



OP+ILAB
Montréal-CUSM

Brochure éducative pour le pré-analytique en microbiologie
Pre-analytical educational booklet for microbiology

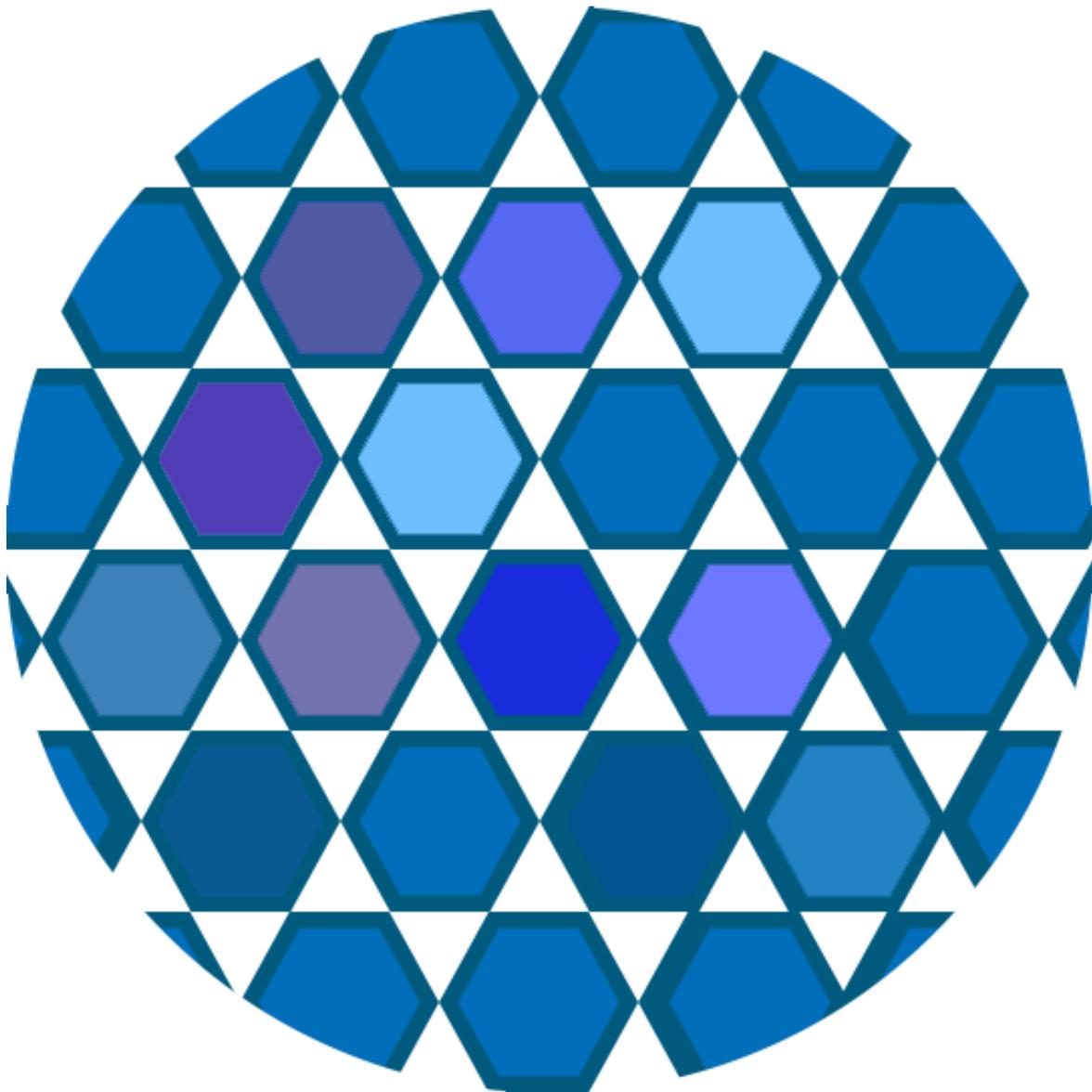


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Gen site of the McGill University Health Center (MUHC) - Decasult. (2023, May 11). Decasult. <https://www.decasult.com/en/projects/gen-site-of-mcgill-university-health-center-mahc/>

Some Statistics

Non-conformities filed* from March 1st to March 31st 2024

	Categories of Non-Conformities	%	NC count
1	Pre-Pre Analytical	93.7%	1357
2	Pre Analytical	0.8%	11
3	Analytical	2.9%	42
4	Post-Analytical	0.8%	12
5	Others	1.8%	27
	Grand Total	100%	1449

* These are only the non-conformities that are filed with an NC CODE (see page 5), a lot of issues are never filed due to some circumstances being hyper specific.

The **VAST** majority of our NCs come from the pre-pre analytical, meaning before the specimen is even received in the lab.

Location of the pre-pre-analytical non-conformities

	Collection Location	%	Total Count of NC
1	Inpatient	37.8%	513
2	Emergency	25.5%	346
3	Outpatient	16.4%	223
4	Others	20.3%	275
	Grand Total	100%	1357

The disparity between the locations of the non-conformities is not significant, which means all locations suffer from the same problems equally.

1357 pre-analytical non-conformities / 33141 tests ordered = **4.1% NC rate**

Some Statistics

Main culprits of the non-conformities in the MUHC

	Encounter	Count of NC	
1	Glen - RVH - Urology Clinic	86	
2	External Physician Office	73	
3	Glen - RVH - D03C B	69	
4	Glen - RVH - D03C A	68	
5	Glen - MCH Ped Emergency - Green Zone	62	

These locations usually have the highest rate because they also request the most tests and have the most patients. However, that doesn't necessarily excuse the amount of NCs we have to file for them.

Wards with the least amount of non-conformities in the MUHC

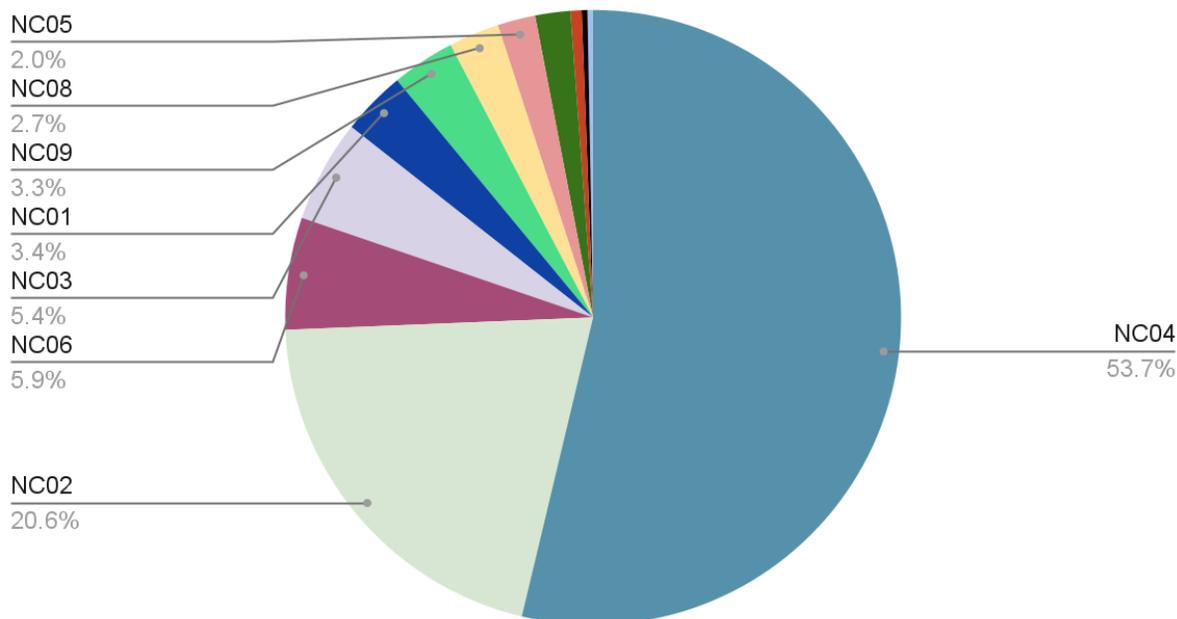
	Encounter	Count of NC	
1	All the pediatric inpatients at MCH (12 wards)	59	
2	Every Glen adult clinic other than urology (20 clinics)	86	
3	Every RVH inpatient ward other than D03C (20 wards)	95	

To really understand the scale of these statistics:
12 wards of the MCH **combined** (59) < D03C A (68)
20 clinics of the RVH **combined** (86) = Urology clinic (86)
20 wards of the RVH **combined** (95) < D03C A + B (137)

Some Statistics

Every pre-analytical non-conformity code used in microbiology

Amount of NC per category (March 1st - 31st 2024)



NC01 : Date et heure de prélèvement non indiquées: Date de réception mis par défaut

NC02 : Heure de prélèvement non indiquée: Heure 00:01 mis par défaut

NC03 : Source ou site de prélèvement de l'échantillon non indiqué

NC04 : Échantillon reçu après délais de transport acceptable: résultats non fiables

NC05 : Échantillon reçu dans un milieu de transport inadéquat: SVP répéter

NC06 : Aucune numéro de licence indiqué

NC07 : Nom du médecin tel qu'indiqué sur la requête

NC08 : Adresse du médecin, pour le retour des résultats, non indiquée ou incomplète

NC09 : Échantillon reçu souillé ou ayant coulé

NC10 : Signature du prescripteur manquants

NC11 : Échantillon reçu sans identification

NC12 : site anatomique de prélèvement de l'échantillon non indiqué.

NC15 : Description de l'échantillon non indiquée ou incomplète

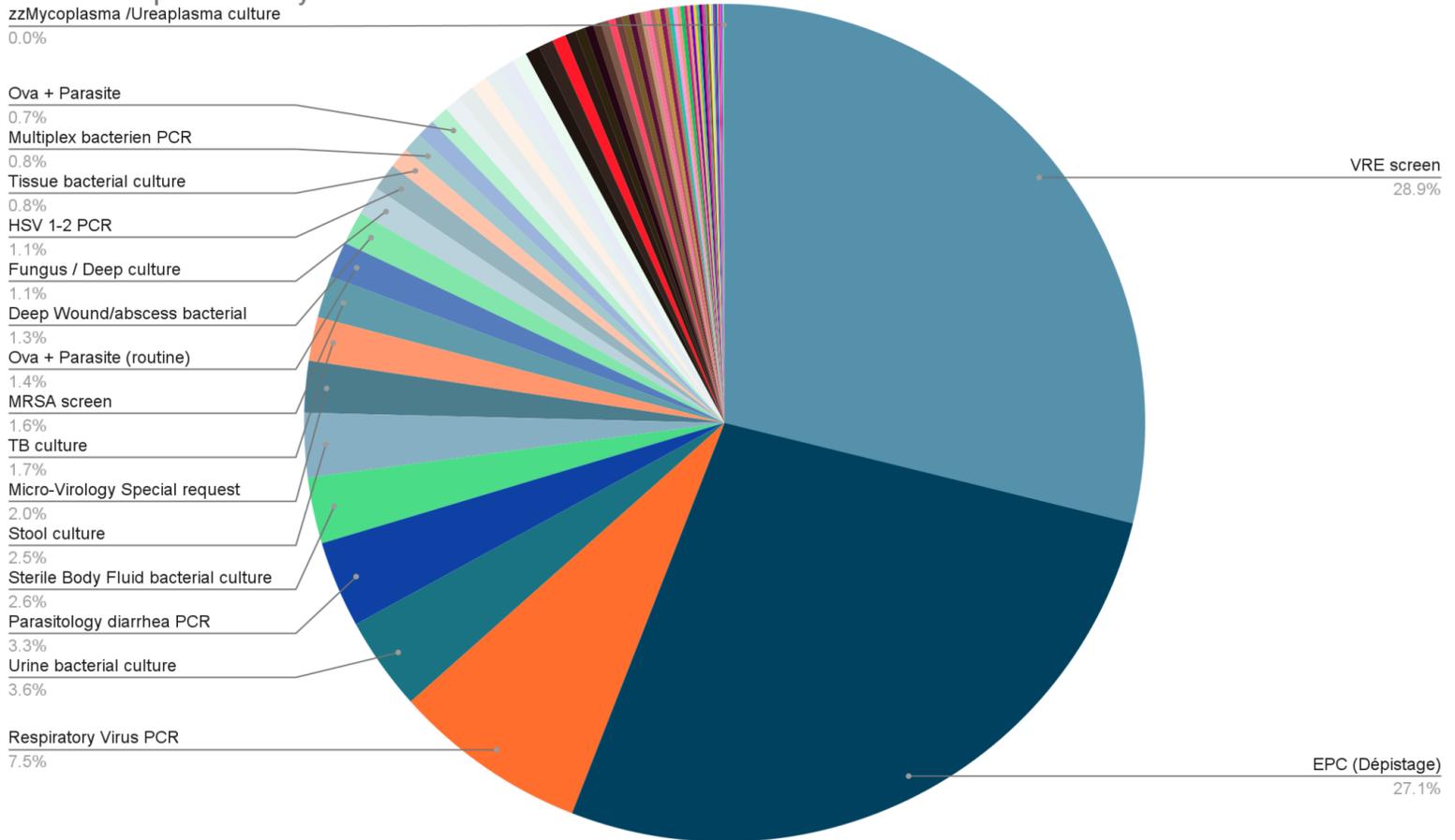
NC17 : Le nom du patient sur la requête ne correspond pas au nom sur l'échantillon

Problems with requisition | Problems with sample

Some Statistics

2665 Tests were canceled due to errors not relating to delays or physician request
March 1st - 31st 2024

Cancelled specimens by test



Total canceled tests **NOT** due to request by physician or no specimen received
= 2655

Total completed with NC code = 1263

2655 (total canceled tests) + 1263 (total completed tests with NC)
= 3918 total complications

3918 total complications

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(33141 tests ordered - 3628 specimens not received or canceled by physician)
= 13.3% error rate

More than $\frac{1}{8}$ samples received in the lab are problematic

General Issues

Labeling

Objective: How to label a specimen correctly to ensure patient identification (NC11, 17)

ALL samples received in the lab must be labeled in the same exact way.

1 - Label must be upright when the top of the container is facing to the left.

2 - Barcode of the label must be straight and readable by a scanner.

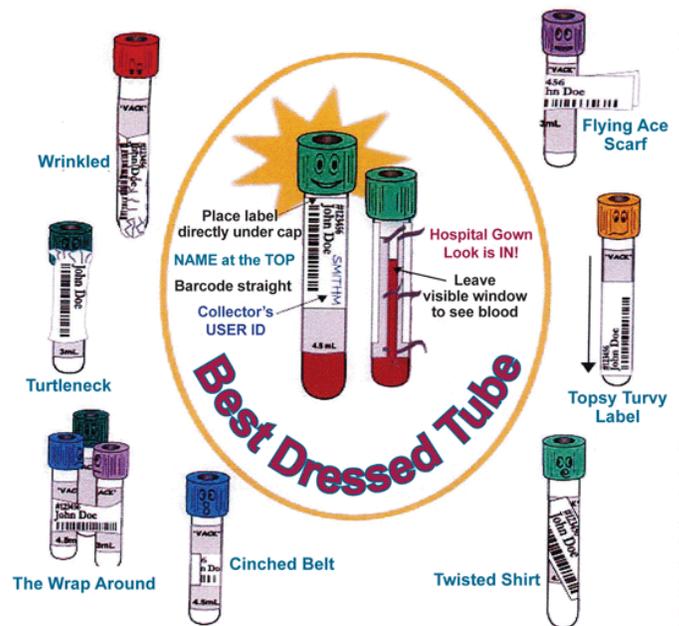
3 - Label must NOT cover any barcode on the container itself (hemoculture bottles).

4 - Labels must not overlap one another.

5 - Labels must not restrict the opening and closing of the container.

6 - It is unnecessary to have 2 labels of the same test on 1 sample.

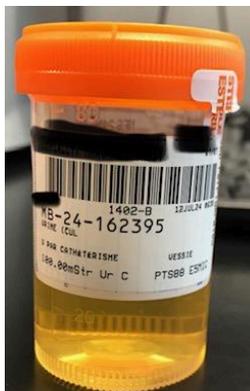
7 - Labels with patient identification must be on any given sample.



← Label not straight, unscannable



← label restrains the swab from being taken out of container



← Barcode unscannable due to convexity of the container

Labelled horizontally on swab →



General Issues

Test ordering

Objective: To fill a requisition properly (NC01, 02, 03, 06, 07, 08, 10, 12, 15).

1 - Patient information

In Quebec maiden names are used even for married spouses, please indicate the maiden name of the patient in case this applies.

2 - Prescriber information

Information needed for return of test results. Please enter the full name of the prescriber with no acronyms and their license number.

3 - Date and Time of collection

Please enter the date and time of collection and the signature of the collector.

4 - Anatomical site or method of collection

If precision is needed and there is not enough space to write on the req, please write in the "other" section at the bottom.

5 - Test requested

Please specify when asked, "viral culture" is not a valid test.

OP+ILAB Montreal-CUMH Site: CHU, HGM, HPM, LARIVE		MICROBIOLOGY Centre de diagnostic et de santé de l'Université de Montréal	
* Prescripteur / Prescriber Nom & Prénoms / Last & First name: _____ No. Permis / License: _____ Clinique, bureau / Clinic, office: _____ Adresse pour le retour des résultats / Address for return of results: _____ No. téléphone: _____ Signature: _____ Date (AAJYMMJJJJ): _____ Diagnostic ou Renseignements Cliniques / Diagnosis or relevant information: _____ ANTIMICROBIAL? <input type="checkbox"/> vs. <input type="checkbox"/> No		* Nom / Last name: _____ * Prénoms / First name: _____ No. de dossier ou RAMQ / BSN or RAMQ: _____ Adresse / Address: _____ * Date de naissance / Date of birth (AAJYMMJJJJ): _____ * Sexe / Gender: _____ * Renseignements Obligatoire / Mandatory Information * Date et heure du prélèvement / Date and time of collection 20 / / Heure / Time: _____ Prélèveur par / collected by: _____	
BLOOD <input type="checkbox"/> Catheter <input type="checkbox"/> Peripheral BONE MARROW <input type="checkbox"/> Bone Marrow	<input type="checkbox"/> Bacterial culture <input type="checkbox"/> CMV Viral load (Lavender tube 4ml) <input type="checkbox"/> EBV Viral load (Lavender tube 4ml) <input type="checkbox"/> Fungal culture (Mycal) <input type="checkbox"/> HepB Viral load (Lavender tube 4ml) <input type="checkbox"/> HepC Viral load (Lavender tubes 2x4ml) <input type="checkbox"/> HIV Viral load (Lavender tubes 2x4ml) <input type="checkbox"/> JC/JK Viral load (Lavender tube 4ml) <input type="checkbox"/> Malaria (Lavender tube 4ml) <input type="checkbox"/> Mycobacterial culture (Mycal) <input type="checkbox"/> OTHER: _____	NOSE <input type="checkbox"/> Nose RESPIRATORY <input type="checkbox"/> BAL <input type="checkbox"/> Endotracheal aspirate <input type="checkbox"/> Neopharyngeal aspirate <input type="checkbox"/> Sinus <input type="checkbox"/> Sputum <input type="checkbox"/> Sputum (CF) <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> MRSA screen <input type="checkbox"/> MESSA screen <input type="checkbox"/> Bacterial culture <input type="checkbox"/> B. pertussis PCR (STA,APA,BA) <input type="checkbox"/> Flu A/B only (STA,APA,BA) <input type="checkbox"/> Fungal culture <input type="checkbox"/> Galactomannan Antigen (6x only) <input type="checkbox"/> Mycobacterial culture <input type="checkbox"/> Mycoplasma/Chlamydia PCR (TA,APA,BA) <input type="checkbox"/> Respiratory virus PCR (TA,APA,BA) <input type="checkbox"/> Viral culture (*Specify: _____) <input type="checkbox"/> OTHER: _____
BIOPSIE / TISSUE Specify site: _____	<input type="checkbox"/> Deep bacterial culture (aerobic & anaerobic) <input type="checkbox"/> Fungal culture <input type="checkbox"/> Mycobacterial culture <input type="checkbox"/> Viral culture (*Specify: _____) <input type="checkbox"/> OTHER: _____	SKIN/NAIL/HAIR <input type="checkbox"/> Scraping: *Specify _____ <input type="checkbox"/> Vesicle <input type="checkbox"/> Slide (DFA) <input type="checkbox"/> Swab (culture only)	<input type="checkbox"/> Fungal culture <input type="checkbox"/> Superficial bacterial culture (skin) Herpes simplex (HSV) <input type="checkbox"/> DFA <input type="checkbox"/> Culture Varicella zoster (VZV) <input type="checkbox"/> DFA <input type="checkbox"/> Culture
EAR Specify: <input type="checkbox"/> Right <input type="checkbox"/> Left <input type="checkbox"/> External canal <input type="checkbox"/> Middle ear canal <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> Bacterial culture <input type="checkbox"/> Fungal culture <input type="checkbox"/> Viral culture (*Specify: _____) <input type="checkbox"/> OTHER: _____	STOOL *Please use requisition DM-3185 for parasitology testing <input type="checkbox"/> Rectal swab <input type="checkbox"/> Stool <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> Bacterial culture <input type="checkbox"/> Clostridium difficile toxin B gene PCR <input type="checkbox"/> CPE Screening (EPEC, enterohemorrhagic E. coli, enterobacteriaceae) <input type="checkbox"/> Rotavirus Direct Detection (ELISA) <input type="checkbox"/> Viral culture (*Specify: _____) <input type="checkbox"/> VRE screen <input type="checkbox"/> Yeast culture
EYE Specify: <input type="checkbox"/> Right <input type="checkbox"/> Left <input type="checkbox"/> Conjunctiva <input type="checkbox"/> Vitreous <input type="checkbox"/> Cornea <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> Bacterial culture <input type="checkbox"/> Fungal culture <input type="checkbox"/> Viral culture (*Specify: _____) <input type="checkbox"/> OTHER: _____	THROAT <input type="checkbox"/> Beta strep culture (Strepococcus A,G,G) <input type="checkbox"/> Throat	<input type="checkbox"/> Yeast culture <input type="checkbox"/> OTHER: _____
FLUID <input type="checkbox"/> Amniotic <input type="checkbox"/> CSF (site): _____ <input type="checkbox"/> Dialysate <input type="checkbox"/> Joint (site): _____ <input type="checkbox"/> Peritoneal <input type="checkbox"/> Pericardial <input type="checkbox"/> Pleural: <input type="checkbox"/> Right <input type="checkbox"/> Left <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> Bacterial culture <input type="checkbox"/> Cryptococcal antigen (CSF only) <input type="checkbox"/> Fungal culture <input type="checkbox"/> Multiplex bacterial PCR <input type="checkbox"/> Mycobacterial culture <input type="checkbox"/> Viral culture (*Specify: _____) <input type="checkbox"/> **PCR for _____ <input type="checkbox"/> OTHER: _____	URINE <input type="checkbox"/> Bladder tap <input type="checkbox"/> Cystoscopy <input type="checkbox"/> In/Out Catheter <input type="checkbox"/> Indwelling catheter <input type="checkbox"/> Midstream <input type="checkbox"/> Nephrostomy <input type="checkbox"/> Pediatric Bag <input type="checkbox"/> Suprapubic catheter <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> Bacterial culture <input type="checkbox"/> Chlamydia/GC PCR <input type="checkbox"/> CMV culture <input type="checkbox"/> Legionella Ag <input type="checkbox"/> Mycobacterial culture <input type="checkbox"/> PCR for (*Specify: _____) <input type="checkbox"/> Schistosoma (2000-1500)(20-25°C) <input type="checkbox"/> Viral culture (*Specify: _____)
GENITAL <input type="checkbox"/> Anal canal <input type="checkbox"/> Cervix <input type="checkbox"/> Recto-vaginal (specimen type) <input type="checkbox"/> Urethra <input type="checkbox"/> Vagina <input type="checkbox"/> Vulva <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> Bacterial culture <input type="checkbox"/> Chlamydia / Gonorrhoea PCR <input type="checkbox"/> GC culture (urethra or cervix) <input type="checkbox"/> Group B Strep screen <input type="checkbox"/> HSV culture <input type="checkbox"/> HPV—women >30 y.o with ASCUS <input type="checkbox"/> Trichomonas preparation <input type="checkbox"/> Recurrent Vulvovaginal Candidiasis <input type="checkbox"/> Vaginitis (Candida & Bacterial Vaginosis)	WOUNDS <input type="checkbox"/> Surgical site: (*specify) _____ <input type="checkbox"/> Non-Surgical site: _____	<input type="checkbox"/> Deep bacterial culture (aerobic & anaerobic) <input type="checkbox"/> Superficial bacterial culture (aerobic) <input type="checkbox"/> Fungal culture <input type="checkbox"/> Mycobacterial culture <input type="checkbox"/> OTHER: _____
OTHER: _____		OTHER: _____	

General Issues

Specimen transport media

Objective: To know what test should go in which media. (NC05)



AMIES swab gel media, used for:
VRE, KPC, MRSA, Throat Culture, Pus deep/superficial, Vaginal Culture, Group B Streptococcus, Ear Culture



Sterile containers, used for:
Urine Culture, Legionella, Stool Culture, C. Diff, Parasitology PCR, H. Pylori, Sputum Culture, Fungus deep/superficial, BAL, Sterile Body Fluid culture, Pus Deep culture, TB



Hemoculture bottles
FA Green = Aerobic bottle
FN Orange = Anaerobic bottle
PF Yellow = Pediatric bottle



COBAS tube
Urine: fill to the line, more or less = cancelled
Genital swab: 1 swab only
Covid: NO rapid test can be done on this media



UTM Tube used for:
COVID routine, COVID rapid, Bordetella Pertussis, HSV, VZV, Multiplex



Endotracheal tube used for:
BAL, Sputum Culture, Deep Fungal Culture



SAF container contains SAF fixative used for:
Ova + Parasites only



CSF tube, plastic to reduce breakage used for:
All CSF testing
Fungus, Bacterial, TB, Viral encephalitis panel



Mycof/Lytic bottle used for:
Fungal culture in blood
TB culture in blood



Non-sterile container
NOT USED IN ANY MICRO TESTING → non-sterile

General Issues

Communication

Objective: How to communicate with the lab in a special situation

ANY special requests or questions need to be communicated with the lab

- Have patient information ready (Name, RAMQ, MRN, DOB)
- Leave your name, service, and extension if a callback is needed

To reach the hospital externally, dial: **(514) 934-1934** and then dial the extension number for the desired location.

x 36758

The technical coordinator is the person in charge of all technical aspects in the lab. This is a good number to call for any **stat** special requests and questions.



514-934-4476 - Fax Number

microlab@muhc.mcgill.ca - Email

The Fax and email are for minor requests or inquiries. It will take more time to process than a phone call.

Stool

Objective: How to collect stool samples properly.

CANCELLED KPC and VRE swabs: Fixing the problem together.

- From November 2023 to March 2024 there were 26,798 swabs done for KPC/VRE at the MUHC.
- More than 5,800 of those swabs were cancelled in lab due to lack of stool on the swab.
- The percentage of cancelled swabs has increased compared to the previous 3 months.



 If fecal matter can not be obtained during the swabbing process then wait for the patient to have a bowel movement and take a sample.



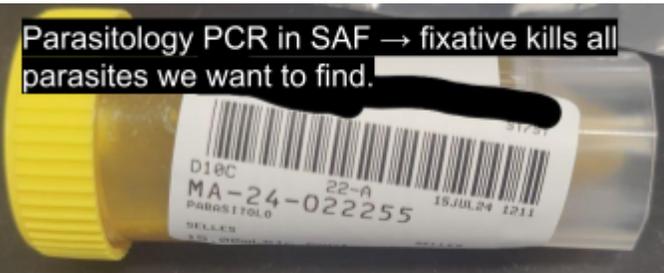
56% of canceled tests = VRE/KPC screens (March 2024), all of those were canceled due to the absence of stool on the swab.

Yellow topped SAF



Parasitology PCR in SAF → fixative kills all parasites we want to find.

containers → only for OVA + Parasites
Sterile containers → PCR parasitology



PathWest General Lab: Order Result Viewer [Order List]

Task Mode View Help

3GLEN RVH MD MNH / Discharged

Orders for accession 149-24-064896

Client Date	Accession	Order	Specimen	Priority	Status	Comments	Receipt	Order Date	Order Personnel ID	Cancel Date	Cancel Reason	Worksheet
2024-03-19 15:30	48-24-064896	Stool Culture	Stool	RT - Routine	Cancelled			2024-03-19 15:37	Contributor_system, DACS	2024-03-26 9:53	Patient address -> C Diff test	

Stool Culture is done on inpatients only when they have been hospitalized for less than 3 days. If the have been an inpatient for >3 days, C.Diff will be ordered instead only on LIQUID STOOL.

Encounter Status	Client	Facility	Patient Types	Admitted	Discharged
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/10/27 10:34 AM	2023/10/29 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/10/27 10:34 AM	2023/10/29 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/10/27 10:34 AM	2023/10/29 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/10/27 10:34 AM	2023/10/29 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/10/27 10:34 AM	2023/10/29 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/10/27 10:34 AM	2023/10/29 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/10/27 10:34 AM	2023/10/29 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/10/27 10:34 AM	2023/10/29 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/12/20 7:00 AM	2023/12/20 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2023/12/21 8:06 AM	2023/12/21 11:59 PM
Discharged	4-Edenval Physician Office	Edenval Physician Office	Released In	2023/12/28 9:30 AM	2023/12/31 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Inpatient	2024-03-28 9:30 AM	2024-04-12 4:26 AM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2024-03/11 7:00 AM	2024-03/11 11:59 PM
Discharged	3GLEN RVH MD MNH	RVH MD MNH	Outpatient	2024-03/21 7:00 AM	2024-03/21 11:59 PM

The culture was ordered on March 19th but the patient has been at the Glen since February 28th, therefore the culture will NOT be done.

The culture is not done because their diet is controlled in the hospital and therefore their condition is not necessarily caused by shigella or salmonella making the test redundant. A physician must notify the lab if there is a special case.

Stool culture, C.Diff, and Parasitology PCR can be done on the same sample.

Ova + Parasites will have to be in a separate container since SAF is needed.

Objective: How to collect urine samples properly.

TIGHTEN URINE CONTAINERS TO PREVENT LEAKAGE DURING TRANSPORT

How does it leak?

- Lid screwed on very loosely
- Lid not screwed on straight
- PTS tube impact opens lid
- Transport personnel handles coolers roughly
- Broken container

What happens if it leaks?

- Sterility not confirmed for test
- Cleanup needed in lab or in transport medium
- Test may need to be canceled and redone



Chlamydia trachomatis / Neisseria gonorrhoeae (CT/NG)
must always be **received** in a COBAS tube.



← Urine must always be filled up to this fill line.
Overfilled or underfilled samples are rejected due to the concentration of the buffer solution being off.

Only 1 specimen swab must be in the COBAS tube if it's a swab specimen.
We cannot confirm if both swabs are from the same site or same collection.



Respiratory

Objective: How to properly request respiratory tests.

1. Patient identification, you can stamp the patients medicare card here or manually write their name, RAMQ/MRN, Address, DOB, Sexe/Gender
2. Prescriber's identification
3. Sample collection information
4. Type of sample
5. Patient information relating to illness

Pregnant, Respiratory Emergency, Critical care, Pre-chemotherapy, → Rapid GeneXpert

Immunocompromised host and Febrile infant → Rapid BioFire

Biofires are ordered as Multi R-22

SPECIAL RAPID REQUESTS MUST BE FORWARDED TO THE LAB

Centre universitaire de santé McGill | McGill University Health Centre | OP+ILAB | COVID-19 TEST (SARS-CoV-2 RT-PCR) | INTERNAL REQUISITION | HOSPITALIZED AND AMBULATORY CLIENTS

1. Patient Identification (top right box)

2. Prescriber's Identification (left side)

3. Collection Information (right side)

4. Type of Sample (Specimen) (middle section)

5. Symptomatic Patient - COVID-19 suspected (bottom section)

Annotations: Rapid GeneXpert, Rapid BioFire

RAPID TESTS MUST BE RECEIVED IN AN UTM TUBE

DM-6311 (REV-7 2022/11/07) CUSM Repro MUHC



COBAS or UTM tube is required for COVID/Multiplex tests. AMIES swabs are for culture tests will be rejected.

Blood

Objective: How to collect blood cultures properly.

There are 3 types of hemoculture bottles

Green = FA (aerobic)

Orange = FN (anaerobic)

Yellow = PF (pediatric, aerobic)

Since the bottles have culture media and an anticoagulant, the right concentration is very important for the accuracy of the test.

There is a fill line for the bottles, please try not to overfill or underfill these bottles.

There are 3 places on the bottle to not cover with a label

- 1 - Bottle barcode
- 2 - Bottle QR code
- 3 - Bottle expiry date



Put the labels on the empty rectangle specifically for the label.

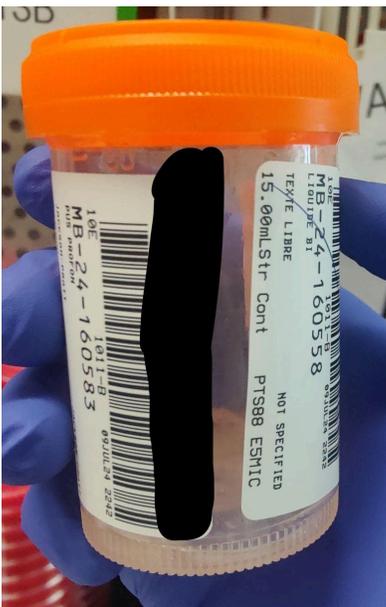
Please send both the FN and FA bottles of the same set (same accession number) at the same time, issues may occur if the set is separated.

Wounds, Tissues, and Sterile Body Fluids

Objective: How to differentiate between wounds, SBF, and tissues.

Pus deep vs Pus superficial vs Sterile Body Fluids vs Tissues

Pus deep	Sterile body fluids	Pus superficial	Tissues
Abscess swabs or drains	Peritoneal fluid	Skin swabs	Biopsies
Aspirates of pus or fluid	Pleural fluid	Subcutaneous tissues	Any solid visible soft tissue
Prosthetic material	Joint fluid	Mucous membranes	
Amniotic fluids	Synovial fluid	Catheter sites	
Bones	Abdominal fluid		
Non-vascular catheter	Pericardial fluid		



This sample is a Jackson-Pratt Drain wrongly ordered as a sterile body fluid. The lab had to verify with the prescriber and cancel and reorder the appropriate test.

For an SBF: BAPCO2, CHOC, Thio/PF bottle, BBA

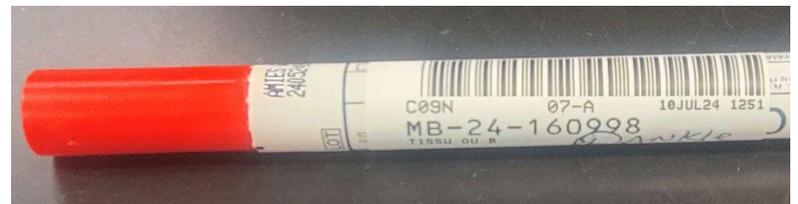
For a Pus deep: BAPCO2, CHOC, MAC, CNA, Thio, BBA, BAN, BBE

The confirming, reordering, replating and re-incubation process is very long and could skew the results due to delays.

Left ulcer wound swab ordered as tissue.

Swab = no visible tissue = not tissue

WOUND SWABS = pus deep



Cerebral Spinal Fluid

Objective: What tests to order and how much volume of CSF is needed.

CSF Multi-14 = BioFire FilmArray Meningitis-Encephalitis (ME) Panel

14 bacterias + viruses + yeast

The 14 tests on the biofire panel are LESS sensitive than individual tests. If more sensitivity is needed, order tests for specific bacterias (Ex. Crypto Ag).

Bacteria:

- *Escherichia coli* K1
- *Haemophilus influenzae*
- *Listeria monocytogenes*
- *Neisseria meningitidis* (encapsulated)
- *Streptococcus agalactiae*
- *Streptococcus pneumoniae*

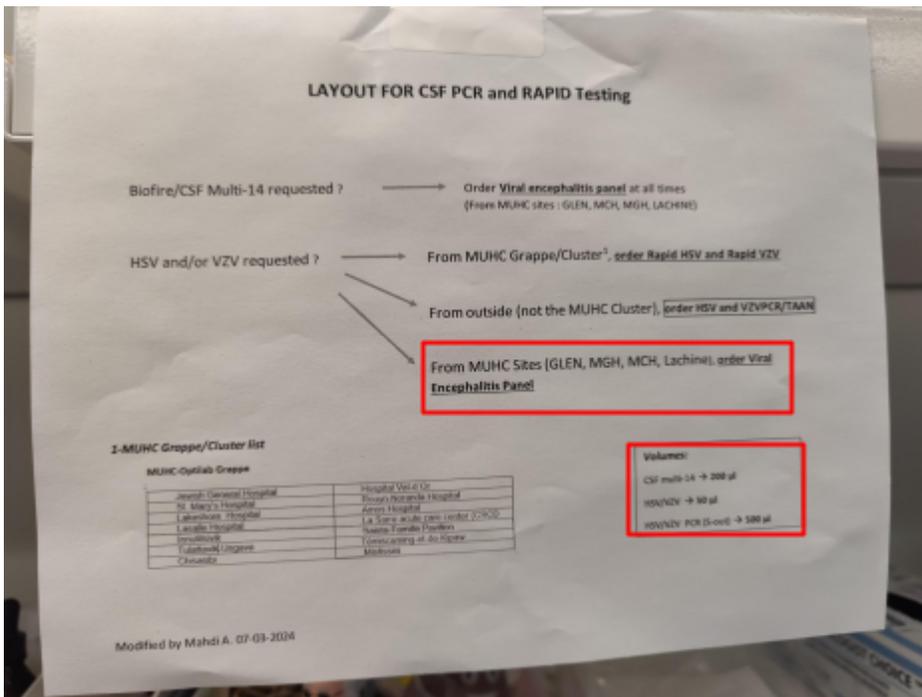
Viruses:

- Cytomegalovirus
- Enterovirus
- Herpes simplex virus 1 (HSV-1)
- Herpes simplex virus 2 (HSV-2)
- Human herpesvirus 6 (HHV-6)
- Human parechovirus
- Varicella zoster virus (VZV)

Yeast:

- *Cryptococcus neoformans/gattii*

HSV and/or VZV are done on CSF only in the biofire panels for MUHC cluster patients, if requested they will be canceled and reordered as the **“Viral Encephalitis Panel”**.



Minimum Volumes

Bacterial culture = 100uL (0.1mL)

CSF Multi-14 = 200uL (0.2mL)

HSV VZV = 50uL (0.05mL)

Crypto Ag = 100uL (0.1mL)

IF CSF is hard to obtain → microbiology will do their best but a priority list for the tests will be needed in case of insufficient volume.

Microbiology will hold extra CSF samples (samples received with >2mL) and processed specimens for 31 days. If add-ons are needed please communicate with the lab.

