

2023 Antibiograms Now Available!

Dr. Diana Whellams, Medical Microbiologist, MD, FRCPC

This year's antibiograms for British Columbia are now available online on LifeLabs.com at [Antibiograms – LifeLabs](#)

There are distinct antibiograms for BC's lower mainland and Vancouver island indicating susceptibility rates for the most common urinary, respiratory, and skin/soft tissue pathogens.

There is also a province-wide antibiogram for bacterial pathogens causing gastroenteritis.

As always, the antibiograms are generated using data from the previous calendar year (2022) to reflect the most recent trends in antibiotic resistance as to inform empiric therapy.

LifeLabs 2023 BC Lower Mainland Antibiograms

The following antibiograms are profiles of antimicrobial susceptibility testing results of pathogens submitted to LifeLabs from January 1, 2022 to December 31, 2022 as per the Clinical and Laboratory Standards Institute (CLSI) document M39-A4.

Respiratory Tract Pathogens (Sputum)

ORGANISM	Number of isolates tested	ANTIBIOTIC (% susceptible)												
		Ampicillin/Amoxicillin	Azithromycin	Ceftriaxone	Ciprofloxacin	Clarithromycin	Erythromycin	Levofloxacin	Tetracycline	Penicillin (oral)	TMP-SMX	Ceftazidime	Gentamicin	Meropenem
<i>Haemophilus influenzae</i>	46	76	100	100				96	R	94				
<i>Moraxella catarrhalis</i> ^a	42	R							R					
<i>Streptococcus pneumoniae</i>	39	>95 ^b	62	97		62	62	100	64	69	64			
<i>Pseudomonas aeruginosa</i>	57	R	R	R	72	R	R		R	R	R	93	89	95

^aSusceptibility testing for *Moraxella catarrhalis* is not routinely performed. Most clinical isolates of *M. catarrhalis* are resistant to amoxicillin but susceptible to amoxicillin-clavulanate, meropenem, trimethoprim-sulfamethoxazole, quinolones, ceftazidime, ceftimide, and ceftazidime.
^bAmoxicillin testing is not routinely performed on *Streptococcus pneumoniae*; however, 2019 testing of a subset of isolates showed >95% susceptibility.

Skin and Soft Tissue Pathogens

ORGANISM	Number of isolates tested	ANTIBIOTIC (% susceptible)													
		Ampicillin/Amoxicillin	Azithromycin	Ceftriaxone	Cephalothin / Cephalaxin	Clarithromycin	Clindamycin	Cloxacillin	Erythromycin	Levofloxacin	Linezolid	Penicillin	Tetracycline ^a	TMP-SMX	Vancomycin
<i>S. aureus</i> (MSSA)	6430				100		82	100	78				95	99	100
<i>S. aureus</i> (MRSA)	1485	R		R	R		77	R	44		100	R	70	92	100
Group A <i>Streptococcus</i> ^b	240	100	69	100	100	68	68		68	38		100		R	100

^aIsolates susceptible to tetracycline are preferentially susceptible to doxycycline; however, some isolates that are resistant to tetracycline may be susceptible to doxycycline.

Changes to Dermatophyte Testing

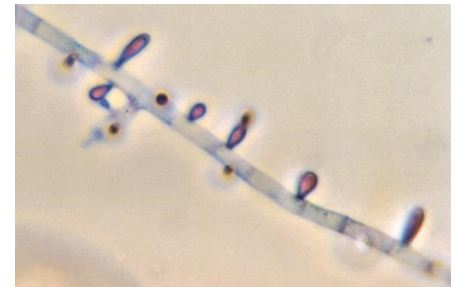
Dr. Diana Whellams, Medical Microbiologist, MD, FRCPC

Starting later this summer, you may notice some changes to how we test and report dermatophytes at LifeLabs.

Traditionally, we've incubated these fungi for 4 weeks; however, a recent study performed in our lab demonstrated that a 3 week incubation time yielded comparable results and allowed for faster reporting of negative results.

We have also moved to a new technology, MALDI-TOF, to help identify some of our dermatophytes more quickly than conventional methods, and we have begun reporting some organisms to the genus or group level rather than the species level. For example, you may see *Trichophyton rubrum*—by far the most common dermatophyte isolated at LifeLabs—reported as *T. rubrum/violaceum* because genetically, these two organisms are very closely related. In most cases, speciation doesn't impact treatment of dermatophyte infections; however, we are still willing and able to perform speciation if required—just contact the microbiology laboratory.

For any questions about dermatophyte testing at LifeLabs BC, please contact Dr. Diana Whellams at diana.whellams@lifelabs.com



Trichophyton rubrum microconidia

High sensitivity Troponin I and NT-proBNP testing at LifeLabs

Dr. Joanna Jung, Clinical Biochemist, PhD

On May 29, 2023, LifeLabs made some important changes to our testing menu.

High Sensitivity Cardiac Troponin I

We have replaced the current high sensitivity Troponin T assay with the Abbott Alinity i high sensitivity cardiac Troponin I assay. The high cardiac tissue specificity of Troponin I is beneficial for identifying myocardial injury in clinical conditions involving skeletal muscle injury or muscle disease. Reference ranges have been updated and gender-specific ranges have been introduced to reflect recent guidelines and help guide result interpretation.

We would like to take this opportunity and emphasize the importance of serial sampling to detect changes in cardiac Troponin I levels to differentiate acute cardiac events from chronic disease.

NT-proBNP

As part of our High-Volume Chemistry update we have replaced the previous B-type natriuretic peptide (BNP) with N-terminal pro-BNP (NT-proBNP) assay for diagnosing and managing patients with suspected heart failure. Increased stability of NT-proBNP helps to reduce pre-analytical variability and allows for testing from serum. NT-proBNP levels are not affected by selected emerging therapies for heart failure, allowing for monitoring patients receiving these treatments (1).

For questions related to Troponin and proBNP testing, please contact Dr. William Schreiber, Clinical Director of Chemistry, at William.Schreiber@Lifelabs.com or Dr. Joanna Jung, Clinical Biochemist, at Joanna.Jung@Lifelabs.com.

Reference

<https://www.acc.org/latest-in-cardiology/articles/2015/02/09/13/00/cardiac-biomarkers-and-heart-failure>

Save the Date for the 2023 Healthcare Providers' Conference: September 28, 2023, Victoria, B.C.

Dr. Miguel Imperial, Medical Microbiologist, MD, FRCPC

After a successful HCP conference in Surrey, BC last year, we're moving to Vancouver Island this year!

Join us for an evening of lab-related talks and a complimentary dinner in a beautiful setting at the Oak Bay Beach Hotel on the **evening of Thursday, September 28, 2023.**

A finalized program will be available in a future newsletter in August, 2023.

To pre-register for this free event, please contact Jolie Quinton at Jolie.Quinton@Lifelabs.com.

We look forward to seeing you there!



High Group A Streptococcus Positivity Rates in Throat Cultures

Dr. Diana Whellams, Medical Microbiologist, MD, FRCPC

As summer arrives, it often brings with it relief from the many upper-respiratory infections that affect children and adults alike through the winter months. However, one infection that we are continuing to see unexpectedly late into the spring this year is “Strep throat”,

Bacterial pharyngitis is typically caused by Group A Streptococcus (although other pathogens such as Group C or G Streptococcus or *Arcanobacterium hemolyticum* may rarely be implicated.) Common symptoms of Strep throat include swollen tonsils with exudate, anterior cervical lymphadenopathy, fever, and absence of cough (1).

LifeLabs BC performs a high volume of outpatient throat cultures looking for Group A Streptococcus (GAS). Typically, the positivity rate ranges from 8-13 percent of samples, with sample volumes and positivity rising in late winter and spring. This year, however, we have seen very high positivity rates for GAS and later in the year than expected—from March to May, positivity rates for our BC throat samples have been above 20%. While we don’t capture statistics on repeat isolation in the same patient, anecdotally we seem to be seeing more repeat positive cultures with GAS this year as well—this may reflect repeat infection or GAS carriage.



Treatment of Strep throat with antibiotics is recommended because it prevents complications including peritonsillar abscess, sepsis, rheumatic fever, and rheumatic heart disease. (Post-streptococcal glomerulonephritis is likely not prevented by antibiotic administration) (1). Fortunately, GAS is unique in that 100% of isolates remain susceptible to treatment with penicillin or amoxicillin, the first-line therapies for Strep throat. If a patient’s throat swab grows GAS after treatment with one of these antibiotics, it does NOT mean that they have developed resistance; rather, it may represent re-infection, colonization, or a medication compliance issue.

Penicillin-allergic patients can be treated with cephalexin (for non-anaphylactic penicillin allergies only), a macrolide, or clindamycin. (1) However; resistance rates to macrolides and clindamycin are close to 40%, so please request susceptibility testing on the test requisition if you are considering one of these alternative antibiotics. (LifeLabs does not routinely perform antibiotic susceptibility testing on all GAS isolates because they are predictably sensitive to penicillin, amoxicillin, and cephalexin).

Helpful guidelines on the diagnosis and treatment of GAS pharyngitis are available from the Canadian Pediatric Society at [Group A streptococcal \(GAS\) pharyngitis: A practical guide to diagnosis and treatment | Canadian Paediatric Society \(cps.ca\)](https://cps.ca/en/resources/clinical-guidelines/2019/04/group-a-streptococcal-gas-pharyngitis-a-practical-guide-to-diagnosis-and-treatment)

Reference:

1) Sauve L et al. Group A streptococcal (GAS) pharyngitis: A practical guide to diagnosis and treatment. 2021. Available online at [Group A streptococcal \(GAS\) pharyngitis: A practical guide to diagnosis and treatment | Canadian Paediatric Society \(cps.ca\)](https://cps.ca/en/resources/clinical-guidelines/2019/04/group-a-streptococcal-gas-pharyngitis-a-practical-guide-to-diagnosis-and-treatment)