

Study of the Key Performance Indicators to Assess the
Performance of the Gynecology Department, Pratiksha
Hospital, Guwahati, Assam

By

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TO WHOMSOEVER MAY CONCERN

This is to certify that **Kasturi Saikia**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at Pratiksha Hospital, Guwahati, Assam from February 8th 2016 to April 30th 2016.

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all future endeavors.



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INTERNSHIP COMPLETION CERTIFICATE

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And has successfully completed her project on

To study the key performance Indicators (KPIs) and assessment of performance
management in Gynecology Department of Pratiksha Hospital, Guwahati, Assam.

She comes across as a committed, sincere & diligent who has a Strong drive &
Zeal for learning

We wish her all the best for future endeavors.

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 Enrollment No. 1561
 under the supervision of DR. D.K. MANGAL
 for award of Postgraduate Diploma in Hospital and Health/ Pharmaceutical / Rural Management of the University carried out during the period from 2014 to 2016 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Kasturi Saikia

Signature

**DEDICATED TO MY FAMILY
AND
TO MY FRIENDS**

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Introduction

1. Introduction:

1.1 Maternal Health

Maternal health refers to the health of women during pregnancy, childbirth, and the postpartum period. It encompasses the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to reduce maternal morbidity and mortality.^[1]

- *Pre-natal care* includes a general health overview for parents-to-be pertaining to simple do's and don'ts to ensure a healthy pregnancy. It is at this stage that couples who are finding it difficult to get pregnant are offered advice related to fertility and if required, visit a fertility specialist to ensure a smooth pregnancy.
- *Ante-natal care* is the care that is initiated after the mother has conceived. Both the baby and the mother are monitored regularly to ensure that the pregnancy progresses smoothly and any intervention required can be provided for as early as possible.
- *Post-natal care* starts right after the birth of the baby. It is crucial that help, support and advice be extended to the mother, father and the baby and hence, regular post-natal visits are of importance.^[2]

The United Nations Population Fund (UNFPA) estimated that 289,000 women died of pregnancy or childbirth related causes in 2013. These causes range from severe bleeding to obstructed labour, all of which have *highly effective interventions*.^[1]

In recent years, women have gained access to family planning and skilled birth attendance with backup emergency obstetric care, the global maternal mortality ratio has fallen from 380 maternal deaths per 100,000 live births in 1990 to 210 deaths per 100,000 live births in 2013. This has resulted in many countries halving their maternal death rates.^[1]

However, much is needed to be done to ensure that both the mother and the baby be healthy, both during pregnancy and after safe delivery. The effect of a mother's death results in vulnerable families, and their infants, if they survive childbirth, are more likely to die before reaching their second birthday.

Four elements are essential to maternal death prevention.^[1]

- Prenatal care: It is recommended that expectant mothers receive at least four antenatal visits to check and monitor the health of mother and foetus.
- Skilled birth attendance with emergency backup such as doctors, nurses and midwives who have the skills to manage normal deliveries and recognize the onset of complications.

- Emergency obstetric care to address the major causes of maternal death which are haemorrhage, sepsis, unsafe abortion, hypertensive disorders and obstructed labour.
- Postnatal care which is the six weeks following delivery. During this time bleeding, sepsis and hypertensive disorders can occur and newborns are extremely vulnerable in the immediate aftermath of birth.

Therefore, follow-up visits to assess the health of both mother and child in the postnatal period are strongly recommended.

Maternal morbidity is a pre-existing medical condition, or obstetric complication caused by pregnancy, that adversely affects a woman's peri-natal health beyond what would be expected in normal pregnancy and delivery. Between 1998 to 2008, the maternal mortality nearly doubled in California and it was suspected that maternal morbidity may also be rising during this period. There was found to be a considerable rise in maternal medical conditions including hypertension (14%), diabetes (43%) and asthma (75%). This rise in morbidity was independent of demographic shifts in maternal age, race-ethnicity, education, insurance status, parity, and prenatal care adequacy.^[3]

1.2 Performance Management

In the last years, performance has become a well known term in the industry of health services (Minvielle et al., 2008). Performance represents the extent to which set objectives are accomplished.

The concept of performance in health services represents an instrument for bringing quality, efficiency and efficacy together. The mission of any hospital is to provide specific health services, which can solve the patients' health problems (efficacy) in the best manner (quality) and in the most economic way possible (efficiency).^[4] Since performance actually refers to efficacy, efficiency and quality, being aware of the performance of the hospital means nothing but an understanding of the way it fulfils its mission. Being aware of the performance of the hospital becomes even more important if the fact is considered that it must permanently adapt to an external environment that undergoes continuous change, so as to fulfil its mission even in the newly emerging contexts.

The new situations that the hospital has to deal with may be determined by various causes such as the development of new health policies or the emergence of new orientations and tendencies (increase in the hospital's social responsibility, increase in the interest for the quality of healthcare services), changes in the demand for hospital services or in the services supply competition, changes in medical technologies, etc. However, success in adapting to new situations can only be assessed by a change-based comparison, namely, performance before the change and performance after the change.

Importance of performance management - According to the reports of the World Health Organization (WHO), share of organizations out of current expenses of the government in health section is between 50% and 80%, while share of hospital expenses

out of health and therapy in governmental section does not exceed 40% in developed countries. Therefore, evaluation of performance and execution of results is important. Lack of evaluation in therapeutic institutes leads to increased therapeutic expenses; in addition, negligence in the provision of primary health care intensively endangers the health of the society, while its provision will result in full productivity of therapeutic institutes with suitable cost at the same time with guaranteeing health.^[4]

1.3 Key Performance Indicators

Key Performance indicators are business metrics that are used to evaluate factors that are crucial to the success of the any organization. In the context of a hospital, it can be said that Identifying hospitals key performance indicators (i. e BOR, ALOS, Early Booking, Breastfeeding etc) provides an opportunity for health stakeholders to identify critical and problematic points with lower costs as well as time and to recognize the best correction action. They also define and measure progress towards organisational goals.

As the primary means of communicating performance across the organisation, KPIs should focus on a range of areas. Once an organisation has analysed its mission, identified all its stakeholders and defined its goals, KPIs offer a way of measuring progress toward these goals. Also, performance measures such as, length of stay, mortality rates, readmission rates and day case rates can be analysed. For example the length of stay for a particular procedure, may be different from the national benchmark. Therefore this may highlight where a process can be investigated and changed.

In the context of healthcare, the health of pregnant mothers is of grave importance. The health of a mother is not only an indicator of how well services are being imparted but also of development and one of the main components of Primary Health Care. The hospital ward of Gynaecology and Obstetrics is of importance as it is the only ward from where life starts and the health of both mother and baby is crucial. Evaluating the indicators designed specifically for this ward will provide us with information in terms of its performance; a good performance of this ward is important for the hospital as well as for developing a good attitude of the patients towards it.

Therefore, this study aims to collect relevant data and evidence in order to help analyze the Key Performance Indicators (KPIs) to assess the performance of the Gynaecology and Obstetrics Department of the hospital. The KPIs have been selected based on various studies that have been conducted to determine the essential parameters responsible for a good performance of any department of a hospital. Evaluating its performance based on these performance indicators will help to analyze the existing status of the department and determine whether further improvement is necessary.

Review of Literature

2. Review Of Literature

A research entitled *Developing performance evaluation indicators in James Hospital of Ireland* conducted by Karter and Cahill, using the comparative study of 8 hospitals in some countries concluded that there should be performance indicators for evaluating performance in each hospital and performance evaluation system could considerably help improve the performance and productivity of hospitals in the presence of performance indicators.

The following key indicators have been considered to evaluate the performance of the Gynaecology and Obstetrics Department:

a. **Bed Occupancy Rate (BOR)** – It is the number of hospital beds occupied by patients expressed as a percentage of the total beds available in the ward, specialty, hospital, area, or region. The occupancy rate is the percentage utilization of the total bed capacity in the hospital. It is used to assess the demands for hospital beds and hence to gauge an appropriate balance between demands for health care and number of beds.

Hospital bed-occupancy rates have been proposed as a measure that reflects the ability of a hospital to properly care for patients. High bed-occupancy rates have been shown to be associated with greater risks of hospital-associated infection and access block and to have a negative impact on staff health. Clinical observational data have suggested that bed occupancies above 85% could adversely affect safe, effective hospital function.^[5]

It can be calculated by the formula:

(Total No. of IPD for a given period) x 100} / (Available beds x days in the period).

The BOR is calculated based on the midnight bed census at each hospital.

The following is an example of the BOR calculated at 0000hrs at the following hospitals:

**Changi General Hospital (CGH),
Khoo Teck Puat Hospital (KTPH),
National University Hospital (NUH) (Adults)
Ng Teng Fong General Hospital (NTFGH),
Singapore General Hospital (SGH), and Tan Tock Seng
Hospital (TTSH).**

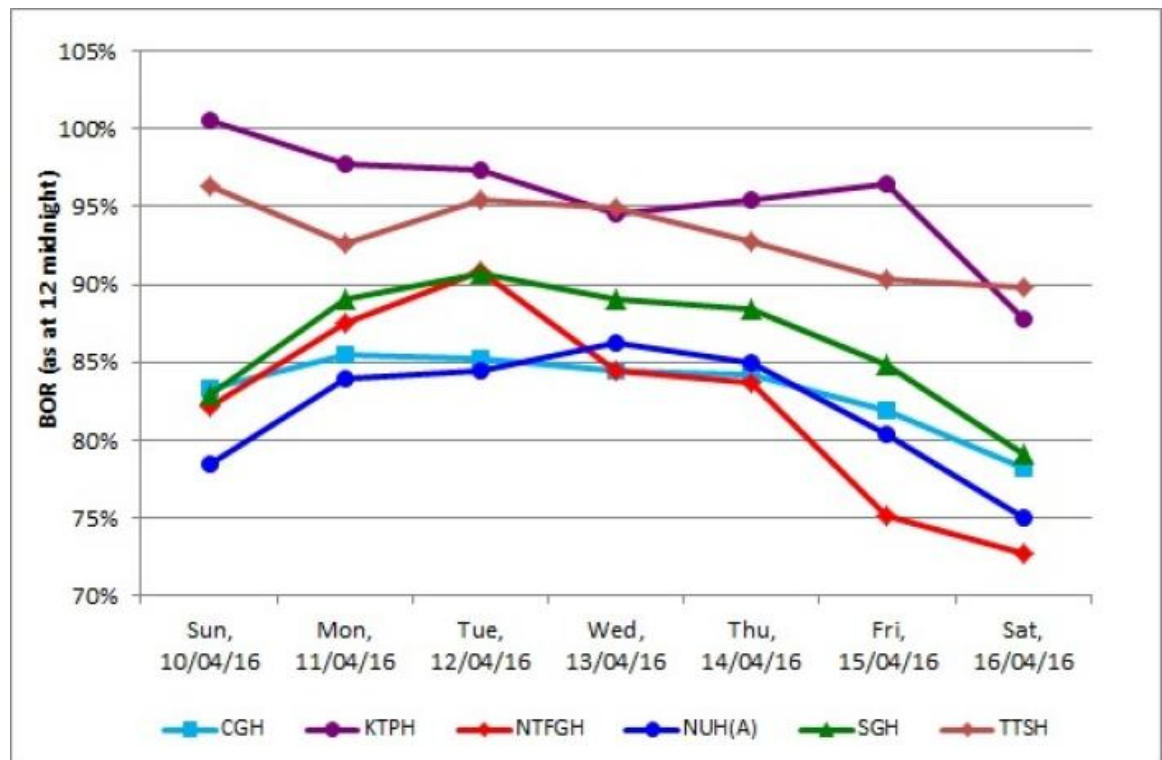


Figure 1: BOR of hospitals calculated at 0000hrs.
[\[https://www.moh.gov.sg/content/moh_web/home/statistics/healthcare_institutionstatistics/Beds_Occupancy_Rate_BOR.html\]](https://www.moh.gov.sg/content/moh_web/home/statistics/healthcare_institutionstatistics/Beds_Occupancy_Rate_BOR.html)

In the UK during 1997–98, average bed-occupancy levels varied between around 50% and 99%. However, most National Health Service (NHS) acute trusts reported periods during which inpatient bed demand exceeded availability. At those times, emergency patients were more likely than usual to be assessed and have treatment initiated in EDs before moving to an inpatient ward.^[6] Furthermore, those hospitals with higher average bed-occupancy rates cancelled a significantly higher proportion of elective operations and had longer delays in the transfer of patients from the ED to inpatient beds. It was acknowledged that “hospitals with average occupancy levels above 85 per cent can expect to have regular bed shortages and periodic bed crises”. It has been suggested that reducing bed-occupancy rates below a “threshold” level should reduce excessive waiting times in EDs.^[6]

b. Early Booking: Early booking of antenatal care (ANC) is regarded as a cornerstone of maternal and neonatal health care. However, existing evidence from developing countries indicate that lots of pregnant women begin ANC booking later into the pregnancy.

Antenatal care, a care given to pregnant women, is widely used for prevention, early diagnosis, and treatment of general medical- and pregnancy-related complications. Early ANC booking and regular follow-up of services usually provides opportunities for delivering health information and interventions (i.e., via early detection of modifiable pre-existing medical conditions like Heart disease, Diabetes Mellitus, Hypertensive disorders, HIV/AIDS, and severe anemia) that can significantly enhance the health of

the mother and foetus.^[8] On the contrary, opportunities to provide information and other interventions pertaining to their reproductive health and the health of their unborn child are missed when a woman initiates ANC in late time of her pregnancy. The new World Health Organization ANC model states that every pregnant woman is at risk of complications and recommends early an ANC visit, of which the first should be during the first trimester^[8]. The visit is used to classify pregnant women into two groups based on previous history of pregnancy, current pregnancy state, and general medical conditions - those eligible to receive routine ANC (basic component) and those who need special care, which accounts to on an average, 25% of all pregnant women initiating ANC.^[8]

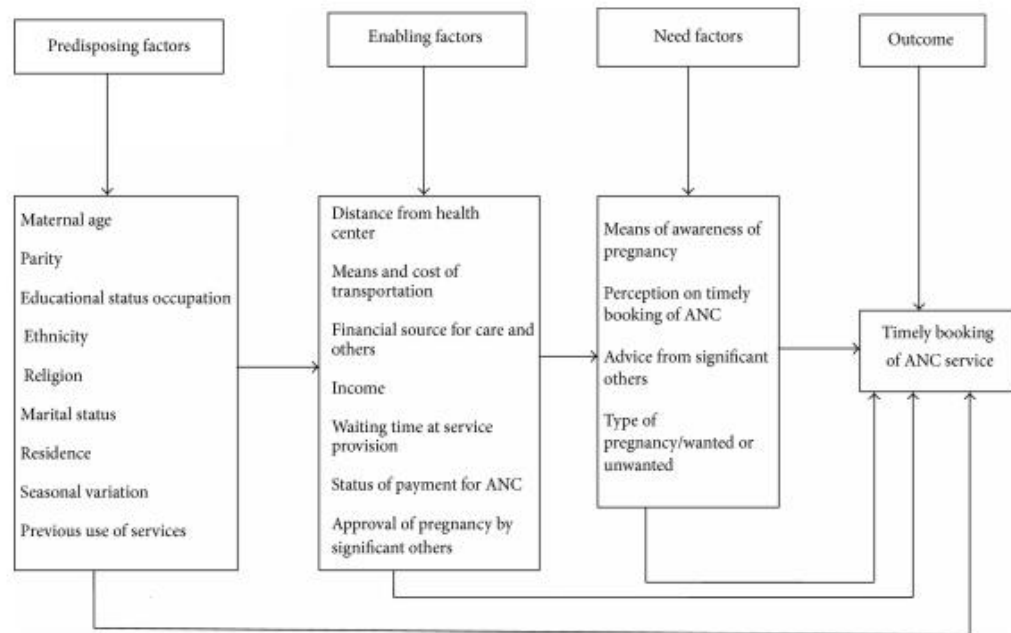


Figure 2: Conceptual Framework for timely use of ANC.

[<http://www.hindawi.com/journals/jp/2014/132494/>]

Utilization of health services is a complex behavioural phenomenon. Empirical studies of preventive and curative services have often found out that the use of health services is related to the availability, quality, cost of services, social structure, health beliefs, and personal characteristics of the users. Reviewed literatures showed that maternal age, marital status, maternal education, occupation, ethnicity, religion, family income, residence, parity, history of abortion, child birth outcome, experience of service utilization, pregnancy-related complications, wanted or unwanted pregnancy, and influence of the husband were predictors that either positively or negatively influence timing of ANC booking.

c. Number of births due to C-section and due to normal delivery:

Pregnant women can have babies either by vaginal birth, that is normal delivery or by Caesarean Section, the ultimate goal being to give birth to a healthy baby with a healthy mother. In some cases, C-sections are planned because of medical reasons that make a vaginal birth risky. A woman may know in advance that she will need a C-section and

schedule it because she is expecting twins or other multiples, or because the mother may have a medical condition, such as diabetes or high blood pressure, an infection that complicates pregnancy, such as HIV or herpes, or she may be experiencing problems with the placenta during her pregnancy.^[9]

Sometimes the decision by an obstetrician to perform a C-section is unplanned, and it is done for emergency reasons because the health of the mother, the baby, or both of them is in jeopardy. This may occur because of a problem during pregnancy or after a woman has gone into labor, such as if labor is happening too slowly or if the baby is not getting enough oxygen.

Advantages of Vaginal Delivery:

- Shorter stay for the mother and recovery time as compared to C-section delivery.
- Vaginal Delivery avoids major surgery and associated risks such as severe bleeding, scarring, infections, reaction to anaesthesia, and long-lasting pain.
- Early initiation of breastfeeding.
- During a vaginal delivery, muscles involved in the process are more likely to squeeze out fluid found in a newborn's lungs, Bryant said, which is a benefit because it makes babies less likely to suffer breathing problems at birth. Babies born vaginally also receive an early dose of good bacteria as they travel through their mother's birth canal, which may boost their immune systems and protect their intestinal tracts.

Disadvantages of Vaginal Delivery:

- During a vaginal delivery, there is a risk that the skin and tissues around the vagina can stretch and tear while the foetus moves through the birth canal. If stretching and tearing is severe, a woman may need stitches or this could cause weakness or injury to pelvic muscles that control her urine and bowel function.
- If a woman has had a long labor or if the baby is large and delivered vaginally, the baby may get injured during the birth process itself, such as a bruised scalp or a fractured collarbone.

Advantages of C-section delivery:

- The mother knows she will go for a C-section since it is scheduled in advance and hence as time to prepare herself for the operation.
- Small risk of baby being nicked during the procedure.

Disadvantages of C-section:

- Longer stay in the hospital.
- Increases chances of physical discomfort after delivery such as pain at the site of incision, and longer lasting soreness.
- Initiation of Breastfeeding becomes delayed.
- The baby is likely to develop breathing problems during birth as well as in childhood, such as asthma.

Some of the factors responsible for choosing C-section over Vaginal Delivery are as given below:

- The choice of a C-section is strongly associated with the type of the previous delivery. Studies have shown that women who had previously undergone a vaginal delivery were less likely to opt for C-section the second time around (25% or lower). However, there were cases where dissatisfaction due to the previous method of vaginal delivery had induced a want for surgical delivery during the second time.
- The economic background of the parents is strongly related to the choice of delivery.
- The degree of satisfaction involved in the previous delivery plays an important factor in the choice of delivery.
- In a study conducted by Alexandre Faisal-Cury, Paulo Rossi Menezes titled **Factors associated with preference for caesarean delivery**, 43% of the women said that they lacked motivation to try vaginal delivery and expressed a desire to undergo caesarean. When the choice of caesarean was analyzed according to previous delivery, it was observed that 64.2% of the pregnant women with previous caesareans preferred to repeat the procedure, versus only 9.8% of the pregnant women with previous vaginal delivery.^[9] Indeed, previous caesarean is an important factor in the choice of subsequent delivery. The repetition of caesareans has been shown to be the main factor in maintaining the caesarean rates in developed countries, concomitantly with the decline in attempts at vaginal delivery following a caesarean.

d. Success Rate of IVF

IVF is the process of manually combining an egg and a sperm in a laboratory dish, and then transferring the embryo to the uterus. It involves the monitoring and stimulation of the ovulatory process of the women, removing the ova from the woman's ovaries and letting the sperm fertilise them in a liquid dish in the laboratory.

It is an example of Assisted Reproductive Technology for treatment of infertility

IVF success rates are the percentage of all IVF procedures which result in a favourable outcome. Depending on the type of calculation used, this outcome may represent the number of confirmed pregnancies, called the pregnancy rate, or the number of live births, called the live birth rate.

The success rate depends on variable factors such as maternal age, cause of infertility, embryo status, reproductive history and lifestyle factors.

- **Maternal age:** Younger candidates of IVF are more likely to get pregnant. Women older than 41 are more likely to get pregnant with a donor egg.

- Reproductive history: Women who have been previously pregnant are in many cases more successful with IVF treatments than those who have never been pregnant.

Due to advances in reproductive technology, IVF success rates are substantially higher today than they were just a few years ago.

Live Birth Rate is the percentage of all IVF cycles that lead to a live birth. This rate does not include miscarriage or stillbirth and multiple-order births such as twins and triplets are counted as one pregnancy. A 2012 summary compiled by the Society for Reproductive Medicine which reports the average IVF success rates in the United States per age group using non-donor eggs compiled the following data.^[10]

Age	<35	35-37	38-40	41-42	>42
Pregnancy rate	46.7	37.8	29.7	19.8	8.6
Live birth rate	40.7	31.3	22.2	11.8	3.9

Table 1: Data for the success rate of IVF in the United States.

In 2006, Canadian clinics reported a live birth rate of 27%. Birth rates in younger patients were slightly higher, with a success rate of 35.3% for those 21 and younger, the youngest group evaluated. Success rates for older patients were also lower and decrease with age, with 37-year-olds at 27.4% and no live births for those older than 48, the oldest group evaluated.^[10]

Pregnancy rate may be defined in various ways. In the United States, the pregnancy rate used by the Society for Assisted Reproductive Technology and the Centers for Disease Control (and appearing in the table in the Success Rates section above) are based on foetal heart motion observed in ultrasound examinations.

In 2006, Canadian clinics reported an average pregnancy rate of 35%. A French study estimated that 66% of patients starting IVF treatment finally succeed in having a child (40% during the IVF treatment at the center and 26% after IVF discontinuation).^[10]

The potential reasons for success of pregnancy through IVF be maternal age, duration of infertility or subfertility, bFSH and number of oocytes, all reflecting ovarian function. Optimal woman's age is 23–39 years at time of treatment.^[10]

Other determinants of outcome of IVF include:^[10]

- Tobacco smoking reduces the chances of IVF producing a live birth by 34% and increases the risk of an IVF pregnancy miscarrying by 30%

- A body mass index (BMI) over 27 causes a 33% decrease in likelihood to have a live birth after the first cycle of IVF, compared to those with a BMI between 20 and 27. Also, pregnant women who are obese have higher rates of miscarriage, gestational diabetes, hypertension, thromboembolism and problems during delivery, as well as leading to an increased risk of foetal congenital abnormality. Ideal body mass index is 19–30.
- Success with previous pregnancy and/or live birth increases chances
- Low alcohol/caffeine intake increases success rate
- The number of embryos transferred in the treatment cycle.
- Embryo quality
- Some studies also suggest the autoimmune disease may also play a role in decreasing IVF success rates by interfering with proper implantation of the embryo after transfer.

Complications arising due to IVF can be as follows:^[10]

- Multiple births: The major complication of IVF is the risk of multiple births. This is directly related to the practice of transferring multiple embryos at embryo transfer. Multiple births are related to increased risk of pregnancy loss, obstetrical complications, prematurity, and neonatal morbidity with the potential for long term damage.
- Spread of infectious diseases
- Other risks to the egg provider/retriever:
 - A risk of ovarian stimulation is the development of ovarian hyper stimulation syndrome, particularly if hCG is used for inducing final oocyte maturation. This results in swollen, painful ovaries. It occurs in 30% of patients.
 - During egg retrieval, there's a small chance of bleeding, infection, and damage to surrounding structures like bowel and bladder (transvaginal ultrasound aspiration) as well as difficulty in breathing, chest infection, allergic reactions to medication, or nerve damage (laparoscopy).
 - Ectopic pregnancy may also occur if a fertilised egg develops outside the uterus, usually in the fallopian tubes and requires immediate destruction of the foetus.

Methodology

3. Research Methodology

3.1 Research Question.

Q: What is the status of performance of the Gynaecology and Obstetrics Department of Pratiksha Hospital, Assam?

3.2 Objectives.

- To analyze key performance indicators to assess the performance of the Gynaecology Department of Pratiksha Hospital, Guwahati, Assam.

3.3 Methodology

Study type-

- Descriptive and Analytical

Study area-

- Pratiksha Hospital, Guwahati, Assam.

Study duration - Three months.

Data Collection-

- Secondary data – Collection will be done through hospital information system and medical records.

Inclusion/Exclusion Criteria:

- Data of the months from January 2016 to April 2016 has been collected.
- Data for Early Booking has been collected for those patients who have visited the OPD for the period under study.

Sample Size – All the patients admitted every month for the period under study will be considered for data collection and subsequent evaluation

Analysis and Interpretation:

The data collected will be tabulated and subsequently evaluated with the help of Microsoft Access and Microsoft Excel.

Limitations of the Study:

- ❖ Due to unavailability of data for success rate of IVF, it was calculated till the first quarter of 2014.

Ethical Considerations:

- ❖ Permission will be taken from the hospital authority to conduct the study in the hospital.
- ❖ Data Confidentiality will be maintained throughout the study.
- ❖ The results will be shared with the appropriate hospital authorities.

Results

4: Results

4.1 Bed Occupancy Rate (BOR) Indicator:

$$\text{BOR} = (\text{Total No. Of Inpatient Days for a given period} \times 100) / (\text{Available beds} \times \text{No. Of days in the period})$$

Table 2: Table depicting the BOR of the hospital

Month	No. Of IPD for gynaecology department	BOR (in %)
Jan-16	816	54.40
Feb-16	850	56.67
Mar-16	960	64.00
Apr-16	992	66.13

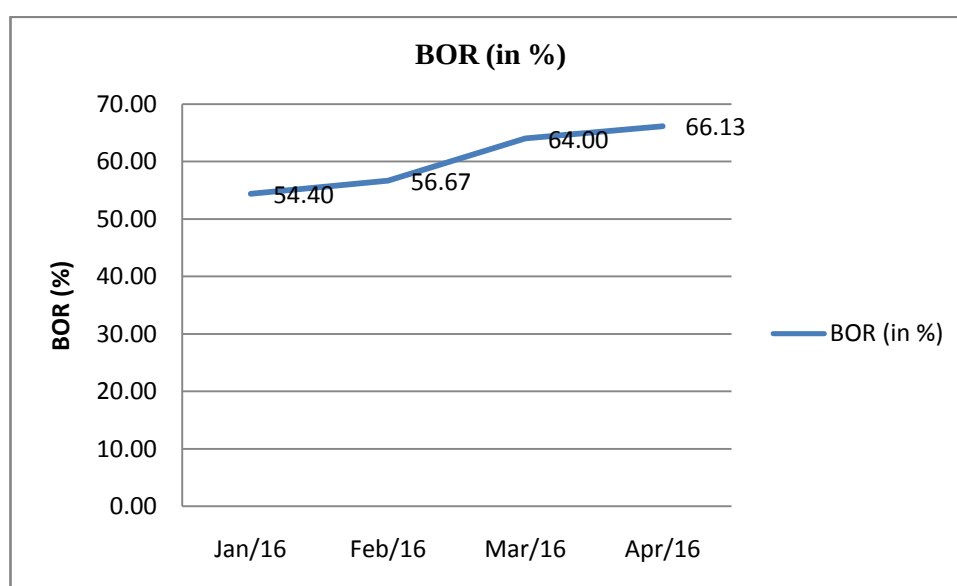


Figure 3: Line graph depicting the trend of BOR over the period of study.

4.3 Number of births by normal delivery and by C-section.

No. Of births by normal delievery and by C-sections			
MONTH	C-Section Delivery	Normal delivery	Total deliveries
Jan-16	90	10	100
Feb-16	92	10	102
Mar-16	97	11	108
Apr-16	103	11	114

Table 3: Table indicating the No. of births by Normal (Vaginal) delivery and by C-section over the period of 2015-2016

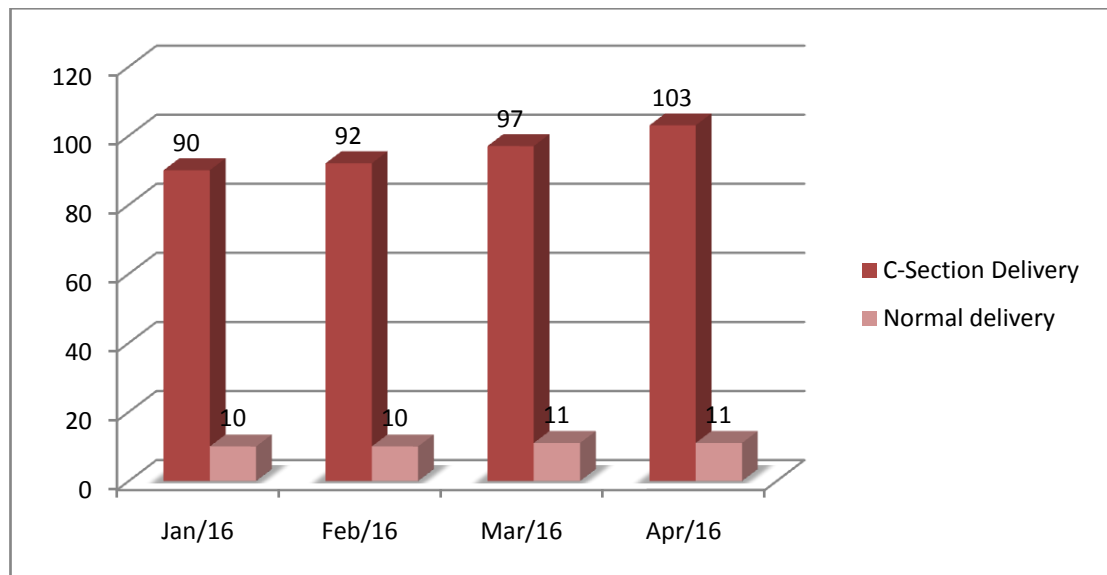


Figure 4: Graph indicating the No. Of C-section delivery and normal delivery over the period of 2015-2016

4.4 Number of Cases of Early Booking.

EARLY BOOKING			
MONTH	No. Of cases detected.	Total No. Of Cases.	No. Of Cases in %
Feb-16	70	350	20
Mar-16	60	370	16.22
Apr-16	100	400	25

Table 4: Table indicating the No. Of cases of early Booking over the period of three months.

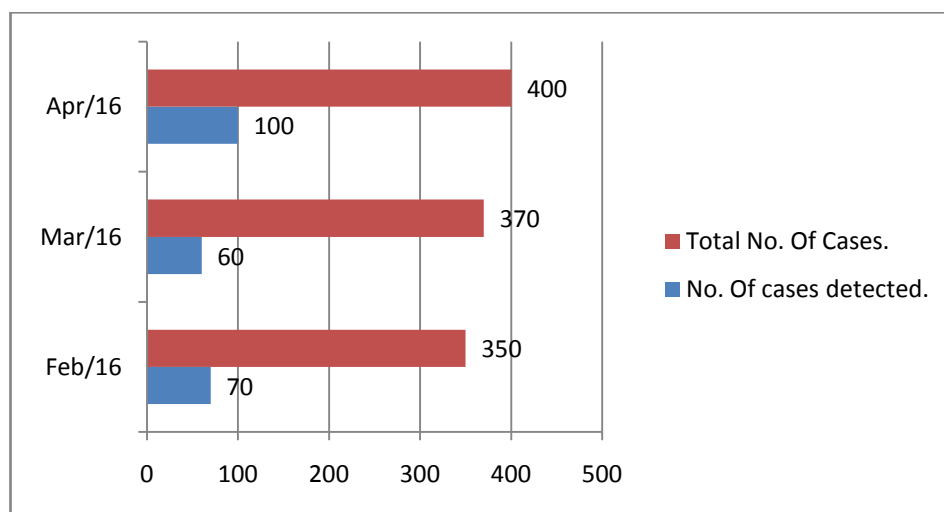


Figure 5: Graph indicating the No. of cases of early booking over the period of three months.

4.5 Success Rate of In-Vitro Fertilisation (IVF)

Success Rate of IVF			
First Quarter of 2013			
Procedure	No. Of Patients	No. Of Pregnancies	Success %
With Self Egg	115	46	40
With Donated Egg	67	33	49
With Embryo Donation	55	24	44

Table 5: Table indicating the Success Rate of IVF for the first quarter of 2013.

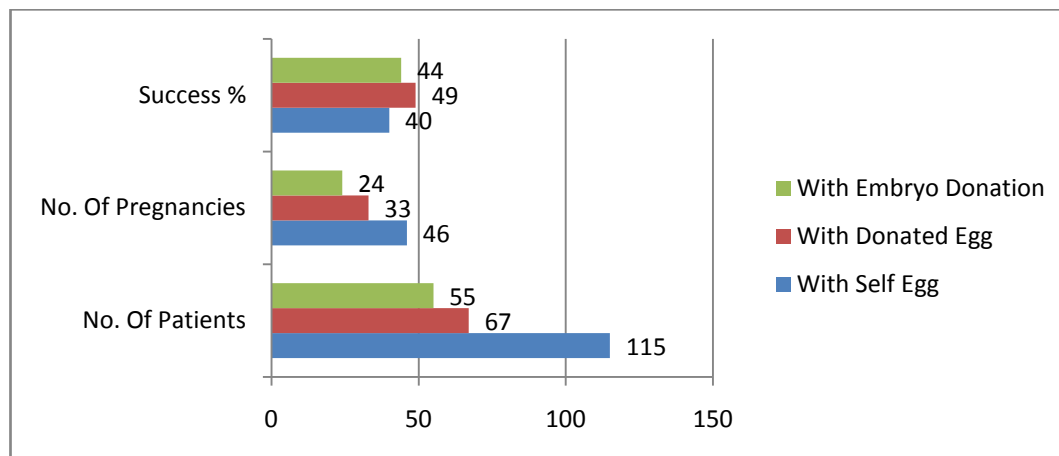


Figure 6: Graph indicating the Success Rate of IVF for the first quarter of 2013.

Second Quarter of 2013			
Procedure	No. Of Patients	No. Of Pregnancies	Success %
With Self Egg	137	47	34
With Donated Egg	72	32	44
With Embryo Donation	60	22	37

Table 6: Table indicating the Success Rate of IVF for the second quarter of 2013

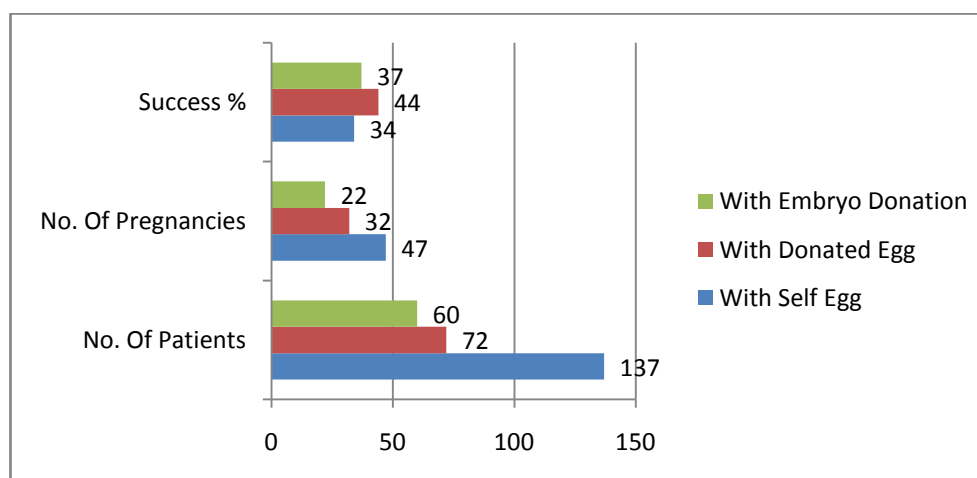


Figure 7: Graph indicating the Success Rate of IVF for the second quarter of 2013.

Third Quarter of 2013			
Procedure	No. Of Patients	No. Of Pregnancies	Success %
With Self Egg	115	42	37
With Donated Egg	82	33	40
With Embryo Donation	54	26	48

Table 7: Table indicating the Success Rate of IVF for the third quarter of 2013

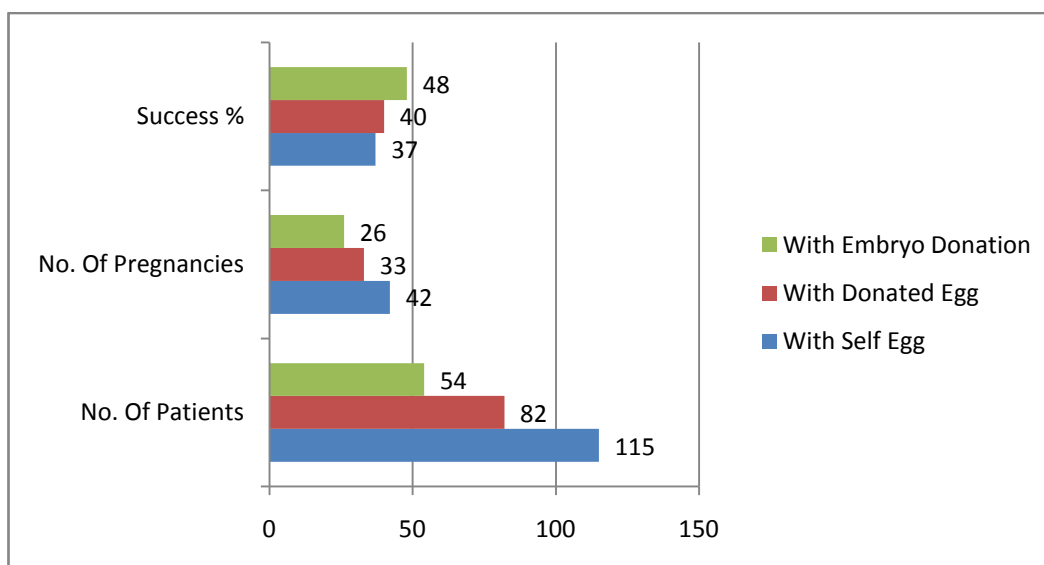


Figure 8:Graph indicating the Success Rate of IVF for the third quarter of 2013.

First Quarter of 2014			
Procedure	No. Of Patients	No. Of Pregnancies	Success %
With Self Egg	97	37	38
With Donated Egg	56	27	48
With Embryo Donation	43	23	53

Table 8: Table indicating the Success Rate of IVF for the first quarter of 2014

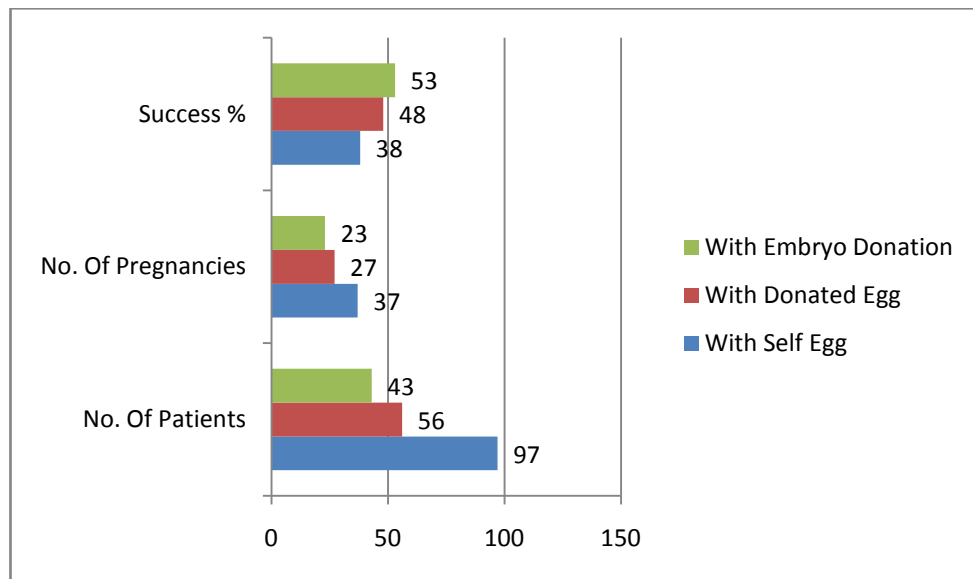


Figure 9: Graph indicating the Success Rate of IVF for the first quarter of 2014.

Findings & Recommendations

5.1 Findings and recommendations.

- The BOR for gynaecology cases ranges from 54% to 65% over the period under study. This stands to reason that on an average 60% of the total number of beds is occupied by Gynaecology cases and the rest are either occupied by the other cases or are lying vacant.

To increase the BOR for the gynaecology department, the hospital could take the following steps:

- Branding of the hospital to create a space in the minds of the customers for deeper penetration into the existing target market needs further assistance.
 - Tie-ups with corporate organizations to ensure a steady flow of patients can be implemented.
 - Designing packages to attract patients to the hospital is an option.
- Around 90% of patients prefer to opt for delivery through C-section rather than by the normal way of delivery.
- It has been observed, over a period of three months, that on an average, 20.4% patients have initiated Early Booking in their pregnancies indicating that a very small number of people have shown consistency in regular check-ups and visits to their gynaecologist. This may be attributed to lack of knowledge in the part of the parents about the importance of early booking pertaining to the first three months of their pregnancy, a crucial time for both the mother and the foetus. Moreover, a busy lifestyle can significantly contribute towards lesser chances of regular visits to the gynaecologist. To improve upon this aspect, the following steps could be undertaken:
 - Counselling the parents about the importance of Early Booking and regular visits to their gynaecologist can be suggested.
 - Educating the parents about the potential complications that could arise due to irregularity in the check-ups can also be considered.
- The success rate of In-vitro fertilisation with Self egg varies from 34% to 38% over the observed period. That with donated eggs varies from 40% to 49% and with embryo donation varies from 37% to 53%. The hospital is one of its kind in the North-East, providing IVF treatment to patients who are in need of it. As such, proper counselling should be carried out of the patients both before and after the treatment. It is crucial that the patients understand the various intricacies involved in opting for ART and should be well prepared to withstand the psychological, emotional and financial that it brings with it.

Also, the hospital could ensure a dedicated legal branch to keep track of the cases being handled by the hospital and should be equipped to address any cases as and when required.

- Breastfeeding is an important step right after the birth of the child. In most cases, the nurses and midwives are entrusted with the responsibility of helping the mother initiate the process of breastfeeding. However, this could give rise to complications in that the mother may not understand the need to continue with the practice due to the related discomfiture or due to lack of understanding of the importance of the practice. Hence, a dedicated professional should be entrusted with the responsibility of ensuring safety in carrying out breastfeeding. It is also important that proper counselling should be incorporated to the mother about the importance of the consistency in carrying out breastfeeding.

In this regard, the Baby Friendly Hospital Initiative has been launched by the UNICEF and WHO in 1991 following the adoption of the *Innocenti Declaration* on breastfeeding promotion in 1990. The initiative is a global effort for improving the role of maternity services to enable mothers to breastfeed babies for the best start in life.

The criteria for a BFHI accreditation are as follows:

- ❖ Have a written breastfeeding policy that is routinely communicated to all health care staff.
- ❖ Train all health care staff in skills necessary to implement this policy.
- ❖ Inform all pregnant women about the benefits and management of breastfeeding.
- ❖ Help mothers initiate breastfeeding within one half-hour of birth.
- ❖ Show mothers how to breastfeed and maintain lactation, even if they should be separated from their infants.
- ❖ Give newborn infants no food or drink other than breastmilk, not even sips of water, unless medically indicated.
- ❖ Practice rooming in - that is, allow mothers and infants to remain together 24 hours a day.
- ❖ Encourage breastfeeding on demand.
- ❖ Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
- ❖ Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

The program also restricts use by the hospital of free formula or other infant care aids provided by formula companies and recommends that when formula is medically needed, it should be given in a small cup or spoon, rather than a bottle and should only be used to supplement breastfeeding.

Conclusion

6. Conclusion.

The Key Performance Indicators (KPIs) used to assess the performance of the hospital have been instrumental in gauging its smooth and efficient functioning, which is imperative for the management, employees and the patients.

The use of a good set of KPIs could help the hospital in the long run to keep track of the activities which are of prime importance, to stay true to its mission and objectives.

The study has analysed the following indicators –

- Bed Occupancy rate(BOR)
- No. Of cases of early Booking.
- Number of C-section and Normal Deliveries.
- Success Rate of IVF.

The results have shown that the BOR needs to be increased. The number of people opting for C-section is high as compared to the number of people opting for Normal delivery. Around 20% of the patients have been observed to have gone for Early Booking suggesting that this indicator requires considerable improvement.

A well-developed dashboard could contribute significantly towards this goal of maintaining a record of the different indicators.

An important component of accumulating information about the performance of a hospital is the recording of the huge amount of data generated, of the different variables, which could be retrieved and interpreted easily. Hence, it is crucial that appropriate software and data analyses techniques be invested upon, to make the generation of data and its subsequent interpretation a smooth process.

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