LABORATORY SERVICES

SPECIMEN COLLECTION GUIDE 2018

Patient Notification

Wayne HealthCare Laboratory, in its continual pursuit of excellence, encourages it employees to be proactive in addressing any concerns you may have in regards to compliance, regulatory issues, safety, quality or company policy, by bringing these concerns to the attention of the Administrative Director of the Laboratory.

If you have a concern regarding patient care or safety, please notify a laboratory employee or the Laboratory Director. You may also contact Hospital Administration.

Wayne HealthCare Laboratory is a Joint Commission accredited laboratory. If your concerns cannot be resolved by hospital staff, you may contact the Joint Commission's Office of Quality and Patient Safety to report a laboratory concern or complaint.

Contact List:

Hospital Director of Laboratory Services	937-569-6249
Hospital Administration	937-569-6723
Hospital Director of Regulatory Affairs	937-569-6918
Hospital Corporate Compliance Officer	937-569-6938

The Joint Commission:

Website: www.jointcommission.org

Email: patientsafetyreport@jointcommission.org

Mail: Office of Quality and Patient Safety
The Joint Commission
One Renaissance Boulevard
Oakbrook Terrace, IL 60181
Fax: 630-792-5636

Vision Statement

Wayne HealthCare Laboratory will be the provider of choice for complete, accurate lab results and services, delivered in a prompt, professional, caring manner.

Our pledge is to serve our patients and customers to the best of our ability at all times.

Contact Information

Wayne HealthCare Laboratory
835 Sweitzer Street
Greenville, OH 45331

Phone: 937-548-1141 ext. 5716

Fax: 937-547-5744

CLIA #: 36D0348417

Staff Directory

Medical Director of Laboratory Services:
Allen Stephens, MD, Pathologist

Administrative Director:
Matt Kiehl, MLS(ASCP)^{CM}

Clinical Consultants:
Valley Pathologists, Inc:
Drs. Ronald Chiu, Thomas Wallace, Rebecca Balaj, Allen L. Stephens, Luke Wibowo, Chris Rolitsky, Ben McCalip, Melissa Grilliot, Alan Prok, M.A. Shrit, Daniel Hood, Baojin Fu.

Technical Supervisors:
Lainie Godfrey, BSMT (ASCP), Quality Assurance
Nancy Threewits, BSMT (ASCP), Microbiology

Technologist Lead Staff:

Tammy Wenning, Point of Care Testing Coordinator, Safety Officer
Kelly Sanning, Blood Bank Lead Technologist
Stacie May, Hematology Lead Technologist
Nancy Threewits, Microbiology Lead Technologist
Bethany Livingston, Chemistry Lead Technologist

Laboratory Information System:

Denise R. Tomlinson, IT department, 937-548-1141, ext. 6246

Compliance

Physicians should only order tests that are medically necessary for diagnosing or treating their patients, be certain to provide the correct ICD codes in both their patient files and on the test request forms and always follow CMS guidelines for ABN completion if they believe the service is likely to be denied.

Health Insurance Portability & Accountability Act of 1996 (HIPPA)

Wayne HealthCare Laboratory as a "covered entity complies with all federal, state and local laws, rules and regulations, including HIPPA. To this end, Wayne HealthCare Laboratory and users of WH Laboratory, will establish terms and conditions with respect to utilizing and disclosing patient protected health information (PHI), including information subject to protection under HIPPA.

To protect the integrity and availability of PHI, and to protect against inadvertent release or disclosure, both parties agree to maintain the other parties' confidential information in strict confidence using at least the same degree of care and security it uses to maintain the confidentiality of its own information. Laboratory users, providers, employees, subcontractors and other individuals permitted by the ordering medical provider to access any computer system, network, file, report, data or software owned by or licensed to Wayne HealthCare shall take all reasonable safeguard measures necessary to protect the security of patients' protected health information.

Who Can Order Lab Tests?

The laboratory will process laboratory requests made by licensed, independent practitioners, authorized by law to order tests and receive results, and who have valid provider numbers on file with registration. The laboratory will also process requests *directly* from patients utilizing the Self Directed Testing Program (see Appendix E).

What Constitutes an Order?

In order to perform a test or procedure on an outpatient basis, the Laboratory requires a valid requisition for such services indicating that they have been ordered by an authorized provider. Each requisition requires the following elements: 1) the patient's first and last name, 2) the patient's diagnosis, 3) the test(s) or procedure(s) ordered, 4) the signature of the authorized provider who orders the tests, and 5) the date the order was written. This information will be verified through the registration process. Orders received which are missing any of the five key elements will result in follow up communications to the submitting providers in order to provide service to the patient. These completed orders are valid for a period of one (1) year from the date of the physician signature. The laboratory staff will not collect blood or other specimens from a patient who does not have a proper order from a qualified practitioner. The exceptions are requests for HIV tests and Self Directed Tests, which may be performed through patient request alone without an order from a physician. Contact the Laboratory for more information on this process.

Copies of the Outpatient Order Form, Blood Product Order Form, Cytology Requisition,
and Pathology Requisition may be downloaded from Appendix A. Please indicate on these forms if testing is STAT, if results are to be called or faxed and the phone numbers, and if courtesy copies should be sent to additional physicians.

Verbal Orders

Verbal (phone) orders will be accepted from the licensed provider only, *not* physician office staff, as a last resort to faxing a signed, written order to the laboratory. Any member of the Wayne HealthCare Laboratory can accept a verbal order. The laboratory employee will request the patient's full name, diagnosis and tests to be performed. The physician may also give instructions for paging or faxing results at this time. The information will be recorded on a verbal order form and read back to the physician for confirmation. The order will be given to Registration to obtain the physician's signature/written authorization within 30 days and will then be forwarded to Health Information Management for inclusion in the permanent medical record.

STAT Test Requests

Some laboratory tests may be ordered as STAT due to clinical necessity of test results for diagnosis purposes or for the implementation or revision of treatment for the patient, the delay of which may result in the lack of the provision of necessary treatment required to stabilize the patient's physical condition. The STAT results will print on completion to the ordering unit for hospital patients. Outpatient results will be phoned or faxed as directed by the ordering provider

and indicated on the requisition. Expectations are for the results to be released within one hour of receipt of the specimen by the lab.

Tests that are sent to reference laboratories or tests that have a process time of over 60 minutes are not eligible for the <60 minute result turn-around-time standard. With that in mind, the medical staff has approved the following laboratory test list for STAT ordering purposes:

STAT TESTS

Acetaminophen	CK Total	Gentamicin	Mono screen	Rotavirus ag
Albumin.	CKMB	GGTP	Mycoplasma Ab	RSV ag
Alcohol	CMP	Glucose	Occult Bld: stool/gastric	Salicylate
Alkaline phos.	CO2	Gram stain	Osmolality	Sodium
ALT	Creatinine	HCG quant.	Phenobarbital*	Strep Grp A Scrn
Ammonia	CRP & hs CRP	Hematocrit	Phosphorous	Strep pneumo ag
Amylase	CSF Glucose	Hemoglobin	Platelet	Theophylline
APTT	CSF Protein	Influenza A/B ag	Potassium	Tox Screen
AST	D-Dimer	Ketones	PreAlbumin	Troponin T
Bilirubin	Digoxin	KOH/Wet Prep	Pro-BNP	Urea Nitrogen
Blood Bank tests	Dilantin/Phenytoin	Lactic Acid	Progesterone	Uric Acid
BMP	Electrolytes	LDH	Protein total	Urinalysis
Calcium	ESR	Legionella ag	Protime/INR	Urine dipstick
Carbamazepine	Fetal Fibronectin*	Lipase	Renal Panel	Urine preg qual
CBC ± Diff	Fibrinogen	Lithium	Retic count	Valproic acid
Chloride	Fluid Cell Count	Magnesium	Rheumatoid Factor	Vancomycin

*Fetal Fibronectin and Phenobarbital are sent STAT to Compunet Clinical Laboratory in Dayton. Expected turn-around-time is 4 hours ± 1 hour.

Timed Orders

Timed Orders are orders that are designated to be drawn at a specific time. The Lab's goal is to collect the specimen within a window of 10 minutes before or after the specified time.

Result Reporting

Reports print to the patient's location upon completion. In addition, cumulative reports print at the patient's nursing unit at 1 a.m. daily for all inpatients. (The emergency room does not receive cumulative reports).

Physicians can have patient results faxed to their offices via “community reports” which are generated multiple times per day at set times or sent electronically to their EMR as tests are completed. Physicians who do not want to receive faxed or electronic reports may have their results printed and placed in their hospital mailbox in the physician lounge or mailed to their office.

Most reference lab results are interfaced into the hospital computer system and are part of the laboratory record. For the tests that are not interfaced, the report will state “See separate reference lab report” and when received, the completed reports will be sent to the appropriate nursing unit, physician and medical records. All results will indicate the testing facility.

Laboratory reports are only to be released to the ordering physician and consulting physicians, if indicated on the order form. The laboratory does not issue physician ordered test results to patients. If patients want copies of their reports, they may complete the necessary request form in Medical Records to receive their results or access through the Wayne HealthCare Hospital Patient Portal. Call Medical Records at extension 6732 for more information.

Most routine results are reported within 24 hours. Culture results and tests sent to reference laboratories may take longer to report. Call the lab to inquire for specific test reporting times.

Critical Test Results

Critical results are outcomes that require rapid communication of the values obtained. The laboratory’s goal is to complete the notification within 60 minutes of determining the critical value.

For outpatients, critical values will be called to the ordering or attending physician. Critical values will not be left with office staff personnel unless that person is an accepted physician designee and the results will be transmitted to the physician or licensed responsible caregiver without delay.

For hospital patients and emergency room patients, the critical values may be called to registered nurses, who in turn notify the appropriate physician.

The lab technologist will document the full name of the person the result was given to, the time contacted, and whether the information was read back to the technologist as a double check. This documentation will be resulted with the actual critical result called.

WAYNE HEALTHCARE LABORATORY CRITICAL VALUES 2017

TEST	CRITICAL LOW	CRITICAL HIGH
WBC	**< 2.0** x10^3 cu/mm	**> 30** x10^3 cu/mm
HEMOGLOBIN		
Newborn 0 – 2 weeks	**< 7.0** mg/dL	**> 25.0** mg/dL
Newborn 2 wks – 1 month	**< 7.0** mg/dL	**> 20.0** mg/dL
Child 1 month – 6 years	**< 7.0** mg/dL	**> 18.0** mg/dL
Female 6 years - adult	**< 7.0** mg/dL	**> 18.0** mg/dL
Male 6 years - adult	**< 7.0** mg/dL	**> 20.0** mg/dL
PLATELET *adult*	**< 50** x 10^3 cu/mm	none
PLATELET *newborn*	**< 75** x 10^3 cu/mm	none
INR value *(protime)*	none	**> 4.5**
APTT *on therapy*	none	**> 90** sec
BILIRUBIN *newborn*	none	**> 18** mg/dL
BUN	none	**> 100** mg/dL
CALCIUM	**< 6.0** mg/dL	**> 13.0** mg/dL
CKMB	None	**> 6** ng/mL
CO2	**< 10** mmol/L	**> 40** mmol/L
CREATININE	none	**> 5.0** mg/dL
GLUCOSE *adult*	**< 50** mg/dL	**> 450** mg/dL
GLUCOSE n*ewborn*	**< 30** mg/dL	**> 300** mg/dL
MAGNESIUM	**< 1.0** mg/dL	none
PHOSPHOROUS	**< 1.0** mg/dL	none
POTASSIUM *adult*	**< 3.0** mmol/L	**> 6.0** mmol/L
SODIUM	**< 120** mmol/L	**> 160** mmol/L
ACETAMINOPHEN	none	**> 100** µg/mL
CARBAMAZEPIN	none	**> 12** µg/mL
DIGOXIN	none	**> 2.0** µg/mL
GENTAMICIN *trough*	none	**> 2.0** µg/mL
GENTAMICIN *peak*	none	**> 10.0** µg/mL
LITHIUM	none	**> 2.0** mmol/L
PHENYTOIN	none	**> 20** ug/mL
SALICYLATE	none	**> 30** mg/dL
THEOPHYLINE	none	**> 20** µg/mL
TROPONIN	None	**> 100** ng/L
VALPROIC ACID	none	**> 100** µg/mL
VANCOMYCIN *trough*	none	**> 25** µg/mL
VANCOMYCIN *peak*	None	**> 60** µg/mL
BLOOD CULTURES	Any positive gram stain.	
CSF CULTURES	Bacteria seen on gram stain. Growth of any pathogenic organism on culture plates.	

Notification List

The ordering physician and/or the nursing unit involved will be notified, by phone, based on the following criteria. Documentation recorded in the same manner as critical values.

Department	Criteria
Microbiology	**Notify the physician or nurse as soon as possible for the following organisms. If the patient is an inpatient, contact the Infection Preventionist.**
	Vancomycin Intermediate or Resistant Staphylococcus aureus.
	CRE- Carbapenem Resistant Enterobacteriaceae.
	VRE/Vancomycin Resistant Enterococcus or **ESBL** (Extended Spectrum Beta Lactamase) producing organisms: Call if inpatient or extended care facility resident.
	C. difficile: Positive Toxin.
	Salmonella, Shigella, Ecoli 0157, Positive Shiga Toxin, and Positive Campylobacter Antigen from stool cultures.
	Recovery of isolates that are out of the ordinary.
	MRSA Carrier Culture: Positive cultures from ICU patients.
	Positive Giardia/Cryptosporidium antigen
Hematology	New onset of blast forms or early cell lines. Intracellular microorganisms (bacteria or yeast) found in normally sterile body fluids or blood.
Immunology	Positive Fetal Fibronectin test.
	Positive Influenza A/B or Mycoplasma for Inpatients only.
Chemistry	Lactic Acid levels $\geq$ 2.0 mmol/L.
Blood Bank	Positive Fetal Maternal Hemorrhage screens or Kleihauer-Betke confirmations
Entire Laboratory	Anytime corrected reports are issued due to a major discrepancy.

Health Fair Critical Value Notification

*If the testing process reveals a critical result as defined by laboratory critical value policy, the patients, who by signing the consent, have authorized the laboratory to contact them directly with the results. The patients may have also indicated an emergency contact authorized to receive the results. Patients will be encouraged to seek immediate medical care/consultation from their physicians or any emergency department. Results will include documentation of who was contacted, date, time and technologist's initials as per protocol.

Reflex Testing

Several tests, based upon the original test result or other criteria, will reflex to more testing. See the table below for reflex test criteria:

INITIAL TEST	REFLEX CRITERIA	CONFIRMATORY TEST
Antibody Screen (Blood Bank)	Positive Screen	Antibody Identification & compatibility testing if indicated.
Complete Blood Count/Auto Diff	Neut ≥ 85%, Lymphs <10% or >50%, Monos>20%, Eos>20%, Basos>4.0%, IG >5.0%, WBC count <2,000 or >20,000, Blast flag, left shift flag, nRBC flag, Atypical lymph flag	Manual Differential. Contact the department for absolute counts triggering manual differentials.
Complete Blood Count/Auto Diff	RDW >20%, MCV<70 or >110 fl, Hypochromia flag, Plt count <100, MCHC<30.0 g/dL	Red Cell Morphology Review
Cultures (All Sources)	Positive Growth	Identification of pathogenic organisms & Susceptibility testing performed following CLSI guidelines.
Direct Antiglobulin Testing (DAT) on Cord Blood	Positive Result	Bilirubin levels on cord blood & 12 hours, Antibody ID
Lactic Acid, Serial	>2.0 mmol/L	Reflexes to a 2nd Lactic Acid at 5 hours.
PAP (Thin Prep) Test	ASCUS+	HPV High Risk DNA Detection, Pathologist Review
Rhogham Workup Post Delivery or Miscarriage	Positive Fetal Screen	Kleihauer-Betke Test-sent to Compunet Clinical Labs.
Rapid Group A Strep w/ Confirmation	Negative Screen	Strep Culture
Troponin I	Ordered as “Serial” Troponins	2nd Troponin at 2 hours; 3rd Troponin at 6 hours.
Urinalysis Reflex Culture	Positive nitrites or WBC (dipstick) or >15-20 wbc/hpf (microscopic)	Urine Culture

Labeling

Patient identification and proper labeling are the most important steps in specimen collection and critical for ensuring patient safety. Misidentifying patients or mislabeling specimens can lead to serious and potentially fatal outcomes for our patients. Therefore, the person who collects a specimen must label the specimen immediately, in the presence of the patient. In addition, patient safety protocol requires the use of two identifiers, neither to be location or bed number, such as date of birth.

The following information ***must*** be present on all specimens:

*Patient's last name, first name and middle initial, if known
*Patient's date of birth (or social security number, account or medical record number)
*Date collected
*Time collected
*Collector's initials
*Site & type of specimen (for cultures, biopsies, surgical & cytology specimens)

If computer generated labels are not available, the information must be written in permanent ink on the specimen tube or container. Never cover up the original labeling or patient identification on a specimen.

For hospital patients, all information will be verified against the patient's identification band. Patient identification bands affixed to bedrails, charts, or other places except the patient's person are not a suitable form of patient identification. If the patient does not have an ID band, nursing staff must identify the patient and place a new ID band on the patient before the lab specimens are collected.

Specimen Integrity

Proper specimen collection, handling and transport are critical for providing the most accurate and reliable test results possible. Specimens submitted in unsanitary conditions or with sharp implements attached are considered dangerous to laboratory personnel and may be rejected for testing. Be sure to follow specimen guidelines for specimen handling and storage in the specimen collection section. Specimens for tests sent to reference laboratories should be drawn in separate tubes to prevent cross-contamination with tubes used for testing at Wayne HealthCare. If separate tubes are not available, Wayne HealthCare lab staff will prevent cross-contamination by using new disposable pipettes for each tube when aliquoting specimens for reference lab testing.

Specimen Rejection

No testing will be performed on compromised specimens, as determined by the laboratory staff. Physicians cannot "assume responsibility" and insist testing be done on compromised specimens. This is a CLIA violation and a legal issue for the laboratory. Any questions or concerns may be referred to the Medical or Administrative directors of the laboratory. The following is a list of the most common reasons for specimen rejections:

*Unlabeled or mislabeled specimens
*Hemolyzed specimens (usually Chemistry or Blood Bank tests)
*Clotted specimens (usually Hematology or Coagulation tests)

*Grossly lipemic specimens
*QNS (quantity of specimen is insufficient)
*Needle attached to specimen
*Wrong collection tube or container
*Specimen not stored or transported correctly (ex. on ice)
*Delay in transporting specimen to lab (specimen deterioration)
*Under-filled blue or purple top tubes
*Required collection times not met (ex. peak or trough drug level)
*Inappropriate specimen for test ordered
*Specimen gives inaccurate or spurious results not consistent with clinical situation
*Incomplete collection (ex. 24 hour urines not collected for full 24 hour period)
*Specimen contaminated or diluted with IV fluids or medications

Other situations may arise which require specimen rejection and recollection. The laboratory will notify the person, unit or office responsible for collecting the specimen as soon as possible that the specimen needs recollected and the reason why. The rejection will be documented in the patient's medical record.

Blood Collection by Venipuncture Procedure

See Appendix C

Blood Collection by Capillary Puncture incl. PKU's

See Appendix D

Specimen Collection Guidelines

Proper handling and preservation of specimens is critical for accurate result reporting. Collection supplies (not including needles or syringes) are available from Wayne HealthCare Laboratory provided the specimens are returned to our laboratory for testing.

The following chart describes the blood collection tubes used at Wayne HealthCare Laboratory:

TUBE TOP COLOR	ADDITIVE	DRAW VOLUME	NUMBER OF INVERSIONS TO MIX	LABORATORY USE
Red with gel or SST	Clot activator	5 ml or 9 ml	0 to 5	Chemistry & many reference lab tests

Red plain (no gel)	No additives	6 ml	0	Drug levels and some ref. tests
Purple/lavender	EDTA	4 ml (2 ml pedi tube)	5	CBC's, ESR's, Retics, Hgb A1c, Blood Bank, D-Dimer, Body Fluid Cell Counts and Crystals
Blue/Light blue	Sodium Citrate	3 ml (2 ml pedi tube)	5	PT, APTT, and reference coag. studies
Gray	Sodium Flouride/Potassium Oxalate	4 ml	5	Glucose, Lactic Acid
Green, Gel or BD Barricor	Lithium heparin	3.5 – 6 mL with or w/out gel	5	Ammonia, Body Fluid chemistries
Green	Sodium heparin	6 ml	5	Flow Cytometry & other reference lab testing
Royal blue or Dark Blue	EDTA	6 ml	5	Heavy metals, Lead, Mercury, Vitamin levels
White PPT	EDTA	5 ml	5	Hepatitis PCR, HIV PCR
Black & Yellow	Clot activator	5 ml	5	NMR Lipoprofile
BD Lt. Blue (glass tube, striped label)	Sodium Citrate	4.5 ml	5	Platelet Function tests

Blood Bank Specimen Collection

In the Blood Bank more than any other department in the lab, the proper identification of both the patient and the blood samples is absolutely critical. A mislabeled tube or improperly identified patient can spell disaster and even lead to death. For this reason, the following procedure is to be rigidly adhered to without exception:

Positive identification of both the patient and the patient's blood sample shall be made using 2 patient identifiers (full name and date of birth).

The patient and blood sample must be positively identified at the time of collection. The patient's blood specimen tubes must be labeled immediately in the patient's presence.

Refer to the "Blood Collection by Venipuncture" (Appendix C) procedure for more information on patient identification (ex. identifying unconscious patients, etc.).

The tubes must be labeled with the patient's first and last name, unique identifier (date of birth, social security number or medical record number), date and time sample was collected, and the collector's initials.

The collector of blood bank specimens must place a green blood bank identification band on the patient's arm. This ID band must contain the same information as the specimen labels: full name, unique identifier number, date, time and initials of collector. This information must be compared to the hospital identification band and the labels used to label the specimen tubes. Any discrepancies need to be corrected *before* the specimens are actually collected.

If there is any discrepancy or doubt about the identification of the patient or sample, a new sample must be collected and a new green blood bank band applied to the patient. It is unacceptable for anyone to correct an incorrectly labeled sample.

The **Blood Products Order Form** is available in **Appendix A**.

STOOL COLLECTION GUIDE FOR NURSING

Fill the vial according to the color of the vial cap.

Test Name	Collection Container	Collection Instructions
Stool Culture	**GREEN Cap Vial (See collection note #3)**	Add stool specimen until the red liquid reaches the **red fill line**.
C.difficile Toxin	**WHITE Cap Vial**	Transfer stool specimen (golf ball size) into vial.
Stool WBC Lactoferrin	**WHITE Cap Vial**	Transfer stool specimen (golf ball size) into vial.

Rotavirus	**WHITE Cap Vial**	Transfer stool specimen (golf ball size) into vial.
Giardia/Cryptospordium Antigen (0 & P Antigen)	**WHITE Cap Vial (Green Cap acceptable)**	Transfer stool specimen (golf ball size) into vial.
Ova & Parasite (Complete-Send out.)	**PINK & GRAY Vials (Contact lab for kit.)**	Add stool specimen until the liquid reaches the **red fill line** in each vial

Collection Notes:

1. Avoid contaminating stool with urine or water.
2. Select watery, bloody or slimy portions of the stool using the attached collection scoop.
3. **If only a small amount of stool is collected, add it to the white cap vial first. The culture can be done from this vial if sent to the lab immediately.**

Label each vial with the following:

1. Apply a patient's registration label to the vial.
2. Date and time of collection.
3. Collector's initials.

Transport the specimen to the lab as soon as possible.

Please call the lab at ext. 5716 for any questions regarding the collections of these tests.

Revised 2/02/2016/NT

Hema Screen™ Fecal Occult Blood Cards

Only a small fecal sample is needed. With an applicator, apply a very thin smear of stool inside oval where indicated with Roman numeral I. Using the same applicator, repeat from a different portion of the stool for area II. Optimally, stool should be collected from 3 consecutive bowel movements and smears made on 3 Occult Blood cards.

The cards with samples applied may be stored at room temperature, protected from heat and light, for up to 21 days.

Interfering Substances:

*Do not collect fecal specimen if obvious rectal bleeding from hemorrhoids, constipation or dental work is present, during a menstrual cycle or for the first 3 days after a menstrual cycle.

*Ascorbic acid (Vitamin C) taken in units greater than 250 mg/day may cause false negative results.

*Oral medications such as aspirin, corticosteroids, reserpine phenylbutzone, indomethacin, etc. can cause gastrointestinal irritation and occult bleeding.

*Iron or preparations containing iron may cause false positives.

*Do not collect if using rectal preparations.

Patient Preparation:

*A red-meat free, high residue diet is recommended, starting 3 days before testing and continuing through the test period.

*Avoid raw fruits and vegetables that contain peroxidase-like substances (turnips, broccoli, horseradish, cauliflower, etc.)

Urine Collection Guidelines

Random or First Morning Clean Catch Mid-Stream

Midstream urine collection obtains the cleanest urine sample from the middle of one's urine flow ensuring more accurate lab results. First morning is the preferred collection time for most random urine tests.

1. Thoroughly wash hands with soap and water.

2. Remove the specimen cup with funnel attached and all towelettes from package. Place them on clean surface. If funnel is not attached, carefully connect it to the specimen cup without touching inside of channel.

3. Tear open a package of towelettes and remove contents.

Males: If necessary, with one hand, retract foreskin of penis. Unfold the first towelette, and wipe head of penis thoroughly. Discard towelette and repeat with a fresh towelette.

Females: Unfold first towelette and wipe vaginal area with downward strokes only. Do not wash upwards. Discard towelette and repeat procedure with second towelette.

4. Pick up the specimen cup. Do not urinate into the cup yet. Begin urinating into the toilet until urine stream is well established.

5. Insert the urine cup with funnel into the established urine stream. Collect at least 10 mL of urine or fill until the cup is ¾ full. Remove the

cup and finish urinating into the toilet. Be careful not to let any part of the body or genitalia come into contact with the inside of the specimen cup during collection.

6. Detach the funnel and screw the lid on tightly. Do not touch the inside surface of the lid. Discard any remaining packaging materials. Wash hands thoroughly. Be sure urine cup is properly labeled with name, date of birth or other identifier, and the date and time of collection.

Important Note: Transport urine to the laboratory as soon as possible and within 2 hours after collection. If a delay in transport is anticipated, the specimen should be refrigerated until processed. Refrigerated specimens will be rejected if greater than 24 hours old.

24 Hour Urine Collection Procedure

Patients will find it more convenient to void (urinate) into the smaller container provided (commode collection hat) and transfer the urine into the larger collection container. Do not add anything but urine to the container. The collection container should be kept refrigerated throughout the collection period. Do NOT collect the 24 hour urine if you are experiencing a menstrual period, urinary tract infection or are engaging in strenuous exercise. Do maintain a normal diet and fluid intake unless instructed otherwise.

1. Upon arising in the morning, urinate into the toilet, emptying the bladder completely. Do NOT collect this sample. Note the exact time and date and print it on the container label as the "start" time.

2. Collect all urine voided for 24 hours after this time in the container provided. All urine voided (day and night) must be saved. Urine passed during bowel movements must also be collected. Do not allow the urine to become contaminated with stool or toilet paper.

3. Refrigerate the urine container between all urine collections.

4. At exactly the same time the following morning, void completely again (upon awakening), and add this sample to the collection container. This completes the 24 hour collection. Note the "end" date and time on the container label.

5. **Take the 24 hour specimen to Wayne HealthCare the day that collection is completed**. Make sure the container is tightly closed. Place the container in a plastic bag to avoid leaks, maintaining the cool temperature in transit by placing the specimen in a portable cooler or insulated bag. Be sure the container is labeled with your full name and date of birth.

6. **If your provider ordered a Creatinine Clearance test, you must have your blood drawn on the day you return your urine container to the Outpatient Lab**.

See patient preparation guidelines for various 24 hour urine tests in the specimen collection guide that follows.

Culture Specimen Collection

Principle

All diagnostic information from the microbiology laboratory is contingent on the quality of specimen received. Consequences of a poorly collected and/or poorly transported specimen include failure to isolate the causative microorganism and recovery of contaminants or normal microbiota which can lead to improper treatment of the patient.

Specimen

Safety considerations:

Follow universal precaution guidelines.

Do not contaminate the external surface of the collection container and/or its accompanying paperwork.

Note: Specimens obtained by a physician using needle aspiration should be transferred to a sterile tube prior to transport. If there is little material in the syringe, the physician should draw up a small amount of sterile non-bacteriostatic saline through the syringe and then transfer the specimen to a sterile tube.

General Guidelines for Proper Specimen Collection

Collect specimen before administering antimicrobial agents when possible. This is critical for the recovering of pathogens. For inpatients, collect specimen as soon as possible from the time the order is placed. The sooner the culture is plated, the sooner the physician can have culture results

Collect specimen with as little contamination of surrounding area to ensure that the sample will be representative of the infected site.

Utilize appropriate collection devices.

Clearly label the specimen container with the patient's name and identification number
and with the date and time of collection.

Collect an adequate amount of specimen. Inadequate amounts of specimen may yield **false-negative** results. **Aspirates** or **tissue** (if obtained) should be sent for culturing rather than the material on a swab. **It is best to have more of the specimen rather than a swab with a small portion.**

Identify the specimen source and/or specific site correctly so that proper culture media will be selected during processing in the laboratory.

Transport all specimens to the laboratory promptly.

Guidelines for Proper Specimen Collection and Transport:

BLOOD CULTURES

Collected by laboratory per laboratory policy. If collected by other personnel, they must adhere to the following protocol.

Blood Collection – Bactec Bottles provided by laboratory

Prepare Venipuncture Site: Locate vein to draw. **Do not leave tourniquet on while doing prep.**

Adults and Children Older than 2 months of age

1. Clean the venipuncture site with **alcohol pad**. **Allow to dry.**
2. Swab with **ChloraPrep Sepp** using back and forth motion. Allow prepped area to dry for at least 30 seconds. **Do not blot or wipe solution away.**

Note: ChloraPrep is not approved for use in children under 2 months of age.

For Children Less than 2 month of age

1. **Clean the venipuncture site with sterile alcohol pad. Allow to dry.**
2. **Swab with Iodine Sepp using back and forth motion. Allow prepped area to dry.**
3. **Swab with another alcohol pad. Allow to dry. Do not blot or wipe.**

Do NOT RUSH the cleaning. This is to prevent contamination.

Select and Prepare Bottles:

The adult blood culture collection consists of 4 bottles being draw from 2 sites.
(Two bottles from each site.) Studies have shown there is more chance of bacterial recovery when 40 mls blood are drawn. On patients that are very difficult to draw, try to get at least two bottles (1 gray and 1 purple) rather than divide it between all four bottles. If the 2nd draw site is a difficult draw and less than 10cc of is drawn, put the full amount into the aerobic bottle.

Note: If a physician orders 1 site only, 2 sites should be always be attempted for best recovery.

ADULTS (all):	2 sites drawn	1st set = 1 gray + 1 purple	8-10 mL each
		2nd set = 1 gray + 1 purple	8-10 mL each
AGES 4-17:	1 draw	1 gray + 1 purple	8-10 mL each
CHILD <3:	1 draw	1 pink	1-3 mL

NOTES: **Never use pink bottles for anyone over 3 years of age**
Marks on side of bottles are in 5 mL increments
Minimum draws for gray and purple bottles are 5 mL. (Only applies to difficult draws).

Remove caps and clean rubber septum with alcohol – NO BETADINE OR IODINE.

Perform Venipuncture: Use either a syringe system or a vacutainer adapter with butterfly. A 21 gauge butterfly would be the preferred method (and easiest) for the 1st site, since more blood is needed (if other blood work is ordered). A 20 mL syringe with a straight needle can be used when only blood cultures are being drawn.

DO NOT USE A VACUTAINER NEEDLE HOLDER WITHOUT A BUTTERFLY COLLECTION SET. (This risks a reflux reaction with the media)

Label the Bottles: Attach patient's label to bottle. Write your initials and time drawn on bottles. Label the bottles as to Site #1 or Site #2. Site #2 should be a different draw time than Site #2.

Do not cover Bactec vial barcode with label. Take Bottles To The Lab ASAP!

Body Fluids (Excluding CSF, Urine and Blood)

The physician will aseptically perform percutaneous aspiration to obtain pleural, pericardial,
peritoneal, or synovial fluid.

Body Fluids: Specimens should be collected and transported using the body fluid collection kits and guidelines. These are detailed in the Reference Information Book.

The Micro department usually receives a liter bottle to set up plates and Bactec bottles. The culture should be set up as soon as possible.

CEREBRAL SPINAL FLUID SPECIMENS

CSF – Slowly drain the CSF into the sterile leakproof tubes. Three tubes are generally required for microbiology, hematology, and chemistry testing. The second tube drawn will generally go to microbiology and the last tube drawn will generally go to hematology.

Specimen Requirements:

CSF for bacterial culture: specimens at room temp. **Tube 2** is the preferred tube for culture.
The culture should be set up as soon as possible.
CSF for Viral Culture: refrigerate as soon as possible or keep on ice.
Do not put in viral transport media

GASTRIC LAVAGE

Submitted primarily for the detection of Mycobacterium Tuberculosis in patients unable to produce quality sputum. Should be performed after the patient wakes in the morning so that sputum swallowed during sleep is still in the stomach.

GENITAL TRACT SPECIMENS

- **Genital or GC culture*:***
    - Culturette swab (white cap for female, blue mini tip for male). Keep at room temperature.

- **Chlamydia/Neisseria gonorrhoeae by DNA Probe:**
  - Aptima Unisex Swab or urine. Refer to Reference Manual or kit for collection instructions. Store at room temperature or refrigerate.
- **Chlamydia Culture:**
  - Viral Transport Media (pink liquid media, kept in refrigerator) Use for sexual abuse cases.
- **Herpes Simplex Virus:**
  - Viral Tansport Media (pink liquid media, kept in refrigerator) Store refrigerated. See Viral Collection Procedure for more details.
- **Trichomonas:**
  - Saline Tube (Wet Prep). Send to lab as soon as possible.
- **Candida (Yeast):**
  - Saline Tube (KOH). Send to lab as soon as possible.
- **Group B Streptococcus:**
  - Vaginal/Rectal Swab (culturette with pink or white cap). Keep at room temperature.

Female

Genital tract specimens are submitted primarily for the detection of sexually transmitted pathogens (such as N. Gonorrhoeae, Chlamydia Trachomatis, HSV, Trichomonads, Group B Strep and Candida).

Cervix

Wipe the cervix clean of vaginal secretion and mucus.
Rotate a sterile swab, and obtain exudate from the endocervical glands.
If no exudate is seen, insert a sterile swab into the endocervical canal, and rotate the swab.

Endometrium

Collect endometrium specimens by transcervical aspiration through a telescoping catheter.

Vagina

Specimens are also useful in the detection of Group A streptococci in children.
Use a speculum without lubricant. Collect secretions from the mucosa high in the vaginal canal with sterile pipette or swab.

Male

Anal Swab

Submitted primarily for the detection of N. gonorrhoeae, Shigella Species, HSV, and anal carriage of Strep. pyogenes.

Epididymis

Use a needle and syringe to aspirate material from the epididymis

Penile Lesion

Clean the surface of the lesion with saline. If there is a crust on the lesion, remove it.
Scrape the lesion until serous fluid emerges.
Wipe away fluid and debris with sterile gauze.
Press the base of lesion until clear fluid is expressed.
Aspirate vesicular fluid with a 26-27 gauge needle.

Prostatic Massage

Perform a digital massage through the rectum.
Collect the specimen in a sterile tube or on a sterile swab.

Urethra
Collect specimens at least 2 hr. after the patient has urinated.
Insert a thin urethrogenital swab 2-4 cm. into the endourethra, gently rotate it, leave it in place for 1-2 sec. and withdraw it.

Collection Considerations For Genital Tract Specimens

Culture for:	Recommended Specimens
N. gonorrhoeae	Cervical, Urethral, Anal or Vaginal Swabs
Bacteria	Prostatic fluid , Cervical, Vaginal
Anaerobes	Epididymis Aspirate, Amniotic Fluid, Abscess Fluid
HSV	Genital or Perianal Lesion
C. trachomatis	Urethral, Vulval, Cervical

LESIONS SUPERFICIAL: FUNGAL

Clean the surface with sterile water.

Using a scalpel blade, scrape the periphery of the lesion border. Samples from scalp lesions should include hair that is selectively collected for examination.

If there is nail involvement, obtain scrapings of debris or material beneath the nail plate. Transport in a sterile container.

OCULAR SPECIMENS

Obtain viral and chlamydial samples before topical anesthetics are instilled.

Bacterial cultures: culturette swab (white cap). Store at room temperature.

Viral Cultures: Viral Transport Media. Blue cap tube with pink media (kept refrigerated)
Store specimen in refrigerator after collection.

RESPIRATORY SPECIMENS

If Corynebacterium diptheria, Arcanobacterium haemolyticum, Bordetella pertussis, N. gonorrhoea, Legionella, Chlamydia, or Mycoplasmas are suspected, the physician should contact the clinical microbiology laboratory prior to specimen collection because special techniques and/or media are required for the isolation of these agents.

Lower Respiratory Tract

Expectorated Sputum
If possible, have the patient rinse mouth and gargle with water prior to collection.
Instruct the patient not to expectorate saliva or postnasal discharge into the container.
Collect specimen resulting from deep cough in sterile screw-cap cup.
Label specimen with name, date and time of collection.
Transport to the lab as soon as possible. Refrigerate if there is a delay in transport.

Induced Sputum
Using a wet toothbrush, brush the buccal mucosa, tongue and gums prior to the procedure.
Rinse the mouth with water.
Using a nebulizer, have the patient inhale about 20-30 ml of 3-10% saline.
Collect the induced sputum in a sterile screw-cap cup.
Transport to the lab as soon as possible. Refrigerate if there is a delay in transport.

Tracheostomy and Endotracheal Aspirations
Tracheostomy is followed by colonization within 24 hr. of insertion to the tube. Results ***MUST*** be correlated with clinical findings such as fever or infiltrate on chest x-ray.
Aspirate the specimen into a sterile sputum trap.
Transport to the lab as soon as possible. Refrigerate if there is a delay in transport.
Bronchoscopy Specimens
These include bronchoalveolar lavage bronchial washing, bronchial brushing, and trans-bronchial biopsy specimens, all collected by physician.

Upper Respiratory Tract Infections

Throat (pharyngeal) Specimens :

Culturette swab (white cap). Keep specimen at room temperature

Submitted primarily for the detection of Group A Streptococci (can also be used to detect N. gonorrhoea, Haemophilus influenzae (for epiglottitis), and A. haemolyticum).

Do not obtain throat samples if epiglottis is inflamed, as sampling may cause serious respiratory obstruction.

Depress tongue gently with tongue depressor.

Extend sterile swab between the tonsillar pillars and behind the uvula. (avoid touching the cheeks, tongue, uvula, or lips)

Sweep the swab back and forth across the posterior pharynx, tonsillar areas, and any inflamed or ulcerated areas to obtain sample.

Nasal Swabs (MRSA Carrier Screening)

Culturette swab (white cap). Keep at room temperature
Submitted for the detection of staphylococcal carriers or nasal lesion

Collect specimen by inserting swab approximately 1-2 cm into each anterior nare. Rotate the swab against the nasal mucosa. (Collection instruction sheet available in lab.)

Nasal Sinus Cultures: (For evaluation of sinus infections.)

Collections of specimens from patients with sinusitis is performed by otolaryngologists who perform nasal endoscopy or sinus puncture and aspiration. (Not performed at Wayne Hospital at this time.)

Nasopharyngeal Swabs

Mini tip NP Flocked Viral Transport Vial, 1 ml. (red cap): RSV and/or Influenza rapid testing: Store refrigerated if there is a delay in transport or testing.

Mini tip NP Flocked Swab (orange cap-dry-no liquid media): Bordetella pertussis
PCR for Bordetella (Preferred test): Place in plastic transport sleeve.
Bordetella pertussis culture: Streak to Regan –Lowe media (available in lab)
DFA smear: Roll material from swab onto 2-3 slides, air dry, maintain at room temp.

Collection Procedure:

The specimen should be collected by the doctor or nurse.

Only trained phlebotomists or technologist can obtain nasopharyngeal specimens on out patients.

Contact the Micro department for a current list.

Patient's head should be tilted backwards (hyperextended) for proper specimen recovery.

Carefully insert a flexible-wire mini tip swab through the nose into the posterior nasopharynx

and rotate the swab for 5-10 seconds. (Keep the swab near the septum and floor of the nose.)

Withdraw the swab, insert into the transport tube. For best sample quality, repeating the procedure for the second nostril will deliver an optimal combined sample

Nasal Washings

Instruct the patient not to swallow during the procedure.

With the patients head hyperextended, instill about 5 ml of sterile saline into each nostril.

To collect material, tilt the head forward and allow the fluid to run out of the nares into a sterile container, or aspirate the fluid from each nostril.

Place the wash in an equal volume of viral transport medium or transport in a sterile container.

RECTAL SWABS

Submitted primarily for the detection of Neisseria Gonorrhoea, Shigella Species, Herpes Simplex Virus (HSV) and anal carriage of Streptococcus pyogenes and Vancomycin Resistant Enterococcus.

Pass the tip of a sterile swab about 1 inch beyond the anal sphincter. Carefully rotate the swab to sample the anal crypts, and withdraw the swab. Place swab in plastic transport sleeve and return to the lab promptly.

Must note organism suspected.

Urine (Other than Clean Catch or 24 hour)

Thoroughly clean the urethral opening (and vaginal vestibule in females) prior to collection procedures to ensure that the specimen obtained is not contaminated with colonizing micro-organisms in this area.

Soap, rather than disinfectants, is recommended for cleaning the urethral area. If disinfectants are introduced into the urine during collection they may be inhibitory to the growth of microorganisms.

Transport specimen to laboratory within 2 hours of collection. If a delay in transport or processing is anticipated, the specimen should be placed in the refrigerator until processed. Refrigerated specimens will be rejected if greater than 24 hours old.

Use sterile cups or tubes to transport urine.

Any urine collection procedure involving catheterization must be done with scrupulous aseptic technique to avoid introducing microorganisms

Obtain early morning specimens whenever possible. Allowing urine to remain in the bladder overnight or at least 4 hours will decrease the number of false negative results. Do not force fluids in order to have the patient void urine. Excessive fluid intake will dilute the urine and may decrease the colony count.

Never culture urine foley catheter tips. Bacteria colonize the tip and is not representative of true infection.
Never collect urine from a bedpan or urinal.

NOTE: EACH URINE COLLECTION TYPE IS WORKED UP DIFFERENTLY IN THE MICROBIOLOGY LAB. IT IS IMPERATIVE THAT THE TYPE OF COLLECTION BE ACCURATELY NOTED.

Pediatric Voided Urines

Pediatric bagged urine: A collection bag is placed over the external genitalia. Urine from the bag is transferred to a clean, sterile container.

Ileal Conduit

a. Remove the external device.

b. Cleanse the stoma with 70 % alcohol followed by iodine. Remove the iodine with alcohol.
Insert a double catheter into the cleansed stoma, to a depth beyond the fascial level, and collect the urine.

1. Pick up the specimen cup. Do not urinate into the specimen cup yet. Instead begin urinating into the
toilet or bed pan to eliminate contaminants.

2. In the middle of the process, insert the specimen cup with funnel attachment into the urine stream. Collect at least 10 cc of urine or until the cup is ¾ full. Then remove the cup and finish urinating into the toilet or bed pan. Be careful not to let any part of your body come in contact with inside of specimen cup during this procedure.

3. Detach the funnel and screw the lid on tightly. Do not touch inside surface of lid. Discard any remaining packaging materials. Wash hands thoroughly.

Catheter Urine

a. Indwelling catheter (Foley catheter): Using sterile technique with a needle and syringe, collect urine through the catheter port, after cleaning with alcohol. Aspirate urine and place it in a sterile container.
Treated as a voided specimen.
Note: Specimen may not be labeled as Foley catheter.
DO NOT COLLECT URINE FROM COLLECTION BAG

b. **Straight catheter (in and out):** Specimens are useful when clean-catch urine cannot be obtained or when results from clean-catch urine specimens are equivocal and a diagnosis is critical. This procedure must be carried out with aseptic technique, to avoid the risk of introducing micro-organisms into the bladder.

Aseptically Collected Urine Specimens

Suprapubic needle aspiration

Urine collection by suprapubic needle aspiration directly into the bladder is the preferred method for infants, for patients for whom the interpretation of results of voided urine is
Difficult, and when anaerobic bacteria are suspected as the cause of infection.

a. Bladder should be full and before aspiration.
b. Shave and disinfect the skin over the bladder.
c. Make a small lance wound thorough the epidermis above the symphysis pubus.
d. Aspirate using a needle and syringe. Submit in syringe or cup.

Cystoscopy: The use of a cystoscope to determine site of infection in the urinary tract. Multiple specimens may be submitted. Each specimen should be labeled as to the site of collection.

Nephrostomy Urine: Urine draining from a nephrostomy tube placed in the renal pelvis is collected into a clean, sterile container.

Prostatic massage is used to diagnose acute or chronic prostatitis. Gram negative organisms are most frequently isolated. Neisseria gonorrhoeae is found infrequently but a chocolate plates should be set up. The specimen should be labeled as "Expressed Prostatic Secretions".

Gram Stains are not routinely done on urine cultures at Wayne Hospital. It is acceptable to do a Gram stain on a patient with a history of pyuria and repeatedly negative cultures (sterile pyuria). A gram stain may indicate an anaerobe.
The gram stain should be done on well- mixed **unspun** urine. Place 10 ul on a slide (do not smear), let dry. This is not a STAT procedure.

Specimen Rejection Criteria

Rejection Criteria	Reporting Procedure
Request a repeat urine specimen when there is no evidence of refrigeration and the specimen is >2 hours old. Or If refrigerated specimen is >24 hours old. Or Inappropriate/non sterile specimen. Or Unlabelled or mislabeled specimen. Or Reject urine from bag of a catheterized patient	Order a Rejection/Recollection and follow procedure for recollection notice.
Reject urine specimens obtained with the **same collection method within 24 hours.**	Order Rejection/Recollection. This is considered a duplicate specimen. Culture order should be cancelled by nursing unit.
Reject Foley catheter tips for culture.	Order Rejection/Recollection. This is a rejection. Advise to order urine culture.

Wound and Soft Tissue Cultures includes "Surgically" collected specimens

A. General Considerations

1. *Preferably collect specimen prior to initiation of therapy and only from wounds that are clinically infected or deteriorating or that fail to heal over a long period.*
2. Cleanse skin or mucosa surfaces.
   a. For closed wounds and aspirates, disinfect with 2% chlorhexidine or 70% alcohol followed by an iodine solution. Remove iodine with alcohol prior to specimen collection.
   b. For open wounds, debride, if appropriate, and thoroughly rinse with sterile saline prior to collection.
3. Sample viable infected tissue, rather than superficial debris.
4. **Avoid swab collection if aspirates or biopsy samples can be obtained.**
5. Containers

a. ***Sterile wide mouth cup for tissue***. An anaerobe transport vial may be used for ***small tissues.*** **Do NOT push tissue to the bottom of the vial.**
b. ***Aspirates:*** Syringes with safety devices to protect from needle exposure. **Note: Always use a safety device on the needle. Do not submit needle to the lab.**
(1). Expel the air from the syringe, remove the needle after activating the safety apparatus, and cap the syringe with a sterile Luer-Lok or blunt cannula.
(2). Alternatively, place the aspirated contents in a sterile container or blood collection tube without anticoagulant (red top with no gel).
c. ***Swabs:***
(1) Culture Swab with Amies medium for aerobic cultures (*CULTURE MISC).*
(2) E swab for anaerobic (white cap) transport system for aerobic and anaerobic cultures (*CULTURE AEROBIC/ANAEROBIC)*

Note: Large volumes of purulent material and large pieces of tissue maintain the viability of anaerobes. Therefore these specimens do not need to be placed in an anaerobic transport tube. Small volumes of aspirated material should be transported in an anaerobic transport device if there is a long delay in sending the specimen to the lab.

B. Specimen collection after proper disinfection.

1. Closed absesses:
Aspirate infected material with needle and syringe.

2. Open Wounds:
a. Remove all superficial exudates.
b. Remove overlying debris with scalpel and swabs or sponges.
c. Collect biopsy or curette sample from base or advancing margin of lesion

3. Pus
a. Aspirate the deepest portion of the lesion or exudate with a syringe and needle.
b. Collect a biopsy sample of the advancing margin or base of the infected lesion after excision and drainage.

4. Bite wounds
Aspirate pus from the wound with syringe and needle, or obtain it at the time of incision, drainage, or debridement of infected wound. ***Do not culture fresh bite wounds, as there is generally not yet evidence of infection. These wounds will harbor the resident respiratory flora introduced from the bite and will not predict if they will cause infection.***

5. Tissues and biopsy samples (Includes any specimen collected in surgery.)
a. Collect sufficient tissue for all culture types needed (bacterial, fungal and/or AFB).
b. Place in sterile container.

c. Collect swabs only when tissue or aspirate cannot be obtained.
(1) Gently roll swab over the surface several times, focusing on the area where there is evidence of pus or inflamed tissue.
(2) Transfer swab to an anaerobic transport tube (Eswab with white cap)
(3) The gram stain can be made from the Eswab transport tube.

C. Specimen labeling, ordering and transport

1. Use patient label for name and demographic information on the patient
2. Describe the type of specimen (deep tissue, superficial tissue, abscess, cellulitis, aspirate, pus, drainage, etc.)
3. State anatomic location (arm, leg, etc.)
4. Record collection time and date.

5. Order requested tests in computer. All orders for cultures are listed under "Culture _____". Remember to enter the type of specimen, anatomic location and the collection time.
6. **Deliver to the lab as soon as possible (within 30 minutes for best recovery)**
7. Do not refrigerate or incubate before or during transport. If there is a delay, keep sample room temperature.

Collection Considerations for Subcutaneous Tissue and Skin Specimens

Culture For:	Comments
Bacteria	Syringe aspirates or tissue specimens are preferable to swab specimens.
Anaerobes	Useful following bites and trauma. Uncommon in burn, Ulcer, nodules or superficial skin infections.
Fungi	Useful in diagnosing dermatophytes, yeast, filamentous fungi, and dimorphic fungi.
*Virus**	Useful in diagnosing HSV and varicella-zoster virus. *Rate of recovery of HSV and varicella-zoster virus is highest from the youngest lesions (vesicles) then pustules, ulcers and crusted lesions -in that order.

VIRAL COLLECTION AND TRANSPORT

Virus/Chlamydia Specimen Collection and Transport – Reference Lab Tests

Swabs collected for viral cultures: Should be sent in **Viral Transport Media (tube with pink media**). This transport tube is stored refrigerated or at room temperature *prior* to use.

Viral Transport Media, aka Universal Transport Media (UTM), is appropriate for recovery of viruses and Chlamydia trachomatis (CT).

After collection, ***VIGOROUSLY*** mix swab (dacron) into media, leave **swab in media**, and break off shaft. Assure proper labeling of patient specimen (include name, date of collection and ***SOURCE OF CULTURE*)** and check cap for tightness. Bring to lab STAT or refrigerate until specimen can be delivered to laboratory..

Remember that optimum recovery of viruses and Chlamydia trachomatis requires collection of cells, not just fluids or exudates. The following procedures are for collection of viral specimens. (The collection methods described for nasophyngeal, eye and cervix/vaginal culture are appropriate for CT also.)

VIRAL COLLECTION INSTRUCTIONS

Throat Swab throat firmly with sterile dacron tipped plastic shaft swab. Agitate swab briskly in UTM, leave swab in media, break off shaft. Make sure cap is on tightly. Label. Refrigerate immediately. ***DO NOT FREEZE.***

Nasopharynx After immobilizing the patient/child, gently insert dacroswab (dacron swab on flexible aluminum shaft) into nares until swab reaches posterior nasal cavity (nasopharynx). Rotate the swab tip across the mucosal surface then withdraw the swab and agitate briskly in UTM, leave swab in media, break off shaft. Repeat the procedure with a new swab in the other nostril same vial of UTM. Make sure cap is on tightly. Label vial. Refrigerate immediately. ***DO NOT FREEZE.***

Nasal Wash Fill a disposable sterile rubber bulb with 3-5 ml sterile phosphate buffered saline. Tilt the patient's head back at an angle of about 70 degrees. Insert bulb into one nostril until nostril is occluded. With one squeeze of the bulb, instill saline into the nostril and immediately release bulb to collect recoverable nasal specimen. Empty bulb into a clean container. Transfer 1-2 ml into each of 1-2 vials of UTM. (One vial for culture and an additional vial for direct detection). Label. Refrigerate immediately. ***DO NOT FREEZE.***

Cervix/Vaginal After removing any superficial exudate (suitable for bacterial culture) firmly swab desired area with sterile dacron tipped swab. Agitate swab briskly in UTM, leave swab in media, break off shaft. Make sure cap is on tightly. Label as previously described. Refrigerate immediately. ***DO NOT FREEZE.***

Eye After removing any superficial exudate (suitable for bacterial culture), swab conjunctiva firmly with sterile dacron tipped swab. Agitate swab briskly in UTM, leave swab in media, break off shaft. Make sure cap is on tightly. Label. Refrigerate immediately. ***DO NOT FREEZE.***

Lesion Break vesicle (use a sterile needle if necessary) and firmly swab area with sterile dacron tipped swab. Agitate swab briskly in UTM, leave swab in media, break off shaft. Make sure cap is on tightly. Repeat the procedure with a new swab if there are multiple lesions. Label. Refrigerate immediately. ***DO NOT FREEZE.***

Urine The specimen (approximately 10 ml clean catch) should be collected in a clean sterile urine container. First morning specimen is preferred. Add 1-2 ml of the urine specimen to a vial of UTM. Send both the urine that is in UTM and the urine remaining in the urine container. Label. Refrigerate immediately. ***DO NOT FREEZE.***

CSF Collect at least 2 ml of CSF (preferably more) in a dry leak-proof sterile container. Specimen should not be diluted **(DO NOT ADD TO UTM).** Label. Refrigerate immediately. ***DO NOT FREEZE.***

Anal Wet, sterile, dacron tipped plastic shaft swab with UTM. Insert swab 4-6 cm into rectum and roll the swab against mucosa, Agitate swab briskly in UTM, leave swab in media, break off shaft. Make sure cap is on tightly. ***DO NOT FREEZE.***

Delayed Transport Time and Specimen Processing

Transport urine and respiratory specimens within 1 hour of collection. Refrigerate if a longer delay is expected

Urine specimens that have been preserved or refrigerated within 2 hours of collection may be processed up to 24 hours later.

Fecal specimens must not be more than 1 hr. old or must be received in transport medium.

Normal microorganisms may rapidly overgrow or destroy any pathogens present, especially

Shigella species, if the specimen is not in transport medium. Cary-Blair, wound and body fluid specimens must be received within 1 hr. of collection. Ideally all other specimens should be less than 2 hr. old when received.

When a suboptimal specimen is processed, a comment will be made, e.g. "specimen left in surgery overnight before culturing" or "specimen received in unsterile container". Also state, "Microorganisms isolated may not reflect actual microbiota because of faulty collection and/or transportation procedure."

Transport Containers

Use only sterile containers. A screw-cap container may be used for urines, body fluids, sputum and tissues.

For hospital patients: Enter orders into hospital computer system. All cultures are grouped together and start with the word "Culture." Enter the date & time of collection.

Enter specific specimen type if order indicates. For example urine culture will prompt, clean catch, catheter, or surgical.

For miscellaneous cultures, enter source in comment lines. Use this area to enter other information related to the culture. This comment area can be use for specific request made by the doctor.

SPECIMEN COLLECTION CHART

MICROBIOLOGY QUESTIONS?? CALL MICROBIOLOGY DEPT. x6287

Anatomic Site	**Acceptable Specimen(s)**	**Notes**
Blood	Blood in Bactec Bottles	Collect Following Lab Protocol
CSF	Sterile Screw-cap tube	Transport ASAP Note if viral culture is ordered – Ref.
Fecal Specimens Stool culture O & P Antigen (Giardia/Crypto) PinWorm Rotavirus Cdiff for Toxin A/B Stool WBC (Lactoferrin)	 Cary Blair (green cap vial) Cary Blair PW NP NP NP	 Culture, O+P routine exam May also use scotch tape prep Rotavirus Antigen- C. difficile Toxin A/B detection-
Rectal Swabs	DS-L, DS-L (UTM)	Screen for VRE carrier Viral Culture (Herpes, etc.)-Ref
Gastric Lavage	Sterile Screw-cap cup	Note suspect agent

Genital Tract <u>Female</u>	DS-L, Viral Media (UTM) Aptima swab kit or urine 1-3 CC saline <u>Male</u> DS-L, Viral Media (UTM) Aptima swab kit or urine Slide w/exudate	Bacteria Culture (including GC) OB Gp B Strep screen Viral Culture-Ref GC/Chlamydia detection (either or both) Wet Prep/KOH request Bacterial Culture (including GC) Viral Culture GC/Chlamydia detection (either or both) Gram Stain for GC
Ocular	DS-L, DS-L/UTM UTM	Bacterial Culture Viral Culture -Ref Chlamydia from the eye
Respiratory Tract <u>Upper</u> (throat, nares, nasopharyngeal) <u>Lower</u> (BAL, Sputum-both induced and expectorated)	DS-D NPS DS-L (UTM) DS-L, Slide Sterile Screw-cap cup	Rapid Antigen Detection ex. Gp A strep, Influenza A, B or RSV Viral Cultures-Ref Bacterial Cultures Yeast detection (thrush or Candida) Note if Bacterial, Acid-fast or fungal cultures Are ordered

Abbreviations:

DS-D =Dacron Swab – Dry *DS-L =Dacron-Swab – Liquid Media*

UTT =Urine Transport Tube

NP =No Preservative (white cap vial/ *CB =Carey-Blair green cap*

PS =Parasafe Preservative *PW =PinWorm Collection Vial*

UTM = Universal Transport Media (Viral/Chlamydia)

*Sy =Syringe **without** needle attached* *Ref =Refrigerate*

NPS =Nasopharyngeal Swab *BAL =Bronchoalveolar Lavage*