

Web annex

DANMAP

2015



DANMAP 2015 - Use of antimicrobial agents and occurrence of antimicrobial resistance in bacteria from food animals, food and humans in Denmark



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Table A4.1. Consumption of antimicrobial agents^(a) for systemic use in pigs given as defined animal daily doses (DADDs), Denmark

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ATCvet code	QJ01AA	QJ01BA	QJ01CE	QJ01CA QJ01CR	QJ01DC QJ01DD	QJ01E	QJ01FA	QJ01FF	QA07AA QJ01G	QA07AA10	QJ01MA	QJ01RA	QJ01XX	
Therapeutic group	Tetracyclines	Amphenicols	Penicillins, b-lactamase sensitive	Aminopenicillins ^(b)	Cephalosporins ^(c)	Sulfonamides and trimethoprim	Macrolides	Lincosamides / spectinomycin ^(d)	Aminoglycosides (local G)	Colistin (local G)	Fluroquinolones	Penicillin-streptomycin combinations	Pleuromutilins	Total
breeding animals/piglets (1000's DADD for 200 kg)														
Year														
2004	984	9	2302	1363	114	1284	781	555	218	24	3	669	865	9170
2005	1114	10	2399	1340	132	1391	800	556	170	23	4	656	709	9304
2006	1059	9	2380	1340	149	1443	854	517	153	24	7	641	788	9366
2007	1524	11	2598	1571	244	1574	1449	599	153	33	6	660	1086	11508
2008	1483	11	2654	1508	300	1636	1352	543	36	48	0	621	1611	11803
2009	1547	31	2864	1767	219	2033	1464	524	48	74	0	670	1490	12730
2010	1376	45	2792	1840	114	2096	1356	448	54	92		674	1090	11977
2011	896	66	2402	1562	3	1755	1041	318	53	78	7	591	493	9267
2012	980	50	2409	1499	1	1765	1175	288	68	81	9	586	472	9383
2013	1123	87	2602	1477	5	1810	1367	297	85	84	15	554	635	10142
2014	1085	72	2580	1446	4	1693	1401	311	78	130	6	555	414	9773
2015	960	85	2496	1457	0	1576	1345	287	67	147		547	558	9526
Weaner pigs (1000's DADD for 19 kg)														
Year														
2004	30140	112	3290	12463	209	4659	42895	17154	16837	2386	6	2427	17456	150033
2005	35525	75	3368	10876	211	5291	41618	14340	15523	2100	4	2811	18983	150726
2006	43457	38	3180	9052	230	3763	41313	12630	15343	2212	9	2744	17945	151916
2007	59800	71	3533	8920	320	3321	51223	13141	8425	3021		2681	15725	170182
2008	65823	203	3278	8726	316	3625	49708	13424	2269	4424		2653	22058	176507
2009	77778	119	3642	10661	284	3720	56966	14513	2348	4681		2908	28224	205843
2010	72083	98	3749	10082	143	3082	54494	13481	1717	5831		3051	29287	197098
2011	61124	100	3565	8632	4	2405	42432	10961	1803	4847	0	2817	20775	159465
2012	72192	88	3527	9136	19	2880	48316	12805	1682	5342	5	2862	21390	180244
2013	74002	109	3789	10386	27	4997	48240	12654	2296	5196		2868	24335	188899
2014	67180	125	3966	11078	32	4753	43747	11570	2165	8829		3104	23073	179623
2015	62821	300	4246	11341	10	4015	42758	11336	1581	11296		3383	22584	175671
Finisher pigs (1000's DADD for 70 kg)														
Year														
2004	8836	31	4948	2357	46	185	9423	3256	114	11	3	294	6702	36207
2005	9703	25	5542	2216	46	181	9574	3052	182	35	1	332	7830	38721
2006	11477	24	5677	1891	38	119	8473	2582	160	15	1	214	6958	37628
2007	13371	14	5720	1998	40	125	9037	2304	79	10		164	5517	38381
2008	13127	14	5411	1255	38	110	9167	1914	4	26	0	110	8404	39581
2009	13900	11	5895	1329	28	89	10882	1958	9	21		92	9869	44082
2010	13549	8	6467	1374	16	86	10904	1982	29	21		152	10722	45311
2011	11303	47	5796	988	2	100	7942	1776	5	10	0	165	8152	36285
2012	12094	4	5508	1107	1	132	8611	1703	3	12		191	8055	37422
2013	13055	8	5678	1125	1	244	7711	1551	4	6		139	9609	39132
2014	11500	7	5698	919	1	176	7483	1431	2	43		102	8738	36099
2015	9614	16	5897	807	2	123	6432	1330	0	79		84	7947	32332
Age group not given (1000's DADD for 50 kg)														
Year														
2004	665	6	395	255	7	103	944	310	98	10	3	42	622	3459
2005	582	3	334	234	7	114	771	226	62	13	0	39	478	2862
2006	712	1	293	225	6	106	580	166	84	15	0	28	428	2645
2007	594	0	203	107	11	70	356	156	36	19		21	315	1890
2008	371	1	126	104	9	55	259	78	7	31		8	237	1288
2009	218	0	104	86	10	43	245	66	2	18	0	9	176	977
2010	79	0	35	34	3	15	139	33	3	7		11	75	433
2011	7		1	3		3	11	2	0			0	3	28
2012	3	0	1	0		0	2	2	0				1	10
2013	3		3	3		1		0	0					10
2014	2	0	1	2		0		0		2			0	8
2015	1		1	4			1	2					0	9

Note: DADD for pigs is defined as the standard dose necessary for treating a pig of average weight in the age group (breeding animals = 200 kg, weaners = 19 kg and finishers = 70 kg). Where the age group was not specified a weight of 50 kg was assumed.

a) Data includes sales from pharmacies, feed mills and veterinary practice. Local intrauterine, intramammary and topical treatment is not included

b) Includes a small proportion of combinations with aminopenicillin and clavulanic acid

c) 3rd and 4th generation cephalosporins

d) Lincomycin and lincomycin/spectinomycin combinations

Figure A5.1. Distribution of DIDs between primary health care and hospital care, Denmark

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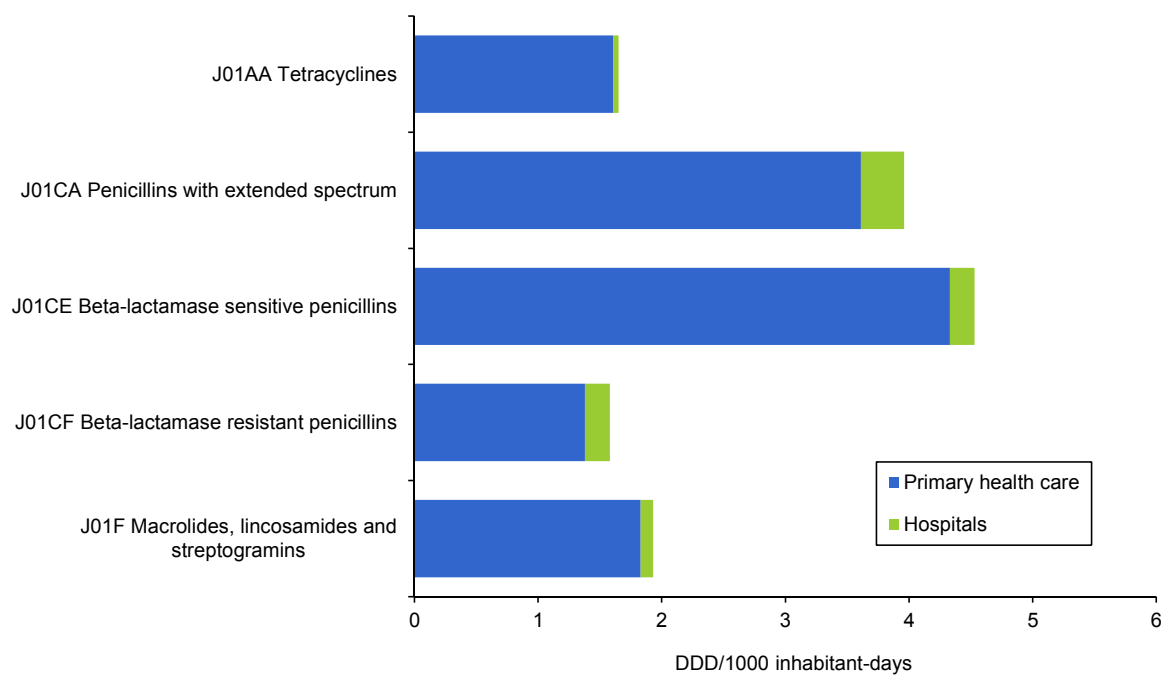
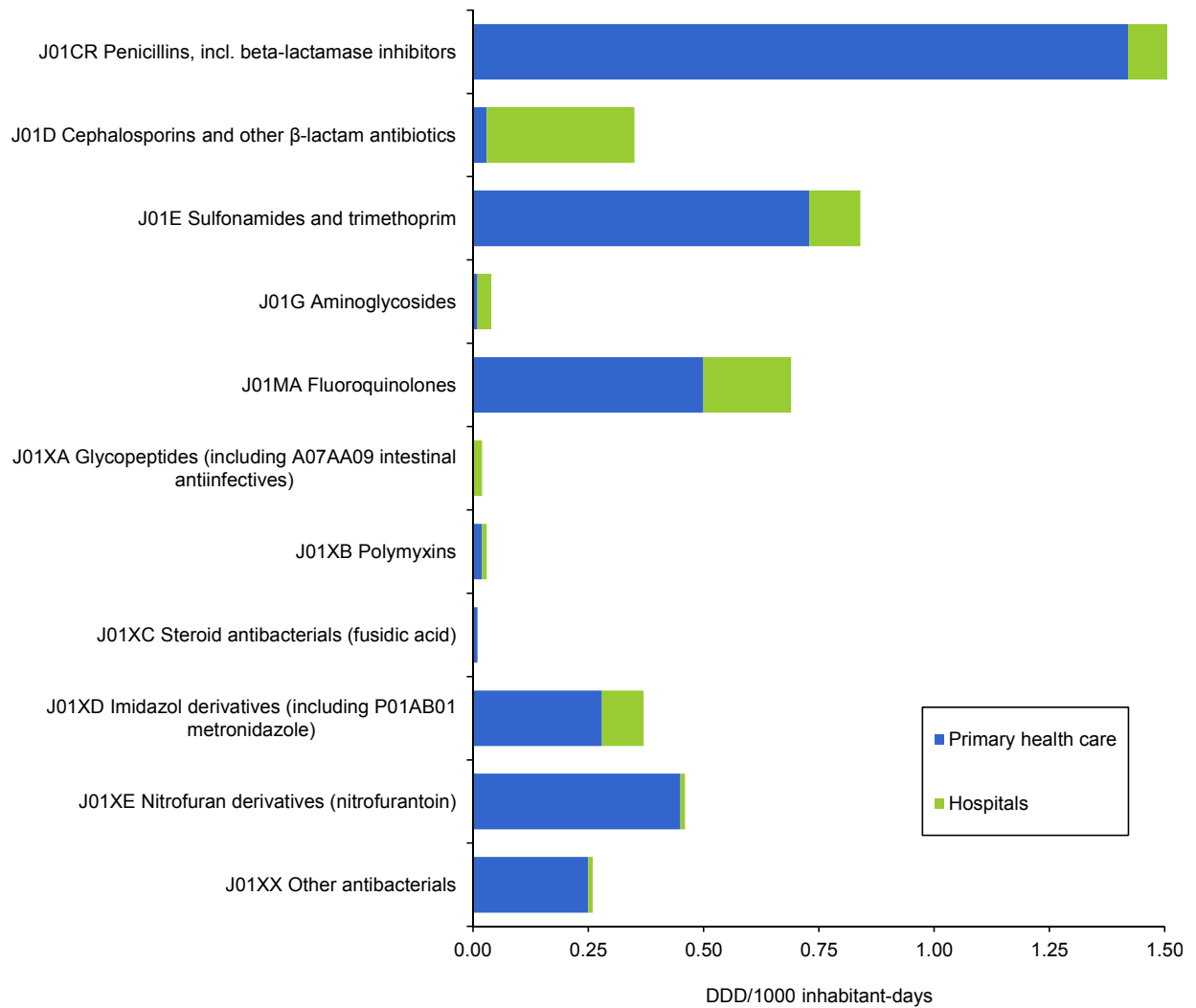


Table A5.1. Consumption of antimicrobial agents for systemic use in humans (kg active substance), Denmark

DANMAP 2015

ATC group ^(a)	Therapeutic group	Year									
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
J01AA	Tetracyclines	1835	1855	1884	2039	2161	2193	2217	2253	2024	1791
J01CA	Penicillins with extended spectrum	5722	6188	6061	6076	6317	6205	6010	6001	6068	6200
J01CE	Beta-lactamase sensitive penicillins	22760	24003	22466	21744	22301	22671	20318	20223	19272	19008
J01CF	Beta-lactamase resistant penicillins	4842	5037	5183	5250	5418	5290	5687	6126	6444	6513
J01CR	Comb. of penicillins, including beta-lactamase inhibitors	724	1012	1348	1836	2597	3274	5410	6322	7352	8259
J01D	Cephalosporins and related substances ^(b)	1778	2285	2530	2740	2696	2374	1983	2328	2060	1853
J01EA	Trimethoprim and derivatives	382	402	402	399	417	416	435	442	466	467
J01EB	Short-acting sulfonamides	2865	2565	2273	2200	2158	1998	1861	1838	1737	1479
J01EE	Comb. of sulfonamides and trimethoprim, including derivatives	208	148	183	193	252	326	362	357	383	402
J01FA	Macrolides	3542	3434	3164	2966	3038	2942	2129	2446	2329	2287
J01FF	Lincosamides ^(b)	66	78	94	113	124	138	145	239	236	244
J01G	Aminoglycosides	27	27	25	23	24	24	31	30	23	23
J01MA	Fluoroquinolones ^(b)	979	1162	1351	1371	1457	1458	1414	1238	1197	1170
J01XA	Glycopeptides	56	61	64	86	89	102	108	111	97	88
J01XC	Steroid antibacterials (fusidic acid)	65	67	64	62	65	56	48	41	38	31
J01XD	Imidazoles	198	202	241	255	258	261	269	270	287	265
J01XE	Nitrofurantoin derivatives (nitrofurantoin)	185	190	192	201	208	209	205	202	200	189
J01XX05	Methenamine ^(b)	1076	1060	1087	1047	1078	1057	1040	993	1009	1009
J01XX08+09	Linezolid, daptomycin	14	12	14	14	13	18	19	20	22	23
P01AB01	Nitroimidazole derivatives	1089	1135	1200	1343	1387	1396	1393	1383	1374	1345
A07AA09	Intestinal antiinfectives (vancomycin)	216	220	238	259	256	256	291	243	221	42
J01	Antibacterial agents for systemic use (total) ^(c)	48629	51143	50064	50217	52314	52664	51375	53106	52819	52691

Note: Includes data from both primary health care and hospital care and has been recalculated from original data expressed as DDDs. For monitoring in human primary health care and hospital care, the recommended way of expressing consumption is DDDs per 1000 inhabitant-days and DDDs per 100 occupied bed-days / DDDs per 100 admissions

a) From the 2015 edition of the ATC classification system

b) Since 2005, the kg active substance was estimated taking into account the DDD for each route of administration, e.g. cefuroxime parenteral DDD=3 g and cefuroxime oral DDD=0.5 g.

c) Does not include polymyxins

**Table A5.2. Consumption of antimicrobial agents for systemic use in primary health care
(No. treated patients/1000 inhabitants/year), Denmark**

DANMAP 2015

ATC group ^(a)	Therapeutic group	Year									
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
J01AA	Tetracyclines	12.3	12.5	12.7	13.0	13.4	13.7	13.5	13.9	12.2	11.3
J01CA	Penicillins with extended spectrum	75.8	82.1	81.3	81.1	85.1	84.2	77.3	76.11	75.3	74.9
J01CE	Beta-lactamase sensitive penicillins	171.3	177.1	164.4	158.8	162.9	164.4	145.5	142.2	134.8	130.6
J01CF	Beta-lactamase resistant penicillins	29.4	29.7	29.9	29.9	30.0	30.4	28.5	29.1	29.2	28.9
J01CR	Combinations of penicillins, including beta-lactamase inhibitors	2.3	3.6	5.0	8.0	11.7	15.0	17.3	19.7	20.5	22.0
J01D	Cephalosporins and related substances	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
J01EA	Trimethoprim and derivatives	5.6	5.9	5.9	5.8	6.0	6.2	6.6	6.9	7.4	7.4
J01EB	Short-acting sulfonamides	33.0	29.7	26.3	25.4	25.0	23.2	21.6	21.1	19.1	16.8
J01EE	Combinations of sulfonamides and trimethoprim, including derivatives	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01FA	Macrolides	67.0	71.4	66.9	64.5	72.7	78.8	64.7	56.2	51.4	51.8
J01FF	Lincosamides	0.5	0.6	0.8	1.0	1.3	1.4	1.4	1.5	1.6	1.8
J01GB	Aminoglycosides	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01MA	Fluoroquinolones	13.1	15.2	17.1	16.9	18.5	18.1	17.3	16.1	15.3	15.1
J01XA	Glycopeptides	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01XB	Polymyxins	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
J01XC	Steroid antibacterials (fusidic acid)	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1
J01XE	Nitrofurans derivatives (nitrofurantoin)	7.0	6.5	6.8	7.0	6.9	7.1	7.0	7.0	6.7	6.9
J01XX05	Methenamine	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4
J01XX08	Linezolid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
A07AA09	Vancomycin	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
P01AB01	Nitroimidazole derivatives	13.8	14.4	15.3	16.3	16.7	16.9	16.9	16.5	16.3	16.5
J01 ^(b)	Antibacterial agents for systemic use (total)	310.3	320.4	308.2	303.1	315.5	321.8	293.1	286.3	275.4	270.6

a) From the 2015 edition of the Anatomical Therapeutic Chemical (ATC) classification system

b) This includes only J01 and not P01 or AA07 compounds. The total no. of patients treated with an antibiotic is lower than the sum of all antibiotic classes. This is because the Danish Medicines Agency only counts the first treatment for each patient, each year

Table A5.3. Number of DDDs and packages per treated patient among leading groups of antimicrobial agents in primary health care, Denmark

DANMAP 2015

ATC group ^(a)	Therapeutic group	Indicator	Year									
			2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
J01AA	Tetracyclines	DDD / patient	40.9	43.0	44.4	45.2	45.9	44.0	47.6	51.6	49.9	51.7
		Packages / patient	1.9	2.0	2.0	2.0	2.0	1.9	2.1	2.1	2.1	1.9
		DDD / package	21.0	22.0	22.7	22.7	22.7	22.6	23.1	25.5	23.8	27.8
J01CA	Penicillins with extended spectrum	DDD / patient	14.2	14.4	14.7	14.8	14.9	14.8	16.1	16.7	17.2	17.6
		Packages / patient	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
		DDD / package	8.9	9.0	9.2	9.2	9.0	9.2	9.7	10.0	10.0	10.3
J01CE	Beta-lactamase sensitive penicillins	DDD / patient	11.5	11.7	11.8	11.8	11.8	11.8	11.8	12.0	11.9	12.1
		Packages / patient	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
		DDD / package	8.0	8.2	8.2	8.4	8.4	8.4	8.4	8.5	8.5	8.8
J01CF	Beta-lactamase resistant penicillins	DDD / patient	13.0	13.4	13.7	13.9	14.2	13.8	15.5	16.4	17.1	17.4
		Packages / patient	1.5	1.5	1.5	1.5	1.5	1.4	1.6	1.7	1.8	1.8
		DDD / package	8.6	8.7	9.0	9.1	9.3	9.6	9.7	9.4	9.7	9.5
J01CR	Combinations of penicillins, incl. beta-lactamase inhibitors	DDD / patient	19.3	19.1	19.9	20.4	21.1	21.9	22.3	22.6	23.2	23.6
		Packages / patient	1.8	1.6	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6
		DDD / package	10.7	11.7	12.4	13.3	13.7	14.1	14.3	14.3	14.3	15.1
J01FA	Macrolides	DDD / patient	12.6	12.4	12.5	12.5	12.2	11.5	12.4	12.6	12.8	12.5
		Packages / patient	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6
		DDD / package	8.3	8.1	8.1	8.1	8.1	7.9	8.0	8.0	7.9	7.7
J01MA	Fluoroquinolones	DDD / patient	10.3	10.6	11.0	11.2	11.2	11.5	11.7	11.8	11.9	12.0
		Packages / patient	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
		DDD / package	6.9	7.0	7.5	7.6	7.6	7.7	7.8	7.8	7.9	7.9
J01	Antibacterial agents for systemic use (total)	DDD / patient	17.9	17.3	18.9	19.2	19.6	19.4	20.6	21.3	21.5	21.8
		Packages / patient	2.0	1.9	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1
		DDD / package	8.7	8.9	9.1	9.3	9.3	9.3	9.7	9.9	9.9	10.2

a) From the 2015 edition of the Anatomical Therapeutic Chemical (ATC) classification system

Table A5.4. Consumption of antimicrobial agents for systemic use in hospital care (DDD/1000 inhabitant-days), Denmark

DANMAP 2015

ATC group ^{a)}	Therapeutic group	Year									
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
J01AA	Tetracyclines	0.01	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.04	0.04
J01CA	Penicillins with extended spectrum	0.35	0.35	0.35	0.35	0.32	0.29	0.33	0.32	0.34	0.35
J01CE	Beta-lactamase sensitive penicillins	0.29	0.28	0.25	0.23	0.21	0.19	0.22	0.22	0.22	0.20
J01CF	Beta-lactamase resistant penicillins	0.18	0.18	0.17	0.17	0.17	0.15	0.19	0.20	0.20	0.20
J01CR	Combinations of penicillins, incl. beta-lactamase inhibitors	0.05	0.08	0.10	0.13	0.15	0.17	0.25	0.29	0.33	0.36
J01DB	First-generation cephalosporins	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J01DC	Second-generation cephalosporins	0.23	0.31	0.33	0.37	0.35	0.33	0.30	0.27	0.24	0.21
J01DD	Third-generation cephalosporins	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
J01DF	Monobactams	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J01DH	Carbapenems	0.03	0.05	0.07	0.07	0.08	0.09	0.08	0.09	0.09	0.08
J01EA	Trimethoprim and derivatives	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
J01EB	Short-acting sulfonamides	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
J01EE	Combinations of sulfonamides and trimethoprim, incl. derivatives	0.05	0.04	0.05	0.05	0.06	0.08	0.07	0.09	0.10	0.10
J01FA	Macrolides	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.08	0.09
J01FF	Lincosamides	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
J01GB	Aminoglycosides	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.03	0.03
J01MA	Fluoroquinolones	0.18	0.21	0.24	0.24	0.22	0.19	0.21	0.21	0.21	0.19
J01XA	Glycopeptides	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.02	0.02
J01XB	Polymyxins	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
J01XC	Steroid antibacterials (fusidic acid)	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00
J01XD	Imidazol derivatives	0.07	0.07	0.06	0.05	0.08	0.08	0.09	0.09	0.09	0.09
J01XE	Nitrofurantoin derivatives (nitrofurantoin)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
J01XX	Other antibacterials	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
P01AB01	Nitroimidazole derivatives (metronidazole)	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.04
A07AA09	Intestinal anti-infectives (vancomycin)	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.01
J01	Antibacterial agents for systemic use (total)	1.81	1.92	2.01	2.07	2.04	1.97	2.13	2.15	2.18	2.04

a) From the 2015 edition of the Anatomical Therapeutic Chemical (ATC) classification system

Table A5.5. Activity in somatic hospitals, Denmark

DANMAP 2015

Region	No. bed-days somatic hospitals ^(a)	No. admissions somatic hospitals ^(a)
The Capital Region of Denmark	1,525,251	479,447
The Sealand Region	609,456	240,194
Region of Southern Denmark	797,360	253,602
Central Denmark Region	820,442	276,751
North Denmark Region	401,674	116,300
Denmark ^(b)	4,154,183	1,366,294

Source: Statens Serum Institut (www.ssi.dk)

a) Excluding private hospitals, psychiatric hospitals, specialized clinics, rehabilitation centres and hospices

b) Compared to 2014 no. bed-days have decreased by 3% and no. admissions remain at the same level

Table A6.1 Distribution of MICs and resistance (%) in *Salmonella* (all serovars) from pigs (n=139), Denmark

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (%) of MICs																	
			0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	>1024
Tetracycline	39.6	[31.4-48.2]						0.7		56.8	2.2	0.7								39.6
Tigecycline	0	[0-2.6]					57.6	36.7	5.8											
Chloramphenicol	5.8	[2.5-11.0]										87.8	6.5		1.4	4.3				
Ampicillin	33.1	[25.4-41.6]							38.1	25.9	2.9					33.1				
Cefotaxime	0	[0-2.6]					99.3	0.7												
Ceftazidime	0	[0-2.6]					0.7	97.1	2.2											
Meropenem	0	[0-2.6]	71.9	27.3	0.7															
Trimethoprim	10.1	[5.6-16.3]					88.5	1.4							10.1					
Sulfonamide	36.0	[28.0-44.5]										47.5	16.5						36.0	
Azithromycin	0.7	[0.02-3.9]										53.2	44.6	1.4		0.7				
Gentamicin	3.6	[1.2-8.2]						80.6	15.8					3.6						
Ciprofloxacin	0.7	[0.02-3.9]	52.5	44.6	2.2	0.7														
Nalidixic acid	0.7	[0.02-3.9]										92.8	6.5		0.7					
Colistin	0	[0-2.6]								92.8	7.2									

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A6.2. Distribution of MICs and resistance (%) in *Salmonella* (all serovars) from pork (Danish n=36), Denmark

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (%) of MICs																				
			0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048		
Tetracycline	30.8	[20.8-42.2]							38.5	29.5	1.3			1.3	29.5								
Tigecycline	0	[0-4.6]					9.0	85.9	5.1														
Chloramphenicol	5.1	[1.4-12.6]										82.1	12.8	1.3	1.3	2.6							
Ampicillin	35.9	[25.3-47.6]							11.5	47.4	3.8	1.3				35.9							
Cefotaxime	0	[0-4.6]					98.7	1.3															
Ceftazidime	0	[0-4.6]						89.7	10.3														
Meropenem	0	[0-4.6]	32.1	67.9																			
Trimethoprim	10.3	[4.5-19.2]					57.7	29.5	2.6						10.3								
Sulfonamide	38.5	[27.7-50.2]											15.4	23.1	17.9	5.1	1.3				37.2		
Azithromycin	1.3	[0.03-6.9]									11.5	76.9	10.3		1.3								
Gentamicin	0	[0-4.6]						76.9	19.2	3.8													
Ciprofloxacin	0	[0-4.6]	16.7	79.5	3.8																		
Nalidixic acid	0	[0-4.6]										74.4	25.6										
Colistin	1.3	[0.03-6.9]							79.5	19.2		1.3											

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A6.3. Distribution of MICs and resistance (%) in *Salmonella* Typhimurium from pigs (n=53), Denmark

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (%) of MICs																					
			0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	>1024				
Tetracycline	66.0	[51.7-78.5]							32.1	1.9					66.0									
Tigecycline	0	[0-6.7]					56.6	37.7	5.7															
Chloramphenicol	11.3	[4.3-23.0]											81.1	7.5	3.8	7.5								
Ampicillin	73.6	[59.7-84.7]								15.1	9.4	1.9			73.6									
Cefotaxime	0	[0-6.7]					100																	
Ceftazidime	0	[0-6.7]					1.9	96.2	1.9															
Meropenem	0	[0-6.7]	54.7	43.4	1.9																			
Trimethoprim	18.9	[9.4-32.0]					79.2	1.9							18.9									
Sulfonamide	83.0	[70.2-91.9]											13.2	3.8								83.0		
Azithromycin	1.9	[0.05-10.1]											69.8	28.3	1.9									
Gentamicin	7.5	[2.1-18.2]						77.4	15.1					7.5										
Ciprofloxacin	0	[0-6.7]	18.9	77.4	3.8																			
Nalidixic acid	0	[0-6.7]										86.8	13.2											
Colistin	0	[0-6.7]							96.2	3.8														

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A6.4. Distribution of MICs and resistance (%) in Salmonella Typhimurium from pork (Danish n=36), Denmark

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (%) of MICs																		
			0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	>1024	
Tetracycline	50.0	[32.9-67.1]								22.2	25.0	2.8			50.0						
Tigecycline	0	[0-9.7]					2.8	88.9	8.3												
Chloramphenicol	8.3	[1.8-22.5]										77.8	13.9		2.8	5.6					
Ampicillin	72.2	[54.8-85.8]								19.4	5.6	2.8			72.2						
Cefotaxime	0	[0-9.7]					100														
Ceftazidime	0	[0-9.7]						100													
Meropenem	0	[0-9.7]	16.7	83.3																	
Trimethoprim	16.7	[6.4-32.8]					66.7	13.9	2.8						16.7						
Sulfonamide	72.2	[54.8-85.8]													22.2	5.6				72.2	
Azithromycin	2.8	[0.07-14.5]										13.9	75.0	8.3		2.8					
Gentamicin	0	[0-9.7]						77.8	19.4	2.8											
Ciprofloxacin	0	[0-9.7]	2.8	91.7	5.6																
Nalidixic acid	0	[0-9.7]										63.9	36.1								
Colistin	0	[0-9.7]								86.1	13.9										

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A6.5. Distribution of MICs and resistance (%) in *Salmonella* Typhimurium from human cases reported as domestically acquired (n=129), associated with travel abroad (n=66), of unknown origin (n=36) and in total (231), Denmark

DANMAP 2015

Antimicrobial agent	Human cases	% Resistant	95% Confidence interval	Distribution (%) of MICs																				
				0.015	0.0	0.1	0.1	0.3	0.5	1.0	2.0	4.0	8.0	16.0	32.0	64.0	128.0	256.0	512	1024	>1024			
Tetracycline	Domestically acquired	55.0	[46.0-63.8]											27.9	16.3	0.8								55.0
	Travel abroad reported	74.2	[62.0-84.2]											15.2	10.6									74.2
	Unknown origin	58.3	[40.8-74.5]											22.2	19.4									58.3
	Total	61.0	[54.4-67.4]											23.4	15.2	0.4								61.0
Tigecycline	Domestically acquired	2.3	[0.5-6.6]					9.3	76.7	11.6			0.8	1.6										
	Travel abroad reported	3.0	[0.4-10.5]					4.5	74.2	18.2			1.5	1.5										
	Unknown origin	0.0	[0-9.7]					11.1	72.2	16.7														
	Total	2.2	[0.7-5.0]					8.2	75.3	14.3			0.9	1.3										
Chloramphenicol	Domestically acquired	11.6	[6.7-18.5]														83.7	4.7	0.8	1.6	9.3			
	Travel abroad reported	24.2	[14.5-36.4]														72.7	3.0		1.5	22.7			
	Unknown origin	13.9	[4.7-29.5]														77.8	8.3		2.8	11.1			
	Total	15.6	[11.2-20.9]														79.7	4.8	0.4	1.7	13.4			
Ampicillin	Domestically acquired	65.1	[56.2-73.3]									14.7	19.4	0.8										65.1
	Travel abroad reported	66.7	[54.0-77.8]									13.6	19.7											66.7
	Unknown origin	55.6	[38.1-72.1]									13.9	27.8	2.8										55.6
	Total	64.1	[57.5-70.3]									14.3	20.8	0.9										64.1
Cefotaxime	Domestically acquired	2.3	[0.5-6.6]					96.9	0.8							2.3								
	Travel abroad reported	13.6	[6.4-24.3]					84.8	1.5					3.0	10.6									
	Unknown origin	5.6	[0.7-18.7]					91.7	2.8					2.8	2.8									
	Total	6.1	[3.4-10.0]					92.6	1.3					1.3	4.8									
Ceftazidime	Domestically acquired	2.3	[0.5-6.6]									93.8	3.9				2.3							
	Travel abroad reported	10.6	[4.4-20.6]									84.8	4.5				7.6				3.0			
	Unknown origin	2.8	[0.07-14.5]									91.7	5.6				2.8							
	Total	4.8	[2.4-8.4]									90.9	4.3				3.9				0.9			
Meropenem	Domestically acquired	0.0	[0-2.8]			76.0	24.0																	
	Travel abroad reported	0.0	[0-5.4]			74.2	25.8																	
	Unknown origin	0.0	[0-9.7]			72.2	27.8																	
	Total	0.0	[0-1.6]			74.9	25.1																	
Trimethoprim	Domestically acquired	14.0	[8.5-21.2]								63.6	21.7	0.8											14.0
	Travel abroad reported	10.6	[4.4-20.6]								66.7	21.2	1.5											10.6
	Unknown origin	13.9	[4.7-29.5]								69.4	8.3	8.3											13.9
	Total	13.0	[8.9-18.0]								65.4	19.5	2.2											13.0
Sulfonamide	Domestically acquired	65.9	[57.0-74.0]														0.8	3.1	11.6	14.7	3.9	0.8	65.1	
	Travel abroad reported	75.8	[63.6-85.5]														1.5	1.5	12.1	7.6	1.5	1.5	74.2	
	Unknown origin	63.9	[46.2-79.2]															2.8	11.1	16.7	5.6	2.8	61.1	
	Total	68.4	[62.0-74.3]														0.9	2.6	11.7	13.0	3.5	1.3	67.1	
Azithromycin	Domestically acquired	0.0	[0-2.8]											0.8	67.4	30.2	1.6							
	Travel abroad reported	3.0	[0.4-10.5]												72.7	24.2					3.0			
	Unknown origin	0.0	[0-9.7]												55.6	36.1	8.3							
	Total	0.9	[0.1-3.1]											0.4	67.1	29.4	2.2				0.9			
Gentamicin	Domestically acquired	0.8	[0.02-4.2]								32.6	59.7	7.0				0.8							
	Travel abroad reported	10.6	[4.4-20.6]								27.3	57.6	4.5			1.5						9.1		
	Unknown origin	0.0	[0-9.7]								38.9	58.3	2.8											
	Total	3.5	[1.5-6.7]								32.0	58.9	5.6	0.4			0.4					2.6		
Ciprofloxacin	Domestically acquired	1.6	[0.2-5.5]			4.7	85.3	8.5			0.8	0.8												
	Travel abroad reported	19.7	[10.9-31.3]			1.5	77.3	1.5			7.6	12.1												
	Unknown origin	5.6	[0.7-18.7]								86.1	8.3												
	Total	7.4	[4.3-11.5]			3.03	83.1	6.5			3.0	4.3												
Nalidixic acid	Domestically acquired	1.6	[0.2-5.5]														82.9	14.7	0.8			1.6		
	Travel abroad reported	7.6	[2.5-16.8]														66.7	15.2	10.6			7.6		
	Unknown origin	2.8	[0.07-14.5]														72.2	22.2	2.8			2.8		
	Total	3.5	[1.5-6.7]														76.6	16.0	3.9			3.5		
Colistin	Domestically acquired	1.6	[0.2-5.5]								48.1	50.4			0.8	0.8								
	Travel abroad reported	1.5	[0.04-8.2]								54.5	43.9			1.5									
	Unknown origin	2.8	[0.07-14.5]								66.7	30.6			2.8									
	Total	1.7	[0.5-4.4]								52.8	45.5	0.4	1.3										

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A6.6. Distribution of MICs and resistance (%) in *Campylobacter jejuni* from broilers (n=44) and cattle (n=101), Denmark

DANMAP 2015

Antimicrobial agent	Animal species	% Resistant	95% Confidence interval	Distribution (%) of MICs																			
				0.0038	0.0075	0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	>128			
Tetracycline	Broilers	11.4	[3.8-24.6]										88.6						2.3	2.3	6.8		
	Cattle	11.9	[6.3-19.8]										88.1									11.9	
Erythromycin	Broilers	0	[0-8.0]											97.7	2.3								
	Cattle	0	[0-3.6]											99.0	1.0								
Streptomycin	Broilers	2.3	[0.06-12.0]										2.3	27.3	63.6	4.5			2.3				
	Cattle	1.0	[0.03-5.4]											23.8	64.4	10.9			1.0				
Gentamicin	Broilers	0	[0-8.0]									6.8	75.0	18.2									
	Cattle	0	[0-3.6]									1.0	67.3	31.7									
Ciprofloxacin	Broilers	27.3	[15.0-42.8]						68.2	4.5								15.9	11.4				
	Cattle	24.8	[16.7-34.3]						70.3	5.0								10.9	13.9				
Nalidixic acid	Broilers	22.7	[11.5-37.8]										6.8	2.3	63.6	2.3	2.3				22.7		
	Cattle	24.8	[16.7-34.3]												47.5	24.8	3.0				24.8		

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A6.7. Distribution of MICs and resistance (%) in *Campylobacter jejuni* from broiler meat (Danish n=39; imported n=62), Denmark

DANMAP 2015

Antimicrobial agent	Food type	% Resistant	95% Confidence interval	Distribution (%) of MICs																
				0.0038	0.0075	0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	>128
Tetracycline	Danish	10.3	[2.9-24.2]									89.7			2.6					7.7
	Imported	56.5	[43.3-69.0]									40.3	3.2				1.6	4.8	50.0	
Erythromycin	Danish	2.6	[0.06-13.5]										97.4							2.6
	Imported	4.8	[1.0-13.5]										95.2							4.8
Streptomycin	Danish	5.1	[0.6-17.3]										41.0	51.3	2.6			5.1		
	Imported	8.1	[2.7-17.8]								1.6		45.2	45.2				8.1		
Gentamicin	Danish	0	[0-9.0]								10.3	74.4	15.4							
	Imported	0	[0-5.8]							1.6	3.2	62.9	32.3							
Ciprofloxacin	Danish	23.1	[11.1-39.3]							74.4	2.6					10.3	12.8			
	Imported	79.0	[66.8-88.3]							17.7	3.2					3.2	25.8	50.0		
Nalidixic acid	Danish	23.1	[11.1-39.3]											12.8	59.0	5.1			23.1	
	Imported	75.8	[63.3-85.8]											1.6	4.8	16.1	1.6			75.8

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions.

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A6.8. Distribution of MICs and resistance (%) in *Campylobacter jejuni* from human cases reported as domestically acquired (n=145), associated with travel abroad (n=43) and in total (n=188), Denmark

DANMAP 2015

Antimicrobial agent	Human cases	% Resistant	95% Confidence interval	Distribution (%) of MICs															
				0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.5	1	2	4	8	16	32	64	128
Tetracycline	Domestically acquired	22.8	[16.2-30.5]								73.1	4.1	1.4	0.7		0.7	1.4	18.6	
	Travel abroad reported	72.1	[56.3-84.7]								25.6	2.3					2.3	69.8	
	Total	34.0	[27.3-41.3]								62.2	3.7	1.1	0.5		0.5	1.6	30.3	
Erythromycin	Domestically acquired	4.1	[1.5-8.8]										86.9	7.6	1.4	0.7			3.4
	Travel abroad reported	2.3	[0.06-12.3]										69.8	25.6	2.3				2.3
	Total	3.7	[1.5-7.5]										83.0	11.7	1.6	0.5			3.2
Streptomycin	Domestically acquired	4.1	[1.5-8.8]							6.2	65.5	23.4		0.7		4.1			
	Travel abroad reported	7.0	[1.5-19.1]							4.7	62.8	25.6				7.0			
	Total	4.8	[2.2-8.9]							5.9	64.9	23.9		0.5		4.8			
Gentamicin	Domestically acquired	1.4	[0.2-4.9]					67.6	27.6	2.1	0.7	0.7			1.4				
	Travel abroad reported	4.7	[0.6-15.8]					62.8	32.6					2.3	2.3				
	Total	2.1	[0.6-5.4]					66.5	28.7	1.6	0.5	0.5		0.5	1.6				
Ciprofloxacin	Domestically acquired	42.1	[33.9-50.5]					54.5	2.8	0.7			0.7	0.7	16.6	24.1			
	Travel abroad reported	79.1	[64.0-90.0]					14.0	2.3	4.7					30.2	48.8			
	Total	50.5	[43.2-57.9]					45.2	2.7	1.6			0.5	0.5	19.7	29.8			
Nalidixic acid	Domestically acquired	42.1	[33.9-50.5]											6.9	44.1	4.8	2.1	42.1	
	Travel abroad reported	79.1	[64.0-90.0]											7.0	7.0	7.0		79.1	
	Total	50.5	[43.2-57.9]											6.9	35.6	5.3	1.6	50.5	

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions.

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.1. Distribution of MICs and resistance (%) in *Enterococcus faecalis* from pigs (n=40), Denmark

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (%) of MICs																	
			0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048
Tetracycline	72.5	[56.1-85.4]						27.5					30.0	42.5						
Tigecycline	0	[0-8.8]	5.0	32.5	32.5	30.0														
Chloramphenicol	15.0	[5.7-29.8]							12.5	72.5				15.0						
Ampicillin	0	[0-8.8]						80.0	20.0											
Erythromycin	35.0	[20.6-51.7]						52.5	12.5					35.0						
Gentamicin	10.0	[2.8-23.7]								52.5	37.5				2.5		7.5			
Ciprofloxacin	0	[0-8.8]				20.0		72.5	7.5											
Vancomycin	0	[0-8.8]						27.5	65.0	7.5										
Teicoplanin	0	[0-8.8]					100													
Linezolid	0	[0-8.8]						10.0	90.0											
Daptomycin	0	[0-8.8]						27.5	70.0	2.5										

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.2. Distribution of MICs and resistance (%) in *Enterococcus faecalis* from broiler meat (Danish n=48; imported n=78), beef (Danish n=57; imported n=59), pork (Danish n=120; imported n=27), Denmark

DANMAP 2015

Antimicrobial agent	Food type	Food type	% Resistant	95% Confidence interval	Distribution (%) of MICs														
					0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512
Tetracycline	Broilers	Danish	47.9	[33.3-62.8]						50.0	2.1					2.1	4.2	27.1	14.6
		Imported	57.7	[46.0-68.8]						42.3						2.6	7.7	20.5	26.9
	Cattle	Danish	12.3	[5.1-23.7]						78.9	8.8							3.5	8.8
		Imported	22.0	[12.3-34.7]						71.2	6.8						3.4	11.9	6.8
	Pigs	Danish	14.2	[8.5-21.7]						80.0	4.2	1.7						5.8	8.3
		Imported	44.4	[25.5-64.7]						55.6								22.2	22.2
Tigecycline	Broilers	Danish	0	[0-7.4]		8.3	29.2	45.8	16.7										
		Imported	0	[0-4.6]		3.8	37.2	39.7	19.2										
	Cattle	Danish	0	[0-6.3]		15.8	31.6	36.8	15.8										
		Imported	0	[0-6.1]		3.4	30.5	47.5	18.6										
	Pigs	Danish	0	[0-3.0]		11.7	26.7	47.5	14.2										
		Imported	0	[0-12.8]		3.7	37.0	37.0	22.2										
Chloramphenicol	Broilers	Danish	2.1	[0.05-11.1]								8.3	87.5	2.1				2.1	
		Imported	0	[0-4.6]									11.5	87.2	1.3				
	Cattle	Danish	0	[0-6.3]													1.8		
		Imported	1.7	[0.04-9.1]										13.6	83.1	1.7			1.7
	Pigs	Danish	4.2	[1.4-9.5]													0.8	0.8	3.3
		Imported	0	[0-12.8]										7.4	92.6				
Ampicillin	Broilers	Danish	0	[0-7.4]					6.3	77.1	16.7								
		Imported	0	[0-4.6]					12.8	66.7	20.5								
	Cattle	Danish	0	[0-6.3]					1.8	87.7	10.5								
		Imported	0	[0-6.1]					1.7	66.1	32.2								
	Pigs	Danish	0	[0-3.0]					5.0	62.5	32.5								
		Imported	0	[0-12.8]					3.7	74.1	22.2								
Erythromycin	Broilers	Danish	25.0	[13.6-39.6]						47.9	27.1			2.1	4.2			18.8	
		Imported	33.3	[23.1-44.9]						55.1	11.5			1.3				32.1	
	Cattle	Danish	1.8	[0.04-9.4]						77.2	21.1								1.8
		Imported	1.7	[0.04-9.1]						61.0	37.3								1.7
	Pigs	Danish	5.8	[2.4-11.6]						61.7	32.5								5.8
		Imported	11.1	[2.4-29.2]						59.3	29.6								11.1
Gentamicin	Broilers	Danish	0	[0-7.4]										37.5	62.5				
		Imported	1.3	[0.03-6.9]										46.2	51.3	1.3			
	Cattle	Danish	0	[0-6.3]											66.7	33.3			1.3
		Imported	0	[0-6.1]											67.8	32.2			
	Pigs	Danish	1.7	[0.2-5.9]											80.8	17.5		0.8	0.8
		Imported	3.7	[0.09-19.0]											59.3	37.0			3.7
Ciprofloxacin	Broilers	Danish	0	[0-7.4]				4.2	16.7	75.0	4.2								
		Imported	5.1	[1.4-12.6]					15.4	75.6	3.8				5.1				
	Cattle	Danish	0	[0-6.3]				1.8	24.6	70.2	3.5								
		Imported	0	[0-6.1]					20.3	69.5	10.2								
	Pigs	Danish	0	[0-3.0]				0.8	25.0	70.0	4.2								
		Imported	0	[0-12.8]					44.4	55.6									
Vancomycin	Broilers	Danish	0	[0-7.4]						22.9	70.8	6.3							
		Imported	0	[0-4.6]						30.8	56.4	12.8							
	Cattle	Danish	0	[0-6.3]						47.4	47.4	5.3							
		Imported	0	[0-6.1]						39.0	54.2	6.8							
	Pigs	Danish	0	[0-3.0]						28.3	63.3	8.3							
		Imported	0	[0-12.8]						44.4	48.1	7.4							
Teicoplanin	Broilers	Danish	0	[0-7.4]					100										
		Imported	0	[0-4.6]					100										
	Cattle	Danish	0	[0-6.3]					100										
		Imported	0	[0-6.1]					100										
	Pigs	Danish	0	[0-3.0]					98.3	1.7									
		Imported	0	[0-12.8]					100										
Linezolid	Broilers	Danish	0	[0-7.4]					10.4	89.6									
		Imported	0	[0-4.6]					16.7	83.3									
	Cattle	Danish	1.8	[0.04-9.4]					1.8	7.0	89.5			1.8					
		Imported	0	[0-6.1]						6.8	93.2								
	Pigs	Danish	0	[0-3.0]						11.7	88.3								
		Imported	0	[0-12.8]						11.1	88.9								
Daptomycin	Broilers	Danish	0	[0-7.4]						14.6	83.3	2.1							
		Imported	0	[0-4.6]						1.3	1.3	32.1	57.7	7.7					
	Cattle	Danish	0	[0-6.3]						1.8	1.8	28.1	66.7	1.8					
		Imported	0	[0-6.1]						3.4	6.8	42.4	45.8	1.7					
	Pigs	Danish	0	[0-3.0]						4.2	41.7	50.8	3.3						
		Imported	0	[0-12.8]						3.7	40.7	51.9	3.7						

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.3. Distribution of MICs and resistance (%) in *Enterococcus faecium* from broiler meat (Danish n=180; imported n=73), beef (Danish n=24; imported n=24), Denmark

DANMAP 2015

Antimicrobial agent	Food type	Food type	% Resistant	95% Confidence interval	Distribution (%) of MICs																		
					0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	
Tetracycline	Broilers	Danish	21.7	[15.9-28.4]							78.3						0.6	1.1	0.6	6.1	13.3		
		Imported	49.3	[37.4-61.3]							49.3	1.4								2.7	11.0	35.6	
	Cattle	Danish	8.3	[1.0-27.0]							91.7									4.2		4.2	
		Imported	16.7	[4.7-37.4]							79.2	4.2								4.2	8.3	4.2	
Tigecycline	Broilers	Danish	0	[0-2.0]																			
		Imported	0	[0-4.9]																			
	Cattle	Danish	0	[0-14.2]																			
		Imported	0	[0-14.2]																			
Chloramphenicol	Broilers	Danish	0	[0-2.0]																			
		Imported	0	[0-4.9]																			
	Cattle	Danish	0	[0-14.2]																			
		Imported	0	[0-14.2]																			
Ampicillin	Broilers	Danish	3.3	[1.2-7.1]						15.0	63.9	16.1	1.7								3.3		
		Imported	12.3	[5.8-22.1]						15.1	50.7	15.1	6.8								9.6		
	Cattle	Danish	0	[0-14.2]						12.5	50.0	37.5											
		Imported	4.2	[0.1-21.1]						20.8	37.5	33.3	4.2								4.2		
Erythromycin	Broilers	Danish	10.6	[6.5-16.0]						20.0	48.9	20.6									10.0		
		Imported	31.5	[21.1-43.4]						28.8	35.6	4.1								4.1	2.7	1.4	23.3
	Cattle	Danish	4.2	[0.1-21.1]						45.8	45.8	4.2										4.2	
		Imported	8.3	[1.0-27.0]						54.2	20.8	16.7										8.3	
Quinupristin/dalfopristin	Broilers	Danish	3.9	[1.6-7.8]						32.8	32.2	0.6	30.6								2.2	1.7	
		Imported	4.1	[0.9-11.5]						27.4	5.5	9.6	53.4								4.1		
	Cattle	Danish	0	[0-14.2]						33.3	20.8	45.8											
		Imported	0	[0-14.2]						16.7	20.8	16.7	45.8										
Gentamicin	Broilers	Danish	0.6	[0.01-3.1]																			
		Imported	0	[0-4.9]																			
	Cattle	Danish	4.2	[0.1-21.1]																			0.6
		Imported	0	[0-14.2]																			4.2
Ciprofloxacin	Broilers	Danish	0.6	[0.01-3.1]																			
		Imported	5.5	[1.5-13.4]																			
	Cattle	Danish	0	[0-14.2]																			
		Imported	0	[0-14.2]																			
Vancomycin	Broilers	Danish	0	[0-2.0]							40.6	54.4	5.0										
		Imported	0	[0-4.9]							71.2	19.2	9.6										
	Cattle	Danish	0	[0-14.2]							79.2	16.7	4.2										
		Imported	0	[0-14.2]							91.7	8.3											
Teicoplanin	Broilers	Danish	0	[0-2.0]						100													
		Imported	0	[0-4.9]						100													
	Cattle	Danish	0	[0-14.2]						100													
		Imported	0	[0-14.2]						91.7	8.3												
Linezolid	Broilers	Danish	0	[0-2.0]							2.2	96.1	1.7										
		Imported	0	[0-4.9]							1.4	4.1	91.8	2.7									
	Cattle	Danish	0	[0-14.2]									91.7	8.3									
		Imported	0	[0-14.2]									100										
Daptomycin	Broilers	Danish	1.1	[0.1-4.0]							1.1	1.1	27.8	68.9							1.1		
		Imported	0	[0-4.9]							1.4	1.4	1.4	21.9	74.0								
	Cattle	Danish	4.2	[0.1-21.1]									12.5	83.3							4.2		
		Imported	4.2	[0.1-21.1]									4.2	33.3	58.3						4.2		

Vertical solid lines indicate EUCAST epidemiological cut-off values. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. Confidence intervals are calculated as 95% binomial proportions.

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.4. Distribution of MICs and resistance (%) in *Escherichia coli* from broilers (n=95), cattle (n=144) and pigs (n=174), Denmark

DANMAP 2015

Antimicrobial agent	Animal species	% Resistant	95% Confidence interval	Distribution (%) of MICs																
				0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024
Tetracycline	Broilers	22.1	[14.2-31.8]								72.6	5.3			1.1	21.1				
	Cattle	9.0	[4.9-14.9]								87.5	3.5			2.1	6.9				
	Pigs	35.6	[28.5-43.2]								63.2	1.1			0.6	4.0	31.0			
Tigecycline	Broilers	0	[0-3.8]					93.7	6.3											
	Cattle	0	[0-2.5]	0.7				99.3												
	Pigs	0	[0-2.1]					92.0	7.5	0.6										
Chloramphenicol	Broilers	2.1	[0.3-7.4]										94.7	3.2	1.1		1.1			
	Cattle	6.2	[2.9-11.5]										93.8			1.4	4.9			
	Pigs	2.3	[0.6-5.8]										95.4	2.3	1.1		1.1			
Ampicillin	Broilers	30.5	[21.5-40.8]								28.4	40.0	1.1			30.5				
	Cattle	8.3	[4.4-14.1]							2.1	19.4	62.5	7.6			8.3				
	Pigs	31.6	[24.8-39.1]							2.9	24.1	39.1	2.3			31.6				
Cefotaxime	Broilers	0	[0-3.8]					100												
	Cattle	0.7	[0.02-3.8]					99.3	0.7											
	Pigs	0	[0-2.1]					100												
Ceftazidime	Broilers	0	[0-3.8]						100											
	Cattle	0	[0-2.5]						100											
	Pigs	0	[0-2.1]						100											
Meropenem	Broilers	0	[0-3.8]		98.9	1.1														
	Cattle	0	[0-2.5]		100															
	Pigs	0	[0-2.1]		100															
Trimethoprim	Broilers	24.2	[16.0-34.1]					72.6	2.1	1.1					24.2					
	Cattle	5.6	[2.4-10.7]	0.7				93.1	0.7						5.6					
	Pigs	24.1	[18.0-31.2]					74.7	1.1						24.1					
Sulfonamide	Broilers	28.4	[19.6-38.6]										71.6					28.4		
	Cattle	10.4	[5.9-16.6]										88.9	0.7				10.4		
	Pigs	35.6	[28.5-43.2]										64.4						35.6	
Azithromycin	Broilers	1.1	[0.03-5.7]								4.2	49.5	43.2	2.1		1.1				
	Cattle	0	[0-2.5]								24.3	55.6	20.1							
	Pigs	0.6	[0.01-3.2]								26.4	56.9	15.5	0.6		0.6				
Gentamicin	Broilers	1.1	[0.03-5.7]						55.8	42.1	1.1			1.1						
	Cattle	0.7	[0.02-3.8]						57.6	38.2	3.5			0.7						
	Pigs	1.1	[0.1-4.1]						58.6	37.4	2.9			0.6	0.6					
Ciprofloxacin	Broilers	8.4	[3.7-15.9]	67.4	24.2			6.3	1.1	1.1										
	Cattle	0	[0-2.5]	94.4	5.6															
	Pigs	1.1	[0.1-4.1]	90.8	8.0			1.1												
Nalidixic acid	Broilers	8.4	[3.7-15.9]										91.6			2.1	6.3			
	Cattle	0	[0-2.5]										100							
	Pigs	0.6	[0.01-3.2]										98.3	1.1			0.6			
Colistin	Broilers	0	[0-3.8]							100										
	Cattle	0	[0-2.5]							100										
	Pigs	0.6	[0.01-3.2]							99.4				0.6						

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.5. Distribution of MICs and resistance (%) in *Escherichia coli* from broiler meat (Danish n=214; imported n=148), beef (Danish n=55; imported n=36), pork (Danish n=57; imported n=15), Denmark

Antimicrobial agent	Animal species	Food type	% Resistant	95% Confidence interval	Distribution (%) of MICs																
					0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024
Tetracycline	Broilers	Danish	21.0	[15.8-27.1]											73.4	5.6		0.5	20.6		
		Imported	41.2	[33.2-49.6]											56.1	2.7		0.7	2.7	37.8	
	Cattle	Danish	9.1	[3.0-20.0]											83.6	7.3			3.6	5.5	
		Imported	11.1	[3.1-26.1]											83.3	5.6				11.1	
	Pigs	Danish	24.6	[14.1-37.8]											66.7	8.8				24.6	
		Imported	26.7	[7.8-55.1]											66.7	6.7				26.7	
Tigecycline	Broilers	Danish	0	[0-1.7]						98.1	1.4	0.5									
		Imported	0	[0-2.6]						93.2	6.8										
	Cattle	Danish	0	[0-6.5]						98.2	1.8										
		Imported	0	[0-9.7]						94.4	5.6										
	Pigs	Danish	0	[0-6.3]						89.5	10.5										
		Imported	0	[0-21.8]						93.3	6.7										
Chloramphenicol	Broilers	Danish	2.8	[1.0-6.0]											96.7	0.5	0.5	0.9	1.4		
		Imported	7.4	[3.8-12.9]											92.6	6.7	0.7	2.7	4.1		
	Cattle	Danish	3.6	[0.4-12.5]											94.5	4.8			3.6		
		Imported	8.3	[1.8-22.5]											91.7	6.7		2.8	5.6		
	Pigs	Danish	0	[0-6.3]											100						
		Imported	0	[0-21.8]											100						
Ampicillin	Broilers	Danish	28.5	[22.6-35.1]											2.8	26.2	39.7	2.8		28.5	
		Imported	52.7	[44.3-61.0]											1.4	18.9	24.3	2.7		52.7	
	Cattle	Danish	5.5	[1.1-15.1]											1.8	16.4	72.7	3.6		5.5	
		Imported	16.7	[6.4-32.8]											13.3	63.9	5.6		16.7		
	Pigs	Danish	22.8	[12.7-35.8]											5.3	28.1	42.1	1.8		22.8	
		Imported	26.7	[7.8-55.1]											13.3	13.3	46.7			26.7	
Cefotaxime	Broilers	Danish	0.5	[0.01-2.6]						99.5								0.5			
		Imported	2.0	[0.4-5.8]						98.0								2.0			
	Cattle	Danish	0	[0-6.5]						100											
		Imported	2.8	[0.07-14.5]						97.2								2.8			
	Pigs	Danish	0	[0-6.3]						100											
		Imported	0	[0-21.8]						100											
Ceftazidime	Broilers	Danish	0.5	[0.01-2.6]						99.5								0.5			
		Imported	2.0	[0.4-5.8]						0.7	97.3							1.4			
	Cattle	Danish	0	[0-6.5]						100											
		Imported	2.8	[0.07-14.5]						97.2								2.8			
	Pigs	Danish	0	[0-6.3]						100											
		Imported	0	[0-21.8]						100											
Meropenem	Broilers	Danish	0	[0-1.7]						100											
		Imported	0	[0-2.5]						100											
	Cattle	Danish	0	[0-6.5]						100											
		Imported	0	[0-9.7]						97.2								2.8			
	Pigs	Danish	0	[0-6.3]						100											
		Imported	0	[0-21.8]						100											
Trimethoprim	Broilers	Danish	22.9	[17.4-29.1]						75.7	1.4								22.9		
		Imported	37.2	[29.4-45.5]						60.8	1.4	0.7							37.2		
	Cattle	Danish	0	[0-6.5]						100											
		Imported	5.6	[0.7-18.7]						94.4									5.6		
	Pigs	Danish	17.5	[8.7-29.9]						82.5									17.5		
		Imported	13.3	[1.7-40.5]						86.7									13.3		
Sulfonamide	Broilers	Danish	28.0	[22.1-34.6]															28.0		
		Imported	38.5	[30.6-46.9]															38.5		
	Cattle	Danish	7.3	[2.0-17.6]															7.3		
		Imported	13.9	[4.7-29.5]															13.9		
	Pigs	Danish	19.3	[10.0-31.9]															19.3		
		Imported	26.7	[7.8-55.1]															26.7		
Azithromycin	Broilers	Danish	0	[0-1.7]																	
		Imported	0.7	[0.02-3.7]															0.7		
	Cattle	Danish	0	[0-6.5]																	
		Imported	0	[0-9.7]																	
	Pigs	Danish	0	[0-6.3]																	
		Imported	0	[0-21.8]																	
Gentamicin	Broilers	Danish	0.9	[0.1-3.3]						49.5	47.7	1.9						0.9			
		Imported	0.7	[0.02-3.7]						47.3	46.6	5.4						0.7			
	Cattle	Danish	0	[0-6.5]																	
		Imported	2.8	[0.07-14.5]														2.8			
	Pigs	Danish	0	[0-6.3]																	
		Imported	0	[0-21.8]																	
Ciprofloxacin	Broilers	Danish	6.5	[3.6-10.7]						70.6	22.4	0.5							6.5		
		Imported	31.8	[24.4-39.9]						60.1	8.1								31.8		
	Cattle	Danish	0	[0-6.5]						90.9	9.1										
		Imported	5.6	[0.7-18.7]						83.3	11.1								5.6		
	Pigs	Danish	0	[0-6.3]						94.7	5.3										
		Imported	0	[0-21.8]						100											
Nalidixic acid	Broilers	Danish	6.5	[3.6-10.7]															6.5		
		Imported	29.1	[21.9-37.1]															29.1		
	Cattle	Danish	0	[0-6.5]																	
		Imported	5.6	[0.7-18.7]															5.6		
	Pigs	Danish	0	[0-6.3]																	
		Imported	0	[0-21.8]																	
Colistin	Broilers	Danish	0	[0-1.7]																	
		Imported	1.4	[0.2-4.8]															1.4		
	Cattle	Danish	0	[0-6.5]																	
		Imported	0	[0-9.7]																	
	Pigs	Danish	0	[0-6.3]																	
		Imported	0	[0-21.8]																	

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.6. Distribution of MICs and resistance (%) in ESC *Escherichia coli* from cattle (n=14) and pigs (n=78), Denmark

Antimicrobial agent	Animal species	% Resistant	95% Confidence interval	Distribution (%) of MICs																
				0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024
Tetracycline	Cattle	14.3	[1.8-42.8]									85.7					14.3			
	Pigs	53.8	[42.2-65.2]									42.3	3.8			2.6	51.3			
Tigecycline	Cattle	0	[0-23.2]					100												
	Pigs	0	[0-4.6]					92.3	7.7											
Chloramphenicol	Cattle	7.1	[0.2-33.9]											92.9				7.1		
	Pigs	1.3	[0.03-6.9]											96.2	2.6				1.3	
Ampicillin	Cattle	100	[76.8-100.0]															100		
	Pigs	100	[95.4-100.0]															100		
Cefoxitin	Cattle	57.1	[28.9-82.3]									21.4	21.4			28.6	21.4	7.1		
	Pigs	74.4	[63.2-83.6]									3.8	15.4	6.4		14.1	43.6	16.7		
Cefotaxime	Cattle	100	[76.8-100.0]						7.1	28.6	21.4	42.9								
	Pigs	100	[95.4-100.0]							11.5	46.2	42.3								
Ceftazidime	Cattle	92.9	[66.1-99.8]						7.1	21.4	35.7	21.4	14.3							
	Pigs	97.4	[91.0-99.7]							2.6	15.4	11.5	39.7	30.8						
Cefepime	Cattle	42.9	[17.7-71.1]			21.4	35.7					14.3	7.1	14.3	7.1					
	Pigs	37.2	[26.5-48.9]			9.0	53.8		7.7	5.1			2.6	11.5	2.6	7.7				
Meropenem	Cattle	0	[0-23.2]																	
	Pigs	0	[0-4.6]																	
Ertapenem	Cattle	0	[0-23.2]															92.9	7.1	
	Pigs	0	[0-4.6]															53.8	43.6	2.6
Imipenem	Cattle	0	[0-23.2]				35.7	57.1	7.1											
	Pigs	0	[0-4.6]				3.8	85.9	10.3											
Trimethoprim	Cattle	14.3	[1.8-42.8]																	78.6
	Pigs	48.7	[37.2-60.3]																	7.1
Sulfonamide	Cattle	14.3	[1.8-42.8]																	51.3
	Pigs	56.4	[44.7-67.6]																	14.3
Azithromycin	Cattle	0	[0-23.2]																	85.7
	Pigs	3.8	[0.8-10.8]																	43.6
Gentamicin	Cattle	7.1	[0.2-33.9]																	14.3
	Pigs	7.7	[2.9-16.0]																	50.0
Ciprofloxacin	Cattle	0	[0-23.2]																	65.4
	Pigs	0	[0-4.6]																	23.1
Nalidixic acid	Cattle	0	[0-23.2]																	3.8
	Pigs	0	[0-4.6]																	56.4
Colistin	Cattle	0	[0-23.2]																	14.3
	Pigs	0	[0-4.6]																	56.4

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.7. Distribution of MICs and resistance (%) in ESC *Escherichia coli* from beef (Danish n=2; imported n=6), pork (Danish n=4; imported n=1), Denmark

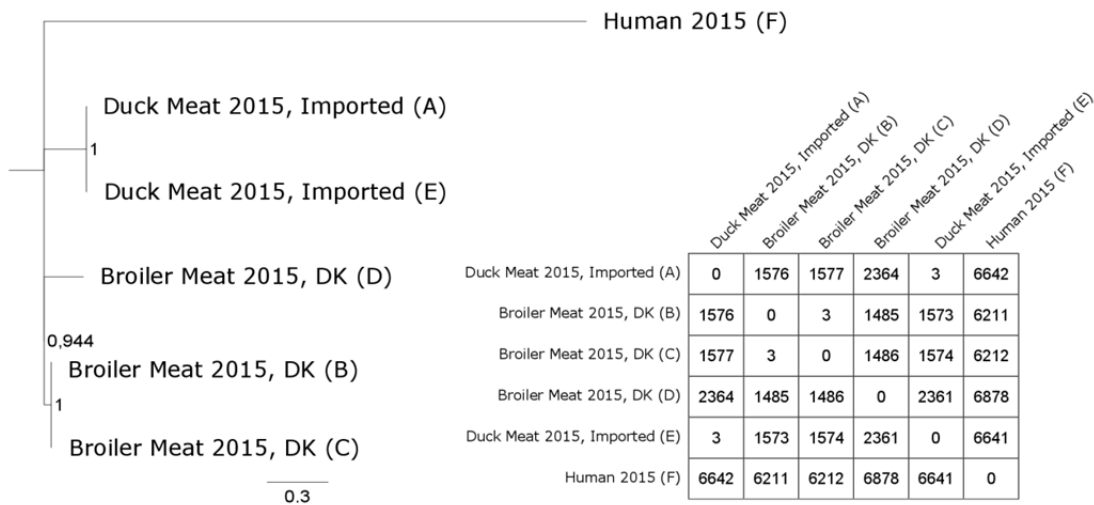
Antimicrobial agent	Food type	Food type	% Resistant	95% Confidence interval	Distribution (%) of MICs																	
					0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	>1024
					DANMAP 2015																	
Tetracycline	Cattle	Danish	0	[0-84.2]																		
		Imported	50.0	[11.8-88.2]																		
		Pigs	Danish	75.0	[19.4-99.4]																	
Tigecycline	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	0	[0-60.2]																	
Chloramphenicol	Cattle	Danish	0	[0-84.2]																		
		Imported	16.7	[0.4-64.1]																		
		Pigs	Danish	25.0	[0.6-80.6]																	
Ampicillin	Cattle	Danish	100	[15.8-100.0]																		
		Imported	100	[54.1-100.0]																		
		Pigs	Danish	100	[39.8-100.0]																	
Cefoxitin	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	50.0	[6.8-93.2]																	
Cefotaxime	Cattle	Danish	100	[15.8-100.0]																		
		Imported	100	[54.1-100.0]																		
		Pigs	Danish	100	[39.8-100.0]																	
Ceftazidime	Cattle	Danish	100	[15.8-100.0]																		
		Imported	100	[54.1-100.0]																		
		Pigs	Danish	100	[39.8-100.0]																	
Cefepime	Cattle	Danish	100	[15.8-100.0]																		
		Imported	100	[54.1-100.0]																		
		Pigs	Danish	75.0	[19.4-99.4]																	
Meropenem	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	0	[0-60.2]																	
Ertapenem	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	0	[0-60.2]																	
Imipenem	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	0	[0-60.2]																	
Trimethoprim	Cattle	Danish	0	[0-84.2]																		
		Imported	33.3	[4.3-77.7]																		
		Pigs	Danish	75.0	[19.4-99.4]																	
Sulfonamide	Cattle	Danish	0	[0-84.2]																		
		Imported	50.0	[11.8-88.2]																		
		Pigs	Danish	75.0	[19.4-99.4]																	
Azithromycin	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	0	[0-60.2]																	
Gentamicin	Cattle	Danish	0	[0-84.2]																		
		Imported	33.3	[4.3-77.7]																		
		Pigs	Danish	0	[0-60.2]																	
Ciprofloxacin	Cattle	Danish	0	[0-84.2]																		
		Imported	33.3	[4.3-77.7]																		
		Pigs	Danish	25.0	[0.6-80.6]																	
Nalidixic acid	Cattle	Danish	0	[0-84.2]																		
		Imported	16.7	[0.4-64.1]																		
		Pigs	Danish	25.0	[0.6-80.6]																	
Colistin	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	0	[0-60.2]																	
	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	0	[0-60.2]																	
	Cattle	Danish	0	[0-84.2]																		
		Imported	0	[0-45.9]																		
		Pigs	Danish	0	[0-60.2]																	

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values

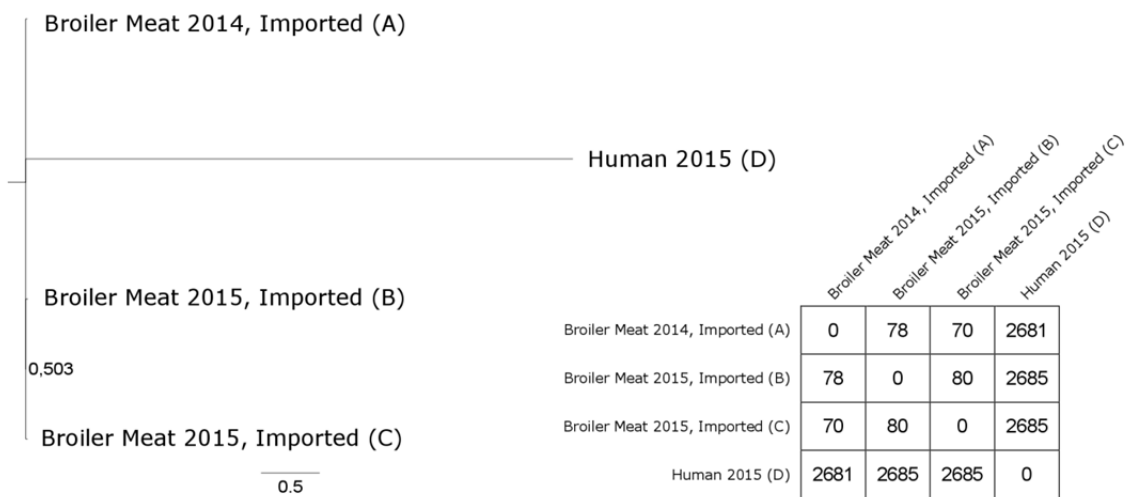
White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.9. SNP comparisons for ST38 CMY-2, ST354 CMY-2 and ST131 CTX-M-1, Denmark

ST38 with CMY-2 enzyme



ST354 with CMY-2 enzyme



ST131 with CTX-M-1 enzyme

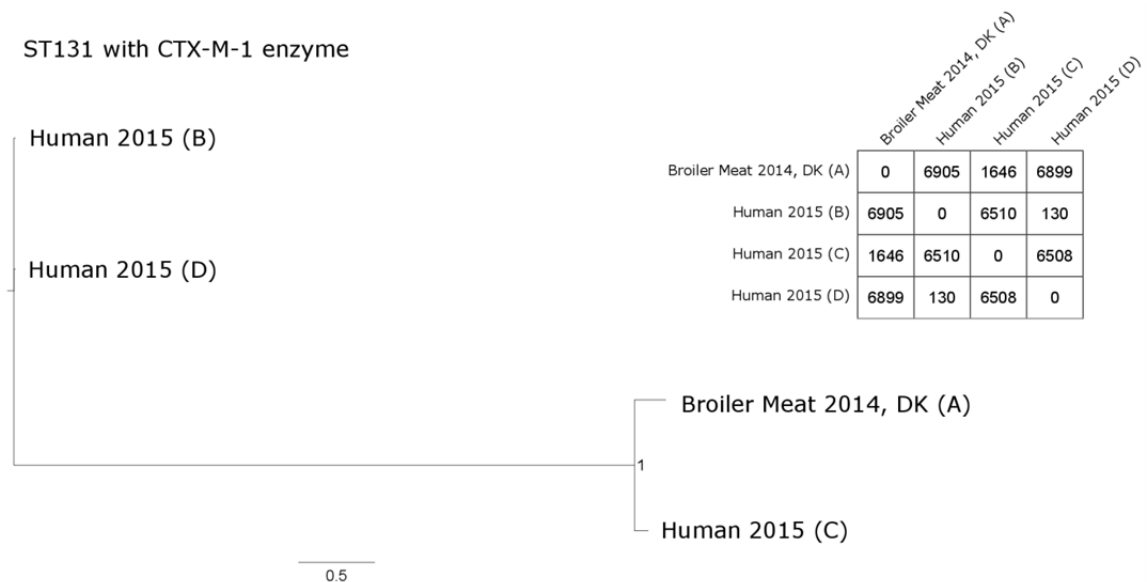


Table A7.10. Distribution of MICs and resistance (%) in clinical *Escherichia coli* O149 from pigs (n=53), Denmark

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (isolates) of MICs																			
			0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	
Tetracycline	64.2	[49.8-76.9]							32.1	3.8			5.7	58.5								
Chloramphenicol	28.9	[16.4-44.3]							2.2	64.4	2.2	2.2	4.4	4.4	20.0							
Florfenicol	9.6	[3.2-21]							7.7	71.2	9.6	1.9			9.6							
Ampicillin	40.4	[27-54.9]						42.3	17.3				40.4									
Amoxicillin/clavulanic acid	4.4	[0.5-15.1]						48.9	8.9	33.3	4.4	4.4										
Trimethoprim	51.0	[36.6-65.2]						47.1	2.0				51.0									
Sulfonamide	69.8	[55.7-81.7]											28.3	1.9		1.9			67.9			
Streptomycin	65.4	[50.9-78]									28.8	5.8	1.9	9.6	15.4	38.5						
Gentamicin	1.9	[0-10.1]					67.9	26.4	3.8			1.9										
Neomycin	5.7	[1.2-15.7]							92.5	1.9			1.9	3.8								
Apramycin	2.1	[0.1-11.1]									91.7	6.3		2.1								
Ciprofloxacin	0	[0-5.6]	57.7	21.2	7.7	1.9	11.5															
Nalidixic acid	10.9	[3.6-23.6]									89.1			4.3	6.5							
Colistin	0	[0-5.5]							98.1	1.9												
Spectinomycin	45.3	[31.6-59.6]											37.7	7.5	9.4	41.5	3.8					
Ceftiofur	3.8	[0.5-13]				96.2			3.8													

Note: Some of the *E. coli* 149 isolates were not tested for Chloramphenicol (n=45), Florfenicol (n=52), Ampicillin (n=52), Amoxicillin/clavulanic acid (n=45), Trimethoprim (n=51), Streptomycin (n=52), Apramycin (n=48), Ciprofloxacin (n=52) and Nalidixic acid (n=46). Proportion of tulathromycin resistant isolates is not calculated (ND)

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.11. Distribution of MICs and resistance (%) in clinical *Actinobacillus pleuropneumoniae* from pigs (n=70), Denmark

DANMAP 2015

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (number of isolates) of MICs														
			0.015	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256
Tetracycline	0	[0-4.2]				2.9	20.0	65.7	10.0		1.4						
Florfenicol	0	[0-4.2]				1.4	91.4	5.7	1.4								
Penicillin	0	[0-4.2]	1.4	4.3	8.6	25.7	55.7	4.3									
Ampicillin	0	[0-4.2]						100.0									
Ceftiofur	0	[0-4.2]		98.6	1.4												
Sulfa-trimethoprim	0	[0-4.2]		38.6	35.7	24.3	1.4										
Erythromycin	100	[95.8-100]							1.4	18.6	48.6	31.4					
Tulathromycin	ND									1.4		1.4	50.0	44.3	2.9		
Tilmicosin	2.9	[0.3-9.9]									5.7	50.0	41.4	2.9			
Ciprofloxacin	0	[0-4.2]				98.6		1.4									
Spectinomycin	0	[0-4.2]										2.9	1.4	54.3	41.4		
Tiamulin	0	[0-4.2]									8.6	44.3	47.1				

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range

Table A7.12. Distribution of MICs and resistance (%) in clinical *Streptococcus suis* from pigs (n=43), Denmark

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (number of isolates) of MICs														
			0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	>512
Tetracycline	47.0	[31.2-62.3]			9.3	9.3	16.3	18.6	7.0	0.0	9.3	30.2					
Chloramphenicol	0	[0-6.7]					9.3	69.8	20.9								
Florfenicol	0	[0-6.7]				20.9	76.7	2.3									
Penicillin	0	[0-6.7]	97.7					2.3									
Trimethoprim	2.0	[0.1-12.3]			88.4	2.3	2.3	4.7				2.3					
Sulfonamide	19.0	[8.4-33.4]									69.8	4.7	4.7	2.3		18.6	
Sulfa-trimethoprim	0	[0-6.7]			97.7	2.3											
Erythromycin	67.0	[51.5-80.9]			32.6			4.7			62.8						
Streptomycin	47.0	[31.2-62.3]					4.7	20.9	27.9	11.6	9.3	25.6					
Gentamicin	0	[0-6.7]				2.3	14.0	55.8	27.9								
Ciprofloxacin	0	[0-6.7]			30.2	51.2	16.3	2.3									
Spectinomycin	26.0	[13.5-41.2]								69.8	4.7					25.6	
Tiamulin	19.0	[8.4-33.4]			16.3	7.0	27.9	23.3	2.3	2.3	2.3	11.6	7.0				

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values

White fields represent the range of dilutions tested. MIC values equal to or lower than the lowest concentration tested are presented as the lowest concentration. MIC values greater than the highest concentration in the range are presented as one dilution step above the range