

COLLECTION AND TRANSPORT BLOOD SPECIMENS

INTRODUCTION

Ideal Clinical Laboratories is striving to be the very best for diagnosing the cause of disease and overall wellness of the patient through the help of sophisticated and state of the art diagnostic equipment coupled with a team of competent and dedicated professionals.

We are here to serve you with **Quality and Care**.

PROCEDURE

SPECIMEN COLLECTION:

1. Information for Request Form:

A properly completed and legible test request form must be accompanying each patient specimen submitted to the laboratory for analysis.

2. Specimen Identification:

- Patient's surname, first name, and middle initial.
- Patient's file number.
- Patient's date of birth, age or sex.
- Requesting physician's complete name.
- Patient mobile number.
- Nationality.
- Source of specimen. This information must be given when requesting microbiology, fluid analysis, or other testing where analysis and reporting is site specific.
- Initials of the phlebotomist.
- Date and time of collection.

3. Blood Collection

Blood collection is a technique that needs to be mastered and practiced with utmost care and precautions. Blood collection is performed by qualified phlebotomist possessing qualifications such as Bachelor of Science and Post Graduate Diploma in Laboratory Techniques (DMLT) or Bachelor of Science in Medical Laboratory Technology (B.Sc-MLT) or Clinical Medical Laboratory Technology (CMLT) or Medical Laboratory Technology (MLT). Technical training is imparted to phlebotomist on joining.

4. Methods for obtaining specimens:

Gloves should be worn when handling human tissue or body fluids. Gloves can prevent transmission of blood-borne pathogen infection from a specimen, and contamination of the sample by exfoliated cells from persons handling the sample.

SPECIMEN TRANSPORT

- State of art Technology like Data Watch Data Log is being used to monitor the transport temperature.
- All the technical staffs and Messenger shall follow the protocol of the transporting. The process of transporting specimens to the laboratory can affect the suitability of specimens for analysis. The policy will be implemented as follows:
 - Specimens should be transported in a timely manner.
 - Routine samples from respected clinics are collected twice daily basis in the morning and evening shift by the Messenger who is scheduled to collect.
 - Also in case of emergency, on information to the reception, he will immediately go to collect the sample on urgent basis to accomplish the patient care.
 - All specimens not collected at the IDCL laboratory facility shall be transported in sealed plastic biohazard bags. Requisitions must be in the outer pocket of the biohazard bag.
 - These will include floor collected specimens such as urine, specimens for culture, occult blood specimens, body fluid specimens, vaginal and throat swabs.
 - List of sample *Picked-up* shall be prepared with date, time and signature by the Clinic where it is collected and a messenger brings along with.
 - Use specimen Box with Ice Packs and with *Lock* during transport for *Security reasons*.
 - Specimens should be kept in an upright position.
 - Avoid specimen agitation/leaking during transportation.
 - A temperature of requisite for specimen is mandatorily maintained. However a temp is $2^{\circ} - 8^{\circ}\text{C}$ is preferable for all routine specimen. State of art Technology – Data Watch **data logger** instrument software is used for monitoring the transport specimen is well maintained in the Temperature range.
 - *On delivery* to the laboratory, the Data Logger placed along with the specimen during the transport is logged to the system by USB and checked for temperature accuracy during the transport.
- To double check the temperature found in the cool box is confirmed with a INFRA RED Thermometer.
- The list items are *acknowledged and rechecked* for presence of all samples, any leakages and then shall be taken for analysis.
- Any sample requiring STAT process shall be separated and attended immediately.
- The Clinical Laboratory will not accept any "Unbagged" specimens for testing.

Receipt of Unprocessed Specimens by the Laboratory:

- A. Time:** Upon the receipt of specimens in the laboratory, the accessioning officer records the time as well as the temperature condition of the specimens received. Specimens are sorted and prepared for centrifugation, if required. For specimens received in cold or frozen the temperature conditions are maintained throughout the pre analytical process.
- B. Accessioning of Specimen:** After initial identification by accessioning officer with information given on the Test requisition form (TRF). Those forms are forwarded to Data Entry Operators for data entry and barcode generation. A unique identification number is assigned to each specimen accessioned through the system; these barcodes are pasted on respective tubes, scanned and forwarded to respective laboratory department for processing. Rescanning is done by the individual department to acknowledge the receipt of specimen.
- C. Specimen rejection:** In case if sample received is hemolysed or if whole blood is clotted or serum quantity is not sufficient, etc. then a problem sample notification in prescribed format is forwarded to Customer Care Group. If no feedback is received from the client within 4 weeks then specimens are discarded as per QA policy.

PATIENT INSTRUCTION OF VARIOUS TESTS

Instructions given to the patient before the collection of the following specimen.

FASTING GLUCOSE:

Type of specimen:

Plasma or Serum

Type of Container:

Gray / Yellow / Red tube

Patient instruction:

Blood sample is collected after 8-12 hours fasting or as per Physician advice.

POST PRANDIAL GLUCOSE:

Type of specimen:

Plasma or Serum

Type of container:

Gray / Yellow / Red tube

Patient instruction

Blood and urine specimens are collected 2 hours after completion of meals.

50 GRAMS ORAL GLUCOSE CHALLENGE TEST

Type of specimen:

Plasma or Serum

Type of Container:

Gray / Yellow / Red tube

Patient instruction:

Patient is not necessarily being in fasting state. 50 grams of glucose (Mostly orange in flavour) is given to the patient. Exactly one hour after blood and urine samples is collected. During the test period the patient must remain in the laboratory and not permitted to go Home so as any untoward effects such as nausea vomiting or giddiness may be attended immediately by the medical personnel.

75 GRAMS ORAL GLUCOSE TOLERANCE TEST

Type of specimen:

Plasma or Serum and urine

Type of Container:

Gray / Yellow / Red tube and urine container

Patient instruction:

Patient must be fasting 8-12 Hours

a. 75 gram with half an hour intervals

Fasting blood sugar and fasting urine sugar are collected before giving 75 grams of glucose to the patient. After collection of fasting specimens, 75 gram of glucose is given. Specimens are collected at half an hour intervals for subsequent two hours, one blood specimen and one urine specimen. During the test period the patient must remain in the laboratory and not permitted to go home so as any untoward effects such as nausea vomiting or giddiness may be attended immediately by the medical personnel.

b. 75 gram with 2 hours interval

Fasting blood sugar and fasting urine sugar are collected before giving 75 grams of glucose to the patient. After collection of fasting specimens, 75 gram of glucose is given. Specimens are collected 2 hours after, one blood specimen and one urine specimen. During the test period the patient must remain in the laboratory and not permitted to go home so as any untoward effects such as nausea vomiting or giddiness may be attended immediately by the medical personnel.

100 GRAMS ORAL GLUCOSE TOLERANCE TEST

Type of specimen:

Plasma or Serum and urine

Type of Container:

Gray / Yellow / Red tube and urine container

Patient instruction:

Patient must be fasting 8-12 Hours

Fasting blood sugar and fasting urine sugar are collected before giving 100grams of glucose to the patient. After collection of fasting specimens, 100 grams of glucose is given. Specimens are collected at 1 hour intervals for subsequent 3 hours, one blood specimen and one urine specimen. During the test period the patient must remain in the laboratory and not permitted to go Home so as any untoward effects such as nausea vomiting or giddiness may be attended immediately by the medical personnel.

LIPID PROFILE

Type of specimen:

Serum

Type of container:

Gray / Yellow / Red tube

Patient Instruction:

Blood samples are collected 8-14 hours of fasting; to follow instruction given by physician as appropriate.

24 hours urine Collection

Type of specimen:

Urine

Patient Instruction

1. If container contains preservative, instruct the patient about the same and restrict him discarding the preservative.

2. To start collection: -Ask the patient to discard the first urine passed in the morning. Note down the exact time (for e.g.7.00am). During the process of collection the container is to be kept in a cool place or refrigerator.

3. From this time onwards collect all subsequent urine samples in the container provided. Collection should be continued till the first voided specimen of the next day. This is the 24hours urine sample.

4. The patient should return the 24hours urine sample container within 1hour to the laboratory.

Urine Collection for Routine Examination:

Type of specimen:

Urine

Patient Instruction:

Specimen:

Urine specimen must be first voided midstream specimen or a random specimen and must be collected in the sterile plastic container.

Instruction given to the patient:

Patient must be instructed to void directly into the container. During the collection the initial portion of the urine stream is allowed to escape while the midstream portion is collected.

Preservation: In case of delay in testing, urine must be stored at 2-8°C (lower Cooling compartment of the refrigerator).

NOTE: If urine specimen is collected at home, patient is instructed to submit to the laboratory in 15-20 minutes of collection. Otherwise they can preserve the urine in refrigerator and submit it within two hours.

Urine collection for microbiological testing:

Type of specimen:

Urine

Instruction given to the patient

Specimen:

First morning midstream urine is the ideal specimen for microbiological testing but in case of urgency random urine specimen can be collected.

Instruction to be given to the Patient:

Collect 50-mL of first, morning midstream urine specimen in a sterile leak-proof container. Use clean catch technique for urine specimen collection (Clean the urethral surface, open the sterile container just prior to passing urine. Let some urine pass and thereafter collect the

midstream specimen directly into the container. Close the container immediately).

Sputum Collection

Type of specimen:

Sputum

Instruction given to the patient

Specimen:

Early morning specimen in a sterile plastic container.

Instruction to be given to the Patient:

- 1) The mouth to be rinsed well by using water.
- 2) The sputum must be coughed up from the lungs or bronchi and placed in the sterile plastic container. The container to be recapped immediately and secured tightly.

For Semen analysis:

The patient should be instructed to collect semen after three days and no longer than five days of sexual abstinence in a sterile plastic container. He should evacuate his bladder before ejaculation. Semen should be obtained by masturbation, and if circumstances preclude such collection, special silastic condoms should be used for collection with intercourse. Only specimens collected in the laboratory will be processed and the same should be done within one hour of collection.

Stool examination for occult blood

- 1) Certain medications such as aspirin, indomethacin, phenylbutazone, reserpine, corticosteroids and nonsteroidal anti-inflammatory drugs can induce gastro-intestinal bleeding and cause false positive results. These medications should be temporarily discontinued with the consent of the physician for seven days prior to testing and during the test period.
- 2) Vitamin C when taken in amounts greater than 250 mg/day has been shown to induce false negative results. Rectal medications (suppositories) and iron containing medications may also interfere with these tests and should be discontinued two days before and during the test period with consent of the physician.
- 3) For at least two days before and during the test period all raw meat and red meat should be avoided. Raw Broccoli, Cauliflower, Radishes, Beetroot and Turnip may cause false positive results, hence should be avoided.

Timed collections:

For some hormonal studies specimens are collected at specific timings e.g. Cortisol test, Microfilaria, Valproic Acid, renin plasma activity. The blood specimens are collected at 8.00am and 4.00pm. The timing of blood collection has clinical significance and hence must be clearly specified on the evacuated tube and subsequently on the transfer vial. The Serum / Plasma must be separated at the earliest, stored and dispatched as specified in the reference guide for lab; outsourced specimen.

Blood Collection

The phlebotomist is well trained in blood collection using the evacuated blood collection system. He/She is shown the blood collection system during training, which consists of a needle, a needle holder and an evacuated tube instead of the syringe barrel and plunger. The function of system is explained i.e. once the vein is punctured, the requisite quantity of blood flows automatically into the evacuated tube so that the need to pull the plunger is obviated. Appropriate anticoagulants are pre-added in appropriate quantities in these tubes so that all required is a clean venipuncture and collection of blood to a full draw. Evacuated tubes are simpler to use and safer. The system is a cleaner system as blood does not come in contact with the atmosphere as it flows straight from the vein through the sterile needle into the sterile tube. Contamination from spilled blood is entirely removed. The incidence of hemolysis is significantly reduced because the major cause of it the transfer of blood from the syringe to container is eliminated. Furthermore, all tubes are sterile, hence the biological integrity of the specimen is maintained. This has particular significance in ESR determinations and coagulation studies, which can be seriously distorted by microbial growth in citrate solutions.

The evacuated blood collection system colour codes with order are explained to the phlebotomist, which are as follows.

S.No.	Colour of the cap	Anticoagulant	Used for
1.	Blood culture bottle	Transport Media	Microbial Cultures
2.	Blue	Sodium Citrate	Coagulation Studies
3.	Tubes with Gel separator/ Clot activator (Red/ Yellow)	None	Test Requiring Sera
4.	Lavender	EDTA	Hematology
5.	Grey	Sodium Fluoride & Potassium Oxalate	Glucose
6.	Black	Sodium Citrate	ESR

The Phlebotomist is explained the following basic steps for drawing a blood specimen:

1. Check and confirm with the patient the details given on the Test Requisition Form. At least 2 unique identifiers should be used for confirming patient's identity such as name of the patient, date of birth, unique identification number, etc.

2. Ascertain whether the patient is fasting and record the same on the Test Requisition Form.
3. Assemble the evacuated tubes, needle holder, alcohol swab, cotton swab, tourniquet etc. required for phlebotomy. The phlebotomist should select the appropriate type of needle/ scalp vein set based on patient's physical characteristics and amount of blood to be drawn. Keep the evacuated tubes in order of draw.
4. Reassuring the patient:

The phlebotomist must gain the patient's confidence and assure him that, although the venipuncture is slightly painful, it would be of a short duration. Panic or anxiety of the patient will lead to difficulty in collecting the specimen.

5. Positioning the patient:

The patient should be made to sit comfortably in a chair and should position his arm on a slanting armrest, extending the arm straight from the shoulder without bending at the elbow. The patient should extend the arm straight from the shoulder. For support, a pillow may be placed under the arm.

6. Specimen labeling:

Check the prescription, test requisition form with evacuated tube type before proceeding for collection of specimen and label primary specimen containers with at least 2 unique identifiers such as patient name, date of birth, hospital number, social security number, requisition number, accession number, unique random number, etc. and ensure that all the details are matching.

Selection and Preparation of Vein Site for Blood Collection

Selecting vein site: For most venipuncture procedures on adults, veins located on the arm are used. The median cubital vein is most commonly used for the patient. If the venipuncture of this vein is unsuccessful, one of the cephalic or basilic veins may be used.

The following conditions should be avoided while selecting a vein: -

1. Vein from area having extensive scarring.
2. Phlebotomy must not be performed on any size of hematoma.
3. Specimens should not be collected from the arms having intravenous site.

Procedure for vein selection: -

Locating veins: -

To locate veins it is necessary to palpate & trace the path of the veins several times with index finger.

Alternate site: -

Site such as dorsal wrist or hand & ankles or lower extremities may be required for patients with difficult veins.

➤ Disinfection of the venipuncture site:

The puncture site must be cleansed to prevent microbiological contamination of the specimen and infection at the venipuncture site.

➤ Cleansing is done with gloved hands. Spirit or 70% ethanol is used for disinfection. The

alcohol swabs are used for disinfection. The cleaning should start from the vein and move out in a circular motion towards the outer surface. Allow the area to air dry to prevent hemolysis of the specimen, give enough contact time for the alcohol to bring out the disinfection of venipuncture site & prevent the patient from experiencing a burning sensation when the venipuncture is performed. Once disinfected, this site should not be touched with bare hands.

- Applying the tourniquet: A tourniquet is used to increase venous filling. This makes the vein more prominent & easier to enter.
- Precautions when using a tourniquet:-
The tourniquet should be released after no more than one minute. Local stasis can occur with hemoconcentration & the possible formation of a hemotoma due to infiltration of blood into tissue. This may result in erroneously high values for all protein based analytes, PCV & other cellular elements.

If the test requested is Calcium then use of tourniquet is not permissible.

Tourniquet tying locations:

Wrap the tourniquet around the arm, 3 to 4 inches above the venipuncture site. The tied tourniquet should never be left on the arm for more than 2 minutes because a tourniquet prevents blood from flowing freely.

Collection Technique:

Screw the needle into the holder. Puncture the selected vein at 30° to 40° angle. Insert the selected evacuated tube into the holder by pushing through the rubber sleeve of the rear cannula of the needle. After the vacuum in the tube draws the blood upto the mark on the tubes, withdraw the tube and proceed in a similar fashion if more evacuated tubes are indicated. After blood has been drawn, the patient should release the fist & the tourniquet is also released and then the needle is withdrawn from the vein with simultaneous application of cotton at the venipuncture site.

The blood in the anticoagulated tubes is mixed by gently inverting the evacuated tube 7 to 8 times & blood collected in the plain (red top) tubes is kept at room temperature for 45 – 60 minutes for clotting and serum separation.

Note: Blood collected in plain tubes with clot activator additive is mixed by gently inverting the evacuated tube 4 to 5 times and then kept at room temperature for 30 – 45 minutes for clotting and serum separation.

Preventing hematoma during venipuncture:

- Puncture only the uppermost wall of the vein.
- Remove the tourniquet before removing the needle.
- Use the major veins.
- Do not make partial penetration with needle.
- Apply a small amount of pressure to the area with cotton after blood collection.

Collection of Blood from Pediatric Patients

Pediatric collections are done with the help of scalp vein needle (butterfly needle) and the blue top evacuated system needle (leur adapter). The end of the butterfly needle rubber tubing has to be fixed on to the blue top needle which is fitted on to the holder and used with the required evacuated tubes.

- A cotton ball is held firmly over the venipuncture site as soon as the needle is removed. After

checking that there is no blood flow a stick plaster is applied at the site of venipuncture and the patient is given a cotton ball to be held at the site of venipuncture which has to be removed after 5-10 minutes.

In case of continued bleeding: -

- i) Apply pressure to the site with a gauze pad until the bleeding stops.
- ii) Hold cotton firmly for sometime on the site & then put a bandage.
- iii) Tell patient to keep it for 15 minutes.

Disposal of Puncturing Unit: -

Dispose of needles promptly in a puncture resistant container with 1% sodium Hypochlorite.

Details of Specimens – Types, Collection & Processing

The pricelist available has tests listed in an alphabetical order with specific test methodology, specimen type and storage & transport conditions required for each test.

This pricelist is referred by the phlebotomist to obtain specific test related information before proceeding to test ordering & specimen collection. The specimen types are – Whole blood, serum or plasma (EDTA, Fluoridated, Citrated, Heparinised, Etc.), Urine, Body fluids, sputum, and stool.

Procedure for Specimen Collection.

A. For whole blood

1. Blood is collected in a labeled (Patient's name, identity no.), specific anticoagulant containing evacuated tube (i.e. containing specific anticoagulant as per test specifications e.g. lavender top EDTA for CBC), to a full draw.
2. This specimen containing tube is gently inverted seven - eight times, to ensure proper mixing of blood and the anticoagulant. The specimen quality must be checked, and should be free from hemolysis, clots and must be in recommended quantity.

B. For serum

1. Blood is collected in a labeled (Patient's name, identity no.) red top plain evacuated tube.
2. Allow the blood to clot for 45 -60 mins.
3. Centrifuge the specimen at 3500 rpm for 10 minutes.
4. Ensure that the information on the white cap plastic transfer vial and the evacuated tube from which the separated specimen is being transferred is matching.
5. Transfer separated serum to this vial with a plastic transfer pipette after ensuring that the serum is free from hemolysis and turbidity.
6. Ensure that the quantity of serum specimen is sufficient for all the tests requested.

C. For plasma

Blood is collected in a labeled (Patient's name, identity no.), specific anticoagulant containing evacuated tube as per test specifications.

Blood containing tube is gently inverted 7-8 times to ensure proper mixing of specimen and the anticoagulant.

The tube is centrifuged at 3500 rpm for 10-15 mins.

The white capped plastic transfer vial is used to collect the separated plasma. This vial must be labeled specifying anticoagulant in which blood was collected to obtain plasma and time of collection e.g. EDTA plasma, Fluoride plasma Fasting or Post Prandial.

After confirming that the details on the specimen containing evacuated tube and the transfer vial label are matching, the separated plasma is transferred to this vial with the help of a

plastic transfer pipette.

The obtained plasma must be free from hemolysis and turbidity.

Ensure that the quantity of plasma specimen suffices specimen requirement of all the specific plasma requiring tests.

D. For body fluids

1. Body fluid collected by the treating physician is brought by the patient and is received by the laboratory as it is.
2. The specimen container must be examined for adequate labeling indicating Patient's name and specimen type. The requisition form must be filled up appropriately.

E. For urine/sputum

1. Urine/ sputum specimen must be collected in the sterile plastic container.
2. The container is adequately labeled indicating patient's name and specimen type.
Preservation: In case of delay in testing, urine must be stored at 2-8 C (lower cooling compartment of the refrigerator). There is no agreed-upon length of time for refrigeration as a preservative, because this depends on the individual urine constituents.

F. Timed Urine Samples:

These are obtained at designated intervals starting from time zero, and are noted on each subsequent container with time of collection.

G. For Glucose Tolerance test

Fasting blood specimen is collected in the grey top sodium fluoride evacuated tube to a full draw and fasting urine specimen is collected in urine container by the patients.

Non-pregnant adult patients must be given 75 grams of glucose in 300 mL of water. This should be ingested over 5 minutes. Children should be given 1.75gm/Kg bodyweight of glucose upto maximum 75 grams. The time is noted down for intake of glucose. Four blood specimens and urine specimens are collected at half hourly intervals for subsequent two hours. At every half hour interval one blood specimen and one urine specimen is collected. Each of these specimens is labeled appropriately indicating specimen type and time of collection.

For Pregnant adult patients 100 gram of glucose is administered. Three blood specimens and urine specimens at one hourly interval for 3 hours are collected.

To obtain plasma for coagulation test

1. Blood is collected in a labeled (Patient's name, identity no.), blue top Sodium Citrate evacuated tube.
2. Blood containing tube is gently inverted seven-eight times to ensure proper mixing of specimen with the anticoagulant. Collection of blood should be upto the mark specified on vacutainer.

Note: The recommended proportion of blood to the sodium citrate anticoagulant volume is 9:1. Inadequate filling of the collection device will decrease this ratio, and may lead to inaccurate results for calcium-dependent clotting tests, such as the PT and aPTT. Conversely over-filling of the collection device will increase this ratio and may lead to clotted samples or inaccurate results.

3. The evacuated tube is centrifuged at 2500 rpm for 10-15 minutes. If due to high hematocrit

for eg. (>60%) the volume of plasma is low, the anticoagulant effect gets enhanced as a result of anticoagulant to plasma ratio. In such situation, the blood to be re-collected with a smaller volume of the anticoagulant as per published guidelines.

Hematocrit correction = $100 - \text{HCT} / 595 - \text{HCT}$ for 1 ml of blood.

4. Label the plastic transfer vial specifying anticoagulant used to obtain plasma and time of collection, Ensure that the above details match with the details given on the label of the specimen containing evacuated tube.
5. Transfer separated plasma to this vial with the help of a plastic transfer pipette after ensuring that the plasma is free from hemolysis and turbidity.
6. This plasma must be frozen and stored in the freezer compartment of the refrigerator till the time of processing.

Note: Coagulation tests are very sensitive specialized tests, proper specimen collection, processing and transport under specified conditions is mandatory to obtain accurate reports. Clinical History & or provisional diagnosis along with a list of medication taken by the patient must be noted, especially if it is oral anticoagulant like warfarin or intravenous anticoagulant i.e. Heparin.

Instructions to patients on oral anticoagulant therapy for prothrombin time:

Many medications can affect prothrombin time test results. The patient has to submit the details of all medications taken before undergoing this test. There is no need to discontinue medication unless advised by the clinician.

Prothrombin time is usually done at the same time of day each time, so test results can monitor the dosage of medication used to prevent blood clots.

Urine Collection

- Single urine specimens (fasting, midstream) are used for qualitative tests, but for quantitative tests a 24 hours urine sample is necessary. However, the price list &/ or should be referred for specific specimen requirement.
- The phlebotomist provides a sterile container for specimen collection, single urine sample as well as 24 hours urine specimen.
- The single urine specimen should be transported to the laboratory as early as possible. However, for 24 hours urine specimen collection details, refer to:

1. Add suitable preservative to the container to be used for 24hrs. urine collection. Refer the chart given along for details regarding Test and preservative to be used. Instruct the patient about the preservative and restrict him from discarding the same.
2. Total urine output in 24 hrs. is measured and noted, specify 24 hrs. Urine sample on the Requisition Form.

Note: For Creatinine Clearance Test, also specify height, weight & age of the patient on the Requisition Form.

3. Send a well mixed 20 mL aliquot of the total volume for analysis. The container must be properly sealed to avoid leakage & suitably labeled stating it is a 24 hrs. Sample with volume. The sample should be dispatched for processing at the earliest.

Blood for microbiological test

Blood must be drawn under strict aseptic conditions. Prepare the skin with 70% alcohol and 2% iodine as for a minor surgical procedure. Take 5 ml blood. Do not touch anything with the needle before inoculation into the culture media. Lift one end of the adhesive tape over the cap of the blood culture bottle, carefully introduce the needle, and deliver to brain heart infusion broth.

Specimen Rejection:

Causes for specimen rejection:

- Specimen received in formalin for culture. (If exposure to formalin is short i.e. < 24 hours) one may be able to culture certain organisms such as Mycobacteria if sample is collected from the innermost part of the specimens not exposed to formalin).
- 48 hour old sputum samples for culture.
- Samples which have leaked out of the container.
- Submission of samples in unsterile containers for bacterial culture.
- Dried out swabs and culture plates that contain bacterial growth.
- Samples that are difficult to recollect (CSF, bronchial washing etc) should be processed anyway. However, on the final report one should indicate the condition of the sample received to caution the doctor regarding the possibility of specimen contamination at collection or at transport. (i.e. report with a disclaimer).
- Discrepancy found in the patient's name on the Test Requisition Form and sample vial.
- Unlabelled/ incomplete sample identifiers.



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