# TIME UTILIZATION OF OPERATION THEATRE

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# INTRODUCTION

- SPS Hospital was started in 2005 and was the first hospital in South East Asia to be accredited by the prestigious Joint Commission International, USA within 2 years of operations.

- The modern state of the art 350 bedded hospital is a center of excellence for Cardiac Sciences (cardiac surgery & interventional cardiology), Neuro Sciences (neurology & neurosurgery), Orthopedics and Joint Replacements, Gastro Sciences (gastroenterology and gastro intestinal surgery), Kidney Transplants, Mother and Child Care, Emergency Services and Preventive Healthcare Services.

- An Operation Theatre (OT) is a vital facility of any healthcare unit. This specialized service of the hospital is directed towards lifesaving procedures carried out in strict aseptic conditions under controlled environment. A room in a hospital equipped for the performance of surgical operations is called Operation Theater.

- OT Utilization can be defined as the measure of hours of theatre time that is actually utilized during elective resource hours and also considers the total number of optional resource hours available for use for optimal utilization of theatre time (Augusto et al., 2010).

# REVIEW OF LITERATURE

- The utilization of operation theatre is not a new concept for healthcare establishments. In late 1970, the theory of OT utilization exists in the surgical journalism.

- Oh et al. (2011) states proper allocation of resources is required to maintain an effective functioning of an OT unit in a hospital.

- The studies on OT functioning and development revealed that the measure of time utilization of OT has been of great interest among various academicians and researchers.

# AIM AND OBJECTIVES

**Aim:**

- To study the utilization of Operation Theatres in SPS Hospital, Ludhiana.

**Objectives:**

- To assess the overall utilization of operation theaters in terms of hours.
- To assess the extent to which different departments are utilizing the allocated hours.
- To identify the proportion of (unplanned or planned) of surgeries.
- To suggest measures to improve the utilization of the OT.

# METHODOLOGY:

- **Study design:** Descriptive type of study.
- **Sample size:** 663
- **Data collection method:** Secondary Data. Through OT record files and register.
- **Data analysis :** Data was analyzed with the help of MS-Excel
- **Study duration:** February 2017 to April 2017.

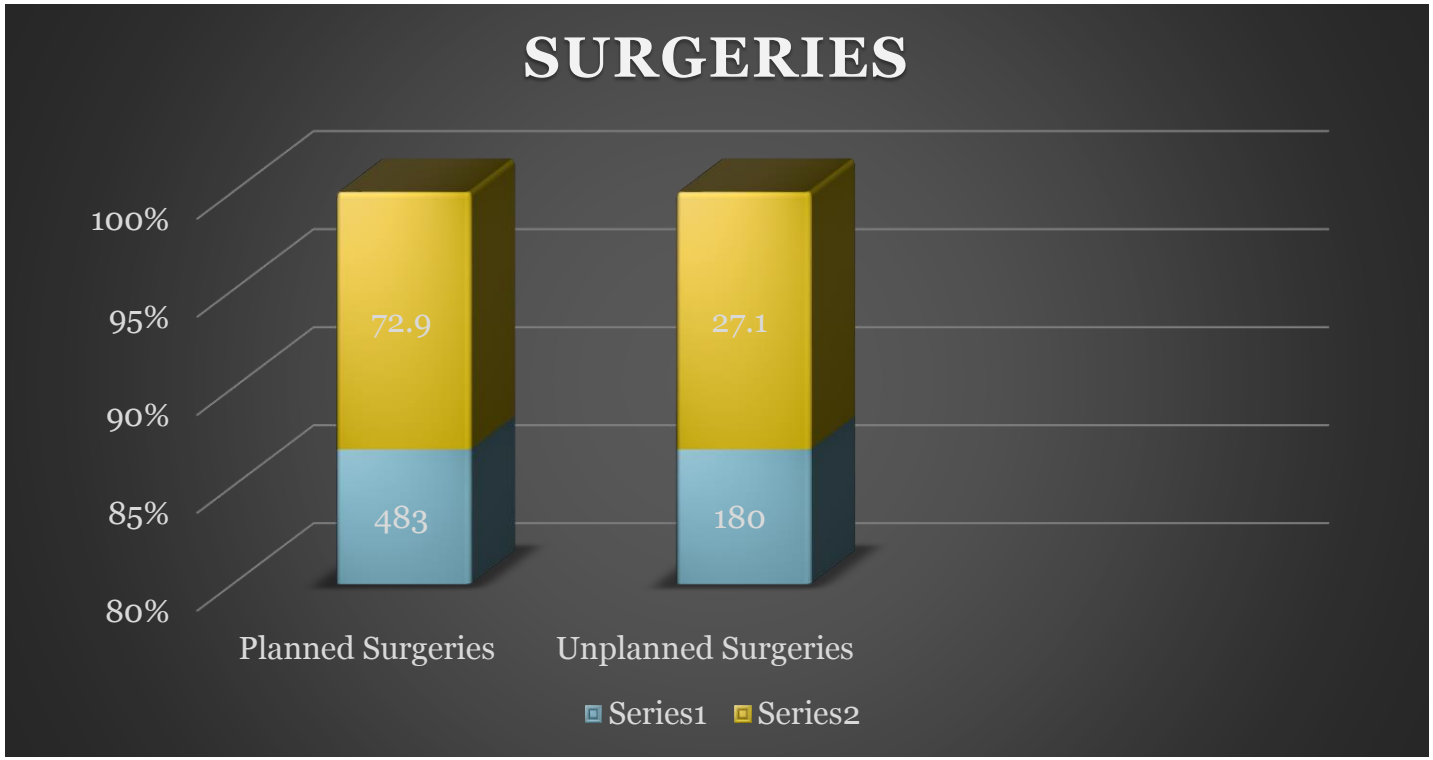
# ANALYSIS

- Analysis was done with the help of Operation Theater Schedule as well O.T. Record.
- Mathematical analysis was done based on comparison of Planned, Unplanned, and Total Surgeries.
- To evaluate the utilization rate,

1. **The utilization of O.T. was calculated using the below formula:**

$$\frac{\text{Number of hours when O.T. was used}}{\text{Maximum number of hours the O.T. can be functioned}} \times 100$$

# FINDINGS




Graph Shows that there are total 663 surgeries were performed during the study period out of which 483 surgeries were planned and 180 were unplanned that accounts for 72.9 % were planned and 27.1 % were unplanned.

## DISTRIBUTION OF PLANNED AND UNPLANNED SURGERIES

Table 1 shows proportion of planned and unplanned surgeries in comparison with total surgeries performed during the study period. It also shows the specialty wise percentage distribution of planned and unplanned surgeries.

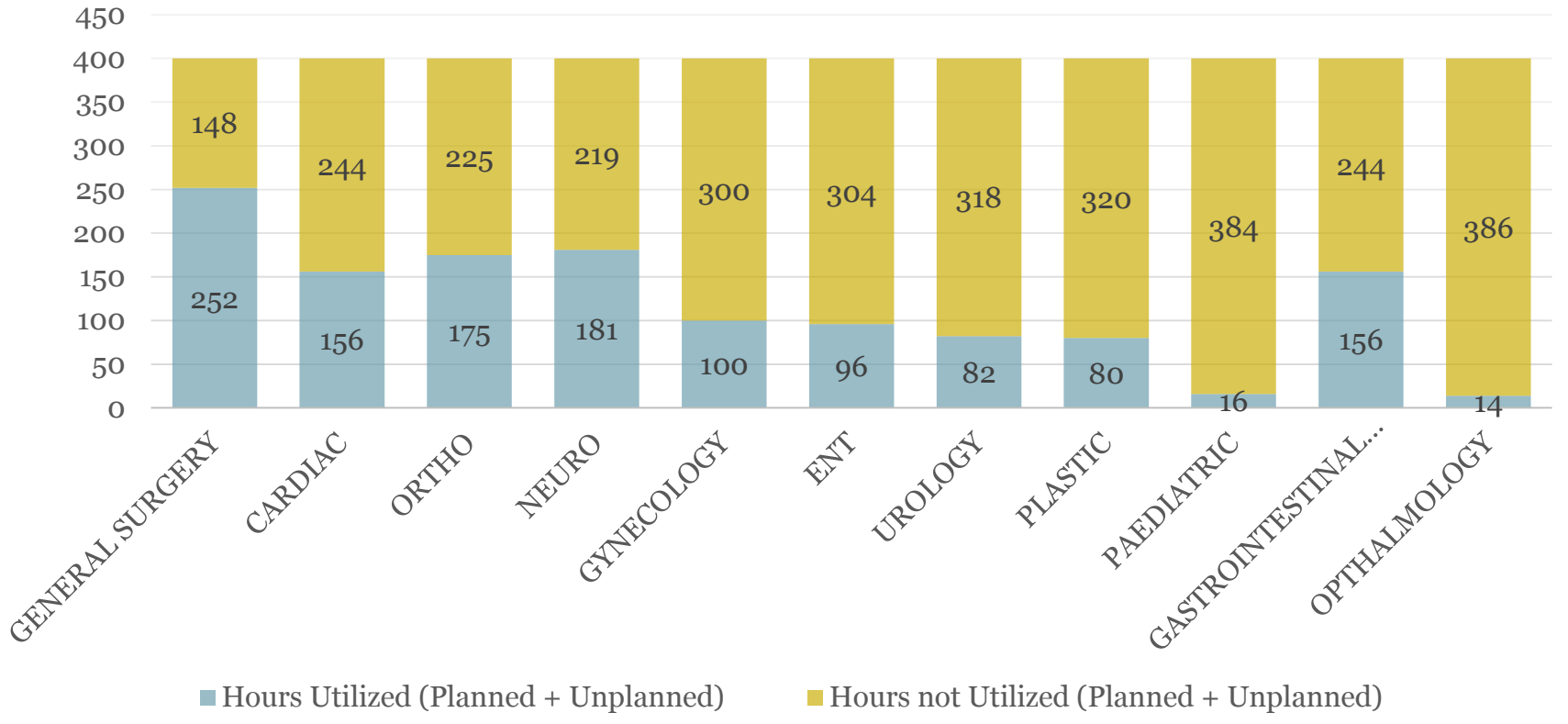
| Specialty | Planned | Unplanned | Total | % Planned | % Unplanned |
|---|---|---|---|---|---|
| GENERAL SURGERY | 102 | 38 | 140 | 72.9 | 27.1 |
| CARDIAC | 33 | 3 | 36 | 91.7 | 8.3 |
| ORTHO | 60 | 10 | 70 | 85.7 | 14.3 |
| NEURO | 35 | 27 | 62 | 56.5 | 43.5 |
| GYNECOLOGY | 32 | 40 | 72 | 44.4 | 55.6 |
| ENT | 51 | 12 | 63 | 81.0 | 19.0 |
| UROLOGY | 63 | 10 | 73 | 86.3 | 13.7 |
| PLASTIC | 40 | 14 | 54 | 74.1 | 25.9 |
| PAEDIATRIC | 15 | 7 | 22 | 68.2 | 31.8 |
| GASTROINTESTINAL SURGERY | 30 | 7 | 37 | 81.1 | 18.9 |
| OPTHALMOLOGY | 22 | 12 | 34 | 64.7 | 35.3 |
| TOTAL | 483 | 180 | 663 | 72.9 | 27.1 |

# HOURS UTILIZATION:

To find out the hour utilization for different specialties each specialty was taken separately. After calculating surgery time for each surgery for that specialty total used hours were drawn that were for both planned and unplanned surgery. These utilized hours were deducted from total available hours for that unit and un utilized hours were drawn. Then separate percentage was calculated from both the utilized and not utilized hours.

| Specialty | Total Hours in the study period | Hours Utilized (Planned + Unplanned) | Hours not Utilized (Planned + Unplanned) | %Utilized | % Not Utilized |
|---|---|---|---|---|---|
| GENERAL SURGERY | 400 | 252 | 148 | 63 | 37 |
| CARDIAC | 400 | 156 | 244 | 39 | 61 |
| ORTHO | 400 | 175 | 225 | 43.75 | 56.25 |
| NEURO | 400 | 181 | 219 | 45.25 | 54.75 |
| GYNECOLOGY | 400 | 100 | 300 | 25 | 75 |
| ENT | 400 | 96 | 304 | 24 | 76 |
| UROLOGY | 400 | 82 | 318 | 20.5 | 79.5 |
| PLASTIC | 400 | 80 | 320 | 20 | 80 |
| PAEDIATRIC | 400 | 16 | 384 | 4 | 96 |
| GASTROINTESTINAL SURGERY | 400 | 156 | 244 | 39 | 61 |
| OPTHALMOLOGY | 400 | 14 | 386 | 3.5 | 96.5 |

# HOURS UTILIZED AND NOT UTILIZED



# RESEARCH LIMITATION

- There was no data available for the cancelation as well absenteeism of patient from planned surgeries.

- There was no pre- scheduling done one day prior to the day of surgery.

- The unplanned surgeries done in emergency also affected the utilization as the surgery planned had to be delayed.

# CONCLUSION

The planned surgeries between the study period for the General Surgery department is around 21.1 % of the total planned surgeries, which is the highest and for the pediatric department it is around 3.10%, lowest during the study period.

The unplanned surgeries between the study period for the Gynecology department is 22.2 % of the total unplanned surgeries, which is the highest and Cardiac department is 1.66% of total surgeries performed, which is the lowest during the study period.

The study succeeded in its attempt to identify the overall utilization of operation theaters in terms of hours and proportion of (unplanned or planned) of surgeries done. It clearly defined the strongest and weakest departments in terms of their OT utilization hours.

In the end few recommendations were proposed which can be utilized in the future.

# RECOMMENDATION

- The hospital can consult other pediatric surgeons and ophthalmic surgeons near the hospital that are willing to perform surgeries, either on honorary basis or on call basis at SPS Hospital in order to increase the utilization level of Pediatric Surgery and Ophthalmic Operation Theater.

- The operation theater records are insufficient to know the booking details of theater so a central O.T. booking register should be placed in hospital so that this is available to know the booking details of various Surgical theaters.

- Since unplanned surgeries lead to delay in planned surgeries and currently the OTs are underutilized, it can be suggested that out of the 7 OTs, one should be allotted completely for unplanned surgeries so that scheduled theaters should not suffer and overall utilization can be achieved.

- More effective use of theatre time is possible if delays in starting lists is minimized, proper scheduling of surgical lists is done.

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Thank
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