

## Cumulative Antibiograms 2020: Tablelands Sector Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Tablelands Sector antibiogram captures data from the following sites: Armidale Hospital, Emmaville Hospital, Glen Innes Hospital, Guyra Hospital, Inverell Hospital, Tenterfield Hospital

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- The predominant pathogen isolated from blood cultures collected in the Tablelands Sector was *Escherichia coli*.
- *Escherichia coli* isolates demonstrated 59% susceptibility to ampicillin and 95% susceptibility to gentamicin.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin
<b>Treatment of severe pyelonephritis in adults</b>	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime

## Cumulative Antibiograms 2020: Tablelands Sector Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
See eTG Complete > Antibiotic > Acute cystitis in adults and Acute pyelonephritis in adults for an unabridged description	

- The predominant pathogens from urine samples included: *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Enterococcus faecalis*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (83% trimethoprim susceptibility, and 99% nitrofurantoin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (98% gentamicin susceptibility and 61% ampicillin susceptibility).
- *Klebsiella pneumoniae* isolates showed susceptibility to oral options (90% trimethoprim susceptibility) and first line intravenous option (98% gentamicin susceptibility). Isolates were not susceptible to ampicillin (0% susceptibility).
- Isolates of *Pseudomonas aeruginosa* isolates demonstrated high rates of susceptibility to oral options (87% ciprofloxacin susceptibility) and first line intravenous therapy option (90% gentamicin susceptibility).
- *Enterococcus faecalis* isolates demonstrated high rates of susceptibility were observed to first line oral agents (100% nitrofurantoin susceptibility, 100% ampicillin susceptibility) and empiric and directed intravenous therapies (100% vancomycin susceptibility). 0% of these isolates were VRE.

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
<b>Empirical therapy for cellulitis and erysipelas without systemic features &gt; purulent cellulitis</b>	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
<b>Empirical antibiotic therapy for peritonitis due to perforated viscus</b>	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR

## Cumulative Antibiograms 2020: Tablelands Sector Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
	Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete &gt; Antibiotic &gt;</i> for an unabridged description	

- Predominant pathogens included: *Staphylococcus aureus* and *Streptococcus pyogenes*
- *Staphylococcus aureus* was frequently isolated from the samples collected at Tablelands Sector. Isolates demonstrated high rates of susceptibility to flucloxacillin (83% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 17% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (88% clindamycin susceptibility, 97% sulfamethoxazole and trimethoprim susceptibility and 98% doxycycline susceptibility).

## Cumulative Antibiograms 2020: Tablelands Sector: Blood

	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Gentamicin		Amikacin		Piperacillin and tazobactam		Ceftriaxone		Meropenem		Ciprofloxacin		Vancomycin		Sulfamethoxazole and trimethoprim		Benzylpenicillin		Flucloxacillin	
Organism	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	59	37	83	35	78	37	95	37	100	37	95	37	95	37	100	37	92	37			84	37				

## Cumulative Antibiograms 2020: Tablelands Sector: Urine

Organism	Ampicillin		Cefazolin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftriaxone		Cefepime		Meropenem		Ciprofloxacin		Vancomycin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	61	369	54	340	98	368	95	141	99	135	97	356	95	133	100	295	91	349		40	83	369	99	368	89	369	97	348
Klebsiella pneumoniae	0	40	74	35	98	40					97	38			100	35	92	37		40	90	40			90	39	97	37
Pseudomonas aeruginosa					90	31									90	31	87	31									97	31
Enterococcus faecalis	100	70																	100	40			100	69				

## Cumulative Antibiograms 2020: Tablelands Sector: Other

	Sulfamethoxazole and trimethoprim		Gentamicin		Ciprofloxacin		Vancomycin		Teicoplanin		Linezolid		Clindamycin		Fusidic acid		Rifampicin		Benzylpenicillin		Erythromycin		Flucloxacillin		Doxycycline		Mupirocin	
Organism	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Staphylococcus aureus	97	280	99	250	96	261	100	254	99	242	100	247	88	260	96	253	100	254	16	278	86	284	83	281	98	281	96	264

## Cumulative Antibigrams 2020: Peel Sector Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	N Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Peel Sector antibiogram captures data from the following sites: Barraba Hospital, Gunnedah Hospital, Manilla Hospital, Quirindi Hospital, Tamworth Base Hospital, Walcha Hospital, Werris Creek Hospital.

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- Predominant pathogens isolated from blood cultures collected in the Peel Sector were *Escherichia coli* and *Staphylococcus aureus*.
- *Escherichia coli* isolates demonstrated 58% susceptibility to ampicillin and 92% susceptibility to gentamicin.
- *Staphylococcus aureus* isolates demonstrated 88% susceptibility to flucloxacillin and were susceptible to vancomycin. 12% of isolates were MRSA.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin

## Cumulative Antibiograms 2020: Peel Sector Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Treatment of severe pyelonephritis in adults	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime
See eTG Complete > Antibiotic > Acute cystitis in adults and Acute pyelonephritis in adults for an unabridged description	

- The predominant pathogens from urine samples included: *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae*, *Proteus mirabilis*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (84% trimethoprim susceptibility, 99% nitrofurantoin susceptibility and 97% cefalexin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (97% gentamicin susceptibility and 66% ampicillin susceptibility).
- *Klebsiella pneumoniae* isolates showed susceptibility to oral options (86% trimethoprim susceptibility, and 96% cefalexin susceptibility) and first line intravenous option (99% gentamicin susceptibility). Isolates were not susceptible to ampicillin (0% susceptibility).
- Isolates of *Pseudomonas aeruginosa* isolates demonstrated high rates of susceptibility to oral options (97% ciprofloxacin susceptibility) and first line intravenous therapy option (100% gentamicin susceptibility).

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
Empirical therapy for cellulitis and erysipelas without systemic features > purulent cellulitis	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
Empirical antibiotic therapy for peritonitis due to perforated viscus	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole
Empirical therapy: low-severity CAP in adults	Amoxicillin OR



## Cumulative Antibigrams 2020: Peel Sector Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
	Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete &gt; Antibiotic &gt;</i> for an unabridged description	

- Predominant pathogens included: *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Streptococcus sp. (Group B)*, *Streptococcus pyogenes (Group A)*, *Enterobacter cloacae complex*, *Proteus mirabilis*, and *Haemophilus influenzae*
- *Staphylococcus aureus* was frequently isolated from the samples collected at Peel Sector. Isolates demonstrated high rates of susceptibility to flucloxacillin (80% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 20% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (88% clindamycin susceptibility, 99% sulfamethoxazole and trimethoprim susceptibility and 96% doxycycline susceptibility).
- *Haemophilus influenzae* isolates demonstrated 74% ampicillin susceptibility, and 91% ceftriaxone susceptibility.
- *Pseudomonas aeruginosa* isolates demonstrated 97% gentamicin susceptibility, 98% ceftazidime susceptibility, and 96% ciprofloxacin susceptibility.

## Cumulative Antibigrams 2020: Peel Sector: Blood

Organism	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Gentamicin		Amikacin		Piperacillin and tazobactam		Ceftriaxone		Meropenem		Ciprofloxacin		Vancomycin		Sulfamethoxazole and trimethoprim		Benzylpenicillin		Flucloxacillin	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	58	52	84	51	85	52	92	52	100	52	92	52	94	52	100	52	96	52			87	52				
Staphylococcus aureus																	91	45	100	48	98	57	19	57	88	57

## Cumulative Antibigrams 2020: Peel Sector: Urine

Organism	Benzylpenicillin		Ampicillin		Cefazolin		Cefalexin		Flucloxacillin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftriaxone		Meropenem		Ciprofloxacin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli			66	687	47	30	97	684			97	685	88	49	100	51	69	52	100	55			84	688	99	682	96	688		
Staphylococcus aureus	16	31							94	31													97	30	100	31				
Klebsiella pneumoniae			0	85			96	84			99	85											86	85			96	85		
Pseudomonas aeruginosa											100	74	100	74	100	73			99	71	97	68					99	67	100	70
Enterobacter cloacae complex			0	34			0	34			79	34											71	34			88	33		
Proteus mirabilis			91	47			96	47			98	47											85	47			98	47		



## Cumulative Antibigrams 2020: MNC Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The MNC antibiogram captures data from the following sites: Coffs Harbour Hospital, Kempsey District Hospital, Macksville & District Hospital, Wauchope Hospital, Bellinger River District Hospital, Coffs Macksville Community Health, Dorrigo Health Campus, Port Macquarie Base Hospital.

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- Predominant pathogens isolated from blood cultures collected in the MNC included *Escherichia coli* and *Staphylococcus aureus*.
- *Escherichia coli* isolates demonstrated 55% susceptibility to ampicillin and 87% susceptibility to gentamicin.
- *Staphylococcus aureus* isolates demonstrated 87% susceptibility to flucloxacillin and were susceptible to vancomycin. 13% of isolates were MRSA.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR

## Cumulative Antibiograms 2020: MNC Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
	Ciprofloxacin
<b>Treatment of severe pyelonephritis in adults</b>	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime
See eTG Complete > Antibiotic > Acute cystitis in adults and Acute pyelonephritis in adults for an unabridged description	

- The predominant pathogens from urine samples included: *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae*, *Proteus mirabilis*, *Staphylococcus aureus*, *Streptococcus agalactiae*, *Enterococcus faecalis* and *Pseudomonas aeruginosa*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (78% trimethoprim susceptibility, 98% nitrofurantoin susceptibility and 94% cefalexin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (95% gentamicin susceptibility and 60% ampicillin susceptibility).
- *Klebsiella pneumoniae* isolates showed susceptibility to oral options (93% trimethoprim susceptibility, and 96% cefalexin susceptibility) and first line intravenous option (99% gentamicin susceptibility). Isolates were not susceptible to ampicillin (0% susceptibility).
- Isolates of *Pseudomonas aeruginosa* isolates demonstrated high rates of susceptibility to oral options (99% norfloxacin susceptibility) and first line intravenous therapy option (98% gentamicin susceptibility).
- *Enterococcus faecalis* isolates demonstrated high rates of susceptibility were observed to first line oral agents (100% nitrofurantoin susceptibility, 98% ampicillin susceptibility) and empiric and directed intravenous therapies (100% vancomycin susceptibility). 0% of these isolates were VRE.

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
<b>Empirical therapy for cellulitis and erysipelas without systemic features &gt; purulent cellulitis</b>	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
<b>Empirical antibiotic therapy for peritonitis due to perforated viscus</b>	Gentamicin PLUS metronidazole PLUS Ampicillin OR

## Cumulative Antibiograms 2020: MNC Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
	Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete</i> > <i>Antibiotic</i> > for an unabridged description	

- Predominant pathogens included: *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Streptococcus sp. (Group B)*, *Streptococcus pyogenes (Group A)*, *Streptococcus sp. (Group G)*, *Streptococcus sp. (Group C)*, and *Haemophilus influenzae*
- *Staphylococcus aureus* was frequently isolated from the samples collected at MNC. Isolates demonstrated high rates of susceptibility to flucloxacillin (80% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 20% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (87% clindamycin susceptibility, 99% sulfamethoxazole and trimethoprim susceptibility and 96% doxycycline susceptibility).
- *Haemophilus influenzae* isolates demonstrated 73% ampicillin susceptibility, and 99% ceftriaxone susceptibility.
- *Pseudomonas aeruginosa* isolates demonstrated 99% gentamicin susceptibility, 98% ceftazidime susceptibility, and 95% ciprofloxacin susceptibility.

## Cumulative Antibigrams 2020: MNC: Blood

	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Gentamicin		Piperacillin and tazobactam		Ceftriaxone		Cefepime		Meropenem		Ciprofloxacin		Vancomycin		Sulfamethoxazole and trimethoprim		Benzylpenicillin		Flucloxacillin	
Organism	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	55	130	86	109	81	130	87	130	88	128	89	130	92	130	100	130	89	130			72	129				
Staphylococcus aureus							95	37									81	37	100	38	98	45	29	45	87	45



## Cumulative Antibiograms 2020: MNC: Urine

Organism	Benzylpenicillin		Ampicillin		Cefazolin		Cefalexin		Flucloxacillin		Gentamicin		Piperacillin and tazobactam		Ceftriaxone		Meropenem		Ciprofloxacin		Vancomycin		Trimethoprim		Nitrofurantoin		Norfloxacin	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli			60	1,370			94	1,374			95	1,374	67	69	42	84	100	99	52	96			78	1,370	98	1,377	94	1,377
Staphylococcus aureus	22	51							76	51											100	39	93	43	100	45		
Klebsiella pneumoniae			0	266			96	266			99	267											93	267			98	267
Pseudomonas aeruginosa											98	133	100	134													99	134
Streptococcus sp. (Group B)	100	40																							100	40		
Enterococcus faecalis			98	143																	100	139			100	143		
Enterobacter cloacae complex			0	48							85	48					95	44	90	42			71	48			90	48
Proteus mirabilis			87	92			97	92			98	92											87	92			99	92

## Cumulative Antibiograms 2020: MNC: Other

Organism	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Sulfamethoxazole and trimethoprim		Gentamicin		Ceftroxone		Cefepime		Ceftazidime		Piperacillin and tazobactam		Meropenem		Ciprofloxacin		Vancomycin		Clindamycin		Fusidic acid		Rifampicin		Benzylpenicillin		Erythromycin		Flucloxacillin		Doxycycline		Mupirocin							
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n				
Escherichia coli	47	38	89	35	87	38	76	38	92	38	92	38	92	38			89	38	100	38	87	38																								
Staphylococcus aureus							99	1,732	95	397									83	395	100	398	87	1,733	98	395	99	395	16	1,735	88	1,360	80	1,731	96	1,726	96	395								
Pseudomonas aeruginosa									99	231			95	230	98	231	98	231	98	226	95	231																								
Streptococcus sp. (Group B)											100	48									100	48					100	49	83	48					28	53										
Streptococcus pyogenes (Group A)											100	212									100	210					100	215	97	206					63	235										
Streptococcus sp. (Group G)																					100	30					100	30							60	30										
Streptococcus sp. (Group C)											100	58									100	59					100	59	83	58					78	65										
Haemophilus influenzae	73	77	94	69			78	77			99	77																									99	77								

## Cumulative Antibigrams 2020: Lake Macquarie Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Lake Macquarie antibiogram captures data from the following sites: Belmont District Hospital, Morisset Hospital.

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- The predominant pathogen isolated from blood cultures collected in Lake Macquarie included was *Escherichia coli*.
- *Escherichia coli* isolates demonstrated 48% susceptibility to ampicillin and 88% susceptibility to gentamicin.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin
<b>Treatment of severe pyelonephritis in adults</b>	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime

## Cumulative Antibiograms 2020: Lake Macquarie Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
See eTG Complete > Antibiotic > Acute cystitis in adults and Acute pyelonephritis in adults for an unabridged description	

- The predominant pathogens from urine samples included: *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (81% trimethoprim susceptibility, and 99% nitrofurantoin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (94% gentamicin susceptibility and 61% ampicillin susceptibility).
- *Klebsiella pneumoniae* isolates showed susceptibility to oral options (92% trimethoprim susceptibility) and first line intravenous option (100% gentamicin susceptibility). Isolates were not susceptible to ampicillin (0% susceptibility).
- Isolates of *Pseudomonas aeruginosa* isolates demonstrated high rates of susceptibility to oral options (89% ciprofloxacin susceptibility) and first line intravenous therapy option (93% gentamicin susceptibility).
- *Enterococcus faecalis* isolates demonstrated high rates of susceptibility were observed to first line oral agents (100% nitrofurantoin susceptibility, 100% ampicillin susceptibility) and empiric and directed intravenous therapies (100% vancomycin susceptibility). 0% of these isolates were VRE.

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
<b>Empirical therapy for cellulitis and erysipelas without systemic features &gt; purulent cellulitis</b>	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
<b>Empirical antibiotic therapy for peritonitis due to perforated viscus</b>	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR

## Cumulative Antibiograms 2020: Lake Macquarie Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
	Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete &gt; Antibiotic &gt;</i> for an unabridged description	

- The predominant pathogens was *Staphylococcus aureus*
- *Staphylococcus aureus* was frequently isolated from the samples collected at Lake Macquarie. Isolates demonstrated high rates of susceptibility to flucloxacillin (80% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 20% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (84% clindamycin susceptibility, 94% sulfamethoxazole and trimethoprim susceptibility and 93% doxycycline susceptibility).

## Cumulative Antibigrams 2020: Lake Macquarie: Blood

Organism	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Gentamicin		Amikacin		Piperacillin and tazobactam		Ceftriaxone		Ceftazidime		Meropenem		Ciprofloxacin		Sulfamethoxazole and trimethoprim	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	48	69	84	68	58	69	88	69	100	65	94	66	88	69	87	69	100	69	85	68	72	69

## Cumulative Antibiograms 2020: Lake Macquarie: Urine

Organism	Ampicillin		Cefazolin		Flucloxacillin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftriaxone		Cefepime		Meropenem		Ciprofloxacin		Vancomycin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n		
Escherichia coli	61	466	55	445			94	467	95	185	99	181	94	471	88	179	99	382	90	445			81	467	99	466	89	467	93	446
Klebsiella pneumoniae	0	48	67	42			100	48					100	48			100	46	94	47			92	48			94	47	100	47
Pseudomonas aeruginosa							93	46									95	43	89	46									93	46
Enterococcus faecalis	100	53																			100	38			100	52				
Proteus mirabilis	90	42	58	40			98	42					98	42			100	36	95	40			74	42			95	42	100	40

## Cumulative Antibiograms 2020: Lake Macquarie: Other

	Sulfamethoxazole and trimethoprim		Gentamicin		Ciprofloxacin		Vancomycin		Teicoplanin		Linezolid		Clindamycin		Fusidic acid		Rifampicin		Benzylpenicillin		Erythromycin		Flucloxacillin		Doxycycline		Mupirocin	
Organism	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Staphylococcus aureus	94	268	95	258	93	258	100	257	97	256	100	257	84	263	96	258	100	257	19	259	84	267	80	268	93	268	99	268



## Cumulative Antibigrams 2020: Mehi Sector Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Mehi Sector antibiogram captures data from the following sites: Bingara Medical Centre, Warialda Hospital, Boggabri Hospital, Narrabri Hospital.

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- There were insufficient blood culture isolates from the Mehi Sector to characterise antibigrams.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin
<b>Treatment of severe pyelonephritis in adults</b>	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime
See <i>eTG Complete &gt; Antibiotic &gt; Acute cystitis in adults</i> and <i>Acute pyelonephritis in adults</i> for an unabridged description	

## Cumulative Antibiograms 2020: Mehi Sector Commentary

- There were insufficient urine culture isolates from the Mehi Sector to characterise antibiograms.

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
<b>Empirical therapy for cellulitis and erysipelas without systemic features &gt; purulent cellulitis</b>	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
<b>Empirical antibiotic therapy for peritonitis due to perforated viscus</b>	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete &gt; Antibiotic &gt;</i> for an unabridged description	

- There were insufficient other culture isolates from the Mehi Sector to characterise antibiograms.

## Cumulative Antibiograms 2020: Lower Mid North Coast Sector Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Lower Mid North Coast Sector antibiogram captures data from the following sites: Bulahdelah District Hospital, Dungog and District Hospital, Gloucester Soldiers Memorial Hospital, Taree Hospital, Wingham Hospital

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- Predominant pathogens isolated from blood cultures collected in the Lower Mid North Coast Sector included *Escherichia coli* and *Staphylococcus aureus*.
- *Escherichia coli* isolates demonstrated 67% susceptibility to ampicillin and 98% susceptibility to gentamicin.
- *Staphylococcus aureus* isolates demonstrated 90% susceptibility to flucloxacillin and were susceptible to vancomycin. 10% of isolates were MRSA.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin

## Cumulative Antibiograms 2020: Lower Mid North Coast Sector Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Treatment of severe pyelonephritis in adults	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime
See <i>eTG Complete</i> > Antibiotic > Acute cystitis in adults and Acute pyelonephritis in adults for an unabridged description	

- The predominant pathogens from urine samples included: *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Enterobacter cloacae*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (82% trimethoprim susceptibility, and 100% nitrofurantoin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (96% gentamicin susceptibility and 57% ampicillin susceptibility).
- *Klebsiella pneumoniae* isolates showed susceptibility to oral options (86% trimethoprim susceptibility) and first line intravenous option (95% gentamicin susceptibility). Isolates were not susceptible to ampicillin (0% susceptibility).
- Isolates of *Pseudomonas aeruginosa* isolates demonstrated high rates of susceptibility to oral options (96% ciprofloxacin susceptibility) and first line intravenous therapy option (97% gentamicin susceptibility).
- *Enterococcus faecalis* isolates demonstrated high rates of susceptibility were observed to first line oral agents (100% nitrofurantoin susceptibility, 100% ampicillin susceptibility) and empiric and directed intravenous therapies (100% vancomycin susceptibility). 0% of these isolates were VRE.

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
Empirical therapy for cellulitis and erysipelas without systemic features > purulent cellulitis	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
Empirical antibiotic therapy for peritonitis due to perforated viscus	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam

## Cumulative Antibiograms 2020: Lower Mid North Coast Sector Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
	OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete</i> > <i>Antibiotic</i> > for an unabridged description	

- Predominant pathogens included: *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Streptococcus pyogenes* (Group A), *Streptococcus sp.* (Group C), and *Haemophilus influenzae*
- *Staphylococcus aureus* was frequently isolated from the samples collected at Lower Mid North Coast Sector. Isolates demonstrated high rates of susceptibility to flucloxacillin (82% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 18% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (88% clindamycin susceptibility, 97% sulfamethoxazole and trimethoprim susceptibility and 96% doxycycline susceptibility).
- *Haemophilus influenzae* isolates demonstrated 54% ampicillin susceptibility, and 100% ceftriaxone susceptibility.
- *Pseudomonas aeruginosa* isolates demonstrated 96% gentamicin susceptibility, 83% ceftazidime susceptibility, and 89% ciprofloxacin susceptibility.

### Cumulative Antibigrams 2020: Lower Mid North Coast Sector: Blood

Organism	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Gentamicin		Amikacin		Piperacillin and tazobactam		Ceftriaxone		Ceftazidime		Cefepime		Meropenem		Ciprofloxacin		Sulfamethoxazole and trimethoprim		Benzylpenicillin		Flucloxacillin	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	67	92	87	92	76	89	98	91	100	89	92	89	96	92	95	92	100	47	100	92	97	92	84	90				
Staphylococcus aureus																						97	39	10	39	90	39	

## Cumulative Antibigrams 2020: Lower Mid North Coast Sector: Urine

	Ampicillin		Cefazolin		Flucloraxacillin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftriaxone		Cefepime		Meropenem		Ciprofloxacin		Vancomycin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime	
Organism	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	57	635	58	600			96	635	91	271	99	276	95	634	93	271	100	546	90	609			82	635	100	631	90	635	94	608
Klebsiella pneumoniae	0	83	71	77			95	83	91	44	100	44	94	83	98	43	100	73	90	82			86	83			88	83	94	82
Pseudomonas aeruginosa							97	67	88	34	97	34			94	34	97	65	96	67									97	67
Enterococcus faecalis	100	63																			100	38			100	63				
Enterobacter cloacae complex	0	34	0	34			94	34					74	34			100	34	94	34			88	34			88	33	78	32
Proteus mirabilis	78	51	66	47			94	51					98	51			100	40	96	50			69	51			96	50	100	50





## Cumulative Antibigrams 2020: John Hunter Hospital Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The John Hunter Hospital antibiogram captures data from the following site: John Hunter Hospital.

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- Predominant pathogens isolated from blood cultures collected in the John Hunter Hospital included *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, and *Pseudomonas aeruginosa*.
- *Escherichia coli* isolates demonstrated 55% susceptibility to ampicillin and 94% susceptibility to gentamicin.
- *Staphylococcus aureus* isolates demonstrated 92% susceptibility to flucloxacillin and were susceptible to vancomycin. 8% of isolates were MRSA.
- *Pseudomonas aeruginosa* isolates demonstrated 100% susceptibility to gentamicin. This species is intrinsically resistant to ceftriaxone and cefotaxime.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin

## Cumulative Antibiograms 2020: John Hunter Hospital Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Treatment of nonsevere pyelonephritis in adults	Amoxicillin+Clavulanate OR Ciprofloxacin
Treatment of severe pyelonephritis in adults	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime
See eTG Complete > Antibiotic > Acute cystitis in adults and Acute pyelonephritis in adults for an unabridged description	

- The predominant pathogens from urine samples included: *Escherichia coli*, *Klebsiella pneumoniae*, *Klebsiella oxytoca*, *Proteus mirabilis*, *Enterobacter cloacae*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Enterococcus faecium*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (76% trimethoprim susceptibility, and 99% nitrofurantoin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (95% gentamicin susceptibility and 54% ampicillin susceptibility).
- *Klebsiella pneumoniae* isolates showed susceptibility to oral options (84% trimethoprim susceptibility) and first line intravenous option (97% gentamicin susceptibility). Isolates were typically not susceptible to ampicillin (2% susceptibility).
- Isolates of *Pseudomonas aeruginosa* isolates demonstrated high rates of susceptibility to oral options (90% ciprofloxacin susceptibility) and first line intravenous therapy option (94% gentamicin susceptibility).
- *Enterococcus faecalis* isolates demonstrated high rates of susceptibility were observed to first line oral agents (100% nitrofurantoin susceptibility, 100% ampicillin susceptibility) and empiric and directed intravenous therapies (99% vancomycin susceptibility). 1% of these isolates were VRE.
- *Enterococcus faecium* isolates demonstrated low rates of susceptibility were observed to first line oral agents (9% ampicillin susceptibility) and low rates of susceptibility to empiric and directed intravenous therapies (51% vancomycin susceptibility). 49% of these isolates were VRE.

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
Empirical therapy for cellulitis and erysipelas without systemic features > purulent cellulitis	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins)

## Cumulative Antibigrams 2020: John Hunter Hospital Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
	OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
<b>Empirical antibiotic therapy for peritonitis due to perforated viscus</b>	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzyloxyphenoxymethyl penicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzyloxyphenoxymethyl penicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete &gt; Antibiotic &gt;</i> for an unabridged description	

- Predominant pathogens included: *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Streptococcus pneumoniae*, *Streptococcus pyogenes* (Group A), *Enterobacter cloacae* complex, *Serratia marcescens*, *Enterococcus faecium*, *Klebsiella oxytoca*, *Streptococcus sp.* (Group C), and *Haemophilus influenzae*.
- *Staphylococcus aureus* was frequently isolated from the samples collected at John Hunter Hospital. Isolates demonstrated high rates of susceptibility to flucloxacillin (81% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 19% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (85% clindamycin susceptibility, 96% sulfamethoxazole and trimethoprim susceptibility and 95% doxycycline susceptibility).
- *Streptococcus pneumoniae* was another Gram-positive organism of note. The breakpoint for penicillin susceptibility for treating *Streptococcus pneumoniae* meningitis is an MIC  $\leq$  0.06 mg/L; Pneumococcal infections outside the central nervous system with MICs  $\leq$  2 mg/L will respond to high dose penicillin or other narrow spectrum  $\beta$ -lactam antibiotics. 69% of isolates tested were susceptible to erythromycin.
- *Haemophilus influenzae* isolates demonstrated 57% ampicillin susceptibility, and 98% ceftriaxone susceptibility.
- *Pseudomonas aeruginosa* isolates demonstrated 86% gentamicin susceptibility, 87% ceftazidime susceptibility, and 84% ciprofloxacin susceptibility.

## Cumulative Antibigrams 2020: John Hunter Hospital: Blood

Organism	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Gentamicin		Amikacin		Piperacillin and tazobactam		Ceftioxone		Ceftazidime		Cefepime		Meropenem		Ciprofloxacin		Vancomycin		Sulfamethoxazole and trimethoprim		Benzylpenicillin		Flucloxacillin		
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	
Escherichia coli	55	173	80	169	66	171	94	172	98	170	92	173	93	174	92	172	89	45	100	173	91	171			74	170					
Staphylococcus aureus																										98	97	27	97	92	97
Klebsiella pneumoniae	0	37	84	37	78	36	86	36	100	36	77	35	89	37	94	36			97	36	86	35			86	37					
Pseudomonas aeruginosa							100	34	100	34	100	34			97	34			97	33	94	34									

## Cumulative Antibiograms 2020: John Hunter Hospital: Urine

Organism	Benzylpenicillin		Ampicillin		Cefazolin		Flucloxacillin		Clindamycin		Erythromycin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftioxone		Cefepime		Meropenem		Ciprofloxacin		Vancomycin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime		
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n			
Escherichia coli			54	1,443	53	1,378							95	1,443	90	598	99	599	93	1,446	88	591	100	1,214	88	1,395			76	1,442	99	1,440	86	1,442	93	1,395	
Staphylococcus aureus	19	43					85	62	88	33	81	32	94	33											88	33	100	35	96	52							
Klebsiella pneumoniae			2	180	73	165							97	180	87	103	100	106	96	180	94	104	100	159	90	172			84	180			88	180	96	172	
Pseudomonas aeruginosa													94	188	85	87	91	89			91	87	96	183	90	188									95	188	
Enterococcus faecalis			100	276																						99	183			100	273						
Enterobacter cloacae complex			0	98	0	98							84	98			97	71			84	70	93	97	82	96			73	98			79	98			
Proteus mirabilis			91	81	66	74							98	81	100	39	95	37	100	82	100	37	100	65	98	81			74	80			98	81	100	80	
Enterococcus faecium	0	39	9	56																						51	57										
Klebsiella oxytoca			0	42	15	41							100	42	78	32	100	30	86	43	100	30	100	39	98	42			93	42			98	42	100	42	
Enterobacter aerogenes			0	36									100	36									100	36	100	36			94	36			100	36			

### Cumulative Antibigrams 2020: John Hunter Hospital: Other

Organism	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Sulfamethoxazole and trimethoprim		Gentamicin		Tobramycin		Amikacin		Ceftriaxone		Cefepime		Ceftazidime		Piperacillin and tazobactam		Meropenem		Ciprofloxacin		Vancomycin		Telicoplanin		Linezolid		Clindamycin		Fusidic acid		Rifampicin		Benzylpenicillin		Erythromycin		Flucloxacillin		Doxycycline		Mupirocin					
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n						
Escherichia coli	56	199	84	198	69	189	81	199	92	199	92	199	99	199	92	200	94	191	89	199	95	198	100	199	87	199																										
Staphylococcus aureus							96	1,577	97	1,452											93	1,453	100	1,451	98	1,414	100	1,426	85	1,522	97	1,444	100	1,439	16	1,544	84	1,585	81	1,580	95	1,579	97	1,574								
Klebsiella pneumoniae	0	54	89	54	83	47	94	54	96	54	96	54	100	54	98	54	100	51	98	54	87	53	100	54	96	54																										
Pseudomonas aeruginosa									86	329	91	328	86	328			86	275	87	329	82	325	89	327	84	329																										
Enterococcus faecalis	99	68																					100	68	100	52	100	54																								
Streptococcus pneumoniae																																																				
Streptococcus pyogenes (Group A)																																																				
Enterobacter cloacae complex	0	133	0	132	0	133	92	132	94	133	92	132	98	133			90	124			98	133	94	133																												
Serratia marcescens	0	77	0	77	0	77	100	76	100	77	57	77	100	76			100	66			100	77	99	77																												
Enterococcus faecium	13	39																					60	43	67	33	100	32																								
Klebsiella oxytoca	0	32	94	32	19	32	94	32	97	32	97	32	97	32	91	33	100	31	100	32	94	33	100	32	100	32																										
Streptococcus sp. (Group C)																																																				
Haemophilus influenzae	57	164	73	164			75	163							98	164																																				

## Cumulative Antibigrams 2020: Maitland Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Maitland antibiogram captures data from the following sites: Cessnock District Hospital, Kurri Kurri Hospital, Maitland Hospital

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- Predominant pathogens isolated from blood cultures collected in the Maitland included *Escherichia coli* and *Staphylococcus aureus*.
- *Escherichia coli* isolates demonstrated 52% susceptibility to ampicillin and 96% susceptibility to gentamicin.
- *Staphylococcus aureus* isolates demonstrated 87% susceptibility to flucloxacillin and were susceptible to vancomycin. 13% of isolates were MRSA.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin



## Cumulative Antibiograms 2020: Maitland Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Treatment of severe pyelonephritis in adults	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime
See eTG Complete > Antibiotic > Acute cystitis in adults and Acute pyelonephritis in adults for an unabridged description	

- The predominant pathogens from urine samples included: *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (80% trimethoprim susceptibility, 100% nitrofurantoin susceptibility and 0% cefalexin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (97% gentamicin susceptibility and 56% ampicillin susceptibility).
- *Klebsiella pneumoniae* isolates showed susceptibility to oral options (90% trimethoprim susceptibility) and first line intravenous option (94% gentamicin susceptibility). Isolates were not susceptible to ampicillin (0% susceptibility).
- Isolates of *Pseudomonas aeruginosa* isolates demonstrated high rates of susceptibility to oral options (97% ciprofloxacin susceptibility) and first line intravenous therapy option (97% gentamicin susceptibility).
- *Enterococcus faecalis* isolates demonstrated high rates of susceptibility were observed to first line oral agents (100% nitrofurantoin susceptibility, 100% ampicillin susceptibility) and empiric and directed intravenous therapies (100% vancomycin susceptibility). 0% of these isolates were VRE.

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
Empirical therapy for cellulitis and erysipelas without systemic features > purulent cellulitis	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
Empirical antibiotic therapy for peritonitis due to perforated viscus	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam



## Cumulative Antibiograms 2020: Maitland Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
	OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete &gt; Antibiotic &gt;</i> for an unabridged description	

- Predominant pathogens included: *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Streptococcus pyogenes* (Group A)
- *Staphylococcus aureus* was frequently isolated from the samples collected at Maitland. Isolates demonstrated high rates of susceptibility to flucloxacillin (78% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 22% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (86% clindamycin susceptibility, 98% sulfamethoxazole and trimethoprim susceptibility and 97% doxycycline susceptibility).
- *Haemophilus influenzae* isolates demonstrated 49% ampicillin susceptibility, and 97% ceftriaxone susceptibility.
- *Pseudomonas aeruginosa* isolates demonstrated 100% gentamicin susceptibility, 93% ceftazidime susceptibility, and 90% ciprofloxacin susceptibility.

## Cumulative Antibigrams 2020: Maitland: Blood

	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Gentamicin		Amikacin		Piperacillin and tazobactam		Ceftriaxone		Ceftazidime		Cefepime		Meropenem		Ciprofloxacin		Sulfamethoxazole and trimethoprim		Benzylpenicillin		Flucloxacillin	
Organism	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	52	108	84	105	63	106	96	107	99	104	96	101	90	108	89	107	83	35	100	108	86	108	78	108				
Staphylococcus aureus																							100	45	31	45	87	45

## Cumulative Antibigrams 2020: Maitland: Urine

Organism	Ampicillin		Cefazolin		Flucloxacillin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftriaxone		Cefepime		Meropenem		Ciprofloxacin		Vancomycin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n		
Escherichia coli	56	934	52	886			97	934	96	357	98	354	96	933	92	349	100	776	90	910			80	933	100	932	89	933	96	905
Klebsiella pneumoniae	0	88	73	77			94	88	84	55	100	55	94	87	95	55	99	81	93	87			90	88			90	88	95	86
Pseudomonas aeruginosa							97	69	90	39	92	39			90	39	99	68	97	69									93	69
Enterococcus faecalis	100	124																			100	78			100	123				
Proteus mirabilis	91	45	68	38			100	45					100	45			100	39	100	41			87	45			100	45	100	43

### Cumulative Antibigrams 2020: Maitland: Other

Organism	Ampicillin		Amoxicillin and clavulanic acid		Sulfamethoxazole and trimethoprim		Gentamicin		Tobramycin		Amikacin		Ceftriaxone		Cefepime		Ceftazidime		Piperacillin and tazobactam		Meropenem		Ciprofloxacin		Vancomycin		Teicoplanin		Linezolid		Clindamycin		Fusidic acid		Rifampicin		Benzylpenicillin		Erythromycin		Flucloxacillin		Doxycycline		Mupirocin			
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n				
Escherichia coli	69	35	80	35	83	35	94	35	91	35	97	35	97	36	97	35	92	36	100	35	91	35																										
Staphylococcus aureus					98	675	98	646													96	646	100	648	98	633	100	642	86	658	97	646	100	646	12	654	85	680	78	675	97	673	95	675				
Pseudomonas aeruginosa							100	71	100	71	99	71			91	58	93	71	94	70	94	70	90	71																								
Streptococcus pyogenes (Group A)																							100	84									100	84	92	84			86	84								
Streptococcus sp. (Group C)																							100	31									100	31	87	31			65	31								
Haemophilus influenzae	49	35	69	35	69	35							97	35																									94	35								

## Cumulative Antibiograms 2020: Hunter Valley Sector Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Hunter Valley Sector antibiogram captures data from the following sites: Murrurundi Hospital, Muswellbrook Hospital, Scone Hospital, Singleton Hospital.

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- There were insufficient blood culture isolates from the Hunter Valley Sector to characterise antibiograms.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin
<b>Treatment of severe pyelonephritis in adults</b>	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime

## Cumulative Antibiograms 2020: Hunter Valley Sector Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
See <i>eTG Complete &gt; Antibiotic &gt; Acute cystitis in adults and Acute pyelonephritis in adults</i> for an unabridged description	

- The predominant pathogens from urine samples included *Escherichia coli*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (82% trimethoprim susceptibility, and 99% nitrofurantoin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (96% gentamicin susceptibility and 61% ampicillin susceptibility).

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
<b>Empirical therapy for cellulitis and erysipelas without systemic features &gt; purulent cellulitis</b>	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
<b>Empirical antibiotic therapy for peritonitis due to perforated viscus</b>	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete &gt; Antibiotic &gt;</i> for an unabridged description	

- Predominant pathogens included: *Staphylococcus aureus* and *Streptococcus pyogenes*.

## Cumulative Antibiograms 2020: Hunter Valley Sector Commentary

- *Staphylococcus aureus* was frequently isolated from the samples collected at Hunter Valley Sector. Isolates demonstrated high rates of susceptibility to flucloxacillin (87% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 13% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (86% clindamycin susceptibility, 98% sulfamethoxazole and trimethoprim susceptibility and 97% doxycycline susceptibility).

## Cumulative Antibigrams 2020: Hunter Valley Sector: Urine

	Ampicillin		Cefazolin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftriaxone		Cefepime		Meropenem		Ciprofloxacin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime	
Organism	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	61	254	55	229	96	254	91	99	100	98	95	239	91	97	100	199	93	233	82	254	99	252	91	254	94	233



## Cumulative Antibigrams 2020: Hunter Valley Sector: Other

Organism	Sulfamethoxazole and trimethoprim		Gentamicin		Ciprofloxacin		Vancomycin		Teicoplanin		Linezolid		Clindamycin		Fusidic acid		Ritampicin		Benzylpenicillin		Erythromycin		Flucloxacillin		Doxycycline		Mupirocin	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Staphylococcus aureus	98	222	98	206	95	211	100	209	97	204	100	206	86	209	97	208	100	207	16	218	86	223	87	223	97	223	92	214
Streptococcus pyogenes (Group A)							100	40											100	41	90	41			78	41		

## Cumulative Antibigrams 2020: Tomaree Community Hospital Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Tomaree Community Hospital antibiogram captures data from the following site: Cessnock Tomaree Community Hospital

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- There were insufficient blood culture isolates from the Tomaree Community Hospital to characterise antibiograms.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin
<b>Treatment of severe pyelonephritis in adults</b>	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime
See <i>eTG Complete &gt; Antibiotic &gt; Acute cystitis in adults</i> and <i>Acute pyelonephritis in adults</i> for an unabridged description	

## Cumulative Antibiograms 2020: Tomaree Community Hospital Commentary

- The predominant pathogens from urine samples included *Escherichia coli*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (81% trimethoprim susceptibility, and 100% nitrofurantoin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (97% gentamicin susceptibility and 59% ampicillin susceptibility).

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
<b>Empirical therapy for cellulitis and erysipelas without systemic features &gt; purulent cellulitis</b>	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
<b>Empirical antibiotic therapy for peritonitis due to perforated viscus</b>	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzympenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzympenicillin PLUS Gentamicin PLUS Azithromycin
See eTG Complete > Antibiotic > for an unabridged description	

- Predominant pathogens included: *Staphylococcus aureus*.
- *Staphylococcus aureus* was frequently isolated from the samples collected at Tomaree Community Hospital. Isolates demonstrated high rates of susceptibility to flucloxacillin (84% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent

## Cumulative Antibiograms 2020: Tomaree Community Hospital Commentary

recommended for use in penicillin hypersensitivity. 16% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (89% clindamycin susceptibility, 97% sulfamethoxazole and trimethoprim susceptibility and 95% doxycycline susceptibility).

## Cumulative Antibigrams 2020: Tomaree Community Hospital: Urine

Organism	Ampicillin		Cefazolin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftriaxone		Cefepime		Meropenem		Ciprofloxacin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	59	146	49	139	97	146	91	44	100	45	96	146	93	45	100	124	95	143	81	146	100	146	94	146	96	143

## Cumulative Antibiograms 2020: Tomaree Community Hospital: Other

	Sulfamethoxazole and trimethoprim		Gentamicin		Ciprofloxacin		Vancomycin		Teicoplanin		Linezolid		Clindamycin		Fusidic acid		Ritampicin		Benzylpenicillin		Erythromycin		Flucloxacillin		Doxycycline		Mupirocin	
Organism	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Staphylococcus aureus	97	63	98	63	95	63	100	63	98	63	100	63	89	63	94	63	100	63	18	60	89	63	84	63	95	63	98	63

## Cumulative Antibigrams 2020: Calvary Mater Newcastle Commentary

### Antibiogram key

	> 90% of isolates susceptible
	70-90% of isolates susceptible
	< 70% of isolates susceptible
	Not tested, not clinically effective, intrinsically resistant, or no data available from OrgTRx
	Antibiotic not recommended to be used in children. Seek specialist advice

### Notes:

1. Data processed by OrgTRx (antibiogram) software to exclude multiple isolates so only the first isolate of a given species per patient per year per subset (e.g., urine) is included. Only data captured by OrgTRx is presented.
2. Only organisms with 30 or more isolates are included (CLSI Guidelines M39-A4 recommended that results should include at least 30 isolates to be considered significant.)
3. Antimicrobial susceptibility testing standard used: EUCAST v8.1
4. The Calvary Mater Newcastle antibiogram captures data from the following site: Calvary Mater Newcastle.

### Blood Cultures

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent</b>	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
See <i>eTG Complete &gt; Antibiotic &gt; Empirical regimens for sepsis or septic shock</i> for an unabridged description	

- Predominant pathogens isolated from blood cultures collected in the Calvary Mater Newcastle included *Escherichia coli*, *Staphylococcus aureus* and *Klebsiella pneumoniae*.
- *Escherichia coli* isolates demonstrated 53% susceptibility to ampicillin and 91% susceptibility to gentamicin.
- *Staphylococcus aureus* isolates demonstrated 89% susceptibility to flucloxacillin and were susceptible to vancomycin. 11% of isolates were MRSA.

### Urinary Isolates

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical antibiotic therapy for nonpregnant women with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Empirical antibiotic therapy for men with acute cystitis</b>	Trimethoprim OR Nitrofurantoin OR Cefalexin
<b>Treatment of nonsevere pyelonephritis in adults</b>	Amoxicillin+Clavulanate OR Ciprofloxacin

## Cumulative Antibiograms 2020: Calvary Mater Newcastle Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Treatment of severe pyelonephritis in adults	Gentamicin AND Ampicillin/Amoxicillin OR Ceftriaxone/Cefotaxime
See <i>eTG Complete</i> > Antibiotic > Acute cystitis in adults and Acute pyelonephritis in adults for an unabridged description	

- The predominant pathogens from urine samples included: *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Proteus mirabilis*.
- *Escherichia coli* demonstrated mixed rates of susceptibility to first line oral agents for cystitis and non-severe pyelonephritis (77% trimethoprim susceptibility, and 99% nitrofurantoin susceptibility). The isolates were typically susceptible to first line intravenous therapy options for severe pyelonephritis (94% gentamicin susceptibility and 54% ampicillin susceptibility).
- *Klebsiella pneumoniae* isolates showed susceptibility to oral options (84% trimethoprim susceptibility) and first line intravenous option (96% gentamicin susceptibility). Isolates were typically not susceptible to ampicillin (2% susceptibility).
- Isolates of *Pseudomonas aeruginosa* isolates demonstrated high rates of susceptibility to oral options (92% ciprofloxacin susceptibility) and first line intravenous therapy option (100% gentamicin susceptibility).
- *Enterococcus faecalis* isolates demonstrated high rates of susceptibility were observed to first line oral agents (100% nitrofurantoin susceptibility, 100% ampicillin susceptibility) and empiric and directed intravenous therapies (100% vancomycin susceptibility). 0% of these isolates were VRE.

### Other Isolates Commentary

The Cumulative Antibiogram for “Other Isolates” provides summary data of antibiotic resistance patterns for organisms obtained from sites other than blood and urine. Chiefly these bacteria are collected from skin, soft tissue, respiratory track and surgical sites. Infection control screens are excluded.

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
Empirical regimens for adults with community-acquired sepsis or septic shock, source not apparent	Gentamicin PLUS Flucloxacillin PLUS Vancomycin PLUS Ceftriaxone/Cefotaxime (if <i>Neisseria meningitidis</i> suspected)
Empirical therapy for cellulitis and erysipelas without systemic features > purulent cellulitis	Dicloxacillin OR Flucloxacillin OR Cefalexin (if delayed non-severe hypersensitivity to penicillins) OR trimethoprim+sulfamethoxazole OR clindamycin (if increased risk of MRSA or immediate hypersensitivity to penicillins)
Empirical antibiotic therapy for peritonitis due to perforated viscus	Gentamicin PLUS metronidazole PLUS Ampicillin OR Piperacillin+tazobactam OR Ceftriaxone/Cefotaxime PLUS metronidazole



## Cumulative Antibiograms 2020: Calvary Mater Newcastle Commentary

Infectious Syndrome	Abridged Therapeutic Guidelines (TG) empirical recommendations
<b>Empirical therapy: low-severity CAP in adults</b>	Amoxicillin OR Doxycycline OR Clarithromycin (if non-immediate hypersensitivity to penicillin or suspected atypical cause)
<b>Empirical therapy: moderate-severity CAP in adults</b>	Benzylpenicillin PLUS (Doxycycline OR clarithromycin) OR Ceftriaxone/Cefotaxime PLUS (Doxycycline OR clarithromycin) (if immediate non-severe or delayed non-severe hypersensitivity to penicillin)
<b>Empirical therapy: high-severity CAP in adults</b>	(Ceftriaxone OR Cefotaxime) PLUS Azithromycin OR Benzylpenicillin PLUS Gentamicin PLUS Azithromycin
See <i>eTG Complete &gt; Antibiotic &gt;</i> for an unabridged description	

- Predominant pathogens included: *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Streptococcus pyogenes* (Group A), *Haemophilus influenzae*
- *Staphylococcus aureus* was frequently isolated from the samples collected at Calvary Mater Newcastle. Isolates demonstrated high rates of susceptibility to flucloxacillin (77% susceptibility) as the recommended first line oral agent and cefalexin as the second line agent recommended for use in penicillin hypersensitivity. 23% of isolates were MRSA. First line oral agents for the treatment of MRSA demonstrated high rates of susceptibility (85% clindamycin susceptibility, 97% sulfamethoxazole and trimethoprim susceptibility and 94% doxycycline susceptibility).
- *Haemophilus influenzae* isolates demonstrated 61% ampicillin susceptibility, 94% ceftriaxone susceptibility, and #N/A% amoxicillin/clavulanate susceptibility.
- *Pseudomonas aeruginosa* isolates demonstrated 98% gentamicin susceptibility, 89% ceftazidime susceptibility, and 89% ciprofloxacin susceptibility.

## Cumulative Antibigrams 2020: Calvary Mater Newcastle: Blood

Organism	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Gentamicin		Amikacin		Piperacillin and tazobactam		Ceftriaxone		Ceftazidime		Cefepime		Meropenem		Ciprofloxacin		Sulfamethoxazole and trimethoprim		Benzylpenicillin		Flucloxacillin	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n
Escherichia coli	53	138	78	138	68	138	91	136	98	130	95	132	88	138	90	135	94	48	100	136	80	136	78	137				
Staphylococcus aureus																							98	45	27	44	89	45
Klebsiella pneumoniae	0	32	94	31	90	30	97	32	100	31			94	31	90	31			100	32	97	31	87	31				

## Cumulative Antibigrams 2020: Calvary Mater Newcastle: Urine

Organism	Ampicillin		Cefazolin		Flucloxacillin		Gentamicin		Piperacillin and tazobactam		Amikacin		Ceftriaxone		Cefepime		Meropenem		Ciprofloxacin		Vancomycin		Trimethoprim		Nitrofurantoin		Norfloxacin		Ceftazidime	
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n		
Escherichia coli	54	704	54	672			94	705	92	287	98	289	94	706	90	287	100	600	89	683			77	703	99	703	88	703	94	682
Klebsiella pneumoniae	2	91	75	84			96	91	88	50	100	50	93	91	90	50	99	79	91	87			84	91			89	91	94	87
Pseudomonas aeruginosa							100	53									100	50	92	53									100	53
Enterococcus faecalis	100	75																			100	44			100	75				
Proteus mirabilis	89	36	47	34			97	36					100	36					97	35			78	36			97	36	100	35

## Cumulative Antibigrams 2020: Calvary Mater Newcastle: Other

Organism	Ampicillin		Amoxicillin and clavulanic acid		Cefazolin		Sulfamethoxazole and trimethoprim		Gentamicin		Tobramycin		Amikacin		Ceftriaxone		Cefepime		Ceftazidime		Piperacillin and tazobactam		Meropenem		Ciprofloxacin		Vancomycin		Teicoplanin		Linezolid		Clindamycin		Fusidic acid		Rifampicin		Benzylpenicillin		Erythromycin		Flucloxacillin		Doxycycline		Mupirocin			
	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n	%S	n				
Escherichia coli	51	39	79	39	64	33	77	39	92	39	90	39	100	39	90	39	95	37	90	39	92	39	97	39	85	39																								
Staphylococcus aureus							97	415	97	394													92	395	100	397	98	387	100	389	85	403	98	396	100	395	13	409	84	416	77	415	94	414	99	415				
Pseudomonas aeruginosa									98	47	100	47	96	47			88	42	89	47	89	47	100	47	89	47																								
Streptococcus pyogenes (Group A)																									100	50									100	50	88	50					80	50						
Haemophilus influenzae	61	49	80	49			68	47							94	49																											98	49						