GENERAL SPECIMEN COLLECTION PROCEDURES

ABBEVILLE GENERAL HOSPITAL LABORATORY

TABLE OF CONTENTS

BACK TO TOP

I. SPECIMEN PREPARATION AND HANDLING - INTRODUCTION

Proper specimen collection, preparation, and handling are imperative to ensure valid laboratory results. Improper technique in obtaining and preserving specimens may yield false analytical values. The following information summarizes our recommendations for collecting, handling, and preserving specimens. In order that the results of analysis truly reflect the patient's condition, we suggest that these recommendations be followed closely. Also in this directory, specific specimen requirements for each test are given, and these must be followed carefully. Please call the laboratory if you have any questions about obtaining a valid specimen for the test desired.

Blood specimens will be drawn for procedures requiring plasma, serum or whole blood. The tops of collection tubes are color coded according to the anticoagulant or preservative (plasma), or lack thereof (serum). In the alphabetical listing of tests, the proper tube is indicated by anticoagulant used or as a specific quantity of serum (red top). The following table is provided as a guide to the anticoagulant / preservative in the various collection tubes.

A. Plasma - Most chemistry tests processed here at AGH require clear, unhemolyzed plasma obtained from green top tubes. (Red top-serum may be used as well) The required green top tube for chemistry testing at AGH contains Lithium Heparin as the anticoagulant and has a gel separator included. The gel containing plasma separator tube is preferred over the non-separator due to its preservative properties; removing plasma from the red cells reduces/eliminates metabolism of analytes tested, thus preserving the accurate analytical value. If possible, immediately centrifuge the tube at 3500 rpm for 15 minutes. If a gel separator tube is not used, i.e. in the case of coagulation tests in a blue top tube, the plasma only (no red cells) must be decanted and pipetted into a capped transport tube. Properly label the tube with the patient's name, date of birth, current date and time of collection. Send specimen directly to AGH lab for processing.

If you are not able to separate the plasma from the red cells either by centrifugation and removing the plasma or by

centrifuging a plasma separator tube, it is important that the specimen be transported to the laboratory immediately after collection.

PLASMA / WHOLE BLOOD TUBES:

<table>
<tr><td>GREEN TOP:
CHEMISTRY
TESTING</td><td>LITHIUM HEPARIN</td><td>  </td></tr>
<tr><td>BLUE TOP:
COAGULATION</td><td>SODIUM CITRATE</td><td>  </td></tr>
<tr><td>PURPLE TOP:
HEMATOLOGY</td><td rowspan="2">EDTA</td><td rowspan="2">  </td></tr>
<tr><td>PINK TOP:
BLOOD BANK</td></tr>
</table>

GREY CAP: LACTIC ACID TESTING (MUST BE COLLECTED ON ICE AND IMMEDIATELY PROCESSED)	**SODIUM FLUORIDE/ POTASSIUM CITRATE**	

B. **<u>Whole blood</u>** **-** For collecting whole blood fill the proper color-coded tube and mix immediately by slowly inverting the tube 8-10 times. Do not centrifuge the tube.

C. **<u>Serum</u>** **-** Chemistry testing, Serology testing, and most reference lab testing may require **serum**. For collecting specimens, completely fill the required **red top tube**. Allow the tube to clot for at least 15 minutes, then centrifuge for 15 minutes at approximately 3500 rpm. Place the serum in a transfer tube (if not on gel) using either a clean disposable transfer pipette or by carefully decanting. Cap the transfer tube securely and label with the patient's name, date of birth, date and time of collection.

If you are not able to separate the serum from the red cells by centrifugation and removing the serum, it is important that the specimen be transported to the laboratory immediately after collection.

SERUM TUBES:

RED TOP (PLAIN/SST): CHEMISTRY, SEROLOGY, SEND OFF TESTING, ETC.	**NO ANTICOAGULANT**	

MOST OF THE TIME, A YELLOW RING ON TOP OF THE CAP WILL INDICATE THAT THE TUBE CONTAINS A GEL SEPARATOR, A WHITE RING WILL INDICATE THAT IT IS A SHORT SAMPLE TUBE, AND A BLACK RING WILL INDICATE THAT A TUBE HAS NO GEL.

SHORT DRAW TUBE*- USE CAUTION AS MOST DO NOT CONTAIN GEL NOR MAY THEY MEET MINIMUM SPECIMEN VOLUME REQUIREMENTS… DIRECT ANY QUESTIONS ON SPECIMEN COLLECTION REQUIREMENTS TO AGH LAB AT 337-898-6475.

When blood is collected, fill the labeled proper color-coded tube completely with blood to ensure the correct ratio of specimen to anticoagulant/preservative. (The exception to this is the blue top citrated tube which is a partial draw tube. Allow the tube to fill until the vacuum of the tube is depleted to assure proper volume. It is very critical for coagulation testing that the tube be allowed to fill to the appropriate volume.)

Immediately after filling, invert all tubes slowly 8-10 times to thoroughly mix the blood and the anticoagulant. Avoid vigorous mixing which can cause hemolysis and adversely affect some tests results. *Instructions for proper blood drawing (phlebotomy) are available from our laboratory on request.*

Some tests require special patient preparations, fasting states, or timing of samples. It is important that these requirements are followed in order for the test results to be meaningful to the physician interpreting the results.

Specimen requirements for blood samples will be listed as Plasma, Serum, or Whole Blood.

D. URINE COLLECTION - Collection of urine should be into chemically clean receptacle, tightly sealed, and labeled with the patient's name, date of birth, and date and time of collection. Some procedures may require timed specimens or samples collected over a 24 hour period. Urine collection for culture and sensitivity will be outlined below in bacteriology section.

E. STORAGE AND TRANSPORT

Specimens should be transported to the laboratory immediately after collection. If the serum or plasma will be separated from the red cells before being sent to the laboratory, the table will indicate the proper storage temperature. If the serum or plasma cannot be separated, contact the laboratory for instructions.

Frozen specimens - Some specimens should be frozen soon after collection if testing will be delayed. Serum or plasma can only be frozen after they have been centrifuged and placed in a plastic transfer tube.

NEVER FREEZE A TUBE WHICH STILL CONTAINS RED BLOOD CELLS

NEVER FREEZE A GLASS TUBE

II. LABELING OF SPECIMENS

In order to assure positive identification and optimum integrity of patient specimens from the time of collection until testing has been completed and results reported, all specimens submitted to AGH laboratory for testing must be labeled with the patient name and a unique identifying number. In general, it would always be acceptable to use name and date of birth.

Multiple samples from the same patient on the same day should also be labeled with the time of collection or site specific information as appropriate.

Accrediting agencies require the laboratory to reject a specimen for analysis if there is no identification on the specimen. Collectors will be notified of inappropriately labeled specimens.

A. CRITERIA FOR REJECTION

Specimens collected according to the requirements in the procedure list will be acceptable for analysis. Specimens not collected according to guidelines may be subject to rejection. The collection site or physician will be notified immediately of the rejection. A specimen collection deficiency report will be filled out on these specimens and determinations will be made as to whether the patient's treatment was compromised. Some criteria for rejection of specimens are:

- **Unlabeled specimens**
- **Improperly labeled specimens**
- **Specimens received without requests**
- **Incomplete or incorrect test request form (e.g., no test marked)**
- **Test order without a specimen**
- **Grossly hemolyzed blood**
- **Clots in an anticoagulated tube**
- **Compromised specimens (e.g., grossly contaminated)**
- **Leaky containers**
- **Improper storage of specimens**
- **Inappropriately collected specimens**
- **Insufficient quantity**
- **Specimens submitted in incorrect or expired transport media**

III. SPECIMEN REQUIREMENTS:

The following table lists specimen requirements by test name. Additional specific specimen collection procedures follow the table when indicated.

SERUM - UNLESS SPECIFICALLY INDICATED, EITHER A PLAIN RED OR A RED SERUM SEPARATOR TUBE MAY BE USED. (PLAIN RED IDICATES THAT SERUM SEPARATOR TUBES SHOULD NOT BE USED.)

GREEN TOP – INDICATES LITHIUM HEPARIN ANTICOAGULANT UNLESS NOTED.

RED TOP – INDICATES ANY RED TOP TUBE UNLESS NOTED.

LABCORP REFERENCE LABORATORY (REF LAB)- SEE LINK BELOW FOR ALL SPECIMEN REQUIREMENTS

https://www.labcorp.com/wps/portal/provider/testmenu

R = SPECIMENS REFERRED TO REFERENCE LABS. INFORMATION ON TESTING SCHEDULES CAN BE OBTAINED BY CALLING THE LABORATORY.

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
ACETAMINOPHEN	SAME DAY	GREEN OR RED TOP
ACETONE, SERUM	SAME DAY	GREEN OR RED TOP
ACETONE, URINE	SAME DAY	URINE - 5 ML
ACID PHOSPHATASE	R	ANY RED TOP
ACTH	R	PURPLE TOP (EDTA PLASMA)
ACTIN/SMOOTH MUSCLE ANTIBODY	R	RED TOP
AFB CULTURE AND STAIN	R	SPUTUM, BRONCHIAL WASH, ETC. Refrigerate
ALBUMIN	SAME DAY	GREEN OR RED TOP
ALCOHOL, ETHYL	SAME DAY	GREEN OR RED TOP CLEAN SKIN WITH A DISINFECTANT OTHER THAN ALCOHOL
ALKALINE PHOSHPATASE (ALP)	SAME DAY	GREEN OR RED TOP
ALPHA-FETOPROTEIN (MATERNAL)	R	RED TOP SUBMIT PRENATAL AFP REQUEST FORM
ALPHA-FETOPROTEIN	R	RED TOP

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
(TUMOR MARKER)		
ALPHA-FETOPROTEIN WITH L3%	R	RED TOP
ALT	SAME DAY	GREEN OR RED TOP
AMIKACIN, PEAK	R	PLAIN RED TOP (NO GEL): COLLECT WITHIN 15 MINUTES AFTER A 60 MINUTE INFUSION, 30 MINUTES AFTER A 30 MIN. INFUSION.
AMIKACIN, TROUGH	R	PLAIN RED TOP (NO GEL): COLLECT PREDOSE
AMMONIA	SAME DAY	GREEN TOP PLACE SPECIMEN ON ICE AFTER COLLECTION *SEND TO LAB IMMEDIATELY*
AMYLASE	SAME DAY	GREEN OR RED TOP
AMYLASE, URINE	SAME DAY	URINE – 10 ML - COLLECT A TIMED TWO HOUR SPECIMEN OR 24 HOUR URINE. REFRIGERATE DURING COLLECTION.
ANGIOTENSIN-CONVERTING ENZYME (ACE)	R	RED TOP
ANA (ANTI-NUCLEAR ANTIBODIES)	R	RED TOP
ANTITHROMBIN III	R	BLUE TOP
AST	R	GREEN OR RED TOP
BARTONELLA ANTIBODY PROFILE: (CAT SCRATCH SEROLOGY)	R	RED TOP TUBE
BASIC METABOLIC PANEL	SAME DAY	GREEN OR RED TOP
BILIRUBIN, CONJUGATED		SEE: BILIRUBIN, DIRECT
BILIRUBIN, DIRECT	SAME DAY	GREEN OR RED TOP PROTECT FROM LIGHT
BILIRUBIN, TOTAL	SAME DAY	GREEN OR RED TOP PROTECT FROM LIGHT
BLEEDING TIME	SAME DAY	SEND PATIENT TO LABORATORY
BLOOD TYPE & RH	SAME DAY	PINK OR PURPLE TOP: SEE TYPENEX PROCEDURE BELOW
BLOOD UREA NITROGEN		SEE: BUN
BNP	SAME DAY	GREEN TOP: NT-PRO BNP (IN HOUSE) PURPLE TOP: BNP (REF LAB)
BUN	SAME DAY	GREEN OR RED TOP

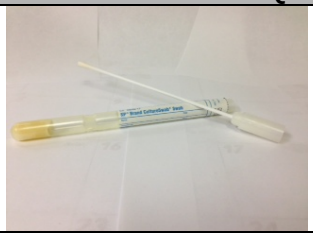
BACK TO TOP

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
CBC	SAME DAY	PURPLE TOP: 24 HRS ROOM TEMP, 36 HRS REFRIGERATED
C-REACTIVE PROTEIN, QUANTITATIVE	R	RED TOP
C-REACTIVE PROTIEN, CARDIAC, HIGH SENS.	R	RED, PURPLE, OR GREEN TOP: SEND IMMEDIATELY AFTER COLLECTION
C. DIFFICILE TOXIN	SAME DAY	STOOL – MINIMUM 2 GRAMS
C.S.F. ANALYSIS	SAME DAY	CSF IN 4 STERILE TUBES IMMEDIATELY TRANSPORT TO THE LABORATORY - DO NOT REFRIGERATE
CA 125	R	RED TOP
CA 15-3	R	RED TOP
CA 19-9	R	RED TOP
CA 27.29	R	RED TOP
CAFFEINE	R	PLAIN RED TOP (NO GEL)
CALCIUM	SAME DAY	GREEN OR RED TOP
CARBAMAZAPINE	SAME DAY	PLAIN RED TOP (NO GEL)
CARBON DIOXIDE	SAME DAY	GREEN OR RED TOP
CCP ANTIBODIES, I_GA, I_GG	R	RED TOP (GEL RECOMMENDED)
CEA - CARCINOEMBRYONIC AG.	R	RED TOP TUBE
CHLAMYDIA CULTURE	R	ENDOCERVICAL OR URETHRAL SWAB COLLECTED WITH CULTURETTE PLACED IN CHLAMYDIA TRANSPORT MEDIA: SEE BACTERIOLOGY SECTION BELOW.
CHLAMYDIA PROBE BY GEN PROBE	R	APTIMA UNISEX SWAB TRANSPORT KIT: 
CHLORIDE, SERUM	SAME DAY	GREEN OR RED TOP
CHOLESTEROL	SAME DAY	GREEN OR RED TOP
CHOLINESTERASE	R	RED AND/OR PURPLE TOP
CHOLINESTERASE, RBC	R	PURPLE TOP
CK		SEE: CPK
CKMB	SAME DAY	GREEN OR RED TOP
CL		SEE: CHLORIDE
CLINITEST, URINE	SAME DAY	RANDOM URINE, REFRIGERATE

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
CLO TEST	1 DAY	BIOPSY IN CLO TEST MEDIA
CLOZAPINE (CLOZARIL)	R	PLAIN RED TOP (NO GEL)
CMV - (CYTOMEGALO-VIRUS ANTIBODIES)	R	RED TOP
CO2		SEE: CARBON DIOXIDE
COAG FACTOR ASSAYS	R	BLUE TOP: 2 ML FOR EACH FACTOR REQUESTED
COMPLEMENT, C3	R	RED TOP
COMPLEMENT, C4	R	RED TOP
COMPLEMENT, TOTAL	R	RED TOP
COMPREHENSIVE METABOLIC PANEL	SAME DAY	GREEN OR RED TOP
COOMBS, DIRECT	SAME DAY	PINK OR PURPLE TOP
COOMBS, INDIRECT	SAME DAY	PINK OR PURPLE TOP: SEE TYPENEX PROCEDURE BELOW
COPPER, SERUM	R	ROYAL BLUE TOP TUBE-NO ANTICOAGULANT 
CORTISOL, A.M.	R	RED TOP - COLLECT AT 8:00 A.M.
CORTISOL, P.M.	R	RED TOP - COLLECT AT 4:00 P.M.
CORTISOL, URINARY FREE	R	USE JUG CONTAINING BORIC ACID (SUPPLIED BY LABCORP)
CPK	SAME DAY	GREEN OR RED TOP
CREATININE CLEARANCE	SAME DAY	24 HOUR URINE - KEEP ON ICE (ALSO NEED GREEN OR RED TOP COLLECTED DURING COLLECTION OF URINE) SEE: PATIENT EDUCATION SERIES
CREATININE	SAME DAY	GREEN OR RED TOP
CREATININE, URINE	SAME DAY	URINE - 10 ML
CROSS MATCH	SAME DAY	PINK OR PURPLE TOP SEE: BLOOD BANK TYPENEX PROCEDURE
CRYPTOSPIRIDIUM, EIA	R	STOOL – 2mL or 2g
CSF CELL COUNT	SAME DAY	CSF - 1 ML
CSF GLUCOSE	SAME DAY	CSF - 1 ML
CSF PROTEIN	SAME DAY	CSF - 1 ML
CULTURE, BLOOD	1 - 5 DAYS	SEE: BACTERIOLOGY SPECIMENS - BLOOD
CULTURE, SPUTUM	1 - 3 DAYS	SEE: BACTERIOLOGY SPECIMENS – SPUTUM

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
CULTURE, STOOL	1 - 3 DAYS	SEE: BACTERIOLOGY SPECIMENS - STOOL
CULTURE, THROAT	1 - 3 DAYS	SEE: BACTERIOLOGY SPECIMENS – THROAT
CULTURE, URINE	1 - 3 DAYS	SEE: BACTERIOLOGY SPECIMENS - URINE
D - DIMER	SAME DAY	GREEN TOP
DEPAKANE	SAME DAY	SEE: VALPROIC ACID
DHEA-SULFATE	R	RED TOP
DIFFERENTIAL WBC COUNT	SAME DAY	PURPLE TOP
DIGOXIN	SAME DAY	GREEN OR RED TOP COLLECT PREDOSE OR AT LEAST 8 HOURS POST DOSE
DILANTIN	SAME DAY	SEE: PHENYTONIN
dsDNA ANTIBODIES	R	RED TOP
DRUG SCREEN - URINE	SAME DAY	URINE - 10 ML
ELECTROLYTES	SAME DAY	GREEN OR RED TOP
ENDOMYSIAL AB IGA	R	RED TOP
EOSINOPHIL COUNT	SAME DAY	PURPLE TOP
EPSTEIN-BARR VIRUS (EBV) ACUTE ANTIBODIES	R	RED TOP
ESR - ERYTROCYTE SEDIMENTATION RATE	SAME DAY	PURPLE TOP STABLE 4 HOURS AT ROOM TEMP STABLE 12 HOURS REFRIGERATED
ESTRADIOL	R	RED TOP
ESTROGEN	R	GREEN OR RED TOP
ETHYL ALCOHOL (ETOH)	SAME DAY	SEE: ALCOHOL, ETHYL
FECAL FAT QUALITATIVE	R	STOOL – 3 GRAMS MINIMUM
FECAL FAT QUANTITAIVE	R	CONTACT LAB FOR SPECIMEN COLLECTION MATERIALS
FECAL LEUCOCYTE STAIN	SAME DAY	STOOL - RANDOM
FERRITIN	SAME DAY	RED TOP
FIBRINOGEN	SAME DAY	BLUE TOP
FLU TEST	SAME DAY	NASAL WASHING OR NASAL/NASOPHARYNGEAL SWAB (GREEN CAP)

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
		
FOLIC ACID	R	RED TOP
FOLIC ACID, RBC	R	2 PINK TOPS- FILLED
FOLLICLE-STIMULATING HORMONE (FSH)	R	RED TOP
FTA-ABS	R	RED TOP
G-6PD	R	2 PURPLE TOPS - FILLED
GASTROCCULT	SAME DAY	EMESIS/GASTRIC ASPIRATE
GENTAMYCIN, PEAK	SAME DAY	GREEN OR RED TOP COLLECT WITHIN 15 MINUTES AFTER A 60 MINUTE INFUSION 30 MINUTES AFTER A 30 MIN. INFUSION
GENTAMYCIN, TROUGH	SAME DAY	GREEN OR RED TOP COLLECT PREDOSE
GGT-GAMMA GLUTAMYL TRANSPEPTIDASE	R	GREEN OR RED TOP
GIARDIA ANTIGEN	R	STOOL – 2 GRAM MINIMUM
GLIADIN AB IGA	R	RED TOP
GLIADIN AB IGG	R	RED TOP
GLUCOSE TOLERANCE	SAME DAY	SEE: SPECIAL PROCEDURES
GLUCOSE, 2 HOUR POST PRANDIAL	SAME DAY	GREEN OR RED TOP
GLUCOSE	SAME DAY	GREEN OR RED TOP
GLUCOSE, URINE	SAME DAY	URINE, RANDOM - 10 ML
GLUTAMIC ACID DECARBOLYLASE (GDA)	R	
GLYCOHEMOGLOBIN		SEE: HEMOGLOBIN A_{1C}
GRAM STAIN	SAME DAY	PREPARED SLIDE OR PRIMARY SPECIMEN
GROUP B CULTURE	1 - 3 DAYS	WHITE CAPPED SWAB –VAGINAL/ANORECTAL AREA

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
		
GROWTH HORMONE	R	RED TOP
H. PYLORI ANTIBODY	SAME DAY	RED TOP
H. PYLORI ANTIGEN	R	STOOL – 2mL or 2g
HCG QUALITATIVE	SAME DAY	RED TOP
HCG - QUANTITATIVE	SAME DAY	GREEN OR RED TOP
HDL CHOLESTEROL	SAME DAY	GREEN OR RED TOP
HEMATOCRIT	SAME DAY	PURPLE TOP
HEMOGLOBIN ELECTROPHORESIS	R	PURPLE TOP
HEMOGLOBIN	SAME DAY	PURPLE TOP
HEMOGLOBIN A_{1C}	SAME DAY	PURPLE TOP
HEPATIC PANEL	SAME DAY	GREEN OR RED TOP
HEPATITIS A ANTIBODY	R	RED OR PURPLE TOP
HEPATITIS B SURFACE ANTIGEN - HBSAg	R	RED TOP
HEPATITIS B CORE ANTIBODY, TOTAL	R	RED OR PURPLE TOP
HEPATITIS B CORE ANTIBODY, I_GM	R	RED OR PURPLE TOP
HEPATITIS B SURFACE ANTIBODY - HBSAb	R	RED TOP
HEPATITIS C VIRUS ANTIBODY	R	RED OR PURPLE TOP
HCV RT-PCR, QUANTITATIVE	R	PURPLE TOP
HEPATITIS PANEL	R	RED TOP
HIV 1,2	R	RED TOP
HIV-RAPID (POST EXPOSURE ONLY)	SAME DAY	FINGERSTICK OR PURPLE TOP
I_gA	R	RED TOP
I_gE	R	RED TOP
I_gG	R	RED TOP
I_gM	R	RED TOP

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
IMMUNOGLOBULINS, $I_gA+I_gG+I_gM$	R	RED TOP
INDIA INK PREP	R	CSF - 1 ML
INSULIN	R	RED TOP
IRON	SAME DAY	RED TOP
IRON BINDING CAPACITY	SAME DAY	RED TOP
K^+		SEE: POTASSIUM
KEPPRA		SEE: LEVTIRACETAM
KOH PREP	R	SWAB OR PRIMARY SPECIMEN IN KOH
LEUKOCYTE ALKALINE PHOSPHATASE STAIN (LAP)	R	GREEN TOP
LUTEINIZING HORMONE (LH)	R	RED TOP
LD		SEE: LDH
LDH	SAME DAY	GREEN OR RED TOP
LDH ELECTROPHORESIS	R	RED TOP
LDL	SAME DAY	GREEN OR RED TOP PATIENT MUST BE FASTING
LEAD	R	ROYAL BLUE – WHOLE BLOOD WITH ANTICOAGULANT 
LEVETIRACETAM (KEPPRA)	R	PLAIN RED TOP (NO GEL)
LH - (LEUTINIZING HORMONE)	R	RED TOP
LIDOCAINE	R	PLAIN RED TOP (NO GEL)
LIPASE	SAME DAY	GREEN OR RED TOP
LIPID PROFILE	SAME DAY	GREEN OR RED TOP PATIENT MUST BE FASTING
LITHIUM	SAME DAY	PLAIN RED TOP (NO GEL) COLLECT PREDOSE

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
LIVER PROFILE		See: HEPATIC PANEL
LUPUS PANEL	R	RED TOP
MAGNESIUM	SAME DAY	GREEN OR RED TOP
MALARIA PREP	R	PURPLE TOP - 5 ML AND 2 THIN AND THICK SMEARS
METHYLMALONIC ACID	R	RED TOP
MYCOPLASMA IGG	R	RED TOP
MYCOPLASMA IGM	R	RED TOP
MITOCHONDRIAL ANTIBODY, M2	R	RED TOP
MONOSPOT	SAME DAY	GREEN OR RED TOP
MUMPS ANTIBODIES, I_gG	R	RED TOP
Na^+		SEE: SODIUM
O'SULLIVAN SCREEN	SAME DAY	GREEN OR RED TOP SEE: PATIENT EDUCATION SERIES
OCCULT BLOOD, STOOL	SAME DAY	STOOL SEE: PATIENT EDUCATION SERIES
OCP - (STOOL FOR OVA, CYSTS & PARASITES)	R	STOOL - 10 GRAMS - FRESH, RANDOM,
OSMOLALITY, SERUM	R	RED TOP
OSMOLALTIY, URINE	R	URINE - 25 ML – RANDOM
OXCARBAZEPINE (TILEPTAL)	R	PLAIN RED TOP (NO GEL) OR PURPLE TOP
PANCREASTATIN	R	COLLECT IN "Z" PRESERVATIVE TUBE CONTACT LAB FOR INSTRUCTIONS
PAP SMEAR	R	FIXED SMEAR
PHENOBARBITOL	R	PLAIN RED TOP (NO GEL) COLLECT PREDOSE
PHENYTOIN	SAME DAY	GREEN OR RED TOP COLLECT PREDOSE
PHOSPHORUS	SAME DAY	GREEN OR RED TOP
PIN WORM PREP	SAME DAY	PINWORM SLIDE
PKU	R	CAPILLARY BLOOD ON PKU CARD
PLATELET COUNT	SAME DAY	PURPLE TOP
POTASSIUM	SAME DAY	GREEN OR RED TOP: AVOID HEMOLYSIS, PROLONGED TOURNIQUET APPLICATION, AND EXCESSIVE FIST CLENCHING
PREALBUMIN	R	RED TOP

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
PRIMIDONE	R	PLAIN RED TOP
PROCAINAMIDE	R	PLAIN RED TOP
PROCALCITONIN	R	RED TOP
PROGESTERONE	R	RED TOP
PROGRAF		SEE: TACROLIMUS
PROINSULIN	R	RED TOP
PROLACTIN	R	RED TOP
PROTEIN ELECTROPHORESIS, SERUM OR URINE		SEE: SERUM PROTEIN ELECTROPHORESIS SEE: URINE PROTEIN ELECTROPHORESIS
PROTEIN, TOTAL	SAME DAY	GREEN OR RED TOP
PROTEIN, URINE	SAME DAY	URINE - 10 ML - COLLECT 24 HOUR URINE
PSA - (PROSTATIC SPECIFIC ANTIGEN)	SAME DAY	GREEN OR RED TOP
PT - PROTHROMBIN TIME	SAME DAY	BLUE TOP: TUBE MUST BE FILLED TO THE BLACK TRIANGLE INDICATOR. SPECIMENS BELOW THE INDICATOR LEVEL WILL BE REJECTED. CENTRIFUGE AND REMOVE PLASMA FROM CELLS IF POSSIBLE. DO NOT POUR MULIPLE TUBES TOGETHER.
PTH , INTACT	R	PURPLE TOP
PTH, PLUS CALCIUM		RED AND PURPLE TOP REQUIRED
PTT - PARTIAL THROMBOPLASTIN TIME	SAME DAY	BLUE TOP: TUBE MUST BE FILLED TO THE BLACK TRIANGLE INDICATOR. SPECIMENS BELOW THE INDICATOR LEVEL WILL BE REJECTED. CENTRIFUGE AND REMOVE PLASMA FROM CELLS IF POSSIBLE. DO NOT POUR MULIPLE TUBES TOGETHER.
QUAD SCREEN, (AFP-TETRA)	R	2 FULL RED GEL SEPARATOR TUBES – MATERNAL INFORMATION SHEET REQUIRED AS WELL
QUANTITATIVE HCG		SEE: HCG - QUANTITATIVE
QUINIDINE	R	PLAIN RED TOP (NO GEL)
RAPAMUNE		SEE: SIROLIMUS
RHEUMATOID ARTHRITIS (RA) FACTOR	R	RED TOP
RENAL PANEL	SAME DAY	GREEN OR RED TOP

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
RENIN	R	PURPLE TOP
RETICULOCYTE COUNT	SAME DAY	PURPLE TOP
RETICULIN AGA AB	R	RED TOP
ROTAVIRUS	SAME DAY	STOOL - 2 ML
RPR	1 - 3 DAYS	RED OR PURPLE TOP
RSV	SAME DAY	NASOPHARYNGEAL WASHINGS OR GREEN CAPPED SWAB
RUBELLA TITER, IGG ANTIBODIES	R	RED TOP
RUBEOLA ANTIBODIES, I_gG	R	RED TOP
SALICYLATE	SAME DAY	GREEN OR RED TOP: COLLECT 1-3 HOURS POST DOSE
SED RATE	SAME DAY	SEE: ESR
SERUM PROTEIN ELECTROPHORESIS (SEP)	R	RED TOP
SICKLE CELL SCREEN	R	PURPLE TOP
SIROLIMUS (RAPAMUNE)	R	PURPLE TOP
SODIUM	SAME DAY	GREEN OR RED TOP
SPECIFIC GRAVITY URINE	SAME DAY	URINE - 12 ML
SPERM COUNT	N/A	Not performed at AGH lab.
SPINAL FLUID		See: CSF ANALYSIS
STOOL REDUCING SUBST	SAME DAY	STOOL - 2 GRAMS - PROCESS WITHIN 1 HOUR AFTER COLLECTION
SWEAT TEST	N/A	Not performed at AGH lab
T_3, FREE	R	RED TOP
T_3, TOTAL	R	RED TOP
T UPTAKE	SAME DAY	GREEN OR RED TOP
T_4	SAME DAY	GREEN OR RED TOP
T_4, FREE	SAME DAY	GREEN OR RED TOP
T_7 (TU+T_4)	SAME DAY	GREEN OR RED TOP
TACROLIMUS (PROGRAF)	R	PURPLE OR GREEN TOP
TEGRETOL		SEE: CARBAMAZAPINE
TESTOSTERONE, TOTAL	R	RED TOP
TESTOSTERONE, FREE	R	RED TOP
THEOPHYLLINE	R	PLAIN RED TOP (NO GEL)

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
		COLLECT IV DOSE - 30 MIN. AFTER COMPLETED ORAL DOSE - 2 HOURS POST DOSE
THYROGLOBULIN ANTIBODY	R	RED TOP
THYROGLOBULIN QUANTITATIVE	R	RED TOP
TIBC		SEE: IRON BINDING CAPACITY
TTG IGA (TISSUE TRANSGLUTAMINASE - IGA)	R	RED TOP
TTG IGG (TISSUE TRANSGLUTAMINASE – IGG)	R	RED TOP
TRANSFERRIN SATURATION	SAME DAY	RED TOP
TRIAGE DRUG SCREEN		SEE: DRUG SCREEN (Urine)
TRICHOMONAS PREP	SAME DAY	VAGINAL SWAB PLACED IN A SMALL AMOUNT OF SALINE
TRILEPTAL		SEE: OXCARBAZEPINE
TRIGLYCERIDE	SAME DAY	GREEN OR RED TOP: PATIENT MUST BE FASTING
THYROID PEROXIDASE (TPO) ANTIBODIES	R	RED TOP
THYROID STIMULATING HORMONE (TSH)	SAME DAY	GREEN OR RED TOP
TYPE AND RH	SAME DAY	PINK OR PURPLE TOP
UCG	SAME DAY	URINE - 12 ML, RANDOM
URIC ACID	SAME DAY	GREEN OR RED TOP
URINALYSIS	SAME DAY	URINE - 12 ML STABLE 1 HOUR AT ROOM TEMP STABLE 24 HOURS REFRIGERATED
URINE PROTEIN ELECTROPHORESIS	R	URINE - 100 ML ALIQUOT OF A 24 HOUR URINE COLLECTION OR 10 ML RANDOM URIN
VALPROIC ACID	SAME DAY	GREEN OR RED TOP: COLLECT PREDOSE
VANCOMYCIN, PEAK	SAME DAY	GREEN OR RED TOP: COLLECT 2 HOURS AFTER THE COMPLETION OF A 60 MINUTE I.V.
VANCOMYCIN,	SAME DAY	GREEN OR RED TOP:

TEST NAME	RESULTS AVAILABLE	SPECIMEN REQUIREMENTS
TROUGH		COLLECT PREDOSE
VARICELLA-ZOSTER VIRUS (VZV), I_gG	R	RED TOP
VDRL, CSF	R	CSF - 1 ML
VDRL, SERUM W/TITER	R	RED TOP
VITAMIN A	R	RED TOP (PROTECT FROM LIGHT) PATIENT MUST BE FASTING 8 HRS- CONTACT LAB FOR MORE INFORMATION.
VITAMIN B_1 (THIAMINE)	R	PURPLE TOP (PROTECT FROM LIGHT)
VITAMIN B_{12}	R	RED TOP PATIENT FASTING RECOMMENDED
VITAMIN D, 25-OH	R	RED TOP
VITAMIN E	R	RED TOP (PROTECT FROM LIGHT)
WBC	SAME DAY	PURPLE TOP
WBC DIFFERENTIAL		See: DIFFERENTIAL WBC COUNT
WSR		See: ESR
ZINC	R	ROYAL BLUE TOP (EDTA) 

TABLE INCLUDES ALL TESTS PERFORMED AT ABBEVILLE GENERAL AND COMMONLY ORDERED REFERRED PROCEDURES. FOR INFORMATION ON PROCEDURES NOT LISTED CALL 898-6296 FOR ADDITIONAL SPECIMEN REQUIREMENTS

Revised October 2014

IV. BLOOD BANK TYPENEX PROCEDURE

When drawing blood for crossmatching, the following procedure must be followed:

1. Verify the patient's identification comparing the identification on the requisition with the information on patient's armband and asking patient to state their name and date of birth.

2. On the label of the typenex band: Write the patient's name, hospital number, date and time of collection, patient's date of birth, and the initials of the phlebotomist.
3. Draw one pink top tube.
4. Remove the completed self-sticking label and press onto the pink top tube.
5. Place the typenex band on the patient's wrist or ankle with the numbers and information side out. Firmly close the clip with the band between the front and rear guides. The band becomes tamperproof when the clip is properly closed.
6. Tear or cut the remaining numbers from typenex band.
7. Send blood and remaining typenex numbers to the laboratory.

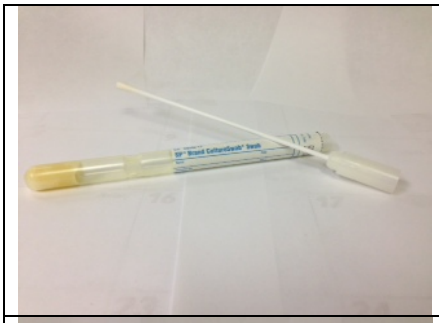
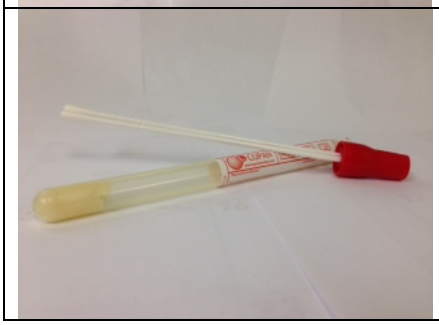
THE TYPENEX BAND MUST BE APPLIED AT THE TIME THE BLOOD IS COLLECTED

V. BACTERIOLOGY SPECIMEN COLLECTION PROCEDURES

A. AEROBIC CULTURES

1. **THROAT SWABS -** Using a tongue blade, depress the tongue enough to be able to visualize the back of the throat. Using a Culturette swab, swab the back of the throat and the tonsillar area being careful not to touch the tongue or mouth. Replace swab

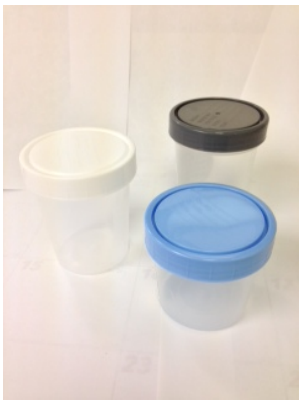
into carrier. Specimens can be kept at room temperature until processed. **See diagram below for acceptable throat swabs:**

	WHITE CAPPED SWABS
	RED CAPPED (DOUBLE) SWABS **PREFERRED** 1ST SWAB USED FOR OFFSITE RAPID TESTING 2ND SWAB SENT TO AGH LAB FOR CONFIRMATORY CULTURE

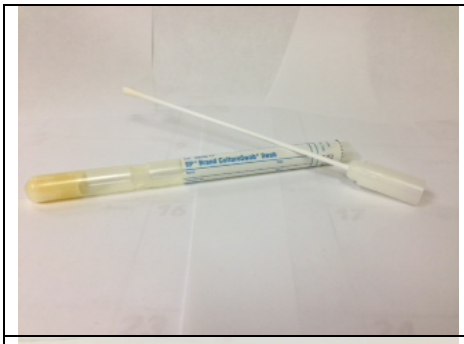
2. **SPUTUM -** Have the patient remove excess saliva from the mouth then cough up sputum from deep within the chest. Collect the sample into a sterile specimen cup. Transport immediately to the laboratory. (Note: refer to the patient education series for detailed information for the patient.)

3. **URINE -** Urines should be collected into sterile specimen cups by one of the following methods: a) Clean-catch mid-stream b) Catheterized c) Foley catheter or d) Suprapubic aspiration.

   Refrigerate all urine specimens immediately after collection. URINES MUST BE PROCESSED WITHIN 24 HRS OF COLLECTION. Urine collection patient education materials are available upon request.



4. **VAGINAL/CERVICAL/URETHRAL -** Specimens should be collected using a culturette swab (see below). If culture is for GC, transport the specimen immediately to the laboratory. **Do not refrigerate swabs after collection.**

	**WHITE CAPPED SWABS:** ***GC CULTURE, GROUP B STREP TESTING***
	**APTIMA UNISEX SWABS:** ***(AVAILABLE FROM AGH LAB)*** ***FOR GC/CHLAMYDIA GENPROBE (DNA) TESTING***

5. **STOOL -** Submit fresh stool in a clean, well sealed container. A swab smeared through a stool specimen or a rectal swab is

acceptable if collected with a transport device. **Do not refrigerate stool or swabs after collection.**

6. **CEREBROSPINAL FLUID (CSF) -** After aseptic collection into a sterile tube, send immediately to the laboratory. **Request as "STAT".**

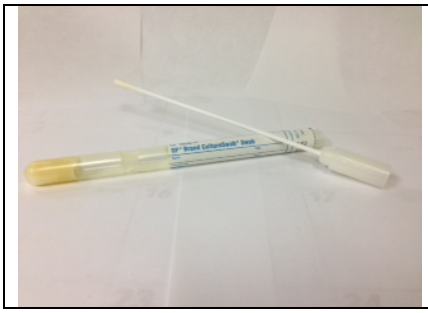
Do not refrigerate CSF after collection

7. **SYNOVIAL (JOINT) FLUIDS -** Joint aspiration should be performed by a physician under strict sterile conditions. For routine exam, the fluid is obtained by syringe. Some of the fluid collected should be transferred into a sterile tube for microbiology studies, a green top tube for cell counts, and a red top tube for chemistries. (***It is important that the specimen be added to the green top tube soon after collection in order to prevent clot formation.*** *For culture,* submit collected specimens as a swab, in a syringe **(*REMOVE THE NEEDLE*),** or in a sterile container. Label the request with the source of the specimen (i.e. right Knee fluid). Specimens should be plated within four hours. **Do not refrigerate specimens.**

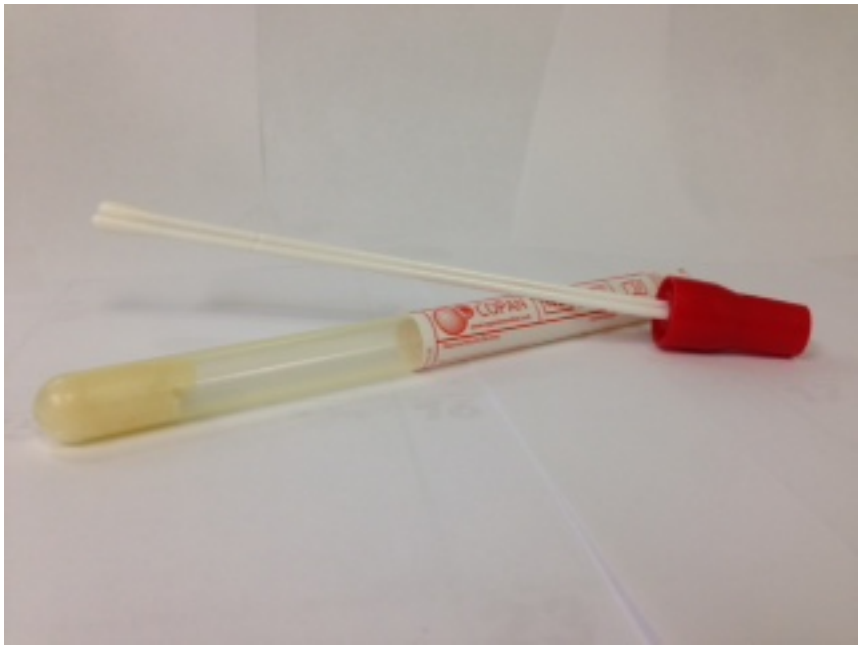
8. **BLOOD CULTURES -** Aseptically draw blood into blood culture bottles. Two bottles per set is required. **Do not refrigerate blood culture bottles after collection.**

9. **WOUNDS/ABSCESSES/EXUDATES -** Specimens may be submitted as a swab, or in a syringe **(*REMOVE THE NEEDLE*).**

Include on the request the source of the specimen. **Do not refrigerate specimens after collection. GRAM STAINS PERFORMED ONLY IF ORDERED BY PHYSICIAN.**

	**WHITE CAPPED SWAB:** *WOUNDS/ABSCESSES/EXUDATES*

10. **MRSA SCREENING (NARES ONLY) –** A DOUBLE culture swab is used to swab each nasal opening. Use both swabs at once to swab each nostril. Testing performed by PCR technology (Cepheid GeneXpert). Results obtained within an hour. Note: MRSA is ONLY screened on the nares. Tissue or other specimen types will be rejected. Routine wound culture will detect MRSA if present in tissue.



RED CAPPED DOUBLE SWAB FOR MRSA TESTING
-AVAILABLE AT AGH LAB UPON REQUEST

11. **EYE/EAR/SINUS CULTURES–** Swabbed specimens may be submitted for culture. White and green capped swabs are acceptable for eye, ear, and sinus specimens.
    -Eye specimens may include swabs of conjunctiva, eye lid, and corneal scrapings, as well as chamber fluids. Please specify source.
    -Ear specimens may be of both internal and external origin. Please specify.
    -Sinus specimens may include swabs of nares as well as the nasopharyngeal area. Note: MRSA screening here at AGH is not the same as a sinus culture. MRSA screening must be ordered separately and collected with a Red Capped Double swab.

B. ANAEROBIC CULTURES -

1. Proper collection and transport of clinical specimens is of primary importance in recovery of anaerobes. The sample should be collected from the site of the infection and precautions must be taken to exclude contaminants and aeration of the sample. Specimens must be placed under anaerobic conditions as soon as collected for transport to the laboratory since some anaerobes are oxygen toxic and will die rapidly in an aerobic environment. **Samples must <u>not</u> be refrigerated, since chilling is detrimental to some anaerobes.**

PINK CAPPED SWAB: *FOR ANAEROBIC CULTURE* *-CONTAINS GEL*	

2. **Guidelines for Diagnostic Anaerobic Cultures:**

A. Specimens **ACCEPTABLE** for anaerobic culture:

1. **Body fluids -** Asitic, Cerebrospinal, Pericardial, Pleural, Prostatic, Seminal, Synovial, Thoracentisis, Bile, Bone Marrow transudate.
2. **Exudates -** Aspirated pus from wounds or abscess, or if "sulfur granules" are present.
3. **Genital specimens:** 1) Female - material from placenta, glands, culdocentesis, endometrium, fallopian tube. 2) Male - prostatic or seminal fluids.
4. **Surgical specimens -** Material from gallbladder, etc.
5. **Respiratory -** Transtracheal aspirate
6. **Urine -** Suprapubic aspiration

B. Specimens **NOT ACCEPTABLE** for anaerobic culture:

1. **Exudate -** Pus from superficial wounds or abscesses.
2. **Genital specimens -** 1) Female - Vaginal, cervical, or urethral swabs. 2) Male - Urethral swabs
3. **Lesions -** Materials form burns, cysts, or ulcers.
4. **Respiratory -** Throat, tonsillar, nasal, nasopharyngeal, or ear swabs; bronchial washings, expectorated sputum.
5. **Gastrointestinal -** Stool or rectal swab
6. **Urine -** Voided or catheterized urine.

*Any commercially available **anaerobic** collection and transport device will be accepted. These swabs are available from the lab upon request.*

VI. VIROLOGY SPECIMEN COLLECTION PROCEDURES

A. **INFLUENZA TESTING –** Use freshly collected specimens for best test performance. Inadequate specimen collection or improper sample handling/transport may yield a false-negative result.

The following sample types are acceptable for Flu testing:

1. **Nasal Wash/Aspirate:** Collect nasal washes in a clean standard container. Test as soon as possible. Washes can be held at 2-8 degrees centigrade for up to 24 hours before testing. (Note: Nasal washing are generally collected by trained cardiopulmonary personnel. Do not attempt specimen collection by this method unless you have been trained in this method of sample collection.)

2. **Nasopharyngeal and Nasal Swabs:** Only sterile cotton, rayon, foam or polyester flexible swabs are acceptable. Do not use calcium alginate swabs.

NASOPHARYNGEAL SWAB (GREEN CAP)

a. Nasopharyngeal - Insert nasopharyngeal swab beneath the inferior turbinate of either nares (keep the swab near the septum and floor of the nose until entering the nasopharynx) and rub and roll against the mucosal surface. Remove swab taking care not to injure the nasal mucous membrane, and insert swab into transport system. SPECIMEN MUST BE ELUTED WITHIN 1 HR OF COLLECTION; SEND TO LAB IMMEDIATELY AFTER COLLECTION.

b. Nasal – Insert sterile swab into either nares and carefully rotate the swab. SEND TO LAB IMMEDIATELY AFTER COLLECTION.

Transport media: The following common media can be used to transport the samples – Amies Media, Saline, Stuart's Media (Note: Culturette swabs used at Abbeville General Hospital use Stuart's Media.)

B. **RSV TESTING –** Use freshly collected specimens for best test performance. Inadequate specimen collection or improper sample handling/transport may yield a false-negative result.

The following sample types are acceptable for RSV testing:

1. **Nasal Wash/Aspirate:** Collect nasal washes in a clean standard container. Test as soon as possible. Washes can be held at 2-8 degrees centigrade for up to 24 hours before testing (4 HRS ROOM TEMP). (Note: Nasal washing are generally collected by trained cardiopulmonary personnel. Do not attempt specimen collection by this method unless you have been trained in this method of sample collection.)

2. **Nasopharyngeal Swabs:** Only sterile cotton, rayon, foam or polyester flexible swabs are acceptable. Do not use calcium alginate swabs.

Nasopharyngeal - Insert nasopharyngeal swab beneath the inferior turbinate of either nares (keep the swab near the septum and floor of the nose until entering the nasopharynx) and rub and roll against the mucosal surface. Remove swab taking care not to injure the nasal mucous membrane, and insert swab into transport system. SEND TO LAB IMMEDIATELY AFTER COLLECTION.

3. Nasal – Insert sterile swab into either nares and carefully rotate the swab. Place the sample into the transport system and keep at room temperature for up to 4 hours or refrigerate up to 48 hours.

Transport medial: The following common media can be used to transport the samples – Amies Media, Saline, Stuart's Media (Note: Culturette swabs used at Abbeville General Hospital use Stuart's Media.)

VII. PARASITOLOGY SPECIMEN COLLECTION PROCEDURES

A. **Stool for OCP -** Collect specimen in a clean, well sealed container and submit to the laboratory as soon as possible. If storage for a short time is required (2-4 hours), place the specimen in the refrigerator.

B. **Gross Specimens for Identification** -
a) Worms should be submitted, if possible in 10% formalin.
b) Insects should be submitted in a clean container without preservatives.

VIII. OTHER SPECIMEN COLLECTION PROCEDURES

1. Virology - When viral antibody studies are requested, both acute and convalescent specimens should be submitted.

Contact the laboratory for viral culture procedures.

2. Amniotic fluid - Fluid should be sent immediately to the laboratory in a clean tube shielded from light.

3. SYNOVIAL (JOINT) FLUIDS - Joint aspiration should be performed by a physician under strict sterile conditions. For routine exam, the fluid is obtained by syringe. Some of the fluid collected should be transferred into a sterile tube for microbiology studies, a green top tube for cell counts, and a red top tube for chemistries. (***It is important that the***

specimen be added to the green top tube soon after collection in order to prevent clot formation. *For culture,* submit collected specimens as a swab, in a syringe **(*REMOVE THE NEEDLE*),** or in a sterile container. Label the request with the source of the specimen (i.e. right Knee fluid). Specimens should be plated within four hours. **Do not refrigerate specimens.**

4. **Pleural, Pericardial, & Peritoneal fluid** - Obtain fluid by suction aspiration in a sterile trap or with a syringe. Transfer an aliquot into a green top tube as soon as possible. (***It is important that the specimen be added to a green top tube soon after collection in order to prevent clot formation. Cell counts cannot be performed on clotted samples.)*** Place an aliquot into a red top tube for chemistry procedures and an aliquot into a sterile tube for cultures.

5. **Chlamydia / GC swabs for Gen-Probe**

a. **Endocervical swab specimens**

1. Remove excess mucus from the cervical os and surrounding mucosa using the cleaning swab (white shaft swab in the package with red printing). Discard this swab.

   Note: To remove excess mucus from the cervical os, a large-tipped swab (not provided) may be used.
2. Insert the specimen collection swab (blue shaft swab in the package with the green printing) into the endocervical canal.
3. Gently rotate the swab clockwise for 10 to 30 seconds in the endocervical canal to ensure adequate sampling.

4. Withdraw the swab carefully; avoid any contact with the vaginal mucosa.
5. Remove the cap from the swab specimen transport tube and immediately place the specimen collection swab into the transport tube.
6. Carefully break the swab shaft against the side of the tube at the score-line and discard the top portion of the swab shaft; use care to avoid splashing of contents.
7. Re-cap the swab specimen transport tube tightly.

b. Male urethral swab specimens

The patient should not have urinated for at least 1 hour prior to sample collection.

1. Insert the specimen collection swab (blue shaft swab in the package with the green printing) 2 to 4 cm into the urethra.
2. Gently rotate the swab clockwise for 2 to 3 seconds in the urethra to ensure adequate sampling.
3. Withdraw the swab carefully.
4. Remove the cap from the swab specimen transport tube and immediately place the specimen collection swab into the transport tube.
5. Carefully break the swab shaft against the side of the tube at the score-line and discard the top portion of the swab shaft; use care to avoid splashing of contents.
6. Re-cap the swab specimen transport tube tightly.

Specimen Transport and Storage

After collection, transport and store the swab in the swab specimen transport tube at 2°C to 30°C until tested. Specimens must be assayed with the APTIMA assays within 60 days of collection. If longer storage is needed, refer to the appropriate APTIMA assay package insert.