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Letter to Editor

Biochemistry Section

Beyond Four Walls: Perspective from a Hospital Laboratory

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With great interest we have read article published in your journal in Oct 2016 issue, "An Insight View on Pre and Post-Analytical Errors in Clinical Chemistry Laboratory of A Tertiary Care Super Specialty Teaching Hospital" [1]. The article definitely enlightens about the Quality Indicators and their use in Quality Improvement process. In this context we would like to suggest creation of problem groups classification and monitoring the incidence record and subsequent planning for improvement.

DISCUSSION

The International Organisation for Standardisation (ISO) 15189:2012 standard for laboratory accreditation defines the preanalytical phase as "processes that start, in

Group A:Supplies and Accessories				
Problem	**Consequences**	**Incidence Record %**	**Plan**	**Result/ Outcome**
Long order business cycle, from order to receive/delay in the procurement of materials needed.	Increased cost. Delay or interruption in analysis/test error.		Protocols establishment for supply chain and materials or accessories ordering.	
Group B: Problems related to Hospital Information System (HIS)				
Missing unique identifier for each patient and misidentification. Deficiency in pathology request form, in particular in primary diagnosis field.	Sample rejection, repeated requests, over utilisation of laboratory test. Inappropriate request/under or overutilisation of laboratory tests. Interruption in preanalysis or postanalysis phase/delayed reports.		System improvement by application training.	
Group C: Inappropriate Interaction of other Departments with Clinical Laboratory				
Repeated request for a sample Failure to timely send the sample and autolysis. Antibiotic therapy for patient before test and create microbial resistance. Absence of label on sample or incomplete information on the labels. Mismatch between information on the lab request form and sample type. Unavailability of attending physician or his/her assistants to get needed information about the patient.	over utilisation of laboratory tests. Sample rejection/test error/need for repeated sampling.		Designing of the interaction between the different departments.	
Group D: Insufficient Education and Experience				
Lack of awareness/knowledge among nurses and other staff regarding sufficient volume or how to obtain a sample and how it is transported. Lack of knowledge among assistants and staff on diagnostic test indications.	Sample rejection/ test error/ Inappropriate request/under or over utilisation of laboratory tests.		Educational programs and training.	

[Table/Fig-1]: Problem groups and possible proposed plans.

chronological order, from the clinician's request and include the examination request, preparation and identification of the patient, collection of the primary sample (s), and transportation to and within the laboratory, and end when the analytical examination begins" [2].

Identification and documentation of a problem is a key step for improving the quality of laboratory medicine. Currently, pre analytical errors account for up to 70% of all mistakes made in laboratory diagnostics, most of which arise from problems in patient preparation, sample collection, transportation, and preparation for analysis and storage [3].

While patient preparation and sample collection (including patient and sample identification, and specimen handling) are widely recognised as frequent sources of errors, greater attention should be paid to sample transportation. This area needs improvement initiatives, as there is an increasing trend towards consolidation of laboratory facilities, with a consequent need for long distance sample transportation [4].

Moreover, usually only the analytical phase falls under laboratory control, while the pre and post analytic phases are the responsibility of stakeholders other than the laboratory such as the clinician, the nurse, the patient and others involved in patient identification, data entry, specimen collection and transport. In addition, most of the many different terms used in the literature to define errors in laboratory medicine (e.g., mistakes, blunders, defects, outliers, unacceptable results, and quality failure) have negative connotations involving blame, individual failure and culpability, and even worse, pertain to studies focusing on a limited number of Total Testing Process (TTP) steps. Taken together these are the "reasons for neglect" for errors in laboratory medicine, and should explain why the patient centered view point has been taken into account only in recent years [5].

We have tried to segregate the indicators where they can be grouped separately. This also helps in maintaining the incidence record. Then accordingly plan of action is suggested and outcome is monitored. This process helps in continuous monitoring and evaluation of these quality indicators [Table/Fig-1].

CONCLUSION

Though, it is impossible to completely eliminate errors, it is possible to reduce them. Correcting such problems is mainly dependent on increased co-operation between higher management authority, laboratory personnel, paramedical staffs and clinicians and implementing new strategies as well as continuous training programme will surely reduce the errors occurring in such phases.

The concept of quality indicators has revolutionised the field of laboratory medicine. These indicators provide the comparison of individual laboratory performance with the aim of improving laboratory quality. Monitoring and evaluating these indicators help laboratory achieve excellence. We should strive to reach these bench marks to provide the best services. Efforts should be initiated to develop quality indicators in laboratory that can evaluate and subsequently improve the health care system in an effective manner. Such indicators should be easily quantifiable and should be segregated into groups to employ corrective actions and preventive actions necessarily.

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