The journey of the implementation of total laboratory automation in a large tertiary care hospital: Challenges and immediate effects

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The laboratory is arguably the core of diagnostic based medicine and has come to play an invaluable role in the making of decisions by medical personnel. This emphasis on clinical Biochemistry has placed high demands on the laboratory causing decision makers to rapidly adapt to methods to keep pace with such demands; these demands hover around diagnostic accuracy, rapid turnaround time, limitation of hazards and reduction/elimination of error. These challenges have been tackled via various means such as realignment of architecture, enhanced training of technicians, technologists and biomedical scientists, and the implementation of the Laboratory automation system (specifically, the total laboratory automation system). The enforcement of the latter has proven to be the most impacting of all but it comes with its own challenges and these challenges are a facet in a comprehensive overview of the process involved in pre-implementation, implementation and post implementation decision making, advantages of this system, architecture and the technicality of its operation process at Medanta the Medicity. The method initially involved interviewing of leadership personnel and studying the documented specimen flow, operator flow, and process flow. Pre implementation phase has its own challenges like space constraint, designing of the automated system so as to meet the requirements of the hospital in relation to handling of large number of samples and the comprehensive menu of parameters. During implementation phase the major challenge was of the barcode labeling. The barcode labeling was changed so suffice the need of the puck (carrier for transportation of samples). The implementation of the total lab automation has led to reduced TAT, improved lab productivity which is helping in improving the brand value of the hospital, increase revenue and savings by reducing average length of the stay for patients and improving patient care standards. However, the best of automation alone is not enough. If the processes around automation mainly information technology are not streamlined most of the advantages will fail. Automation is well suited to a laboratory when coupled with process like lean that can bring path breaking improvements in the overall efficiency of lab.

Biography

Aditi Jindel Gupta is currently working in Department of Biochemistry Medanta-The Medicity, India. Her international experience includes various programs, contributions and participation in different countries for diverse fields of study. Her research interests reflect in his wide range of publications in various national and international journals. Her research interest includes analytical biochemistry techniques, air analysis, anaerobic glycolysis and analytical biochemistry.

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