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Journal Name:	Current Journal of Applied Science and Technology
Manuscript Number:	Ms_CJAST_43874
Title of the Manuscript:	QUALITY MANAGEMENT OF THE PRE-ANALYTICAL PHASE: MONITORING AND CONTROL
Type of the Article	Review Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer’s comment	Author’s comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)												
Compulsory REVISION comments														
Introduction	Introduction: Firstly, Starting the introduction with statement on three phases of laboratory process (Pre-analytical, Analytical and Post Analytical) as background of total testing process before introduction of Pre-analytical perspective will give readers especially non-laboratory expert broad and good understanding of the topic. Thus more references will be required Modify line 33-35 to read – Some important Pre-analytical phase of laboratory process are generally held outside the medical laboratory environment, which are not under total control of laboratory management. Please include reference/citation for the following statements in Line 41-42, Line 44 and 45. Do same for 51 to 53. Change laboratory error to laboratory errors in line 42 Table 1. Error Tracking in Medical Laboratory Testing in Pre-Analytical Phase can be improved to include possible recommendations of what to do in each error. Include Table 1 title on where it appeared. Objective is “----- monitor and control error “the write up lacks information on approach to control errors. You make relook at the objective. Line 99-100 also look at pipette calibration, incubators etc Line 117 to 118 “it takes well- planned and managed activities <i>Like what?????</i> Line 121 Details not de details Methods: • The method and type of review was not stated. There are many types of review (traditional, Systematic or Systematic with Meta-analysis etc.) hence the need to mention which type of review specifically is this article. • Which data based were literature extracted (Pubmed, Medline, etc.) • How were the literatures synthetized, distilled and summarized or Did authors made used of all literature materials? • More work and details needed under Materials and Methods Result section: Data from previous literatures can be stated in result section such as percentage of error in Pre-analytical phase so that conclusion can be effective Conclusion: Conclusion not supported by data. There is need to support conclusion with reviewed data results section before the study conclusion can be deem effective. Ethical issue: There is no ETHICAL ISSUES in this manuscript	The Total Laboratory testing process includes three phases : the preanalytical, the analytical and the post analytical phase Some important pre-analytical phase of laboratory process is generally held outside the medical laboratory environment, which are not under total control of laboratory management. [10] The pre-analytical phase of the total laboratory testing process is where the majority of laboratory errors occur. [11,12 Studies have shown that pre-analytical errors predominated in the laboratory ranging from 31.6% to 75% [13]. The pre-analytical phase can be classified into two namely the “Pre”-pre-analytical constituting (46-68%) and the “true” or “conventional” pre-analytical phase (3-5%). [14,15] The commonest causes of errors in the ‘Pre’ pre-analytical phase include inappropriate test request, order entry, patient/specimen mis-identification, sample collected from infusion route, sample collection (hemolysis, clotting, insufficient volume etc), inappropriate container, handling, storage and transportation. [19] laboratory errors Error tracking in medical laboratory testing at the pre-analytical phase Table 2 Types and Description of most common prep-analytical errors <table><tr><th>Pre-analytical errors</th><th>Description</th></tr><tr><td>Hemolyzed samples</td><td>Presence of pink to red tinge in serum or plasma</td></tr><tr><td>Insufficient sample</td><td>Serum obtained not enough for requested test</td></tr><tr><td>Incorrect sample tube</td><td>Most samples received should not be in anticoagulated tubes</td></tr><tr><td>Sample not on ice</td><td>Samples for arterial blood gases analysis not transported on ice</td></tr><tr><td>Incorrect sample identification</td><td>Mismatch between name on sample and request form</td></tr></table>	Pre-analytical errors	Description	Hemolyzed samples	Presence of pink to red tinge in serum or plasma	Insufficient sample	Serum obtained not enough for requested test	Incorrect sample tube	Most samples received should not be in anticoagulated tubes	Sample not on ice	Samples for arterial blood gases analysis not transported on ice	Incorrect sample identification	Mismatch between name on sample and request form
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Materials and Methods														
Results Section														
Conclusion														



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		Tube broken in centrifuge	The use of different tube sizes for sample collection
		Delay in sample transportation	Samples were not sent to the laboratory on time
		Expired reagents	Some reagents expired before use
		Sample mix up	Samples intended for other laboratories were sent to the biochemistry lab
Adapted from [35]			
The most common pre-analytical errors include inappropriateness of test order, patient identification error, timing errors in sampling and preparation, hemolysis and lipemic blood samples, inappropriate transport and inadequate and inappropriate sample collection tube (table 2) It takes well-planned and well managed activities of every step taken from the test ordering to the point of analysis of sample in the laboratory to achieve quality			
Details Studies have shown that “pre”-preanalytical errors predominated in the laboratory ranging from (46 – 68%), while the conventional pre-analytical account for (3-5%) [5].			



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Minor REVISION comments	Copyediting Example: "The pre-analytical phase is the most complex of the total testing process as pre-analytical errors are estimated to account for up to 70% of all mistakes made in laboratory diagnostic" Should be modified as Pre-analytical phase is the most complex of the total testing process as pre-analytical phase are estimated to account for approximately 70% of all errors that occurred laboratory diagnostic Good laboratory practise should be good clinical laboratory practice Line 28 Please, define all abbreviation such as CLSI, ISO and QC at first mentioned and do so for all others abbreviation in text that are not first defined	The pre-analytical phase is the most complex of the total testing process as pre-analytical errors are estimated to account for approximately 70% of all mistakes made in laboratory diagnostics [1,2] The management of quality in medical laboratories today is generally subject to national or international guidelines for good clinical laboratory practice [7].
Optional/General comments	This review article looks at Pre-analytical variables that causes errors in the laboratory process but focus on those errors that occurred before sample are received in the traditional laboratory settings hence the need for laboratory to proactively make continuous quality improvement efforts to reduce such non-laboratory related errors for improved patient's safety, accurate and reliable laboratory results. No doubt the authors of this review article have done a good reviewed and synthesis of literatures hence the work has its own merit but more work is needed for improvement in Introduction, methods, Results and Conclusion section before it can be accepted. Those specific area of improvement already stated above	