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Research Article

A Partial Sketch of 2018 from Laboratory Services Department at National Institute of ENT

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ABSTRACT

Laboratories play a crucial role in patient diagnosis, follow up, disease surveillance, control and provide accurate health data for proper national health planning and resource mobilization. The objectives of the study were to assess quantity and distribution of patients achieving laboratory services at a tertiary level hospital like National Institute of Ear Nose Throat. Because the patient distribution and quantification of particular tests guide us to plan and distribute our resources for the next fiscal year. Performance of the lab services ensure us the confidence of clients over quality services. A descriptive study was performed from 1st January to 31st December 2018 at Laboratory Services Department of NIENT, Dhaka, Bangladesh. All those patients attended the department to attain any particular service existing at that particular time were included in the study. Total patients received services were 9805 (of which males 4785, females 5003) and male:female ratio, 0.96. Only 8% of total outdoor patients achieved the services. Majority of the patients 5308, were within age range of 18-65 yrs. Total RBS/FBS performed 6146, out of which 81 were abnormal results. On the other hand, blood glucose 2 hours after breakfast were only 52 and 30 showed abnormal results. Serum Creatinine 4344 (abnormal 58), LFT 384 (abnormal 19), Lipid profile 165 (Abnormal 40), Uric acid 14 (abnormal 0), Serum Calcium 266 (abnormal 0). We started our services since 2014. In first year we served 2711. In 2018 it was 9805 near about 3.6 times more. In summary, we can say though 8% of the total outdoor patients attained the institutional laboratory services, females predominated. Patients with both extremes of age were negligible in number. Availability of reagents was positively correlated with number of patients, like number of the RBS/FBS tests. Number of services acceptors was increasing with passing years. Not all tests (like serum uric acid) are commonly prescribed here, so resource distribution regarding test selection has to be more meticulous.

Keywords: Laboratories; NIENT; Patients

INTRODUCTION

According to WHO, the laboratories are an essential and fundamental part of all health systems. Reliable and timely results from laboratory investigations are crucial for decision making in almost all aspects of health services. Critical decisions are dependent on laboratory results that concern with health security and also International Health regulations. It provides a provision of accurate health data for national planning and resource mobilization [1,2]. Despite these crucial and central role laboratory services always receive little or inadequate attention in many countries. More over in a resource limited country like Bangladesh even neighboring country like India are often neglected [1,3]. But to correctly asses and manage patients with various illnesses lab services must be consistent and dependable. So strengthening laboratory services and systems is essential for universal access to high quality laboratory diagnostic services. WHO emphasized on human capacity, infrastructure and managements of quality systems for laboratories to provide high quality test results [1,6]. Quantification is a very important process. It helps to calculate the quantity of a given item at a particular time.[4].

National Institute of ENT is a tertiary level specialized hospital. This hospital is almost centrally situated at Dhaka city. The laboratory service department started its function since August 2014. Since then routine biochemical tests are regularly done.

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Like any other specialized hospital at initial stage it was targeted to provide "bread and butter" of a basic clinical laboratory [5]. As the lab has no emergency services, so working hours are 8:00 AM to 2:30 PM. As per WHO requirement staffs are competent and adequately trained [1]. Moreover effective supervision is runby managerial staffs [1]. So an observational study was carried out to see the patient quantification and distribution attending Laboratory Services Department of NIENT in the year of 2018. With a view that such kind of study would guide us to plan and distribute our resources for the next fiscal year. Moreover qualitylaboratory services will be achieved.

MATERIALS AND METHODS

This study was performed in the department of Laboratory Service of NIENT during the period of 1st January to 31st December of 2018. Study population was all those attending the laboratory service department to attain any particular service existing at that particular time. It was a descriptive study. It was designed to have following criteria.

- Inclusion criterion was those who accepted existing service.
- Those who refused to take any service were excluded from the study.

STATISTICAL ANALYSIS

Data was analysed by Graph pad Prism 9 software. Pearson's r test was done and $p < .05$, considered to be significant.

RESULTS

The patients attained the laboratory services after being advised at OPD or at indoor. Here included only the OPD. Regular quality control was done. Because laboratory's quality management system drives the highest quality of patient care (7). Third party control was run with control negative (control N) and control positive (control P) for all parameters to monitor the accuracy and precision of all processes (9). Fig 3. Is showing Levy-Jennings curve of glucose for January to June as a sample.

DISCUSSION

Most of monthly data showing females predominated except August, November, December and M: F ratio was 0.9. Out of 8% males were 3.5% and females 4.5%. Patients were minimum on June in not only laboratory Services Department but also in OPD(Figures 1 and 2). This could be also a cause for reduced numberof patients at laboratory services department in June. Maximum patients were in October at laboratory services department (Table1). Though patients at OPD were maximum in September. So number of patients at laboratory services did not follow the sametrend of OPD. According to age distribution majority of thepatients were of 18-65 yrs of age followed by 1-17 yrs age group(Tables 1 and 2). As the patients of 18-65 yrs age group were working and conscious, so they attained the services actively. On the other hand, 0-1 yrs age groups were the most dependent group. So they were the minimum. Therefore it can be assumed that to attain any particular health service, the client must be active. Moreover 0-1 yrs age group are dealt particularly by the paediatricians. We ran out of reagents for serum creatinine test on May. So number of serum creatinine in May was "0". Maximum blood glucose and serum creatinine tests were performed in the month of October (Table 4). Despite short comings majority of the tests were of blood glucose and serum creatinine (Table 4). Sowe can assume that most common investigations even at a tertiarylevel hospital are blood glucose and serum creatinine. MaximumLFT and serum lipid profile tests were done on December (Table5). Serum Calcium tests were highest at October (Table 6). Serum uric acid tests are not usually prescribed here. So for the next fiscal year we completely omitted the test. As Government of Bangladesh declared Minimum Health Care Facility (MDG) by 2015, so quality control is seen as a part of total laboratory program [8,10]. The laboratories need to maintain its quality material by using Levey–Jennings chart [11]. We always follow the Levy–Jennings chart for quality control for all parameters throughout the year (Figure 3). Number of tests were (RBS/FBS) significantly positively (r^2 0.5748,p 0.0043) correlated with number of patients (Figure 4). As earlier we have seen number of patients in laboratory services department even gender of attending patients always did not correspond with the OPD. So quality service was a prerequisite to increase the number of service acceptors.

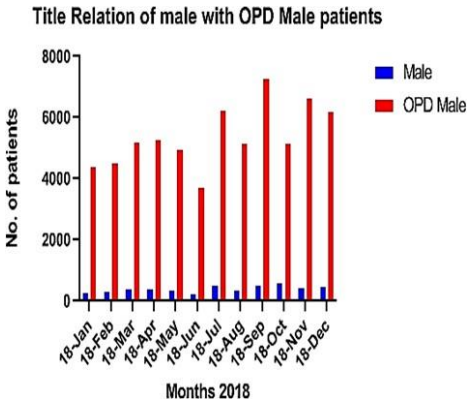

Figure 1: Relation of male patients attaining Lab services with OPD male patients.

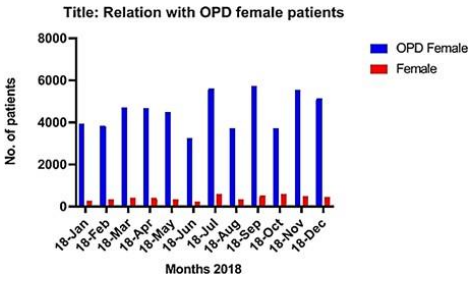

Figure 2: Relation of Female patient attaining Lab services with OPD female patients.

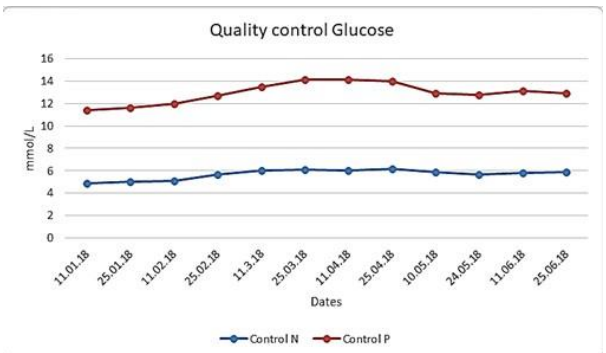

Figure 3: Quality control of glucose for the first six months.

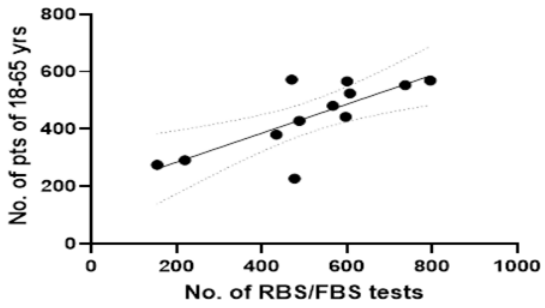

Figure 4: Correlation of number of tests with number of patients.

Table 1: Patients attending the Laboratory Services

Months	Total patients	Males	Females
Jan–18	503	250	253
Feb–18	628	269	359
Mar-18	779	371	403
Apr–18	812	400	415
May–18	667	332	347
Jun–18	456	216	235
Jul–18	1085	491	581
Aug–18	682	348	335
Sep-18	1005	479	504
Oct–18	1175	575	604
Nov–18	1113	586	527
Dec–18	905	468	440
Total	9810	4785	5003
	M:F	0.9	

Table 1: Shows month wary patients' distribution achieving services provided by Department of Biochemistry (in partial). Total patients were 9810 in number out of which 4785 were males and 5003 females.

Table 2: Age Distribution of the patient.

Months	0-1yrs	1-17 yrs	18-65 yrs	66-75yrs	>75yrs
Jan-18	0	77	291	16	3
Feb-18	1	95	380	10	1
Mar-18	1	155	481	13	3
Apr-18	0	106	442	17	3
May-18	0	32	227	7	1
Jun-18	0	71	275	6	6
Jul-18	0	175	572	20	5
Aug-18	0	96	428	9	5
Sep-18	0	145	553	29	2
Oct-18	1	136	569	9	7
Nov-18	0	126	524	17	5
Dec-18	0	144	566	11	3

Table 2: Showing month wary distribution of age of patients. Majority of the patients were within the age distribution of 18-65 yrs in all months.

Table 3: Total patients according to age distribution.

Age ranges (in yrs)	No. of patients
0-1	3
1-17	1358
18-65	5308
66-75	164
>75	44

Table 3: Shows maximum of the patients that is 5308 were of 18-65 yrs of age whereas minimum number, 3 of 0-1 yr.

Table 4: Distribution of routine biochemical tests.

Months	RBS/FBS	Abn	2HAB	Abn	S. creatinine	Abn
Jan-18	219	3	4	2	29	0
Feb-18	434	3	1	1	396	1
Mar-18	567	3	2	1	550	4
Apr-18	597	8	3	2	186	1
May-18	477	4	0	0	0	0
Jun-18	154	2	4	1	91	0
Jul-18	470	4	4	1	405	8
Aug-18	488	5	10	6	394	11
Sep-18	737	16	13	6	617	5
Oct-18	796	15	7	4	634	12
Nov-18	607	8	0	4	519	1
Dec-18	600	10	4	2	523	15

Table 4: Shows RBS/FBS tests were 6146 out of which 81 showed abnormal results. Blood glucose tests 2hrs after breakfast were 52 in number with 30 abnormal. Serum Creatinine tests were 4344 in number with 58 tests showed abnormal results.

Table 5: Distribution of other Biochemical tests (contd).

Month	LFT	Abn	Lipid Profile	Abn
Jan-18	3	0	12	0
Feb-18	21	0	13	1
Mar-18	17	4	0	0
Apr-18	26	1	6	0
May-18	24	4	4	0
Jun-18	9	0	9	1
Jul-18	5	1	10	0
Aug-18	51	0	16	9
Sep-18	53	0	24	9
Oct-18	58	2	23	12
Nov-18	47	2	17	2
Dec-18	70	5	31	6

Table 5: Showing more biochemical tests, where LFT were 384 in number with 19 abnormal results. Out of 165 lipid profile tests 40 were abnormal levels.

Table 6: Distribution of other Biochemical tests (contd).

Months	UA	S.Ca
Jan-18	3	11
Feb-18	1	11
Mar-18	0	24
Apr-18	0	24

May-18	0	27
Jun-18	0	12
Jul-18	10	16
Aug-18	0	13
Sep-18	0	27
Oct-18	0	48
Nov-18	0	31
Dec-18	0	22

Table 6: Showed Uric acid tests only 14 and 266 Serum Calcium tests with no abnormal findings.

CONCLUSION

It has been seen total 8% of the outdoor patients received laboratory services. Despite all short comings laboratory services department always tries to provide quality reports within every possible earliest time. So everybody's cooperation, guidance and advice are mandatory regarding quality laboratory services.

DECLARATION

All the authors declare no conflict of interest.

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