Wake Forest® Baptist Health	**DOCUMENT TYPE:** ☒ Procedure	**ORIGIN DATE IN TITLE 21** 6/9/20
CLIA Lab Director: Dr. Gregory Pomper	**LAB DEPARTMENT:** Central Processing Lab	**CONTACT:** Central Processing Lab

APPLICABLE LABORATORY(S)):

☒ North Carolina Baptist Hospital (NCBH)
☐ Lexington Medical Center (LMC)
☐ Davie Medical Center (DMC)
☐ Wilkes Medical Center (WMC)
☐ High Point Medical Center (HPMC)
☐ Westchester
☐ Clemmons

PROCEDURE STATEMENT

This procedure provides laboratory testing personnel with guidelines for processing body fluid samples sent to the laboratory for testing.

SCOPE

i. Procedure Owner/Implementer: Central Processing Lab
ii. Procedure Prepared by: Central Processing Management
iii. Who Performs Procedure: Central Processing Team Members

DEFINITIONS

A. Procedure: A process or method for accomplishing a specific task or objective.
B. WFBH Lab System: Wake Forest Baptist Lab System is a health system that includes Wake Forest Baptist Medical Center and all affiliated organizations including Wake Forest University Health Sciences (WFUHS), North Carolina Baptist Hospital (NCBH), Lexington Medical Center (LMC), Davie Medical Center (DMC), Wilkes Medical Center (WMC), High Point Medical Center (HPMC), Lab at Westchester and Lab at Clemmons.
C. Vitreous Fluid: Fluid in the eye located between the lens and retina. Specimen obtained from the eye via a syringe inserted into the eye. Limited fluid can be submitted.
D. Synovial Fluid: Viscous fluid found in the cavities of the joints (such as the knee).
E. BAL (Bronchoalveolar Lavage): Fluid collected when a bronchoscope is passed through the mouth or nose into airway in the lungs with an appropriate amount of fluid that is introduced and then collected for testing.
F. CSF (Cerebrospinal Fluid): Clear, colorless body fluid found in the brain and spinal cord.
G. Pleural: Fluid found between the layers of membranes that line the pleura and surround the lungs (pleural cavity/space).

H. Peritoneal: Fluid found in the peritoneal cavity (space between the layers of tissue that line the belly's wall and abdominal organs).
I. Pericardial: Fluid surrounding the heart.
J. Ascites: Fluid in the peritoneal cavity.

POLICY GUIDELINES

A. Specimen Orders Accessioning

1. Fluid specimens are delivered to the laboratory. Verify the specimens are labeled with two unique identifiers.

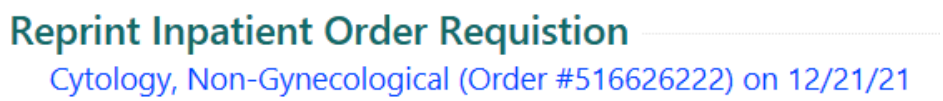
2. Determine the fluid specimen type:
a) Body Fluid: Peritoneal, Pleural, Ascites, Pericardial, Vitreous, etc.
b) Bronchoalveolar Lavage (BAL)
c) Cerebrospinal Fluid (CSF)
d) Synovial Fluid

3. Obtain and begin documentation on the Fluid Specimen Checklist (Attachment A).

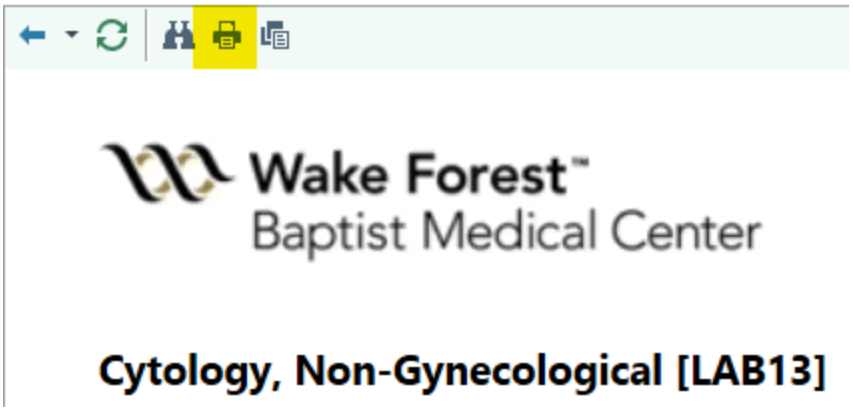
4. Look up the patient's orders in Chart Review – Labs tab:
a) Open Specimen Inquiry by patient.
b) Click on Chart Review tab
c) Click on Labs tab within Chart Review window

5. Determine if a cytology order has been placed in Labs tab of Chart Review. Look for: Cytology, Non-Gynecological. If a cytology requisition is not in the sample bag, print a requisition from Beaker:

a) Click on the Cytology, Non-Gynecological order. In the side pane, scroll to the section "Reprint Inpatient Order Requisition."
b) Click the blue hyperlink to the requisition.



c) Click the printer icon in the window to print the requisition.



6. Verify which clinical lab body fluid orders are associated with the specimen.
   a) If the same test is ordered multiple times, click on the order and scroll to the Comment section. Determine if the order is entered for your current specimen, or if it is for a different fluid specimen type or site.
   b) Review all Unlisted Lab orders for tests on the body fluid.
   c) Document on the Fluid Specimen Checklist which orders are present for the fluid.

7. Collect orders in Order Inquiry if not already accessioned (do not collect Cytology order), or scan Beaker labels to receive orders. Receive chemistry, hematology, and sendouts orders.

8. Add a Lab Comment to received samples:
   a) If cytology orders were placed, enter “Sample sent to Cytology” comment using smart phrase “.cyto”
   b) If there are no cytology orders, enter “No Cytology Order” comment using smart phrase “.nocyto”

8. Place all labels in bag with specimen(s).

B. Specimen Aliquoting and Distribution

1. For specimens that require aliquoting, label the appropriate aliquot tube. Verify identifiers match on specimen and aliquot. Initial each aliquot label. Perform aliquoting in the biosafety cabinet using sterile pipets.

2. Chemistry tests: aliquot into plain urine chemistry tube, minimum volume 0.5 mL.

3. Hematology tests: aliquot into plain urine chemistry tube, minimum volume 0.5 mL.

4. Sendout tests: aliquot into tubes provided by sendouts bench. Minimum volumes are listed in Attachment D.
   a) See Section C: Freeze and Hold Specimens for handling of Freeze and Hold orders.

5. Microbiology tests: deliver labels with sample in the original container once other aliquots have been poured off.

6. Cytology tests: Original container preferred. Urine cup may also be used. A minimum volume of 0.5mL but prefer as much as possible. Keep requisition and/or cytology label with the sample.
a) Place specimens in the room temperature Cytology bin, or after hours, in the Cytology bin in the walk-in refrigerator.

7. If there is insufficient volume for all tests ordered, contact the ordering provider for priority of testing. Document on the Fluid Specimen Checklist the order of testing and provider who authorized it.

8. Retain any unused fluid sample in the spin refrigerator extra rack or hold bin.
a) Order an Extra Body Fluid in Beaker. Label the sample. Store in the extra rack or hold bin of the Spin refrigerator.

9. Deliver labeled aliquots or samples to the testing areas. Document time delivered on the Fluid Specimen Checklist.

10. Sendouts will write “SO” on the tube and deliver to the Spin bench if the sample requires centrifugation.

C. Freeze and Hold Specimens

1. Samples ordered for Freeze and Hold will arrive in the lab as an Unlisted Lab (RTEST) with the order comment to Freeze and Hold remaining sample.

2. Receive/scan in the Unlisted Lab accession.

3. If enough fluid remains after aliquoting all tests, aliquot additional sample for the Freeze and Hold in a plain urine chemistry tube. Fill tube roughly halfway full to allow fluid to expand when frozen. Verify identifiers and initial the aliquot label.

4. Place labeled aliquot tube in the Sendouts rack. Sendouts will answer the Unlisted Lab (RTEST) and order an Extra Body Fluid. Sendouts will write “freeze and hold” on the Extra Body Fluid label and place the sample on the accessioning turntable.

5. Open Container Storage in Beaker. Open the current Fluid Rack (listed on the dry erase board in accessioning):
a) WC CP Fluid Rack 1
b) WC CP Fluid Rack 2
c) WC CP Fluid Rack 3

6. Select the next available slot in the rack. Scan the Extra Body Fluid label that came from Sendouts. Write the Rack and slot number on the tube. Click the “X” button on Container Storage to exit.

7. Take the sample to the freezer and physically store the sample in the slot listed on the tube.

D. Locating Fluid Specimens for Add-Ons

1. Receive a call or inquiry about a fluid.

2. Open Specimen Inquiry by Patient for the patient in question.

3. Determine the date the fluid was sent. Check for fluid testing performed on that date.

4. If an Extra Body Fluid was created, click on that accession to determine if it is stored in a freezer rack (as a Freeze and Hold).

5. Locations to look for the fluid sample:
   a) Walk-in refrigerator or Spin refrigerator in that date's extra rack
   b) Sendouts rack or refrigerator (Sendouts racks are also in walk-in refrigerator)
   c) Micro refrigerator
   d) Hematology (if a cell count was done)
   e) Cytology

REFERENCES

None

RELATED PROCEDURES/POLICIES

None

ATTACHMENTS/LINKED DOCUMENTS

Attachment A: Fluid Specimen Checklist
Attachment B: Labeling of Cerebrospinal Fluid
Attachment C: Handling Vitreous Fluids
Attachment D: Fluid Specimen Test Reference

REVISION DATES: REVIEW CHANGE SUMMARY AS REPRESENTED IN TITLE 21.

Name/MRN: _____

(Or place small taglet)

Fluid Type: _____

Date/Time Received in Central Processing: _____

Check orders in Beaker: _____(Initial)

Tests are present for which labs?

_____Cytology *(designate in computer with either cyto sent/not sent)*

_____Microbiology _____Chemistry

_____Hematology _____ Flow

_____ Send outs _____ Misc Freeze/Hold

Is there enough to aliquot? _____ Yes _____ No

YES – aliquot, label, initial, deliver to sections.

NO - (not enough to aliquot)

1. Call physician _____(name)
2. List priority of testing:

3. Pass the priority to the section(s). (make a copy of this form for the section)

   Note: Micro usually needs the sample first before other testing is done.
   Print, receive labels for other areas. Notify areas that tests may need to be cancelled.

Date/Time Delivered To:

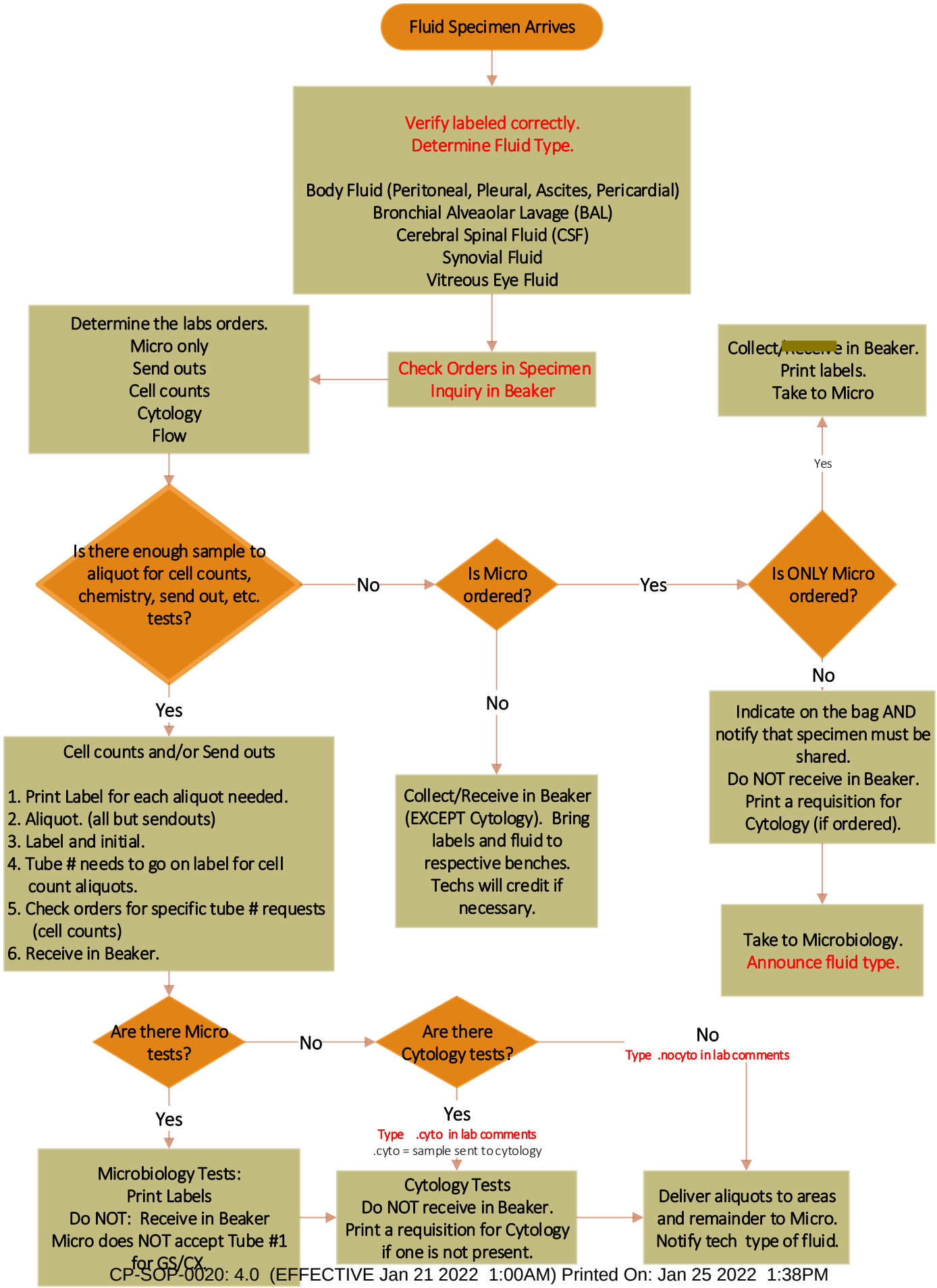
Micro _____ (NOTIFY Tech type of fluid)

Cytology (circle one: RT or Fridge) _____
RT = Room Temperature bin

Chemistry (Spin) _____

Hematology _____

Sendouts_____


Fluid Specimen Arrives
Verify labeled correctly.
Determine Fluid Type.
Body Fluid (Peritoneal, Pleural, Ascites, Pericardial)
Bronchial Alveaolar Lavage (BAL)
Cerebral Spinal Fluid (CSF)
Synovial Fluid
Vitreous Eye Fluid
Check Orders in Specimen Inquiry in Beaker
Determine the labs orders.
Micro only
Send outs
Cell counts
Cytology
Flow
Collect/Receive in Beaker.
Print labels.
Take to Micro
Yes
Is there enough sample to aliquot for cell counts, chemistry, send out, etc. tests?
No
Is Micro ordered?
Yes
Is ONLY Micro ordered?
No
Yes
Cell counts and/or Send outs
1. Print Label for each aliquot needed.
2. Aliquot. (all but sendouts)
3. Label and initial.
4. Tube # needs to go on label for cell count aliquots.
5. Check orders for specific tube # requests (cell counts)
6. Receive in Beaker.
No
Collect/Receive in Beaker (EXCEPT Cytology). Bring labels and fluid to respective benches. Techs will credit if necessary.
Indicate on the bag AND notify that specimen must be shared.
Do NOT receive in Beaker.
Print a requisition for Cytology (if ordered).
Take to Microbiology.
Announce fluid type.
Are there Micro tests?
No
Are there Cytology tests?
No
Type .nocyto in lab comments
Yes
Yes
Type .cyto in lab comments
.cyto = sample sent to cytology
Microbiology Tests:
Print Labels
Do NOT: Receive in Beaker
Micro does NOT accept Tube #1 for GS/CX.
Cytology Tests
Do NOT receive in Beaker.
Print a requisition for Cytology if one is not present.
Deliver aliquots to areas and remainder to Micro.
Notify tech type of fluid.

NOTE: If you are not sure if the tubes are labeled with the corresponding tests for that tube, call the ordering unit to verify if the tubes were labeled based on the testing desired on each specific tube.

1. Label each tube with the test label corresponding to the tests to be run on that specific tube.
    a. Each tube has an embossed number on the tube to indicate the order of collection – Please collect in this order whenever possible. If order is mixed up, please indicate on the tube the correct collection order tube number.
    b. The recommended testing for each tube is:
        - 1- Protein, Glucose, Lactate
        - 2-Microbiology, Serology, PCR
        - 3-Cell Count, Flow Cytometry
        - 4-Cytology, Extra to Freeze
        - If two Cell Counts are ordered, it is recommended to use tubes 1 and 4.
2. If you have more tubes of CSF than Beaker labs, place a patient chart label on the additional tube and indicate it is an EXTRA tube
    a. The lab will then place an order for the extra tube CSF and hold the tube in the Spin refrigerator.
3. If you have more labels than tubes of CSF, place only one label on each tube, indicate on the additional stickers which tube to perform testing on, and send the additional sticker with the specimens to the lab – Perform the collection process on all orders.
    a. If you only have 2 tubes of CSF, place the Beaker Cell Count and Culture label on the corresponding tube for testing and send additional labels such as chemistry tests with the specimens.
    b. If you have 1 tube of CSF, place one of the Beaker labels on the tube and send the additional labels with the specimen.

1. Vitreous fluid usually arrives in a small syringe with very small quantity.

2. There may also be a vitreous wash in a large bag, but those are not always accompanied.

3. Check any additional labels that were sent.
   3.1 Look at the orders in the computer to see if anything was not already printed out or collected.
   3.2 Identify what to collect because the sample type will say “Vitreous Fluid”.
   NOTE: There are not Vitreous specific orders like there are with CSF, Synovial, and BAL.
   3.3 If there are lots of orders and an obvious lack of sample, call the provider for the priority of testing.

4. There are usually Micro and Send Out orders, with the occasional Cell Count.
   4.1 If there are tests that need to be poured off (Cell Count or Chemistry), take into account the volume received to determine if need to give the sample to Micro first.

5. If there are no Cell Count or Chemistry orders, give the sample to Micro to pour off what they need. Make sure labels are present for any additional send out orders.
   5.1 Micro will give it to Send Outs after they remove their sample. Send Out labels must be in the bag or If unable to obtain label write “Share Micro and Send Outs”.

Fluid Type	Test Name	LAB Code	Lab Section	Min Volume
Cerebrospinal Fluid (CSF)	CSF Cell Count with Differential	LAB212	Hematology	0.5 mL
	Glucose, CSF	LAB185	Chemistry	0.5 mL
	Protein, CSF	LAB195	Chemistry	0.5 mL
	Lactate, CSF	LAB2771	Chemistry	0.5 mL
	LDH, CSF	LAB2772	Chemistry	0.5 mL
	Chloride, CSF	LAB2767	Chemistry	0.5 mL
	Culture, CSF	LAB6097	Microbiology	
	Enterovirus PCR	LAB3176	Microbiology	0.4 mL
	HSV 1 and 2 PCR	LAB3191	Microbiology	0.5 mL
	Varicella Zoster PCR	LAB3572	Microbiology	0.5 mL
	CMV DNA PCR, Qualitative	LAB3171	Microbiology	0.5 mL
	EBV PCR, Quantitative	LAB3577	Microbiology	0.5 mL
	Adenovirus Qualitative PCR	LAB3566	Microbiology	0.5 mL
	Meningitis-Encephalitis (ME) Panel	LAB4594	Microbiology	
	Meningitis-Encephalitis (ME) Panel, CSF Hold	LAB4718	Microbiology	
	Multiple Sclerosis Panel 2 (Requires Red Top Serum+CSF)	LAB4559	Sendouts	
	Multiple Sclerosis Panel 3 (Requires Red Top Serum+CSF)	LAB6092	Sendouts	0.5 mL
	NMO-IgG, CSF	LAB4286	Sendouts	2.0 mL
	Angiotensin Converting Enzyme (ACE)	LAB2781	Sendouts	0.5 mL
	VDRL CSF	LAB2780	Sendouts	0.2 mL
	Pyruvic Acid, CSF	LAB4436	Sendouts	0.3 mL
	Unlisted Labs – Review all orders for testing on CSF	LAB3053	Sendouts	
	Flow Cytometry	LAB1729	Flow Cytometry	
	Cytology, Non-Gynecological	LAB13	Cytology	0.5 mL, send as much as possible
Synovial (Joint) Fluid	Synovial Fluid Exam (Cell Count with Diff, Crystals, & Mucin Clot)	LAB3155	Hematology	1 mL
	Synovial Fluid Cell Count	LAB3152	Hematology	0.5 mL
	Synovial Fluid Crystals	LAB3153	Hematology	0.5 mL
	Synovial Fluid Mucin Clot Test	LAB3154	Hematology	1 mL
	Chemistry Tests: See Body Fluid			
	Culture, Body Fluid Sterile	LAB6098	Microbiology	
	Flow Cytometry	LAB1729	Flow Cytometry	
	Cytology, Non-Gynecological	LAB13	Cytology	0.5 mL, send as much as possible

Fluid Type	Test Name	LAB Code	Lab Section	Min Volume
Bronchoalveolar Lavage (BAL)	Bronchoalveolar Lavage (BAL) Cell Count and Diff	LAB3074	Hematology	0.5 mL
	Culture, Resp Quant	LAB2682	Microbiology	
	Pneumocystis Direct (PNDFA)	LAB2680	Microbiology	
	Respiratory Virus Panel	LAB3202	Microbiology	
	Acid Fast Culture	LAB2629	Microbiology	
	Fungal Culture	LAB240	Microbiology	
	HSV PCR Non-Blood (Herpes Simplex Virus)	LAB3191	Microbiology	0.5 mL
	CMV PCR (Qualitative)	LAB3171	Microbiology	0.5 mL
	Aspergillus Antigen, BAL	LAB4295	Sendouts	1.5 mL
	Legionella DNA PCR, Qual	LAB4560	Sendouts	0.5 mL
	Flow Cytometry	LAB1729	Flow Cytometry	
	Cytology, Non-Gynecological	LAB13	Cytology	0.5 mL, send as much as possible
Body Fluid: Peritoneal Pleural Ascites Pericardial (Synovial chemistry and sendouts)	Body Fluid Cell Count with Differential	LAB210	Hematology	0.5 mL
	Amylase, Pancreatic Fluid Only	LAB6189	Chemistry	0.5 mL
	Culture, Body Fluid Sterile	LAB6098	Microbiology	
	Culture, Vitreous/Aqueous Fluid	LAB6096	Microbiology	
	Culture, Peritoneal Fluid	LAB2679	Microbiology	
	Culture, Acid Fast	LAB2629	Microbiology	
	Culture, Fungal	LAB240	Microbiology	
	Albumin, Body Fluid	LAB6178	Sendouts	1.0 mL
	Amylase, Body Fluid	LAB6176	Sendouts	1.0 mL
	Bilirubin, Body Fluid	LAB6184	Sendouts	1.0 mL
	Creatinine, Body Fluid	LAB6182	Sendouts	1.0 mL
	Creatinine, JP Drain Fluid	LAB6193	Sendouts	1.0 mL
	Glucose, Body Fluid	LAB6181	Sendouts	1.0 mL
	Lactate Dehydrogenase (LDH), Body Fluid	LAB6180	Sendouts	1.0 mL
	Lipase, Body Fluid	LAB6183	Sendouts	1.0 mL
	Protein, Total, Body Fluid	LAB6179	Sendouts	1.0 mL
	Triglycerides, Body Fluid	LAB6185	Sendouts	1.0 mL
	Flow Cytometry	LAB1729	Flow Cytometry	
	Cytology, Non-Gynecological	LAB13	Cytology	
Body Fluid Tests Ordered as Unlisted Labs (LAB3053)	CA 19-9, Body Fluid	LAB3053	Sendouts	
	CEA, Body Fluid	LAB3053	Sendouts	
	Chloride, Body Fluid	LAB3053	Sendouts	
	Cholesterol, Body Fluid	LAB3053	Sendouts	
	Lactate, Body Fluid	LAB3053	Sendouts	
	pH, Body Fluid	LAB3053	Sendouts	
	Uric Acid, Body Fluid	LAB3053	Sendouts	