

BC Bio Empiric Therapy Antibioqram 2011

Here is the 2011 version of the BC Bio antibiogram. Our antibiogram has been designed primarily to be used by clinicians treating patients before the susceptibility data has been received.

Common organisms are grouped according to the diseases they most frequently cause with that purpose in mind, rather than alphabetically or by Gram stain results. Antibiotics are listed orals first, and grouped by antibiotic classes. The susceptibility rates reflect the spectrum of patients served by BC Bio, namely outpatients and patients living in various residential facilities. Strains of MRSA, Enterococcus, and Pseudomonas from patients with recent and/or prolonged hospitalizations are more likely to be multiply-resistant; otherwise the expected susceptibility patterns for most common organisms are not greatly affected by hospital exposure. Patients with recent and/or prolonged antibiotic exposures are also at increased risk of harbouring resistant bacteria.



What is notable in the 2011 antibiogram?

The long trend of increasing prevalence of methicillin resistance amongst *Staphylococcus aureus* appears to have halted, while an increasing proportion of MRSA strains appear to be “community-associated” strains which are more susceptible to second-line antibiotics. The committee overseeing susceptibility testing guidelines, Clinical and Laboratory Standards Institute (CLSI), changed its criteria for cefazolin susceptibility twice in 2010 with the result that certain cefazolin susceptibilities no longer reflect clinical response to standard dosing. The CLSI has also determined that susceptibility testing of cephalexin does not reliably predict clinical response of certain coliform infections. Therefore, BC Bio has suspended reporting cefazolin and cephalexin susceptibilities for coliform bacteria in order not to mislead prescribing physicians. Amongst coliforms, susceptibility rates to ciprofloxacin and third generation cephalosporins [which had dropped significantly over the past decade] appear to have stabilized.

What is coming in 2011?

We have seen only the first cases of NDM-1 and other carbapenemases, but more are expected in the coming years. We will soon be reporting ertapenem susceptibilities on coliforms as many of the hospital physicians are now prescribing this agent on a once-daily basis for outpatients.



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This susceptibility chart is provided as a guide to empiric therapy until C&S results are available.

Urinary Tract	++++	+++	+++	+++	++	++					+		
Lower Respiratory	+		+		+	+	+++	+++	+++	++	+	+	+
Skin/Musculoskeletal	+				+						++++	+++	+++
BCBio 2011	E.coli	Enterococcus	Klebsiella pneumoniae	Proteus mirabilis	Pseudomonas aeruginosa	SPICE Organisms*	Streptococcus pneumoniae	Haemophilus influenzae	Atypical Pneumonia**	Moraxella catarrhalis	Staph. aureus (MSSA+MRSA)	M.R.S.A.	Group A Streptococcus
Number of Isolates Tested	12,376	1,654	1,113	688	416	644	297	576	##	##	5,570	1,390	309
Penicillin	R	98	R	R	R	R	85	N/R	R	R	R	R	100
Ampicillin	58	98	R	70	R	R	85	83	R	R	R	R	100
Amox-Clavulanate	82	98	94	92	R	R	85	99	R	S	76	R	100
Cloxacillin	R	R	R	R	R	R	N/R	R	R	R	76	R	N/R
Cephalexin	N/R	R	N/R	N/R	R	R	N/R	R	R	R	76	R	100
Cefuroxime		R			R	R	90	99	R	S	76	R	100
Cefixime	89	R	95	94	R	R	N/R	99.9	R	S	N/R	R	N/R
Trimethoprim-Sulfa	76	R	92	71	R	91	83	84	R/S	S	99	98	R
Clindamycin	R	R	R	R	R	R	81	R	R	R	80	66	91
Erythromycin	R	R	R	R	R	R	77	N/R	S	S	62	13	90
Clarithromycin	R	R	R	R	R	R	77	S	S	S	62	13	90
Ciprofloxacin	77	78	98	86	94	94	N/R	99	R/S	S	N/R	N/R	N/R
Moxifloxacin	not indicated for urinary tract infection						99	99	S	S	60	6	
Fosfomycin (UTI only)	99		91	89	R	83	N/R	R	R	R	N/R	N/R	N/R
Nitrofurantoin (UTI only)	97	99	51	N/R	R	39	R	R	R	R	99	99	R
Gentamicin IV/IM	93	Syn	98	95	98	97	R	R	R	N/R	N/R	N/R	R
Tobramycin IV/IM	92	Syn	99	95	99	90	R	R	R	N/R	N/R	N/R	R
Amikacin IV/IM	99.9	Syn	99.9	99	99	99.9	R	R	R	N/R	N/R	N/R	R
Cefazolin IV ***		R			R	R	N/R	R	R	R	76	R	100
Ceftriaxone IV/IM	90	R	95	95	R	N/R	99	100	R	S	76	R	100
Ceftazidime IV	90	R	95	95	99	N/R	N/R	100	R	S	N/R	R	N/R
Piperacillin-Tazobactam IV	90	98	95	95	98	N/R	85	99	R	R	76	R	100
Meropenem	99.9	98	99	99	98	99.9		100	R	S	76	R	100
Vancomycin IV	R	99	R	R	R	R	100	R	R	R	99.9	99.9	100

Percentage of organisms testing susceptible (some estimated) at BC Biomedical Laboratories July-December 2010

Legend

R	This organism is inherently resistant to this antibiotic
S	This organism is predictably susceptible to this antibiotic
	Susceptibility testing not performed
N/R	Not recommended due to poor clinical response (and/or poor activity)
Syn	May provide synergy when combined with penicillins or vancomycin
R/S	Mostly resistant, some susceptible
99.9	No resistance seen in our isolates; reports of resistance in world literature

*SPICE organisms include Serratia, Providencia, Morganella, Citrobacter, Enterobacter (all have inherent cephalosporin resistance)

**Atypical pneumonia pathogens include Mycoplasma, Chlamydia pneumoniae, Legionella

***Testing methods were changed by CLSI in 2010 and in 2011 resulting in markedly lower susceptibility rates for cefazolin against coliforms; testing of individual coliform isolates has become unpredictable of standard dosing response, so BC Bio has now discontinued testing coliforms for cefazolin susceptibility.

The number of "+" signs indicates the relative frequency with which pathogens cause disease. Only the most frequently identified bacteria causing common outpatient infections are indicated. Other pathogens cause infections in many clinical circumstances, and therapy should be tailored accordingly. For ease of use, the organisms in the antibiogram are grouped by infections they commonly cause.

