Quantifying Variation in the Clinical Laboratory for Improving External Quality Control

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ABSTRACT

External quality control (or proficiency testing) is an important tool for quality assurance, especially for ISO accreditation, since it helps laboratories in identifying trends and deviations in analytical measurements thus enabling corrective actions to be taken [1]. However, a deeper analysis for accuracy of quantitative data is not always possible once acceptable range is often overestimated. Consequently, comparing average laboratories performance – within or outside the average range – can be misleading in defining the analytical performance of a laboratory. Here, we take proficiency testing further by evaluating total agreement (for quantitative and qualitative assays) and variation between analytical runs (Total Error %) to assess the reliability of quantitative results for HbA1c, Total Cholesterol (CHOL) and Triglycerides (TG) (Figure 1). The proposed method is a potential tool for taking proficiency testing to the next level thus aiding in continuous improvement of processes.

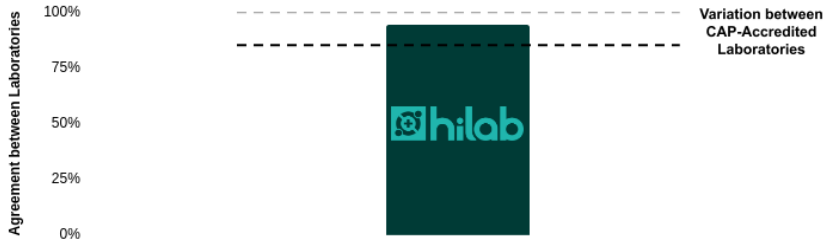

Figure 1: Total Agreement for Quantitative and Qualitative Assays of Hilab compared to CAP-Accredited Laboratories.

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REFERENCES

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