DANMAP 2011

Web annex

Statens Serum Institut
National Veterinary Institute, Technical University of Denmark
National Food Institute, Technical University of Denmark

DANMAP 2011 - WEB annex with Tables and Figures

Table A4.1. Estimated total consumption (kg)[a] of prescribed antimicrobial agents for production animals 1990-2012 [b], Denmark

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ATC_{vet} group[c]	Therapeutic group	1990	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
QJ01AA	Tetracyclines	9300	22000	36500	9000	12900	13700	12100	16200	24000	28500	24500	27150	29350	29550	31800	36600	35400	38400	35550	29400
QJ01CE	Penicillins, β–lactamase sensitive	5000	6700	9400	8800	7200	11200	14300	14700	15100	16400	17500	18950	20900	22250	22650	23850	23950	25950	27100	24750
QJ01C	Other penicillins	1200	2500	4400	4500	5800	6100	6700	6600	7300	8600	9500	10600	12300	11650	10950	10900	10550	12000	12450	10800
QJ01D	Cephalosporins	3800	7900	9500	6300	4800	6900	7700	6800	7000	100	150	200	250	250	250	300	300	250	200	150
QJ01EW	Sulfonamides and trimethoprim	8700	5900	5600	1800	2100	1400	1000	1000	1000	9550	10550	10600	11500	12200	13700	13800	13300	14950	13900	12600
QJ01EQ	Sulfonamides	8700	5900	5600	1800	2100	1400	1000	1000	1000	950	900	850	850	750	750	700	600	4505	550	500
QJ01F	Macrolides, lincosamides	10900	12900	11400	9500	7600	6600	7100	8700	15600	13400	13650	14000	16150	15300	14350	16500	15250	17350	16800	13450
QJ01XQ	Pleuromutilins										4050	4500	5400	6600	6500	6350	6100	9200	10650	10700	7550
QJ01G/ QA07AA	Aminoglycosides	7700	8500	8600	7600	7100	6100	7800	7500	10400	11600	11700	11750	11650	10800	10600	8100	6000	6300	6200	5650
	Others	6700	6800	4400	2100	600	650	650	350	300	900	1600	1400	950	1200	1200	1150	1650	1900	2100	1700
Total		53300	73200	89800	49600	48100	52800	57350	61900	80700	94000	94700	100900	110500	110400	112700	118000	116100	128200	125500	106450

Data based on reports from the pharmaceutical industry of total annual sales of veterinary drugs. Data include parenteral treatment in companion animals, but not veterinary drugs almost exclusively used in pets (tablets, capsules, ointment, eye/ear drops). However, dermal spray with tetracycline, extensively used in production animals, is included.

Data source 1990–1994: Data on use of antibiotics in the pig production [Federation of Danish pig producers and slaughterhouses. N. E. Rønn (Ed.)]; Data source 1996–2000: Danish Medicines Agency; Data source 2001-2012: The VetStat database

a) Kg active compound rounded to nearest 50 for antimicrobial classes and 100 for totals

b) Consumption in aquaculture was only partially included before 2001

c) Only the major contributing ATC_{vet} groups are mentioned

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Table A4.2. Consumption of antimicrobial agents[a] for systemic use in pigs given as Animal Daily Doses (ADDs)[b], Denmark

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ATCvet code	QJ01AA	QJ01BA	QJ01CE	QJ01CA QJ01CR	QJ01DC QJ01DD	QJ01E	QJ01FA	QJ01FF	QA07AA	QA07AA10	QJ01MA	QJ01RA	QJ01XX	
Therapeutic group	Tetracyclines	Amphenicols	Penicilin's, β–lactamase sensitive	Aminopenicillins[c]	Cephalosporins[d]	Sulfonamides / trimethoprim	Macrolides	Lincosamides / spectinomycin[e]	Aminoglycosides (local GI)	Colistin (local GI)	Fluoroquinolones	Penicillin-streptomycin combinations	Pleuromutilins	Total
Year	**Sows and piglets (1000's ADD200)**													
2002	1072	0	1793	894	60	965	764	555	252	26	51	643	498	7574
2003	1104	8	2039	993	99	1116	690	568	234	35	23	703	953	8567
2004	1135	9	2256	1080	113	1269	719	580	215	35	3	669	1027	9110
2005	1092	10	2344	1059	132	1366	724	567	167	35	4	661	845	9006
2006	1232	9	2371	1056	149	1434	780	542	152	35	7	647	955	9368
2007	1697	10	2589	1184	244	1568	1315	615	101	47	6	662	1300	11338
2008	1660	11	2647	1195	300	1635	1242	558	38	57	0	631	1842	11814
2009	1764	31	2865	1404	219	2033	1355	535	48	85	0	685	1726	12751
2010	1620	45	2796	1462	114	2092	1320	447	55	92	0	694	1287	12023
2011	1075	75	2399	1223	3	1754	1033	317	53	78	7	603	372	8993
	Weaner pigs (1000's ADD15)													
2002	31476	4	2552	8308	147	3987	44195	16575	23752	3172	188	2152	18255	154763
2003	32349	112	3015	10654	254	4185	39308	18691	22032	4377	17	2211	19779	156984
2004	39194	141	4144	13899	263	5516	49768	21189	21288	4531	8	3075	24984	188001
2005	45858	96	4258	12115	267	6192	48252	18269	19633	3994	5	3588	26747	189272
2006	56166	48	4050	10017	291	4698	46666	15881	19464	4212	11	3513	25496	190514
2007	76701	90	4472	9914	407	4192	54522	16203	10586	5299	0	3439	22655	208481
2008	83718	256	4144	9730	400	4559	51676	16597	2857	6727	0	3445	30834	214943
2009	98866	149	4618	11902	358	4668	59205	17823	2981	6862	0	3782	39241	250456
2010	91435	122	4775	11361	181	3939	56090	16636	2169	7349	0	4018	41232	239305
2011	70284	125	4506	9561	6	3022	43946	13569	2285	6132	1	3671	15616	172723
	Finisher pigs (1000's ADD50)													
2002	8936	0	4630	1756	36	206	11027	3693	220	22	69	351	7568	38515
2003	11492	30	5249	1995	56	177	11605	4233	192	28	6	423	8522	44008
2004	12689	43	6502	2835	60	237	11599	4447	124	22	4	380	10371	49313
2005	14074	35	7488	2674	62	247	12033	4223	236	20	2	368	12121	53582
2006	16231	33	7702	2275	50	159	10316	3524	213	27	1	297	10846	51673
2007	19320	20	7917	2155	54	172	10362	3194	109	20	0	226	8806	52354
2008	18824	20	7544	1547	53	152	10006	2637	5	43	0	158	12993	53983
2009	20000	16	8195	1651	39	120	11823	2737	13	30	0	129	15194	59948
2010	19581	10	8991	1671	22	112	11942	2695	38	32	0	210	16353	61657
2011	14889	29	8102	1232	2	139	8691	2468	7	14	0	229	7191	42993
	Age group not given (1000's ADD50)													
2002	800	2	444	296	7	202	929	330	209	22	20	82	630	3975
2003	768	5	491	305	9	210	951	376	149	39	0	98	676	4077
2004	915	7	557	289	9	154	1125	419	170	29	3	69	986	4731
2005	874	4	563	276	10	184	841	324	85	32	0	85	729	4007
2006	1168	2	510	315	11	177	755	279	144	34	0	69	722	4187
2007	675	1	254	101	11	84	369	186	48	27	0	26	395	2177
2008	398	1	147	94	9	56	235	90	8	35	0	8	287	1368
2009	233	0	110	78	10	43	205	56	2	24	0	10	187	958
2010	83	1	35	34	3	12	114	35	3	7	0	10	85	423
2011	6	0	0	2	0	3	9	2	0	0	0	0	4	27

a) Data includes sales from pharmacies and feed mills. Consumption in veterinary practice comprises less than 1% of the total consumption in pigs and are not included, except for the use of fluoroquinolones. Local intrauterine and intramammary use is not included, and comprised less than 0.1‰ of the ADDs used in sows. Topical treatment is not included

b) Animal Standard weight is an assumed average weight at treatment, used to calculate numbe of ADD (Animal Daily Doses giving an estimated number of animals treated) from number of ADDkg (mass of animal treated, measured in kg animal bodyweight)

c) Includes a small proportion (< 1‰) of combinations with aminopenicillin and clavulanic acid

d) 3rd and 4th generation cephalosporins

e) Lincosamides and combnations between spectinomycin and lincosamides

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Table A4.3. Consumption of antimicrobial agents[(a)] for systemic use in cattle given as Animal Daily Doses (ADDs)[(b)], Denmark

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ATCvet code	QJ01AA	QJ01BA	QJ01CA QJ01CR	QJ01CE	QJ01DC QJ01DD	QJ01E	QJ01FA	QJ01FF	QA07AA	QA07AA10	QJ01MA	QJ01RA	
Therapeutic group	Tetracyclines	Amphenicols	Aminopenicillins[(c)]	Penicillin's, β–lactamase sensitive	Cephalosporins[(d)]	Sulfonamides / trimethoprim	Macrolides	Lincosamides / spectinomycin[(e)]	Aminoglycosides (local GI)	Colistin (local GI)	Fluoroquinolones	Penicillin-streptomycin combinations	Total
Year	**Cows and bulls (1000's ADD600)**												
2005	186	1	58	490	71	65	112	2	19	0	0	22	1027
2006	193	1	57	498	64	61	116	2	9	0	0	22	1021
2007	235	1	68	610	79	73	91	2	2	0	0	28	1189
2008	257	1	80	702	85	75	65	1	1	0	0	34	1302
2009	279	2	84	804	73	73	53	1	2	0	0	36	1407
2010	269	1	79	835	70	73	38	0	2	0	0	42	1410
2011	272	2	68	818	69	71	40	1	3	0	0	36	1379
	Calves (1000's ADD100)												
2005	574	61	193	170	33	162	562	19	127	39	2	142	2083
2006	534	67	145	180	30	141	879	13	108	7	1	136	2242
2007	561	96	131	183	37	154	881	16	92	8	1	131	2290
2008	528	129	105	168	30	133	804	13	77	11	0	113	2111
2009	556	150	102	173	22	166	768	9	95	10	0	117	2167
2010	615	180	123	166	20	193	475	12	100	15	0	120	2018
2011	518	228	117	170	20	173	461	2	88	17	0	102	1896
	Heifers and steer (1000's ADD300)												
2005	18	0	5	27	3	3	8	1	0	0	0	2	67
2006	19	0	3	26	3	3	9	0	0	0	0	3	67
2007	24	1	6	33	4	3	10	2	0	0	0	4	86
2008	26	1	5	36	4	3	9	2	0	0	0	4	90
2009	26	1	5	37	3	3	6	1	0	0	0	5	88
2010	25	1	5	37	3	4	5	0	0	0	0	5	86
2011	22	3	5	33	2	6	9	0	0	0	0	6	86
	age group unknown (1000's ADD600)												
2005	7	0	4	5	1	2	6	1	2	0	0	1	29
2006	21	1	13	14	2	4	31	6	5	1	0	2	99
2007	16	0	5	13	2	2	13	2	1	0	0	2	57
2008	2	0	1	3	1	0	2	0	0	0	0	0	10
2009	1	0	0	3	0	0	1	0	0	0	0	0	6
2010	1	0	0	4	0	1	1	0	0	0	0	0	7
2011	7	0	3	12	2	1	1	0	0	0	0	2	29

a) Data includes sales from pharmacies and use for cattle in veterinary practice, including sales to the farmer. The use in cattle practice was underestimated by up to 20%, and the consumption in calves and cows are underestimated by up to 5% and 17% in individual years, respectively. This error was decreasing with time (10% underestimation in 2010). Therefore, the numbers not fully representatrends over

b) Animal Standard weight is an assumed average weight at treatment, used to calculate numbe of ADD (Animal Daily Doses giving an

c) Includes a small proportion (< 1‰) of combinations with aminopenicillin and clavulanic acid

d) 3rd and 4th generation cephalosporins

e) Lincomycin and lincomycin/spectinomycin combinations

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Table A4.4. Consumption of antimicrobial agents for systemic use in poultry given as Animal Daily Doses (ADDkg)[a], Denmark

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ATCvet code	QA07AA	QJ01A	QJ01CA	QJ01CE	QJ01E QP51AG	QJ01FA	QJ01MA	QJ01X	QA07 QJ01			
Therapeutic group	Aminoglycosides	Tetracyclines	Amoxicillin	Penicillin's, β–lactamase sensitive	Sulfonamides[b]	Macrolides	Fluoroquinolones	Pleuromutilins	Others[c]	**Total**	Million kg meat or eggs[d]	ADDkg per kg meat produced
Year	**Broilers (1000's ADDkg)**											
2002	0	0	3352	0	69	0	680	0	0	**4101**	*190*	0.04
2003	0	70	3052	0	8	0	270	0	0	**3399**	*181*	0.03
2004	100	116	4617	8	43	44	650	75	46	**5699**	*181*	0.07
2005	0	32	3984	22	58	3	661	0	100	**4860**	*180*	0.05
2006	0	0	3356	6	40	0	620	0	6	**4029**	*163*	0.06
2007	0	0	1718	0	168	289	130	0	36	**2341**	*178*	0.03
2008	0	429	4086	0	83	133	20	0	80	**4830**	*186*	0.07
2009	0	5200	6988	439	75	560	20	60	80	**13422**	*181*	0.15
2010	0	5469	13543	1158	135	522	0	0	20	**20846**	*199*	0.13
2011	0	5008	18111	1561	0	364	0	0	0	**25045**	*201*	0.13
	Rearing for broiler production (1000's ADDkg)											
2002	0	88	2025	0	96	0	660	0	0	**2869**	-	
2003	0	0	1361	0	0	0	80	0	0	**1441**	-	
2004	0	0	6464	0	0	0	490	0	0	**6954**	-	
2005	0	0	3348	0	0	0	400	0	0	**3748**	-	Included in broiler production above
2006	0	0	6238	0	15	0	114	0	0	**6367**	-	
2007	0	0	2659	0	43	22	190	0	0	**2914**	-	
2008	0	400	6913	0	100	322	0	0	10	**7745**	-	
2009	0	2067	7738	2851	80	289	440	0	290	**13754**	-	
2010	0	2267	2825	719	44	33	0	0	0	**5888**	-	
2011	0	167	750	456	0	0	0	0	0	**1373**	-	
	Layers and layer rearing (1000's ADDkg)											
2002	0	285	670	0	171	0	100	0	0	**1226**	*70*	0.02
2003	0	540	350	0	328	0	0	0	0	**1218**	*69*	0.02
2004	0	2	819	2	215	6	30	0	230	**1303**	*72*	0.02
2005	0	8	680	4	243	0	0	3	30	**967**	*69*	0.01
2006	0	28	376	0	140	11	0	0	0	**555**	*67*	0.01
2007	0	0	1150	0	96	0	0	0	150	**1396**	*67*	0.02
2008	0	12	2563	0	100	0	0	0	70	**2745**	*68*	0.04
2009	0	713	1475	0	15	2	0	0	488	**2693**	*61*	0.04
2010	0	133	1488	0	8	171	0	275	395	**2469**	63	0.04
2011	0	42	438	35	53	49	0	100	79	**795**	66	0.01
	Turkeys (1000's ADDkg)											
2002	0	0	26829	0	0	0	0	0	0	**26829**	*13*	2.1
2003	0	0	10900	0	58	0	360	4568	0	**15885**	*11*	1.4
2004	200	0	4873	0	76	16	1560	0	0	**6725**	*20*	0.3
2005	150	60	8963	0	68	0	780	0	0	**10020**	*17*	0.6
2006	100	150	15193	0	45	0	1160	0	0	**16648**	*11*	1.5
2007	518	1654	6788	278	0	2547	2430	0	728	**14941**	*14*	1.0
2008	0	5767	1038	0	4	811	190	0	531	**8340**	*12.3*	0.7
2009	0	11771	4563	491	0	2538	0	0	536	**19899**	*11.1*	1.8
2010	0	6119	300	0	86	1922	0	0	253	**8680**	*14.0*	0.6
2011	0	7138	388	667	63	1446	0	0	39	**9739**	*9.4*	1.0

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Table A4.4 (Continued). Consumption of antimicrobial agents for systemic use in poultry given as Animal Daily Doses (ADDkg)[a], Denmark

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ATCvet code	QA07AA	QJ01A	QJ01CA	QJ01CE	QJ01E QP51AG	QJ01FA	QJ01MA	QJ01X	QA07 QJ01			
Therapeutic group	Aminoglycosides	Tetracyclines	Amoxicillin	Penicillin's, β–lactamase sensitive	Sulfonamides[b]	Macrolides	Fluoroquinolones	Pleuromutilins	Others[c]	**Total**	Million kg meat or eggs[d]	ADDkg per kg meat produced
Ducks and geese (1000's ADDkg)												
2002	0	12	36	0	0	30	0	0	0	**77**	*4.9*	0.02
2003	0	8	257	0	0	0	0	0	0	**265**	*4.2*	0.06
2004	0	14	400	0	13	11	150	3	0	**591**	*4.2*	0.14
2005	0	0	525	0	0	14	0	3	0	**542**	*4.1*	0.13
2006	0	0	1125	0	0	0	0	0	0	**1125**	*4.5*	0.25
2007	0	0	100	0	0	0	0	0	2	**102**	*2.4*	0.04
2008	0	36	250	0	1	0	0	0	0	**287**	*2.6*	0.11
2009	0	24	0	0	10	200	0	0	0	**234**	*2.2*	0.11
2010	0	914	0	0	3	0	0	0	0	**917**	2.0	0.45
2011	0	12	0	0	1	0	0	0	0	**13**	1.8	0.01
Game birds (1000's ADDkg)												
2002	125	177	1466	0	346	289	10	10	94	**2518**	*1.1*	2,387
2003	150	128	923	0	318	273	1	933	0	**2725**	*1.1*	2,583
2004	250	148	1003	0	460	113	30	18	0	**2022**	*1.1*	1,916
2005	160	98	1939	0	403	177	0	13	14	**2803**	*1.1*	2,657
2006	110	86	1863	0	258	39	11	5	42	**2413**	*1.1*	2,287
2007	2	126	1425	0	542	37	0	0	73	**2203**	*1.1*	2,088
2008	110	80	1825	0	256	39	11	0	38	**2360**	*1.1*	2,237
2009	0	270	901	18	664	46	10	0	172	**2080**	*1.1*	1,971
2010	3	267	1083	0	1443	44	10	25	161	**3036**	*1.1*	2,878
2011	8	488	906	175	510	86	0	25	88	**2287**	*1.1*	2,168
Production type unknown (1000's ADDkg)												
2002	29	95	2909	0	315	272	93	5	0	**3718**	-	-
2003	300	91	2370	0	348	186	391	5	0	**3690**	-	-
2004	450	106	3654	0	440	90	131	3	4	**4878**	-	-
2005	0	58	2978	0	192	3	121	5	46	**3403**	-	-
2006	50	144	3059	0	182	4	110	0	0	**3549**	-	-
2007	0	140	1321	72	518	118	34	8	58	**2267**	-	-
2008	0	374	863	0	263	148	3	3	39	**1692**	-	-
2009	2	794	486	0	182	22	11	5	56	**1557**	-	-
2010	0	142	97	0	85	11	12	3	14	**363**	-	-
2011	0	77	213	53	85	54	3	3	4	**490**	-	-

a) ADDkg is the dose necessary for treating 1 kg body-weight

b) Includes sulfaclozin (a coccidiostat/antibacterial) and sulfonamide/trimethoprim combinations

c) Includes QA07AA10 (colistin), QJ01FF (lincosamides, including combinations with spectinomycin), QJ01B (amphenicols) and QJ01R (penicillin/streptomycin combinations)

d) For layers and layer rearing, only the production of eggs for consumption is included (not the slaughter/export of hens)

e) Includes prescription with erraneous farm-id or farms with more than one poultry species; for 2009-2011 this was mainly pigeons and game birds

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

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ATC group[a]	Therapeutic group	Year									
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
J01AA	Tetracyclines	1501	1542	1636	1748	1835	1855	1884	2039	2161	2193
J01B	Amphenicols	0	0	0	0	0	0	0	0	0	0
J01CA	Penicillins with extended spectrum	5356	5295	5346	5561	5722	6188	6061	6076	6317	6205
J01CE	Beta-lactamase sensitive penicillins	21263	21630	22230	22520	22760	24003	22466	21744	22301	22671
J01CF	Beta-lactamase resistant penicillins	3738	4075	4377	4565	4842	5037	5183	5250	5418	5290
J01CR	Comb. of penicillins, including beta-lactamase inhibitors	249	336	480	534	724	1012	1348	1836	2597	3274
J01D	Cephalosporins and related substances[b]	811	830	894	1582	1778	2285	2530	2740	2696	2374
J01EA	Trimethoprim and derivatives	293	307	334	359	382	402	402	399	417	416
J01EB	Short-acting sulfonamides	3092	3064	3067	2987	2865	2565	2273	2200	2158	1998
J01EE	Combinations of sulfonamides and trimethoprim, incl. derivatives	288	273	185	208	208	148	183	193	252	326
J01FA	Macrolides[c]	4150	3876	3743	3775	3542	3434	3164	2966	3038	2942
J01FF	Lincosamides[b]	40	45	53	52	66	78	94	113	124	138
J01G	Aminoglycosides	31	28	31	31	27	27	25	23	24	24
J01MA	Fluoroquinolones[b]	451	611	722	866	979	1162	1351	1371	1457	1458
J01XA	Glycopeptides	42	43	46	51	56	61	64	86	89	102
J01XC	Steroid antibacterials (fusidic acid)	59	58	52	62	65	67	64	62	65	56
J01XD	Imidazoles	179	191	195	206	198	202	241	255	258	261
J01XE	Nitrofuran derivatives (nitrofurantoin)	163	166	171	180	185	190	192	201	208	209
J01XX05	Methenamine[b]	1662	1590	1473	1107	1076	1060	1087	1047	1078	1057
J01XX08+09	Linezolid, daptomycin	3	4	5	10	14	12	14	14	13	18
J01	Antibacterial agents for systemic use (total)[d]	43371	43964	45040	46404	47324	49788	48629	48614	50673	51012

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 10

a) From the 2011 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. From 2001 to 2004, it was estimated with a DDD corresponding to an average

c) When two different DDDs of an antimicrobial agent existed for different presentations an average DDD was used. Estimates using the lowest and the highest calculated limit are 2415–3501 for 2011

d) Does not include polymyxins

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Table A5.2. Consumption of antibacterial agents for systemic use in primary health care (No. packages/1000 inhabitants/year), Denmark

DANMAP 2011

ATC group[(a)]	Therapeutic group	Year									
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
J01AA	Tetracyclines	21.7	21.6	22.5	23.8	23.9	24.5	25.0	25.9	27.2	26.5
J01CA	Penicillins with extended spectrum	111.8	111.5	115.3	119.9	119.7	131.3	130.0	130.2	140.2	135.8
J01CE	Beta-lactamase sensitive penicillins	254.4	254.5	253.7	251.1	243.3	253.0	235.9	223.2	228.2	230.8
J01CF	Beta-lactamase resistant penicillins	37.5	41.9	43.0	44.4	44.0	45.8	45.4	45.2	45.9	43.5
J01CR	Combinations of penicillins, including beta-lactamase inhibitors	1.7	2.0	2.5	3.0	4.0	5.8	8.0	12.3	18.0	23.1
J01D	Cephalosporins and related substances	1.4	1.3	1.4	1.6	1.7	1.8	2.1	2.1	2.1	1.8
J01EA	Trimethoprim and derivatives	8.8	9.3	10.2	10.6	10.7	11.5	12.4	10.9	11.3	11.4
J01EB	Short-acting sulfonamides	47.6	47.9	48.3	47.5	45.8	41.0	36.0	34.6	34.3	31.8
J01EE	Combinations of sulfonamides and trimethoprim, incl. derivatives	1.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01FA	Macrolides	102.8	99.8	102.7	110.3	101.8	108.6	103.3	99.6	110.5	114.5
J01FF	Lincosamides	0.6	0.6	0.7	1.1	1.4	1.6	2.0	2.5	2.8	3.0
J01GB	Aminoglycosides	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
J01MA	Fluoroquinolones	11.0	13.8	16.2	18.3	19.4	22.9	25.1	25.0	27.4	26.8
J01XA	Glycopeptides	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.4
J01XB	Polymyxins	2.0	2.0	2.1	2.0	1.5	0.8	0.8	0.9	0.9	0.9
J01XC	Steroid antibacterials (fusidic acid)	0.8	0.7	0.6	0.7	0.7	0.7	0.8	0.7	0.7	0.6
J01XE	Nitrofuran derivatives (nitrofurantoin)	11.1	11.3	11.7	12.3	12.5	11.9	12.2	12.6	12.4	13.3
J01XX05	Methenamine	3.2	2.6	2.4	2.3	2.0	1.9	2.0	1.9	1.9	1.9
J01XX08	Linezolid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01	Antibacterial agents for systemic use (total)	618.0	622.3	633.6	649.3	632.6	663.5	641.2	628.0	664.4	666.2

a) From the 2011 edition of the Anatomical Therapeutic Chemical (ATC) classification system

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Table A5.3.Consumption of antibacterial agents for systemic use in primary health care (No. treated patients/1000 inhabitants/year), Denmark

DANMAP 2011

ATC group[a]	Therapeutic group	Year									
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
J01AA	Tetracyclines	11.5	11.4	11.6	12.0	12.3	12.5	12.7	13.0	13.4	13.7
J01CA	Penicillins with extended spectrum	69.2	68.8	70.6	73.0	75.8	82.1	81.3	81.1	85.1	84.2
J01CE	Beta-lactamase sensitive penicillins	173.4	172.6	171.2	170.2	171.3	177.1	164.4	158.8	162.9	164.4
J01CF	Beta-lactamase resistant penicillins	23.9	26.4	27.1	27.8	29.4	29.7	29.9	29.9	30.0	30.4
J01CR	Combinations of penicillins, including beta-lactamase inhibitors	1.0	1.1	1.3	1.5	2.3	3.6	5.0	8.0	11.7	15.0
J01D	Cephalosporins and related substances	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
J01EA	Trimethoprim and derivatives	4.5	4.6	5.0	5.4	5.6	5.9	5.9	5.8	6.0	6.2
J01EB	Short-acting sulfonamides	33.0	33.1	33.3	32.7	33.0	29.7	26.3	25.4	25.0	23.2
J01EE	Combinations of sulfonamides and trimethoprim, incl. derivatives	0.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01FA	Macrolides	66.9	64.1	65.9	70.7	67.0	71.4	66.9	64.5	72.7	78.8
J01FF	Lincosamides	0.3	0.3	0.4	0.4	0.5	0.6	0.8	1.0	1.3	1.4
J01GB	Aminoglycosides	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01MA	Fluoroquinolones	7.7	8.9	10.8	12.2	13.1	15.2	17.1	16.9	18.5	18.1
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	0.0	0.0	0.0	0.0	0.1
J01XC	Steroid antibacterials (fusidic acid)	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3
J01XE	Nitrofuran derivatives (nitrofurantoin)	6.1	6.2	6.4	6.7	7.0	6.5	6.8	7.0	6.9	7.1
J01XX05	Methenamine	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
J01XX08	Linezolid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J01[b]	Antibacterial agents for systemic use (total)	301.5	301.4	302.6	308.0	310.3	320.4	308.2	303.1	315.5	321.8

a) From the 2010 edition of the Anatomical Therapeutic Chemical (ATC) classification system

b) 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

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Table A5.4. Number of DDDs and packages per treated patient in primary health care, Denmark

DANMAP 2011

ATC group[(a)]	Therapeutic group	Indicator	Year									
			2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
J01AA	Tetracyclines	DDDs / patient	33.0	34.4	36.9	39.0	40.9	43.0	44.4	45.2	45.9	44.0
		DDDs / package	17.5	18.1	19.0	19.6	21.0	22.0	22.7	22.7	22.7	22.6
		Packages / patient	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	1.9
J01CA	Penicillins with extended spectrum	DDDs / patient	13.2	13.4	13.6	13.9	14.2	14.4	14.7	14.8	14.9	14.8
		DDDs / package	8.2	8.2	8.4	8.5	8.9	9.0	9.2	9.2	9.0	9.2
		Packages / patient	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
J01CE	Beta-lactamase sensitive penicillins	DDDs / patient	10.5	10.7	11.1	11.3	11.5	11.7	11.8	11.8	11.8	11.8
		DDDs / package	7.2	7.3	7.5	7.7	8.0	8.2	8.2	8.4	8.4	8.4
		Packages / patient	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4
J01CF	Beta-lactamase resistant penicillins	DDDs / patient	11.8	11.8	12.4	12.7	13.0	13.4	13.7	13.9	14.2	13.8
		DDDs / package	7.5	7.4	7.8	8.0	8.6	8.7	9.0	9.1	9.3	9.6
		Packages / patient	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.4
J01CR	Combinations of penicillins, incl. beta-lactamase inhibitors	DDDs / patient	14.7	16.6	17.2	16.8	19.3	19.1	19.9	20.4	21.1	21.9
		DDDs / package	8.6	9.1	9.1	9.3	10.7	11.7	12.4	13.3	13.7	14.1
		Packages / patient	1.7	1.8	2.0	2.0	1.8	1.6	1.6	1.5	1.5	1.6
J01D	Cephalosporins and related substances	DDDs / patient	24.9	18.3	18.6	21.7	20.7	21.9	23.8	22.7	24.7	21.6
		DDDs / package	7.8	5.6	6.1	6.2	5.8	6.1	5.8	5.7	5.8	5.8
		Packages / patient	3.2	3.3	3.0	3.5	3.5	3.6	4.1	4.0	4.3	3.7
J01EA	Trimethoprim and derivatives	DDDs / patient	29.3	30.0	29.9	30.2	30.6	30.5	30.2	30.7	30.7	29.9
		DDDs / package	14.9	14.9	14.8	15.3	15.9	15.7	14.5	16.1	16.4	16.1
		Packages / patient	2.0	2.0	2.0	2.0	1.9	1.9	2.1	1.9	1.9	1.9
J01EB	Short-acting sulfonamides	DDDs / patient	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8
		DDDs / package	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8
		Packages / patient	1.4	1.4	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4
J01EE	Combinations of sulfonamides and trimethoprim. incl. derivatives	DDDs / patient	15.6	18.25	-	-	-	-	-	-	-	-
		DDDs / package	8.4	10.95	-	-	-	-	-	-	-	-
		Packages / patient	1.9	1.67	-	-	-	-	-	-	-	-
J01FA	Macrolides	DDDs / patient	11.7	12.1	12.4	12.4	12.6	12.4	12.5	12.5	12.2	11.5
		DDDs / package	7.6	7.8	7.9	8.0	8.3	8.1	8.1	8.1	8.1	7.9
		Packages / patient	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5
J01FF	Lincosamides	DDDs / patient	11.1	11.1	13.9	13.4	13.8	13.3	12.8	12.6	11.4	11.5
		DDDs / package	6.1	6.1	7.6	4.9	4.8	4.9	5.0	5.0	5.2	5.3
		Packages / patient	1.8	1.8	1.8	2.8	2.9	2.7	2.5	2.5	2.2	2.2
J01GB	Aminoglycosides	DDDs / patient	121.7	121.7	156.5	172.2	135.6	128.0	152.7	157.6	151.5	113.2
		DDDs / package	18.3	36.5	47.0	51.7	27.1	26.0	32.2	37.8	43.4	38.7
		Packages / patient	6.7	3.3	3.3	3.3	5.0	4.9	4.9	4.2	3.5	2.9
J01MA	Fluoroquinolones	DDDs / patient	8.6	10.3	9.5	9.6	10.3	10.6	11.0	11.2	11.2	11.5
		DDDs / package	6.0	6.6	6.4	6.5	6.9	7.0	7.5	7.6	7.6	7.7
		Packages / patient	1.4	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
J01XB	Polymyxins	DDDs / patient	243.3	243.3	192.3	196.7	205.6	219.3	202.8	202.8	199.4	175.1
		DDDs / package	3.7	3.7	3.7	3.9	5.5	10.0	10.0	10.0	10.0	10.0
		Packages / patient	66.7	66.7	52.5	50.0	37.5	21.9	20.3	20.3	19.9	17.5
J01XC	Steroid antibacterials (fusidic acid)	DDDs / patient	8.7	11.1	14.4	16.0	15.1	17.1	18.5	18.7	18.8	18.3
		DDDs / package	4.6	5.2	7.2	7.6	7.6	8.0	7.3	6.8	7.7	8.0
		Packages / patient	1.9	2.1	2.0	2.1	2.0	2.1	2.5	2.8	2.4	2.3
J01XE	Nitrofuran derivatives (nitrofurantoin)	DDDs / patient	24.5	24.8	24.3	24.3	24.1	26.3	25.4	25.4	26.8	25.9
		DDDs / package	13.5	13.6	13.3	13.3	13.5	14.4	14.2	14.1	15.0	13.8
		Packages / patient	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9
J01XX05	Methenamine	DDDs / patient	225.6	220.4	221.6	222.9	233.1	237.5	239.9	227.2	234.1	242.4
		DDDs / package	38.8	44.9	45.2	44.6	49.0	50.1	50.0	50.0	50.0	50.0
		Packages / patient	5.8	4.9	4.9	5	4.8	4.7	4.8	4.5	4.7	4.8
J01	Antibacterial agents for systemic use (total)	DDDs / patient	16.0	16.4	17.0	17.5	17.9	17.3	18.9	19.2	19.6	19.4
		DDDs / package	7.8	7.9	8.1	8.3	8.7	8.9	9.1	9.3	9.3	9.3
		Packages / patient	2.0	2.1	2.1	2.1	2.0	1.9	2.1	2.1	2.1	2.1

a) From the 2011 edition of the Anatomical Therapeutic Chemical (ATC) classification system

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Table A5.5. Activity at somatic hospitals, Denmark

DANMAP 2011

Region	No. bed-days somatic hospitals[a]	No. admissions somatic hospitals[a]
The Capital Region of Denmark	1440867	451825
The Sealand Region	560099	219543
Region of Southern Denmark	827786	253614
Central Denmark Region	831698	275367
North Denmark Region	440604	118193
Denmark[b]	4101054	1318569

Source: The National Board of Health [www.sst.dk]

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

b) Compared to the previous year no. bed-days have decreased by 4.0% and no. admissions have increased by 0.3%

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Table A5.6. Consumption of antibacterial agents for systemic use in hospital care (DDD/1000 inhabitant-days), Denmark

DANMAP 2011

ATC group[(a)]	Therapeutic group	Year									
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
J01AA	Tetracyclines	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.02
J01CA	Penicillins with extended spectrum	0.33	0.33	0.32	0.35	0.35	0.35	0.35	0.35	0.32	0.29
J01CE	Beta-lactamase sensitive penicillins	0.33	0.34	0.33	0.33	0.29	0.28	0.25	0.23	0.21	0.19
J01CF	Beta-lactamase resistant penicillins	0.18	0.18	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.15
J01CR	Combinations of penicillins, incl. beta-lactamase inhibitors	0.01	0.01	0.02	0.03	0.05	0.08	0.10	0.13	0.15	0.17
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	0.17	0.17	0.19	0.22	0.23	0.31	0.33	0.37	0.35	0.33
J01DD	Third-generation cephalosporins	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03
J01DF	Monobactams	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J01DH	Carbapenems	0.02	0.02	0.02	0.03	0.03	0.05	0.07	0.07	0.08	0.09
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	0.04	0.03	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01
J01EE	Combinations of sulfonamides and trimethoprim, incl. derivatives	0.04	0.04	0.05	0.05	0.05	0.04	0.05	0.05	0.06	0.08
J01FA	Macrolides	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
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	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04
J01MA	Fluoroquinolones	0.10	0.11	0.13	0.16	0.18	0.21	0.24	0.24	0.22	0.19
J01XA	Glycopeptides	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03
J01XB	Polymyxins	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J01XC	Steroid antibacterials (fusidic acid)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
J01XD	Imidazol derivatives	0.06	0.06	0.07	0.07	0.07	0.07	0.06	0.05	0.08	0.08
J01XE	Nitrofuran 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	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
J01	Antibacterial agents for systemic use (total)	1.51	1.51	1.56	1.67	1.70	1.81	1.87	1.91	1.91	1.83

a) From the 2011 edition of the Anatomical Therapeutic Chemical (ATC) classification system

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Table A6.1a. Distribution of MICs and resistance (%) in *Salmonella* Typhimurium from pigs (n=202), Denmark

DANMAP 2011

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	54.5	[47.3-61.5]								44.6	0.5	0.5	1.0	3.5	50.0						
Chloramphenicol	7.9	[4.6-12.5]									44.1	46.5	1.5		0.5	7.4					
Florfenicol	6.4	[3.5-10.8]								1.0	86.6	4.0	2.0	4.0		2.5					
Ampicillin	51.5	[44.4-58.6]							35.1	11.9	1.5				51.5						
Ceftiofur	0	[0-1.8]						42.6	55.4	2.0											
Cefotaxime	0	[0-1.8]				95.0	5.0														
Trimethoprim	8.4	[5.0-13.1]							91.6						8.4						
Sulfonamide	55.0	[47.8-61.9]													44.6	0.5				55.0	
Streptomycin	56.9	[49.8-63.9]										16.3	26.7	2.5	2.0	4.5	48.0				
Gentamicin	2.0	[0.5-5.0]						64.9	30.7	2.5		0.5	0.5	1.0							
Neomycin	7.9	[4.6-12.5]								87.1	5.0	1.0			6.9						
Apramycin	2.0	[0.5-5.0]									84.7	12.4	1.0		2.0						
Ciprofloxacin	0	[0-1.8]	5.0	87.1	7.9																
Nalidixic acid	0	[0-1.8]									90.6	8.9	0.5								
Colistin	0	[0-1.8]							99.5	0.5											
Spectinomycin	17.3	[12.4-23.3]												51.0	31.7	1.5	1.5	14.4			

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin, spectinomycin and sulfonamide. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details.

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 tested are presented as one dilution step above the testrange.

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Table A6.1b. Distribution of MICs and resistance (%) in *Salmonella* Typhimurium from randomly sampled healthy pigs (n=50), Denmark

DANMAP 2011

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	42.0	[28.2-56.8]								56.0	2.0		2.0		40.0						
Chloramphenicol	4.0	[0.5-13.7]									36.0	56.0	4.0			4.0					
Florfenicol	4.0	[0.5-13.7]									88.0	6.0	2.0	2.0		2.0					
Ampicillin	36.0	[22.9-50.8]							36.0	26.0	2.0				36.0						
Ceftiofur	0	[0-7.1]						44.0	52.0	4.0											
Cefotaxime	0	[0-7.1]				94.0	6.0														
Trimethoprim	8.0	[2.2-19.2]							92.0						8.0						
Sulfonamide	42.0	[28.2-56.8]													58.0					42.0	
Streptomycin	44.0	[30.0-58.7]										34.0	22.0	2.0	6.0		36.0				
Gentamicin	0	[0-7.1]						82.0	16.0	2.0											
Neomycin	12.0	[4.5-24.3]								86.0	2.0				12.0						
Apramycin	0	[0-7.1]									94.0	6.0									
Ciprofloxacin	0	[0-7.1]	6.0	84.0	10.0																
Nalidixic acid	0	[0-7.1]									90.0	8.0	2.0								
Colistin	0	[0-7.1]							98.0	2.0											
Spectinomycin	10.0	[3.3-21.8]												56.0	34.0		2.0	8.0			

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin, spectinomycin and sulfonamide. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details.

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

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Table A6.2. Distribution of MICs and resistance (%) in *Salmonella* Typhimurium from Danish pork (n=49), Denmark

DANMAP 2011

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	65.3	[50.4-78.3]								34.7				4.1	61.2						
Chloramphenicol	10.2	[3.4-22.2]								2.0	42.9	42.9	2.0		2.0	8.2					
Florfenicol	8.2	[2.3-19.6]								2.0	77.6	8.2	4.1	6.1	2.0						
Ampicillin	71.4	[56.7-83.4]							20.4	8.2					71.4						
Ceftiofur	0	[0-7.3]						38.8	59.2	2.0											
Cefotaxime	0	[0-7.3]				85.7	12.2	2.0													
Trimethoprim	10.2	[3.4-22.2]							89.8						10.2						
Sulfonamide	67.3	[52.5-80.1]													32.7					67.3	
Streptomycin	71.4	[56.7-83.4]										10.2	18.4	8.2	4.1	8.2	51.0				
Gentamicin	0	[0-7.3]						71.4	22.4	6.1											
Neomycin	6.1	[1.3-16.9]								81.6	12.2	2.0			4.1						
Apramycin	0	[0-7.3]									89.8	6.1	4.1								
Ciprofloxacin	0	[0-7.3]	10.2	73.5	16.3																
Nalidixic acid	0	[0-7.3]									87.8	10.2	2.0								
Colistin	0	[0-7.3]							100												
Spectinomycin	22.4	[11.8-36.6]												38.8	38.8	2.0	4.1	16.3			

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin, spectinomycin and sulfonamide. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A6.3. Distribution of MICs and resistance (%) in *Salmonella* Typhimurium from human cases reported as domestic sporadic (n=203), domestic outbreak related (n=21), associated with travel abroad (n=74) and of unknown origin (n=85), Denmark

DANMAP 2011

Antimicrobial agent	Origin	% 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	Domestic sporadic	52.7	[45.6-59.7]								45.3	2.0			5.4	47.3						
	Domestic outbreak	90.5	[69.6-98.8]								9.5					90.5						
	Travel abroad reported	74.3	[62.8-83.8]								23.0	2.7			4.1	70.3						
	Unknown origin	54.1	[43.0-65.0]								37.6	7.1	1.2		1.2	52.9						
Chloramphenicol	Domestic sporadic	13.8	[9.4-19.3]								0.5	13.8	68.5	3.4	0.5	2.0	11.3					
	Domestic outbreak	0	[0-16.1]									42.9	57.1									
	Travel abroad reported	28.4	[18.5-40.1]									9.5	60.8	1.4	1.4	4.1	23.0					
	Unknown origin	9.4	[4.2-17.7]									10.6	78.8	1.2		3.5	5.9					
Florfenicol	Domestic sporadic	8.9	[5.3-13.7]								2.5	65.0	20.2	3.4	6.4	0.5	2.0					
	Domestic outbreak	0	[0-16.1]								4.8	95.2										
	Travel abroad reported	23.0	[14.0-34.2]								4.1	59.5	9.5	4.1	1.4		21.6					
	Unknown origin	5.9	[1.9-13.2]								1.2	68.2	22.4	2.4	3.5	1.2	1.2					
Ampicillin	Domestic sporadic	54.7	[47.6-61.7]							15.8	27.6	2.0				54.7						
	Domestic outbreak	0	[0-16.1]							47.6	52.4											
	Travel abroad reported	68.9	[57.1-79.2]							14.9	16.2				1.4	67.6						
	Unknown origin	51.8	[40.7-62.7]							29.4	17.6	1.2				51.8						
Ceftiofur	Domestic sporadic	1.0	[0.1-3.5]						49.8	46.8	2.5		0.5	0.5								
	Domestic outbreak	0	[0-16.1]						95.2	4.8												
	Travel abroad reported	12.2	[5.7-21.8]						48.6	36.5	2.7			12.2								
	Unknown origin	0	[0-4.2]						52.9	45.9	1.2											
Trimethoprim	Domestic sporadic	2.5	[0.8-5.7]							97.0	0.5				0.5	2.0						
	Domestic outbreak	0	[0-16.1]							100												
	Travel abroad reported	9.5	[3.9-18.5]							89.2	1.4					9.5						
	Unknown origin	8.2	[3.4-16.2]							91.8						8.2						
Sulfonamide	Domestic sporadic	59.1	[52.0-65.9]													36.0	4.9				59.1	
	Domestic outbreak	0	[0-16.1]													100						
	Travel abroad reported	70.3	[58.5-80.3]													28.4		1.4			70.3	
	Unknown origin	67.1	[56.0-76.9]													30.6	2.4				67.1	
Streptomycin	Domestic sporadic	59.6	[52.5-66.4]										16.7	23.6	3.9	3.0	7.9	44.8				
	Domestic outbreak	4.8	[0.1-23.8]										90.5	4.8	4.8							
	Travel abroad reported	67.6	[55.7-78.0]										10.8	21.6	6.8		9.5	51.4				
	Unknown origin	60.0	[48.8-70.5]										11.8	28.2	7.1	1.2	7.1	44.7				

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Table A6.3 (Continued). Distribution of MICs and resistance (%) in *Salmonella* Typhimurium from human cases reported as domestic sporadic (n=203), domestic outbreak related (n=21), associated with travel abroad (n=74) and of unknown origin (n=85), Denmark

DANMAP 2011

Antimicrobial agent	Origin	% 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
Gentamicin	Domestic sporadic	2.0	[0.5-5.0]						84.7	12.3	1.0	0.5		0.5	1.0							
	Domestic outbreak	0	[0-16.1]						100													
	Travel abroad reported	13.5	[6.7-23.5]						71.6	12.2	2.7		1.4		12.2							
	Unknown origin	0	[0-4.2]						89.4	10.6												
Neomycin	Domestic sporadic	1.5	[0.3-4.3]								98.0	0.5	0.5		0.5	0.5						
	Domestic outbreak	0	[0-16.1]								95.2	4.8										
	Travel abroad reported	0	[0-4.9]								94.6	5.4										
	Unknown origin	1.2	[0.03-6.4]								97.6	1.2				1.2						
Apramycin	Domestic sporadic	0	[0-1.8]									93.6	5.4	1.0								
	Domestic outbreak	0	[0-16.1]									100										
	Travel abroad reported	1.4	[0.03-7.3]									85.1	10.8	2.7		1.4						
	Unknown origin	0	[0-4.2]									85.9	12.9	1.2								
Ciprofloxacin	Domestic sporadic	2.5	[0.8-5.7]	5.9	85.2	6.4	1.0	0.5	0.5				0.5									
	Domestic outbreak	0	[0-16.1]		95.2	4.8																
	Travel abroad reported	16.2	[8.7-26.6]	2.7	78.4	2.7		4.1	8.1	2.7	1.4											
	Unknown origin	5.9	[1.9-13.2]	1.2	90.6	2.4		3.5	1.2				1.2									
Nalidixic acid	Domestic sporadic	1.0	[0.1-3.5]									75.4	21.2	2.5			1.0					
	Domestic outbreak	0	[0-16.1]									76.2	23.8									
	Travel abroad reported	6.8	[2.2-15.1]									67.6	20.3	5.4	1.4		5.4					
	Unknown origin	3.5	[0.7-10.0]									68.2	27.1	1.2			3.5					
Colistin	Domestic sporadic	0	[0-1.8]							97.5	2.5											
	Domestic outbreak	0	[0-16.1]							100												
	Travel abroad reported	2.7	[0.3-9.4]							95.9	1.4	1.4	1.4									
	Unknown origin	0	[0-4.2]							97.6	2.4											
Spectinomycin	Domestic sporadic	14.3	[9.8-19.9]											0.5	64.0	21.2	0.5		13.8			
	Domestic outbreak	0	[0-16.1]												95.2	4.8						
	Travel abroad reported	13.5	[6.7-23.5]											1.4	73.0	12.2			13.5			
	Unknown origin	10.6	[5.0-19.2]											2.4	65.9	21.2		1.2	9.4			

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin, spectinomycin and sulfonamide. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A6.4. Distribution of MICs and resistance (%) in *Salmonella* Enteritidis from human cases reported as domestic sporadic (n=66), associated with travel abroad (n=167) and unknown origin (n=55), Denmark

DANMAP 2011

Antimicrobial agent	Origin	% 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	Domestic sporadic	3.0	[0.4-10.5]								87.9	9.1				3.0						
	Travel abroad reported	6.0	[2.9-10.7]								68.9	24.6	0.6			6.0						
	Unknown origin	5.5	[1.1-15.1]								78.2	16.4				5.5						
Chloramphenicol	Domestic sporadic	0	[0-5.4]									13.6	86.4									
	Travel abroad reported	0	[0-2.2]									19.2	80.8									
	Unknown origin	0	[0-6.5]									10.9	89.1									
Florfenicol	Domestic sporadic	0	[0-5.4]									86.4	13.6									
	Travel abroad reported	0	[0-2.2]								1.2	88.6	10.2									
	Unknown origin	0	[0-6.5]									87.3	10.9	1.8								
Ampicillin	Domestic sporadic	4.5	[0.9-12.7]							19.7	75.8					4.5						
	Travel abroad reported	7.2	[3.8-12.2]							20.4	70.7	1.8				7.2						
	Unknown origin	12.7	[5.3-24.5]							25.5	58.2	3.6				12.7						
Ceftiofur	Domestic sporadic	0	[0-5.4]						66.7	33.3												
	Travel abroad reported	1.2	[0.1-4.3]						59.9	38.3	0.6			1.2								
	Unknown origin	0	[0-6.5]						49.1	50.9												
Trimethoprim	Domestic sporadic	1.5	[0.04-8.2]							98.5						1.5						
	Travel abroad reported	1.8	[0.4-5.2]							97.6	0.6					1.8						
	Unknown origin	1.8	[0.05-9.7]							96.4	1.8					1.8						
Sulfonamide	Domestic sporadic	1.5	[0.04-8.2]													90.9	7.6				1.5	
	Travel abroad reported	3.6	[1.3-7.7]													91.0	5.4				3.6	
	Unknown origin	3.6	[0.4-12.5]													85.5	10.9				3.6	
Streptomycin	Domestic sporadic	0	[0-5.4]										90.9	9.1								
	Travel abroad reported	3.0	[1.0-6.8]										95.8	1.2	0.6			2.4				
	Unknown origin	1.8	[0.05-9.7]										90.9	7.3				1.8				
Gentamicin	Domestic sporadic	0	[0-5.4]						92.4	7.6												
	Travel abroad reported	0	[0-2.2]						94.6	5.4												
	Unknown origin	0	[0-6.5]						96.4	3.6												
Neomycin	Domestic sporadic	0	[0-5.4]								100											
	Travel abroad reported	0	[0-2.2]								100											
	Unknown origin	0	[0-6.5]								98.2	1.8										
Apramycin	Domestic sporadic	0	[0-5.4]									97.0	3.0									
	Travel abroad reported	0.6	[0.02-3.3]									97.0	2.4		0.6							
	Unknown origin	0	[0-6.5]									98.2	1.8									
Ciprofloxacin	Domestic sporadic	18.2	[9.8-29.6]	7.6	71.2	3.0	1.5	10.6	6.1													
	Travel abroad reported	24.0	[17.7-31.2]	7.2	66.5	2.4	6.6	12.6	4.8													
	Unknown origin	27.3	[16.1-41.0]	7.3	61.8	3.6		18.2	9.1													
Nalidixic acid	Domestic sporadic	18.2	[9.8-29.6]									77.3	4.5				18.2					
	Travel abroad reported	22.2	[16.1-29.2]									71.3	5.4	1.2			22.2					
	Unknown origin	27.3	[16.1-41.0]									72.7					27.3					
Colistin	Domestic sporadic	0	[0-5.4]							65.2	28.8	4.5	1.5									
	Travel abroad reported	0.6	[0.02-3.3]							44.3	35.3	18.6	1.2		0.6							
	Unknown origin	0	[0-6.5]							47.3	41.8	10.9										
Spectinomycin	Domestic sporadic	1.5	[0.04-8.2]											21.2	72.7	4.5		1.5				
	Travel abroad reported	0.6	[0.02-3.3]											19.8	78.4	1.2		0.6				
	Unknown origin	1.8	[0.05-9.7]											18.2	78.2	1.8		1.8				

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin, spectinomycin and sulfonamide. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A6.5. Distribution of MICs and resistance (%) in *Campylobacter jejuni* from broilers (n=43) and cattle (n=95), Denmark

DANMAP 2011

Antimicrobial agent	Animal species	% Resistant	95% Confidence interval	Distribution (%) of MICs												
				0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	>128
Tetracycline	Broilers	18.6	[8.4-33.4]			51.2	25.6	4.7					18.6			
	Cattle	4.2	[1.2-10.4]			71.6	23.2	1.1					4.2			
Chloramphenicol	Broilers	0	[0-8.2]						14.0	74.4	9.3	2.3				
	Cattle	0	[0-3.8]						29.5	68.4	2.1					
Erythromycin	Broilers	0	[0-8.2]				4.7	32.6	51.2	11.6						
	Cattle	0	[0-3.8]				9.5	16.8	66.3	7.4						
Streptomycin	Broilers	4.7	[0.6-15.8]					67.4	27.9				4.7			
	Cattle	0	[0-3.8]					73.7	26.3							
Gentamicin	Broilers	0	[0-8.2]		7.0	65.1	27.9									
	Cattle	0	[0-3.8]		9.5	69.5	18.9	2.1								
Ciprofloxacin	Broilers	23.3	[11.8-38.6]	7.0	46.5	18.6	4.7			2.3	20.9					
	Cattle	20.0	[12.5-29.5]	9.5	58.9	8.4	3.2				20.0					
Nalidixic acid	Broilers	23.3	[11.8-38.6]						4.7	53.5	14.0	4.7			23.3	
	Cattle	20.0	[12.5-29.5]						4.2	52.6	21.1	2.1			20.0	

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. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A6.6. Distribution of MICs and resistance (%) in *Campylobacter jejuni* from broiler meat (Danish n=61; imported n=70), Denmark

DANMAP 2011

Antimicrobial agent	Origin	% Resistant	95% Confidence interval	Distribution (%) of MICs												
				0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	>128
Tetracycline	Danish	9.8	[3.7-20.2]			63.9	23.0	3.3					9.8			
	Imported	35.7	[24.6-48.1]			37.1	12.9	10.0	4.3				35.7			
Chloramphenicol	Danish	0	[0-5.9]						29.5	60.7	9.8					
	Imported	1.4	[0.04-7.7]						18.6	54.3	21.4	4.3	1.4			
Erythromycin	Danish	0	[0-5.9]				19.7	32.8	34.4	13.1						
	Imported	7.1	[2.4-15.9]				12.9	32.9	45.7	1.4	1.4			5.7		
Streptomycin	Danish	1.6	[0.04-8.8]					88.5	9.8				1.6			
	Imported	1.4	[0.04-7.7]					92.9	5.7				1.4			
Gentamicin	Danish	0	[0-5.9]		26.2	65.6	8.2									
	Imported	0	[0-5.1]		34.3	58.6	7.1									
Ciprofloxacin	Danish	11.5	[4.7-22.2]	14.8	47.5	14.8	3.3	8.2		1.6	9.8					
	Imported	57.1	[44.7-68.9]	2.9	20.0	14.3	5.7				57.1					
Nalidixic acid	Danish	11.5	[4.7-22.2]						11.5	54.1	19.7	3.3			11.5	
	Imported	57.1	[44.7-68.9]						1.4	27.1	11.4	2.9		1.4	55.7	

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. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A6.7. Distribution of MICs and resistance (%) in *Campylobacter jejuni* from human cases reported as domestic sporadic (n=104) and associated with travel abroad (n=79), Denmark

DANMAP 2011

Antimicrobial agent	Origin	% Resistant	95% Confidence interval	Distribution (%) of MICs												
				0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	>128
Tetracycline	Domestically acquired	26.9	[18.7-36.5]			60.6	6.7	5.8					26.9			
	Travel abroad reported	62.0	[50.4-72.7]			26.6	7.6	3.8				2.5	59.5			
Chloramphenicol	Domestically acquired	0	[0-3.5]						63.5	29.8	6.7					
	Travel abroad reported	1.3	[0.03-6.9]						46.8	36.7	13.9	1.3		1.3		
Erythromycin	Domestically acquired	0	[0-3.5]				54.8	26.9	16.3	1.9						
	Travel abroad reported	2.5	[0.3-8.8]				39.2	36.7	21.5					2.5		
Streptomycin	Domestically acquired	3.8	[1.1-9.6]					93.3	2.9	1.0			2.9			
	Travel abroad reported	5.1	[1.4-12.5]					91.1	3.8				5.1			
Gentamicin	Domestically acquired	1.0	[0.02-5.2]		57.7	39.4	1.0	1.0				1.0				
	Travel abroad reported	1.3	[0.03-6.9]		59.5	35.4	3.8						1.3			
Ciprofloxacin	Domestically acquired	32.7	[23.8-42.6]	25.0	34.6	6.7	1.0		1.9		30.8					
	Travel abroad reported	83.5	[73.5-90.9]	3.8	10.1	2.5				11.4	72.2					
Nalidixic acid	Domestically acquired	32.7	[23.8-42.6]						13.5	47.1	5.8	1.0			32.7	
	Travel abroad reported	83.5	[73.5-90.9]							15.2		1.3		1.3	82.3	

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. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A6.8. Distribution of MICs and resistance (%) in *Campylobacter coli* from pigs (n=102), Denmark

DANMAP 2011

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (%) of MICs												
			0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	>128
Tetracycline	14.7	[8.5-23.1]			23.5	33.3	16.7	11.8	3.9	2.0	2.9	5.9			
Chloramphenicol	0	[0-3.6]						5.9	37.3	52.0	4.9				
Erythromycin	6.9	[2.8-13.6]				20.6	17.6	32.4	20.6	2.0			6.9		
Streptomycin	58.8	[48.6-68.5]					11.8	28.4	1.0		3.9	54.9			
Gentamicin	0	[0-3.6]		5.9	34.3	56.9	2.9								
Ciprofloxacin	6.9	[2.8-13.6]	22.5	35.3	29.4	3.9	2.0			6.9					
Nalidixic acid	6.9	[2.8-13.6]						5.9	15.7	55.9	12.7	2.9		6.9	

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. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A6.9. Distribution of MICs and resistance (%) in *Campylobacter coli* from broiler meat (Danish n=61; imported n=70), Denmark

DANMAP 2011

Antimicrobial agent	Origin	% Resistant	95% Confidence interval	Distribution (%) of MICs												
				0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	>128
Tetracycline	Danish	9.8	[3.7-20.2]			63.9	23.0	3.3					9.8			
	Imported	35.7	[24.6-48.1]			37.1	12.9	10.0	4.3				35.7			
Chloramphenicol	Danish	0	[0-5.9]						29.5	60.7	9.8					
	Imported	1.4	[0.04-7.7]						18.6	54.3	21.4	4.3	1.4			
Erythromycin	Danish	0	[0-5.9]				19.7	32.8	34.4	13.1						
	Imported	5.7	[1.6-14.0]				12.9	32.9	45.7	1.4	1.4			5.7		
Streptomycin	Danish	1.6	[0.04-8.8]					88.5	9.8				1.6			
	Imported	1.4	[0.04-7.7]					92.9	5.7				1.4			
Gentamicin	Danish	0	[0-5.9]		26.2	65.6	8.2									
	Imported	0	[0-5.1]		34.3	58.6	7.1									
Ciprofloxacin	Danish	11.5	[4.7-22.2]	14.8	47.5	14.8	3.3	8.2		1.6	9.8					
	Imported	57.1	[44.7-68.9]	2.9	20.0	14.3	5.7				57.1					
Nalidixic acid	Danish	11.5	[4.7-22.2]						11.5	54.1	19.7	3.3			11.5	
	Imported	57.1	[44.7-68.9]						1.4	27.1	11.4	2.9		1.4	55.7	

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. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Figure A7.1. Resistance (%) to tetracycline among *Enterococcus faecium* and *Enteroccus faecalis* from pigs and the consumption of tetracyclines in pigs, Denmark

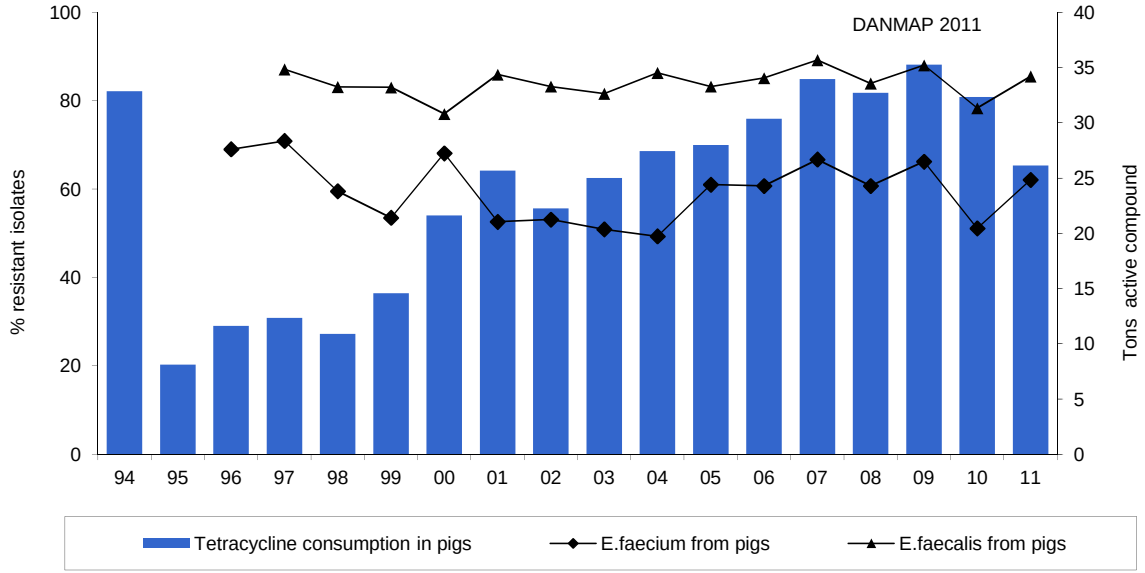

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Figure A7.2. Resistance (%) to erythromycin among *Enterococcus faecium* and *Enteroccus faecalis* from pigs and the the consumption of macrolides in pigs, Denmark

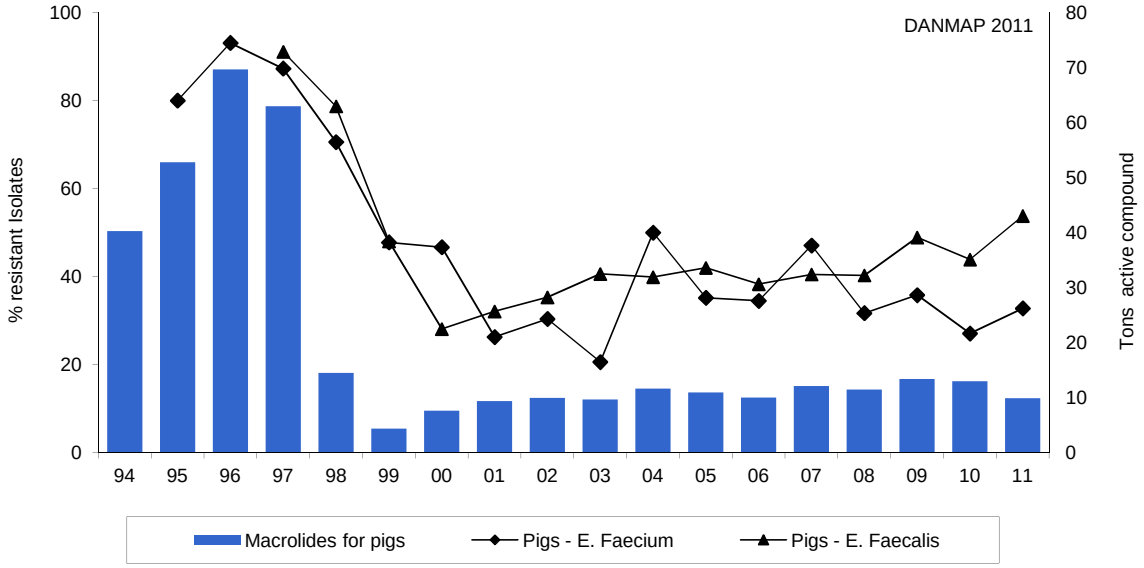

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Figure A7.3. Resistance (%) to streptogramins in *Enterococcus faecium* from pigs and the comsumption of virginiamycin, Denmark

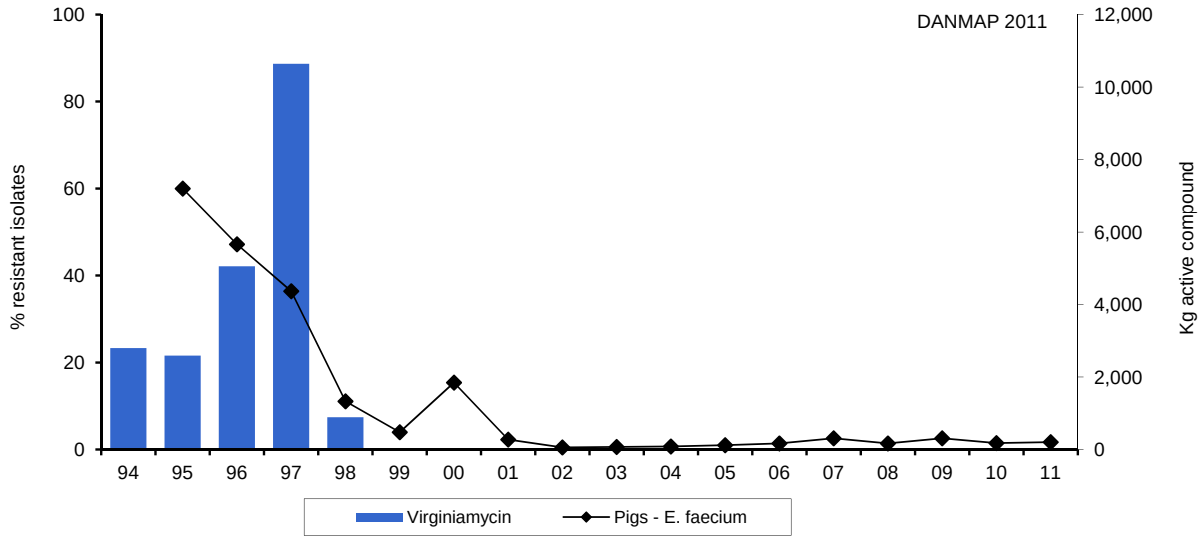

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Figure A7.4. Resistance (%) to streptogramins in *Enterococcus faecium* from broilers and the consumption of virginiamycin, Denmark

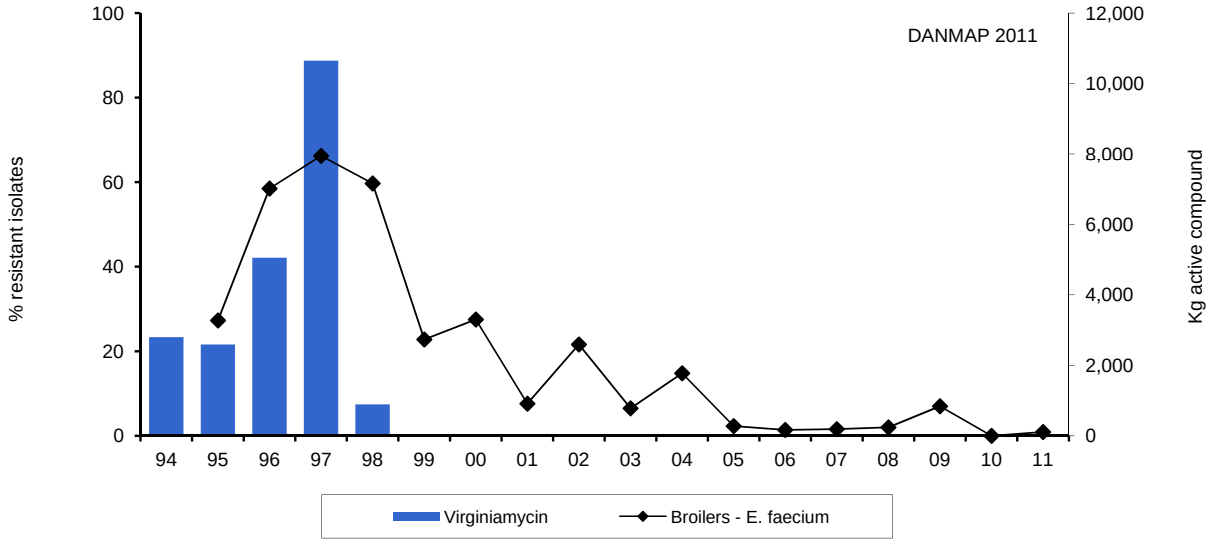

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Figure A7.5. Resistance (%) to avoparcin in *Enterococcus faecium and Enterococcus faecalis* from pigs and the consumption of avoparcin, Denmark

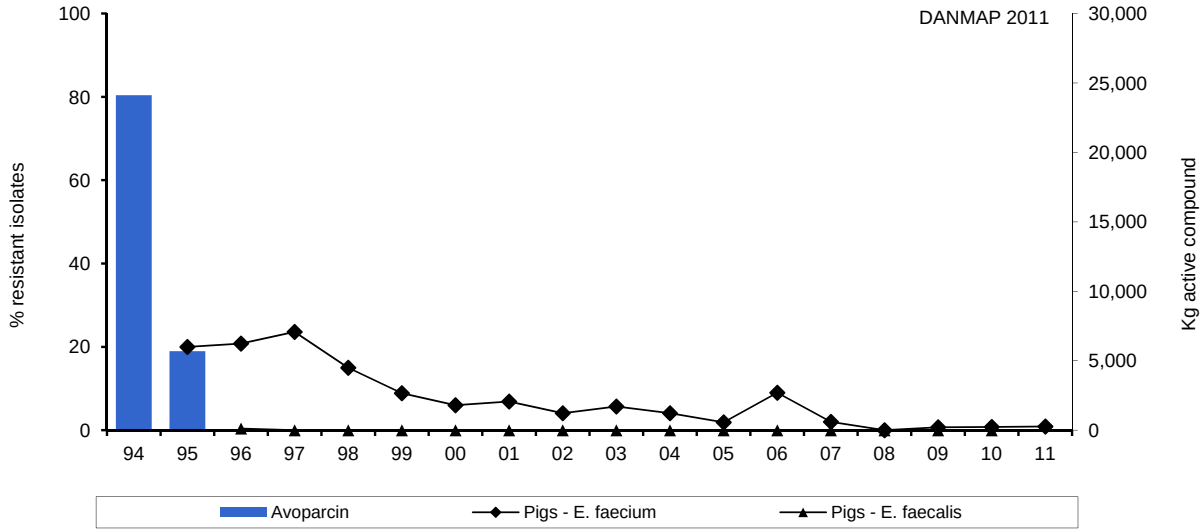

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Figure A7.6. Resistance (%) to avoparcin in *Enterococcus faecium* and *Enterococcus faecalis* from broilers and the consumption of avoparcin, Denmark

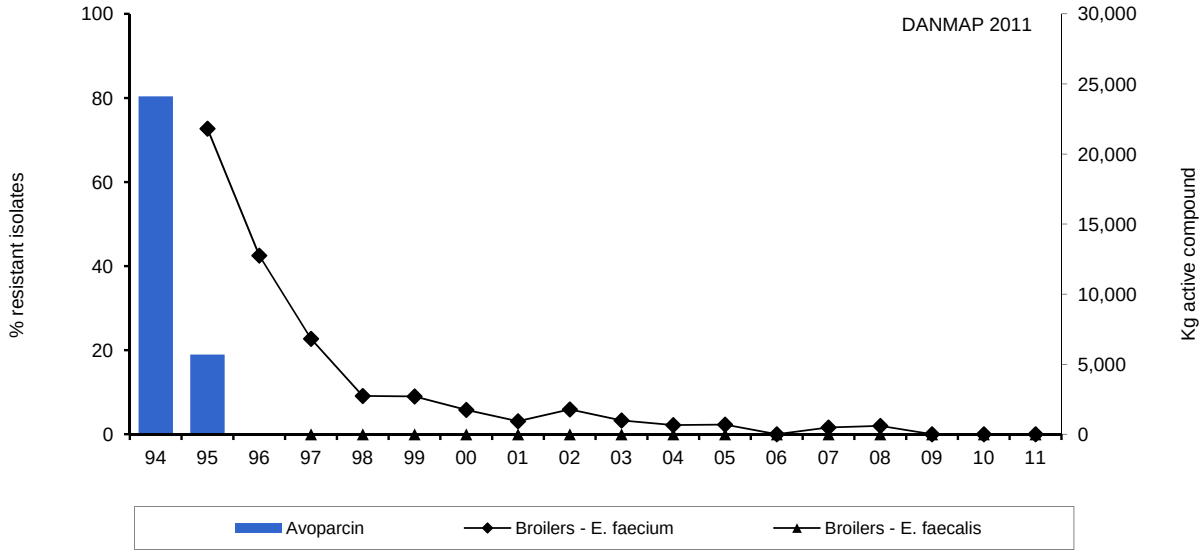

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Figure A7.7. Resistance (%) to avilamycin in *Enterococcus faecium* and *Enteroccus faecalis* from broilers and the consumption of avilamycin, Denmark

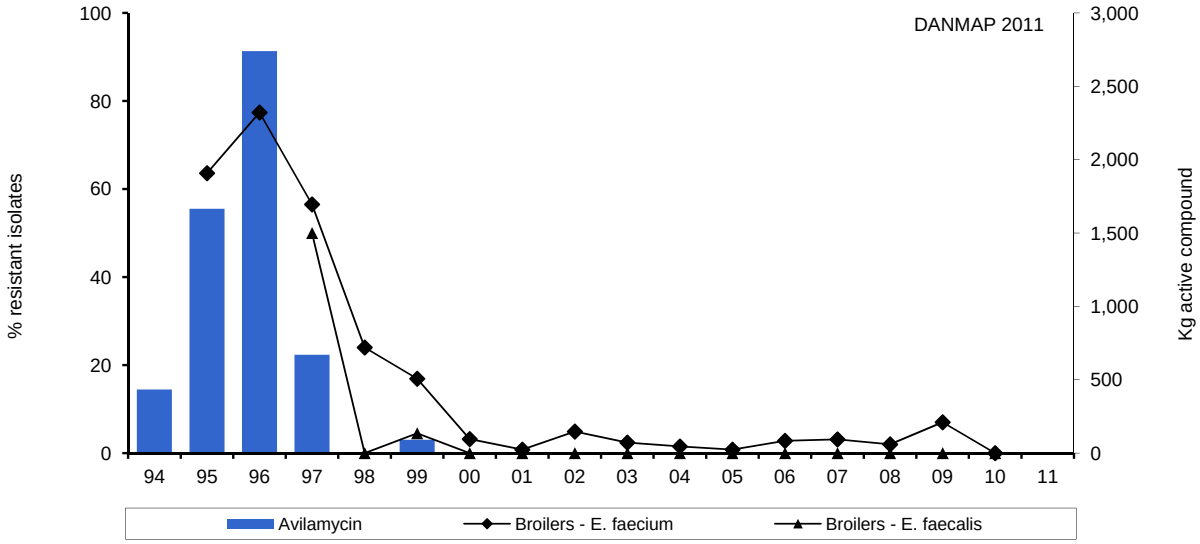

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Table A7.1. Distribution of MICs and resistance (%) in *Enterococcus faecium* from broilers (n=107) and pigs (n=116), Denmark

DANMAP 2011

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	2048	4096	>4096
Tetracycline	Broilers	4.7	[1.5-10.6]							94.4		0.9		0.9	0.9	2.8							
	Pigs	62.1	[52.6-70.9]							37.9				0.9	5.2	56.0							
Tigecycline	Broilers	0	[0-3.4]	2.8	41.1	52.3	3.7																
	Pigs	0	[0-3.1]		11.2	73.3	15.5																
Chloramphenicol	Broilers	0	[0-3.4]								1.9	43.9	50.5	0.9	2.8								
	Pigs	0	[0-3.1]								0.9	19.0	76.7	3.4									
Penicillin	Broilers	2.8	[0.6-8.0]								33.6	33.6	15.0	15.0	2.8								
	Pigs	23.3	[15.9-32.0]								17.2	14.7	6.9	37.9	23.3								
Ampicillin	Broilers	2.8	[0.6-8.0]								84.1	13.1	2.8										
	Pigs	10.3	[5.5-17.4]								40.5	49.1	10.3										
Erythromycin	Broilers	15.0	[8.8-23.1]						29.9	20.6	29.0	5.6	5.6	3.7	1.9	3.7							
	Pigs	32.8	[24.3-42.1]						8.6	7.8	27.6	23.3	5.2			27.6							
Quinupristin/dalfopristin	Broilers	0.9	[0.02-5.1]						9.3	46.7	31.8	11.2	0.9										
	Pigs	1.7	[0.2-6.1]					0.9	14.7	4.3	49.1	29.3	1.7										
Streptomycin	Broilers	3.7	[1.0-9.3]													96.3						3.7	
	Pigs	40.5	[31.5-50.0]													49.1	10.3	0.9	2.6	0.9	8.6	27.6	
Gentamicin	Broilers	0	[0-3.4]											99.1	0.9								
	Pigs	0.9	[0.02-4.7]											94.8	4.3	0.9							
Kanamycin	Broilers	0.9	[0.02-5.1]														39.3	47.7	10.3	1.9		0.9	
	Pigs	25.0	[17.4-33.9]														45.7	23.3	4.3	1.7		25.0	
Ciprofloxacin	Broilers	0	[0-3.4]						4.7	46.7	23.4	25.2											
	Pigs	0	[0-3.1]						31.0	31.0	12.9	20.7	4.3										
Vancomycin	Broilers	0	[0-3.4]							67.3	20.6	12.1											
	Pigs	0.9	[0.02-4.7]							92.2	6.0	0.9				0.9							
Teicoplanin	Broilers	0	[0-3.4]					68.2	31.8														
	Pigs	0.9	[0.02-4.7]					74.1	25.0						0.9								
Linezolid	Broilers	0	[0-3.4]							3.7	65.4	30.8											
	Pigs	0	[0-3.1]							4.3	71.6	24.1											
Salinomycin	Broilers	55.1	[45.2-64.8]								4.7	40.2	55.1										
	Pigs	0	[0-3.1]								100												

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin, quinopristin/dalfopristin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A7.2. Distribution of MICs and resistance (%) in *Enterococcus faecium* from broiler meat (Danish n=83; imported n=64), beef (imported n=16) and pork (Danish n=27), Denmark

DANMAP 2011

Antimicrobial agent	Food type	Origin	% 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	4096	>4096
Tetracycline	Broiler meat	Danish	9.6	[4.3-18.1]							90.4					2.4	7.2							
		Imported	34.4	[22.9-47.3]							65.6				1.6	3.1	29.7							
	Beef	Imported	0	[0-20.6]							100													
	Pork	Danish	7.4	[0.9-24.3]							92.6						7.4							
Tigecycline	Broiler meat	Danish	0	[0-4.3]		10.8	83.1	6.0																
		Imported	0	[0-5.6]		12.5	75.0	10.9	1.6															
	Beef	Imported	0	[0-20.6]		6.3	87.5	6.3																
	Pork	Danish	0	[0-12.8]		14.8	85.2																	
Chloramphenicol	Broiler meat	Danish	0	[0-4.3]								2.4	39.8	57.8										
		Imported	0	[0-5.6]								3.1	17.2	65.6	12.5	1.6								
	Beef	Imported	0	[0-20.6]									18.8	81.3										
	Pork	Danish	0	[0-12.8]								3.7	55.6	40.7										
Penicillin	Broiler meat	Danish	2.4	[0.3-8.4]								57.8	24.1	10.8	4.8	2.4								
		Imported	28.1	[17.6-40.8]								29.7	23.4	12.5	6.3	14.1	14.1							
	Beef	Imported	0	[0-20.6]								50.0	43.8	6.3										
	Pork	Danish	0	[0-12.8]								44.4	48.1	3.7	3.7									
Ampicillin	Broiler meat	Danish	2.4	[0.3-8.4]								94.0	3.6	2.4										
		Imported	26.6	[16.3-39.1]								70.3	3.1	14.1	3.1	1.6	7.8							
	Beef	Imported	0	[0-20.6]								100												
	Pork	Danish	0	[0-12.8]								96.3	3.7											
Erythromycin	Broiler meat	Danish	19.3	[11.4-29.4]						25.3	15.7	24.1	15.7	9.6	4.8	3.6	1.2							
		Imported	60.9	[47.9-72.9]						12.5	12.5	9.4	4.7	3.1	4.7		53.1							
	Beef	Imported	0	[0-20.6]						31.3	12.5	50.0	6.3											
	Pork	Danish	14.8	[4.2-33.7]						33.3	25.9	7.4	18.5	11.1			3.7							
Quinupristin/dalfopristin	Broiler meat	Danish	1.2	[0.03-6.5]					3.6	36.1	25.3	26.5	7.2		1.2									
		Imported	12.5	[5.6-23.2]						7.8	18.8	34.4	26.6	12.5										
	Beef	Imported	0	[0-20.6]						25.0	37.5	18.8	18.8											
	Pork	Danish	0	[0-12.8]						3.7	29.6	55.6	11.1											
Streptomycin	Broiler meat	Danish	0	[0-4.3]													94.0	6.0						
		Imported	28.1	[17.6-40.8]													62.5	9.4			3.1	9.4	15.6	
	Beef	Imported	0	[0-20.6]													100							
	Pork	Danish	3.7	[0.09-19.0]													96.3						3.7	

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Table A7.2 (Continued). Distribution of MICs and resistance (%) in *Enterococcus faecium* from broiler meat (Danish n=83; imported n=64), beef (imported n=16) and pork (Danish n=27), Denmark

DANMAP 2011

Antimicrobial agent	Food type	Origin	% 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	4096	>4096
Gentamicin	Broiler meat	Danish	0	[0-4.3]											98.8	1.2							
		Imported	0	[0-5.6]											96.9	3.1							
	Beef	Imported	0	[0-20.6]											100								
	Pork	Danish	0	[0-12.8]											96.3	3.7							
Kanamycin	Broiler meat	Danish	0	[0-4.3]														61.4	30.1	7.2	1.2		
		Imported	15.6	[7.8-26.9]														35.9	35.9	9.4	3.1	1.6	14.1
	Beef	Imported	0	[0-20.6]														43.8	50.0	6.3			
	Pork	Danish	3.7	[0.09-19.0]														48.1	40.7	3.7	3.7		3.7
Ciprofloxacin	Broiler meat	Danish	0	[0-4.3]						7.2	56.6	18.1	16.9	1.2									
		Imported	0	[0-5.6]						6.3	10.9	37.5	34.4	10.9									
	Beef	Imported	0	[0-20.6]						6.3	37.5	25.0	25.0	6.3									
	Pork	Danish	0	[0-12.8]						25.9	51.9	14.8	7.4										
Vancomycin	Broiler meat	Danish	0	[0-4.3]							61.4	33.7	4.8										
		Imported	0	[0-5.6]							89.1	6.3	4.7										
	Beef	Imported	0	[0-20.6]							87.5	6.3	6.3										
	Pork	Danish	0	[0-12.8]							100												
Teicoplanin	Broiler meat	Danish	0	[0-4.3]					75.9	24.1													
		Imported	0	[0-5.6]					68.8	31.3													
	Beef	Imported	0	[0-20.6]					37.5	62.5													
	Pork	Danish	0	[0-12.8]					7.4	85.2	7.4												
Linezolid	Broiler meat	Danish	0	[0-4.3]							3.6	90.4	6.0										
		Imported	0	[0-5.6]							7.8	89.1	3.1										
	Beef	Imported	0	[0-20.6]							18.8	68.8	12.5										
	Pork	Danish	0	[0-12.8]							11.1	77.8	11.1										
Salinomycin	Broiler meat	Danish	54.2	[42.9-65.2]								16.9	28.9	54.2									
		Imported	25.0	[15.0-37.4]								34.4	40.6	25.0									
	Beef	Imported	0	[0-20.6]								100											
	Pork	Danish	0	[0-12.8]								100											

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin, quinopristin/dalfopristin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A7.3. Distribution of MICs and resistance (%) in *Enterococcus faecalis* from broilers (n=110) and pigs (n=117), Denmark

DANMAP 2011

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	2048	4096	>4096
Tetracycline	Broilers	17.3	[10.7-25.7]							82.7				0.9	3.6	12.7							
	Pigs	85.5	[77.8-91.3]							13.7		0.9			3.4	82.1							
Tigecycline	Broilers	0	[0-3.3]	0.9	22.7	68.2	6.4	1.8															
	Pigs	0	[0-3.1]			23.9	66.7	9.4															
Chloramphenicol	Broilers	0	[0-3.3]										99.1	0.9									
	Pigs	23.1	[15.8-31.8]									10.3	61.5	2.6	2.6	3.4	19.7						
Penicillin	Broilers	0	[0-3.3]								6.4	90.9	2.7										
	Pigs	0	[0-3.1]								27.4	70.9	1.7										
Ampicillin	Broilers	0	[0-3.3]								100												
	Pigs	0	[0-3.1]								100												
Erythromycin	Broilers	14.5	[8.5-22.5]						70.9	9.1	5.5		3.6	4.5		6.4							
	Pigs	53.8	[44.4-63.1]						17.9	21.4	6.8		1.7	0.9		51.3							
Streptomycin	Broilers	3.6	[1.0-9.0]													10.9	84.5	0.9				3.6	
	Pigs	36.8	[28.0-46.2]													3.4	41.9	17.1	0.9	0.9	0.9	35.0	
Gentamicin	Broilers	0	[0-3.3]											99.1	0.9								
	Pigs	21.4	[14.3-29.9]											66.7	12.0	0.9		0.9		3.4	16.2		
Kanamycin	Broilers	0	[0-3.3]														100						
	Pigs	31.6	[23.3-40.9]														67.5	0.9				31.6	
Ciprofloxacin	Broilers	0	[0-3.3]						31.8	67.3	0.9												
	Pigs	0	[0-3.1]						23.9	72.6	3.4												
Vancomycin	Broilers	0	[0-3.3]							60.0	30.0	10.0											
	Pigs	0	[0-3.1]							29.1	54.7	16.2											
Teicoplanin	Broilers	0	[0-3.3]					98.2	1.8														
	Pigs	0	[0-3.1]					100															
Linezolid	Broilers	0	[0-3.3]							5.5	94.5												
	Pigs	0	[0-3.1]							22.2	76.1	1.7											
Salinomycin	Broilers	2.7	[0.6-7.8]								80.0	17.3	2.7										
	Pigs	0	[0-3.1]								100												

Vertical solid lines indicate EUCAST epidemiological cut-off values except for ciprofloxacin, kanamycin, quinopristin/dalfopristin and salinomycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A7.4. Distribution of MICs and resistance (%) in *Enterococcus faecalis* from broiler meat (Danish n=34; imported n=69), beef (Danish n=20; imported n=30), pork (Danish n=133; imported n=45), Denmark

Antimicrobial agent	Food type	Origin	% 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	4096	>4096
Tetracycline	Broiler meat	Danish	26.5	[12.9-44.4]							73.5					11.8	14.7							
		Imported	66.7	[54.3-77.6]							33.3					11.6	55.1							
	Beef	Danish	20.0	[5.7-43.7]							80.0						20.0							
		Imported	16.7	[5.6-34.7]							80.0		3.3			3.3	13.3							
	Pork	Danish	17.3	[11.3-24.8]							82.7					1.5	15.8							
		Imported	35.6	[21.9-51.2]							64.4				2.2	4.4	28.9							
Tigecycline	Broiler meat	Danish	0	[0-10.3]			47.1	47.1	5.9															
		Imported	0	[0-5.2]	1.4		42.0	50.7	5.8															
	Beef	Danish	0	[0-16.8]	5.0	5.0	40.0	45.0	5.0															
		Imported	0	[0-11.6]			50.0	50.0																
	Pork	Danish	0	[0-2.7]		1.5	67.7	27.8	3.0															
		Imported	0	[0-7.9]		6.7	37.8	55.6																
Chloramphenicol	Broiler meat	Danish	0	[0-10.3]									38.2	58.8	2.9									
		Imported	5.8	[1.6-14.2]									14.5	79.7			2.9	2.9						
	Beef	Danish	5.0	[0.1-24.9]									30.0	65.0				5.0						
		Imported	3.3	[0.08-17.2]									33.3	60.0		3.3	3.3							
	Pork	Danish	3.8	[1.2-8.6]									27.8	68.4			0.8	3.0						
		Imported	6.7	[1.4-18.3]									31.1	62.2			2.2	4.4						
Penicillin	Broiler meat	Danish	0	[0-10.3]								55.9	44.1											
		Imported	0	[0-5.2]								43.5	56.5											
	Beef	Danish	0	[0-16.8]								55.0	45.0											
		Imported	0	[0-11.6]								53.3	46.7											
	Pork	Danish	0	[0-2.7]								45.1	54.9											
		Imported	0	[0-7.9]								66.7	33.3											
Ampicillin	Broiler meat	Danish	0	[0-10.3]								100												
		Imported	0	[0-5.2]								100												
	Beef	Danish	0	[0-16.8]								100												
		Imported	0	[0-11.6]								100												
	Pork	Danish	0	[0-2.7]								100												
		Imported	0	[0-7.9]								100												
Erythromycin	Broiler meat	Danish	17.6	[6.8-34.5]						41.2	35.3	5.9			5.9	2.9	8.8							
		Imported	49.3	[37.0-61.6]						30.4	13.0	7.2				2.9	46.4							
	Beef	Danish	5.0	[0.1-24.9]						30.0	50.0	15.0					5.0							
		Imported	6.7	[0.8-22.1]						40.0	26.7	26.7		3.3			3.3							
	Pork	Danish	8.3	[4.2-14.3]						55.6	19.5	16.5					8.3							
		Imported	11.1	[3.7-24.1]						37.8	26.7	15.6	8.9				11.1							
Streptomycin	Broiler meat	Danish	5.9	[0.7-19.7]													14.7	61.8	17.6				5.9	
		Imported	33.3	[22.4-45.7]													18.8	34.8	13.0				33.3	
	Beef	Danish	10.0	[1.2-31.7]													50.0	30.0	10.0				10.0	
		Imported	10.0	[2.1-26.5]													40.0	40.0	10.0		3.3	3.3	3.3	
	Pork	Danish	5.3	[2.1-10.5]													42.1	48.1	4.5				5.3	
		Imported	6.7	[1.4-18.3]													22.2	57.8	1.0				6.7	

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Table A7.4 (Continued). Distribution of MICs and resistance (%) in *Enterococcus faecalis* from broiler meat (Danish n=34; imported n=69), beef (Danish n=20; imported n=30), pork (Danish n=133; imported n=45), Denmark

Antimicrobial agent	Food type	Origin	% 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	4096	>4096
Gentamicin	Broiler meat	Danish	0	[0-10.3]											85.3	14.7								
		Imported	1.4	[0.04-7.8]											89.9	8.7						1.4		
	Beef	Danish	0	[0-16.8]											95.0	5.0								
		Imported	3.3	[0.08-17.2]											93.3	3.3				3.3				
	Pork	Danish	1.5	[0.2-5.3]											90.2	8.3					0.8	0.8		
		Imported	4.4	[0.5-15.1]											84.4	11.1						4.4		
Kanamycin	Broiler meat	Danish	0	[0-10.3]														100						
		Imported	29.0	[18.7-41.2]														68.1		1.4	1.4		29.0	
	Beef	Danish	10.0	[1.2-31.7]														90.0					10.0	
		Imported	6.7	[0.8-22.1]														90.0	3.3				6.7	
	Pork	Danish	5.3	[2.1-10.5]														94.7					5.3	
		Imported	6.7	[1.4-18.3]														93.3					6.7	
Ciprofloxacin	Broiler meat	Danish	0	[0-10.3]						20.6	73.5	5.9												
		Imported	4.3	[0.9-12.2]						2.9	87.0	5.8					4.3							
	Beef	Danish	0	[0-16.8]						15.0	85.0													
		Imported	0	[0-11.6]						13.3	76.7	10.0												
	Pork	Danish	0	[0-2.7]						5.3	90.2	4.5												
		Imported	0	[0-7.9]						15.6	80.0	4.4												
Vancomycin	Broiler meat	Danish	0	[0-10.3]							41.2	44.1	14.7											
		Imported	0	[0-5.2]							37.7	47.8	14.5											
	Beef	Danish	0	[0-16.8]							40.0	60.0												
		Imported	0	[0-11.6]							40.0	43.3	16.7											
	Pork	Danish	0	[0-2.7]							30.8	54.9	14.3											
		Imported	0	[0-7.9]							31.1	57.8	11.1											
Teicoplanin	Broiler meat	Danish	0	[0-10.3]					97.1	2.9														
		Imported	0	[0-5.2]					94.2	5.8														
	Beef	Danish	0	[0-16.8]					100															
		Imported	0	[0-11.6]					100															
	Pork	Danish	0	[0-2.7]					98.5	1.5														
		Imported	0	[0-7.9]					100															
Linezolid	Broiler meat	Danish	0	[0-10.3]								100												
		Imported	0	[0-5.2]							18.8	81.2												
	Beef	Danish	0	[0-16.8]							20.0	80.0												
		Imported	0	[0-11.6]							10.0	90.0												
	Pork	Danish	0	[0-2.7]							14.3	85.7												
		Imported	0	[0-7.9]							17.8	82.2												
Salinomycin	Broiler meat	Danish	0	[0-10.3]								76.5	23.5											
		Imported	0	[0-5.2]								89.9	10.1											
	Beef	Danish	0	[0-16.8]								100												
		Imported	0	[0-11.6]								100												
	Pork	Danish	0	[0-2.7]								100												
		Imported	0	[0-7.9]								100												

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. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A7.5. Distribution of MICs and resistance (%) in indicator *Escherichia coli* from broilers (n=134), cattle (n=93) and pigs (n=157), Denmark

DANMAP 2011

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	2048	>2048
Tetracycline	Broilers	10.4	[5.8-16.9]								89.6					10.4						
	Cattle	5.4	[1.8-12.1]								93.5	1.1		1.1		4.3						
	Pigs	29.3	[22.3-37.1]								69.4	1.3		0.6	1.9	26.8						
Chloramphenicol	Broilers	0	[0-2.7]								5.2	39.6	55.2									
	Cattle	2.2	[0.3-7.6]								2.2	24.7	69.9	1.1			2.2					
	Pigs	4.5	[1.8-9.0]								2.5	36.3	54.1	2.5	3.8		0.6					
Florfenicol	Broilers	0	[0-2.7]								6.7	44.8	48.5									
	Cattle	2.2	[0.3-7.6]								1.1	33.3	59.1	4.3			2.2					
	Pigs	0	[0-2.3]								3.2	42.0	52.9	1.9								
Ampicillin	Broilers	20.1	[13.7-27.9]							5.2	49.3	24.6	0.7			20.1						
	Cattle	2.2	[0.3-7.6]							3.2	39.8	53.8	1.1			2.2						
	Pigs	26.8	[20.0-34.4]							4.5	33.8	33.1	1.9			26.8						
Ceftiofur	Broilers	0.7	[0.02-4.1]						97.8	1.5			0.7									
	Cattle	0	[0-3.9]						100													
	Pigs	1.3	[0.2-4.5]						97.5	1.3				1.3								
Cefotaxime	Broilers	0.7	[0.02-4.1]				98.5	0.7					0.7									
	Cattle	0	[0-3.9]				98.9	1.1														
	Pigs	1.3	[0.2-4.5]				98.1	0.6					1.3									
Trimethoprim	Broilers	9.7	[5.3-16.0]							88.8	1.5	0.7	0.7			8.2						
	Cattle	0	[0-3.9]							100												
	Pigs	21.0	[14.9-28.2]							77.7	1.3					21.0						
Sulfonamide	Broilers	16.4	[10.6-23.8]													83.6		0.7			15.7	
	Cattle	3.2	[0.7-9.1]													96.8					3.2	
	Pigs	28.0	[21.2-35.7]													72.0				0.6	27.4	
Streptomycin	Broilers	11.2	[6.4-17.8]										80.6	8.2		2.2	3.7	5.2				
	Cattle	5.4	[1.8-12.1]										88.2	6.5		1.1	2.2	2.2				
	Pigs	35.7	[28.2-43.7]										54.1	10.2	3.2	8.3	12.1	12.1				
Gentamicin	Broilers	0	[0-2.7]						63.4	32.1	4.5											
	Cattle	0	[0-3.9]						62.4	36.6	1.1											
	Pigs	0	[0-2.3]						68.8	26.8	4.5											
Neomycin	Broilers	0.7	[0.02-4.1]								97.0	2.2				0.7						
	Cattle	0	[0-3.9]								90.3	8.6	1.1									
	Pigs	3.2	[1.0-7.3]								85.4	10.2	1.3			3.2						
Apramycin	Broilers	0	[0-2.7]									66.4	33.6									
	Cattle	0	[0-3.9]									83.9	16.1									
	Pigs	0	[0-2.3]									82.8	16.6	0.6								
Ciprofloxacin	Broilers	9.0	[4.7-15.1]	71.6	19.4		0.7	5.2	1.5			0.7	0.7									
	Cattle	0	[0-3.9]	51.6	48.4																	
	Pigs	0.6	[0.02-3.5]	68.8	29.9	0.6							0.6									
Nalidixic acid	Broilers	9.0	[4.7-15.1]									90.3	0.7		0.7	0.7	7.5					
	Cattle	0	[0-3.9]									100										
	Pigs	0.6	[0.02-3.5]									99.4					0.6					
Colistin	Broilers	0	[0-2.7]							100												
	Cattle	0	[0-3.9]							100												
	Pigs	0	[0-2.3]							99.4	0.6											
Spectinomycin	Broilers	3.0	[0.8-7.5]											70.9	23.9	2.2	1.5	0.7	0.7			
	Cattle	0	[0-3.9]											60.2	38.7	1.1						
	Pigs	20.4	[14.4-27.5]											47.1	22.3	10.2	3.2	8.9	8.3			

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A7.6. Distribution of MICs and resistance (%) in indicator *Escherichia coli* from broiler meat (Danish n=122; imported n=140), beef (Danish n=37; imported n=44), pork (Danish n=92; imported n=30), Denmark

DANMAP 2011

Antimicrobial agent	Food type	Origin	% 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	Broiler meat	Danish	18.9	[12.3-26.9]								78.7	2.5			0.8	18.0						
		Imported	52.1	[43.5-60.7]								47.9					52.1						
	Beef	Danish	5.4	[0.7-18.2]								86.5	8.1				5.4						
		Imported	13.6	[5.2-27.4]								81.8	4.5		2.3		11.4						
	Pork	Danish	32.6	[23.2-43.2]								66.3	1.1				32.6						
		Imported	40.0	[22.7-59.4]								53.3	6.7				40.0						
Chloramphenicol	Broiler meat	Danish	1.6	[0.2-5.8]								0.8	36.9	59.8	0.8			1.6					
		Imported	18.6	[12.5-26.0]								0.7	30.7	47.1	2.9	8.6	5.7	4.3					
	Beef	Danish	0	[0-9.5]									18.9	78.4	2.7								
		Imported	6.8	[1.4-18.7]									25.0	68.2		2.3	2.3	2.3					
	Pork	Danish	2.2	[0.3-7.6]								5.4	27.2	64.1	1.1	1.1		1.1					
		Imported	20.0	[7.7-38.6]								6.7	16.7	56.7		6.7		13.3					
Florfenicol	Broiler meat	Danish	0	[0-3.0]								0.8	44.3	54.1	0.8								
		Imported	0.7	[0.02-3.9]								0.7	38.6	47.1	12.9			0.7					
	Beef	Danish	0	[0-9.5]									16.2	78.4	5.4								
		Imported	2.3	[0.06-12.0]									29.5	65.9	2.3	2.3							
	Pork	Danish	0	[0-3.9]								8.7	32.6	57.6	1.1								
		Imported	3.3	[0.08-17.2]								10.0	30.0	46.7	10.0			3.3					
Ampicillin	Broiler meat	Danish	23.0	[15.8-31.4]							6.6	35.2	35.2				23.0						
		Imported	57.1	[48.5-65.5]								24.3	18.6				57.1						
	Beef	Danish	5.4	[0.7-18.2]							2.7	29.7	59.5	2.7			5.4						
		Imported	9.1	[2.5-21.7]							2.3	27.3	54.5	6.8		2.3	6.8						
	Pork	Danish	29.3	[20.3-39.8]							9.8	26.1	33.7	1.1			29.3						
		Imported	33.3	[17.3-52.8]							6.7	20.0	40.0				33.3						
Ceftiofur	Broiler meat	Danish	2.5	[0.5-7.0]						96.7	0.8			1.6	0.8								
		Imported	7.1	[3.5-12.7]						91.4	1.4		0.7	2.1	4.3								
	Beef	Danish	0	[0-9.5]						100													
		Imported	0	[0-8.0]						93.2	6.8												
	Pork	Danish	0	[0-3.9]						98.9	1.1												
		Imported	3.3	[0.08-17.2]						93.3	3.3				3.3								
Cefotaxime	Broiler meat	Danish	2.5	[0.5-7.0]				97.5						2.5									
		Imported	7.1	[3.5-12.7]				92.9					0.7	6.4									
	Beef	Danish	0	[0-9.5]				97.3	2.7														
		Imported	0	[0-8.0]				97.7	2.3														
	Pork	Danish	0	[0-3.9]				98.9	1.1														
		Imported	3.3	[0.08-17.2]				96.7						3.3									
Trimethoprim	Broiler meat	Danish	12.3	[7.0-19.5]							87.7						12.3						
		Imported	37.9	[29.8-46.4]							62.1						37.9						
	Beef	Danish	0	[0-9.5]							100												
		Imported	4.5	[0.6-15.5]							95.5						4.5						
	Pork	Danish	23.9	[15.6-33.9]							76.1						23.9						
		Imported	30.0	[14.7-49.4]							70.0						30.0						
Sulfonamide	Broiler meat	Danish	22.1	[15.1-30.5]													77.9				22.1		
		Imported	55.7	[47.1-64.1]													44.3			2.1	53.6		
	Beef	Danish	0	[0-9.5]													100						
		Imported	4.5	[0.6-15.5]													95.5				4.5		
	Pork	Danish	27.2	[18.4-37.4]													72.8	1.1		1.1	25.0		
		Imported	33.3	[17.3-52.8]													66.7				33.3		

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Table A7.6 (Continued). Distribution of MICs and resistance (%) in indicator *Escherichia coli* from broiler meat (Danish n=122; imported n=140), beef (Danish n=37; imported n=44), pork (Danish n=92; imported n=30), Denmark

Antimicrobial agent	Food type	Origin	% 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
Streptomycin	Broiler meat	Danish	11.5	[6.4-18.5]										80.3	8.2		1.6	2.5	7.4				
		Imported	45.7	[37.3-54.3]										47.9	6.4	10.0	6.4	5.0	24.3				
	Beef	Danish	2.7	[0.07-14.2]										83.8	13.5			2.7					
		Imported	9.1	[2.5-21.7]										81.8	9.1	2.3			6.8				
	Pork	Danish	37.0	[27.1-47.7]										53.3	9.8	3.3	9.8	10.9	13.0				
		Imported	30.0	[14.7-49.4]										56.7	13.3	6.7	3.3	6.7	13.3				
Gentamicin	Broiler meat	Danish	0	[0-3.0]						53.3	41.8	4.9											
		Imported	2.9	[0.8-7.2]						52.1	41.4	3.6			0.7	2.1							
	Beef	Danish	0	[0-9.5]						59.5	40.5												
		Imported	0	[0-8.0]						59.1	38.6	2.3											
	Pork	Danish	0	[0-3.9]						57.6	37.0	5.4											
		Imported	0	[0-11.6]						53.3	40.0	6.7											
Neomycin	Broiler meat	Danish	4.1	[1.3-9.3]								73.0	21.3	1.6	0.8	0.8	2.5						
		Imported	12.1	[7.2-18.7]								75.0	12.9			1.4	10.7						
	Beef	Danish	0	[0-9.5]								86.5	13.5										
		Imported	0	[0-8.0]								97.7	2.3										
	Pork	Danish	2.2	[0.3-7.6]								81.5	16.3				2.2						
		Imported	3.3	[0.08-17.2]								76.7	20.0				3.3						
Apramycin	Broiler meat	Danish	0	[0-3.0]									78.7	21.3									
		Imported	0.7	[0.02-3.9]									75.7	21.4	2.1		0.7						
	Beef	Danish	0	[0-9.5]									81.1	18.9									
		Imported	0	[0-8.0]									77.3	22.7									
	Pork	Danish	0	[0-3.9]									79.3	20.7									
		Imported	0	[0-11.6]									63.3	36.7									
Ciprofloxacin	Broiler meat	Danish	5.7	[2.3-11.5]	50.8	43.4			4.9	0.8													
		Imported	40.7	[32.5-49.3]	25.7	32.1	1.4	2.1	16.4	15.7	1.4	0.7	0.7	3.6									
	Beef	Danish	0	[0-9.5]	45.9	51.4	2.7																
		Imported	4.5	[0.6-15.5]	45.5	47.7	2.3		2.3					2.3									
	Pork	Danish	0	[0-3.9]	52.2	46.7	1.1																
		Imported	10.0	[2.1-26.5]	40.0	50.0			3.3					6.7									
Nalidixic acid	Broiler meat	Danish	5.7	[2.3-11.5]									92.6	1.6			0.8	4.9					
		Imported	38.6	[30.5-47.2]									57.9	2.1	1.4		5.0	33.6					
	Beef	Danish	0	[0-9.5]									100										
		Imported	4.5	[0.6-15.5]									95.5					4.5					
	Pork	Danish	0	[0-3.9]									100										
		Imported	10.0	[2.1-26.5]									90.0					10.0					
Colistin	Broiler meat	Danish	0	[0-3.0]							99.2	0.8											
		Imported	4.3	[1.6-9.1]							95.7		1.4	2.9									
	Beef	Danish	0	[0-9.5]							100												
		Imported	0	[0-8.0]							100												
	Pork	Danish	0	[0-3.9]							100												
		Imported	0	[0-11.6]							100												
Spectinomycin	Broiler meat	Danish	1.6	[0.2-5.8]											66.4	29.5	2.5		0.8	0.8			
		Imported	31.4	[23.9-39.8]											40.0	17.9	10.7	3.6	7.9	20.0			
	Beef	Danish	0	[0-9.5]											48.6	48.6	2.7						
		Imported	2.3	[0.06-12.0]											61.4	36.4				2.3			
	Pork	Danish	15.2	[8.6-24.2]											43.5	30.4	10.9	5.4	8.7	1.1			
		Imported	10.0	[2.1-26.5]											53.3	33.3	3.3	3.3		6.7			

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A9.1. Distribution of MICs and resistance (%) in *Escherichia coli* (O140) from diagnostic pigs (n=31), Denmark

DANMAP 2011

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	71.0	[52.0-85.8]								29.0					71.0						
Chloramphenicol	9.7	[2.0-25.8]								19.4	64.5	6.5			3.2	6.5					
Florfenicol	0	[0-11.2]								32.3	61.3	3.2	3.2								
Ampicillin	48.4	[30.2-66.9]							6.5	45.2					48.4						
Ceftiofur	0	[0-11.2]						100													
Cefotaxime	0	[0-11.2]				100															
Trimethoprim	77.4	[58.9-90.4]							22.6						77.4						
Sulfonamide	74.2	[55.4-88.1]													25.8				3.2	71.0	
Streptomycin	87.1	[70.2-96.4]										12.9		3.2	12.9	32.3	38.7				
Gentamicin	3.2	[0.08-16.7]						90.3	6.5			3.2									
Neomycin	9.7	[2.0-25.8]								87.1	3.2		3.2		6.5						
Apramycin	3.2	[0.08-16.7]									96.8				3.2						
Ciprofloxacin	6.5	[0.8-21.4]	83.9	9.7		3.2		3.2													
Nalidixic acid	3.2	[0.08-16.7]									96.8					3.2					
Colistin	0	[0-11.2]							100												
Spectinomycin	48.4	[30.2-66.9]											19.4	16.1	16.1	6.5	3.2	38.7			

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A9.2. Distribution of MICs and resistance (%) in *Escherichia coli* F5 (K99) from diagnostic cattle (n=25), Denmark 2010-2011

DANMAP 2011

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	80.0	[59.3-93.2]								20.0					80.0						
Chloramphenicol	24.0	[9.4-45.1]									8.0	68.0		4.0		20.0					
Florfenicol	0	[0-13.7]									28.0	68.0	4.0								
Ampicillin	96.0	[79.6-99.9]								4.0					96.0						
Cefotaxime	4.0	[0.1-20.4]				80.0	16.0	4.0													
Trimethoprim	20.0	[6.8-40.7]							80.0						20.0						
Sulfonamide	52.0	[31.3-72.2]													48.0					52.0	
Streptomycin	60.0	[38.7-78.9]										28.0	12.0		12.0	28.0	20.0				
Gentamicin	4.0	[0.1-20.4]						32.0	48.0	16.0				4.0							
Neomycin	20.0	[6.8-40.7]								72.0	4.0	4.0		4.0	16.0						
Apramycin	4.0	[0.1-20.4]									40.0	52.0	4.0		4.0						
Ciprofloxacin	20.0	[6.8-40.7]	68.0	12.0			16.0	4.0													
Nalidixic acid	20.0	[6.8-40.7]									80.0					20.0					
Colistin	0	[0-13.7]							96.0	4.0											
Spectinomycin	28.0	[12.1-49.4]											64.0	8.0		4.0	16.0	8.0			

Vertical solid lines indicate EUCAST epidemiological cut-off values except for apramycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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Table A9.3. Distribution of MICs and resistance (%) in *Staphylococcus hyicus* from pigs (n=30), Denmark 2009-2011

DANMAP 2011

Antimicrobial agent	% Resistant	95% Confidence interval	Distribution (%) of MICs														
			0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	>512
Tetracycline	43.3	[25.5-62.6]				56.7						20.0	23.3				
Chloramphenicol	0	[0-11.6]							36.7	63.3							
Florfenicol	0	[0-11.6]						50.0	50.0								
Penicillin	60.0	[40.6-77.3]	36.7	3.3				3.3	6.7	10.0	16.7	23.3					
Cefoxitin	0	[0-11.6]				86.7	10.0	3.3									
Trimethoprim	50.0	[31.3-68.7]					10.0	40.0	20.0				30.0				
Sulfonamide	0	[0-11.6]										63.3	16.7	20.0			
Erythromycin	33.3	[17.3-52.8]			33.3	33.3						33.3					
Streptomycin	40.0	[22.7-59.4]							26.7	33.3		3.3	3.3	33.3			
Gentamicin	0	[0-11.6]			63.3	36.7											
Ciprofloxacin	0	[0-11.6]		66.7	26.7	3.3	3.3										
Spectinomycin	36.7	[19.9-56.1]										3.3	60.0			36.7	
Tiamulin	46.7	[28.3-65.7]				36.7	16.7			3.3			43.3				

Vertical solid lines indicate EUCAST epidemiological cut-off values except for erythromycin. EUCAST clinical breakpoints are indicated as vertical dotted lines if different from the corresponding epidemiological cut-off values. See table 10.2 for further details

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 tested are presented as one dilution step above the testrange

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