

The University of Chicago Medical Center Laboratories
Blood Collection Procedure

POLICY

To avoid test error due to additive carryover, a defined order of draw should be followed for both glass and plastic collection tubes when drawing multiple specimens for clinical laboratory testing during a single venipuncture.

All additive tubes should be filled to their stated volumes. As most tubes contain an additive or clot activator that needs to be mixed with the blood sample, tubes need to be mixed immediately after drawing. Tubes with anticoagulants (i.e. EDTA) need to be mixed immediately to ensure that the specimen does not clot.

PROCEDURE

Specimen Requirements

Review specimen requirements for the test of interest in the Test Catalog. Each test will provide information as applicable to identify:

- Patient preparation requirements
- Specimen requirements
- Specimen container requirements
- Specimen stability (temperature) requirements
- Collection instructions
- Required forms or special instructions

Collection Procedure

Refer to individual test information for additional collection requirements. Refer to Medical Center or organizational requirements for patient identification, hand hygiene and other applicable requirements to the venipuncture process.

Order of Draw

After verifying that the collection tubes have not exceeded expiration dates, the following order of draw should be used:

1. Blood culture tube/bottle
2. Coagulation tube (light blue top) – *observe fill line requirements*
3. Serum tube with/without clot activator, with/without gel separator (red top, SST gold top, royal blue top with red-stripe tube label)
4. Heparin tube with/without gel plasma separator (green top, mint green top)
5. EDTA tube with/without gel separator (lavender top, pink top, royal blue top with purple-stripe tube label)
6. Oxalate/Fluoride tube (gray top)
7. Any remaining additive tube (ACD tubes, SPS tubes, etc.)

Note:

- *Waste tubes are required to be collected/discarded before a tube for any coagulation test (other than PTI/PTTB) can be collected.*
- *The discard tube must be nonadditive or another coagulation tube (plastic red tops cannot be used as waste tubes).*
- *When using a winged blood collection set for ANY coagulation test, the discard tube must be used to prime the tubing of the collection set to assure maintenance of the proper anticoagulant/ blood ratio in the tube to be drawn for coagulation testing.*

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Mix by Inverting

If the tube contains an additive, clot activator, or anticoagulant, mix it immediately after it is drawn by gently inverting it 8 to 10 times (holding the tube upright, gently invert it 180° and back (= 1 inversion) - then collect the next tube if drawing multiple specimens.

Label Specimens

Tubes must be positively identified after filling (not before), but before leaving patient bedside (inpatient) or before patient leaves room (outpatient). See Specimen Labelling document for additional information.