Abstract:

INTRODUCTION: The study intends to observe the frequency of preanalytical phase errors both inside and outside the clinical laboratory according to certain quality indicators (QIs).

METHODS: The one-week observation focused on 73 nurses drawing blood from 337 patients. It was performed in two stages: the observation of blood collection up to the receipt of the samples, and the receipt of the samples up to the analytical phase. The data pertaining to the number of patients, tests, and rejection rates were obtained from the laboratory information system (LIS) for the one-week and the one-year period and compared with the observational data.

RESULTS: The process of blood sample collection from 337 patients taken into 1347 tubes was observed. Although the majority of the nurses (78%) used safety needles, the safety mechanism was properly activated only in 38% of the interventions. Evaluation of biochemistry tubes (n=971) revealed the following: the incorrect fill volume error was 40%; the hemolysis was seen by 17%, and the clotted sample and fibrin were observed by 6%. The incorrect fill volume error was 12% and 20% in ethylenediaminetetraacetic acid (EDTA) and citrated tubes, respectively. Clotted samples and platelet clumps were seen in 1% of EDTA tubes.

CONCLUSION: The study confirms the relative frequency of preanalytical phase error occurring inside and outside of the laboratory.

Reference:

Sonmez, C., Yıldız, U., Akkaya, N. and Taneli, F. (2020) Preanalytical Phase Errors: Experience of a Central Laboratory. Cureus. 12(3), p.e7335. doi: 10.7759/cureus.7335.

Full Text