**Special Collection Tips**

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There are several different special collections that a phlebotomist must understand how to collect or be able to provide instructions to a patient so they can collect the specimen needed for testing.

Blood cultures are a common blood collection ordered in hospitals. The collection of blood cultures requires a special scrub and technique. We perform blood cultures on a STAT or timed basis, and they are usually ordered when the patient’s fever spikes. Blood culture bottles are usually drawn in sets of two or three and each set contains two or three bottles. Each set can be drawn 30 to 60 minutes apart, and are usually from two different venipuncture sites. Some facilities use a sterile yellow top tube instead of the larger blood culture bottles. The set of bottles usually contains one anaerobic bottle and two aerobic bottles. The anaerobic bottle is filled first using sterile techniques. The puncture site is cleaned for 30 seconds with iodine or surgical soap, allowed to air dry, and then cleaned with alcohol in an outward circular motion. The finger can be cleaned in the same manner if the phlebotomist needs to re-palpate. The tops of the blood culture bottles also need to be cleaned with iodine and then alcohol. Once everything is sterilized, the venipuncture can begin.

If an alcohol test is ordered, the phlebotomist will want to make sure and clean the arm with iodine or green soap. Cleaning the arm with alcohol can falsely elevate the alcohol level of the patient. Some alcohol tests are done using a chain of custody and a special collection kit so that it can be submitted in a court of law. In these cases, the chain of custody must be filled out and signed each time someone touches or moves the specimen so that everyone who touches or moves the specimen can be held accountable if the case goes to court, and a lawyer can prove there was no evidence tampering.

Many of the tests ordered in the laboratory are ordered routine, which just means they need drawn and run during normal daily run times. Some tests are time sensitive and require timed draws. These usually print out labels that state the specific times the specimens are to be drawn. ASAP, or as soon as possible, is another specimen testing priority that may be seen. If a specimen is labeled ASAP, it means that it is to be drawn after STATs, which are to be drawn immediately, and after time specimens, but before routine draws are performed.

There are several different urine specimen tests that a phlebotomist is required to be able to give a patient instructions for. Routine urine collection, clean catch mid-stream collection, and 24 hour urine collection instructions are important to remember.

If a patient has a routine urinalysis ordered, the instructions given to the patient are for them to write their name and date of birth on the urine cup and then go to the bathroom and void no more than ¾ of the cup full of urine and place it in the window or bucket, depending on the laboratory.

The clean catch mid-stream instructions are a little bit more specific. The patient is handed a sterile urine cup and asked to write their name and date of birth on the cup. They are then instructed to take the cleaning towelette given to them, and a female will wipe front to back and a male tip to base. Once
that is completed, they need to void some in the toilet and then catch some of the urine up to \( \frac{3}{4} \) of the cup full and then finish voiding in the toilet. Once they have finished voiding in the toilet, they can place the urine cup in the window or the bucket, depending on the laboratory.

The third type of urine collection required for a phlebotomist to give instructions for is the 24 hour urine collection. For this test, the patient is given a large gallon amber jug and a “hat” to catch their urine in. The patient is instructed to begin the collection first thing in the morning and flush the first urine specimen and flush it down the toilet, but record the time on the jug as the start time. All other urine specimens for the next 24 hours need to be voiding directly into the jug or into the “hat” and then poured into the jug. The jug must remain on ice or refrigerated for the entire test, and no specimens can be missed or the test is cancelled. The final specimen is collected the next morning at the same time that the collection started the day before. This specimen is voided and collected in the jug. Once the 24 hours is completed, the jug can be brought back to the lab for testing.

A glucose tolerance test is another test that has special patient instructions. This test is usually performed on pregnant women to test for gestational diabetes. When the patient arrives at the lab, the phlebotomist needs to ensure that the patient is fasting and inform them that the test takes a little over 3 hours, and they must remain in the laboratory waiting area the entire time and cannot have any food or drink until the test is completed. When the patient is ready, the phlebotomist draws a fasting specimen to ensure that their glucose is within range to give the glucola drink. The patient must consume the drink within five minutes, and upon completion of the drink, the clock starts. If the patient finishes drinking the glucola at 11 am, the first timed draw will be at 12, then 1, then 2 for the final blood draw. If the patient vomits during the test then the test is voided and the physician is notified.

A few other special collection procedures are when drug levels or cortisol levels are ordered. When drug levels are ordered that require monitoring, such as vancomycin, the doctor will order a peak and a trough to be drawn. These times are calculated by a laboratory technician based on the time the dose is given and at what interval the drug is given. A peak is usually drawn 2-4 hours after injection, and a trough is drawn just prior to the next dose. Cortisol levels are a hormone that exhibits what is called diurnal variation, which means as the day goes on, the body burns off the hormone and the levels change, but when the patient is in a basal or resting state, the hormone is at a good baseline level. Cortisol levels, for this reason, are usually drawn with an AM and a PM sample.

Special handling techniques of patient samples for certain tests are required as well. If a patient has been diagnosed with cold agglutinins, the phlebotomist must keep the specimen warm from the time of the draw until the specimen is tested. This is accomplished using a heel warmer wrapped around the test tube.

There are some specimens that are required to be chilled or put on ice. These specimens are drawn and placed in a cup of ice water to ensure even distribution of the cold temperature. ABGs only need chilled if there will be a delay of over 30 minutes, but ACTHs, ammonias, and lactic acids must be placed on ice immediately following the blood collection.
Bilirubin is an analyte that can affect brain function and is broken down by light. Due to being able to be broken down by light, if a bilirubin level is ordered, the phlebotomist must protect the specimen from light by wrapping it in gauze or collecting it in an amber vial. If it is a baby that is under a bili-light, then the light must be turned off during collection and then turned back on once the blood collection is completed.

The final two special collections are neonatal screens and blood collections to test for malaria. Neonatal screens are collected on a special form with filter paper attached. The baby’s heel is punctured and a large blood drop is placed in the 5 specific circles on the filter paper. The specimen is then allowed to air dry and is sent off for testing. Specimens for malaria testing are collected on blood smears. The patient’s finger is punctured and blood is placed on glass slides in thick and thin smears to be stained and evaluated by a medical laboratory technologist. Some facilities allow the specimen to be collected from a routine venipuncture in an EDTA tube and the slides made from the EDTA tube.