

Pre-analytical Stage of Blood Sample Collection: A Challenge to the Clinical Laboratories

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Background: Clinical Laboratory Total Testing process is highly complex. Most errors in the venous blood testing process are pre-analytical. Improvement in the pre-analytical stage would yield a better laboratory result.

Objective: To evaluate the standards of pre-analytical procedures and identify sources of error in the venous blood sample collection and implement necessary measures to improve the quality of the sample and reduce the sampling errors.

Design: A Prospective Study.

Setting: Biochemistry Section, Bahrain Defence Force (BDF) Military Hospital.

Method: The study was performed on samples received from medical wards for biochemistry analysis from March 2013 to May 2014. The study consisted of three phases, which included sampling error data collected for six months, finding types, sources of errors and solutions and data collected again for six months after implementing the necessary measures.

Result: Pre-implementation and post-implementation patient sample error data were statistically analyzed; P-value <0.05 was considered statistically significant. Overall, there was 56% decrease in the blood specimen errors within six months of implementation in medical wards (95% CI; P<0.05).

Conclusion: In this study, there was a significant decrease in the sampling errors and thereby improvement in the overall quality of patient samples by implementing the recommended measures.

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