**WBCs Side Estimate Study Summary 2014**

12 CLSs performed WBC estimates on ten slides. The WBC counts ranged from 1.9 to 37.7 x103/cc. Per SOP 1117.t *WBC Estimate on Peripheral Blood:*

Evaluate a wedge smear for acceptable cell distribution, feathered edge and staining.

Count the number of both intact and disrupted WBCs in each of ten fields where the RBCs overlap slightly, under 50X oil immersion objective.

Multiply this number by 300 to get the estimated WBC count per L.

The WBC estimate should agree with the automated WBC count by 10%

The average WBC estimates performed by 12 CLSs within 10% of the LH780 WBC counts were 2 out of 10. Four out of 10 estimates agreed by 20%. Estimate ranges were anywhere from 10 to 50% of the LH780 WBC, with no pattern.

The first conclusion is that SOP 1117.t has been changed to *The WBC estimate should agree with the automated WBC count by 20%.(December, 2014)*

The second conclusion is more important. Extensive correlations have been performed here at UCDHS and historically by peers and research. The automated impendence WBC count is more accurate than a manual hemacytometer chamber count. Interference may occur with large and giant platelets, schistocytes, or platelet clumps. The important point is to trust the WBC count *within reason*.

But *within reason* is the difficult part. First correctly interpret the histogram. Second do not overcorrect for NRBC’s. The manual calculation should only be used when the WBC changes significantly, because the manual correction overcorrects the WBC count. Please refer to the *LH780 Uncorrected WBC’s and NRBC’s* handout.

Most important is to rely on the histogram review and the automated WBC count more than on the WBC estimate. It will be rare to report the manual correction. Please refer to the *WBC Estimate Examples.*