

Medicine Hat Diagnostic Laboratory

January 1 - December 31, 2014 COMMUNITY Cumulative Antimicrobial Susceptibility Report (% Susceptible)

Organism	n	Ampicillin Amoxicillin	Cefotaxime Ceftriaxone	Ceftazidime	Cephalothin Cephalexin	Ciprofloxacin	Clindamycin	Erythromycin	Gentamicin	Gentamicin Synergy Screen	Nitrofurantoin Urinary Isolates Only	Norfloxacin Urinary Isolates Only	Oxacillin Cloxacillin	Penicillin	Piperacillin	Sulfamethoxazole/ Trimethoprim	Tobramycin	Vancomycin	Penicillin - PO (Non-meningitis)	Penicillin - IM/IV (Non-meningitis)	Penicillin (Meningitis)
<i>Citrobacter</i> species*	62	R	-	-	-	95	-	-	94	-	63	98	-	-	-	90	97	-			
<i>Enterobacter</i> species*	84	R	-	-	R	99	-	-	100	-	6	99	-	-	-	98	100	-			
<i>Escherichia coli</i>	1609	40	95	-	48 ^u	86	-	-	94	-	94	86	-	-	-	79	94	-			
<i>Klebsiella oxytoca</i>	44	R	98	-	80 ^u	100	-	-	100	-	48	100	-	-	R	93	100	-			
<i>Klebsiella pneumoniae</i>	222	R	98	-	96 ^u	97	-	-	99	-	16	98	-	-	R	92	98	-			
<i>Proteus mirabilis</i>	78	79	99	-	96 ^u	97	-	-	95	-	R	99	-	-	-	82	96	-			
<i>Pseudomonas aeruginosa</i>	96	R	R	98	R	93	-	-	98	-	R	-	-	-	94	R	98	-			
<i>Enterococcus faecalis</i>	187	100	R	R	R	71 ^u	R	-	R	77	97	-	-	-	-	R	R	100			
Group A Streptococcus ^{1,2}	61	-	-	-	-	-	85 ^P	85 ^P	-	-	-	-	-	100	-	R	-	-			
Group B Streptococcus	54	-	-	-	-	-	54 ^P	54 ^P	-	-	-	-	-	100	-	R	-	-			
<i>Staphylococcus aureus</i>	410	-	-	-	-	-	75	68	-	-	95	-	86	23	-	98	-	100			
MRSA Subset (14%) ³	78	-	-	-	-	-	33	9	-	-	95	-	0	0	-	100	-	100			
MSSA Subset (86%) ³	332	-	-	-	-	-	81	78	-	-	95	-	100	27	-	98	-	100			
<i>Streptococcus pneumoniae</i> ²	34	-	-	-	-	-	97	88	-	-	-	-	-	◇	-	100	-	-	94	100	94

Extended Spectrum Beta-Lactamase (ESBL) Data	
Total number of ESBL producing isolates:	58
<i>E. coli</i> (56):	3.5% of <i>E. coli</i> isolates
<i>K. pneumoniae</i> (2):	1.0% of <i>K. pneumoniae</i> isolates
<i>P. mirabilis</i> (0):	0.0% of <i>P. mirabilis</i> isolates

AmpC (Broad Spectrum Cephalosporinase) Data	
Total number of AmpC producing isolates:	27
<i>E. coli</i> (24):	1.5% of <i>E. coli</i> isolates
<i>K. pneumoniae</i> (2):	1.0% of <i>K. pneumoniae</i> isolates
<i>P. mirabilis</i> (1):	1.3% of <i>P. mirabilis</i> isolates

ESBL producing organisms are resistant to all penicillins, cephalosporins and aztreonam. Beta-lactam/beta-lactamase inhibitor combinations have unpredictable activity against these enzymes and are generally not recommended.

AmpC producing organisms are resistant to all penicillins, cephalosporins, beta-lactam/beta-lactamase inhibitor combinations and aztreonam.

- Antimicrobial not tested or antimicrobial not indicated.

* These organisms usually produce inducible beta-lactamase which may cause failure of penicillin/cephalosporin therapy, despite an in-vitro susceptible result.

R Organism is intrinsically resistant to indicated antimicrobial.

¹ Superficial skin and soft-tissue isolates only.

² Due to small number of annual isolates, analysis was performed using data obtained during the 2 year period of January 1, 2013 - December 31, 2014.

³ MRSA - Methicillin Resistant *Staphylococcus aureus*; MSSA - Methicillin Susceptible *Staphylococcus aureus*.

^u Data for this antimicrobial/organism combination is applicable for use towards treatment of urinary tract infections only. Please note that results of Cephalothin/Cephalexin testing for *E. coli*, *Klebsiella* species, and *Proteus mirabilis* do not reliably predict clinical outcome when Cephalexin is used to treat superficial skin and soft-tissue infections.

^P Treatment using Macrolides (Erythromycin/Clarithromycin/Azithromycin) or Lincosamides (Clindamycin) is generally not recommended except when treatment using Penicillin is contraindicated.

<> Refer to Penicillin PO/IV/IM meningitis and non-meningitis columns.

Percent susceptible for each organism/antimicrobial combination was generated by including the first isolate only of that organism recovered from a given patient.