Laboratory test results are dependent on the quality of the specimen submitted. It is important that all specimens and request forms be properly labeled with name of the patient, collection date, and origin (source) of specimen, when applicable.

If there is any doubt or question regarding the type of specimen that should be collected, it is imperative that the laboratory be called to clarify the order and specimen requirements.

**Blood Collection**
Most laboratory tests are performed on anticoagulated whole blood, plasma, or serum. In general, specimens should be refrigerated until placed in the courier box for transport to the laboratory. Please see our individual test directory section for specific requirements.

- **Plasma**: Draw a sufficient amount of blood with indicated anticoagulant to yield necessary plasma volume. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw. If required, separate plasma from cells by centrifugation within 20 to 30 minutes.
- **Serum**: Draw a sufficient amount of blood to yield necessary serum volume. Allow blood to clot at ambient temperature, and then, separate serum from clot by centrifugation within 20 to 30 minutes. Caution: avoid hemolysis.
- **Whole Blood**: Draw a sufficient amount of blood with indicated anticoagulant. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw.

**Specimen Collection Tubes Available**
The following is a list of tubes referred to in specimen requirements. Tubes should be drawn following the “Order of Draw” as specified: blue top, gold top, red top, green top, lavender top, and grey top.

- **Green-Top (Lithium or Sodium Heparin) Tube**: This tube contains lithium or sodium heparin—used for drawing heparinized plasma or whole blood for special tests.
  Note: After tube has been filled with blood, immediately invert tube several times in order to prevent coagulation.
- **Gold-Top (Serum Gel) Tube**: This tube contains a clot activator and serum gel separator—used for various laboratory tests.
  Note: Invert tube to activate clotting; let stand for 20 to 30 minutes before centrifuging for 10 minutes. If frozen serum is required, pour off serum into plastic vial and freeze. Do not freeze VACUTAINER®.
- **Grey-Top (Potassium Oxalate/Sodium Fluoride) Tube**: This tube contains potassium oxalate as an anticoagulant and sodium fluoride as a preservative—used to preserve glucose in whole blood and for some special chemistry tests.
  Note: After tube has been filled with blood, immediately invert tube several times in order to prevent coagulation.
- **Lavender-Top (EDTA) Tube**: This tube contains EDTA as an anticoagulant—used for most hematological procedures.
  Note: After tube has been filled with blood, immediately invert tube several times in order to prevent coagulation.
- **Light Blue-Top (Sodium Citrate) Tube**: This tube contains sodium citrate as an anticoagulant—used for drawing blood for coagulation studies.
  Note: It is imperative that tube be completely filled. Ratio of blood to anticoagulant is critical for valid prothrombin time results. Immediately after draw, invert tube 6 to 10 times in order to activate anticoagulant.
- **Light Green-Top (Plasma Gel Tube) Tube**: This tube contains lithium heparin and a plasma gel separator—used for various laboratory tests.
  Note: After tube has been filled with blood, immediately invert tube several times in order to prevent coagulation.
- **Pink-Top (EDTA) Tube**: This tube contains EDTA as an anticoagulant—used for Blood Bank procedures.
  Note: After tube has been filled with blood, immediately invert tube several times in order to prevent coagulation.
- **Red-Top Tube**: This tube contains a clotting activator—used for drawing serum for selected chemistry tests as well as clotted blood for immunohematology.
- **Royal Blue-Top Tube**: There are 2 types of royal blue-top Monoject® tubes—1 with the anticoagulant EDTA and the other plain. These are used in drawing whole blood or serum for trace element analysis. Refer to individual metals in individual test listings to determine tube type necessary.
- **Special Collection Tubes**: Some tests require specific tubes for proper analysis. Please contact MaineGeneral Medical Center prior to patient draw to obtain correct tubes for metal analysis or other tests as identified in individual test listings.
• **Yellow-Top (ACD) Tube**: This tube contains ACD—used for drawing whole blood for special tests.

**Microbiology Collection**

In order to ensure optimal recovery of pathogenic organisms, specimens must be properly collected and promptly transported to the laboratory. In the event of unavoidable delay, methods for preservation of most specimens are available.

General guidelines are as follows:

- The culture specimen must be from actual site of infection. Contamination from adjacent tissues, secretions, etc., should be avoided as it may cause misleading results.
- Obtain as much material as possible (eg, saturate culture swabs with material) or if specimen is a purulent liquid, submit at least 1 mL in a screw-capped, sterile container or syringe (if aspirated). Remove needle before transporting to laboratory.
  - When possible, actual tissue or aspirates in a sterile container are preferred over swab collected specimens.
- Use containers with tight-fitting covers (screw-capped containers) to prevent leakage.
- If possible, obtain cultures before administration of antibiotics.
- Use transport media (available from the laboratory).
  - Anaerobic collector is to be used for swab specimens from which anaerobes are likely to be isolated.
  - Culture swab is suitable for all specimens collected on a swab; may be kept at ambient temperature for up to 24 hours if fastidious organisms (eg, *Haemophilus* species, *Neisseria* species, etc.). See specific source for time limits for delivery to laboratory. Refrigerate specimen if for viral culture.
  - Viral Transport Kit is required for viral culture specimens.
- Specimens must be correctly labeled with patient’s first and last name and date of birth. It is strongly recommended that specimen source and date and time of collection are also on label.
- Request forms must be properly filled out. Required information is as follows:
  - Patient’s first and last name
  - Date of birth
  - Patient location (Nursing Unit, Physician’s Office, etc.)
  - Name of ordering physician
  - Specimen source
  - Test required
  - Date and time of collection
  - Collector’s initials
- It is also strongly recommended that the following information be indicated on request form:
  - Diagnosis pertinent to culture
  - Current antibiotic therapy
  - Pertinent travel history for ova & parasites and parasite requests
- Transport specimen to the laboratory as soon as possible. Prompt delivery is desirable for all specimens and mandatory for some. Alternative preservation procedures are given where applicable.
- Specimens may be rejected for the following reasons:
  - Incomplete request forms and/or labeling
  - Gross external contamination of, or leakage from, the specimen container
  - Receipt of dry swabs (failure to use appropriate transport media) or incorrect use of transport media
  - Failure to transport specimen within specified time limits
  - Insufficient quantity
  - Incorrect specimen type for test requested
- Call the Microbiology department at 207-872-1542 regarding any special or unusual requests. Alternatively, written instructions can be sent to the laboratory.