

2019 SDHB (Otago/Southland) Hospital Antibigram: Gram Negative Bacteria

For empiric treatment guidelines, see the Southern DHB empiric treatment guidelines on the MicroGuide App (available from the App Store and Google Play) or on the SDHB Intranet, Applications -> District -> Adult Antibiotic Guidelines

Susceptibility testing carried out using EUCAST interpretive criteria (<https://eucast.org/>)

Meaning of "I". A microorganism is categorised as "Susceptible, Increased exposure**" when there is a high likelihood of therapeutic success because exposure to the agent is increased (dose, frequency, mode of administration, and concentration at site of infection eg urine)

Gram negative bacteria (% susceptible)	Number tested	Amoxicillin	Amoxicillin/ Clavulanate	Amoxicillin/ Clavulanate (Cystitis)	Piperacillin/ Tazobactam**	Cefalexin (cystitis)	Cefuroxime parenteral	Ceftriaxone	Ceftazidime	Cefepime	Meropenem	Gentamicin	Tobramycin	Nitrofurantoin (cystitis)	Ciprofloxacin	Cotrimoxazole	Trimethoprim (cystitis)	Fosfomycin (cystitis) **	Pivmecillinam (cystitis) **	Tetracycline
<i>E. coli</i> (all sites)	2467	54%	64%	82%	99%		93%	94%			100%	95%			91%	78%				
<i>E. coli</i> (urines)	1915	55%	64%	82%		93%	94%	96%			100%	96%		98%	92%	79%	77%			
<i>E. coli</i> ESBL * (all sites)	301	R	R	R			R	R	R		100%	69%			43%	34%				
<i>E. coli</i> ESBL * (urine)	217	R	R	59%							100%	71%		94%	43%	35%	31%	95%	89%	
<i>Enterobacter</i> spp. *	186	R	R	R	78%	R	R	74%			99%	99%			98%	92%	87%			
<i>Klebsiella</i> spp.	459	R	76%	81%	92%	84%		91%			100%	98%			94%	91%	87%			
<i>Citrobacter</i> spp.*	113	R	48%	51%	86%	53%		80%			99%	98%			98%	96%	97%			
<i>Proteus mirabilis</i>	185	85%	96%	99%	100%	97%		100%			100%	93%		R	100%	90%	75%			
<i>Morganella morganii</i> *	60	R	R	R	100%	R		98%			100%	96%			98%	94%	87%			
<i>P. aeruginosa</i>	438				94%				86%	82%	89%		91%		76%					
<i>Serratia</i> spp. *	138	R	2%	0%	96%			85%			100%	100%			86%	92%	84%			
<i>Salmonella</i> spp.*	137	86%						100%							100%	98%				
<i>Acinetobacter</i> spp. *	103										99%	95%	93%		98%	97%				
<i>Haemophilus influenzae</i>	251	57%	74%					91%							98%	71%				98%

Notes: R = intrinsic resistance. The ESCHAPPM group (*Enterobacter* spp., *Serratia* spp., *Citrobacter freundii*, *Hafnia* spp., *Aeromonas* spp., *Proteus vulgaris*, *Providencia* spp., *Morganella morganii*) become resistant to cephalosporins if monotherapy with cephalosporins is used.

"Cystitis" = uncomplicated urinary tract infections.

* Community isolates included because of small numbers of hospital isolates.

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Meaning of "I". A microorganism is categorised as "Susceptible, Increased exposure*" when there is a high likelihood of therapeutic success because exposure to the agent is increased (dose, frequency, mode of administration, and concentration at site of infection eg urine)

Gram positive bacteria (%susceptible)	Number tested	Amoxicillin	Penicillin G (sensitive and intermediate)	Flucloxacillin	Ceftriaxone	Erythromycin	Clindamycin	Gentamicin	Nitrofurantoin (cystitis)	Trimethoprim (cystitis)	Cotrimoxazole	Norfloxacin (cystitis)	Fusidic acid	Linezolid**	Tetracycline/ Doxycycline	Vancomycin
<i>Staphylococcus aureus</i> (all)	1900		9%	94%		89%	90%	99%			98%		91%	100%	97%	100%
<i>S. aureus</i> (MRSA)*	202		R	R		73%	82%	91%			92%		79%	100%	92%	100%
<i>S. epidermidis</i> *	291			46%		48%	67%	58%		32%	52%			100%	90%	100%
<i>S. lugdunensis</i> *	141		54%	99%		96%	97%	99%			99%		96%	100%	99%	100%
<i>S. saprophyticus</i> *	286								100%	96%						
<i>Streptococcus pneumoniae</i> *	264		87%		100%	72%	76%				85%			98%	77%	100%
<i>Enterococcus</i> (all)	440	85%							96%			88%		99%		98%
<i>E. faecalis</i> *	358	96%							100%			91%		100%		100%
<i>E. faecium</i> *	59	21%							27%			24%		98%		94%

Notes:

Rifampicin should never be used as monotherapy for staphylococcal infections as resistance readily emerges.

Most erythromycin resistant Staphylococci will have inducible clindamycin resistance.

Note that 13% of *S. pneumoniae* are resistant to penicillin. High doses of a penicillin or cephalosporin may still be useful for infections other than meningitis (see MIC on laboratory report). For meningitis, consult the SDHB MicroGuide.

Flucloxacillin S Staphylococci are also S to 1st generation cephalosporins (eg cefazolin) and amoxicillin/clavulanate.

* Includes community isolates because of small numbers of hospital isolates.