

# Evaluation of Patients Admitted in the Department of Plastic and Re-Constructive Surgery at a Tertiary Care Institute of North India

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**Abstract:** Nowadays, majority of hospitals are having queuing and waiting time problems. Waiting time for elective care is defined as the time that elapses between firstly the physician's decision to admit a patient for elective surgery following clinical assessment and secondly the date of hospital admission. This study was conducted in the department of plastic and re-constructive surgery at the Sher-E-Kashmir Institute of Medical Sciences (SKIMS), Soura. The study was conducted for a period of one year from 1<sup>st</sup> October 2013 to 30<sup>th</sup> September 2014. It was a prospective observational study carried out on the patients admitted in the ward of plastic and re-constructive surgery. The study was done based on the interviews from relevant informants, study of record and observations made by the researcher. Outpatient cards and in-patient case sheets of the admitted patients to ascertain the waiting time from the date of decision of surgery to actual date of surgery was calculated. Interviews were conducted on relevant stake-holders which included resident doctors, patients and attendants of the patients. A total of 2238 patients were included in the study with mean age of 26 years, with 60.9% as males. About 62.2% belonged to rural areas. Mean Length of stay of road traffic accident was 9.97 days, for bear maul it was 9.68 days, for machine cut mean length of stay was 10.69 days, for Post burn contracture it was 11.58 days and in squamous cell carcinoma face it was 9.22 days. Out of the total 2238 patients, 1629 recovered, 54 had amputation of arm, 18 had nerve loss injury, 63 had face deformity and 9 died. It was inferred that the maximum number of cases admitted were those of road accidents, trauma, burns and animal infected injuries. It was seen that mean wait time was 42.88 days with cases like cleft palates, palatal fistula and contractures having an extended wait times of more than 45 days. However, cases like Road traffic accidents, burns, fall from height, carcinoma breast were treated on emergency grounds. Also patients from rural areas had a mean wait time of 46.35 days while those in urban areas had a mean wait time of 37.18 days.

**Keywords:** Waiting time, Road Traffic Accident (RTA), Delay

## 1. Introduction

Majority of hospitals these days are having queuing and waiting time problem. This creates a lot of dissatisfaction among the patients and also the staff. It has been observed that long queues are frequently, seen out-side many specialist clinics like medicine, gastroenterology, plastic surgery. Waiting time for elective care is defined as the time that elapses between firstly the physician's decision to admit a patient for elective surgery following clinical assessment and secondly the date of hospital admission. Studies have shown that waiting times vary according to two factors: (1) the patient's covariates such as residence, demographic characteristics and health status and (2) the indicator procedure<sup>1</sup>

The 2005 edition of the Fraser Institute Report on Hospital Waiting Lists in Canada indicates that wait times for plastic surgery are the second lengthiest of all specialties. The median total wait times (from time of referral to time of surgery) are in excess of 36.2 weeks, with wait times between specialist consultation and treatment being 20.9 weeks<sup>2</sup>. Based on a survey of plastic surgeons, a report indicates that a median clinically reasonable wait time is 10 weeks. Plastic surgery wait times are increasing. In 1993, the median wait time from referral by general physician to

the time of surgical consultation was 5.9 weeks. In the 2005 report, the same wait time had more than doubled to 15.4 weeks<sup>3</sup>. There are a vast range of cases seen in the department of plastic and reconstructive surgery like road traffic accidents, trauma cases, burn injuries, animal bites. Trauma forms a significant part of the workload in plastic surgery. Delays to treatment currently exist and may result in poorer clinical outcomes. Despite an increase in provision of emergency plastic surgery trauma lists, the average wait for emergency plastic surgery is increasing<sup>4</sup>.

Taking all these issues into consideration the present study was conducted at Sher-I-Kashmir Institute Of Medical Sciences, Srinagar for a period of one year from 1<sup>st</sup> October 2013 to 30<sup>th</sup> September 2014 in the department of Plastic and Reconstructive Surgery to determine the average wait-time for the surgical intervention of the patients admitted in the department of Plastic and Reconstructive surgery and to identify various reasons for the delay in surgical intervention (waiting-times)

## 2. Methodology

It was a prospective observational study done for a period of one year in the department of plastic and re-constructive surgery at Sher-e- Kashmir Institute of Medical Sciences.

The study material included outpatient cards and in-patient case sheets of the patients admitted in ward of plastic surgery. Interviews were conducted on relevant stakeholders which included Resident doctors, Patients and Attendants of the patients. The researcher used to visit the ward daily and enter the data pertaining to demographic details of the patients, length of stay, time taken from admission to discharge and outcome of treatment on discharge was undertaken. Wait-time was taken as the time from first date of decision of surgery given on registration card of outpatient/Admission diary of the department till the surgical intervention which also included the patients referred from emergency medicine.

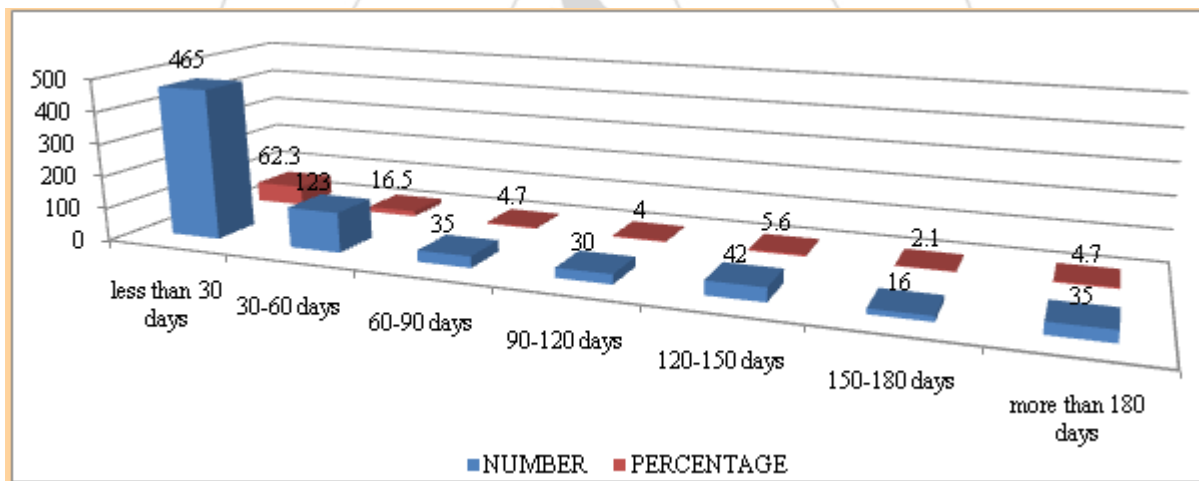
**Average wait-time** was calculated using the following formula:-

Total number of waiting days for all admitted patients requiring surgical intervention during study/total number of discharges of operated patients during the same period

To identify reasons for delay in surgical intervention of the patient's with prolonged waiting times an exit interview was conducted with the patients/attendants to identify various factors leading to delay in surgery. In addition interview with the concerned plastic surgeon was also undertaken to consider his reasons for the delay.

### 3. Observations & Results

Mean age of our study population was 26 years. Out of the total 2238 patients 1362 (60.9%) were males and 876 (39.1%) were females. Overall male: female ratio was 1.55:1. Our study revealed that out of total 2238 admitted patients 1038 (46.4%) were un-married and rest 1200 (53.6%) were married, amongst which 1392 (62.2%) belonged to the rural areas and rest 846 (37.8%) were from urban area-Out of the total 2238 patients 1629 (72.7%) recovered, 54 (2.4%) had amputation of arm, 63 (2.8%) had ear loss, 45 (2%) had palatal fistula, 18 (0.8%) had nerve loss injury, 63(2.8%) had face deformity, 81 (3.6%) had deformity of nose and 9(0.4%) patients had eye loss and 9 (0.4%) died. In our study 1395 (62.3%) had a wait time (Time between first date given for the surgery to the patient in the outpatient till the date of surgery) of less than 30 days, 369 (16.5%) had to wait between 30-60 days, 105 (4.7%) had a waiting time of 60-90 days, 90 (4%) patients had a wait time of 90-120 days, 126(5.6%) waited between time period of 120-150 days, 48 (2.1%) patients between 150-180 days and the rest 105 (4.7%) patients had a wait time of more than 180 days. Mean wait time was 42.88 days.



**Figure 1:** Showing the waiting time of admitted patients

Patients from rural areas had a mean wait time of 46.35 while as those from urban areas had a mean wait time of 37.18 days and a P value of 0.124 (Statistically insignificant).

### 4. Diagnosis

Total 495 cases were that of RTA (road traffic accidents), 162 bear mauls, 135 cleft palate, 117 cleft lip, 99 tin cut injuries, 90 PBC (Post burn contracture) hand, 72 cases of SCC (squamous cell carcinoma) face, 60 cases of BCC (Basal cell carcinoma) thigh. Maximum cases of BCC thigh, bear mauls, RTA, electric burn, tin cut, and machine injuries had a wait time of less than 30 days while post burn contractures had to wait for more than a month.

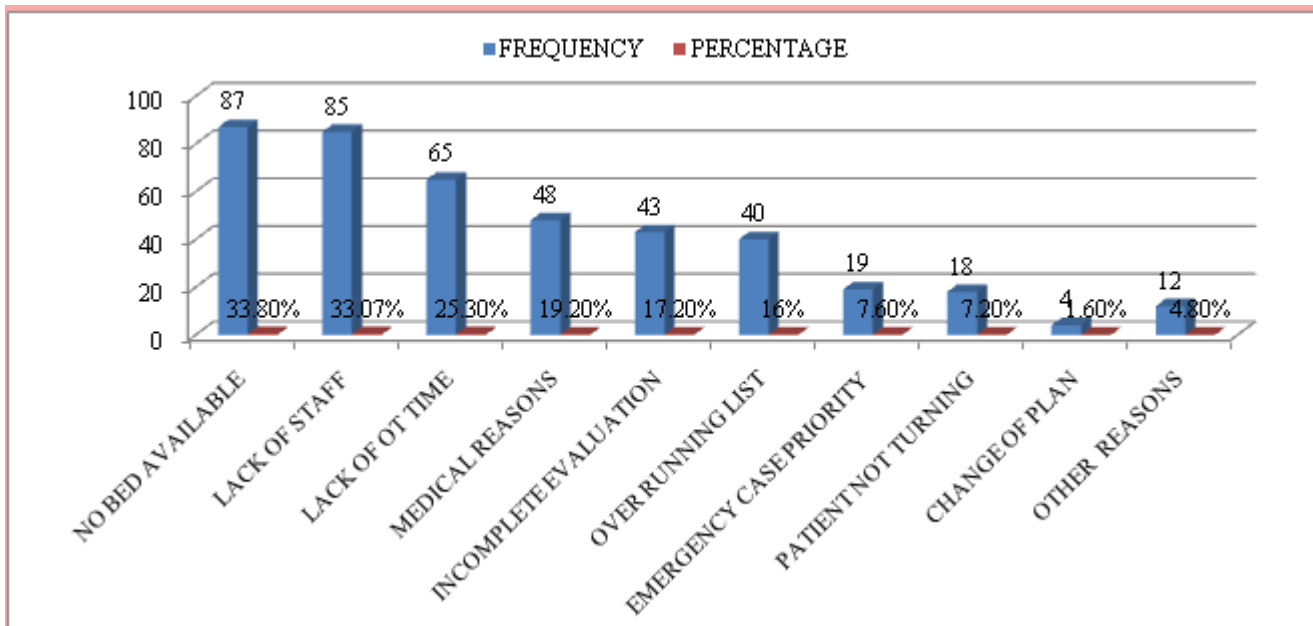
Most of the cases had a LOS of less than 10 days while a few cases of RTA, SCC and electric burns had extended LOS. 9 patients of BCC thigh were more than 60 yrs, 9 (5.6%) of bear maul, 3 patient of fibro adenoma, 9(11.1%) of machine cut, 39 of RTA, 45(62.5%) of SCC face, 54(85.7%) of SCC nose, 9 cases of SCC thigh and 9 of SCC tongue were more than 60 years of age. Most of the patients were less than 40 years of age.

Mean wait time of BCC (basal cell carcinoma) was 42.44 days, bear maul 41.74 days with a min of 2 days, CA breast had a mean of 7.64 days, in electric burn it was 7.32 days. For PBC it was 24.65 days, For RTA it was 11.41 days with minimum of 2 days and maximum of 55 days.

To identify various reasons for the delay in surgical intervention (waiting-times) total of 750 informants were interviewed. Main reasons for the delay in surgeries were

given as lack of OT time, over-running of theatre lists, priority of emergency patients, in-complete pre-operative evaluation of patients. Other reasons were also given by some like a wrong booking date given or a wrong list prepared. Non availability of beds, lack of resident staff was also a major reason given. Reason stated by some for

the lack of resident staff was that the staff was divided between the emergency and the ward as the residents are kept on rotation wise duties and have to attend to the cases in the emergency theatre also thereby leading to shortage of staff.



**Figure 2:** Showing cause of delay for admitted patients

## 5. Discussion

Waiting for a procedure takes a heavy toll on the patient. It not only leads to anxiety and undue stress to the patient but also affects the outcome. Department of Plastic and reconstructive surgery at SKIMS is a lone plastic surgery unit in the whole of the valley receiving a huge rush of patients from all the districts of Kashmir. Un-timely arrival of emergency cases and over-staying of patients in the wards due to various reasons leads to the menace of non-availability of beds which further lead to delayed admission of patients from the Outpatient department (OPD) into the ward.

Mean wait time was 42.88 days (S.D 59.004). Average wait time seen in a study conducted by **Cheung K et al** in Ontario was 35 days<sup>5</sup>. In 2012-13 50% of patients waited for elective surgeries in Australia for upto 36 days according to **Australian Hospital Statistics 2012-13**<sup>6</sup> report (elective surgery waiting times.) while that in Australian Capital Territory it was 62 days. In Sweden about 75% patients of elective hip replacement have a waiting time of less than 30 days<sup>7</sup>.

All these studies suggest that mean wait time is less than what we see in our study. This may again be due to the fact that better resources and greater number of hospitals and staff and better funding are available for patient care than what is available here in our state. Maximum cases of Basal cell carcinoma (BCC), bear mauls, road traffic accident, electric burn, tin cut, and machine injuries had a wait time of less than 30 days while post burn contractures had to wait for more than a month for their treatment.

Patients admitted as emergency cases like road traffic accidents, bear mauls, carcinoma breast, Squamous cell carcinoma face, dog-bites, glass cut injuries were admitted on priority basis with least delay. The cases like cleft palate, burn contractures, hypospadias had a longer wait time of more than 60 days like average wait time of carcinoma breast was 7.64 days, that of fall from height was 1.98 days, road traffic accidents was 11.41 days, skin cancers (SCC) was 24.24 days while less urgent cases like cleft lip had a mean wait time of 76.04 days, that of burn contractures was 40.53 days and that in hypospadias was 60.82 days.

This suggests that patients with less urgent need of treatment had to wait longer for their treatment and emergency cases were admitted on priority basis. This trend leads to non-availability of beds in the ward since many patients from the emergency are ultimately, shifted to ward where from they are discharged.

In our study average wait time for breast re-construction was 7.64 days. According to Fraser Institute Report the mean waiting time for breast re-construction was between 2-4 weeks<sup>2</sup>. Similiar data was also given by Ministry Of Health report by British Government<sup>8</sup>.

The result for burn patients and cleft lip is comparable to that shown Canadian Plastic Surgery Benchmarks where it is more than 7 days in 33% patients for burn cases and 2-4months for cleft lip in 40%cases. Likewise, in our study it was 7.32 days for burns and 76.04 days for cleft lip<sup>3</sup>.

The mean waiting time for road accidents, fractures, tin cut, and machine cut injuries in our study does not match with



that given in Canadian benchmarks where almost all emergency cases are treated within a time frame of 4-7 days<sup>3</sup>. While as here they have to wait for extended period, thereby suggesting an over burdened emergency.

About 33.8% of those interviewed gave the main reason as non availability of beds in the ward.33.07% said lack of resident staff as the reason for delay in surgeries in the admitted patients. 25.3% gave the reason as lack of time in operation theatres.16% of cases mentioned as over-running of list as a reason for the delay.

Robb et al revealed in a study that 31% of cancellations were due to non- availability of beds. Many studies also gave the reason as shortage of beds and staff as the cause for increase in waiting time in hospitals<sup>1,9</sup>.

Lack of staff was also an important cause given by various studies<sup>10, 11, 12</sup> which revealed an important relation between presence of adequate staff and time of surgery of patients.

In our study another cause that was inferred leading to delay in surgeries of admitted patients was over-running theatre list in 16% cases. A study by Schofield W et al revealed 18.7% cases delayed due to over running of theatre list<sup>13</sup>.

7.6% cases were cancelled due to admissions in emergency. These patients occupy majority of beds in the ward. 13.9% cases in a study by Vinukondaiah et al and 9.2% cases in a study conducted by Laisi et al gave the same reason for cancellation of elective surgical cases<sup>14</sup>

## 6. Conclusion

Long queues in the out patients departments (OPD) is an indication of the ever-increasing issue of wait times which not only leads to dis-satisfaction among the patients but also adversely affects the quality of care.

## 7. Future Scope

Many steps need to be taken to address these issues so as to improve the patient care. Various recommendations that can be suggested include:

- 1) Increase the number of beds in the specialty of Plastic and Reconstructive surgery.
- 2) Increase the OT time so that more cases are taken up each day thereby, increasing the routine admissions from the OPD.
- 3) Increase the number of operation theatres so that the issue of increasing wait time can be addressed
- 4) Separate Consultant and resident staff should be kept for emergency cases so that it does not interfere with the staffing of the ward.
- 5) As has been shown in our study maximum number of cases were those of trauma which calls for an urgent need of state-of-art trauma centre which will lessen the burden on the institute to a huge extent.

## References

- [1] Merehau Cindy Mervin and Sukhan Jackson. How can we improve waiting time for elective surgery in Australian public hospitals? School of Economics Discussion Paper No. 387, March 2009, School of Economics, the University of Queensland, Australia
- [2] The 2005 edition of the Fraser Institute Report on Hospital Waiting Lists in Canada. Available from <http://www.fraserinstitute.org>
- [3] Leif Sigurdson Earl Campbell and Nicholas Carr. Canadian Society of Plastic Surgery Wait Times Benchmark Initiative. April 10, 2007
- [4] Khan AA, Furniss D, Townley WA, Jay S, West EV, Clover AJ. Prospective analysis of waiting times for emergency plastic surgery in four units. *J Plast Reconstr Aesthet Surg*. 2011 Jul; 64(7): 873-7.
- [5] Census of fatal Occupational injuries 2006-2007 ; Bureau of Labour Statistics. A report submitted by United States department of labour. Available at [www.bls.gov](http://www.bls.gov)
- [6] Australian hospital statistics 2012-13.. Elective surgery waiting times. Available from <http://www.aihw.gov.au/publication-detail/?id=60129544692>
- [7] Measuring and comparing waiting lists. A study in four European countries. Third report of HOPE, S working party on management of waiting lists, Brussels; April 18, 2004
- [8] A research report submitted by Ministry of Health on Surgical Wait Times by the British Government. (Internet). Available from <http://swt.hlth.gov.bc.ca>
- [9] Nasr A, Reichardt K, Fitzgerald K, Arumugusamy M, Keeling P, Walsh TN. Impact of emergency admissions on elective surgical workload. *Ir J Med Sci* 2004 Jul-Sep; 173(3):133-35
- [10] Jonnalagadda R, Walrond ER, Hariharan S, Walrond M, Prasad C. Evaluation of reasons for cancellation and delays of surgical procedures in a developing country. *J Clin Pract*. 2005; (June); 716-20
- [11] Decoster C (2005). Non clinical factors associated with variation in cataract surgery. *Canadian Journal of aging* 24(suppl):s47-s58
- [12] Troung A, Tessler MJ, Kleiman SJ, Bensimon M. Late Operating Room Starts: Experience With An Educational Trial. *Canadian Journal of Anaesthesia*. 1996; 43:1233-36
- [13] William N Schofield, George L Rubin, Michael Piza, Ying Yin Lai, Doungkamol Sindhusek, Michael R Fearnside and Peter L Klineberg. Cancellation of operations on the day of intended surgery at a major Australian referral hospital. *MJA* 2005; 182: 612.
- [14] J. Laisi, H. Tohmo, U. Keränen. Surgery Cancellation On The Day Of Surgery In Same-Day Admission In A Finnish Hospital. *Scandinavian Journal of Surgery* 2013; 102:204-208
15. Vinukondaiah K, Ananthkrishnan N, Ravishankar M. Audit of operation theatre utilization in general surgery. *Nat Med J India* 2000; 13:118-21.