

Antibiograms

- Canterbury Health Laboratories (CHL) have updated their [antibiogram](#).
- It can be found on their website (www.chl.co.nz/microbiology) and on the CDHB intranet:
 - [Antimicrobial Stewardship home page](#) ('quick link'),
 - Pink Book [Antimicrobial Susceptibilities](#) page, and
 - relevant Community and Hospital HealthPathways.
- Canterbury Southern Community Laboratories (SCL) also have an [antibiogram](#).
- Together the two antibiograms from local laboratories provide a picture of antimicrobial susceptibility in Canterbury.

What is an antibiogram?

- An 'antibiogram' is a profile of antimicrobial susceptibility for specific microorganisms (usually bacteria) as tested in routine laboratory practice. Individual test results are collated for a period of time (e.g. a year) and summarised into categories such as gram-positive or gram-negative bacteria, and sample site (e.g. urine, blood or 'all sites').
- Antibiograms can assist with prescribing for individuals when neither patient-specific susceptibility results nor relevant empiric antimicrobial guideline are available. They can also inform AMS programmes via facilitating local guideline development and detection of antimicrobial resistance issues that need review.
- Fig. 1 shows the CHL antibiogram for gram-negative bacteria isolated from urinary tract infections (UTIs) in 2021. Of 4,090 *E. coli* isolates, most were susceptible to nitrofurantoin (99%), gentamicin (95%) and cefalexin (94%). Susceptibility to trimethoprim ± sulfamethoxazole (~80%), amoxicillin+clavulanic acid (74%) and amoxicillin (58%) was less favourable. This information helped inform our recommendation to use nitrofurantoin before cefalexin or trimethoprim for empiric treatment of [uncomplicated lower UTI](#). Gentamicin is first choice for initial treatment of [pyelonephritis/complicated UTI](#).

Fig. 1: Antimicrobial susceptibility test results for gram-negative isolates from UTIs (2021)

Organism Name	Antibiotics in common use (1st line reporting)								Reserved (2nd line reporting)					
	Number tested	Ampicillin/amoxicillin	Amoxicillin+clavulanate	Cefalexin	Gentamicin	Nitrofurantoin ^d	Trimethoprim ^d	Trimethoprim+sulfamethoxazole	Ceftriaxone	Piperacillin+tazobactam [§]	Cefepime [#]	Meropenem [#]	Fosfomycin [#]	Ciprofloxacin [#]
<i>Citrobacter freundii</i> complex	30	R	R	R	93		87	90	87	90	100	100		100
<i>Citrobacter koseri</i>	93	R	96	99	100		98	98	99	99	99	100		100
<i>Enterobacter cloacae</i> complex	66	R	R	R	100		94	94	83	82	100	100		97
<i>Escherichia coli</i>	4090	58	74	94	95	99	79	82	97	98	98	100	99	93
<i>Klebsiella aerogenes</i>	23	R	R	R	96		100	100	91	91	100	100		100
<i>Klebsiella oxytoca</i>	93	R	88	91	98		97	98	94	90	99	100		99
<i>Klebsiella pneumoniae</i>	303	R	90	93	98		83	87	96	96	97	100		93
<i>Morganella morganii</i>	34	R	R	R	97	R	74	80	97	97	100	100		88
<i>Proteus mirabilis</i>	182	91	98	95	85	R	85	91	99	100	99	100		98
<i>Serratia marcescens</i>	42	R	R	R	100	R	83	93	95	95	100	100		93

≥ 90% susceptible
70 - 89% susceptible
< 70% susceptible, or intrinsically resistant (R)
No data or not tested

Notes:

- ^d Treatment of uncomplicated urinary tract infections only.
- [#] Use requires patient-specific Infectious Diseases/Clinical Microbiology approval unless following CDHB antimicrobial guideline e.g. 'The Pink Book'.
- [§] Use requires patient-specific Infectious Diseases/Clinical Microbiology/Respiratory Specialist approval unless following a CDHB antimicrobial guideline e.g. 'The Pink Book'.

THE PINK BOOK ANTIMICROBIAL GUIDELINES UPDATE

- The [Prophylaxis for Urinary Catheter Placement in Orthopaedic Patients](#) guideline has been updated to include spinal patients. The Hospital HealthPathway [Urethral Catheterisation](#) link to the guideline has also been updated.
- The [Diarrhoea - infection associated](#) guideline has been updated to improve clarity about treatment durations.