

Spurious Outlier in Cell Counter for Total White Blood Cell Count Parameter in Laboratory External Quality Assurance Program

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Abstract

Background & Aims: In the External Quality Assessment Program (EQAP), medical laboratories' test results are compared to their peers by statistical analysis. The present study aims to highlight issues related to the root cause for the outliers in EQAP, the factors which lie outside the laboratory operation. **Material and Method:** Indian Society of Haematology and Blood Transfusion and All India Institute of Medical Science (ISHTM AIIMS) EQAP samples were analyzed in HORIBA Yumizen H 550 and HORIBA Pentra 60 cell counter. Randox international quality assessment scheme hematology (RIQAS) was analyzed on Yumizen H 550 cell counter. **Result:** All CBC parameters performance except Total WBC were found satisfactory as Z score is below three in ISHTM AIIMS EQAS on Yumizen H 550 in both laboratories. In contrast, Yumizen H 550 cell counter showed unsatisfactory performance as the Z score was more than three in both laboratories. In RIQAS Yumizen H 550 cell, the counter-performance of all CBC parameters is satisfactory for all samples as SDI is less than three. **Conclusion:** Horiba Yumizen H 550 cell counter gives spurious outlier in the total WBC parameter for ISHTM AIIMS EQAS. Switching to other EQAPs can provide the solution to a constant outlier.

Keywords: Cell counter, External quality assurance, Yumizen H 550, RQAS, Total WBC count