Original Research Article

Hospital Assessment & Performance Measures: A Study & Mini Review

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Abstract

Hospital assessment and performance are crucial measures to evaluate the efficacy of any health Centre and it requires a thorough knowledge about the same. A retrospective evaluation from 1st Aug 2018 to 30th Aug 2018 of the tertiary hospital were assessed for Bed Occupancy Rate, Bed Turnover Ratio , Average Length of Stay, Mortality rate for ICUs, Mortality rate for hospital and were subjected to mathematical formula to calculate and interpret the results. This manuscript provides the case study and a mini review on the same. Comprehensive assessment of hospital enables the identification of strengths and weaknesses in the system that can be used to develop new improving strategies.
Keywords: Hospital, Assessment, Performance, Measures.

INTRODUCTION

With all the scientific and technological advancements, health systems are thought-provoking with problems such as patients dissatisfaction and facility inefficiency [1]. In all health systems, hospitals sectors provide most of the services and they are also the largest consumer of the products in the health industry. If we see the allocation of the materials 40 % and 80 % are allocated to the hospitals in developed and developing countries respectively [1, 2]. Hospitals impact the health systems' efficacy. So assessment of hospitals performance is of paramount importance [1]. Assessment of performance of an organization is critically important in process to reach the set targets. It is essential for an organization to be consciously aware of its surrounding situation and quality of performance, especially in complex and dynamic contexts [3, 4]. In an organization, lack of a multidimensional assessment system is considered a disease [3]. Primary endeavors to assess performance of hospitals back to 1859. At that time, Florence Nightingale measured the quality of healthcare services through calculating infection and mortality rates [3]. Clinical and economical assessment of hospital performance is beneficial to payment systems, policymakers, hospitals, and physicians. Assessment also assists the managers in promoting

quality of performance and control [5]. Performance of an organization is assessed based on the performance indicators. Indicator-based performance assessment leads to the promotion of performance in hospitals and health system. Precise selection of indicators impacts on improving the quality of services and accuracy of assessment [4]. Indicators measure variations directly and indirectly [3]. Indicators of performance can be applied to achieve internal and external goals. An example for applying indicators in order to achieve internal goals is the managers' use of indicators as informational tools for observation, assessment, and promoting performance in short-term and long-term periods. Response to investigators, consumers, and community is an example of applying indicators to achieve external goals [2]. So to assess the same we did the study with the following objectives at a tertiary hospital in central India.

- How effectively the beds are utilized?
- What is the average length of stay of a patient in the hospital?
- What is the bed turnover ratio in the hospital?
- What is the mortality rate in wards & ICUs?

METHODOLOGY

Primary data were collected from the record book the period range 1st Aug 2018 to 30th Aug 2018 of the hospital and and were assessed for Bed Occupancy Rate, Bed Turnover Ratio , Average Length of Stay, Mortality rate for ICUs, Mortality rate for hospital and were subjected to mathematical formula to calculate and interpret the results thus obtained.
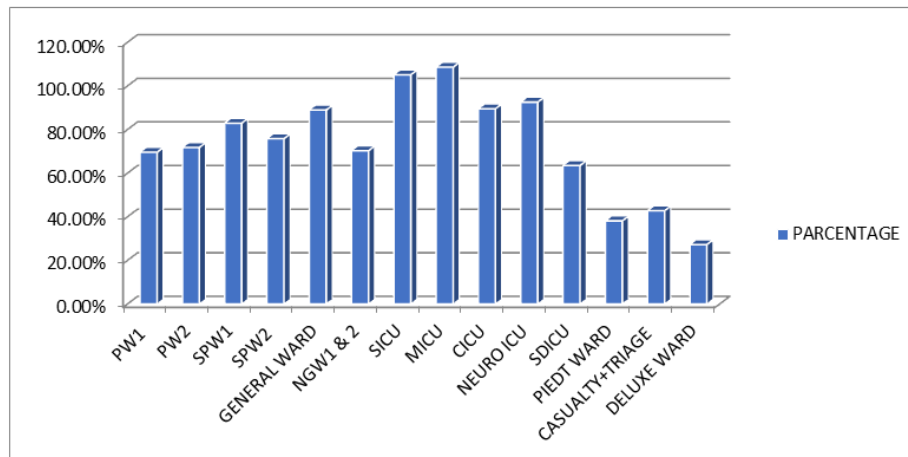
RESULTS

Bed Turnover Ratio

It is calculated by the formula

$$BTOR = \frac{1185}{217} = 5 \text{ patient per bed}$$

In our study we found that total no of admission during the period included in the study were 1185 consisting of all the wards and ICU"s and the

Bed Occupancy Rate

It is calculated by the following formula

$$BOR (\%) = \frac{\text{Cumulative IP days} \times 100}{\text{Number of Beds} \times \text{days}}$$

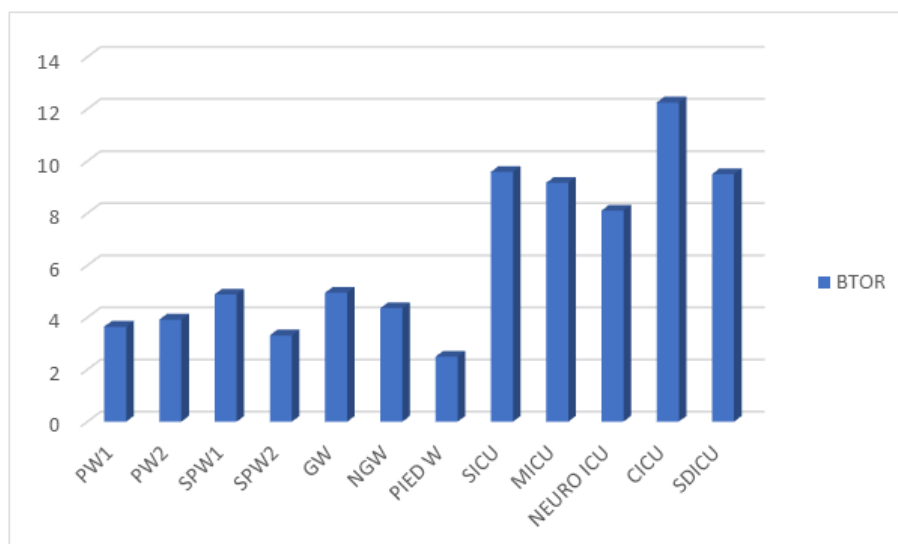In our study the Cumulative IP days were 534 and the No beds were 243, The Bed turnover rate was 71.07 %.

results showed that the average BTOR was of 5 patients / Bed. Bed turnover ratio in CICU was 12 patients per bed where as in MICU, SICU, NEURO ICU & SDICU bed turnover ratio was between 8 to 10 patient per bed and in other wards the turnover ratio was between 3 to 5 patient per.
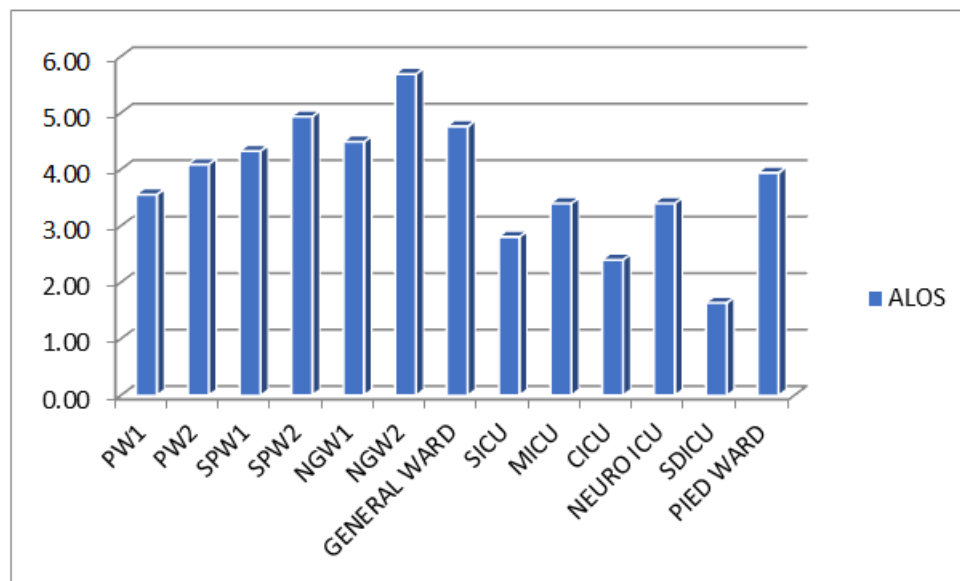

Average Length of Stay:

It is calculated by the formula

$$AVLS = \frac{\text{Cumulative IP days}}{\text{No of discharge}}$$
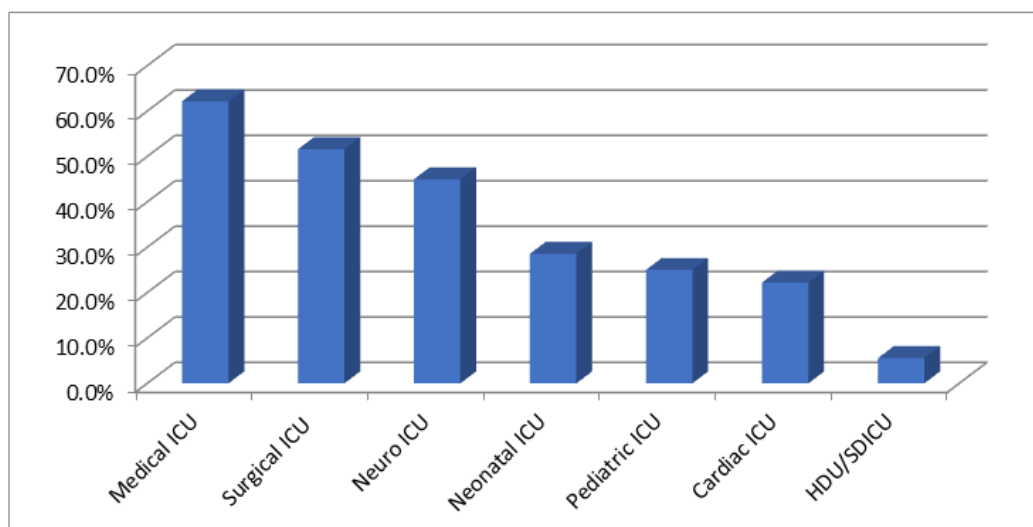
In our study the AVLS was 4.02

Mortality rate for ICUs:

$$\text{Gross ICUs death rate} = \frac{\text{No of all deaths in a period in ICUs}}{\text{No of discharges including deaths in the period in ICUs}} \times 100$$

Gross ICU death rate = 58/144*100 = 40.27% on splitting the data , individual mortality rate in ICU's was highest in Medical ICU (62.16%) and lowest in High dependency unit/SDICU (5.55%)

Mortality rate for hospital:

$$\text{Gross death rate} = \frac{\text{No of all deaths in a period}}{\text{No of discharges including deaths in the period}} \times 100$$

In our study the gross death rate was 11.89%

DISCUSSION

Hospital indicators reflect utilization of services and performance [6]. In other words, indicators are used to measure efficacy and level of success in an organization [6, 7]. In hospitals, indicators reflect performance. So it is necessary to concentrate on these indicators and investigate and compare them regularly [8]. Promotion of indicators of hospital performance reflects appropriate management of resources, efficacy, and effectiveness of the performance of personnel [9]. In our study the Bed Occupancy rate was 71.07 % which was relatable to the standardization mention as per WHO, as per the result the hospital has high occupancy in ICUs especially in SICU & MICU,

because of that there are very high risk of cross infection. WHO suggests that the average length of stay must not exceed 4 days, in our study it was 4.02 days which was matching as per the standard Hospital Guidelines of WHO. Martin and Smith in their study suggest hospital features and demographic characteristics of patient as the two determinants of the length of stay. Any patient is prescribed to spend a particular length of stay. It depends on the rapidity of diagnosis and treatment processes, availability, and appropriateness of alternative cares after discharge. Early diagnosis shortens the length of stay and decreases the care expenses [10]. The bed turnover ratio in our study was 5 patients per bed which suggests that hospital has good inflow of patients and was higher than that of WHO guidelines indicative of more bed requirements in the Hospital, Concerning the reverse association between the average length of stay and the bed turnover indicators, shorter average length of stay can positively impact on the bed turnover rate [11] so that more use of a hospital bed would be provided, and in turn, the efficiency of hospital may be increased The mortality rate of the hospital is an important indicator, in our study mortality rate in ICU's (40.27%) were much higher than that of WHO(1-15%), similarly our Hospital Mortality rate was 11.89 % way higher than that of WHO specifications. Fayazi found that nosocomial infection is a direct cause of mortality. The Britain National Health Care Organization (BNHCO) has estimated that nosocomial infections are responsible for annually $986,360,000 economic burden on the health system, 96% in inpatient departments, and 6% after discharge [12], which could be one of the possible reasons of high mortality rate in our study as there is more burden in ICU's leading to cross infection and Nosocomial Infection.

CONCLUSION

Comprehensive assessment of hospital enables the identification of strengths and weaknesses in the system that can be used to develop new improving strategies.

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