CentraCare
Rice Memorial Hospital

Peripheral Smear/Morphology

Sample:

Morphology	EDTA whole blood-minimum of 0.5 mL (tube or microtainer),refrigerate
	3 properly made and labeled smears from blood <24 hr old, place in slide container, ambient
Routine Review (QA)	2 properly made smears; 1 stained and 1 unstained

Required information- Morphology/QA (Routine Review):

- CBC with 3 or 5 part differential data must be submitted. If not submitted with the smears, processing will be held until all required information is received.

If available-Morphology only:

- Recent clinical notes discussing the patient's hematologic abnormalities
- Medication list
- Most recent H&P with past medical history
- Laboratory studies: B12, Folate, iron studies (serum iron, ferritin, IBC, %saturation), TSH, hepatic panel, erythropoietin, and/or basic metabolic panel

Smear preparation:

a. Use frosted slides; improperly made slides may yield artifactual erroneous results.
   1. Slides that are too thin or are made with extra pressure may damage the cells and cause a disproportionate number of cells to accumulate in the feather edge. Those that are too thick affect morphology and lead to false rouleaux reporting and may lack a feather edge.
   2. A good feather edge should fade away without a defined border on the end, and should be straight across the slide. A defined border indicates that the larger WBC's have piled up on the edge, and this will result in an incorrect proportion of cells in the differential area.
   3. The smear should be smooth and not interrupted by holes, waves, ridges, or streaks. Streaks that extend beyond the feather edge are the result of a chipped spreader slide and will cause uneven distribution and inaccurate cell percentages.
   4. The differential area must show a clear separation of red and white cells. Cells should be touching but not overlapping.

b. Using a pencil, clearly label the slide with patient full name, and DOB.
   1. Other identifiers may also be included.
   2. Use of a marker is unacceptable as the staining process will remove marker.
   3. Do not label with a self-adhesive sticker

c. Drying slides: <u>Immediately</u> dry the blood film in front of a fan or by rapidly waving the slide in the air. Failure to dry the slide immediately will cause false rouleaux, shrunken WBC's and crenated RBC's.

Rejection criteria:

1. Smear made from blood drawn more than 24 hours before.
2. No CBC/Diff data available.
3. Improperly labeled paperwork or slide.
4. Smear technically unacceptable.