How-to Guide

BON SECOURS LABORATORY SERVICES

Good Help to Those in Need®

Bon Secours Laboratory Services

The mission of the Bon Secours Health System is to bring compassion to health care and to be Good Help to Those in Need®. As a system of caregivers, we commit ourselves to help bring people and communities to health and wholeness as part of the healing ministry of Jesus Christ and the Catholic Church.

bonsecourslaboratoryservices.com

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It takes time to build a relationship. It takes years of caring and always being there when you're needed. It takes the expertise of medical professionals. At Bon Secours Laboratory Services, we understand that patients and doctors trust us to provide them with the best medical care possible. You can trust us to provide accurate and fast laboratory services.

Locally operated for more than 25 years, we offer the level of convenience and personalized service that can only come from being an active member of the community we serve. Our client response team is committed to your satisfaction.

Accreditation/Certification

Bon Secours Laboratory Services is accredited by: College of American Pathologists, American Association of Blood Banks, Clinical Laboratory Improvement Amendments (CLIA) and The Joint Commission.

Services

- Local pathologists available for consultation.
- Cytology and biopsy results have a 48- to 72-hour turnaround time.
- No stat fees.
- Stat courier services at no charge.
- In-office lab computer for ordering and results.
- Test supplies delivered quickly and at no charge.
- Reports can be delivered electronically, by fax or by courier.
- Extended hours and weekends at select locations for laboratory draws.

Client Response

If you have questions, we are here to provide answers. Please call the client response team at **757-889-5141** about test results, adding on tests to specimens already received, tests in progress, specimen requirements/handling, information on tests listed in the directory and billing.

The client response team is available Monday through Friday, from 7:30 a.m. to 7 p.m., and Saturday, Sunday and holidays, from 7 a.m. to 3:30 p.m. If calling after hours, an alternate member of our laboratory staff will assist you. For faster service when calling client services, please have your client code, and patient and testing information available and select the best option to handle your questions.

To schedule a courier specimen pickup, please call **757-889-4741 or 757-889-4213.**

Please fax your supply order form to **757-889-5993**. *(Please allow three working days for delivery.)*

Client Response Team		757-889-5141
Courier Dispatch (Monday through Friday, from 7 a.m. to 7:30 p.m.)		757-889-4741 or 757-889-4213
Fax Supply Orders		757-889-5993
Outreach Business Manager	William Nase	757-889-4979
Bon Secours DePaul Medical Center Lab Director	Rita Elson	757-889-4110
Bon Secours Mary Immaculate Hospital Lab Director	Linda McClenney	757-886-6463
Bon Secours Maryview Medical Center Lab Director	Rusty Williams	757-398-2454
Computer Support	Kevin Mullen	757-889-4949
Pathology/Cytology Department	Julie Carty	757-889-5599
Reference Testing Team		757-889-4953

Billing/Insurance

Our billing experts make it easy. We accept most insurance plans and HMOs. Please call to find out if Bon Secours Laboratory Services is a provider for your patient's insurance plan. For your convenience, we will be happy to file your patient's insurance claim. Our experienced staff is always here to assist you.

We regret we are unable to accept these insurance plans:

- HealthKeepers
- Mail Handlers
- Virginia Premier
- Optima

Facilities

Need lab work done? The following facilities are available to serve you. While we have preferred hours, most are open 24 hours a day unless otherwise noted.

Bon Secours DePaul Medical Center

150 Kingsley Lane, Norfolk, VA 23505
757-889-5141
Optimal Lab Hours:
Monday through Friday, from 7 a.m. to 5:30 p.m.

Bon Secours Mary Immaculate Hospital

2 Bernardine Drive, Newport News, VA 23602
757-886-6414
Optimal Lab Hours:
Monday through Friday, from 6 a.m. to 6 p.m.; Saturday and Sunday, from 7 a.m. to 3 p.m.

Bon Secours Maryview Medical Center

3636 High St., Portsmouth, VA 23707
757-398-2260
Optimal Lab Hours:
Monday through Friday, from 6:30 a.m. to 6 p.m.; Saturday, from 7 a.m. to 1 p.m.

Bon Secours Health Center at Harbour View

5818 Harbour View Blvd., Building-D, Suffolk, VA 23435
757-673-5800
Optimal Lab Hours:
Monday through Friday, from 6:30 a.m. to 5:30 p.m.; Saturday, from 8 a.m. to noon

Pathology Team

Skylar Alsop, MD

Dr. Alsop earned his MD from the University of Utah School of Medicine in Salt Lake City and completed his residency in anatomic and clinical pathology at the Penn State Milton S. Hershey Medical Center in Hershey, Pennsylvania. Dr. Alsop completed a fellowship in gynecologic and breast pathology at the University of Virginia in Charlottesville, where he worked with Dr. Mark H. Stoler, a world-renowned expert in gynecologic pathology. He received his bachelor's degree in biology form Utah State University in Logan, Utah.

David A. Cummings, MD, PhD

Dr. Cummings is the Medical Director of hospital laboratories at Bon Secours Maryview Medical Center. He received his MD and PhD in biomedical sciences, with emphasis in pathology, from the Medical College of Ohio. At The University of North Carolina at Chapel Hill, he completed his residency in anatomic and clinical pathology, serving as resident instructor and continuing medical education instructor while chief resident. He completed fellowships in surgical pathology and cytopathology, also at UNC, Chapel Hill. Dr. Cummings is board-certified in anatomic and clinical pathology by The American Board of Pathology. His professional interest is in cytopathology.

Barry H. Hellman Jr., MD

Dr. Hellman is the Medical Director of hospital laboratories at Bon Secours Mary Immaculate Hospital. Dr. Hellman has been board-certified in anatomic pathology since 1994, after having trained at Stanford University Hospital in California from 1990 to 1994. He received his MD with distinction from George Washington University in Washington, D.C., in 1990. He has been practicing pathology in Hampton Roads since 1994. He was the pathology residency director at Eastern Virginia Medical School in Norfolk, Virginia, from 1996 to 1997. He continues to work with students by volunteering as a mentor for the New Horizons Governor's School for Science and Technology in Hampton, Virginia. His areas of interest include gynecologic and breast pathology, as well as hematopathology.

Olubunmi T. Lampejo, MD

Dr. Lampejo is the Medical Director of hospital laboratories at Bon Secours DePaul Medical Center. She received her medical degree from Semmelweis University in Hungary in 1980. She completed a residency in anatomic and clinical pathology, serving as chief resident, at the University of Rochester in New York in 1990. She completed a fellowship in surgical pathology at Stanford University in California and completed a fellowship in breast pathology at Guy's Hospital in London. Dr. Lampejo has served as an assistant professor of pathology at the University of Alabama at Birmingham, Louisiana State University Medical School at Shreveport and Eastern Virginia Medical School in Norfolk, Virginia. She is also board-certified in cytopathology. Her interests include gynecologic and breast pathology.

Diane M. Maia, MD

Dr. Maia graduated from the Baylor College of Medicine in Houston, Texas, in 1991. She completed her residency in anatomic pathology and fellowship in surgical pathology at Stanford University Hospital and did additional fellowship training in hematopathology at University of North Carolina Hospitals. Upon completion of her training, she became the assistant professor of pathology and laboratory medicine at The University of North Carolina School of Medicine with clinical duties in both surgical and hematologic pathology. There, she received The Phillip M. Blatt Award for Outstanding Teaching in Clinical Pathology. While at UNC, she also served as associate director of hematopathology and assistant director of molecular pathology. She is certified by The American Board of Pathology in anatomic pathology and hematopathology. She has been a member of Kingsley Lane Pathology Associates since August 2000. Her professional interests include hematopathology and gynecologic and breast pathology.

Gerard A. Singer, MD

Dr. Singer is a graduate of the Medical College of Virginia in Richmond, where he received the Arthur T. Lyman Pathology Fellowship Award for research in immunopathology. After a combined anatomic and clinical pathology residency at Strong Memorial Hospital at the University of Rochester in New York, he did a surgical pathology fellowship at Hartford Hospital in Connecticut. He joined Kingsley Lane Pathology Associates in 1987 and helped establish one of the area's first comprehensive immunohistochemistry labs at Bon Secours DePaul Medical Center. His interests include general surgical pathology and cytopathology, with specialty interests in gynecologic pathology and immunohistochemistry. Dr. Singer is board-certified in anatomic and clinical pathology.

Ray McKean Smith III, MD

Dr. Smith graduated from the Medical University of South Carolina in Charleston, where he also completed his residency in anatomic pathology and a fellowship in renal pathology. He worked for two years as assistant professor of pathology at the University of Kentucky College of Medicine and then became a resident in clinical pathology at the University of Cincinnati. Dr. Smith joined the department of pathology at DePaul Medical Center in 1982. He also works as a consultant in pathology for LifeNet Transplantation Services and previously served as its assistant medical director. He is board-certified by The American Board of Pathology in anatomic and clinical pathology. Dr. Smith is a fellow of the College of American Pathologists and a member of the Medical Society of Virginia, Virginia Society of Pathology and Tidewater Society of Pathology. His interests include clinical chemistry and cardiac pathology.

Thomas Anderson, MD

Dr. Anderson graduated from King's College London School of Dentistry in 1976 and University College Cork School of Medicine in 1982. He completed his residency in anatomic and clinical pathology at Hartford Hospital in Connecticut and fellowship training in cytopathology at The Johns Hopkins Hospital in Baltimore, Maryland, in 1992. During his training, Dr. Anderson received the Ronald S. Beckett Award for outstanding resident. Before coming to Hampton Roads, he worked as a surgical pathologist at Fox Chase Cancer Center in Philadelphia, Pennsylvania. His professional interests include oncology pathology, particularly in head, neck and thoracic areas, and cytopathy.

Information Requirements

Quality, completeness and accuracy are essential factors in processing laboratory samples. The quality of samples and the completeness and accuracy in how tests are ordered will greatly affect the quality of processing lab samples. When critical information is not provided, test results may be delayed or not reported at all. In addition, there may be billing problems if necessary information is not provided completely and accurately. To avoid problems, each and every request form must include the following:

- Patient's name (first and last)
- Date and time of collection
- Date of birth
- Sex
- ICD-10 diagnosis code(s)
- Patient's address and phone number
- Source of specimen (if pathology and microbiology requisition)
- Date of last menses, pregnancy status, surgical history, previous abnormal Paps or biopsies (if cytology requisition)
- Requesting physicians(s) phone number(s)
- Billing/insurance information
- Tests requested
- Additional tests requested, if needed
- Physician/provider signature
- AFP data sheet (specific for alpha fetoprotein)

Request Forms

The following request forms for outreach testing are available:

- Clinical test request form
- Surgical pathology/cytology/histology request form
- AFP
- General laboratory supply requisition

Labeling of Specimens

Proper specimen collection, handling, labeling and transport are essential for accurate laboratory results. Bon Secours Laboratory Services requires that **at least two patient identifiers** (neither being the patient's location) be used to label specimen collection containers in the presence of the patient. The use of two patient identifiers on all specimens will ensure accurate linkage of the patient, the specimen and the test results.

The name on the tubes must EXACTLY match the name on the requisition.

Samples Other Than Blood Bank

Label specimens with the following information:

- Patient's full name.
- Patient's last four digits of his or her SSN or medical record number.
- Patient's date of birth.
- Date of collection.
- Time of collection.
- Phlebotomist initials or assigned tech number.

Blood Bank Specimens

The following information must be put on each tube:

- Patient's full name.
- Patient's last four digits of his or her SSN.
- Patient's date of birth.
- Date and time of collection.
- Hollister armband number.
- Blood bank armband number for any intended transfusions (including RhoGAM®).

Pathology

- Two identifiers.
- Site and type of specimen (for tissue biopsies, excisions and cytology).
- Cytology slide specimens require two patient identifiers (name and date of birth) and that the site and source be noted on the slide(s) in pencil.

Specimen Handling

Test tubes with color-coded tops indicate the additive contained in the tube. In the Directory of Tests, the color coding is indicated as well as the volume of blood sample required for each test. When collecting blood samples, it is important to allow the tube to fill completely and to follow the "order of draw" for tubes as indicated in the Order of Draw and Tube Type Chart.

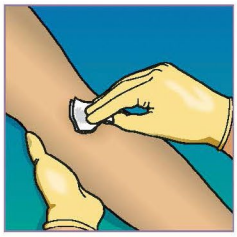
ORDER OF DRAW	TEST OR TUBE TYPE	STOPPER COLOR		ADDITIVE	MIXING, CLOTTING AND OTHER REQUIREMENTS
1	Blood Culture	Orange, Green or Yellow		Culture Media	Mix 8-10 Times
2	Coagulation Tube	Light Blue		Buffered Sodium Citrate	Volume Is Critical Mix 3-6 Times
3	Nonadditive	Red		Clot Activator	Allow to Clot 60 Minutes
4	Serum Trace Elements	Navy Blue		Clot Activator	Do Not Mix Transport Upright
5	SST	Gold		Clot Activator	Mix 5 Times Allow to Clot 30 Minutes
6	Heparin	Green		Sodium or Lithium Heparin PST	Mix 8-10 Times
		Green		Non-PST	Mix 8-10 Times
7	ACD	Yellow		Acid Citrate Dextrose	Mix 8-10 Times
8	CBC/ Blood Typing	Lavender		EDTA (K_3)	Mix 8-10 Times
9	Blood Typing	Pink		EDTA (K_2)	Mix 8-10 Times
10	Serum— Trace Elements	Navy Blue		EDTA (K_2)	Mix 8-10 Times
11	Fluoride/Oxalate	Gray		Sodium Fluoride and Potassium Oxalate	Mix 8-10 Times
12	Other Additives	Various		i.e., Thrombin	Mix 8-10 Times

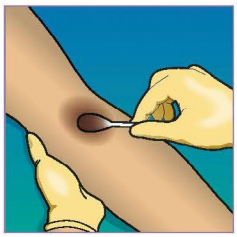
Blood Collection Instructions for Use with the BD BACTEC™ Blood Culture System

WARNING

"Standard Precautions" should be followed in handling all items contaminated with blood or other body fluids.

Prior to use, (1) inquire if patient has a history of adverse reaction to iodine (see Step 1 below); and (2) inspect all vials and discard any vials showing evidence of contamination, damage or deterioration.





STEP 1. SKIN PREPARATION

- Cleanse the venipuncture site with 70% isopropyl alcohol.
- Starting at the middle of the site, swab concentrically with a 1 to 10% povidone-iodine solution or chlorhexidine-gluconate.

NOTE: Chlorhexidine-gluconate is recommended for infants two months and older and patients with iodine sensitivity.

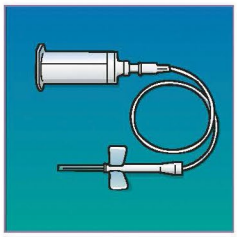
- Allow the site to air dry.

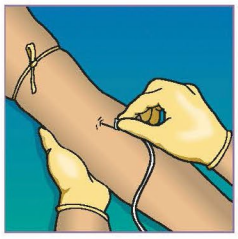
NOTE: If the venipuncture proves difficult and the vein must be touched again to draw blood, the site should be cleansed again.

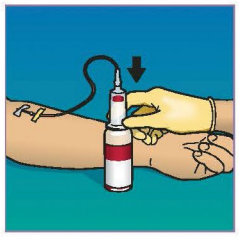
STEP 2. PREPARE BACTEC™ VIALS

- Mark BACTEC culture vial label(s) at desired fill level.
- Remove flip-off caps from BACTEC culture vials(s).
- Wipe tops of vials with single alcohol swab and allow to dry.

STEP 3. BLOOD COLLECTION OPTIONS



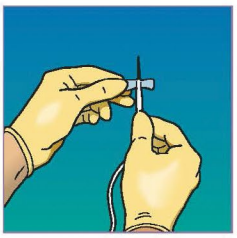


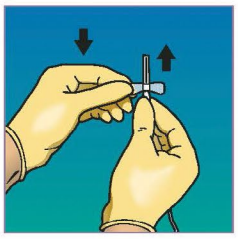


BD Vacutainer® Safety-Lok™ and BD Vacutainer® Push Button Blood Collection Sets – COLLECTION

- Peel apart package and remove blood collection set.
- Thread the Luer end of tubing set into Vacutainer holder.
- Remove sheath covering needle at wings.
- Perform venipuncture by holding wings as shown. DO NOT hold by grasping the yellow safety shield.
- Select aerobic bottle first. Hold the bottle upright.
- Push and hold Vacutainer holder over top of vial to puncture septum.
- Collect blood to desired fill level on vial. Monitor to ensure proper blood flow and fill level.
- Remove holder from vial. Immediately push and hold holder onto second vial.
- Collect blood to desired fill level on second vial. Remove holder from vial.

NOTE: If more samples are required, additional tubes may be drawn at this time using the Vacutainer holder.





OPTION A:

BD Vacutainer® Safety-Lok™ Blood Collection Set – REMOVAL

- When final vial or tube is filled, withdraw the needle by grasping the wings and gently pulling. DO NOT withdraw by holding the yellow safety shield. Cover the puncture site with a sterile gauze pad and apply pressure.
- To activate the safety shield, grasp either wing with one hand and grip the yellow safety base with other hand. Slide the wings back into the rear of the safety shield until a snap is felt to ensure that the needle is retracted completely and locked in place.

(continued on reverse)

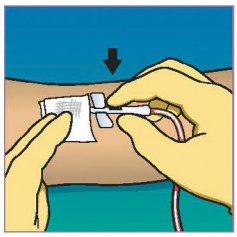
BD

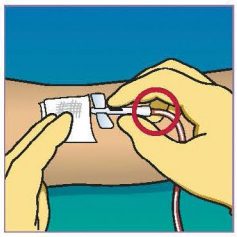
Helping all people live healthy lives

Bon Secours Laboratory Services

Blood Collection Instructions for Use with the BD BACTEC™ Blood Culture System *(continued)*

STEP 3. BLOOD COLLECTION OPTIONS *(continued from front)*





OPTION B:

BD Vacutainer® Push Button Blood Collection Set – REMOVAL

- The device is designed to be activated while the needle is still in the patient's vein. Place your gauze pad or cotton ball on the venipuncture site. Allow gauze pad or cotton ball to cover nose of front barrel. Following the collection procedure, and while the needle is still in the vein, grasp the body with the thumb and middle finger. Activate the button with the tip of the index finger.
- To ensure complete and immediate retraction of device, make sure to keep fingers and hands away from the end of the blood collection set during retraction. Do not impede retraction.

OPTION C:

Needle and Syringe Collection

- Using aseptic technique, attach needle to syringe.
- A 20 mL syringe with a 21 gauge needle is recommended but other sizes may be used.
- Insert the needle into prepared vein and collect 10 to 20 mL blood in syringe.
- Withdraw needle after collecting 10-20 mL blood in syringe.
- Distribute blood equally into aerobic and anaerobic vials.

STEP 4. PATIENT SKIN CARE

- Place the gauze pad over the site, continuing mild pressure. Check bleeding has ceased, and apply an adhesive or gauze bandage over the site.
- After all specimens have been collected, remove remaining skin antiseptic from collection site using a sterile alcohol swab.

STEP 5. LABEL VIALS

- Label all vials. DO NOT write on or place any labels over the BACTEC vial barcode, as this is used by the instrument to process the specimen.

STEP 6. DISPOSAL

- Dispose of the blood collection devices in the nearest sharps container according to regulations. Dispose of all other used materials in appropriate container and wash hands.

STEP 7. ADDITIONAL CULTURES MAY BE COLLECTED IN A SIMILAR WAY

- A different venipuncture site should be used for each culture set collected.

BD BACTEC™ Blood Culture Media

Cat No.	Description	Quantity	Unit
442265	BACTEC™ Lytic/10 Anaerobic/F Medium	50	Shelf Pack
442003	BACTEC™ Myco/F Lytic Medium	25	Shelf Pack
442288	BACTEC™ Myco/F Lytic Medium	50	Shelf Pack
442194	BACTEC™ PEDS PLUS™/F Medium	50	Shelf Pack
442192	BACTEC™ Plus Aerobic/F Medium	50	Shelf Pack
442193	BACTEC™ Plus Anaerobic/F Medium	50	Shelf Pack
442191	BACTEC™ Standard Anaerobic/F Medium	50	Shelf Pack
442260	BACTEC™ Standard/10 Aerobic/F Medium	50	Shelf Pack
442000	Blood Culture Procedural Tray 1, Adult	20	Shelf Pack
442001	Blood Culture Procedural Tray 2, Adult	20	Shelf Pack
442002	Blood Culture Procedural Tray 3, PEDS	20	Shelf Pack

To order any of the above BACTEC Blood Culture Media, please contact your local BD sales representative. To order BD Vacutainer™ products, please call 1.888.237.2762 or visit www.bd.com/vacutainer.

BD Diagnostics
7 Loveton Circle
Sparks, MD 21152-0999
800.638.8663
www.bd.com/ds

Rejection Criteria

Specimen

There are four basic factors that serve as a foundation for rejecting or accepting specimens:

- Specimen labeling problems (e.g., missing or incorrect information).
- Requisitioning difficulties.
- Specimen integrity problems (e.g., being sent a wrong tube or inadequate volume).
- Result integrity problems (e.g., pre-analytical conditions, such as hemolysis or unexplained delta check failure).

The first priority is always the patient. We must always be aware of the effect on patient care if a sample is rejected or if testing is continued. We must prevent the inappropriate acceptance of a specimen whose test results could harm a patient because of misdiagnosis or incorrect treatment. This is of paramount importance. The following are some of the problems that can occur and may call for rejection.

Blood Collection Problems:

- Clotted sample for whole blood or plasma tests
- Gross hemolysis
- IV fluid contamination
- Insufficient quantity
- Incorrect collection tube or container
- Serum or plasma not separated from cells
- Plasma not frozen when needed

Urine Collection Problems:

- Urine contaminated with stool
- Specimen collection time not confirmed
- Delivery delay

Culture Collection Problems:

- Specimen received damaged or leaking
- Grossly contaminated specimen
- Unrefrigerated urine culture
- Refrigerated GC or blood culture
- MRSA screen not collected on proper swab

Sputum Gram Stain:

Sputum specimens must be rejected as unsatisfactory when Gram-stain results do not meet specific criteria. Nurses are notified and result documented in the LIS. Specimens that are rejected will be held if a physician requests that a culture be worked up on the specimen.

Stool Specimens:

Stool specimens for culture for ova and parasite on inpatients should not be submitted after the third hospital day without consultation. Stools should be tested for C-diff for patients ages 2 and over with clinically significant diarrhea and a history of antibiotic exposure as an alternative to routine culture. Only liquid, unformed stool will be tested by microbiology. Formed stool samples will be discarded. Only one stool sample for C-diff will be tested by microbiology during a seven-day period. Additional samples will be discarded.

Requisition

- No order slip received with specimen.
- Unsigned blood bank slip.
- Wrong orders with a specimen.
- No diagnosis code given.

Outreach Stat Testing

Bon Secours Laboratory Services offers outreach stat testing to its clients. When a client orders a test on a stat basis, the laboratory will call results back to the ordering physician within four hours of receipt in laboratory, with allowances for transportation.

While the laboratory provides stat testing for its clients on a wide range of tests, it is important to note that certain tests cannot be processed on a stat basis. Examples include microbiology and virology cultures, polymerase chain reaction (PCR) testing, many special chemistry tests and allergy tests.

The process for ordering tests on a stat basis is as follows:

- **Step 1:** Client calls laboratory at 757-889-5141. It is critical that the client identify exact location, including office or suite numbers.
- **Step 2:** A courier is dispatched.
- **Step 3:** Processing of the stat specimens begins after specimens are received in laboratory.
- **Step 4:** The laboratory will phone the stat results to the ordering physician's office immediately after specimen testing is completed.

Hematology

Profiles:

- CBC to include: WBC, RBC, Hgb, Hct, RBC indices, RDW, platelet count, MPV, with or without differential.

Individual Tests:

- Platelet count
- Reticulocyte count
- Body fluid cell count
- Examination for crystals in fluid
- Prothrombin time
- Partial thromboplastin time
- Fibrinogen
- D-dimer
- Fibrin degradation products

Urinalysis

- Routine urinalysis to include: color, appearance, specific gravity, pH, protein, glucose, ketones, bilirubin, blood, urobilinogen, leukocytes, nitrite, spun microscopic examination if indicated or requested.

Chemistry

Profiles:

- Electrolytes to include: sodium, potassium, chloride, CO2.
- Basic Metabolic Panel to include: electrolytes, glucose, BUN, creatinine, Ca.
- Comprehensive Metabolic Panel to include: albumin, bilirubin total, calcium, chloride, creatinine, glucose, alkaline, phosphatase, potassium, total protein, sodium, urea nitrogen (BUN), AST (SGOT), ALT (SGPT), CO2.
- Hepatic Function Panel to include: albumin, total and direct bilirubin, alkaline phosphatase, AST (SGOT), ALT (SGPT), total protein.
- Renal Function Panel to include: albumin, calcium, CO2, chloride, creatinine, glucose, phosphorus, potassium, sodium, BUN.

Individual Tests:

- All tests included in profiles
- Acetaminophen
- Alcohol
- Amylase
- Carbamazepine
- Creatine phosphokinase
- CKMB quantitative
- CSF protein and glucose
- Digoxin
- Fetal fibronectin*
- Gentamicin
- Monospot
- PBNP
- Phenytoin
- Quantitative HCG
- Rheumatoid arthritis screen
- Salicylate
- Troponin
- Valproic acid
- Vancomycin

**call for special collection device*

Microbiology

- Bacterial antigens – CSF
- Blood cultures (stat collections only)
- Flu A & B
- Gram stain
- India ink prep
- Occult blood
- Rapid strep
- RSV

Blood Bank

- Antibody screen
- Antigen testing
- Antibody identification
- Crossmatch compatibility
- Direct Coombs
- Type, Rh

Tests Offered as Stat but Sent to a Local Laboratory for Testing

- Kleihauer-Betke
- Phenobarbital
- Tobramycin
- Theophylline

Courier Services

Courier info: hours are 7:30 a.m. to 7:30 p.m.; for stats, pickups, please call 757- 889-4213. For supplies, fax order to 757-889-5993. (Please allow three working days for delivery.)

Supplies

Requisitions, blood collection supplies, ThinPrep vials, formalin, brooms, spatulas, cytobrushes, glass slides, spray fixative and cardboard slide holders are provided without charge. Please call Bon Secours Laboratory Services at 757-889-4123 to order supplies, which are delivered by our couriers.

Microbiology

There are several factors essential to providing high-quality microbiological testing. They are: proper collection of the specimen, proper labeling and rapid transport to the laboratory. All are extremely important. Failure to isolate the causative agent in a culture is frequently the result of faulty collecting or transport technique. The following sections outline important instructions that must be followed to ensure optimal recovery of pathogens.

Ordering Procedures

- The nurse or provider enters microbiology orders into the computer system where available.
- Requisition paperwork with complete information must accompany the specimen for delivery to the lab.
- The exact source of the specimen **must** be entered at the specimen prompt or listed on the requisition. If there is no code for the specimen type, a generic source is entered and the exact source **must** be noted on the requisition.
- The **date and time of collection and the ordering physician** is required.

Labeling Specimen

- Each specimen container must be labeled with patient's full name, social security or medical record number, and date and time of collection. **Unlabeled specimens will not be processed.** The requisition is sent to the lab with the labeled specimen; it is **not** a substitute for labeling. The patient information on the requisition must match the label on the specimen.
- All specimens must be placed in zip-closed bags with the opening secure for transport to laboratory. Requisition slips must be in the pouch outside of the bags.

Delivery of Specimen

- Prompt delivery of specimens to the lab is essential if results of cultures are to be valid.

Collection Instructions

- Whenever possible, specimens should be obtained before the administration of antibiotics. If a culture is taken after initiation of antibacterial therapy, the specific antibiotics given should be noted on the requisition slip.
- Cultures should be collected from the actual site of infection, with as little external contamination as possible. To accomplish this, clean the surrounding area with 70 percent alcohol or sterile saline before collection of culture and by being careful to bypass areas of normal flora. The specimen should be submitted to the lab in a sterile container or in appropriate transport medium as listed on the Specimen Collection and Transport Chart.

- Necessary collection supplies are available through the courier department. Certain items, such as Culturette® swabs and anaerobic collection tubes, have expiration dates printed on their packages. Do not use them after their expiration dates.

Causes of Specimen Rejection

In all cases of unacceptable specimens, the patient care unit must be notified and the nature of the discrepancy explained.

- Discrepancy between patient identification on requisition and specimen container.
- Unlabeled or improperly labeled specimen container.
- Presence of gross external contamination on specimen container.
- Exact specimen source not indicated on requisition slip.
- Date and time of collection not indicated on requisition slip.
- Specimen received on dried-out swabs.
- Urine held over two hours at room temperature.
- Foley catheter tips — unacceptable because of skin flora contamination. Collect urine specimen before removing catheter or two hours after removal.
- Specimen received in fixative.
- Inadequate or improperly collected specimen.
- Anaerobic culture from swabs of throat, nose, urethra, vagina, cervix or rectum; expectorated sputum; voided or catheterized urine; or stool specimen.
- Syringe with capped needle. It is against hospital policy to recap a needle. Contents of syringe can be transferred to a suitable sterile container. Alternatively, syringe may be sent to lab after needle has been properly removed and disposed of and opening of syringe has been capped.
- 24-hour urine or sputum collections for AFB or fungus.
- The microbiology laboratory will reject sputum based on its criteria. Notification of sputum rejection by the lab is a comment stating specimen is rejected and why, and a request to call within 48 hours.
- Stools collected in a non-screw-top container (i.e., stool in denture cups).
- Only liquid, unformed stool will be tested by microbiology. Formed stool samples will be canceled. Only one stool sample for Clostridium difficile (C-diff) will be tested by microbiology during seven-day period. Additional samples will be canceled. Formed stool will not be tested by microbiology. Regardless of result, no further testing will be conducted within seven days. After seven days, a second specimen may be tested only if the clinical course of the patient changes.
- MRSA by PCR specimens not collected using the appropriate Copan swab provided by the lab.

Specimen Type

Anaerobic:

- Acceptable Specimens
  - — Pus from closed abscess.
  - — Pleural fluid by thoracentesis.
  - — Urine by suprapubic bladder aspiration.
  - — Pulmonary secretions by transtracheal aspiration.
  - — Uterine secretions or sinus tract material by insertion of an intravenous type of catheter through a decontaminated area and aspiration with a syringe.
- Unsuitable Specimens
  - — Swabs from the throat, nose, ear, eye, decubiti, superficial wounds, urethra, vagina, cervix or rectum.
  - — Expectorated sputum, bronchial secretions, voided urine, feces and gastric contents.
- Methods of Collection
  - — Anaerobic specimen collectors are provided by the laboratory through the courier department. The collector transport system consists of a swab collector in a tube constructed so that once the specimen is collected and introduced into the smaller tube and the system activated, an anaerobic atmosphere is provided. Directions for using the system accompany each collector. The system can be used as a collector and transport system for a specimen collected by swab or as an anaerobic transport system for tissue, fluids and other types of specimens. The activated collector should be held upright at all times and delivered to the laboratory ASAP. The anaerobic specimen collector is not intended for the collection of specimens suspected of containing Neisseria meningitidis or Neisseria gonorrhoeae.

— Aspiration of fluid with sterile needle and syringe: After decontamination of the outer surface of the lesion, the fluid specimen should be aspirated with a sterile needle and syringe. Care should be taken to prevent air from entering the syringe. Once aspirated, the fluid may be transferred to the anaerobic collector, or the syringe needle may be removed and the opening plugged with a stopper. Transport immediately to the laboratory.

Blood:

BACTEC™ aerobic, anaerobic and pediatric bottles are used in our laboratory and available through the courier department. Collect blood cultures as directed by the physician. If not otherwise specified, each set of blood cultures should be drawn at 15-minute intervals. The maximum number of blood cultures per 24 hours per patient should not exceed six sets.

- Adult patient: For each blood culture ordered, one aerobic and one anaerobic bottle should be drawn. Fill aerobic bottle first. In the event that only one bottle can be obtained from a single venipuncture, the aerobic bottle must be drawn. Each set of blood cultures ordered must be obtained from a separate venipuncture site.
  - — Aerobic bottle: Fill with 3-10 mls of blood (10 mls optimal).
  - — Anaerobic bottle: Fill with 5-7 mls of blood.
  - — NOTE: It is very important to obtain optimal fill level of bottles to ensure recovery of pathogens. DO NOT under fill or overfill bottles.
- Pediatric patient: Draw 0.5-3 mls of blood into pediatric BACTEC™ bottle.
  - — NOTE: Aerobic culture bottles contain resins to neutralize antibiotics. No special procedures are necessary when an ARD (antibiotic removal device) or resin bottle is requested.
- Fungus blood cultures: Draw one Myco/F blood culture bottle for each order of blood for fungus. The length of the incubation period will be changed from five to 30 days in the BACTEC™ instrument.
- Mycobacteriology (AFB) blood cultures: Draw one Myco/F blood culture bottle for each order of AFB blood. The order should be placed in the computer as a Mycobacterium blood culture (HAFBLD) with the specimen source as blood. The bottle should be sent to the lab as soon as possible but within eight hours of collection. Bon Secours Maryview will send the bottle to the Sentara Norfolk General lab for processing.

Cerebrospinal Fluid:

All CSF specimens are treated as stat. Gram stains on all CSFs, except myelograms, are required and must be requested.

Lumbar spinal puncture is the procedure used by physicians to obtain cerebrospinal fluid for culture and other laboratory tests. Lumbar punctures must be performed under conditions of strict asepsis. Because contamination of the specimen can readily occur and confuse the identification of the etiologic agent, the skin should be disinfected properly before the puncture. The specimen should be collected by the physician into sterile screw-cap tubes to preclude leakage and loss or contamination of the contents. The specimen should be delivered to the laboratory immediately, and laboratory personnel should be notified of its arrival. If there is to be a delay in processing the specimen, then the fluid should be left at room temperature. The microbiology lab should process tube #2. All CSF samples sent for bacterial and/or cryptococcal antigen testing must have backup cultures ordered and performed.

Ear:

Material from the ear, especially that obtained after perforation of the eardrum, is usually collected by the physician using sterile equipment and a sterile swab. In external otitis, the external ear should be cleansed with a suitable disinfectant to free the skin of contaminating bacterial flora before the culture is taken. A small swab is then carefully inserted into the ear canal and rotated to collect the exudate.

Eye:

The number of organisms recovered from cultures of many eye infections may be relatively low because of the constant working activity of the tears and their antibacterial constituents. Swab specimens are often inadequate because the sample size is small. An additional problem is that topical anesthetics possess antimicrobial activity. It is recommended that as much specimen as possible be obtained on the swab and that the specimen be collected before application of topical anesthetics. Care should be taken that eyelids and eyelashes not be touched during specimen collection. Some infections require collections of corneal scrapings as adequate specimen. All instruments used for collection of eye cultures must be sterile.

Fecal:
Stool specimens should be collected in a sterile screw-top container and delivered to the lab as soon as possible after collection. Consider use of the C-diff toxin by PCR instead of cultures. Stools contaminated with urine, mineral oil or barium are unacceptable. If necessary, a sterile swab may be used to obtain fecal samples for culture only. The swab should be passed beyond the anal sphincter, carefully rotated and withdrawn. Liquid stool specimens for parasitological exam must be delivered to lab and be placed in fixative within one hour of collection. Stool specimens submitted for C-diff testing must be liquid or semiformed. Any formed stool will be rejected.

Fluid (Other Than CSF):
The percutaneous aspiration of pleural, pericardial, peritoneal and synovial fluids must be performed aseptically to avoid contamination of the specimen and to prevent the accidental introduction of microorganisms into these anatomical spaces. The specimen should immediately be injected into a sterile tube and/or into an anaerobic collector. Gram-stained smears of the centrifuged sediment of clear or slightly cloudy fluids should be made and examined carefully. Purulent fluids should be smeared directly and examined.

Genital (Cervical, Vaginal, Urethral):
Use a sterile swab to obtain the specimen by collecting a small amount of exudate or pus from the infected area. Principal culture areas for venereal disease are the vagina, cervix, urethra and Bartholin's glands. Secondary sources for venereal diseases are the rectum, nasopharynx, eye and cutaneous lesions. In the female, the best site from which to obtain a culture is the cervix. The cervical culture is obtained with the aid of a sterile speculum and an alginate or cotton-tipped swab. In situations where a cervical specimen is not indicated (children or hysterectomized patients), a urethral or vaginal culture may be substituted. In male patients with a purulent urethral exudate, the examination of a Gram-stained direct smear is usually sufficient to confirm a clinical diagnosis of gonorrhea. However, since an appreciable number of males may be asymptomatic, a urethral culture is recommended. The culture is obtained by gently inserting a thin alginate urethrogenital swab about 2 cm into the urethra, and then gently rotating and removing the swab.

Nasal:
Nasal cultures can be obtained to demonstrate organisms in the nose, such as staphylococcus aureus, that can be transmitted by hospital personnel to patients within the hospital. These are normally just to identify staphylococcus carriers. Nose cultures may also be obtained to demonstrate the causative agent of sinusitis. A Culturette® swab should be entered in each nostril, rotated a few times and then placed back in the Culturette®. Nasal swabs for an MRSA screen by PCR must be collected on a Copan swab provided by the lab through the courier department and are performed only on nostril sources.

Sputum:
The patient should be instructed to obtain material from a deep cough (tracheobronchial) expectorated directly into a sterile container. About l-3 ml of purulent or mucopurulent material is sufficient. Saliva is an unacceptable specimen. Sputum collected in alcohol cannot be cultured.

Throat:
Throat cultures are most frequently obtained for diagnosing streptococcal pharyngitis and less commonly for diagnosing pertussis, diphtheria and pharyngitis caused by gonococcus or viruses. It is very important to use the proper technique for collecting a throat culture. A Culturette® swab should be used along with a tongue depressor. The tongue depressor is held in one hand and used to depress the tongue to minimize contamination of the swab with oral secretions which may dilute, overgrow or inhibit the growth of pharyngeal flora. Both tonsillar areas, the posterior pharynx and any areas of inflammation, ulceration exudation or capsule formation should be swabbed vigorously.

Urine:
The proper collection, storage and transport of urine specimens for bacteriological examination is of the utmost importance. Contaminating bacteria can multiply in specimens standing at room temperature and invalidate the results of both microscopic and culture examination of urine. Specimens not examined or cultured within one hour after voiding must be refrigerated. Urine specimens may be collected by diagnostic catheterization, by the clean voiding midstream technique, by suprapubic aspiration or from an indwelling catheter. Method of collection should

be noted in the specimen comment line of the request. It is best to obtain early morning specimens whenever possible. Obtaining a clean voided urine specimen will vary greatly depending on the age and sex and ability of the patient to cooperate. The following detailed instructions to lab staff, nursing personnel and patients are recommended for collection of midstream specimens from patients.

Cleanse the periurethral area (tip of penis, labial folds, vulva) with two separate washes with plain soap and water or mild detergent. Rinse well with water to remove the detergent. Then, with the glans penis or labial folds retracted, have the patient flush the urethral passage after the first portion of voiding, which is discarded. Then collect the subsequent urine voided directly into a sterile container.

Wound:
The surface of cutaneous wounds or decubitus ulcers frequently is colonized with environmental bacterial, so swab samples often do not reflect the true cause of the infectious process. For that reason, the most desirable method of collecting cutaneous specimens is by aspirating lobulated purulent material from the depths of the wound with sterile needle and syringe. The wound margins should be decontaminated as much as possible with surgical soap and application of 70 percent ethyl or isopropyl alcohol. If material is obtained in the syringe, the needle should be removed and opening of syringe should be plugged, or contents of the syringe can be placed into a sterile test tube for delivery to lab. If material cannot be obtained with a needle and syringe, then a swab must be used to collect the specimen. The wound margins should be gently separated and the tip of the swab extended deep into the wound, taking care not to touch the adjacent skin margins. All wound cultures should have Gram stains performed routinely when the proper amount of material or number of swabs is submitted.

References:
1. Murray, Baron, Jorgensen, Pfaller and Yolken, Manual of Clinical Microbiology, 8th edition, pp. 288-307, 2003.
2. Bailey and Scott's Diagnostic Microbiology; Forbes, Sahm, Weissfeld, 12th edition, CV Mosby Elsevier pp. 62-77, 2007.

Blood Bank

Blood Products

Bon Secours Laboratory Services offers a full-service transfusion department to provide blood products for each of our hospital infusion centers in Hampton Roads. Red blood cells, platelets and plasma can be transfused per physician request for treatment of anemias or other low blood counts related to chronic anemic conditions, chemotherapy treatments, or pre-surgical hemostasis. RhoGAM® injections can also be provided. Requests (scheduling) for outpatient infusion of blood or blood products should be made through the infusion service representative for infusions that will be performed in the Bon Secours Maryview, Bon Secours DePaul or Bon Secours Mary Immaculate infusion centers.

Please call infusion scheduling at 757-398-4234.

Patients will be instructed to arrive prior to their scheduled transfusions, usually the day before, to have their blood drawn for blood type confirmation and crossmatching, and product selection. Transfusions will be performed within the next three days, on one or more days, based on the type and number of products ordered. Blood samples may be drawn in the infusion center during operating hours or in the outpatient lab areas.

If samples are collected on the day of transfusion, the wait time for patients, once the blood specimens are received in the blood bank, will be approximately one hour for red blood cell transfusions and two hours for blood components (e.g., platelet transfusions).

Note: All blood products supplied by the hospital blood banks are leukoreduced. Special requirements, such as cytomegalovirus negative or irradiated units, once initiated for a patient via a physician's order, will be honored for all subsequent transfusions. A written doctor's order is required to notify the blood bank that these attributes are no longer required. Physicians are asked to continue to specify this request on all orders as a part of FDA and AABB compliance with transfusion accreditation standards.

Anatomical Pathology

Cytology is the study of biological cells, and our cytology department is committed to analyzing each microscopic clue of each sample. Your samples are in good hands with the anatomical pathology team.

The laboratory is certified by the College of American Pathologists. Additionally, we hold certification from CLIA, and serve as a clinical training site for the Old Dominion University College of Health Sciences. Our staff of experts, eight pathologists (three with board certification in cytopathology) and team of ASCP-registered cytotechnologists, are here to serve.

We use CoPath; a computer system dedicated to anatomical pathology and cytology. This technology helps us to perform analysis in a very efficient manner with extensive built-in QC activities and reports. Our easy-to-read reports are returned to your office electronically, by fax or courier service within 72 hours of specimen receipt. We offer personalized, one-on-one assistance for each of our clients.

ThinPrep Pap

Pap Smear Requisition Requirements

- Fill in all patient information (DOB, full name, SSN (if possible) are a must).
- Date of service must be entered.
- Provider's first and last name must be on the requisition.
- Choose whether the Pap is a routine screen or a diagnostic.
- At least one ICD-10 code must be provided.
- Choose any additional molecular testing if needed (e.g., HPV regardless, HPV reflex, CT, NG, TV).
- Choose a source from where the sample was taken (e.g., vaginal or cervical).
- LMP is helpful if you are able to get the information.
- Any patient history must be put on the requisition and not on the vial.

Specimen Requirements

- Two patient identifiers must be on all specimen containers: first and last names and date of birth.
- Do not leave cervical brushes in vial. Rub on the wall of the vial and then swirl the brush and the spatula in the solution to remove cells.
- Double-check to make sure the lid on vial is tight to prevent leaks.

Tissue

Routine surgical pathology specimens should be collected in 10 percent formalin and must be accompanied by a surgical pathology/cytology requisition that details pertinent medical history. The site or source of collection must be clearly stated, including the right or left. Please include the preoperative diagnosis and any other pertinent information.

To ensure proper specimen identification, the specimen container (not the outside bag or package) must be labeled with patient's full name, date of birth, date/time of collection and specimen source.

Labeled specimen containers must be placed into a plastic biohazard bag for transport. Specimens must be refrigerated.

Non-Gyn Samples

Examples of non-gyn samples are body cavity fluids, cerebrospinal fluids, sputum, urine, washings, brushings, fine needle aspirations from cysts and solid masses.

Bon Secours Laboratory Services provides the ThinPrep Pap and pathology supplies.

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To ensure proper specimen identification, the specimen container (not the outside bag or package) must be labeled with patient's full name, date of birth, date/time of collection and specimen source.

Labeled specimen containers must be placed into a plastic biohazard bag for transport. Specimens must be refrigerated.

Advanced Beneficiary Notice (ABN)

An ABN is a written notification required by Medicare. The form should be utilized before services are actually furnished. Otherwise, Medicare is likely to deny payment. ABNs allow beneficiaries to make informed consumer decisions about receiving lab tests, which they may have to pay out of pocket, and to encourage patients to be more active in their own health care treatment decisions. If it is expected that Medicare will deny payment for laboratory tests (listed on ABN), you should advise the beneficiary that he or she will be personally and fully responsible for payment. An ABN should be used each and every time it is determined that Medicare will deny payment.

When using an ABN, please indicate the test(s) being ordered. An explanation should be rendered to the patient that Medicare may not pay. The patient should review the form, select an option and then sign the form. One copy should be sent to the laboratory (attached to the request form), while the patient retains the other.

Visit the National Coverage Determinations (NCDs) Alphabetical Index for more information.

BON SECOURS VIRGINIA HEALTH SYSTEM

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