

# **LABORATORY SERVICES 2003 TO 2006 CURRENT STRATEGY AND FUTURE PROSPECTS**

Bodhraj Acharya  
*Chief, Clinical Laboratory*

## **Introduction**

This report highlights the summary of laboratory activities through 2003-2006. The highlights have been described under below sub-headings.

- Background
- Reducing Error: building self- confidence
- Effective Communication: reduces public defamation
- Quality Management: Key to success
- Automation: to pace with time
- Automation through 2003 to 2006
- Turn Around Time (TAT): Sampling to reporting time
- Major Achievement 2003-2006
- Challenges
- Conclusion

## **Background**

As 2007 gets underway, the clinical laboratory of SGNHC is buzzing with speculation about future directions in various arenas, the major of which are component separation, quantification of Troponins, BNP and pro-BNP, but are not limited to.

Looking back four years in SGNHC, we find a continuous struggle and breakthrough. The identity of our laboratory was something yet to be defined. I recall; few automated machines, limited QC measures, poor documentation and only we had in excess were complains. Service, Quality and Communication were the three major areas which were looking for a total reform. The restructuring process was not easy, really not straightforward. Today, we see its goals set and objective defined but the quest for continual changes has never satisfied our aspiration because we believe, advancement is a continuous process without an end.

## **Reducing Error: building self- confidence**

Rooting out the cause of medical errors in the laboratory is a daunting, but crucial undertaking. The road that a specimen travels from its collection to analysis is filled with room for errors, which includes mislabeling, contamination, and even loss of the specimen. Laboratories which want to pursue an error-free environment should reorganize their labs according to workflow principles. In today's "outcome" oriented healthcare, we can't continue to ignore the bad outcomes or "defects" in our healthcare processes. A better process means higher efficiency, savings of time, money, and effort and better patient satisfaction. We have made a continuous effort to route the source of error which help to eliminate the repetition of the error type. Admitting instead of rejecting possible errors can make laboratory free from error.

### **Effective communication: reduces public defamation**

The recent political and social changes in our country have made the public aware about the consumer rights. Improving health care quality is moving out of rhetoric and into action. By providing accurate information about their health status, patients become empowered customers. Today, internet has made access to adequate information to the patients. Having access to more information, their demands increase or diversify. In response to this development, we should not lose sight of essential humane values. Effective communication means increasing satisfaction to their desire and reducing mess.

### **Quality Management: Key to success**

Laboratory produces data which have no shape or size; they are not touched or felt; but they carry an important meaning within. This meaning is utilized in health processes, to diagnose, monitor or screen. So, producing a wrong data is altering the meaning, affecting the health management of an individual and inviting criticism. Therefore it should be stressed that; quality should not be a target it should be habit. West Guard Rules (WGR) to Biochemistry, and CUSUM analysis to hematology are some of the examples that have been applied in this years.

### **Internal Quality control Targets**

<b>Sub-unit</b>	<b>2003</b>	<b>2006</b>	<b>Target (2009)</b>
Biochemistry	Monthly	Daily (IQC based decision for run )	IQC EQC and QA
Hematology	Yearly	Weekly	Daily Precision testing
Serology	Occasionally	Daily	Decision making level
Microbiology	Never	Yearly	Decision making level

### **Automation: to pace with time**

Semi-automated instruments have been things of museum in the advanced laboratories of the world. Spectrophotometers are no more in existences. Automation has build momentum in every aspect of laboratory analysis, reducing turn around time (TAT) and increasing efficiency. Window based multi-functionality new analyzers provide opportunities for improving laboratory efficiency and communication. Shifting of routine mass analyses to fewer workstations and autoloader, using on-line communication with the laboratory information system, the workflow will be organized more efficiently. Integrated computer systems will assist laboratory professionals in the interpretation of increasingly complex test results.

But technology which commences with cost may distract the poorer from the test availability to their reach. Platelets by aphaeresis may cost 200 times higher than component separation. People's interest must be kept in the forefront before applying any technology.

### **Automation through 2003 to 2006**

<b>Sub-unit</b>	<b>2003</b>	<b>2006</b>	<b>Target (2009)</b>
Biochemistry	Semi-Automation	Automation	TLA Platforms
Hematology	3-Part Differentiation	5-Part	Auto-loader, Auto-

	Coulter	Differentiation Laser	Stainer
Serology	-----	ELISA Platforms	Automation EIA, Dedicated Serology

### **Turn Around Time (TAT): Sampling to reporting time**

There is continuous discussion between physicians and laboratories regarding the TAT. Clinicians expect reduced TAT with precise outcome. Laboratories always look for accurate and precise outcome but flexible TAT. Excess reduction in TAT may sometimes reduce report quality, but extended TAT may effect patient management. We have set the meeting point somewhere in between.

<b>Test</b>	<b>2003</b>	<b>2006</b>	<b>Target (2009)</b>
PT	3 hours	1 ½ - 2 hours	1 hour
Emergency Testing	2 hours	1- 1 ½ hours	½ hours – 1 hour
Urgent testing panel (purposed)	-----	-----	15 – 30 minutes

### **Major Achievement 2003-2006**

#### **2003**

Year 2003 was a year of struggle to get through. The need for change was felt, shared and brought to the interest of administrative authority. Vision and concept was set for the upgrade. We extended our service, started essential tests like Troponin, adopted some skilled technicians and set our goals. Physical extension was made from a single all-encompass laboratory to well defined sub-units. Blood banking guidelines and testing strategies were developed.

#### **2004**

Automation in biochemistry analysis was the major leap we made in the year. The random assay automated analyzer was adopted. Assays like Digoxin, Lipoprotein (a), Thyroid function tests and HbA<sub>1</sub>C were started. Quality control linkage with National Public Health Laboratory (NPHL) was made. Bio-Safety and Infection control manuals, Standard Operating Procedure (SOP) for critical tests were developed

#### **2005**

Switch to ELISA testing from one step quick method of HIV HBsAg and HCV, ensured safe blood to the receiver and provide added safety to the medical practitioners. Sterility testing in critical areas initiated. Automation trainings provided opportunity to adopt latest advances. Exposure to international laboratory forums helped to understand and adopt the quality management in better way.

#### **2006**

Tests like ADA and Direct-HDL, Direct-LDL have been initiated and are in pace. Quantification of RA and ASO are looking for regular requisition. Cardiac specific tests like HsCRP have been started. Switch of Thyroid testing from tube to microwell EIA was made. Automation in biochemistry was more strengthened. Laser-based counting was started. Overall, quality became a part of testing procedure and decision making for run. Component separation is about to launch.

**Challenges:**

Although some advances have been made in the recent years there is a continuous challenge to keep hold of what we have gained. We must also keep our door opened for further improvements. Training human resources, retaining them, keeping the team work in chain and to always boost their morals is still a major challenge. If we keep our commitment always lively we can always contribute to enhance the reputation of our patient friendly hospital through laboratory perspectives.

**Conclusion:**

The success credit goes to all the laboratory staff who worked with the spirit of team-work and to the management who was always supportive to the initiatives taken. We must make quality assurance the touchstone.