ml, respectively. All strains carried the tcdA and tcdB genes, and 1 (1.6%) was positive for the binary-toxin (cdtA and cdtB) genes. The binary-toxin positive strain carried a 54 bp deletion as well as a single nucleotide change in the tcdC gene. Various single nucleotide changes were found in the tcdC gene of 12 strains (19.6%). Our results have shown that, hypervirulent strains exist in our country, but we have no evidence for the presence of ribotype 027 yet. On the other hand, when the increasing incidence of these strains through out the world is taken into consideration, it would be of great importance to perform surveillance studies and characterize the isolated strains.





	Campylobacter	*Salmonella*	*Yersinia*	VTEC- *E.coli*	*Shigella*
Amp.Sulbaktam					
TMP-SXT					
Siprofloksain					
Azitromisin					
Tetrasiklin					
Aminoglikozid					
3.Kuşak Sefalosporin					


TEŞEKKÜRLER...