

NORM / NORM – VET 2016

Antibiotikabruk og resistens i Norge

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NORM – UNN HF



Norsk overvåkingsystem for
antibiotikaresistens hos mikrober
(NORM)

FORSKERNE FRYKTER PANDI

SUPERBAKTERIE SPREER SEG

ER ALLEREDE I NORGE SIDE 12, 13 OG 14

AFTONBLADET Hälsa

PLUS! Köp Plus! Logga in Skapa inloggning Tipsa Aftonbladet Aftonbladet shop

TISDAG 2011-08-16

Hälsa

Allergi
Barnhälsa
Sömn
Vikt

Nyheter
Sportbladet
Nöjesbladet
Webbtv
Vi gillar olika
Vädret

15-ÅRINGEN DAGSOMMEN
AFTONBLADET
NYA REGN-KAOS

Publicerad: 2011-01-21 9 kommentarer

Superbakteriegen på frammarsch

Hotar att göra antibiotika værdelöst

Den resistenta superbakteriegen NDM-1 frodas i avløpp og kranvatten runt om i New Dehli. Det viser en studie som kommer att publiceras i välrenommerade The Lancet, skriver Svenska Dagbladet.

Genen gör bakterier motståndskraftiga mot nästan all antibiotika som finns i dag. Nu varnar forskare for att den kan komma att spridas snabbt over världen.

KÖP ETT AV MARKNADENS BÄSTA VIRUSSKYDD
- PC TOOLS INTERNET SECURITY
59 KR

NDM-1 (New Dehli metallo-beta-lactamase)

- NDM-1 er en «superbakterie» som er resistent mot nesten alle typer antibiotika.

- Bakterietypen er oppdaget hos en lang rekke personer som har reist til blant annet India og Pakistan for å få utført kosmetiske inngrep.

- To norske pasienter er påvist NDM-1 ved sykehusene i Leva...

... den andre sykehuset i Leva...
... eneste måten...
... NDM-1 på, er...
... forskerne raskt...
... fisere tilfelle...
... deretter isoler...
... e pasienter.

Invasjon av SUPERBAKTERIE

- ADVARER mot HELSEREISER
- FRYKTER UTBREDELSE I NORGE
- VIKTIG med RESTRIKTIV ANTIBIOTIKABRUK

NDM-1 (New Dehli metallo-beta-lactamase)

... Forskere frykter...
... Seneste nytt...
... Advare med bakterier...



SENESTE NYT 10:57 Ghitas søn: Synd mor skal skilles



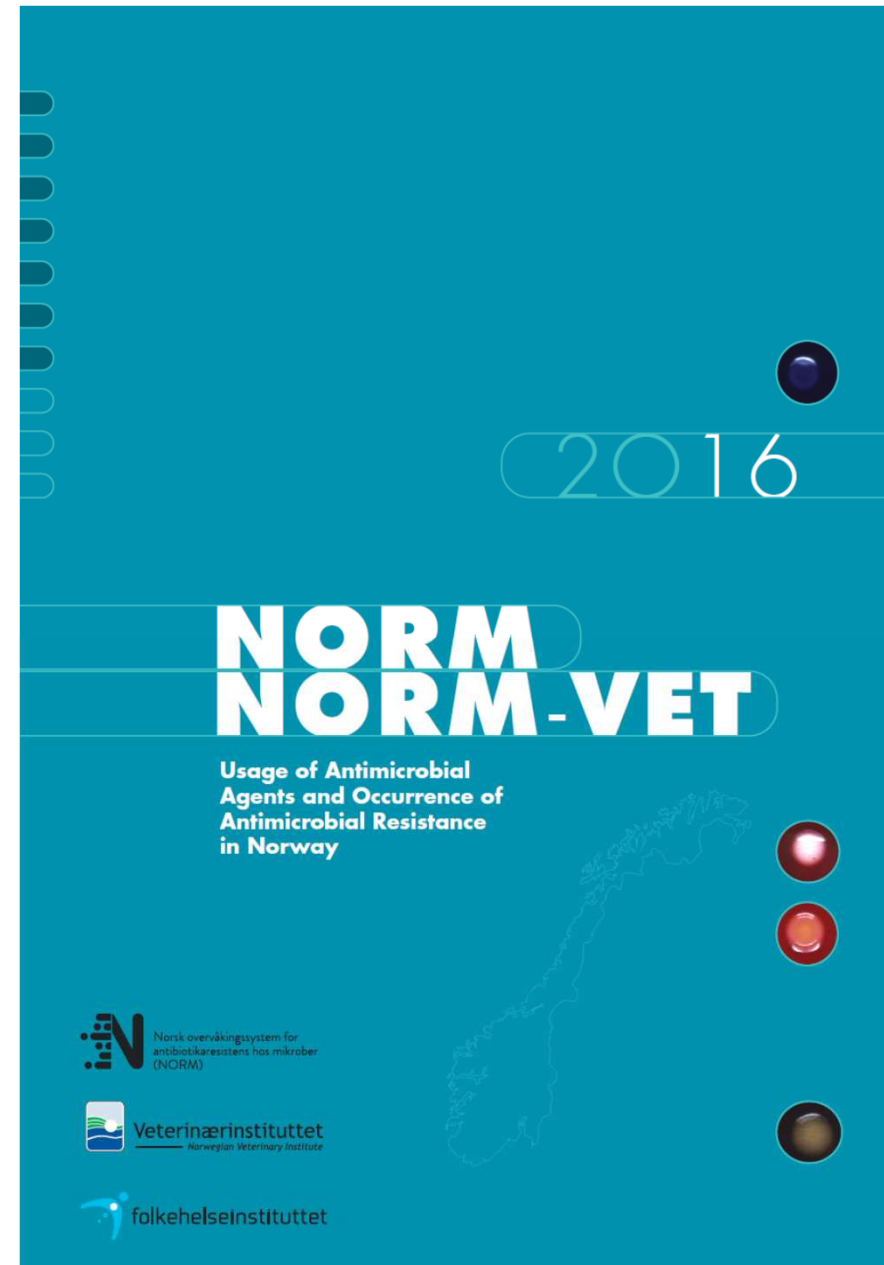
(Foto: colourbox.com) Se stort billede

Kan ikke behandles med antibiotika

Farlig superbakterie set for første gang i Danmark

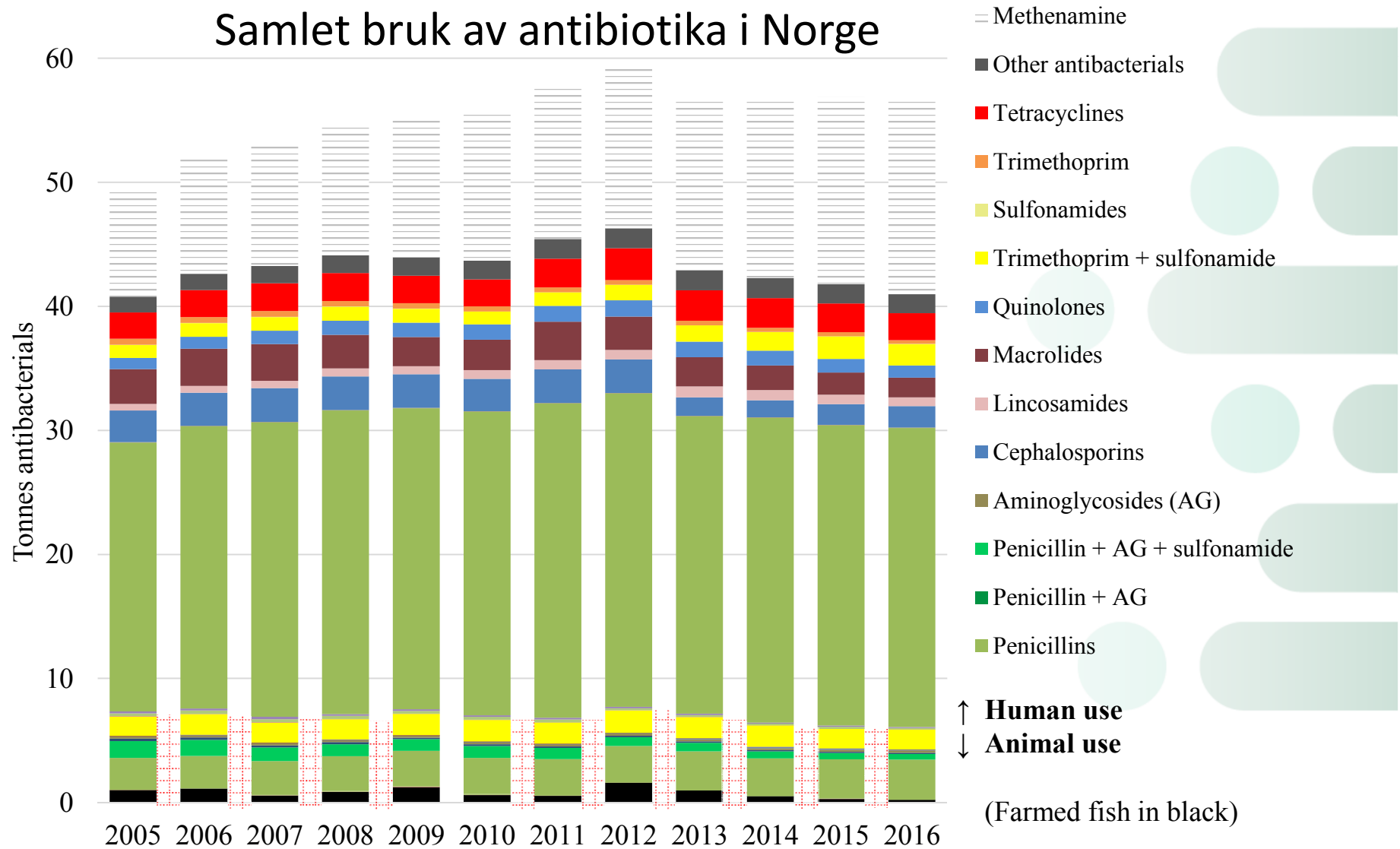


- Antibiotikaforbruket i Norge 2016
- Antibiotikaresistens i Norge 2016
- Mennesker og dyr
- Artikler om aktuelle tema



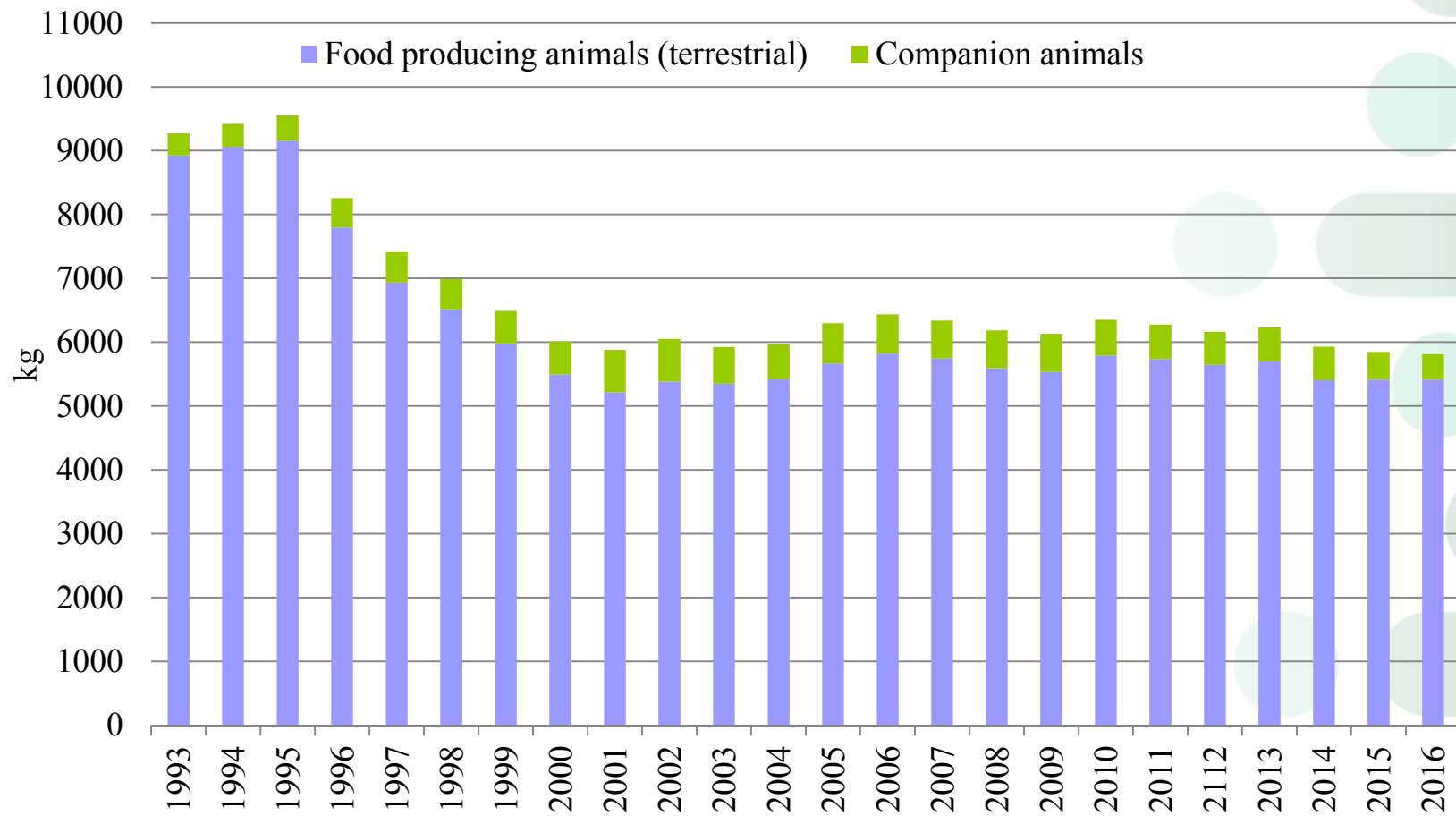


Samlet bruk av antibiotika i Norge



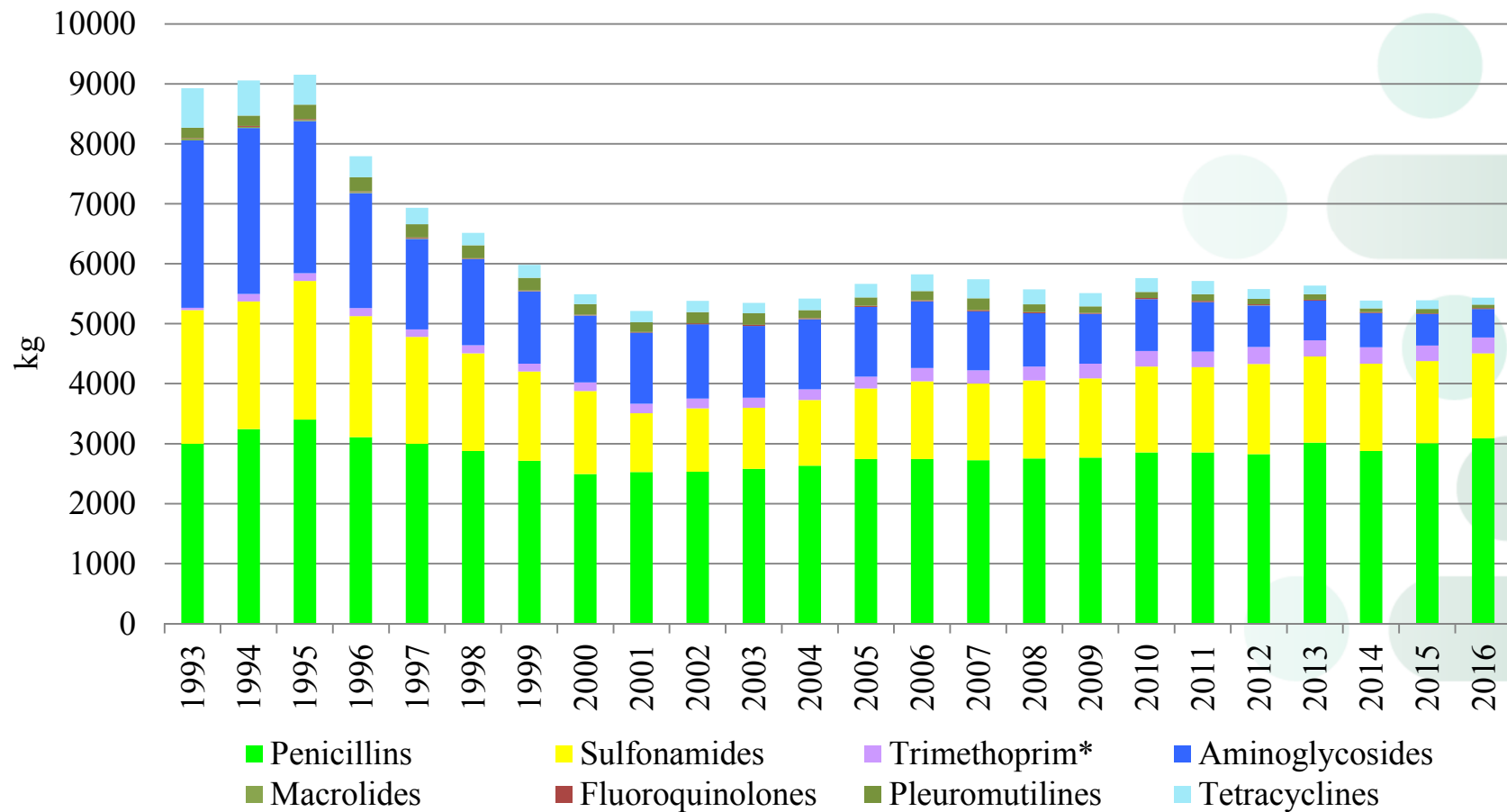


Bruk av antibiotika til dyr



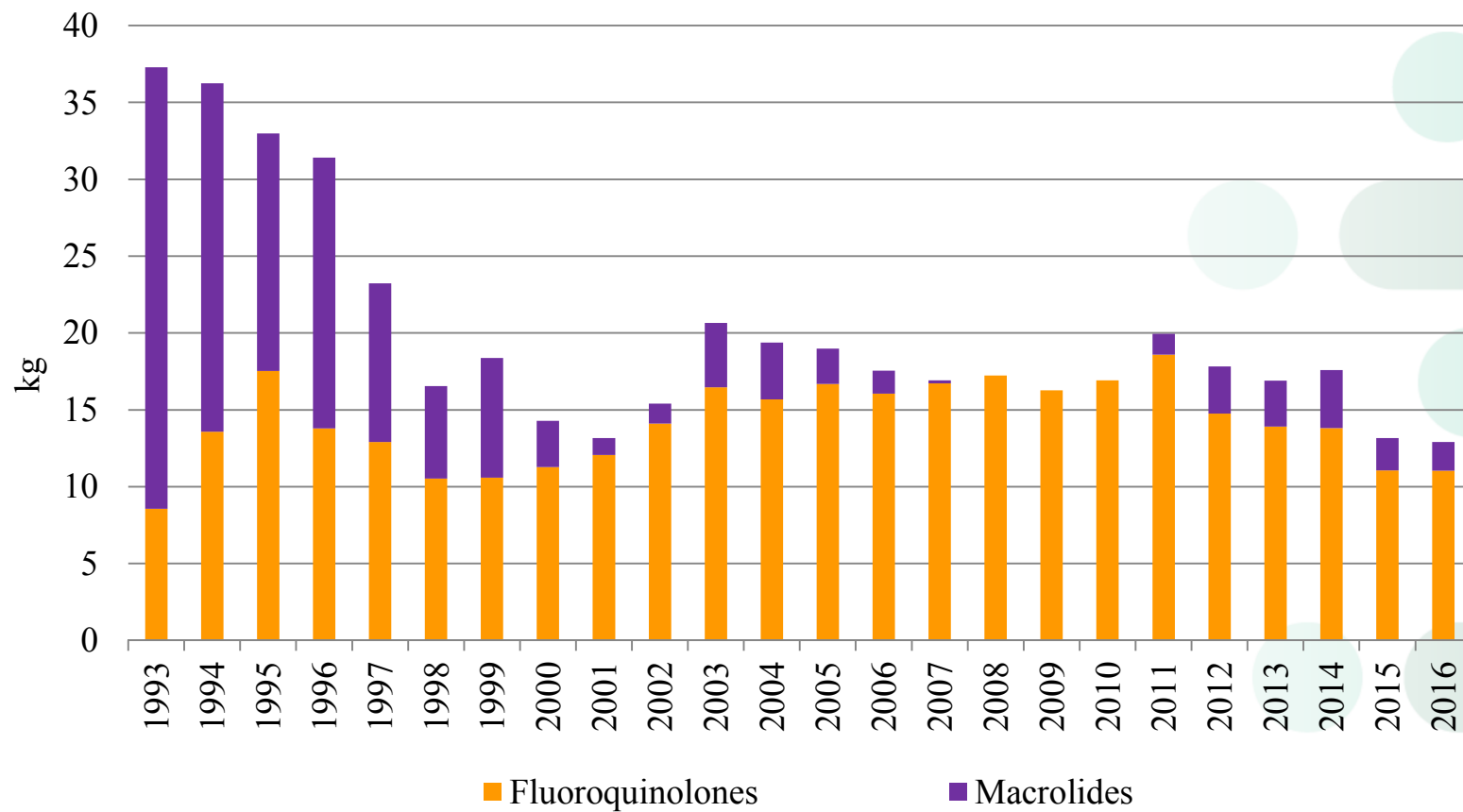


Bruk av antibiotika til produksjonsdyr



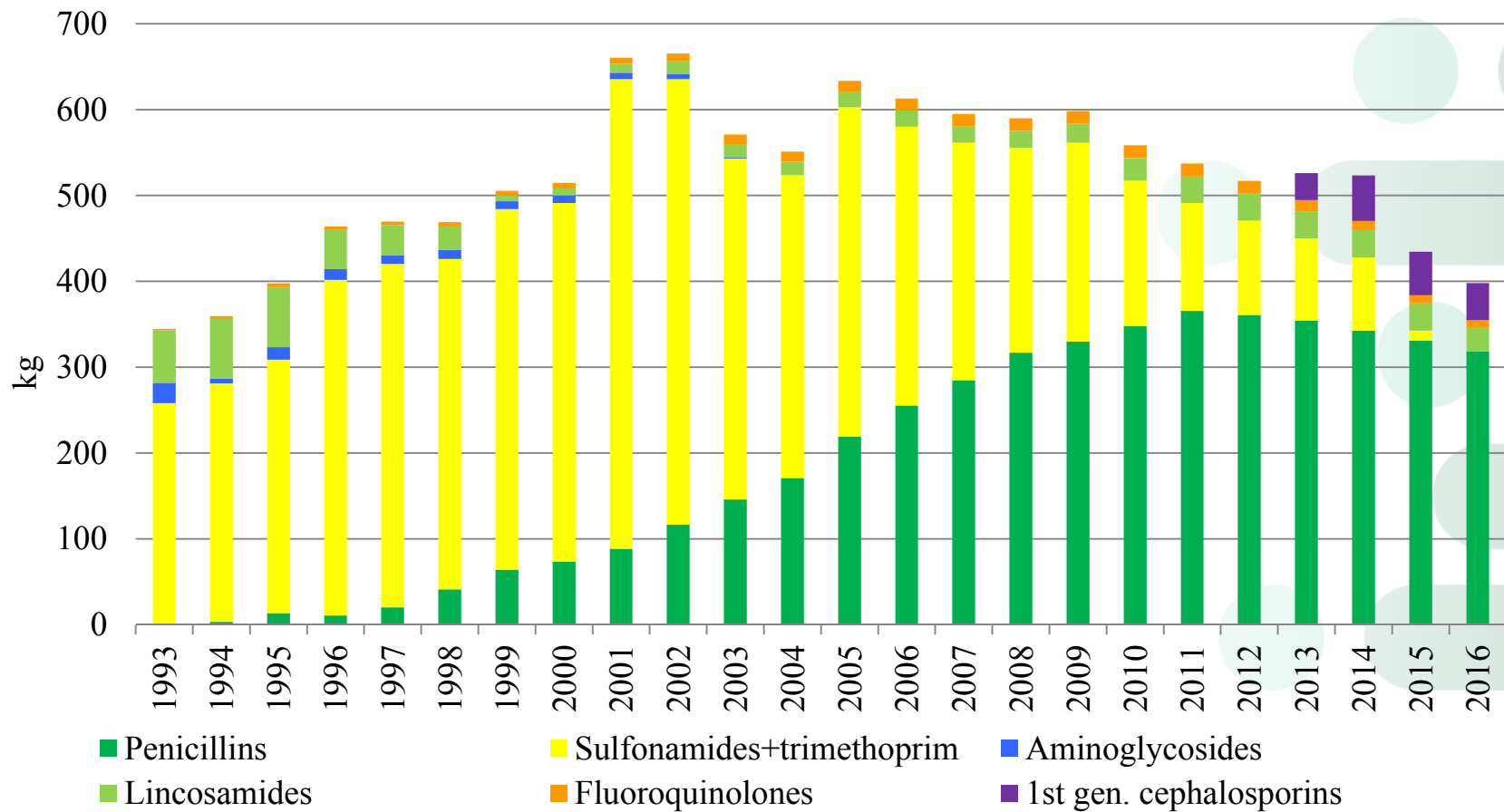


Bruk av «kritisk viktige» antibiotika til produksjonsdyr



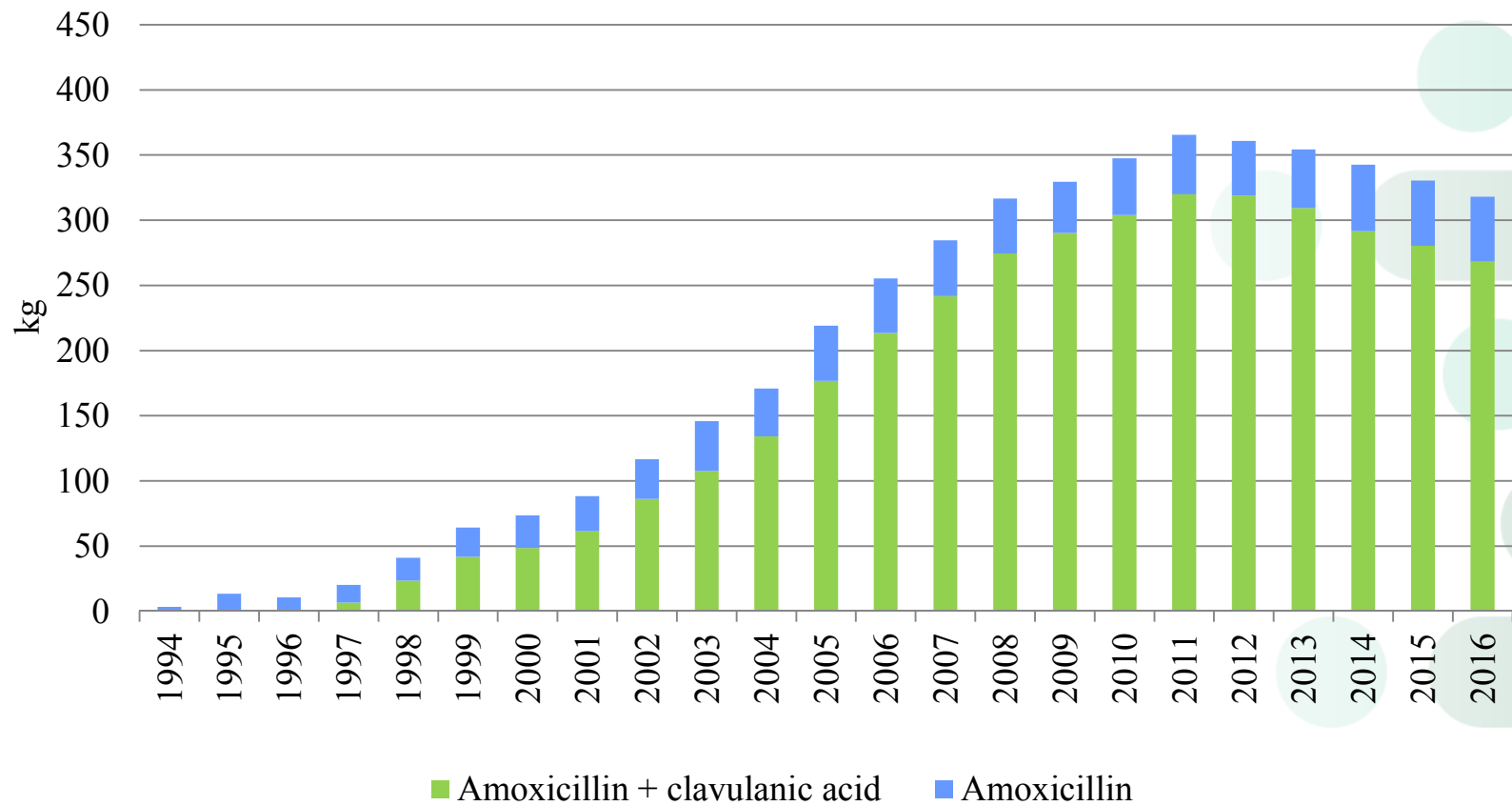


Bruk av antibiotika til sports- og kjæledyr



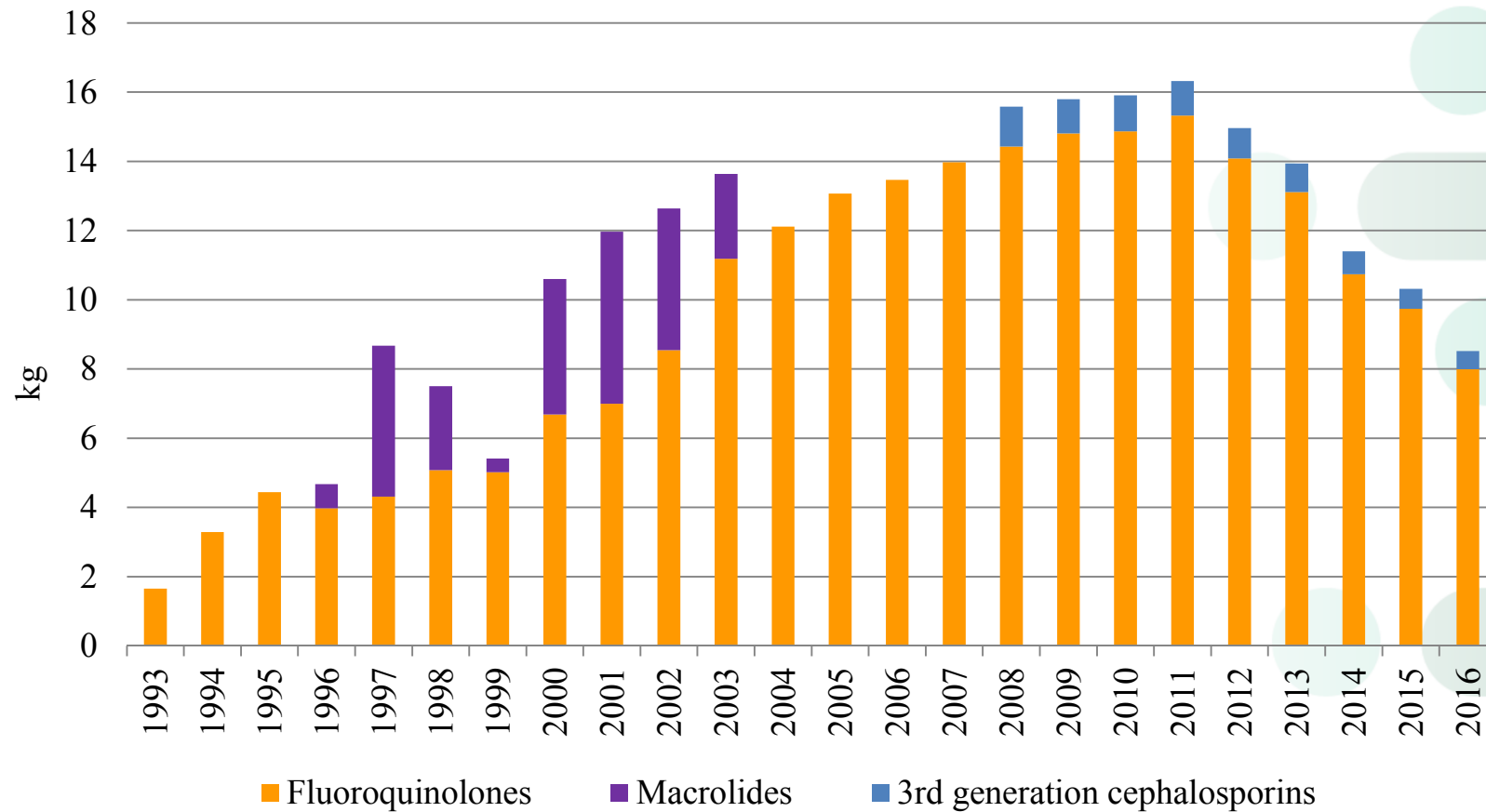


Penicilliner til sports- og kjæledyr



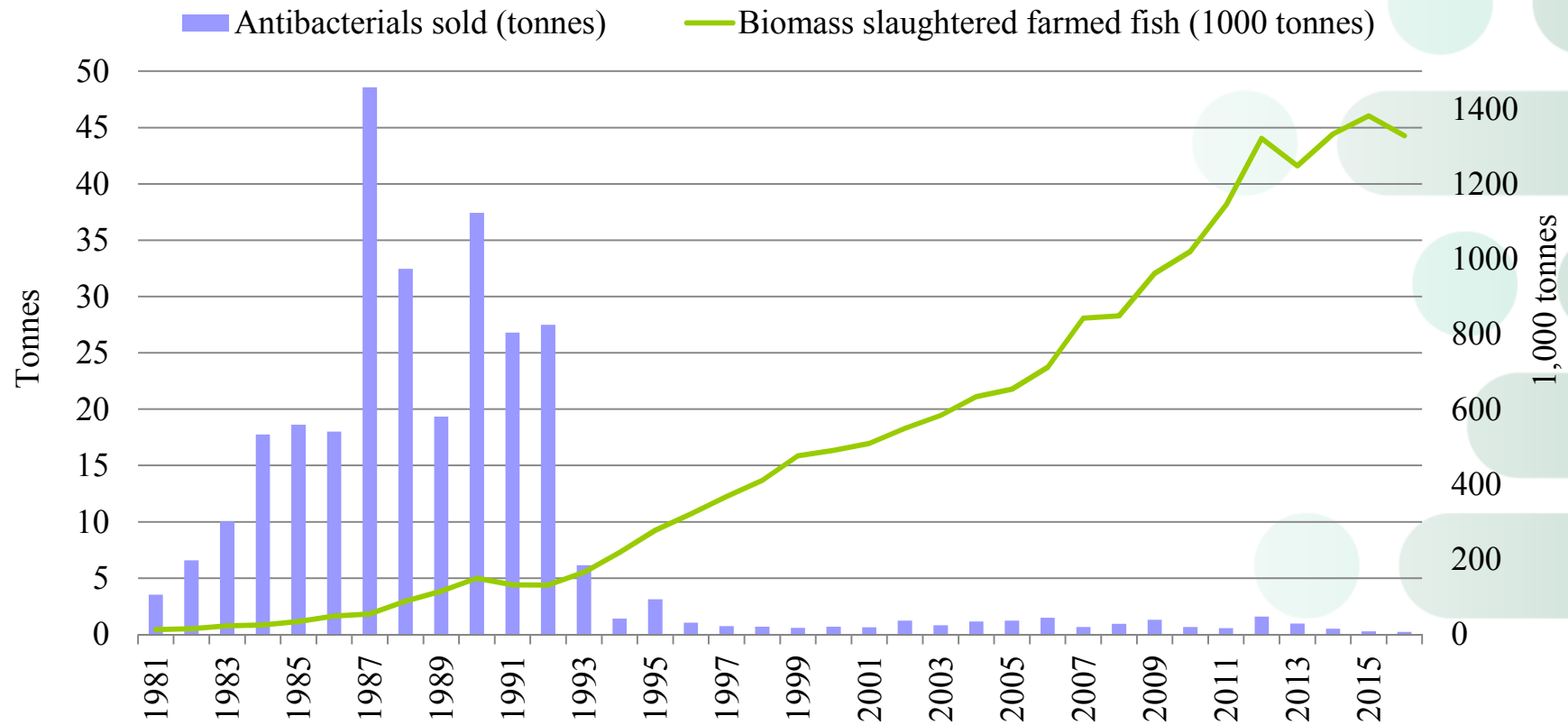


Bruk av «kritisk viktige» antibiotika til sports- og kjæledyr





Bruk av antibiotika i akvakultur





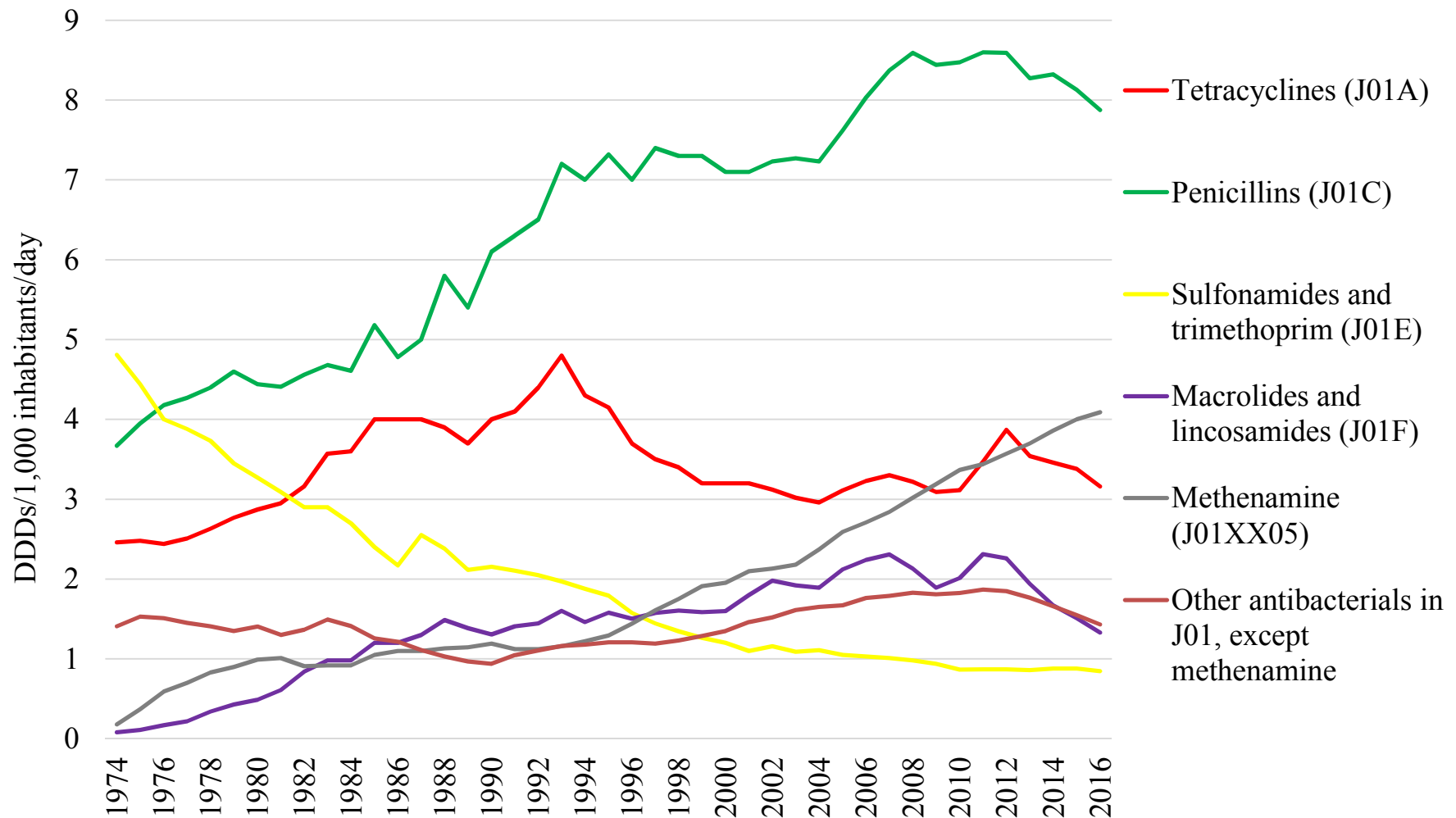
Bruk av antibiotika til mennesker

ATC	Groups of substances	2009	2010	2011	2012	2013	2014	2015	2016	Change (%) 2015-2016
J01A	Tetracyclines	3.09	3.12	3.47	3.87	3.54	3.46	3.38	3.16	- 7
J01B	Amphenicols	0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
J01CA	Penicillins with extended spectrum	3.15	3.19	3.21	3.34	3.35	3.46	3.27	3.14	- 4
J01CE	Beta-lactamase sensitive penicillins	4.47	4.44	4.47	4.30	4.09	3.88	3.88	3.73	- 4
J01CF	Beta-lactamase resistant penicillins	0.80	0.82	0.88	0.90	0.79	0.91	0.89	0.90	- 3
J01CR	Combination of penicillins	0.02	0.03	0.03	0.04	0.05	0.08	0.09	0.10	+ 15
J01D	Cephalosporins, monobactams, carbapenems	0.58	0.55	0.56	0.55	0.52	0.48	0.45	0.43	- 3
J01E	Sulfonamides and trimethoprim	0.94	0.87	0.87	0.87	0.86	0.88	0.88	0.85	- 4
J01F	Macrolides, lincosamides and streptogramins	1.89	2.01	2.31	2.26	1.94	1.67	1.51	1.33	- 12
J01G	Aminoglycosides	0.07	0.07	0.07	0.08	0.07	0.08	0.08	0.08	-
J01M	Quinolones	0.71	0.73	0.75	0.75	0.72	0.68	0.61	0.54	- 8
J01X*	Other antibacterials	0.46	0.47	0.49	0.47	0.45	0.43	0.41	0.38	-
J01	Total exclusive of methenamine	16.2	16.3	17.1	17.4	16.4	16.0	15.5	14.6	- 5
J01XX05	Methenamine	3.19	3.37	3.44	3.57	3.70	3.86	4.00	4.09	+ 2
J01	Total all antimicrobial agents	19.4	19.7	20.6	21.0	20.1	19.9	19.4	18.7	- 4

*J01X includes glycopeptides, colistin, fusidic acid, metronidazol (i.v.), nitrofurantoin, linezolid. Methenamine is excluded.

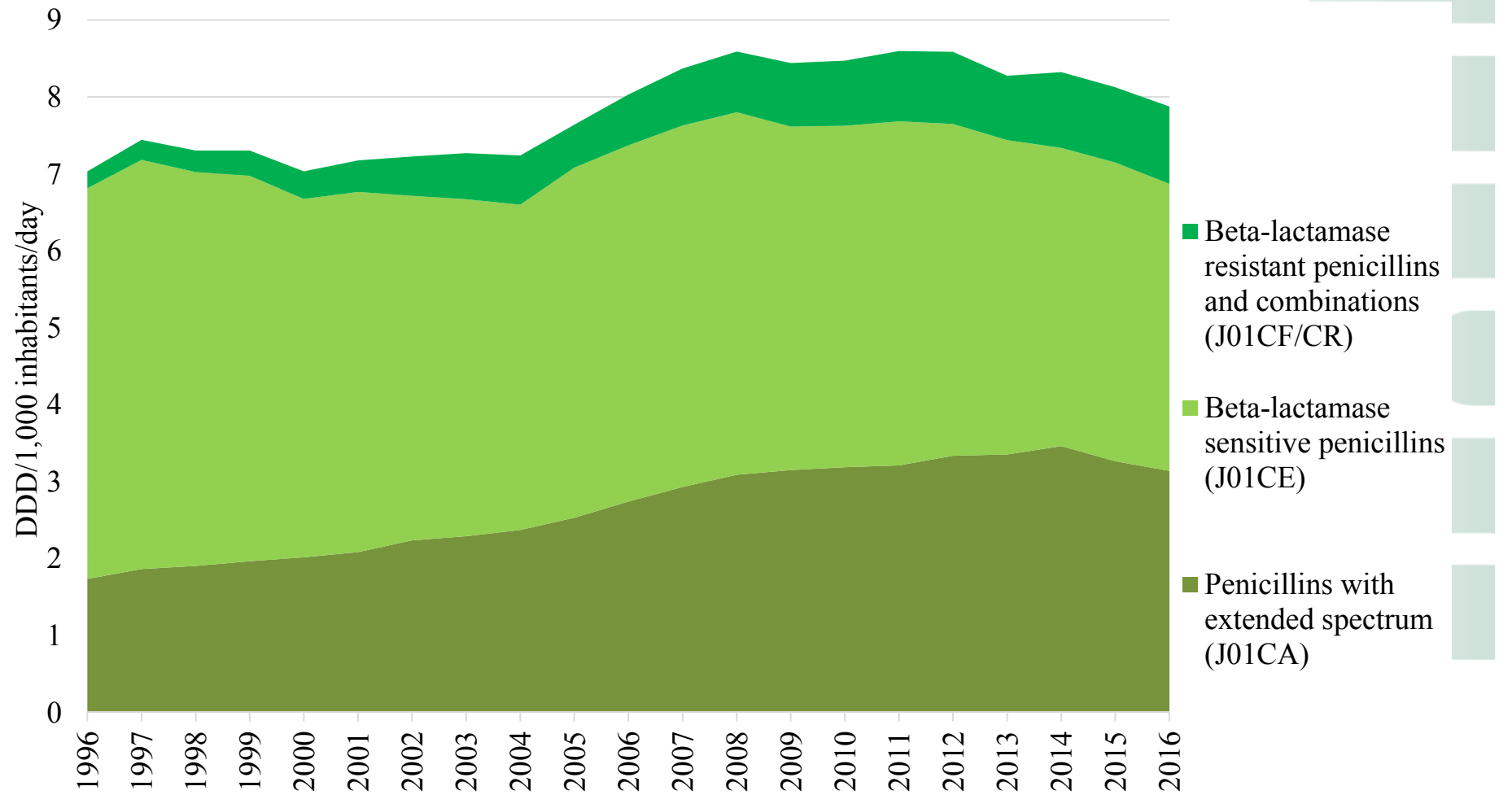


Bruk av antibiotika til mennesker



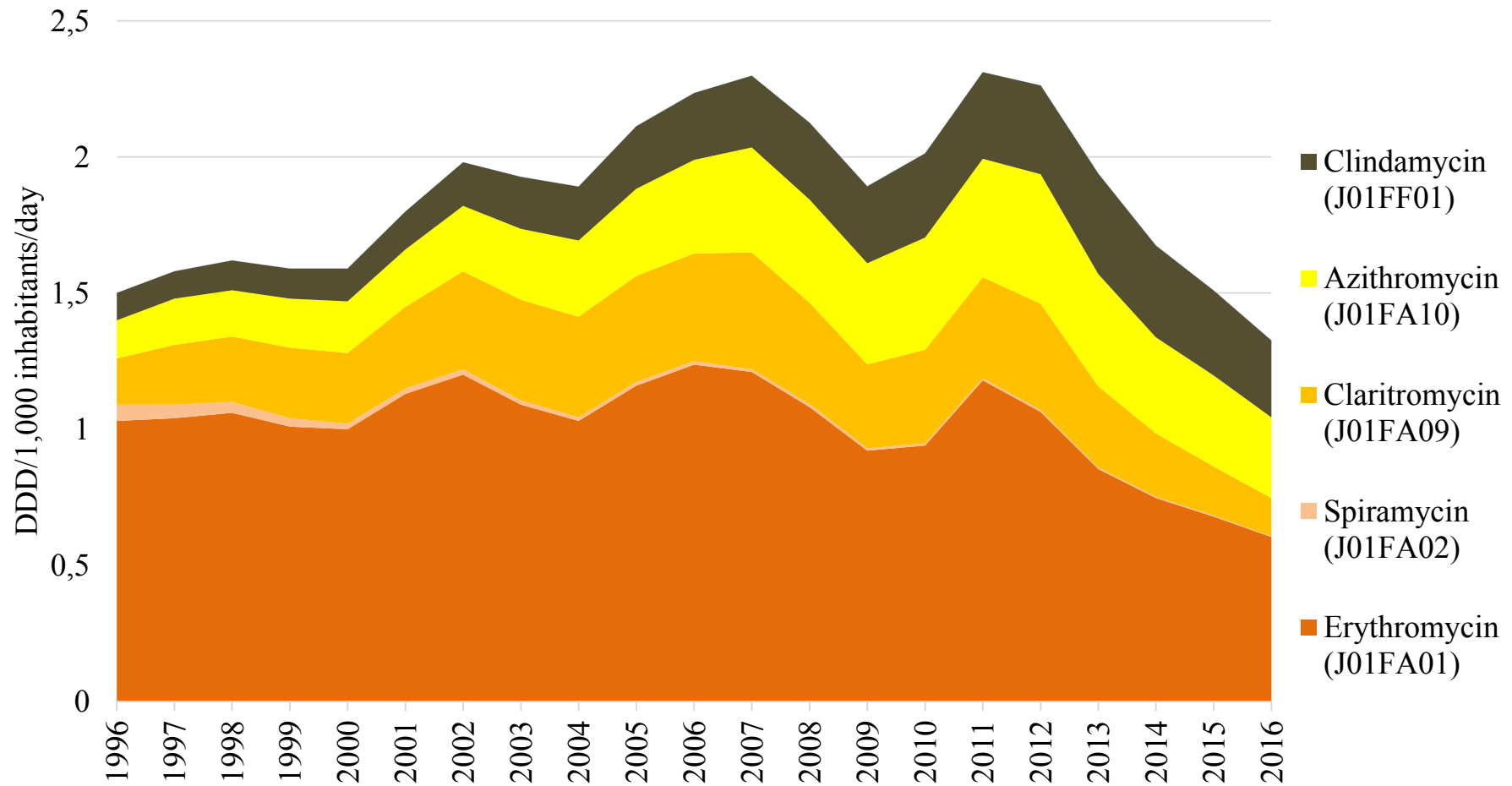


Bruk av penicilliner



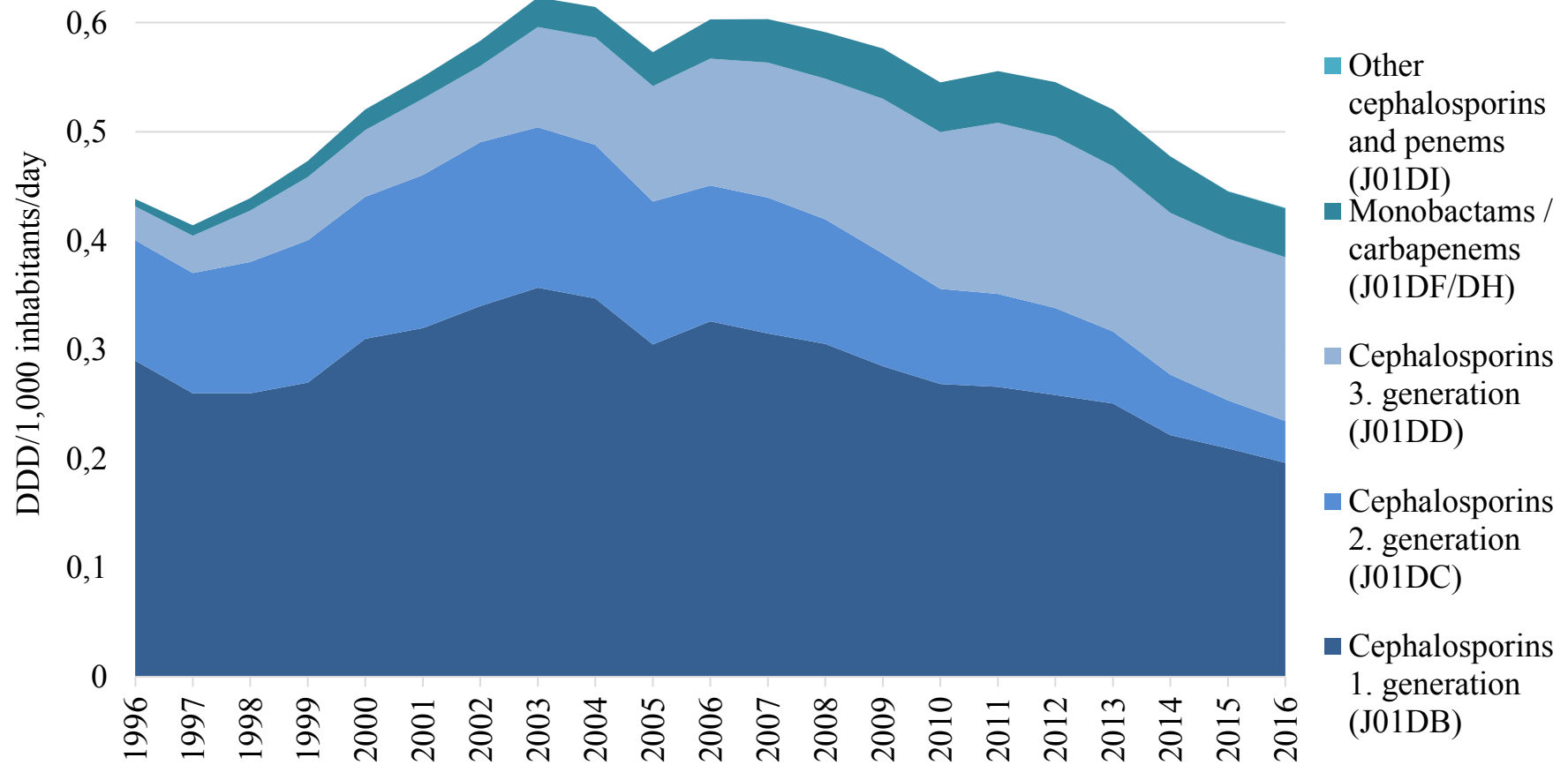


Bruk av makrolider / linkosaminer



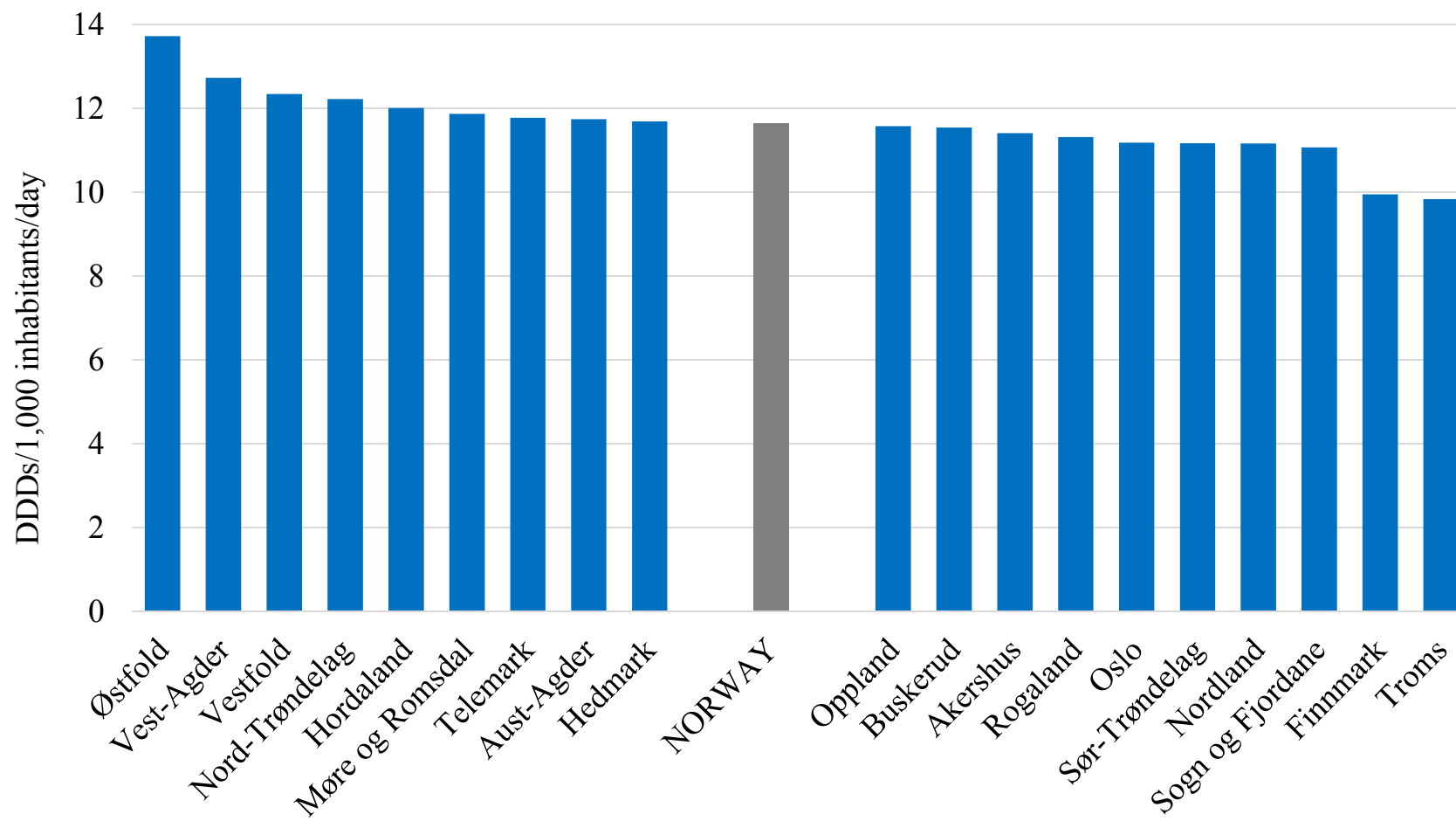


Bruk av cefalosporiner / karbapenemer / monobaktamer



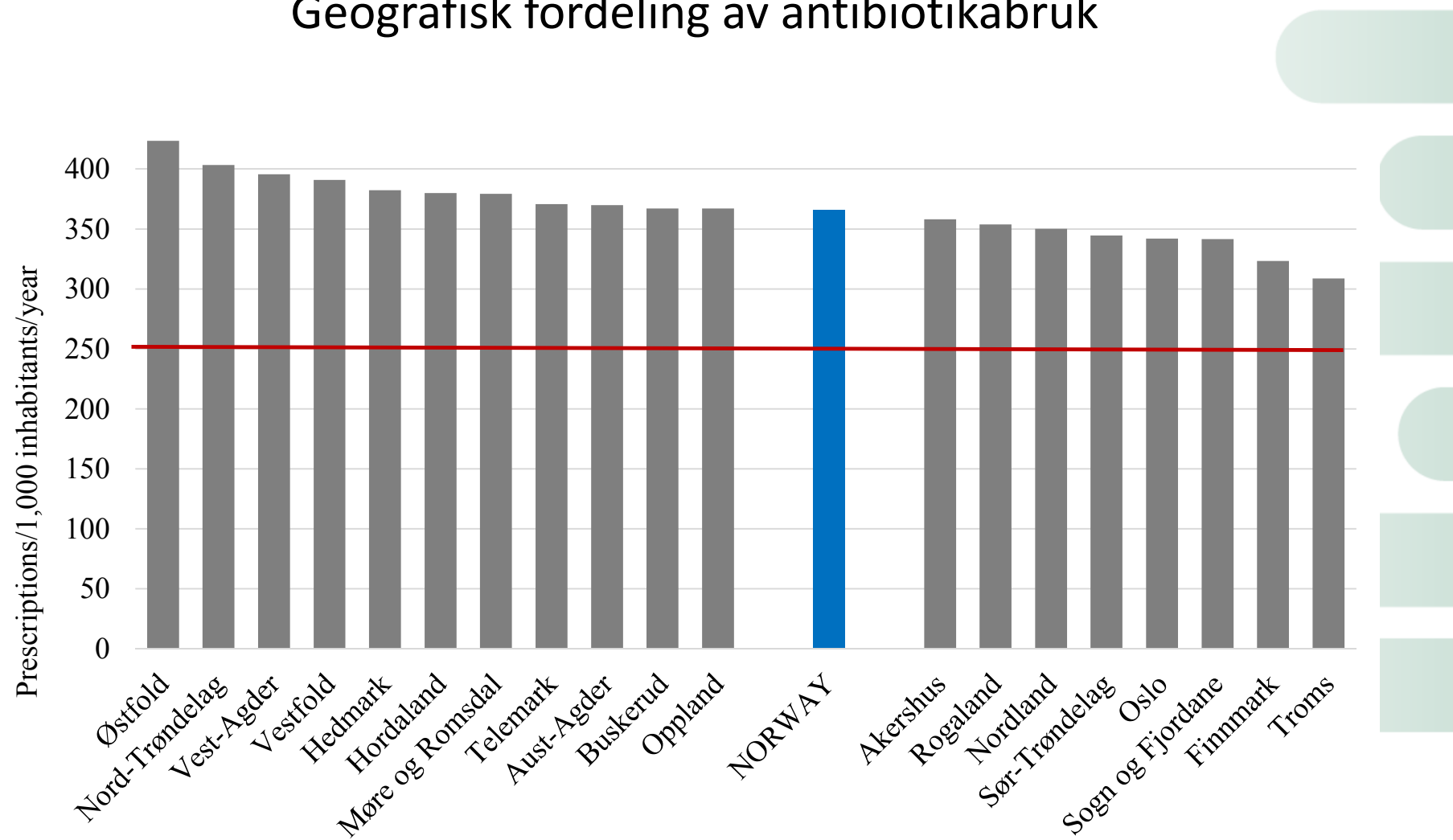


Geografisk fordeling av antibiotikabruk



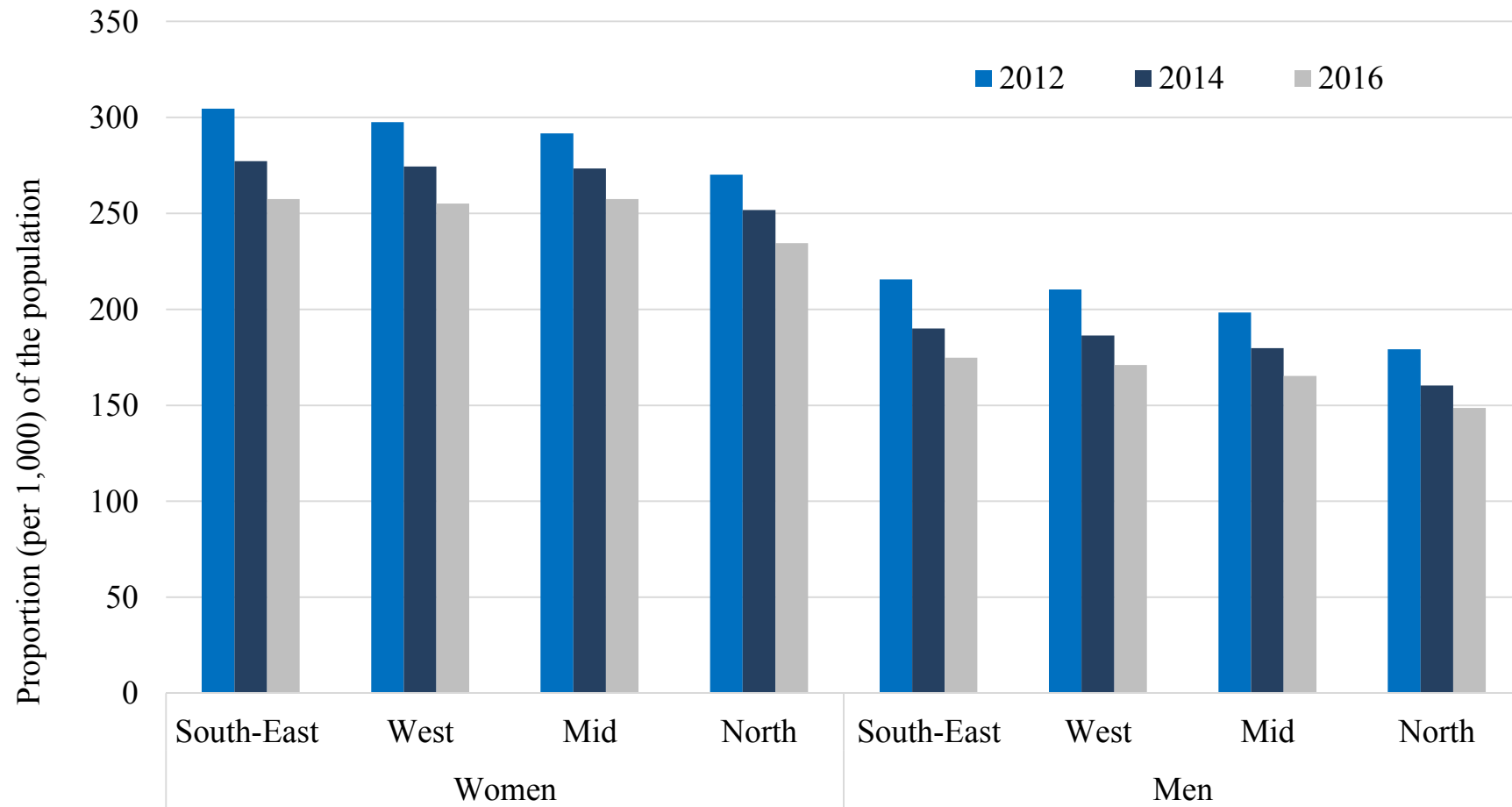


Geografisk fordeling av antibiotikabruk



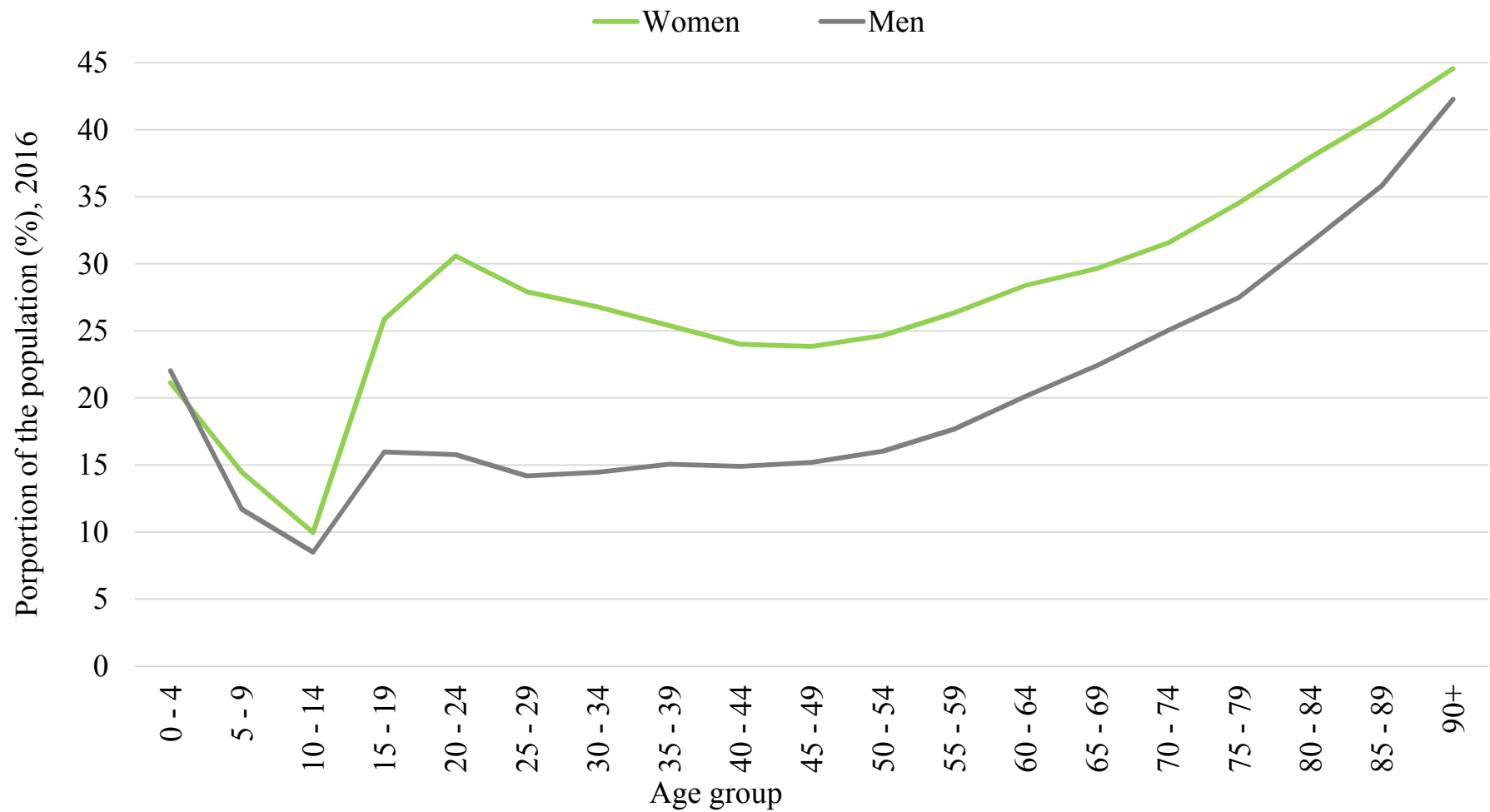


Geografisk fordeling av antibiotikabruk



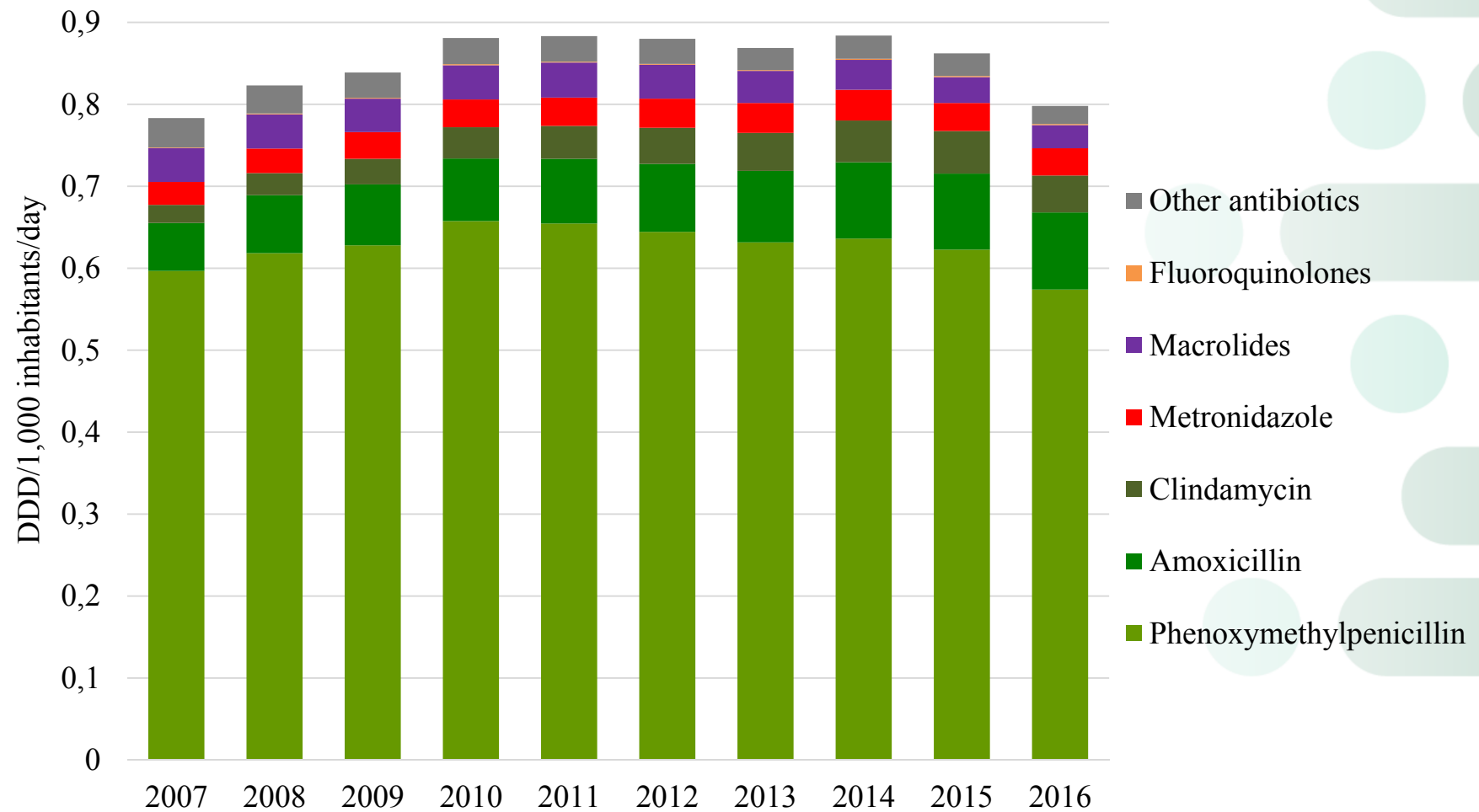


Alders- og kjønnsfordeling av antibiotikabruk



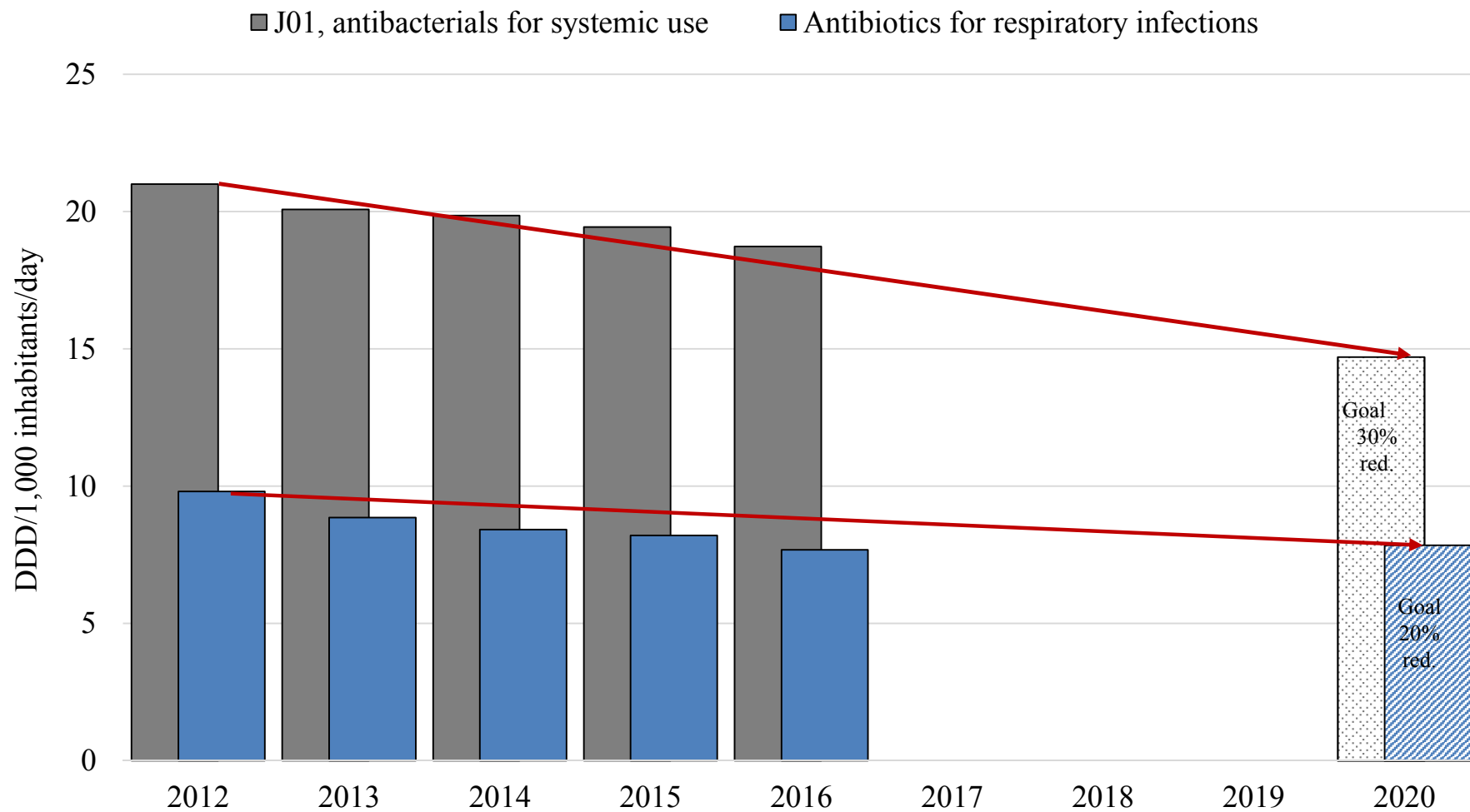


Antibiotikabruk i tannhelsetjenesten



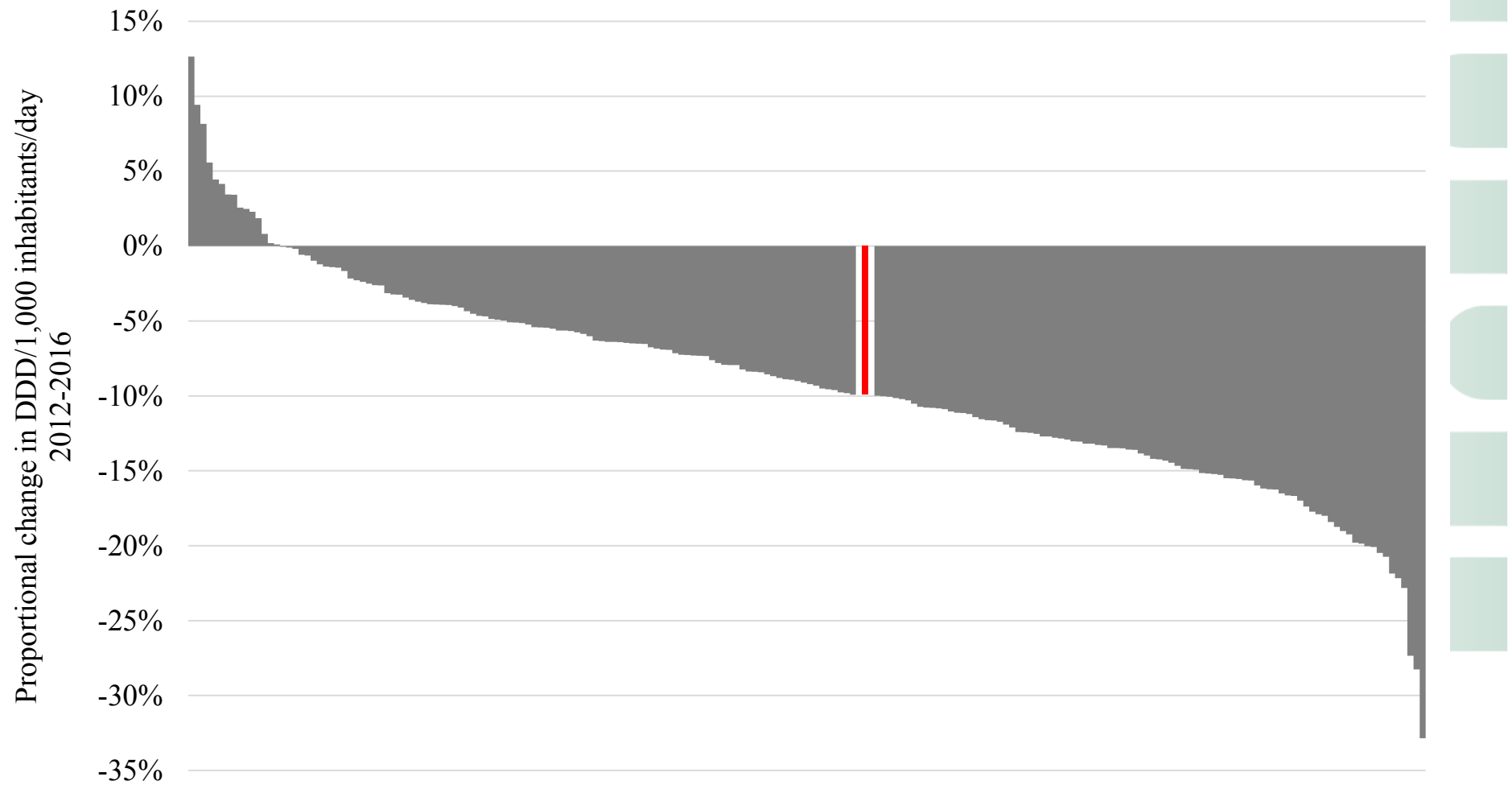


Regjeringens mål om reduksjon av antibiotikabruk



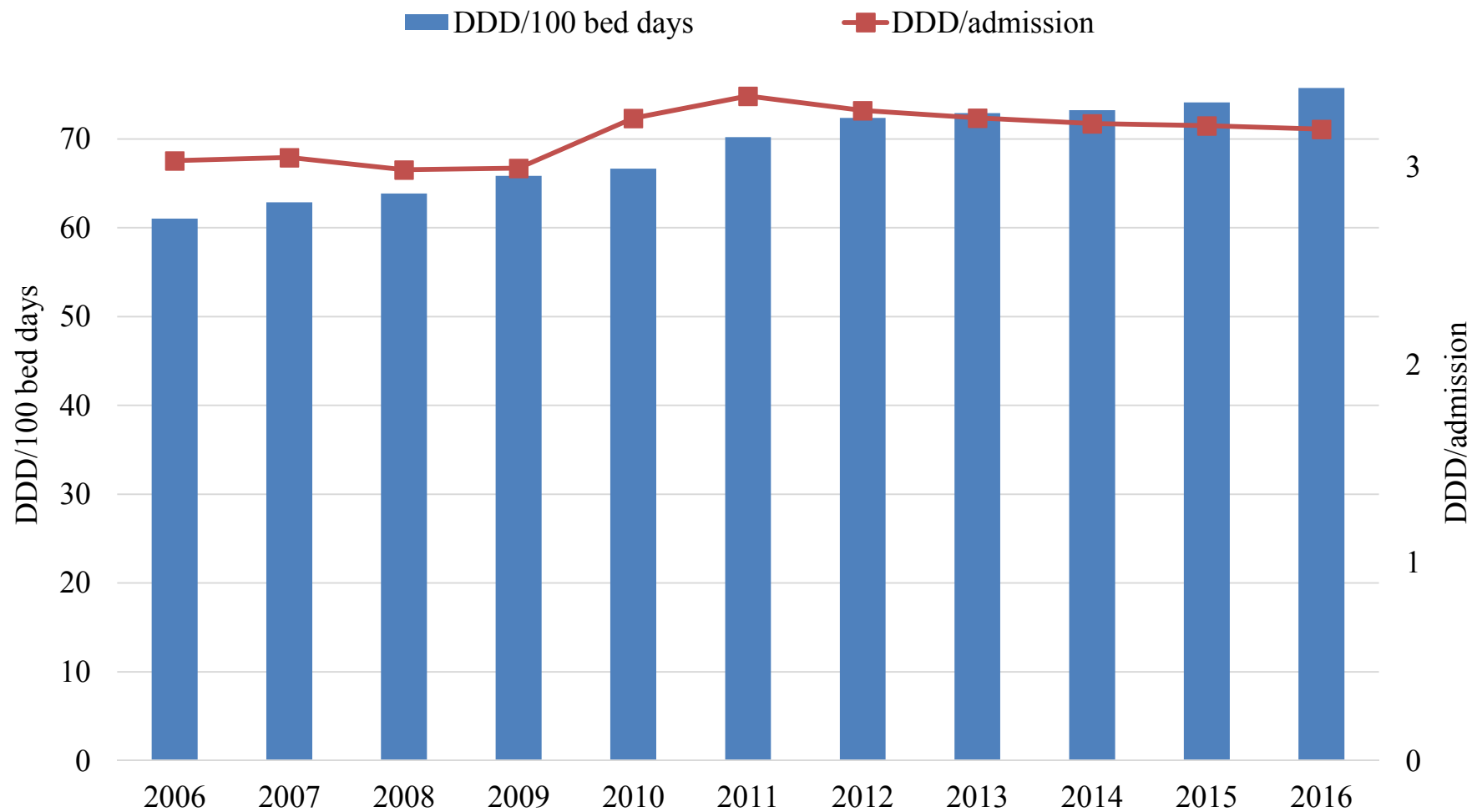


Regjeringens mål om reduksjon av antibiotikabruk



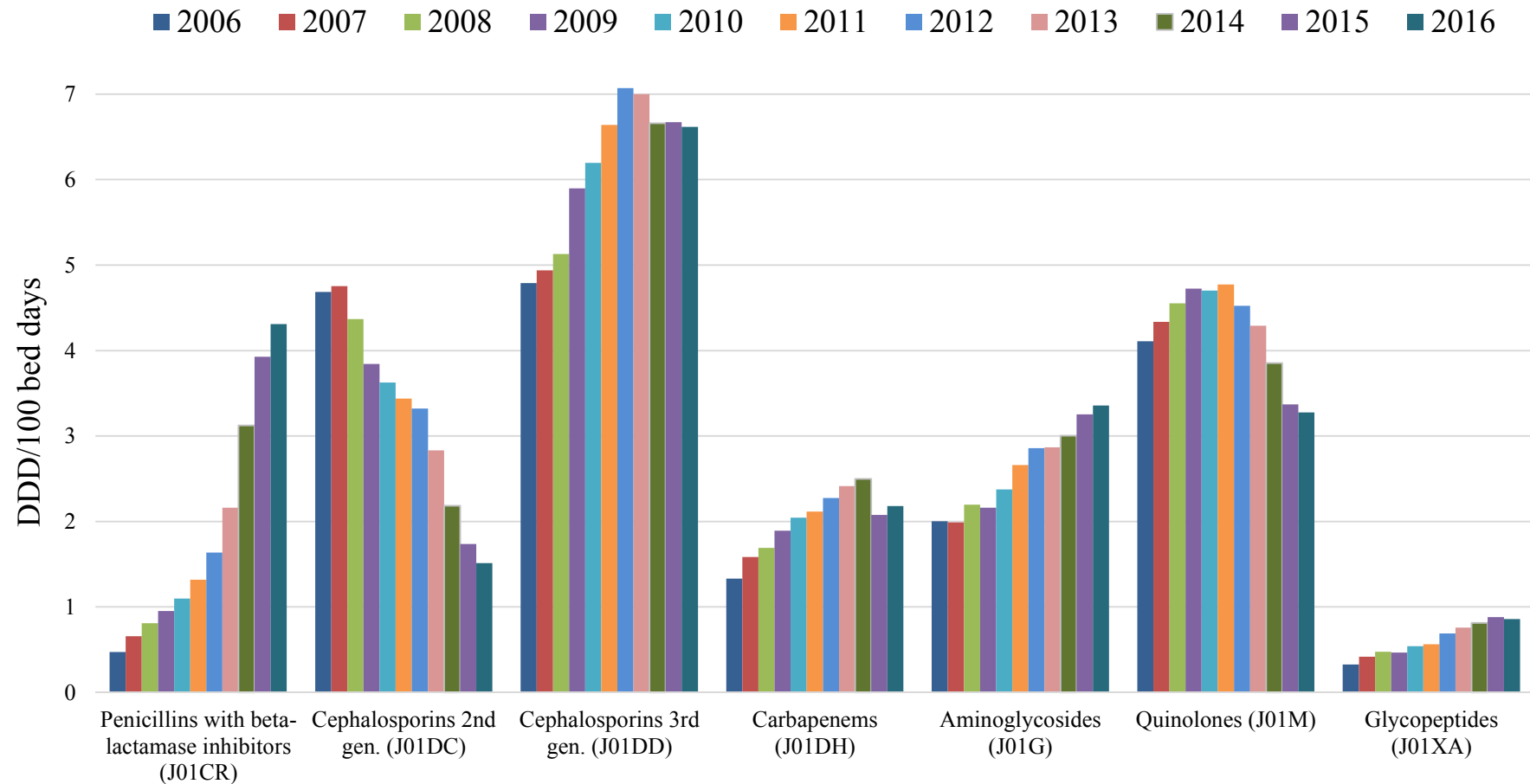


Antibiotikabruk på sykehus



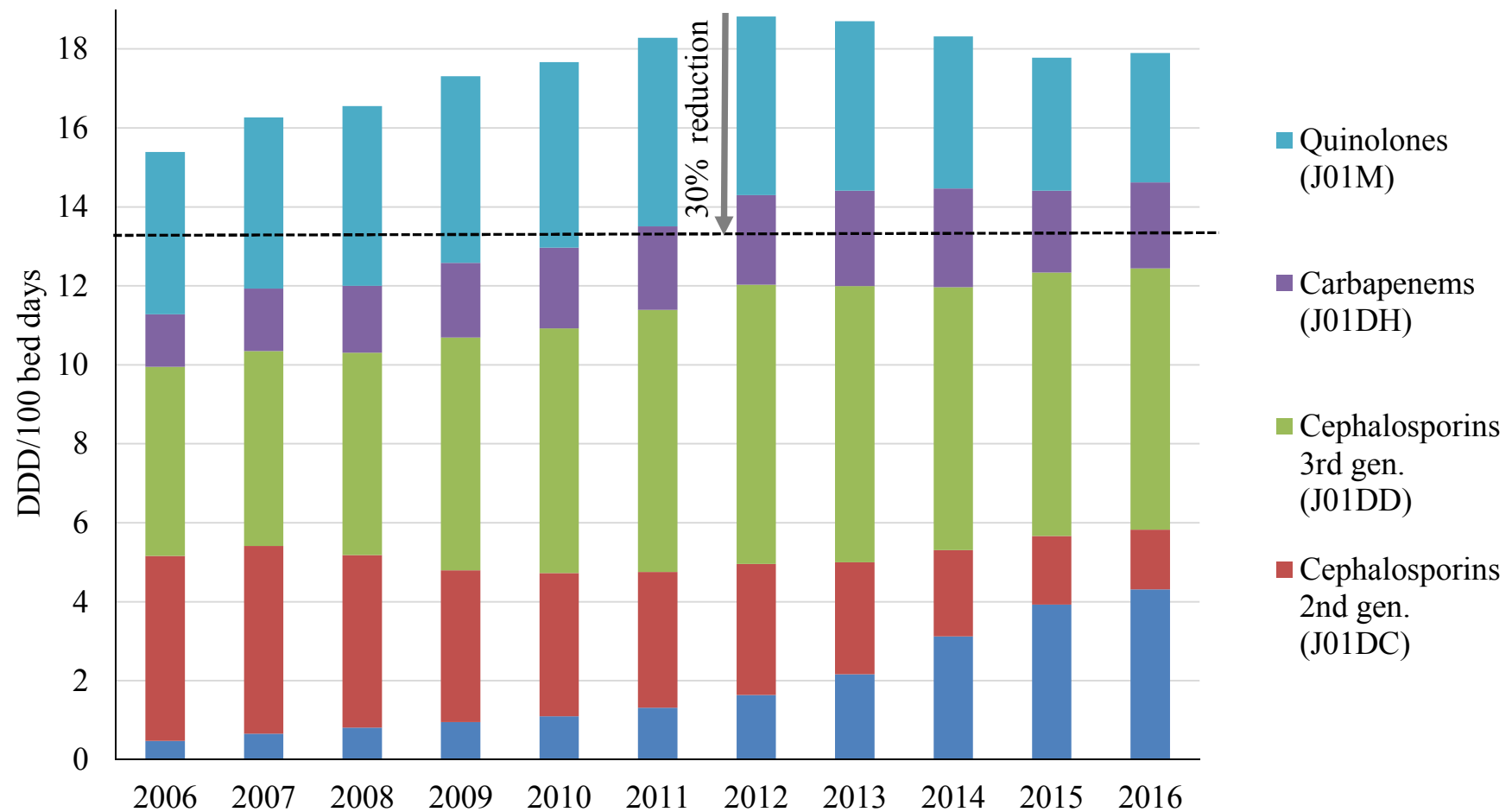


Bruk av bredspektrede antibiotika på sykehus



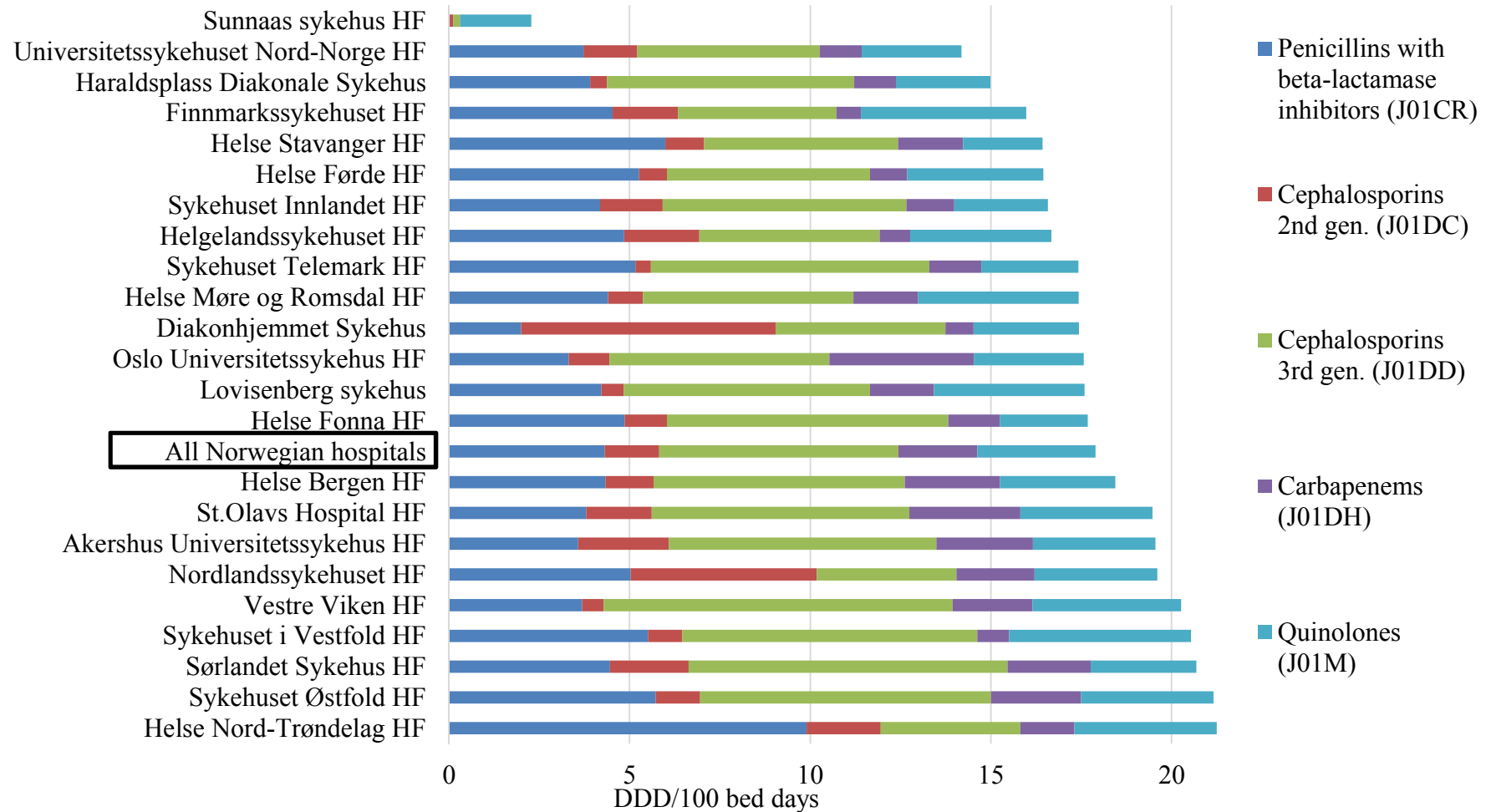


Regjeringens mål om reduksjon av antibiotikabruk



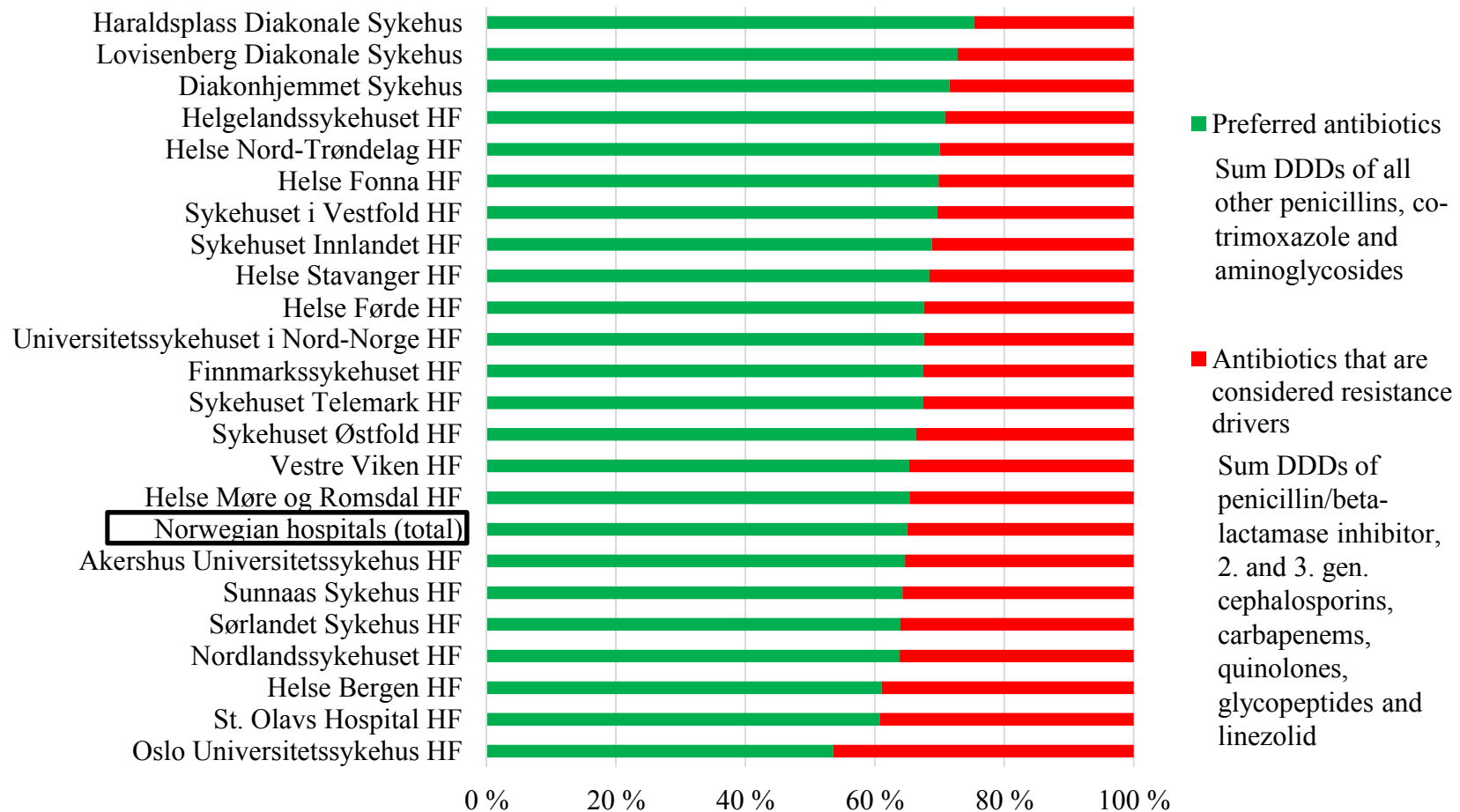


Variasjon i bruk av bredspektrede antibiotika på sykehus



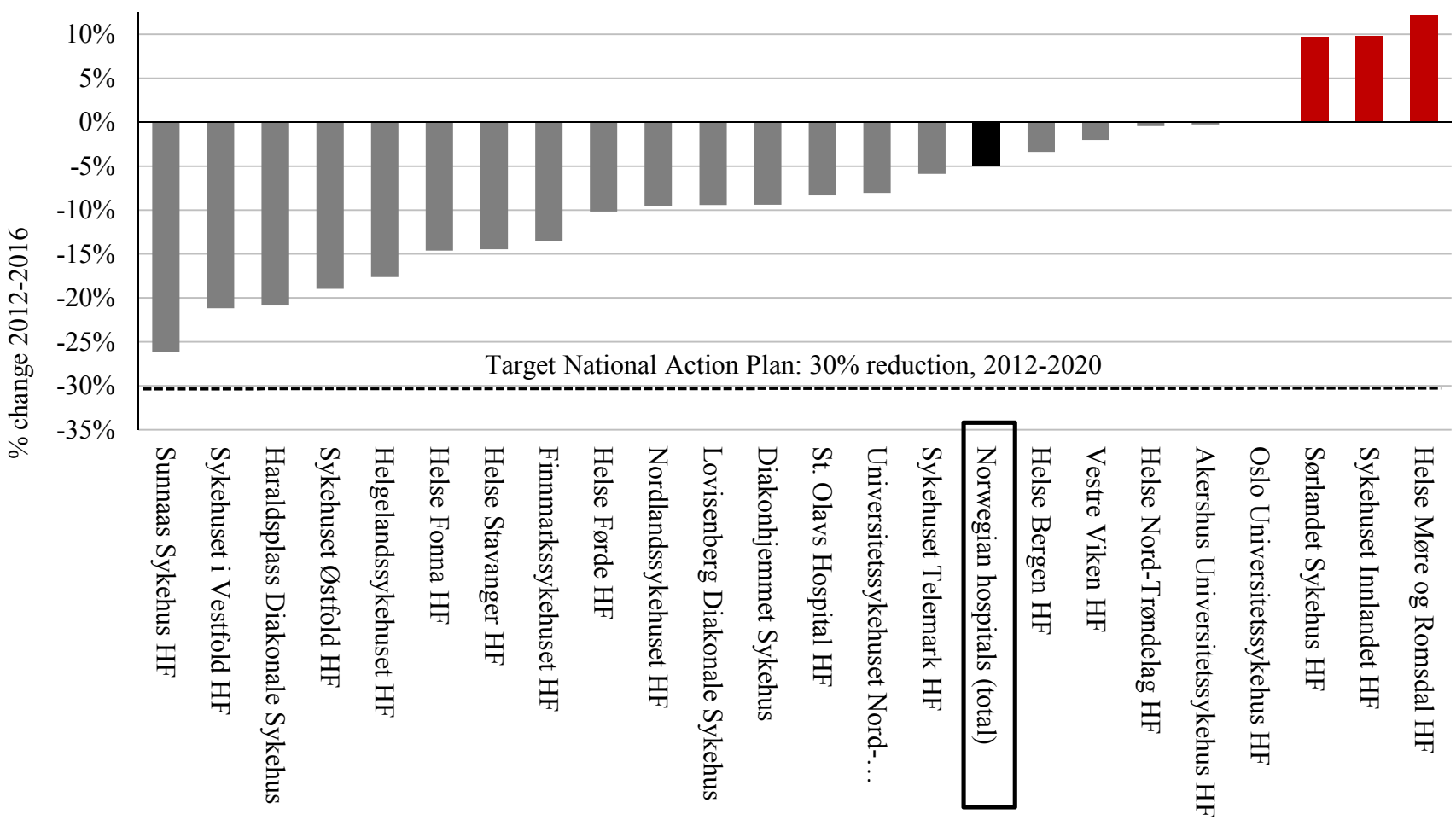


Variasjon i antibiotika forbruksprofil på sykehus



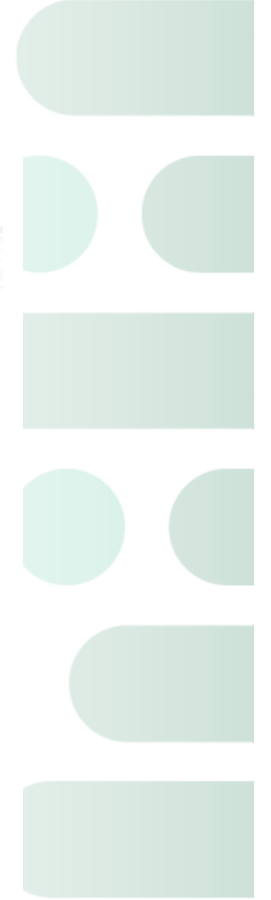
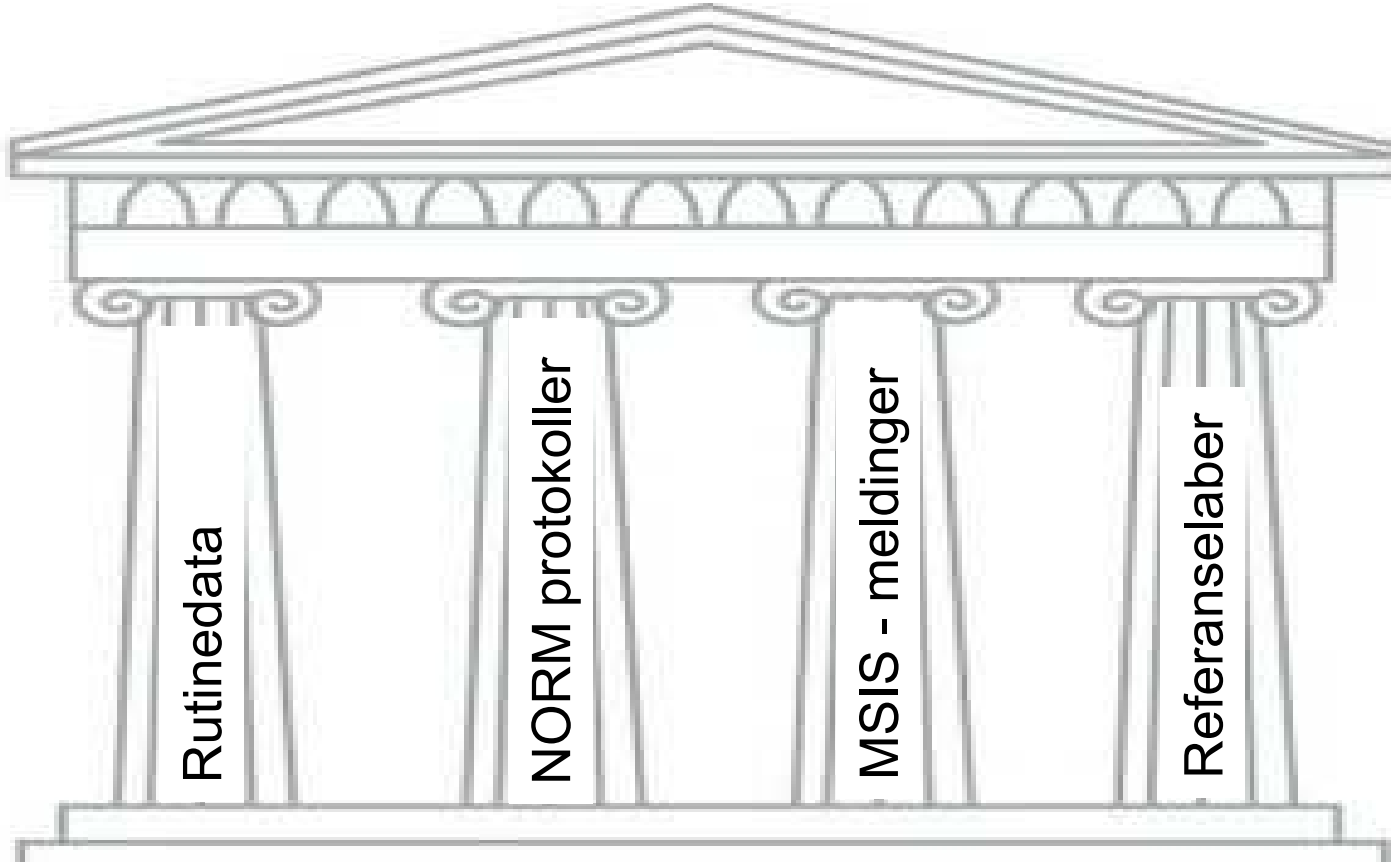


Regjeringens mål om reduksjon av antibiotikabruk



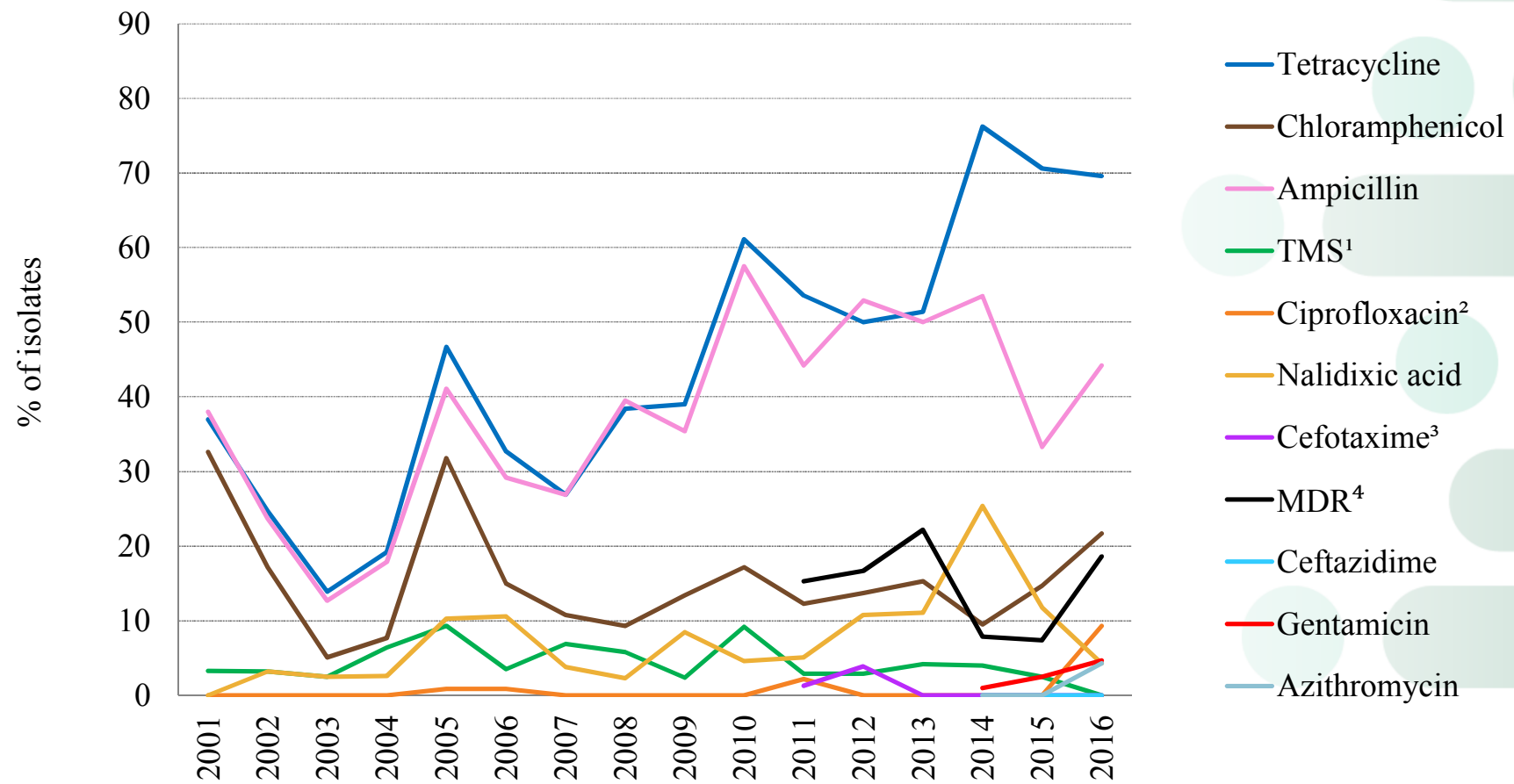


Resistensovervåking i Norge



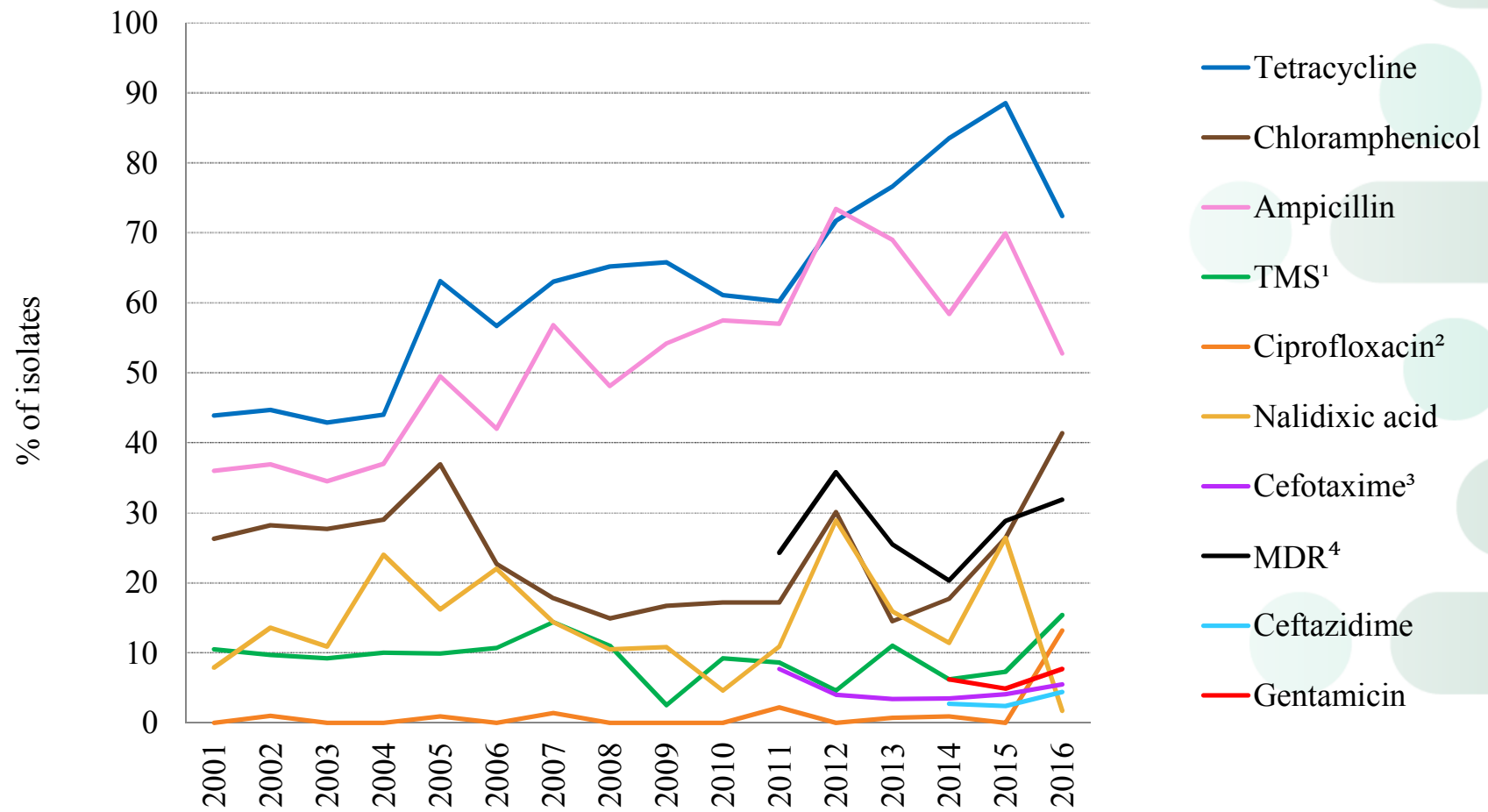


Salmonella Typhimurium smittet i Norge



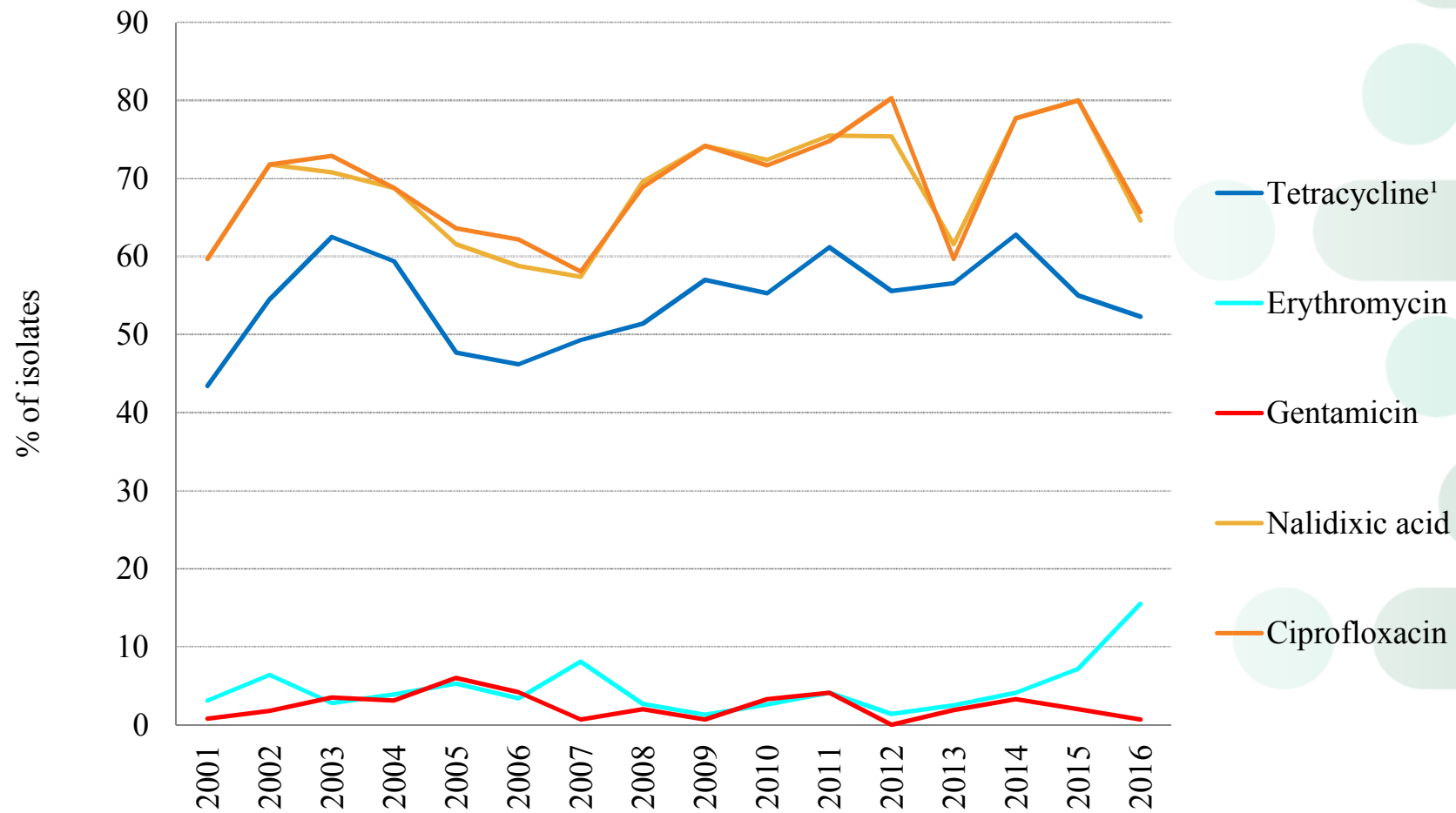


Salmonella Typhimurium smittet utenfor Norge



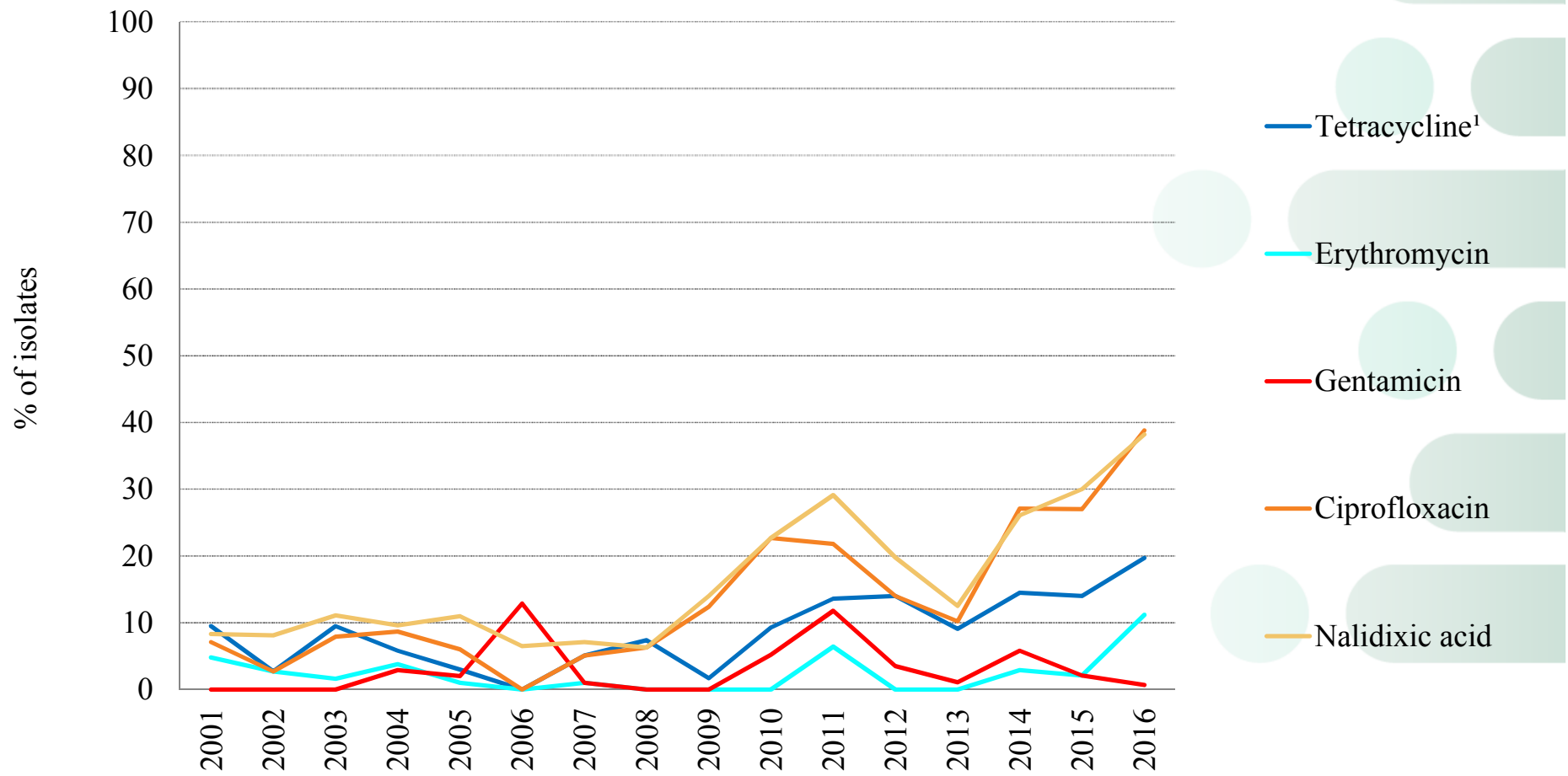


Campylobacter jejuni smittet utenfor Norge



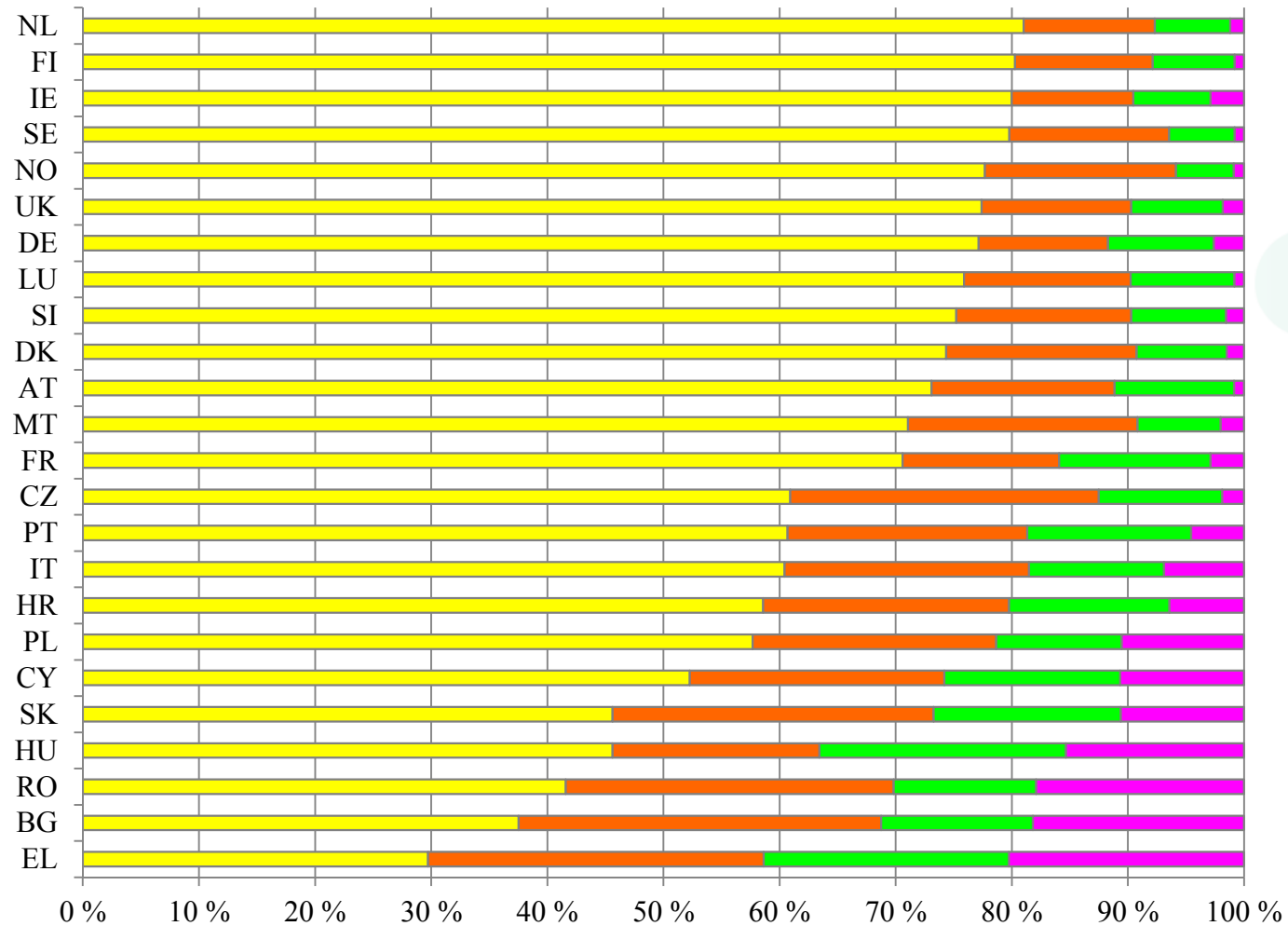


Campylobacter jejuni smittet i Norge





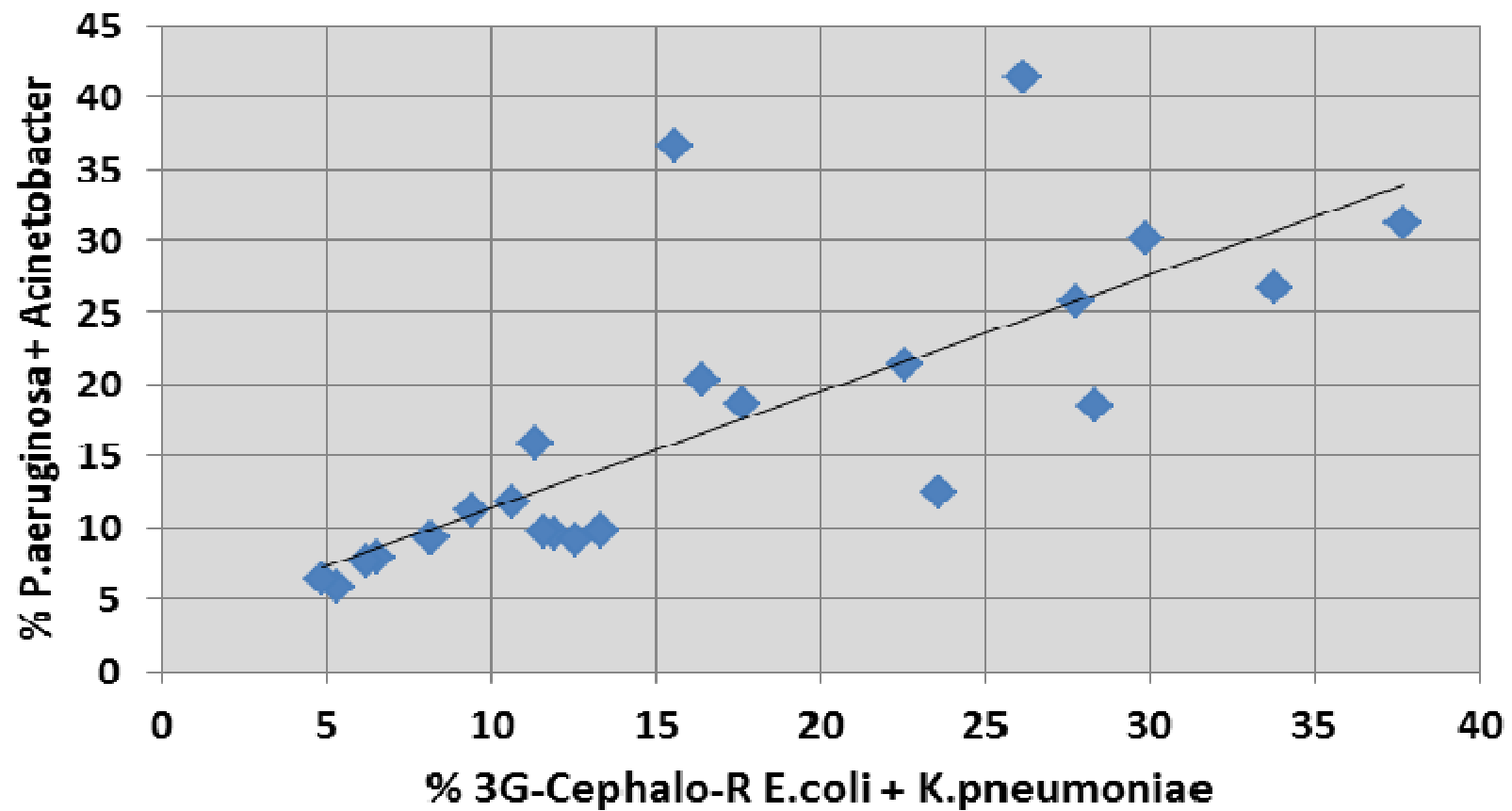
Artsfordeling av Gram negativer i EARSS-Net



V. Jarlier 2015

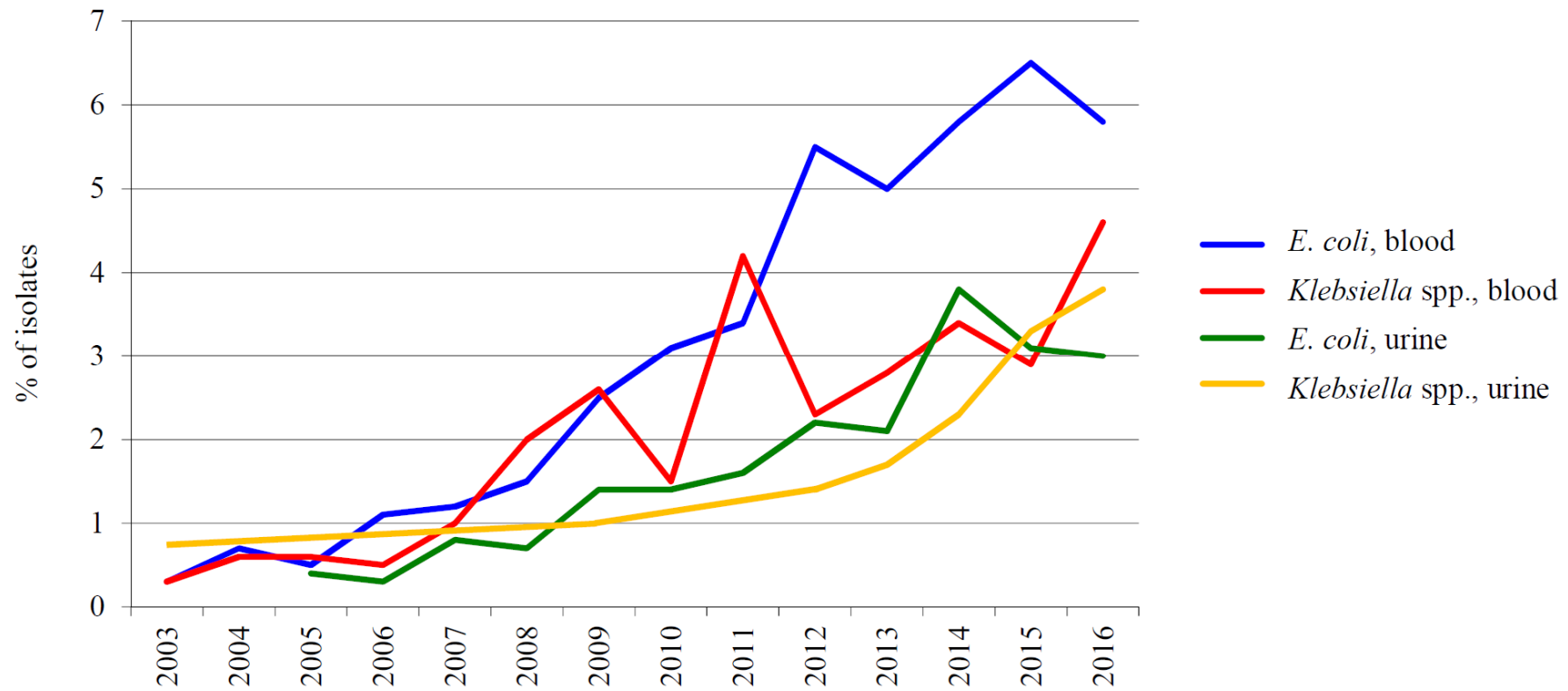


P. aeruginosa og *K. pneumoniae* versus ESBL i EARSS-Net



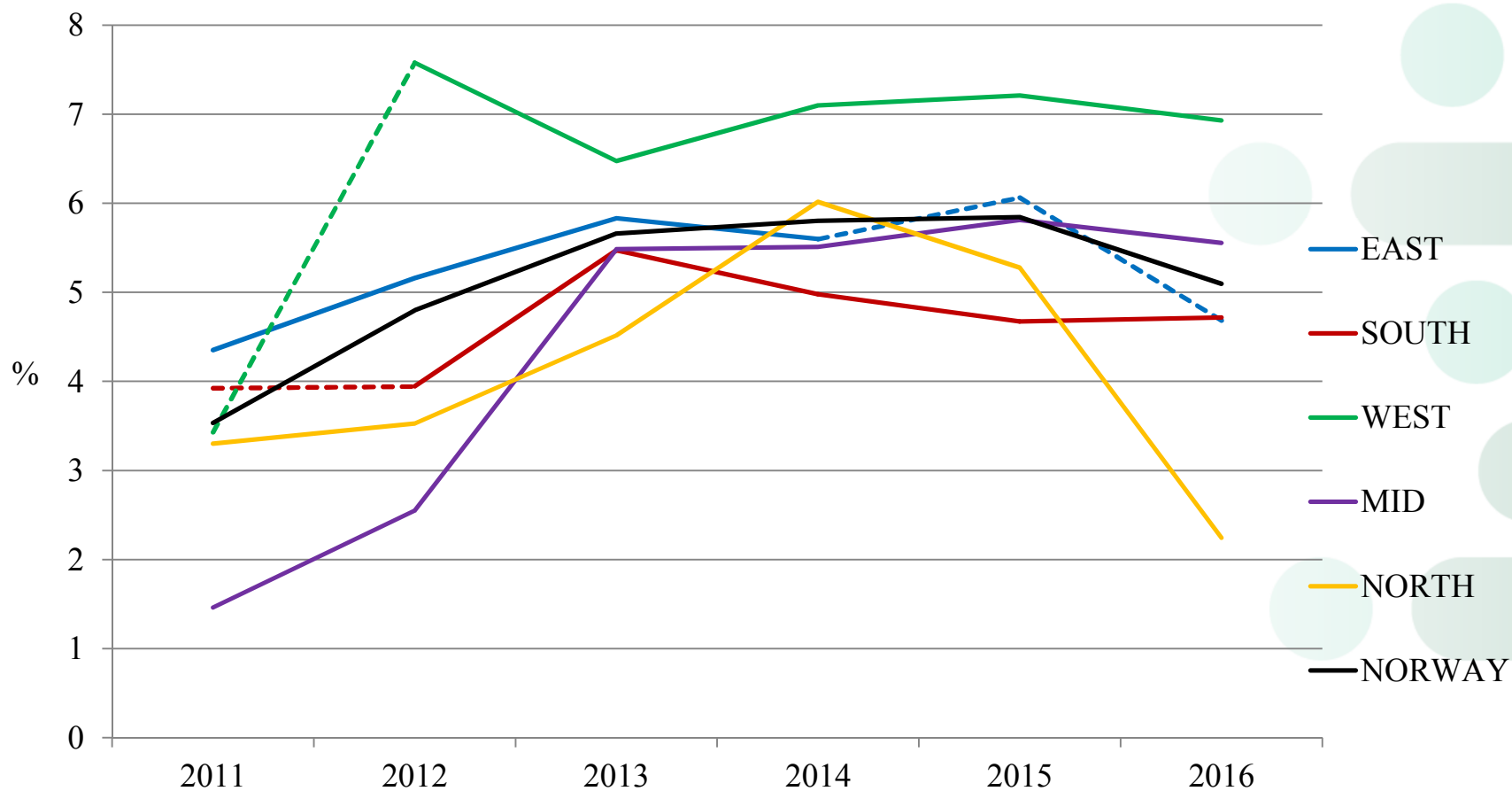


E. coli og *K. pneumoniae* ESBL i blodkultur og urin



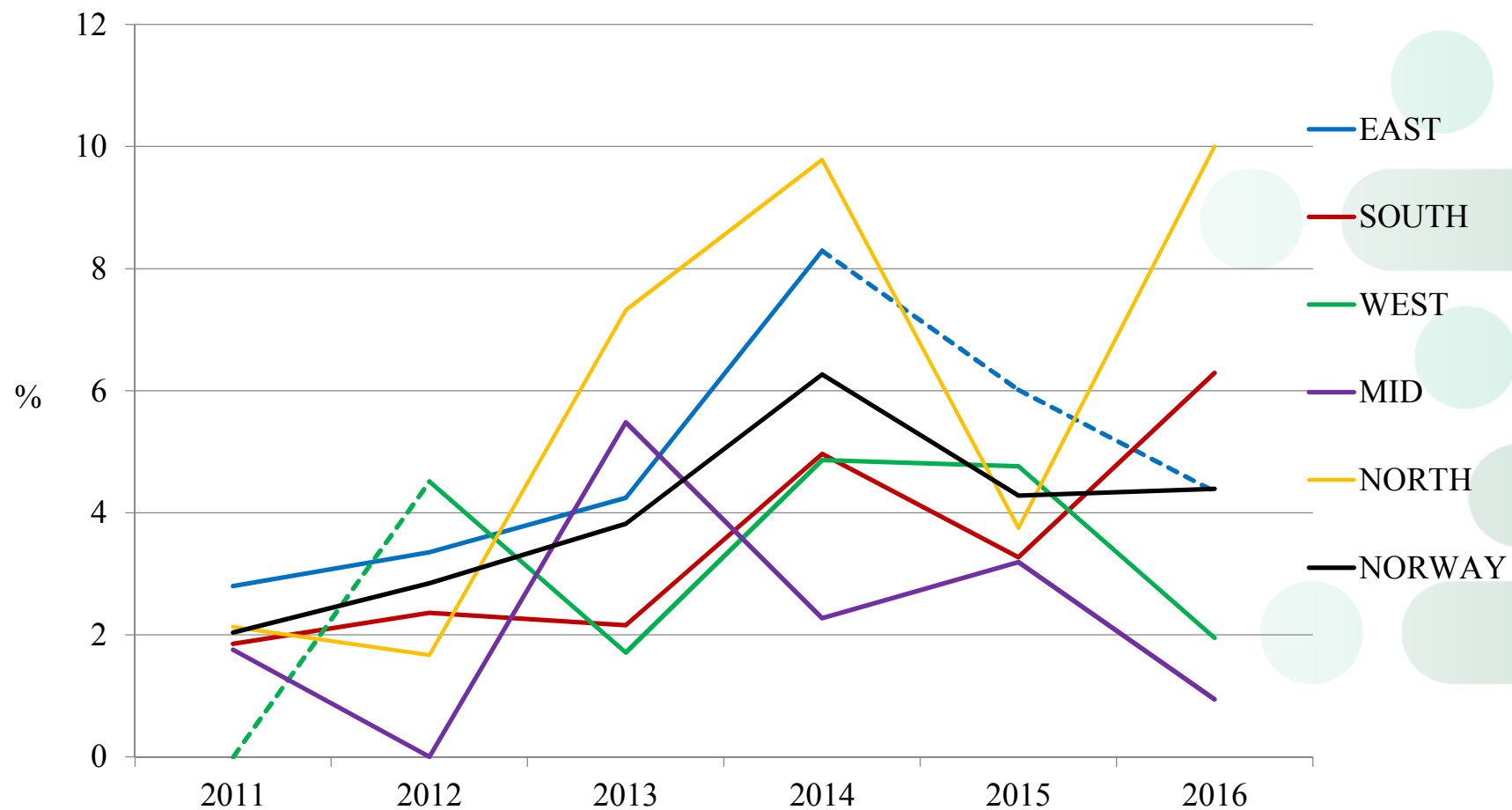


E. coli ESBL i blodkultur fordelt på regioner



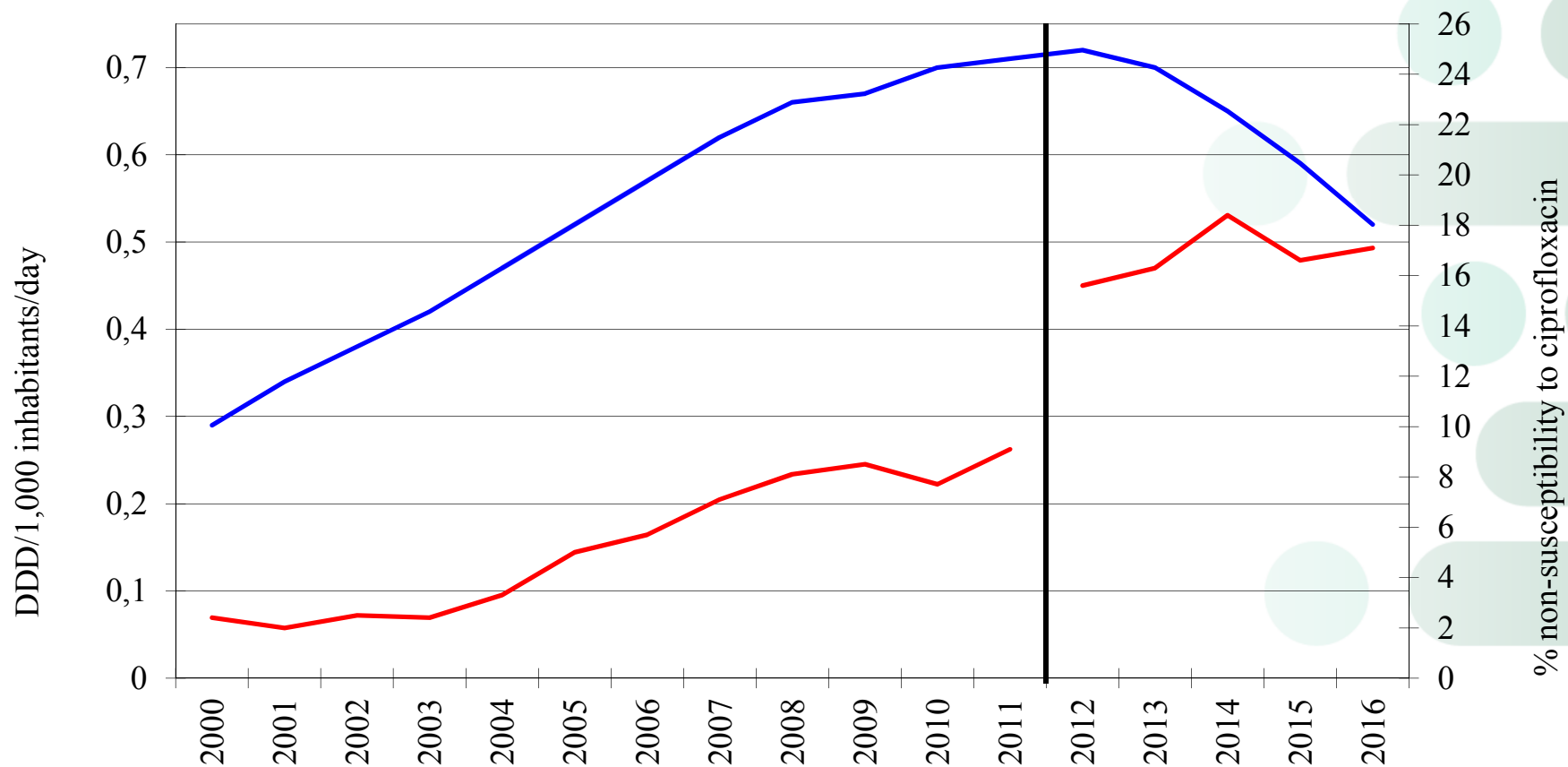


K. pneumoniae ESBL i blodkultur fordelt på regioner



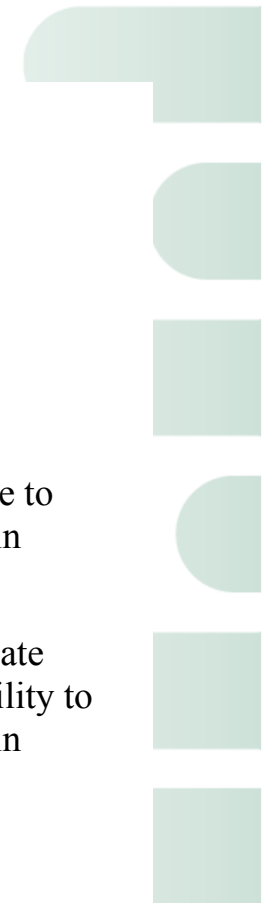
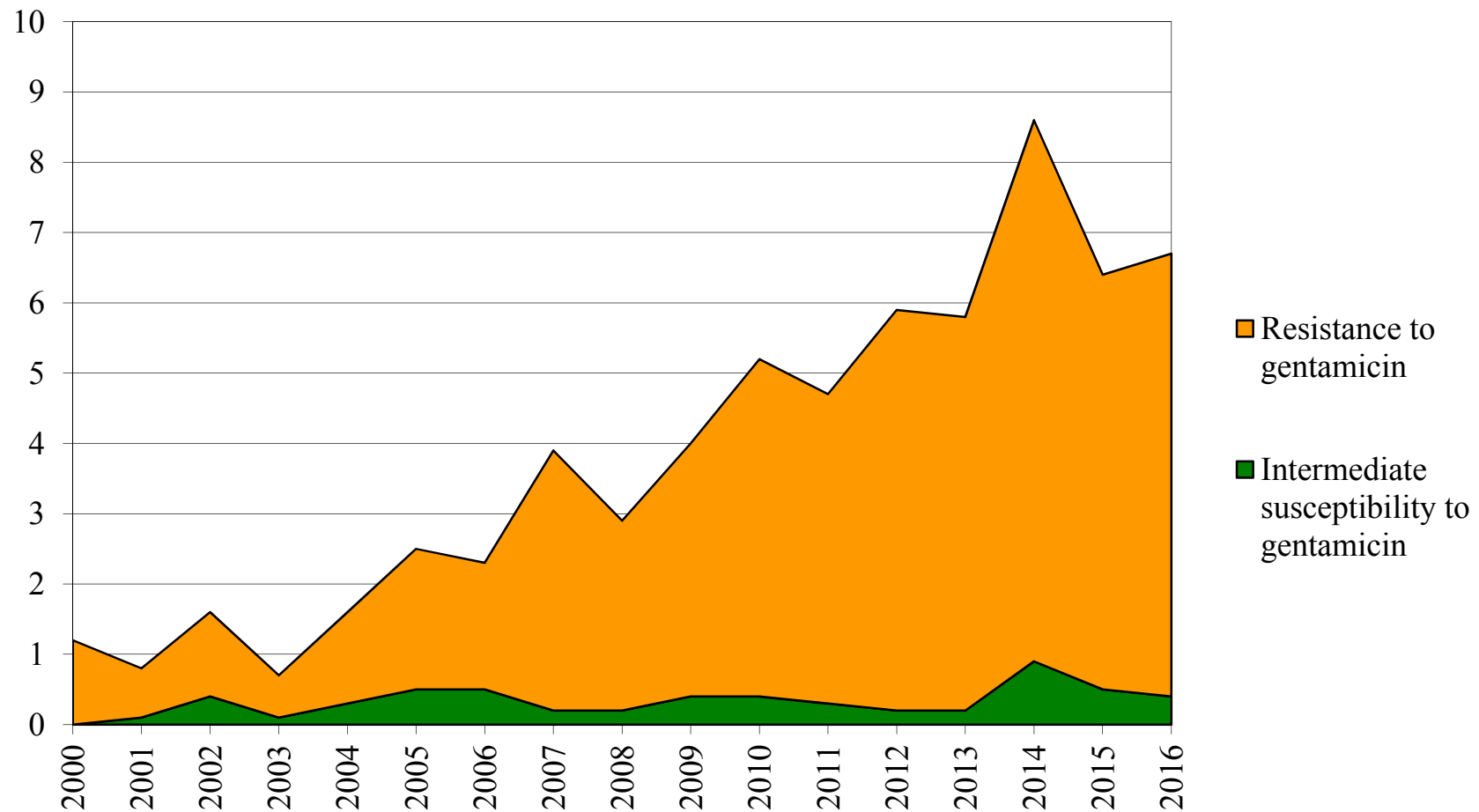


Ciprofloxacinresistente *E. coli* og ciprofloxacinforbruk



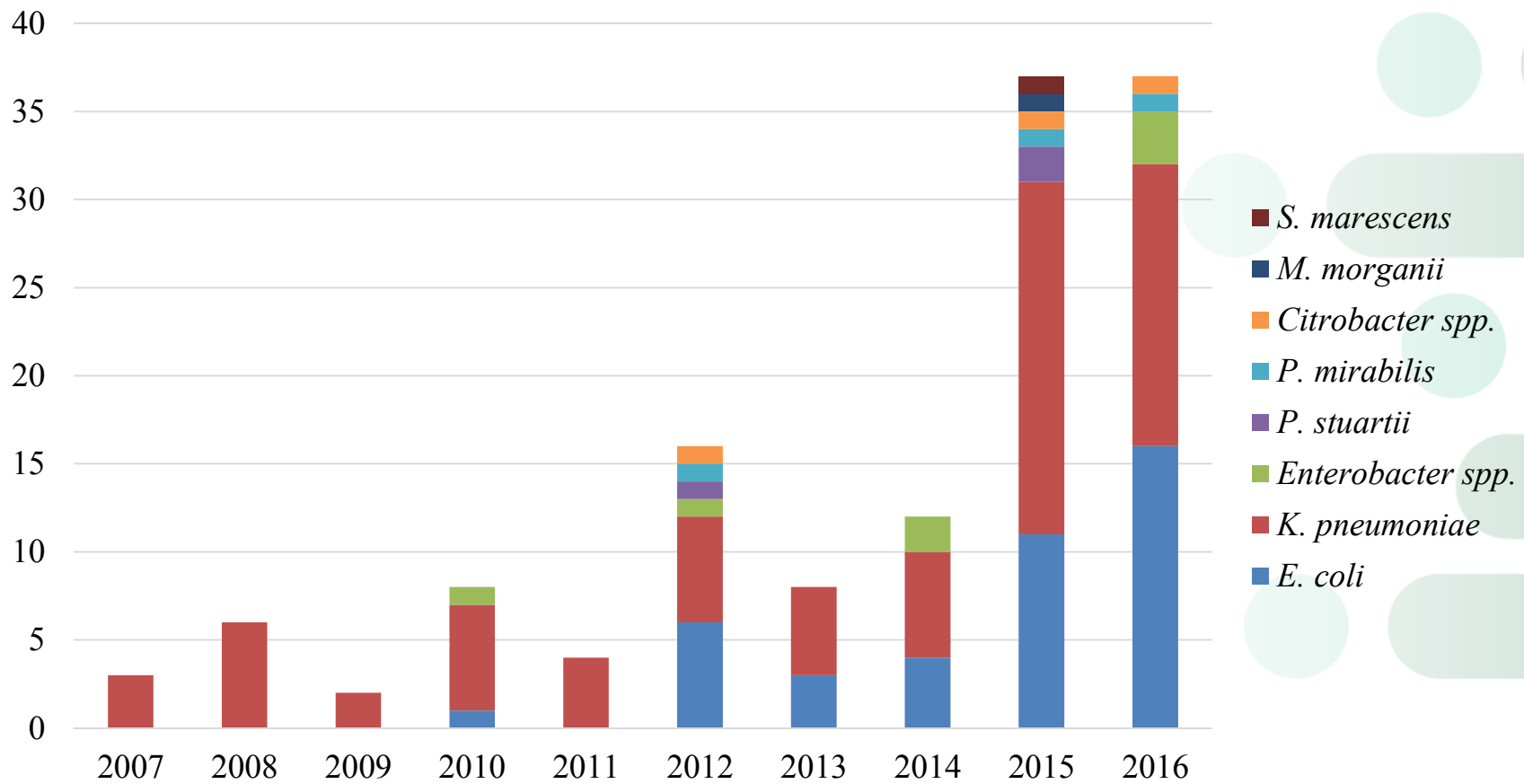


Gentamicinresistente *E. coli* i blodkultur



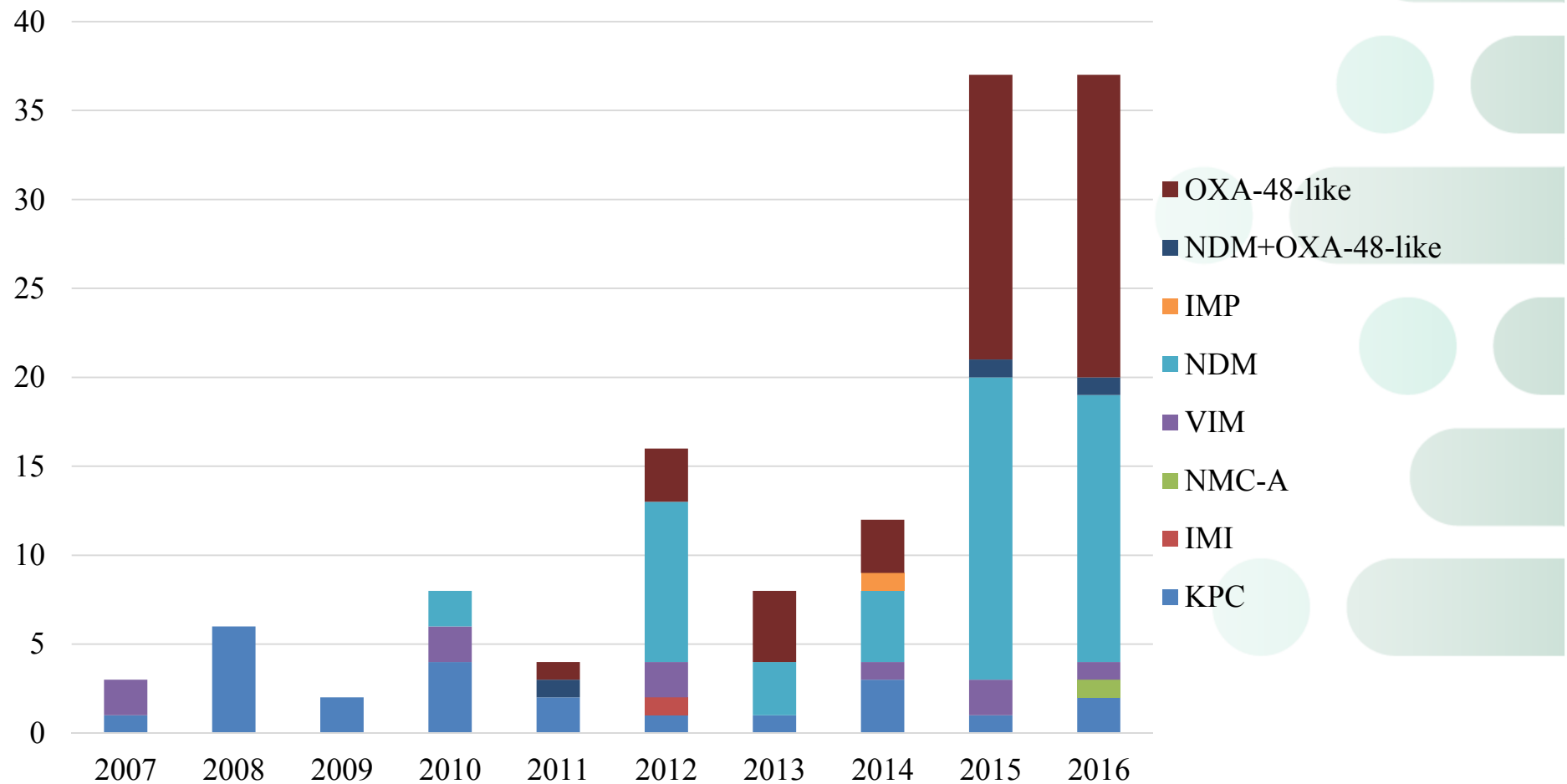


Karbapenemaseproducerende *Enterobacteriaceae*



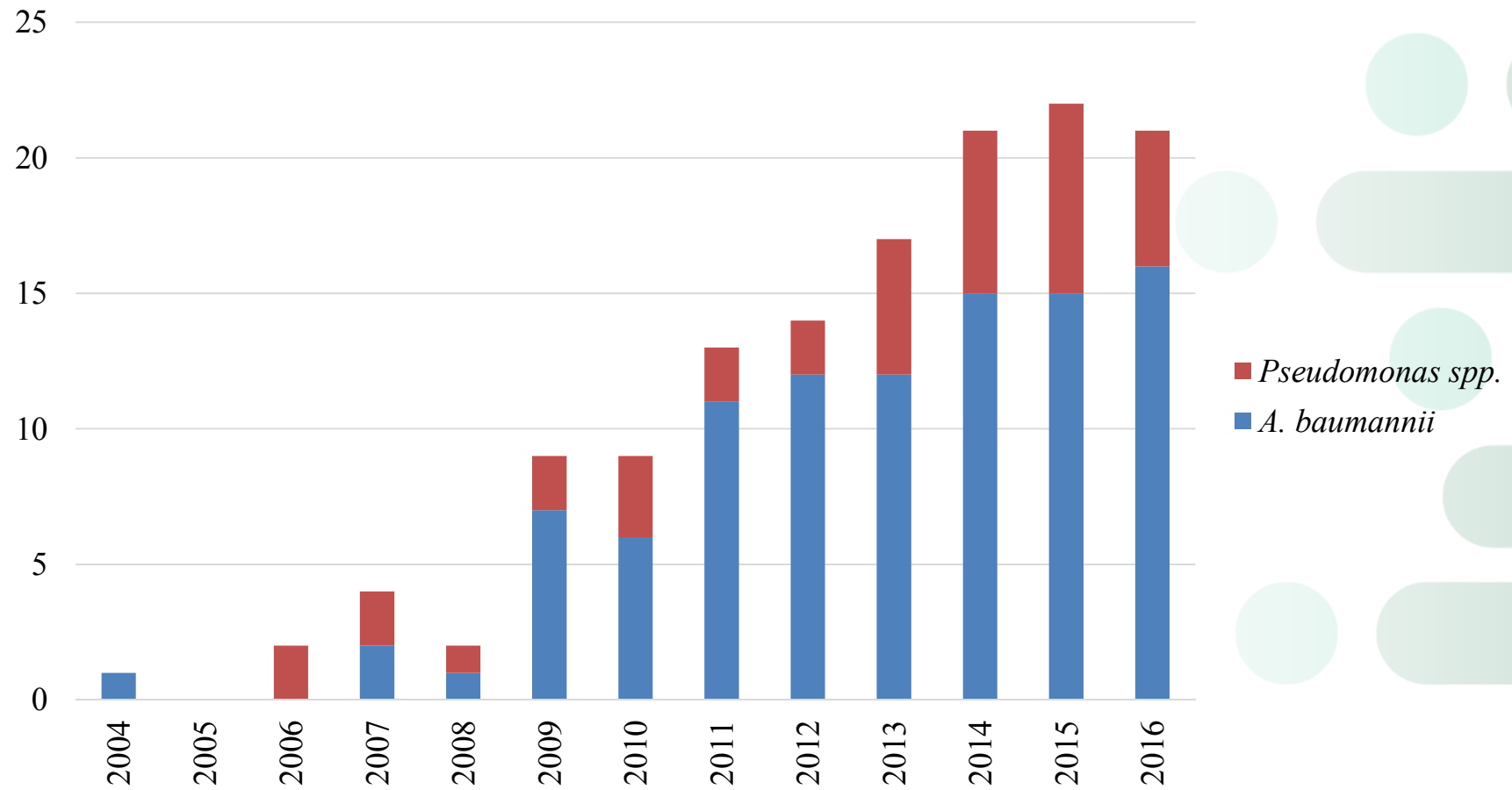


Karbapenemaseproduzierende *Enterobacteriaceae*



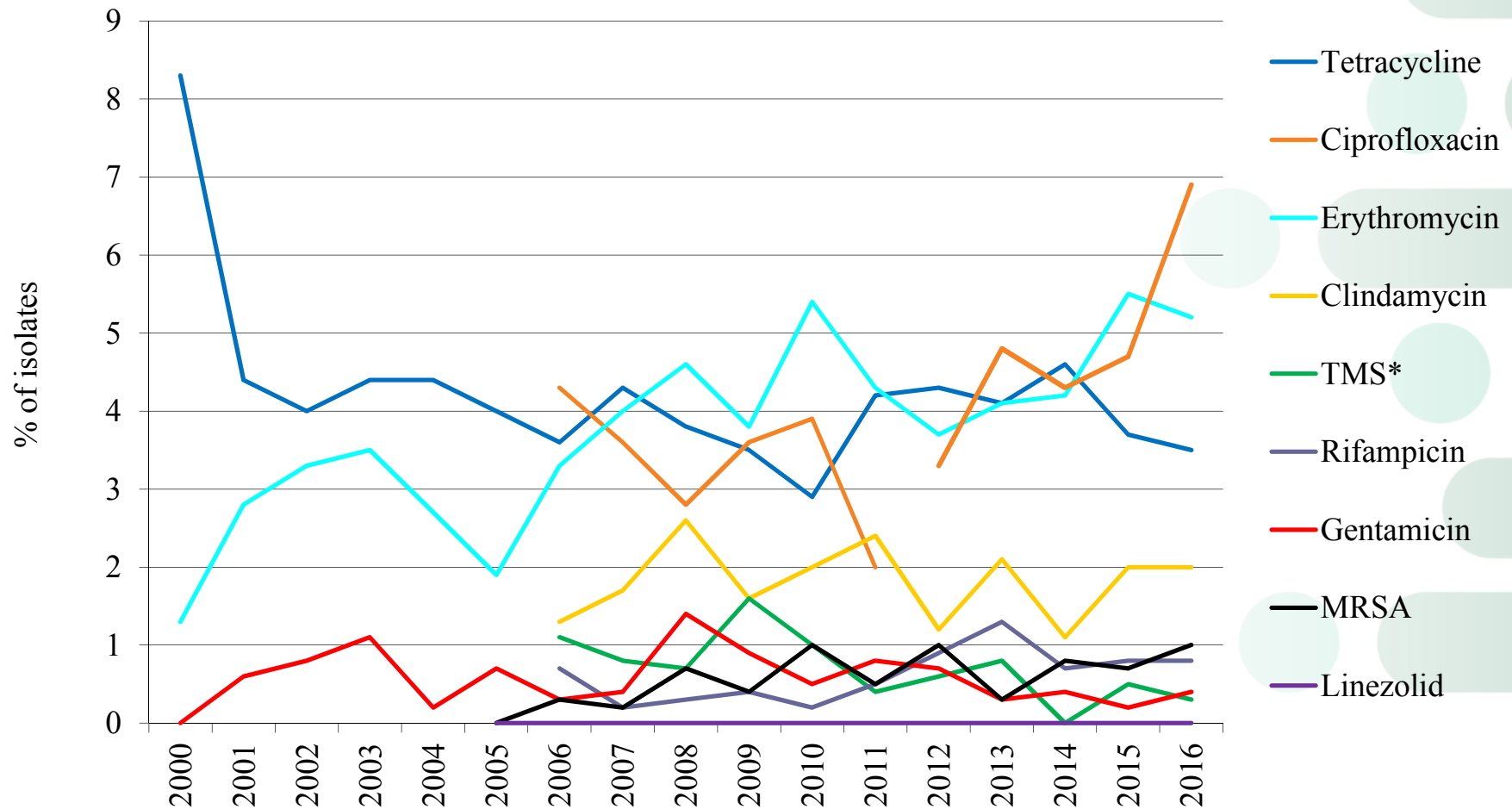


Karbapenemaseproduserende *P. aeruginosa* og *A. baumannii*



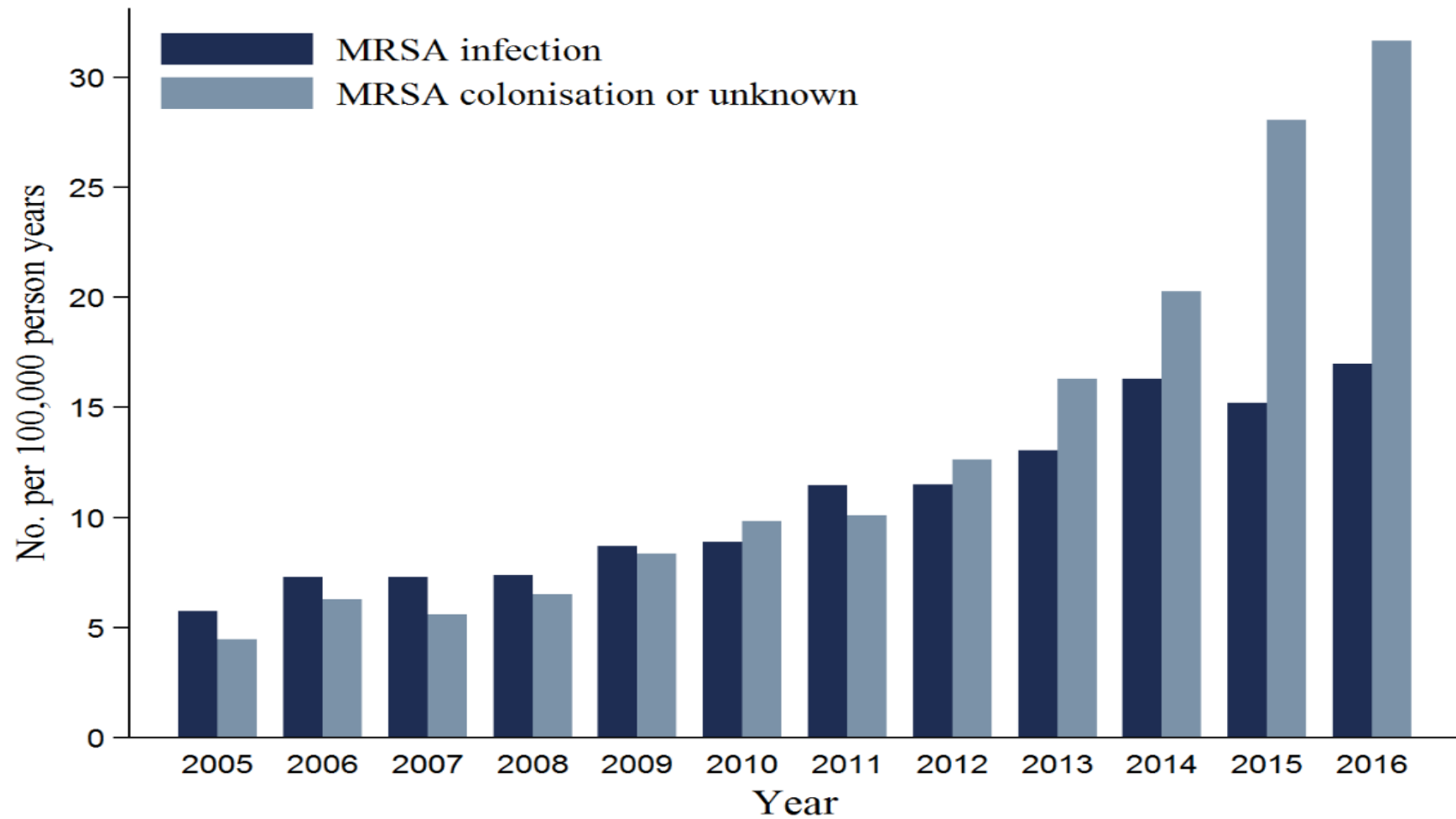


Staphylococcus aureus i blodkultur



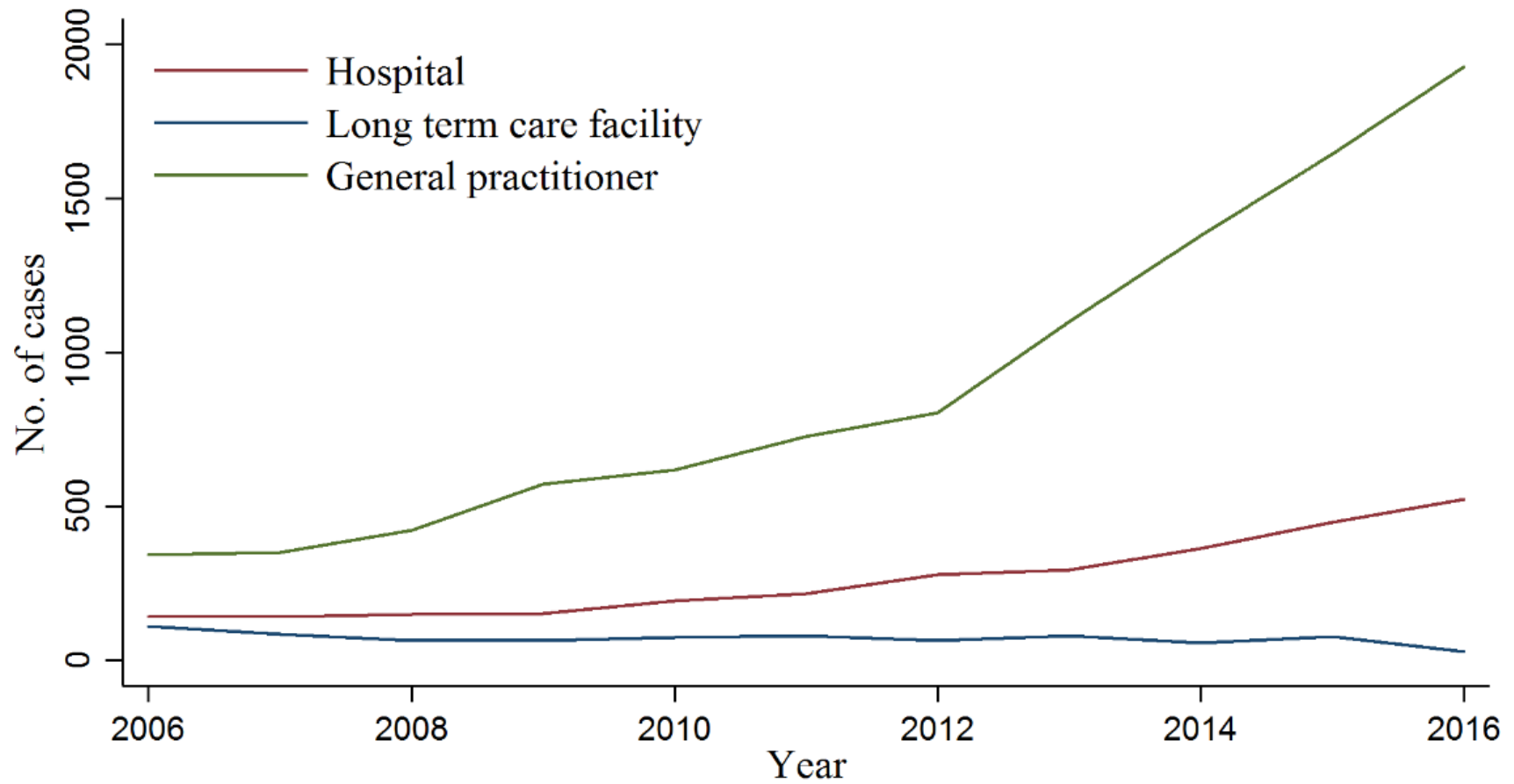


MRSA – Meldte tilfeller per 100 000



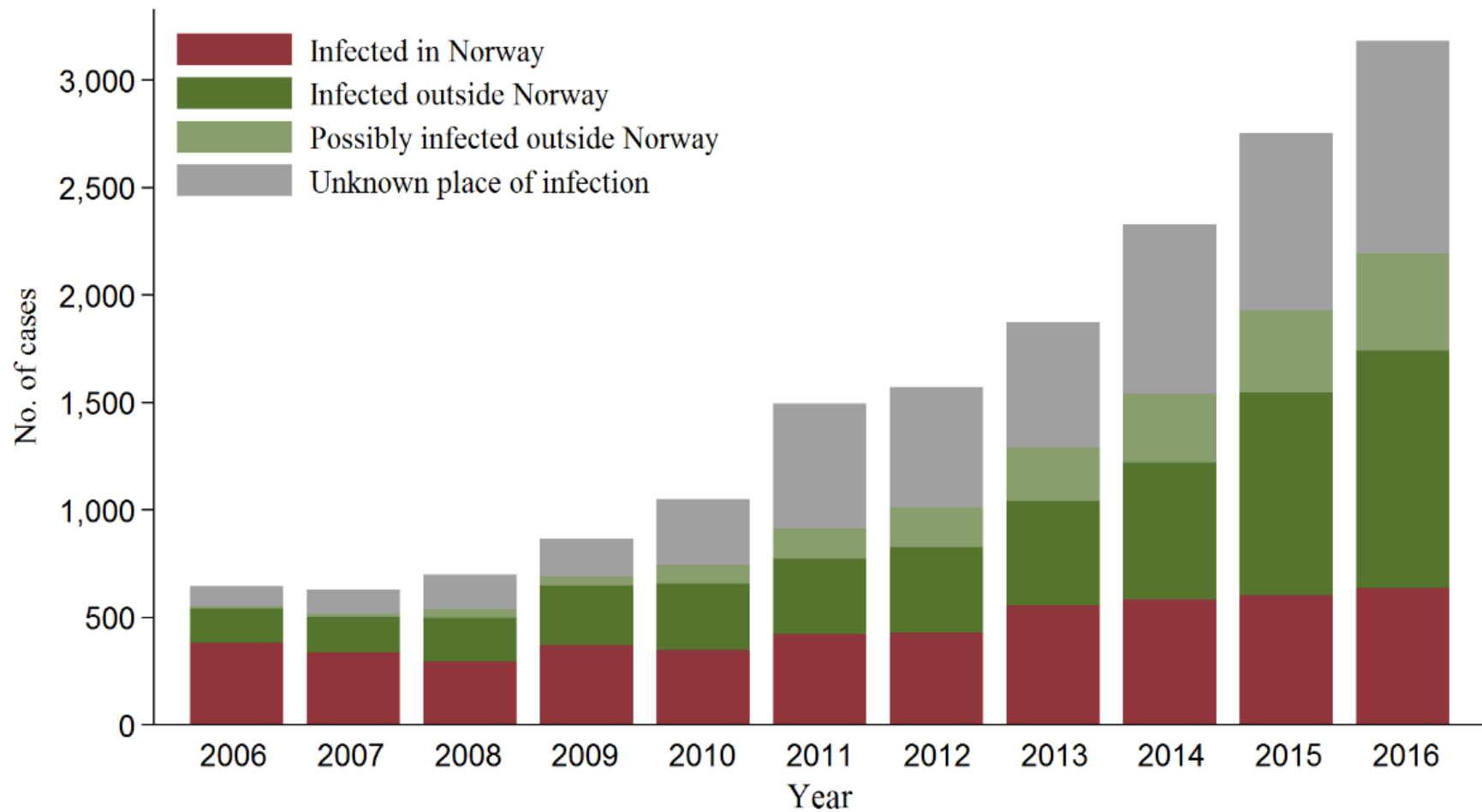


MRSA – Meldte tilfeller



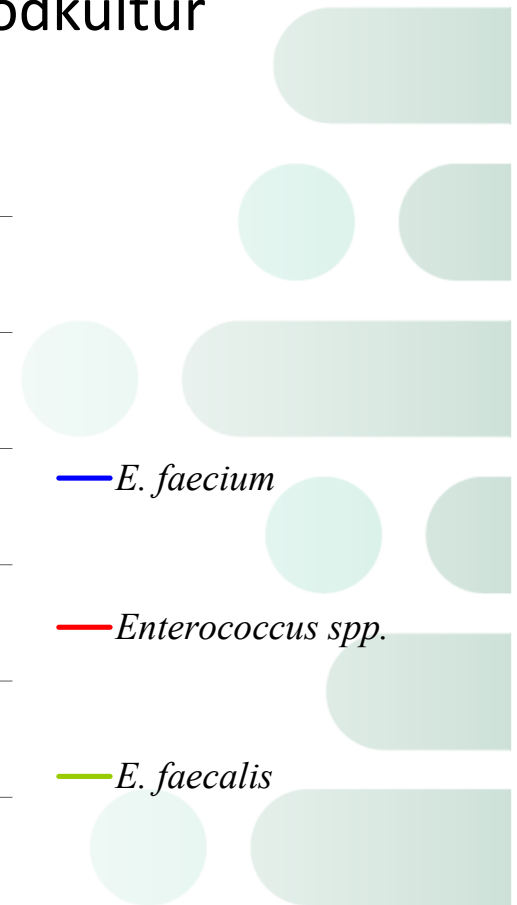
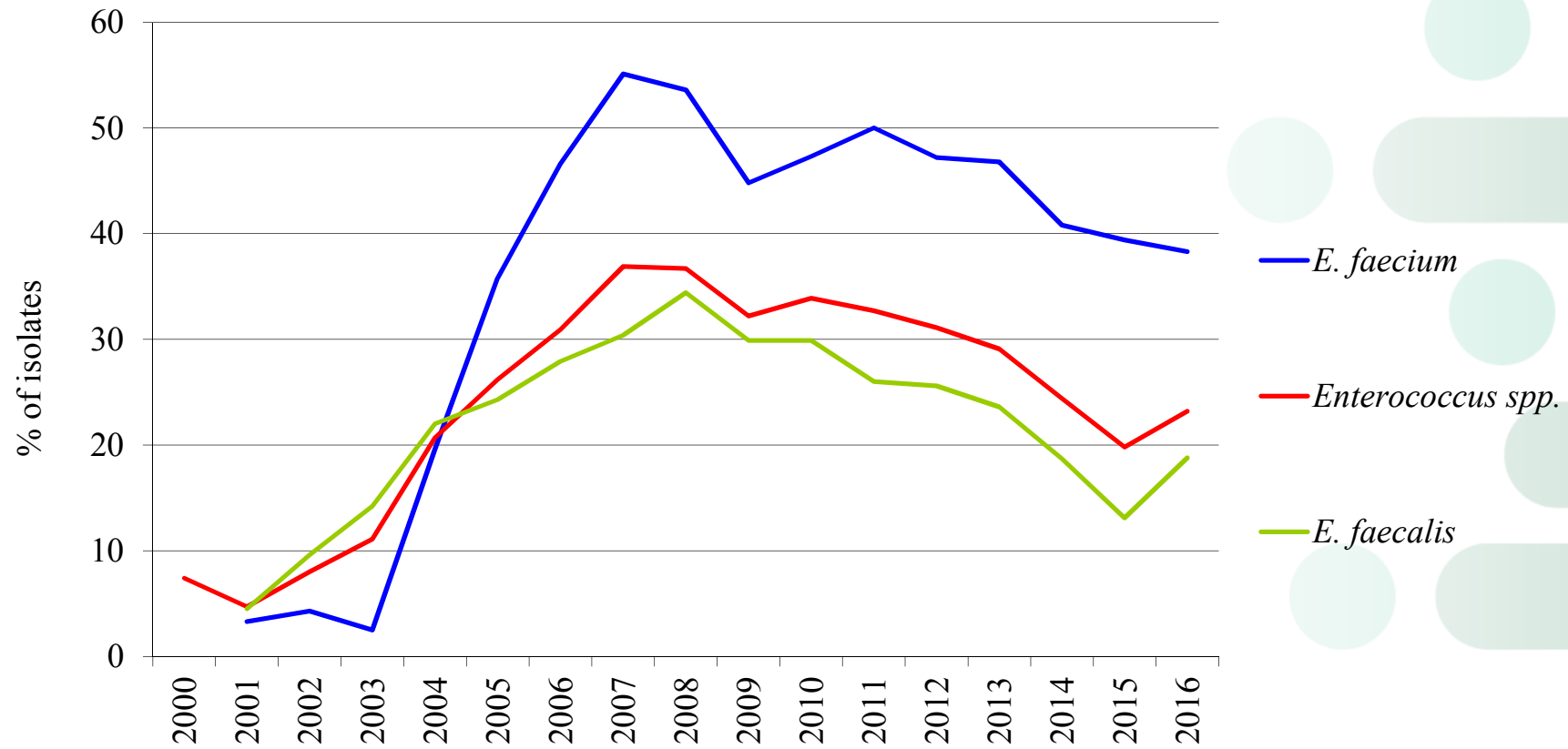


MRSA – Meldte tilfeller



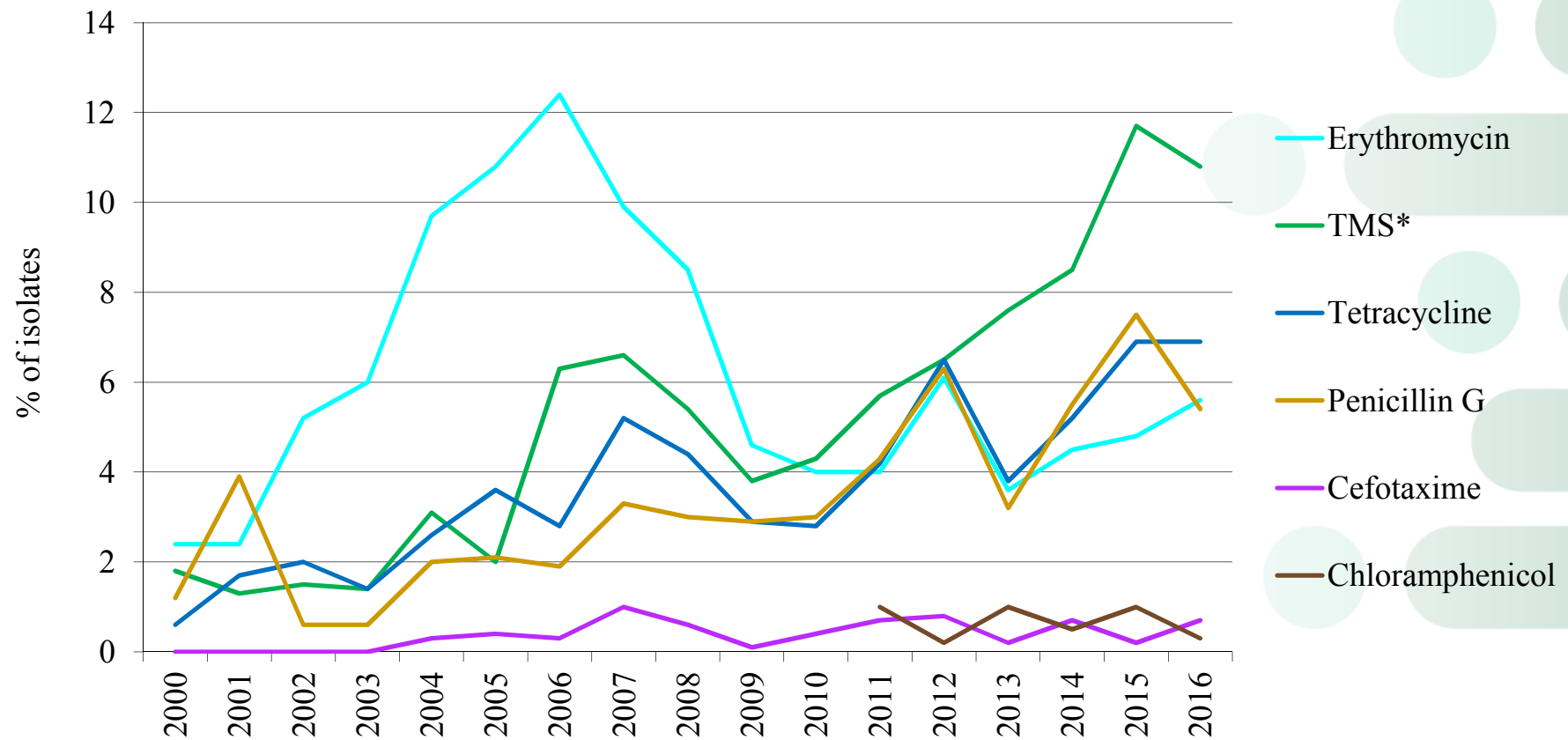


Gentamicinresistente enterokokker i blodkultur





Streptococcus pneumoniae i blodkultur





Neisseria gonorrhoeae

	Breakpoints (mg/L)		Proportion of isolates (%)		
	Susceptible	Resistant	Susceptible	Intermediately susceptible	Resistant
Penicillin G	≤ 0.06	> 1	2.9	66.1	31.0
Ceftriaxone	≤ 0.125	> 0.125	100.0	-	0.0
Cefixime	≤ 0.125	> 0.125	97.6	-	2.4
Azithromycin	≤ 0.25	> 0.5	64.1	24.4	11.5
Ciprofloxacin	≤ 0.03	> 0.06	51.4	0.0	48.6
Tetracycline	≤ 0.5	> 1	43.9	15.2	40.9
Spectinomycin	≤ 64	> 64	100.0	-	0.0
Beta-lactamase	Negative	Positive	76.4	-	23.6



Mycobacterium tuberculosis

Origin of birth	No. of cases	No. of isolates	Resistance to antimicrobial agents (No. of isolates)				
			Isoniazid	Rifampicin	Ethambutol	Pyrazinamid	MDR-TB*
Norway	33 (36)	22 (22)	2 (1)	2 (0)	0 (0)	0 (3)	2 (0)
Europe excl. Norway	39 (27)	34 (22)	3 (1)	2 (0)	2 (0)	7 (0)	2 (0)
Asia	104 (115)	80 (88)	4 (9)	3 (2)	0 (0)	2 (5)	3 (1)
Africa	120 (137)	90 (111)	10 (11)	4 (4)	0 (0)	6 (4)	4 (4)
America	1 (3)	1 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Oceania	1 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Total	298 (318)	228 (245)	19 (22)	11(6)	2 (0)	15 [#] (12)	11 (5)
Proportion resistant isolates (%)			8.3 (9.0)	4.8 (2.4)	0.9 (0.0)	6.6 (5.0)	4.8 (2.0)



Andre tema i NORM / NORM-VET 2016

- Indikatorbakterier fra dyr, fôr, mat og miljø
 - *Enterobacter* spp.
 - *Haemophilus influenzae*
 - *Neisseria meningitidis*
 - *Streptococcus pyogenes*
 - *Streptococcus agalactiae*
 - *Candida* spp.
- + mye mer!





Resistens mot empiriske kombinasjonsregimer

Drugs and dosage		Proportion of invasive isolates resistant (%)								
		<i>E. coli</i> (n=1,940)	<i>Klebsiella</i> spp. (n=855)	<i>H. influenzae</i> (n=81)	<i>Enterococcus</i> spp. (n=616)	<i>S. pneumoniae</i> (n=594)	<i>S. aureus</i> (n=1,255)	<i>S. pyogenes</i> (n=187)	ESBL-A <i>E. coli</i> and <i>Klebsiella</i> spp. (n=152)	MRSA* (n=2,604)
Benzylpenicillin 3g x 4	Gentamicin 5-7 mg/kg x1	6.3	3.4	27.2	-	0.3	0.4	0	52.0	11.7
Benzylpenicillin 3g x 4	Ciprofloxacin 4-600mg x 2	13.0	11.2	0	-	0.3	5.7	0	76.3	19.3
Clindamycin 600-900 mg x 3-4	Gentamicin 5-7 mg/kg x1	6.3	3.4	100.0	100.0	4.2	0.1	2,1	52.0	2.7
Ampicillin 2g x 4	Gentamicin 5-7 mg/kg x1	6.1	3.4	18.5	22.1	0.3	0.4	0 ⁴	52.0	11.7
Piperacillin/tazobactam 4g x 3-4	Gentamicin 5-7 mg/kg x1	0.5	0.9	0 ¹	22.1 ²	X	0.1	0 ⁴	8.6	11.7
Cefotaxime 2g x 3		6.0	4.7	0	100.0	0	1.0 ³	0 ⁴	100.0	100.0
Piperacillin/tazobactam 4g x 3-4		1.9	4.1	0 ¹	22.1 ²	X	1.0 ³	0 ⁴	15.1	100.0
Meropenem 1g x 3		0	0	X	100.0	X	1.0 ³	0 ⁴	0	100.0

¹Derived from results for amoxicillin-clavulanic acid. ²Derived from ampicillin result. ³Derived from cefoxitin result. ⁴ Derived from benzylpenicillin result. - No breakpoint/susceptibility testing not recommended. X No data available. *Includes MRSA isolates from all sources.



Takk for oppmerksomheten!