

LABORATORY COLLECTION MANUAL	<b>BONE MARROW COLLECTION FOR THE PATHOLOGY DEPARTMENT</b>
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## GENERAL PRINCIPLE

The collection of Bone Marrow is performed primarily for the results that can be obtained through a microscopic pathology examination. It is a difficult procedure for the patient, but essential for diagnosis of some hematological disorders. Some pathological findings benefit by confirmation with culture results. So, often, a battery of cultures is ordered at the time of specimen collection, including, but not limited to, culture for aerobic and anaerobic bacteria, acid fast bacilli, and fungus. Upon occasion, there is a need to order "Flow Cytometry and Cytogenetic Studies" on the specimen. **(If it is indicated that these orders need to be made, the Pathology Department needs to be aware of this prior to the specimen collection.)**

### TO CORRECTLY OBTAIN A BONE MARROW SPECIMEN:

**Every floor needs to keep a bone marrow tray in stock.**

1. Correct and complete Request for Service Bone Marrow:  
For inpatient, a Surgical Pathology/Cytology Form is completed. The Laboratory will be there to assist the unit secretary with Order Entry, if needed. For outpatients, use the black and white request form (Example, attached form #2303). Order the specimen after collection, due to queries that need to be answered about what specimens are collected.
2. Correct and complete orders from the physician doing the procedure: Please use sheet titled "**BONE MARROW REQUISITION**" (example following this procedure). Please place a patient label on the bottom right corner of both sheets of the request. This checklist is to be completed after collection of specimen, so that the specimen collected may be listed correctly. This form also needs the patient diagnosis, the physician's signature, and date of procedure written on them, as it is used as the Physician's written orders for patient chart.

It is the nurses' responsibility to have this paperwork ready for the physician to fill out and sign at the time of the procedure. The tech assisting needs to know if the physician is going to need Histology, Microbiology, and/or Flow Cytometry/Cytogenetic Studies when the procedure begins. The "Physician's Checklist for Bone Marrow Testing Sheet" was created to simplify the ordering of Bone Marrow tests, but to do so, it must be used properly. When there is Flow Cytometry / Cytogenetic Studies to be collected, the Lab must know this prior to the collection of the Bone Marrow (Prior being before the assistant comes to the floor to collect the specimen.) Flow Cytometry/Cytogenetic Studies orders are marked on the checklist under Flow.

- ◆ If you have any questions, call either extension 3116 for the Chemistry Department or 3104 for Histology/Pathology.

**There are no routine bone marrow orders!!!!**

3. **"Time Out" must be performed prior to procedure.** Please make sure nursing completes the checklist form to document the Time Out.
4. Correct collection of specimen: Placement of the aspirate (the amount collected and the placement of the specimen in correct containers) depends on the tests that are to be ordered.

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- ❖ **ALL TUBES MUST BE LABELED (at the very least) WITH THE PATIENT'S NAME AND DATE OF BIRTH BEFORE LEAVING THE PATIENT BEDSIDE.** Patient demographic labels are available at the nurses' station.
  - ❖ The 1<sup>st</sup> aspirate collected is placed in the EDTA tube (purple top vacutainer). Please collect a minimum of 1 cc. in the tube and no more than 3 cc. Immediately invert the tube.
  - ❖ The 2nd aspirate collected is for Flow Cytometry/Cytongentis Studies (if it is ordered), 3 cc. of the specimen is to be placed in the green top vacutainer tube/tubes (Sodium Heparin). Two tubes must be collected if both are ordered. Immediately invert the tube(s). If the Bone Marrow procedure renders a "Dry Tap", the bone core biopsy can be placed in RPMI and sent out for these studies. An additional core can be collected for the Histology studies and placed in formalin as usual.
  - ❖ Microbiology is collected in the pedi yellow tops. (Be sure to prepare the tops of the pedi tube with betadine prior to the bone marrow collection.) Place 1.5 ML into each pedi yellow top vacutainer tube, collect three if possible. (You need to shake these tubes VIGOROUSLY.)
  - ❖ The remainder of the specimen is to stay in the syringe so that it can clot and later be fixed with formalin in the Pathology Department for Histology preparation. The bone biopsy specimen is to be placed in formalin as soon as it has been obtained. Be sure that every specimen collected (slide, tube, or container) is labeled with the patient's name before they are taken out of the patient's room.
4. Speedy delivery of specimen: Time is very important in the diagnostic reading of the entire specimen. Please deliver to the Lab as soon as possible.
  5. Correct disposition of the specimen: The specimen, if being delivered to the Lab, needs to be handed to a Lab person, not just set in the specimen box.
  6. Check on all laboratory blood work: Blood work with each Bone marrow biopsy is mandatory. It must be collected within 2 hours of the bone marrow collection. This blood work is ordered in the Laboratory after the bone marrow is collected, "CBC/ RETIC".
  7. Short Summary

If the request and physician bone marrow checklist sheet are filled out correctly, the specimen can be obtained correctly, and the correct tests can be ordered. All of this with the correct fixation of the specimen will allow us to give to the physician and patient the best results possible on the specimen obtained.

The time to collect a bone marrow specimen is from 8 A.M. and 2 P.M. Monday thru Friday. If Flow Cytology/ Cytogentic studies are ordered collection is Monday-Thursday, due to over night Federal Express. The reason for this is that the bone marrow biopsy needs to be fixed, decalcified, and washed before we can process the specimen, which takes hours. Because the cells should not sit in the EDTA for too long, the smears need to be made from the EDTA tube within 2 hours for diagnostic purposes.

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***See original policy in the Laboratory for all documented annual reviews.***

#### REFERENCES

Clinical Microbiology Procedures Handbook; 1992; Isenberg; American Society for Microbiology.

Laboratory Test Handbook; 1994, 3rd edition; Jacobs, et al; Lexi-Comp Inc.

Package inserts.