

# 2015 Antibigram

Red Deer Regional Hospital

Central Zone

Alberta Health Services



## Introduction.

This antibiogram is a cumulative report of the antimicrobial susceptibility rates of common microbial pathogens isolated from infections in samples submitted to Red Deer Regional Hospital Microbiology Laboratory to antimicrobials available on the hospital formulary. The antibiogram is intended to be used as a resource to direct empiric antimicrobial therapy.

The antibiogram represents the results of first clinical isolates collected from individual patients in a calendar year from a specific body site. The rationale is to avoid over representation of antimicrobial resistance that may develop during prolonged stays in hospital. Susceptibility rates for individual species (or groups of similar species) of less than 30 isolates are not calculated, due to limited statistical significance and interpretive value.

This antibiogram contains summary data for the 2015 calendar year and is divided alphabetically into Gram-positive and Gram-negative bacterial species. Specific anaerobic bacteria are included in the lists even if they have fewer than 30 strains isolated. No yeasts are included because the laboratory does not perform susceptibility testing on yeasts. For susceptibility results on those micro-organisms the reader can consult <http://www.antibiogram.ca>.

A significant amount of work is required to generate these data, and the efforts of Debbie Dyrland in the Microbiology Laboratory are gratefully acknowledged.

The Antibiogram is available in PDF format at (INSERT WEB SITE)

Inquiries and feedback can be directed to Dr. Robert Rennie, Microbiology Consultant at [robert.rennie@albertahealthservices.ca](mailto:robert.rennie@albertahealthservices.ca).

## **Comments on Bacterial species included in the Antibiogram.**

### **Gram-negative bacteria.**

Acinetobacter includes both the *A. baumannii* complex, *A. lwoffii*, and unspiciated isolates.

Bacteroides includes both *B. fragilis*, and *B. fragilis* group isolates (*B. thetaiotaomicron*, *B. ovatus*, *B. uniformis* and *B. vulgatus*)

Citrobacter species are separated from *C. freundii* and include *C. amalonaticus*, *C. braakii*, *C. koseri*, *C. werkmanii*, *C. youngae*, and unspiciated isolates.

Enterobacter species include unspiciated isolates other than *E. aerogenes* and *E. cloacae* complex.

Extended spectrum beta-lactamase producing strains of Enterobacteriaceae are included with their specific genera (e.g. *E. coli* and *Klebsiella*).

### **Gram-positive bacteria.**

**Beta-haemolytic streptococci are grouped together and include. *S. pyogenes* (Group A), *S. agalactiae* (Group B) *S. equisimilis*, *S. equi* and *S. zooepidemicus* (Group C and Group G) isolates.**

**Coagulase negative staphylococci include *S. epidermidis*, and a variety of other species. Most of the coagulase negative staphylococci isolated are considered part of normal flora, and antimicrobial susceptibilities are not routinely performed on these micro-organisms.**

**Vancomycin –resistant enterococci are included and separated from *E. faecalis* and *E. faecium* isolates for epidemiological purposes (less than 30 isolates in 2015) and to provide information for treatment options in cases of serious infections with these organisms.**

***S. aureus* is divided into MSSA and MRSA strains for epidemiological purposes and for treatment options for MRSA as required.**

**The *Streptococcus anginosus* group includes *S. anginosus*, *S. constellatus* and *S. intermedius* species. All these species are generally grouped for reporting purposes as *S. anginosus* group since they have similar antimicrobial susceptibility patterns.**

**For other species not listed in the Tables (e.g., fewer than 30 isolates), information is available on a specific basis by contacting Dr. Robert Rennie through the Microbiology Laboratory at Red Deer Regional Hospital 1-403-343-4731.**

Abbreviations Glossary for Antimicrobials in this Antibiogram.

Antimicrobial	Abbreviation	Antimicrobial	Abbreviation
Amikacin	AMK	Linezolid	LNZ
Ampicillin	AMP	Meropenem	MERO
Amoxicillin-Clavulanate	AMC	Metronidazole	MTZ
Ceftriaxone	CAX	Nitrofurantoin	NIT
Ceftazidime	CAZ	Penicillin	PEN
Ciprofloxacin	CIP	Penicillin-meningitis	P-MEN
Clindamycin	CLIN	Penicillin Non-meningitis	P- NMEN
Cloxacillin	CLOX	Piperacillin-Tazobactam	P/ T
Doxycycline	DOXY	Rifampin	RIF
Ertrapenem	ERT	Streptomycin Synergy	STRSYN
Erythromycin	ERY	Tetracycline	TET
Fosfomycin	FOS	Tigecycline	TIG
Gentamicin	GEN	Tobramycin	TOB
Gentamicin Synergy	GM500	Trimethoprim-sulfamethoxazole	SXT
Imipenem	IMI	Vancomycin	VAN
Inducible Clinda Resist.	ICR		

Gram - negative bacteria	Antimicrobial Agent (% S)																	
Bacterial species (No.)	Amikacin (AMK)	Amox/Clav (AMC)	Ampicillin (AMP)	Ceftazidime (CAZ)	Ceftriaxone (CAX)	Ciprofloxacin (CIP)	Doxycycline (DOXY)	Ertapenem (ERT)	Fosfomycin (FOS)	Gentamicin (GEN)	Imipenem (IMI)	Meropenem (MERO)	Metronidazole (MTZ)	Nitrofurantoin (NIT)	Piperacillin/ Tazobactam (P/T)	Tetracycline (TET)	Tobramycin (TOB)	Trimethoprim/ Sulpha (SXT)
Acinetobacter species (29)	100	66	14	55	24	90				97		72		0	64	72	97	93
Bacteroides fragilis group (13)	85											100	0	100				
Citrobacter freundii (110)	100	63	0	89	87	93		100		95		100		92	89	82	97	79
Citrobacter species (264)	100	72	22	93	91	97		100		98		100		77	94	93	98	94
Enterobacter aerogenes (105)	100	19	0	89	89	97		98		100		100		11	87	96	100	99
Enterobacter cloacae complex (103)	100	10	0	83	80	95		83		99		100		28	83	27	99	92
Enterobacter species (228)	100	10	0	82	81	96		91		99		100		27	81	86	99	89
Escherichia coli (10168 incl ESBL's)	100	85	66	93	93	84		100	88	94	99	100		95	95	78	94	80
Haemophilus influenzae (57)			53		61							53						39
Klebsiella oxytoca (311 incl ESBL's)	100	31	0	99	96	96		99		100		100		76	45	96	99	98
Klebsiella pneumoniae (1329 incl ESBL's)	100	95	0	99	99	97		100		98		100		39	96	89	97	94
Morganella morganii (105)	100	1	0	91	105	81		95		89		95		0	95	58	96	72
Proteus mirabilis (424)	100	85	72	98	98	86		100		95		100		0	99	0	96	79
Pseudomonas aeruginosa (576)	99	1	1	93	1	91				95		94		0	89	2	99	7
Serratia marcescens (41)	100	10	0	100	100	100		95		100		98		0	100	27	93	100
Stenotrophomonas maltophilia (39)							82											85

Gram - Positive bacteria	Antibiotic (%S)																		
Organism (No.)	Ampicillin	Ciprofloxacin	Clindamycin	Cloxacillin	Erythromycin	Gentamicin	Gentamicin Synergy Screen	Inducible Clindamycin resistance	Linezolid	Nitrofurantoin	Penicillin	Penicillin	Penicillin	Rifampin	Streptomycin Synergy Screen	Tetracycline	Tigicyline	Trimethoprim-sulpha	Vancomycin
Beta hemolytic Strep (191)	100		66		57						100								99
Coagulase negative Staph (97)		58	58	47	28	78		91	99	97	12			94		85	97	57	100
Enterococcus faecalis (1838)	100	77	0		11		74		96	99					83	16	99		100
Enterococcus faecium (140)	28	24	0		5		86		96	23					76	67	99		99
Enterococcus faecium (VRE) (21)	5	0	0		0		90		95	10					43	57	100		0
Staph. aureus MSSA (1878)		89	82	99	79	99		87	100	97	28			100		97	100	97	100
Staph. aureus MRSA (763)		45	61	0	43	98		96	100	99	0			99		96	100	98	100
Staph lugdunensis (34)		100	85	94	85	100		94	100	100	53			100		97	100	100	100
Strep anginosus group (73)	93										96								100
Strep pneumoniae (95)					51						87	100	90					58	100

Note: Corrected – no isolates of enterococcus sp. were susceptible to clindamycin.