

# Antibiogram

## LHSC and St. Joseph's Healthcare Facilities

### **A Guide to Interpreting the Antibiogram**

- The antibiogram is an annual cumulative report of the antimicrobial susceptibility rates of common pathogens recovered from patients receiving care at London Health Sciences Centre and St. Joseph's Healthcare facilities and is to be used as a resource to inform empirical antimicrobial therapy.
- Susceptibility rates are calculated from the compilation of susceptibility results from all 'first' clinical isolates of a specific pathogen recovered from an individual patient per 30-day period. The rationale for this referral period is based on the need to represent 'wild-type' susceptibility profiles and avoid over-representing antimicrobial resistance that may develop de novo during a patient's prolonged hospital stay.
- Susceptibility rates for pathogens or clinical scenarios represented by less than 30 isolates are not calculated due to their limited statistical significance and interpretive value.
- The appropriateness of empiric therapy is highlighted using a colour range that corresponds to susceptibility rates. Green, 80-100%; Yellow, 70-79%; Red, <70%.

# 2020 Antibiogram

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Gram Negative Organisms	Number of Isolates	Ampicillin	Amoxicillin-Clavulanate	Piperacillin-Tazobactam	Cephalexin (urinary tract)	Cefazolin	Ceftriaxone	Ceftazidime	Imipenem	Meropenem	Ciprofloxacin	Levofloxacin	Gentamicin	Tobramycin	TMP-SMX
<i>Escherichia coli</i>	3264	57	86	86	75	89	100		77		92	93	79		
<i>Klebsiella pneumoniae</i> complex	763		94	91	85	91	99		87		96	95	87		
<i>Proteus mirabilis</i>	417	87	97			96		99	85		93	94	89		
<i>Enterobacter cloacae</i> complex	342					68	98		91		98	97	87		
<i>Klebsiella oxytoca</i>	232		90			93	100		96		95	95	95		
<i>Citrobacter freundii</i> complex	113					65	98		79		91	89	80		
<i>Serratia marcescens</i>	109					98	100	99	91		100	93	100		
<i>Klebsiella aerogenes</i>	74					63	100		93		100	100	100		
<i>Morganella morganii</i>	70					79	26	99	64		81	81	67		
<i>Citrobacter koseri</i>	58		100			97	100		100		100	100	98		
<i>Pseudomonas aeruginosa</i>	934			88			86	75	84	80		89	93		
<i>Stenotrophomonas maltophilia</i>	99										87				93

*Enterobacter*, *Citrobacter*, *Klebsiella aerogenes* and *Serratia* species are intrinsically resistant to ampicillin, cefazolin, and cefuroxime and may develop resistance to broader-spectrum beta-lactams during prolonged beta-lactam therapy.

*Stenotrophomonas maltophilia* results do not include isolates from cystic fibrosis patients.

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Gram Positive Organisms	Number of Isolates	Ampicillin	Penicillin	Penicillin (Meningeal)	Penicillin (Non-meningeal)	Cloxacillin	Ceftriaxone	Ceftriaxone (Meningeal)	Ceftriaxone (Non-meningeal)	Clindamycin	Doxycycline	Gentamicin	TMP-SMX	Vancomycin
<i>Staphylococcus aureus</i> (incl. MRSA)	2169					70				78	100		99	100
MRSA	652					0				87	100		96	100
<i>Staphylococcus epidermidis</i>	239					39				63			68	100
<i>Staphylococcus lugdunensis</i>	47					97				88			100	100
<i>Enterococcus faecalis</i>	173	98										87		100
<i>Enterococcus faecium</i>	174	6										59		87
<i>Streptococcus pyogenes</i> (GAS)	129									93				
<i>Streptococcus agalactiae</i> (GBS)	101									54				
<i>Streptococcus pneumoniae</i>	70		76	89	76			88	97				83	100
<i>Streptococcus anginosus</i> group	85		100				95							100
<i>Streptococcus mitis</i> group	30		83				97							100

*Enterococcus* susceptibility to gentamicin refers to synergy with cell wall active agents, including penicillin, ampicillin, or vancomycin.

*Streptococcus pyogenes* (group A streptococcus) and *Streptococcus agalactiae* (group B streptococcus) are considered susceptible to penicillin and routine testing is not performed.

Susceptibility of *S. pneumoniae* to certain  $\beta$ -lactams is pharmacodynamically interpreted to guide therapy for meningeal (M) and non-meningeal (NM) infections, and infections treated with oral penicillin V (PO).