The implementation of a simple and rapid check-list, including verification of blood collection devices, patient preparation and sampling techniques, was found to be effective for enhancing sample quality and reducing some preanalytical errors associated with these procedures" Giavarina and Lippi (2017).

Abstract:

The extra-analytical phases of the total testing process have substantial impact on managed care, as well as an inherent high risk of vulnerability to errors which is often greater than that of the analytical phase. The collection of biological samples is a crucial preanalytical activity. Problems or errors occurring shortly before, or soon after, this preanalytical step may impair sample quality and characteristics, or else modify the final results of testing.

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The standardization of fasting requirements, rest, patient position and psychological state of the patient are therefore crucial for mitigating the impact of preanalytical variability. Moreover, the quality of materials used for collecting specimens, along with their compatibility, can guarantee sample quality and persistence of chemical and physical characteristics of the analytes over time, so safeguarding the reliability of testing. Appropriate techniques and sampling procedures are effective to prevent problems such as hemolysis, undue clotting in the blood tube, draw of insufficient sample volume and modification of analyte concentration. An accurate identification of both patient and blood samples is a key priority as for other healthcare activities. Good laboratory practice and appropriate training of operators, by specifically targeting collection of biological samples, blood in particular, may greatly improve this issue, thus lowering the risk of errors and their adverse clinical consequences. The implementation of a simple and rapid check-list, including verification of blood collection devices, patient preparation and sampling techniques, was found to be effective for enhancing sample quality and reducing some preanalytical errors associated with these procedures. The use of this tool, along with implementation of

objective and standardized systems for detecting non-conformities related to unsuitable samples, can be helpful for standardizing preanalytical activities and improving the quality of laboratory diagnostics, ultimately helping to reaffirm a “preanalytical” culture founded on knowledge and real risk perception.

Reference:

Giavarina, D. and Lippi, G. (2017) Blood venous sample collection: Recommendations overview and a checklist to improve quality. Clinical Biochemistry. February 24th. .

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