ORIGINAL RESEARCH PAPER

Volume-7 | Issue-3 | March-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

REAGENT RENTAL RE-NEGOTIATION AS A COST CUTTING MEASURE IN A MICROBIOLOGY LABORATORY

Management

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ABSTRACT

With revenues shrinking, laboratories must constantly seek ways to reduce the costs of doing business while still remaining competitive in terms of test offerings. Many laboratories have found that reagent rental contracts with diagnostic manufacturers provide a viable solution for cost reduction.

Materials and Methods: The study is a cross sectional study. One equipment was selected from the list of equipment that were under reagent rental agreement. The reagent rental agreements with the vendor of the equipment were studied with reference to the value of reagents that was committed to be purchased from the vendor per year. A comparison of the monetary value committed under the agreement and the value of reagents purchased was done.

Observations and Results: Under the agreement an equipment was given to the laboratory in lieu of purchase of reagents from the vendor. A minimum amount of value of reagent was mutually agreed upon.

On analysis of data it was observed that the laboratory had purchased reagents worth 69% more than the minimum agreed amount over the period of contract of 4 years. Therefore, the hospital paid for the equipment almost twice during the period of contract as the cost of equipment is a part of the reagent cost.

Recommendations: Based on the findings the following recommendations were made:

- Reagent rates should be revised and the minimum purchase amount should be raised.
- Whenever there is increase in the rate of reagents renegotiation should be done and the organisation should approve the increased rate.
- The value of the equipment should be comparable to the worth of reagent being purchased.
- Regular audit about the value of reagents paid to be done.

KEYWORDS

Reagent rental, microbiological, laboratory, negotiation, cost cutting

Background:

A hospital laboratory service can be a high-income generating service and an economic asset to the hospital. An efficient laboratory service for outpatients has a bearing on reducing the number of patients admitted solely for laboratory investigations, thus, reducing pressure on hospital beds. An efficient laboratory service also helps in reducing the average length of stay of admitted patients.[1]

There are between 40,000 and 60,000 independent pathology labs in India. The sector grew at a 20 percent CAGR between 2006 and 2010. Recent trends and the absence of a regulatory body have resulted in a highly competitive market that is price driven with kickbacks and business referral payments.[2]

With revenues shrinking, laboratories must constantly seek ways to reduce the costs of doing business while still remaining competitive in terms of test offerings. Many laboratories have found that reagent rental contracts with diagnostic manufacturers provide a viable solution for cost reduction.[3]

The manufacturer or distributor of the equipment being acquired arranges a reagent rental agreement. The cost is usually based on a cost per reportable test (CPR), but sometimes is based on total test count. The price paid per test covers the cost of the instrument, service, reagents and consumables for the term of the agreement, but there is no ownership at the end of the agreement. This option offers the use of capital equipment, reagents and consumables without capital outlay. However, the CPR is calculated to cover the cost of the equipment and service in addition to reagents and consumables, so at the end of the term of the agreement, the instrument has essentially been paid for but there is no ownership. If the reagent rental agreement is renewed without renegotiating the terms, the equipment could be paid for more than once without ever achieving ownership.[4]

The study was done at the microbiology laboratory in a private tertiary care teaching hospital where depending on the volumes of tests the reagent rental agreements were revisitedfor the purpose of renegotiation of reagent rates to improve the bottom line. The study provided an opportunity to reduce the cost of reagents under the reagent rental agreement with the manufacturer.

Materials and Methods:

Study design and study setting: The study is a cross sectional study. Data was collected from records maintained at the microbiology laboratory of a tertiary care teaching hospital in India.

Methodology: One equipment was selected from the list of equipment that were under reagent rental agreement.

Selection criteria: The period of agreement for the equipment should be over.

Reason: To analyse the agreement the period of agreement should be complete to allow analysis for the entire period of agreement. The completed period of agreement would provide opportunity for re-negotiation of reagent rates and value of committed purchase.

The reagent rental agreements with the vendor of the equipment were studied with reference to the value of reagents that was committed to be purchased from the vendor per year.

Data of the number of tests done and the amount of reagents actually purchased was collected from the records of the laboratory.

A comparison of the monetary value committed under the agreement and the value of reagents purchased was done.

Data was analysed on MS excel.

Observations and Results:

The following equipment were present in the laboratory:

Table 1: List of equipment in the microbiology laboratory

Equipment	Number
Mycobacterial df	1
Immunofluorescence Microscope	1
PCR	1
Refrigerator	1
Automated identification and sensitivity system	2
Refurbished compact analyser	1

Water bath shaker	1
Weighing machine PCR	1
Microwave PCR	1
Autoanalyser	1
Refurbed M. Tb sensitivity automated incubator	1
Biochemical analyser	1
Biosafety cabinet	2
Centrifuge	1
Cold centrifuge	1
Dry bath PCR	1
Electrophoresis PCR	1
Gel picture PCR	1
Incubator	2

Equipment under reagent rental:

- Immunoflorescence Microscope - 1
- Refurbed M. Tb sensitivity automated incubator - 1
- Auto analyser - 1
- Automated identification and sensitivity system - 1
- Refurbished compact analyser -1

There were 5 equipment under the reagent rental agreement.
The equipment that fit the selection criteria was the Immunoflorescence Microscope.

Salient features of agreement with vendor:

- Dated: 18th Aug 2009 to 17th Aug 2013
- Period: 48 months
- The immunoflorescence microscope was provided to the laboratory by the vendor free of cost with the agreement to purchase reagents worth minimum amount i.e. the cost of the reagents was based on minimum purchase value of reagents per month and not on cost per reportable test.
- The minimum purchase value of reagents (committed amount) was Rs. 1.40 lakhs per month.
- The following reagents were agreed to be purchased under the reagent rental agreement:

1. ANA Profile 3IGG	2. ANA Profile 3IGG
3. Anti-Cardiolipin IGG	4. Anti-Cardiolipin IGG
5. Anti Cardiolipin IGM 96 *01	6. Anti Cardiolipin IGM 96 *01
7. Cyclic citrullinated Peptides	8. Cyclic citrullinated Peptides
9. DS DNA -NCX 96*01	10. DS DNA -NCX 96*01
11. Granulocyte Mosaic 3 10*3	12. Granulocyte Mosaic 3 10*3
13. Mosaic basic Profile A 10*3	14. Mosaic basic Profile A 10*3
15. Mosaic basic Profile A 10*5	16. Mosaic basic Profile A 10*5
17. mosaic basic Profile A 10*10	18. TORCH Profile Euroline IGM 16*01 3M
19. Toxoplasma Gondi IGG 96*01	20. Toxoplasma Gondi IGM 96*01
21. Desmoglein 3 IGG 48*01	22. Desmoglein IGG 48*01
23. Liver Profile IGG 16*01	24. ANCA Proteinase 3(PR-3 hnhr) IGG
25. P ANCA 96*01	26. Rena l Glomeruli 10*3
27. EA 1502 4801 2G	28. Ganglioside profile IGG 16*01
29. Neuronal Profile 16*01	

Therefore according to the agreement the laboratory was to purchase a minimum of Rs. 16,80,000/- worth of reagents per year.

This amount was compared with the actual amount paid for purchase of reagents to the vendor each year depending on the volume of tests performed.

Comparison of amount committed in the agreement with the actual amount paid:

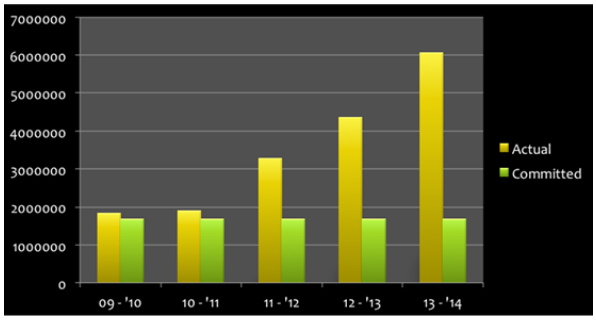
Year	Amount paid (INR)	Amount committed (INR)	Difference (INR)	% difference
18/08/09-17/08/10	18,23,580/-	16,80,000/-	1,43,580/-	8.54%
18/08/10-17/08/11	18,95,014/-	16,80,000/-	2,15,014/-	12.79%
18/08/11-17/08/12	32,71,161/-	16,80,000/-	15,91,161/-	94.71%
18/08/12-17/08/13	43,67,987/-	16,80,000/-	26,87,987/-	159.99%
18/08/13-17/08/14	60,70,890/-			

Table 3: Annual comparison of actual and committed amount paid to vendor

Amt. in 4 years	Committed	Difference	%
INR 1,13,57,742	INR 67,20,000	INR 46,37,742	69.01

Table 4: Comparison of actual and committed amount paid over 4 years

Comparison of actual and committed amount paid over 5 years:



Graph 1: Graphical representation of the comparison of actual and committed amount paid to the vendor

The above figures demonstrate that the laboratory was purchasing much more than the committed amount of reagent. In the third year of agreement the actual purchase made was double of the committed amount and in the fourth year was 159.99% of the committed amount.

The cumulative difference for the period of agreement (4 years) was 69.01% more than the committed amount.

The last column demonstrates that purchase was made for one year during which contract with the vendor was on extension.

Reasons for the difference in committed and actual amount paid was the annual rise in price of reagents. The vendor notified raised rates from 2009 to 2014. Therefore, even though the volume of tests remained the same the monetary value of the reagents purchased was much more than the agreed amount.

Rise in price of reagents from 2009 to 2014:

Table 5 : The above figures show the steady increase in price of the reagents.

DS DNA -NCX 96*01	Granulocyte Mosaic 3 10*3	Mosaic basic Profile A 10*3	Mosaic basic Profile A 10*5	mosaic basic Profile A 10*10
9,350/-	10,395/-	5,775/-	9,240/-	18,400/-
10,285/-	11,435/-	6,353/-	10,164/-	20,240/-
11,314/-	12,578/-	6,988/-	11,180/-	22,264/-

TORCH Profile Euroline IGM 16*01 DN 2410 1601 3M	Toxoplasma Gondii IGG 96*01	Toxoplasma Gondii IGM 96*01	Desmoglein 3 IGG 48*01
13,225/-	5,600/-	6,100/-	7,980/-
14,548/-	6,160/-	6,710/-	10,890/-
16,002/-	6,776/-	7,381/-	11,979/-

Anti Cardiolipin IGG	Desmoglein IGG 48*01	Liver Profile IGG 16*01	ANCA Proteinase 3(PR-3 hn hr) IGG	P ANCA 96*01
9,775/-	7,980/-	13,455/-	10,219/-	10,219/-
10,735/-	10,890/-	14,801/-	11,241/-	11,241/-
11,828/-	11,979/-	16,281/-	12,365/-	12,365/-

Rena l Glomeruli 10*3	EA 1502 4801 2G	Ganglioside profile IGG 16*01	Neuronal Profile 16*01
12,420/-	17,600/-	15,813/-	28,463/-
15,028/-	19,360/-	17,394/-	31,309/-

Anti Cardiopipin IGM 96 *01	Cyclic citrulinnataed Peptides
9,775/-	23,100/-
10,735/-	25,410/-
11,828/-	27,951/-

Table 6: The Total number of Outpatient and Inpatient microbiological tests ordered over 5 years.

Year	Outpatient	Inpatient
2009 - 2010	Not available	Not available
2010 – 2011	43,779	1,85,496
2011 – 2012	45,473	1,88,018
2012 - 2013	50,279	2,00,574
2013 - 2014	58,262	2,29,347

Market price equipment under reagent rental – **INR 12 lakhs** (approximately)

Conclusion:

Laboratories play a vital role in treatment of patients. As more of medical care is getting more dependent day-by-day on diagnostic investigations, accurate and faster diagnostic reports would improve the treatment results. Laboratories play a major role in contributing to the revenues and income to the hospital.

Running a laboratory effectively and efficiently is a challenge. Because of advancement in medical diagnostic technology and availability of auto analysers, laboratories are becoming capital intensive. The recurring costs are huge due to numerous reagents, maintenance of equipment. Still investing in advanced diagnostic equipment has its fruits, like faster and automated results, minimized errors.

Reagent rental is one step towards countering the capital and maintenance costs. In reagent rental, the cost of the equipment is included in the cost of the reagent. The study demonstrated an analysis of reagent rental agreement between a vendor and a laboratory of a tertiary care teaching hospital.

Under the agreement an equipment was given to the laboratory in lieu of purchase of reagents from the vendor. A minimum amount of value of reagent was mutually agreed upon. The rate of reagent that is agreed upon in a reagent rental agreement covers the market rate of reagent as well as the cost of equipment provided and services offered.

On analysis of data it was observed that the laboratory had purchased reagents worth 69% more than the minimum agreed amount over the period of contract of 4 years. Therefore, the hospital paid for the equipment almost twice during the period of contract as the cost of equipment is a part of the reagent cost.

Recommendations:

Based on the findings the following recommendations were made:

- Reagent rates should be revised and the minimum purchase amount should be raised.
- Whenever there is increase in the rate of reagents renegotiation should be done and the organization should approve the increased rate.
- The value of the equipment should be comparable to the worth of reagent being purchased.
- Regular audit about the value of reagents paid to be done.

Summary:

As a cost containment measure in the microbiology laboratory the purchase agreements of reagents bought for use in equipment under reagent rental agreement was revisited. The salient features of the agreements were studied. The committed amount was compared with the amount being paid to the vendor for purchase of reagent. It was found that in view of the workload volume the price of reagent could be further negotiated to reduce the cost to the laboratory.

Thus a renegotiation of agreement was proposed.

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