

**MANUAL DIFFERENTIAL**

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|---|---|--|
| <input checked="" type="checkbox"/> St. Joseph Medical Center, Tacoma, WA | <input checked="" type="checkbox"/> St. Anthony Hospital Gig Harbor, WA | <input type="checkbox"/> Harrison Medical Center, Bremerton, WA  |
| <input checked="" type="checkbox"/> St. Francis Hospital, Federal Way, WA | <input checked="" type="checkbox"/> St. Elizabeth Hospital Enumclaw, WA | <input type="checkbox"/> Harrison Medical Center, Silverdale, WA |
| <input checked="" type="checkbox"/> St. Clare Hospital Lakewood, WA       | <input checked="" type="checkbox"/> Highline Medical Center Burien, WA  | <input type="checkbox"/> PSC                                     |

**PURPOSE**

To provide instruction for performing and resulting a manual differential.

**BACKGROUND**

Manual WBC differentials are required when auto differentials cannot be reported. The manual WBC differential is added and performed in the LIS using pre-defined keys on the keyboard.

**RELATED DOCUMENTS**

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|---------------|---|
| M-PO-HEM-1438 | CBC Review Criteria – LH Analyzers                                    |
| R-W-HEM-1404  | Cell Morphology Grading   |
| J-PO-HEM-1577 | DXH-CBC Review Criteria   |
| M-W-HEM-1320  | LH Cellular Interference  |
| R-PO-HEM-0108 | Pathologist Review of Blood and Body Fluids - Criteria                |
| R-W-HEM-1418  | Peripheral Smear Preparation  |
| R-W-HEM-1421  | Platelet Count Estimates  |
| R-W-HEM-1420  | WBC Slide Estimates   |
|               | Sysmex XN Hematology Analyzer complete blood count/Reticulocyte count |
| J-W-HEM1581   | DXH – WBC Interferences   |
| R-W-HEM-1325  | WBC Low Count Procedure   |

**INSTRUCTIONS**

1. Highlight the appropriate specimen from the hematology outstanding list. Double-click the entry or click on “Results Entry”. If eligible, the hemogram can be preliminary verified. Save, click on the down arrow on the “Verify” button, then click “Prelim Verify” from the dropdown menu.
2. On the middle toolbar, select “Add a Manual Differential”. Note that a manual differential has been added beneath the CBC accession in the Navigation Pane. Select the manual differential folder and click “Edit” to open the manual differential resulting screen.
3. Perform the WBC differential using the keys that are assigned to each cell type on the numeric keypad. In the + column, these keys will be preceded with a capital N. Count and report nRBCs as well.

**Note:** If you notice that you have counted some cells in error, they can be subtracted from the differential by using the associated keys on the alpha-numeric keypad.

**Note:** Consult your site’s instrument-specific CBC Review Criteria Procedure and/or Cellular Interference Procedure for special instructions for nRBC’s.

Example: The hematology analyzer results may enumerate nRBC’s. This requires a smear review to determine if nRBCs are actually present and will require a manual differential if nRBCs are to be reported.

If the nRBC's fall in the 35 fl range for cellular interference, the analyzer will correct the WBC, and the corrected count will be transmitted to the LIS. If nRBC's are present and the analyzer has NOT corrected the WBC count, a manual correction of the WBC count may be indicated. WBC estimate should match your reported WBC count and can help determine if manual correction is needed or not.

**Note:** The default number of cells to count when performing a manual differential is 100. Click on the "Change" button to change the number of cells to count either due to a very low or very high white cell count. Then type the total number of cells counted in the differential into the "Number of Cells to Count" field. The LIS will automatically correct the differential by calculating the Relative Percent for each WBC type. Add a chartable comment to the results "Differential performed on XXX cells." Refer to the WBC Low Count Procedure for further instructions.

4. After the count is complete, use the template to enter abnormal RBC, platelet, or WBC morphology, if applicable. Enter values by clicking on the magnifying glass in the "Values" column of the template and selecting a result from the drop down menu. If no entries are made, all morphologies will be reported as Normal. Normal is the default report in the LIS.
5. If a pathology review is indicated, indicate YES in the "Values" column of the resulting template. The LIS will add a pathology review to the CBC accession number. Finally, use the white "Comments" field to enter pertinent observations that may not otherwise be included as part of the manual differential template.
6. During final verification, the results of the hemogram and manual differential will pop up for review. At this time, carefully review the hemogram, the manual differential, and all morphology results and comments that have been entered, scrolling down if necessary. If you detect an error, cancel and return to the Edit modes to make appropriate corrections. Once you have ensured that all results are correct, final verify the CBC and manual differential together.

## REFERENCES

Beaker user guide