

Five Year Trend Analysis of a tertiary level Gynecological Hospital of Rajasthan: A cross sectional study

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Abstract—Healthcare resources need to maintain pace with the increasing population and expectations. So this record based trend analysis was done from records of year 2005 to 2009 of a tertiary care hospital of Rajasthan India. It was revealed from this study that OPD cases, IPD cases, total operations including major and minor operations, LSCS and total deliveries conducted were on increase trend with the time but sterilizations and MTPs were on decreased trend with the time. Maximum change was observed in MTP (-79.38%) followed by institutional deliveries (46.79%), IPD cases (37.44%), LSCS (29.8%), Minor operations (22.25%), minor operations (17.75%), OPD cases (5.57%) and sterilizations (-3.41%) but this change was towards downwards in MTP and sterilization otherwise it was on upwards in other variables

Key words: Healthcare resources, trend analysis, gynecological hospital

I. INTRODUCTION

India Health care delivery system of a country should be well managed to care the health of their people. In delivering health care health institute's infrastructure is also important with its maximal utilization especially in developing country like India where resources are limited. Healthcare resources need to maintain pace with the increasing population and expectations. A hospital bed is a very important but limited healthcare resource. If public district hospitals remain underused, inefficient, and providing poor quality care may reflect deficiencies in the entire health system as well as at the hospital level.¹

In an era of increasing population with consequent strain on resources it becomes imperative to utilize the suitable healthcare resources to the maximum possible extent. Given the disparity between the population and the available medical, surgical gynecological etc. facilities, availability of beds is the most important factor as hospital resources in any country. In India shortage of beds is indeed a huge problem considering that the average bed population ratio is 6.8:10000.² Moreover the cost of making available a new bed varies between Rs. 50,000 to Rs. 100,000 and then there are additional costs of maintenance to be considered so as well.³ And scarcity of beds is further compounded by the underutilization of hospital resources. Hence efficient hospital management is necessary. For better hospital management hospital managers and administrators should know the flow of patients in various department with its trend. So with the aim to know flow of patients and their trend in various sections of a gynecological hospital this present 5 year trend analysis study was carried out in Mahial Hospital, attached to SMS Medical College, Jaipur (Rajasthan) India

II. Methods

A record based descriptive study was carried out from record of 5 years of Mahila chikitsalay jaipur (Rajasthan) India.

Relevant information was gathered from the records since 1st Jan 2005 to 31st Dec 2009 from record room of Mahila Chikitsalay Jaipur (Rajasthan) India.

Data thus collected were entered in MS Excel 2007 worksheet. Significance of difference in Quantitative data was expressed in percentage and proportions. Relation between two qualitative data was also found out by ratios. Trend of various variables were observed by making trend graphs.

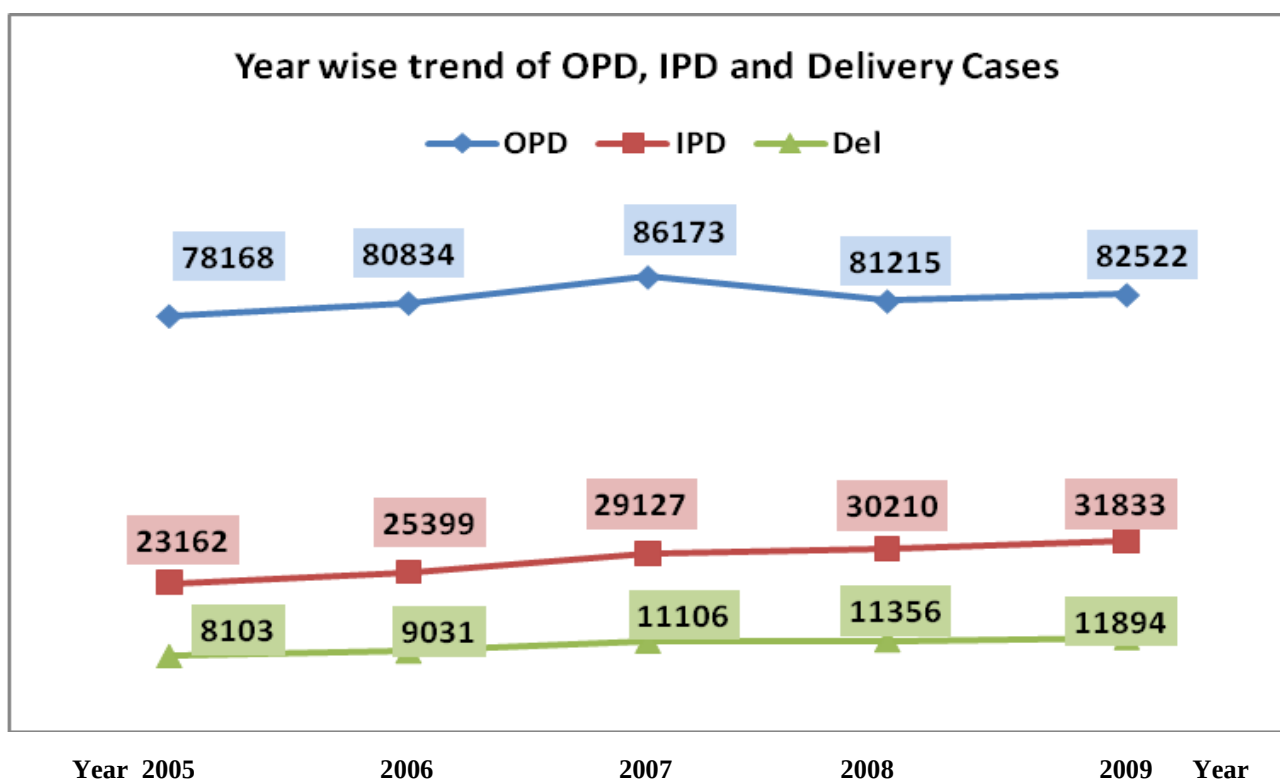
III. Results

In this present study, in year 2005, 78168 OPD patient attended at OPD of Mahila Chikitsalay, which continuously increases with 82,522 OPD cases in year 2009 with exceptionally increase in year 2007 up to 86,173 cases. So there is increase of 4354 OPD cases i.e. rate of increase is 5.57%. (Figure 1)

Total 23162 IPD patient admitted in Mahila Chikitsalay in year 2005, which continuously increases with 31,833 IPD cases in year 2009. So there is increase of 8671 IPD cases i.e. rate of increase is 37.44% (Figure 1)

In this present study, in year 2005, 8,103 pregnant women admitted for delivery in Mahila Chikitsalay, which continuously increases with 11,894 in year 2009. So there is increase of 3,791 pregnant women admitted for delivery i.e. rate of increase is 46.79%. (Figure 1)

Figure 1



It was also observed in this study on further analysis that proportion of IPD cases with OPD cases 29.63% in year 2005 which continuously increases to 38.58% in year 2009. Likewise there one IPD case for every 3.37 OPD cases in year 2005 which increases up to one IPD cases for every 2.59 OPD cases. (Table 1)

Table 1
Relation and trend of IPD and OPD

S. No.	Year	IPD Proportion among OPD Cases (in %)	OPD/IPD Ratio
1	2005	29.63	3.37
2	2006	31.42	3.18
3	2007	33.80	2.96
4	2008	37.20	2.69
5	2009	38.58	2.59

In this present study, in year 2005, total operations were done at OPD of Mahila Chikitsalay, which continuously increases up to 12994 in year 2009 with a dip in year 2006. So there is increase of 2160 total operations in 5 year i.e rate of increase is 19.94%. (Figure 2)

In this present study, in year 2005, total major and minor operations were done in Mahila Chikitsalay 5566 and 5268 respectively, which increases upto 6554 and 6440 respectively in year 2009 with a dip in year 2008 in major and in year 2006 in minor operations. So rate of increase was 17.75% in major and 22.25% in minor operations. (Figure 3)

Figure 2

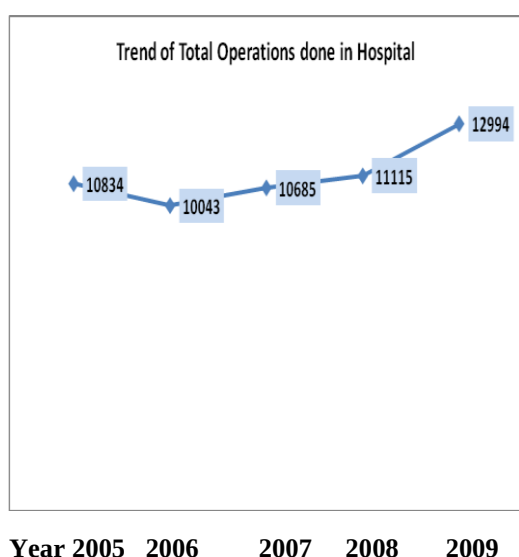
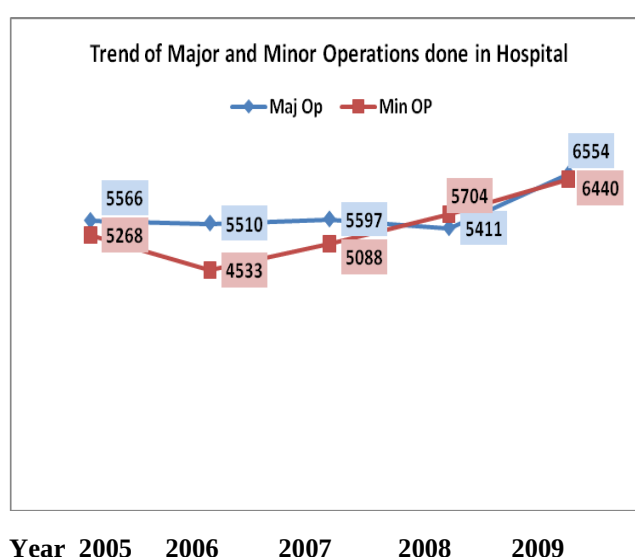


Figure 3



It was also observed in this study on further analysis that proportion of total operations with OPD cases 13.86% in year 2005 which continuously increases to 14.3% in year 2009. Likewise proportion of total

operations with IPD cases 46.77% in year 2005 which continuously increases to 36.68% in year 2007 after that it takes upward trend. (Table 2)

Table 2
Relation and trend of total Operations done with IPD and OPD

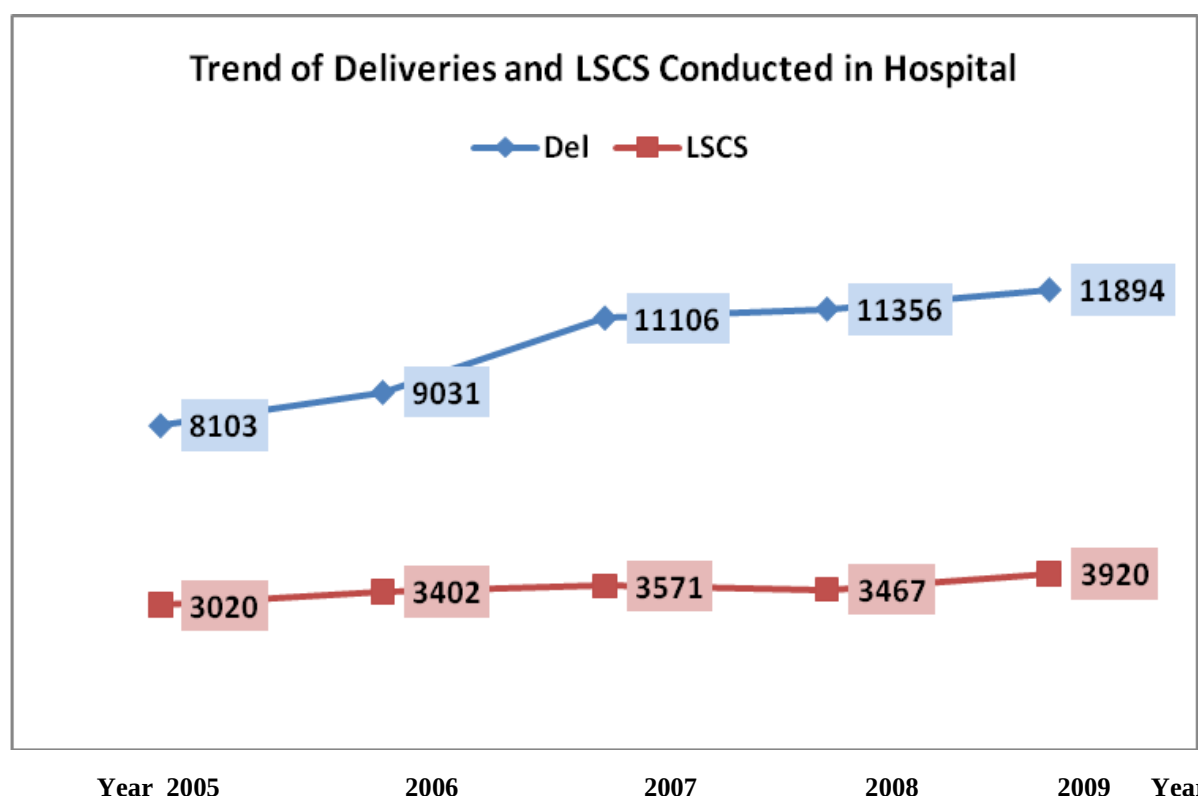
S. No.	Year	Proportion of Operations among OPD Cases (in %)	Proportion of Operations among IPD Cases (in %)
1	2005	13.86	46.77
2	2006	12.41	39.51
3	2007	12.40	36.68
4	2008	13.69	36.79
5	2009	14.30	37.07

It was also observed in this study on further analysis that proportion of LSCS with total operations was 3.35% in year 2005 which decreases to 3.01% in year 2009 with some ups and downs. Likewise ratio of major operations to minor operation, it was 1.06 in year 2005 which decreases to 1.02% in year 2009 with some ups and downs. (Table 3)

Table 3
Relation and trend of among type of Operations done

S. No.	Year	Proportion of LSCS among total Operations done (in %)	Major Operations /Minor Operations Ratio
1	2005	3.59	1.06
2	2006	2.95	1.22
3	2007	2.99	1.10
4	2008	3.21	0.95
5	2009	3.01	1.02

In this present study, 8103 deliveries were conducted in Mahila Chikitsalay in year 2005 which continuously increases up to 11, 894 in year 2009. So there is increase on 3791 deliveries in 5 year i.e. rate of increase 46.79%. Likewise 3020 LSCS were done in Mahila Chikitsalay in year 2005 which continuously increases up to 3,920 in year 2009. So there is increase on 900 LSCS in 5 year i.e. rate of increase 29.8%. (Figure 4)

Figure 4

It was also observed in this study on further analysis that there was one LSCS at every 2.68 deliveries in year 2005 which continuously decreases up to one LSCS at every 3.28 deliveries in year 2008 then there is rise in year 2009 up to one LSCS at every 3.03 deliveries. Likewise, there was one sterilization at every 9.52 deliveries in year 2005 which continuously decreases up to one sterilization at every 14.47 deliveries in year 2009. And there was one MTP at every 9.6 deliveries in year 2005 which continuously decreases up to one MTP at every 68.36 deliveries. (Table 4)

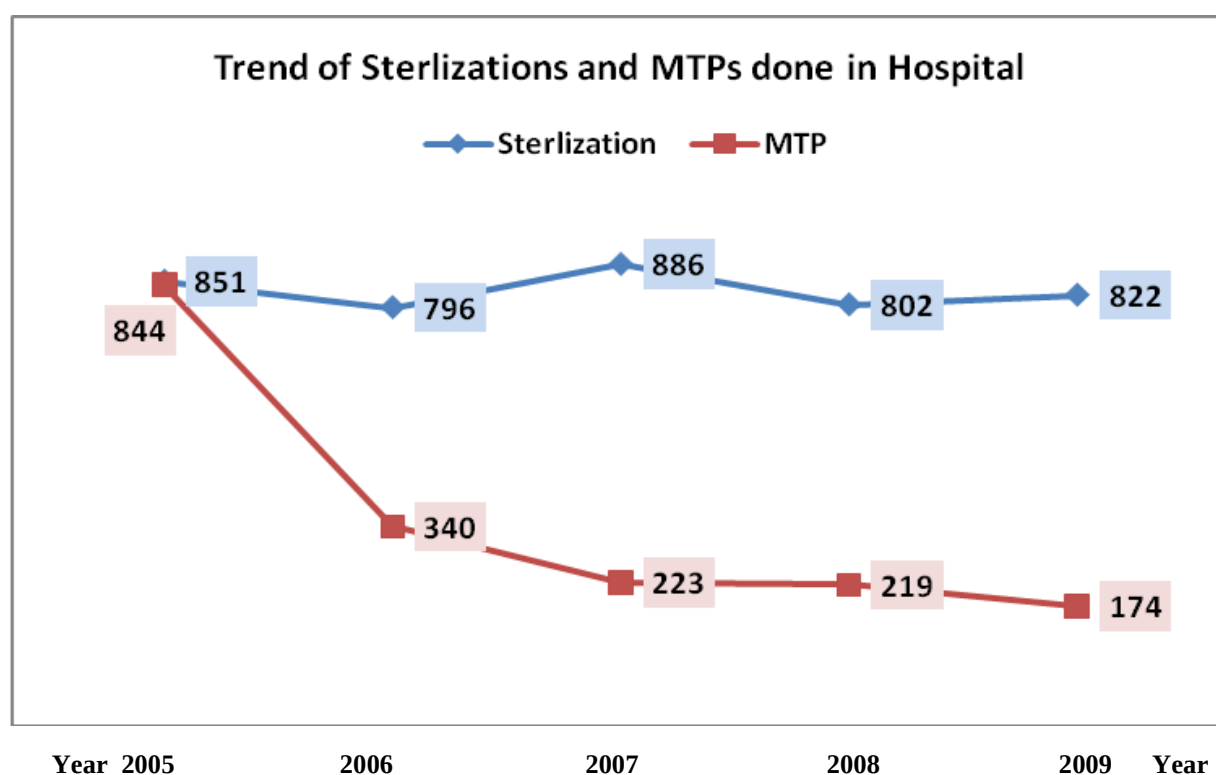
Table 4**Relation and trend of among type of Operations done**

S. No.	Year	Ratio Deliveries /LSCS	Ratio Deliveries/Sterilizations	Ratio Deliveries /MTP
1	2005	2.68	9.52	9.60
2	2006	2.65	11.35	26.56
3	2007	3.11	12.53	49.80
4	2008	3.28	14.16	51.85
5	2009	3.03	14.47	68.36

In this present study, total sterilizations were done 851 in year 2005, which decreases upto 822 in year 2009 with ups and downs. So there is decrease of 29 sterilizations 5 year i.e rate of decrease is 3.41%.

But MTP was on continuous decrease from year 2005 (844) to year 2009 (174). So there is decrease of 670 MTP in 5 year i.e rate of decrease is very high i.e. 79.38%. (Figure 5)

Figure 5



It was revealed from this study on further analysis that OPD cases, IPD cases, total operations including major and minor operations, LSCS and total deliveries conducted were on increase trend with the time but sterilizations and MTPs were on decreased trend with the time. Maximum change was observed in MTP (-79.38%) followed by institutional deliveries (46.79%), IPD cases (37.44%), LSCS (29.8%), Minor operations (22.25%), minor operations (17.75%), OPD cases (5.57%) and sterilizations (-3.41%) but this change was towards downwards in MTP and sterilization otherwise it was on upwards in other variables. (Table 5)

Table 5
Status Change in various Variables related to Hospitals

S. No.	Variables related to Hospitals	Change in 5 Years	Change in Percentage
1	OPD	4354	5.57
2	IPD	8671	37.44
3	Total Operation	2160	19.94
4	Major Operations	988	17.75
5	Minor Operations	1172	22.25
6	LSCS	900	29.80
7	Deliveries	3791	46.79
8	Sterilizations	-29	-3.41
9	MTPs	-670	-79.38

IV. Discussion

It was revealed from this study on further analysis that OPD cases, IPD cases, total operations including major and minor operations, LSCS and total deliveries conducted were on increase trend with the time but sterilizations and MTPs were on decreased trend with the time. Maximum change was observed in MTP (-79.38%) followed by institutional deliveries (46.79%), IPD cases (37.44%), LSCS (29.8%), Minor operations (22.25%), minor operations (17.75%), OPD cases (5.57%) and sterilizations (-3.41%) but this change was towards downwards in MTP and sterilization otherwise it was on upwards in other variables.

This upward trend may be due to increased utilization of hospital services with the time. This explanation is also supported by other authors. Wassem Quereshi et al (2014)⁴ also reported a rising trend of 15% over the five year period i.e. from 2003 to 2007 Shamim et al (2008)⁵ also found the same with so and so that bed occupancy increases more than 100% in RIMS Ranchi. Dutta S et al⁶ also reported increase utilization of gynaecological services in district hospital of west Bengal. An annual report⁷ reported an increase of 83,559 patient /year in OPD and 2,323 birth/yr in year 2005-6.

Even utilization has increased tremendously in other developed country also. Masiira et al (2002)⁸ found that bed occupancy rate (BOR) has been increasing steadily with an 87.41% occupancy in 2007 as against 75.69% in 2003 in Kenya. Vaz et al⁹ reported an occupancy rate of 72.13% in 1999 and 83.12% in 2006. Sanya EO et al¹⁰ also found increased trend of total admissions in elderly population in Nigeria.

In this present study maximum increase was observed in institutional deliveries in IPD cases again show faith of people in hospital services.

Decreasing trend of MTP and sterilization with time may be explained by increasing use of other temporary contraceptives like, condom, hormonal and IUDs. This explanation may be supported by findings of other authors.^{11,12}

V. CONCLUSIONS

It was revealed from this study that OPD cases, IPD cases, total operations including major and minor operations, LSCS and total deliveries conducted were on increase trend with the time but sterilizations and MTPs were on decreased trend with the time. Maximum change was observed in MTP followed by institutional deliveries, IPD cases, LSCS, Minor operations, minor operations, OPD cases and sterilizations but this change was towards downwards in MTP and sterilization otherwise it was on upwards in other variables.

CONFLICT OF INTEREST

None declared till now.

REFERENCES

1. Barnum H., Kutzin J., Saxenian H. Incentives and Provider Payment Methods. International Journal of Health Planning and Management. 1995;10(1):23-45.
2. L Lewellyn-Davies R, Macaulay HMC, Hospital Planning and Administration, WHO Monograph series No 54, Geneva, New Delhi: Jaypee Brothers, 1995 .pp.35 2.

3. Park K. Text Book of Preventive and Social Medicine.17th Ed. Jabalpur, M/S Bhanarasidas Bhanot, 2002.pp.616
4. Waseem Qureshi, Ghulam Hassan. A Five Year Retrospective Study of Bed Utilization Trends in a Tertiary Care Teaching Institution. www.jkscience.org. Vol. 16 No. 3, July - Sept 2014 p119-121
5. Shamim Haider¹ , Shashi Bhushan Singh² , Vivek Kashyap³ , Prabhat Kumar Lal⁴. HOSPITAL UTILIZATION STATISTICS AS A MEASURE OF FUNCTIONING OF THE FACILITY AT RIMS, RANCHI. Indian J. Prev. Soc. Med Vol. 39 No.3 & 4.July-Sept 2008p14--142
6. Dutta S, Biswas R, Lahiri A. A study on bed utilization in the gynaecological ward of a district hospital in West Bengal. Indian J Public Health. 2005 Oct-Dec;49(4):263-4
7. <http://www.aiims.edu/aiims/annual-report/Annual%20Report%202006-eng.pdf>
8. Masiira-Mukasa N, Ombito BR. Surgical Admissions to Rift Valley Provincial General Hospital Kenya. East Afr. Med J. 2002 Jul; 79(7):373-8
9. Vaz F S, Ferreirs AM, Kulkarni MS, Motghare DD. Bed utilization indices at a Tertiary care Hospital in Goa: An eight year trend Analysis. Indian J of Public Health 2007;51(4) :231-233
10. Sanya EO, Akande TM, Opadijo G, Olarinoya JK and Bojuwoye BJ. Pattern and Outcome of Medical admissions of elderly patients seen at University of Ilorin teaching Hospital, Ilorin Nigeria. Afr. J Med Sci. 2008 Dec; 37(4):375-81
11. Brahmbhatt H, Makumbi F, Lutalo T, Sekasanvu J, Serwadda D, Wawer MJ and Gray RH. Longitudinal study of correlats of modern contraceptives use and impact of HIV care programmes among HIV concordant and Serodiscordant couples in Rakai, Uganda. J.Fam Plann Reprod Health Care. 2014 July; 40(3):208-16
12. Heffron R, Were E, Celum C, et al. A prospective study of contraceptive use among African women in HIV-1 serodiscordant partnerships. Sex Transm Dis 2010;37:621–628