

**INTERNSHIP TRAINING**  
**AT**  
**BHAGAT CHANDRA HOSPITAL, DWARKA, NEW DELHI**  
**QUALITY BASED PERFORMANCE EVALUATION OF A**  
**HEALTH CARE FACILITY: PERSPECTIVE STUDY**

**BY**  
**DR. RENU SHARMA**  
**ENROLL NO. PG/2015-17/067**  
**UNDER THE GUIDANCE OF**  
**DR. PANKAJ THALREJA**

**POST GRADUATE DIPLOMA IN HOSPITAL AND**  
**HEALTH MANAGEMENT 2015-17**



**INTERNATIONAL INSTITUTE OF HEALTH**  
**MANAGEMENT RESEARCH**  
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**Completion of Dissertation from Bhagat Chandra Hospital,  
Dwarka, New Delhi**

**The certificate is awarded to**

**Dr. Renu Sharma**

**in recognition of having successfully completed her  
Internship in the department of**

**Quality**

**and has successfully completed her Project on**

**QUALITY BASED PERFORMANCE EVALUATION OF A  
HEALTH CARE FACILITY: PERSPECTIVE STUDY**

**She comes across as a committed, sincere & diligent person who has  
a strong drive & zeal for learning**

**We wish her all the best for future endeavors**

**Dr. C. M. Bhagat**

**Medical Director**

**BCH**

**Dr. Kamal Parwal**

**Medical Superintendent**

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**Dr. Kamal Parwal**

**Medical Superintendent**

**BCH**

**Mr. Mahim Bhagat**

**Head-Human Resources**

**BCH**

**TO WHOMSOEVER IT MAY CONCERN**

**This is to certify that Dr. Renu Sharma student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at Bhagat Chandra Hospital, Dwarka, New Delhi from 06-02-2017 to 30-04-2017.**

**The Candidate has successfully carried out the study designated to him 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 her future endeavors.**

**Dr. A.K. Aggarwal  
Dean, Academics and Student Affairs  
IIHMR, New Delhi**

**Dr. Pankaj Thalreja  
Mentor,  
IIHMR, New Delhi**

## **Certificate of Approval**

**The following dissertation titled “QUALITY BASED PERFORMANCE EVALUATION OF A HEALTH CARE FACILITY: PERSPECTIVE STUDY” at “Bhagat Chandra Hospital, Dwarka, New Delhi is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of Post Graduate Diploma in Health and Hospital Management for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.**

**Dissertation Examination Committee for evaluation of dissertation.**

**Name**

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## **Certificate from Dissertation Advisory Committee**

**This is to certify that Dr. Renu Sharma, a graduate student of the Post- Graduate Diploma in Health and Hospital Management has worked under our guidance and supervision. He/ She is submitting this dissertation titled “QUALITY BASED PERFORMANCE EVALUATION OF A HEALTH CARE FACILITY: PERSPECTIVE STUDY” at “Bhagat Chandra Hospital, Dwarka, New Delhi” in partial fulfillment of the requirements for the award of the Post- Graduate Diploma in Health and Hospital Management.**

**This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.**

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**CERTIFICATE BY SCHOLAR**

**This is to certify that the dissertation titled “QUALITY BASED PERFORMANCE EVALUATION OF A HEALTH CARE FACILITY: PERSPECTIVE STUDY” and submitted by Dr. Renu Sharma Enrollment No.PG/2015-17/067 under the supervision of Dr. Pankaj Thalreja for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 01-02-2017 to 30-04-2017 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.**

**Signature**

## FEEDBACK FORM

**Name of the Student:** Dr. Renu Sharma

**Dissertation Organisation:** Bhagat Chandra Hospital, Dwarka New Delhi

**Area of Dissertation:** QUALITY

**Attendance:** 100%

**Objectives achieved:** Learned about quality in health care, the Indian accreditation standards and allied subjects.

**Deliverables: Strengths:** Sincere and analytical approach to achieve.

**Suggestions for Improvement:** Continue with your hard work.

**Suggestions for Institute:** More practical exposure to students and hand holding for few at difficult times.

**Organisation Mentor (Dissertation)**

**Date:**

**Place:**

## Original Literary Work Declaration

Name of Candidate: Dr. Renu Sharma

Enroll No. PG/2015-17/067

Name of Degree: PGDHM

Title: Quality based performance evaluation of a  
health care facility: perspective study

Field of Study: Quality

I do solemnly and sincerely declare that:

- (1) I am the sole author/writer of this Work.
- (2) This Work is original.
- (3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any extract from, or reference to or reproduction of any copyright work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this Work.
- (4) I do not have any actual knowledge nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyright work.

Candidate's Signature Date

Name: Dr. Renu Sharma

## Acknowledgements

The internship opportunity I had with Bhagat Chandra Hospital, Dwarka New Delhi was a great chance for learning and professional development. Bearing in mind my exposure, I want to use this opportunity to express my deepest gratitude and special thanks to **Dr. C. M Bhagat** Managing Director and **Dr. Kamal Parwal** Medical Superintendent / HOD Quality Department, of BCH, who in spite of being already committed with his professional commitments, I was assisted and guided provided on technical aspects of healthcare data collection, data analytics , dashboard designing for improving sustainability of hospital and provided me requisite inputs and timely help to keep me on the correct path and allowing me to carry out my project at this esteemed organization .

I express my deepest thanks to **Mr. Mahim Bhagat**, CEO for guiding me in decision making & and providing the necessary advices / guidance and arranging all the facilities for achieving the objectives. I choose this moment to acknowledge their contribution gratefully.

I am glad to acknowledge **Prof. (Dr.) Ashok Aggarwal** DEAN academic and Students Affairs, IIHMR and **Dr. Pankaj Thalreja** as my Mentor, IIHMR for incorporating right attitude towards learning and for their timely help, support and guidance. I am grateful to them for giving me an opportunity to learn administrative traits and styles, so that I could learn the efficient functioning of the hospital and ensuring a quality treatment to the patients. I perceive this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best way possible, and will continue to work further on their improvement, in order to attain desired career objectives.

Hoping for a sustained and positive cooperation and interaction with all of you in future.

Sincerely,

**Dr. Renu Sharma**

PGDHM

IIHMR Delhi

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## 1.1 Organizational profile

- Bhagat Hospital Established in 1993
- Bhagat Chandra Hospital Established in 2009
- Formation of Bhagat Hospitals Pvt. Ltd. In 2011
- Bhagat Chandra Hospital is awarded With NABH Accreditation in 2014
- Bhagat Chandra Hospital Empanelled with CGHS in 2014

Bhagat Hospital was established in year 1993 at 'D' Block Janak Puri as a Multi-Specialty 20 bedded Nursing Home to provide secondary level health care and health education services targeted mainly to neighborhood areas of Sagarpur, Janak Puri and Delhi Cantt.

In its existence of nearly 2 and a half decades Bhagat Hospitals have earned an enviable reputation as a perfect health care facility in its neighborhood and in today's date we have expanded our facility at Janak Puri to 35 beds. Continuing their dream of providing affordable medical services to their neighborhood in a safe, secure and comfortable environment, the founders of Bhagat Hospital Dr. C M Bhagat, M.D. (Anesthesia), and Dr. (Mrs.) Upasna Bhagat, M.D. (Obstetrics & Gynaecology), have established another 85 bedded Hospital at RZF 1/1 Mahavir Enclave, near Palam Dwarka Flyover named as BHAGAT CHANDRA HOSPITAL in year 2009. A sustained growth has led to a restructure the management from proprietorship to a company in name and style of BHAGAT HOSPITALS PVT. LTD. IN THE YEAR 2011.

The team of experienced and dedicated Medical specialists supported by qualified and trained Para- medical staff at the Hospitals is patronized by a million of enlightened citizens of Delhi & NCR.

Bhagat Hospitals Pvt. Ltd (BHPL) is an established health care provider in West Delhi. For over two decades, we have focused on building a comprehensive unit that delivers high quality & affordable medical care. Today, we are fulfilling our mission to serve society by providing advanced preventive, diagnostic, & rehabilitative services. The two units of BHPL, Bhagat Hospital (Janak Puri) & Bhagat Chandra Hospital (Mahavir Enclave), have built a strong reputation among direct consumers and service providers in the surrounding areas as evidence by good OPD & casualty attendance. Other brands like, Bavishi Fertility Institute, Fortis La Femme, Lal Path Lab etc., have joined hands with us to provide quality Health care services. By doing so BHPL has managed to provide the best and most comprehensive health care to patients under one roof.

When we talk about quality, we would like to mention that Bhagat Hospital is an ISO 9001:2008 certified unit since the year 2005 and Bhagat Chandra Hospital is a NABH accredited hospital since 2014. Bhagat Chandra Hospital is the first hospital in the Dwarka region of Delhi to acquire this proved accreditation. Recently Bhagat Hospital (Janak Puri) has applied for NABH accreditation and is expected to complete the process before the end of this year.

### **1.1.1 TIMELINE**

1. 1993 Bhagat Hospital (BH) established.
2. 1996 First hospital which replaced manual billing with computer generated billing.
3. 2005 received ISO 9001-2008 Certification.
4. 2009 New branch came up in 2009 which is called Bhagat Chandra Hospital (BCH).
5. 2010 First hospital in this area to provide facilities like ICU, Blood Bank, IVF and Dialysis with all ultra-modern facilities and providing excellent results.
6. 2010 Different brands like Fortis La Femme, Dr Lal Path Lab, Smile on Dental, Bavishi, Blood Bank, Deep Chand Dialysis Centre etc. joined us.
7. 2011 Bhagat Hospital acquired company status as Bhagat Hospitals Pvt. Ltd. (BHPL).
8. 2012 Hospital received Fire NOC in September.
9. 2014 Bhagat Chandra Hospital achieved the NABH certification for pioneering a wide range of ultra-modern facilities.
10. Year after year the hospital continues to incorporate new ideas and is today attached to CGHS, ECHS, all new TPAs, reimbursement and cashless panels, in its quest to serve the community better.

## **Vision, Mission and Quality Statement**

### **1.1.2 Vision Statement of BCH**

To create a comprehensive setup for the neighborhood area which is economical and affordable having high standards of health care? We aim to inculcate values of patient care in the minds of every individual working for the hospital. We keep in mind our duty to be Eco friendly, create social awareness, educate & train the society on health issues. To develop a system to provide healthcare for prevention diagnosis, treatment and Rehabilitation, the four basics of healthcare. To create tertiary care units by collaborating with other technical institutes to provide best of health care.

### **Mission**

To provide immediate, comprehensive health care to the neighborhood area in an economical way. To achieve standards of care depending on the resources and improving with time.

### **Quality Policy**

Bhagat Chandra Hospital is committed to consistently achieve a high level of patient satisfaction by providing the highest standard of medical & surgical treatment, through adherence to medical, ethical, hygiene standards, courteous staff behavior.

### 1.1.3 Scope of Services Provided by BCH

- Anesthesia
- Audiology
- Bavishi Bhagat Fertility Institute(BBFI)
- Blood Bank
- Cardiology
- Clinical Psychology
- Dental
- Dermatology(Skin)
- ENT
- Gastroenterology
- Intensive Care Unit(ICU)
- Internal Medicine
- Urology
- Lal Path Lab
- Neonatology(NICU)
- Nephrology
- Obstetrics, Gynecology & Infertility
- Oncology
- Ophthalmology(Eye)
- Orthopedics
- Pediatrics
- Physiotherapy
- Psychiatry
- Radiology
- Surgery
- Pharmacology

#### Support Services

- Ambulance
- Biomedical Engineering
- CSSD
- Dietetics
- Mortuary
- Physiotherapy

## **Project participated and organized by Bhagat Chandra hospital**

CAHOCON 2017 is an annual international conference to engage with all stakeholders in healthcare delivery system. Theme of this conference is "**Monitor, Measure and Improve.**" It was an opportunity to be part of this programme.

3rd International Conference of Consortium of Accredited Healthcare Organizations (CAHO) which was held on April 14 - 15, 2017 at Vivanta by Taj, Dwarka, New Delhi.

### **Description of programme & Achievements of BCH**

- Variety of high quality activities including keynote addresses, research presentations, oral and poster presentations, workshops, and panel discussion by leaders in hospitals and laboratories; Chairman QCI & SG has also chaired the occasion.
- Arrangements were made to hold a number of Workshops on topics like Entry Level NABH training, Clinical Audit, Communication in Healthcare, Nursing Leadership, and Lab Risk Assessment etc.
- BCH had participated in poster presentation on "**Hand Hygiene**" & won excellence award 2017.
- In BCH we took 200 samples of hand culture & only 6 samples were found positive, after taking corrective action these six people were re-tested & found negative. Some of the original test reports were displayed in the poster also. This is continuous Quality improvement, which every health care facility should do.
- Academic **excellence award** January 2013.
- Participated in Management Development Programme on "Communication Presentation & Report Writing Skills" at IIM Indore January 2017

- AHPI award 2017 for **Green Hospitals**.
- Bhagat hospital received energy efficiency award 2017 below 250- bedded category.

### **1.1.4 Department visited / worked**

I worked with BHAGAT CHANDRA HOSPITAL, near Dwarka Flyover Specifically in Quality department and visited all the departments for data collection and validation of KPIs to enhance performance of hospital system.

Topic selected for dissertation:

**“QUALITY BASED PERFORMANCE EVALUATION OF A HEALTH CARE FACILITY: PRESPECTIVE STUDY”**

### **Worked in major departments:**

- **Obstetrics & Gynecology**
- **General Ward, Private Ward**
- **ICU, CCU and OPD**
- **Casualty**

## 1.1.5 Synopsis

### **Background:**

Recent major advances & increasing demands for health system accountability and patient choice have driven rapid advances in health system performance measurement. Health systems, however, are still in the relatively early stages of performance measurement, and major improvements are still needed in data collection, analytical methodologies, and policy development and implementation.

Health system performance has a number of aspects – including population health, health outcomes from treatment, clinical quality and the appropriateness of care, responsiveness, equity and productivity – and progress is varied in the development of performance measures and data collection techniques for these different aspects. The first requirement of any performance measurement system is to formulate a robust conceptual framework within which performance measures can be developed.

### **Objectives/Key Research Questions:**

- Hospitals performance indicators will help monitoring, evaluation and decision making and therefore must be selected and ranked accurately.
- The aim of the present study is to identify and to select key hospitals performance indicators.
- Quality based performance evaluation of a health care facility: perspective study.

**Methodology:**

This is a quantitative-qualitative study by cross-sectional descriptive method in which literature review has been done to identify only 4 performance indicators. We prioritize performance indicators by Analytical Hierarchy process (AHP) technique. Qualitative and quantitative data was collected based on KPIs for 3 months the data were analyzed.

**Expected Outcome:**

Hospital performance indicators are classified to four areas as Quality- Effectiveness, Efficiency and outcome. The Internal Key Performance indicators chosen for study are:

1. Patient satisfaction
2. Average length of stay in the hospital
3. Hospital acquired infection
4. Nursing care assessment

**Time Frame:**

The population of this study comprised of 300 IPD patients from ICU & General ward & gynae ward for 3-months w.e.f. 01/02/2017 to 30/04/2017 in Bhagat Hospital, Dwarka, New Delhi. The Qualitative and quantitative data was collected based on KPIs for 3 months.

**Conclusion:**

Identifying hospitals key performance indicators provides an opportunity for health stakeholders to identify critical and problematic points with lower costs as well as time and to recognize the best corrective action.

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# Dissertation

## 2.1.1 Abstract

Measurement is central to the concept of quality improvement; it provides a means to define what hospitals actually do, and to compare that with the standard guidelines or original targets in order to identify opportunities for improvement.

### **Findings**

The principal methods of measuring hospital performance are regulatory inspection, public satisfaction surveys, third-party assessment, and statistical indicators, most of which have never been tested rigorously. Evidence of their relative effectiveness comes mostly from descriptive studies rather than from controlled trials. The effectiveness of measurement strategies depends on many variables including their purpose, the organizational culture, how they are applied and how the results are used by;-

1. Inspection
2. Satisfaction Surveys
3. Third party assessments
4. Statistical indicators

The Project aims at improving the quality performance of the hospital using primary and secondary Data Analytics to evaluate identified KPIs (Key Performance Indicators) of its various functions. Using computer technology--IBHAR serves as an interactive and dynamic tool for various stakeholders, which helps in optimizing performance of various functions and more so maximize the performance of the hospital. The Project entails improving performance of patient servicing, operations and OPD departments thus effecting finance function, procurement function, HR function, etc.

Project is aimed at KPIs and efficacy of KPIs for various functions and assisted in designing and developing dynamic charts.

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#### 2.1.4 List of Abbreviations

<b>Abbreviations</b>	<b>Full form</b>
OR	Operations Room
ED	Emergency Department
PPE	Personal Protective Equipment
PAC	Pre anesthetic check-up
IT	Information Technology
TAT	Turnaround Time
YTD	Year to Date
ALOS	Average Length of stay
NHS	National Health Services
SSI	Surgical Slight Infection
UTI	Urinary Tract Infection
VAP	Ventilator Acquired Pneumonia
CVP	Central Venus Pressure line
USG	Ultrasound
BOR	Bed Occupancy Rate
BCH	Bhagat Chandra Hospital

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## **2.2.1 Introduction**

The modern and the present lifestyle has thrown various health related challenges for people across the globe and the healthcare related issues and the proactive measures to be taken to improve the healthcare scenario.

Globally the healthcare expenditure is rising twice as fast as overall economic growth and at the same time the global healthcare industry is moving from a volume-based model to a quality based business model.

This requires the healthcare service providers (hospitals) to shift towards hi-tech infrastructure enabled with sustainable KPIs along with IT solutions & regular monitoring & evaluation to improve the outcome and efficiency.

Presently, the healthcare sector like other sectors are also suffering from poor monitoring & inappropriate data, that too housed at multiple sources thus lacks quality. Therefore KPIs are the means through which quality managers evaluate & enhance further improvement.

Achievement of these goals is more critical for the healthcare sector facilities as:

1. Improve Operational Effectiveness
2. Improve the quality of services in a time bound manner
3. Reduce medication Errors
4. Improve clinical effectiveness
5. Improve financial and administrative performance
6. Reduce readmissions
7. Enhance patient satisfaction
8. Reduce hospital acquired infection rate

In order to achieve these goals, the management and hospital staff should perform various complex tasks by keeping pace with the dynamic healthcare environment including the regulatory changes. The complexity increases given the patient volumes and the types of patients, increasing supply costs, stringent Government compliances, quality requirements, multiple usage of assets and resources and finally the scarcity of trained staff.

The scattered data located across various departments of a healthcare centre causes the biggest challenge in making the right decision at the right time. Non-availability of quality real time data does not give true picture of hospitals' performance with regard to operational, clinical and financial Key Performance Indicators (KPIs).

The hospital executives have to depend on studying fragmented data across various departments which create bottlenecks in taking real time and effective decision making as well as problem solving.

In order to collate and analyse this data in a meaningful manner, it is important that the data structure should be KPI centric and more specific.

## **2.2.2 Literature Review**

The purpose of this paper is to identify key performance indicators (KPIs) and categorize them based on specific aspects of facility performance measurement in order to facilitate a holistic performance assessment.

### **Findings**

The paper identifies indicators for performance measurement and classifies them into four major categories: financial, physical, functional, and survey-based. Indicators are arranged from general to the most specific indicators. The list presents indicators with their description, units of measurement, and literature sources.

### **Research limitations/implications**

Future research could focus on further analysis of the list of KPIs in order to generate a more concise list of easily measurable indicators that exhibit wide applicability and valid categorization

This study proposes a list of KPIs and presents it in appropriate categories so it can be used more practically by facility management practitioners.

### **Originality/value**

The list of KPIs generated covers aspects of facility performance assessment and shows wider applicability; thus, it could be utilized by practitioners for a holistic assessment of a wide range of facilities.

### 2.2.3 Methodology

The study is based on cross-sectional descriptive study method. To analyze the data, statistical techniques were adopted to perform the required statistical analysis of the data from the survey.

Structured checklist is designed for data collection. The population of this study comprised of 300 IPD patients from ICU & General ward for 3-months w.e.f. 01/02/2017 to 30/04/2017 in Bhagat Hospital, Dwarka, New Delhi.

Qualitative and quantitative data was collected based on KPIs for 3 months. The Internal Key Performance indicators chosen for study are:

1. Patient satisfaction
2. Average length of stay in the hospital
3. Hospital acquired infection
4. Nursing care assessment

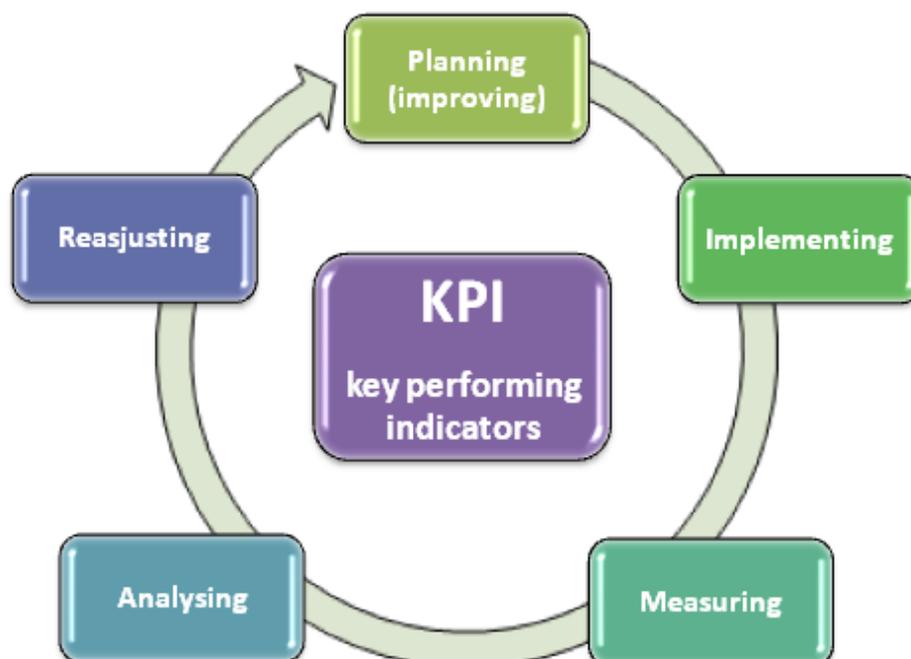
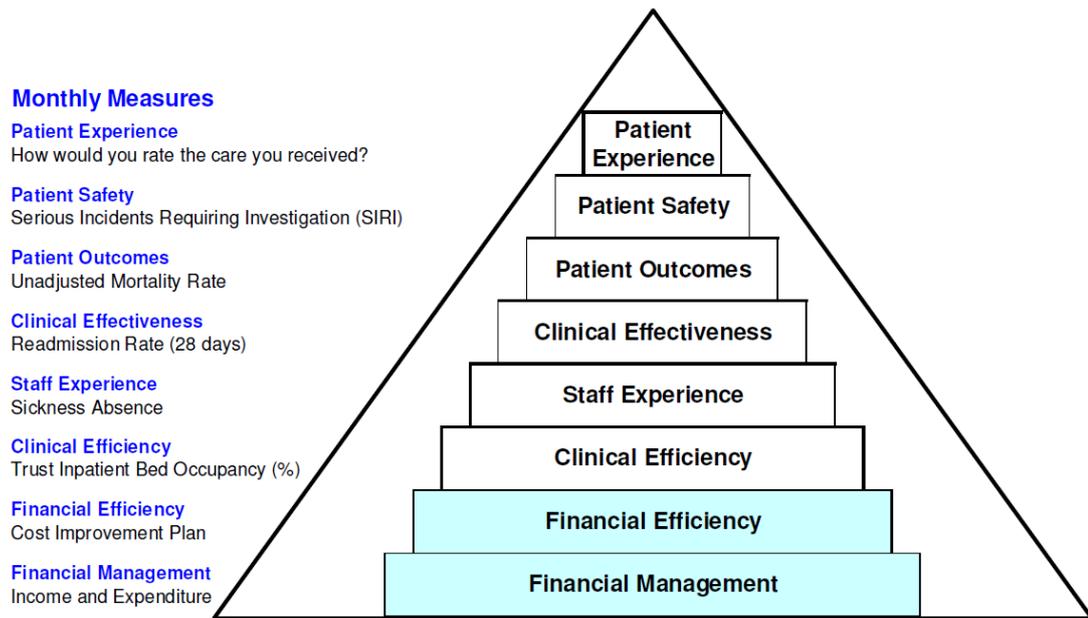


Fig 1.0

## 2.2.4 Quality Indicator Pyramid



**Fig 2.0**

Service initiative impact on quality is monitored on an ongoing basis. Key measures of quality are summarized in the above pyramid. These are analyzed using statistical process control to improve sensitivity to identifying change.

## **2.2.5 Key Performance Indicators for hospital**

### **What are KPIs?**

KPIs measure the performance and progress of an individual employee or the sector. The KPIs are an integral part of strategic and long term goal defining process. The effective KPI development should form a part of the planning and strategy, policy making, budgeting, review and monitoring.

Similar to goal setting, defining KPIs is also crucial as KPIs are in essence reflects a specific goals in the form of activities that need to be performed to achieve the specific goals. The KPIs should be Specific, Measurable, Achievable, Relevant and Time Bound.

### **KPIs in Health Sector :**

According to report of Prof. Steve Rozner, titled “Developing Key Performance Indicators- A Toolkit for Health Sector Managers” . The report is explained in detail about the KPIs, linking of KPIs to strategy, using KPIs in the healthcare sector, using health information systems to manage KPI data, etc.

- (1) Establishing baseline information (i.e. the current state of performance);
- (2) Setting up performance standards and targets to facilitate and encourage continuous improvement;
- (3) Measuring and reporting improvements over a recurring intervals;
- (4) Comparing performance across functions and geographic locations;
- (5) Benchmarking performance against regional and international peers or norms;
- (6) Allowing stakeholders to independently judge the performance of the healthcare centre or hospital.

The KPIs help the organisation to monitor the sustainability and performance of the healthcare resources including the performance of the staff, improve the quality of service delivery, and enhances overall efficiency by appropriately allocating and utilizing the resources and improving the financial performance of the healthcare facilities.

**Quality:**

Most of the hospitals face challenges on quality front and providing quality services is a very crucial aspect in the competitive environment. These aspects have significant bearing on the outcome of the services and satisfaction of the patients. Following are some of the quality challenges that need to be addressed on a priority basis.

- (1) Drug safety and efficacy.
- (2) Maintaining a safe, clean, hygienic and healthy environment.
- (3) Quality of overall healthcare.
- (4) Improved and efficient processes for sustainability.
- (5) Laboratory Accreditation.
- (6) Continuous improvement of doctors, nurses, supporting staff.

## 2.2.6 Key Performance Indicators (KPIs)

S.No	KPI	Description
<b>HEALTHCARE MANAGEMENT</b>		
	External quality indicator	<ol style="list-style-type: none"> <li>1.Number of patients treated during the month and Year to Date (YTD) for different diseases,</li> <li>2.Nursing and its comparison with the set goals that reflects the quality level and the pressure on the resources of the hospital.</li> </ol>
	Patient Survey	<ol style="list-style-type: none"> <li>1.Response of patients on various parameters that reflects on the quality of the services provided to the patient and the rating given by the patient on the overall performance of the hospital as well as his recommending the hospital to others.</li> <li>2.Comparison of these parameters on month to month and YTD basis against the set goals</li> </ol>
	Incidents	<ol style="list-style-type: none"> <li>1.Number of patients treated for various diseases.</li> <li>2.Number of complaints received and addressed across various departments on monthly and YTD basis on various parameters like professional conduct, patient communication and guidance, treatment and care, fast turnaround time (TAT), care wait time etc...</li> </ol>
<b>PATIENT SATISFACTION SURVEY ANALYSIS</b>		
	Patient Care	<ol style="list-style-type: none"> <li>1.Feedback of patients on various aspects like consultation on arrival, diagnostics, nursing and treatment, medication etc...</li> <li>2.Experience of the patient during his stay on parameters like personal attention, privacy, guidance and query handling, visiting time for friends and relatives, physiotherapy, diet etc...</li> </ol>
	Customer Service	<ol style="list-style-type: none"> <li>1.Feedback of the patient on the overall performance of the hospital on parameters like housekeeping, front office, billing, pharmacy etc...</li> <li>2.Experience of the patient on softer aspects like courteousness of the staff, cleanliness during the stay, approach of support staff, provision of linen, friendly return policy for unused medicines upon discharge etc...</li> </ol>
	Nursing score-card	Feedback of people on Nursing care assessment, satisfaction scores, satisfaction and safety scores etc...

**Table 1.0**

## **2.2.7 Challenges / Gaps in operations**

Efficient operation of hospitals is one of the major concern areas for the management team of any organisation as it involves multiple departments, numerous activities, and intertwined processes, involvement of staff at different levels and more importantly efficient use of scarce resources. As a result of such diversity, the challenges are also diverse and of varied intensity, which requires detailing and working at various levels of the organisation. These challenges have a high impact on the productivity, employee morale and patient satisfaction. Following are some of the operational challenges that need to be addressed on a priority basis.

1. Improve and optimise planning and scheduling.
2. Optimisation of bed management and usage of hospital facilities.
3. Understanding of Inpatient diagnosis and procedures with their cost.
4. Streamlining and optimising utilisation of operation theatre.
5. Streamlining and optimising utilisation of various assets including high-tech equipment.eg.(USG)
6. Wait time for patients at various departments and processes.
7. Medication error.
8. Average length of Stay and cost for the patient.
9. Improved and efficient processes.
10. Waste and abuse of resources.

## 2.2.8 Bed Occupancy Rate

It is calculated by the following formula

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

Bed occupancy ratio reflects the popularity of the hospitals in terms of Inpatients. The level of occupancy also varies with the type of facilities available in the hospital. Usually larger the number of beds, the larger is the number of Doctors also. As a result more facilities are provided and the level of medical care tends to be of a higher magnitude. Given this, it is normally the case that the bed occupancy ratio in private Hospitals is higher than the bed occupancy ratio in the public Health Centers. The bed occupancy ratio, and in general, the utilization of hospitals is also set to vary with the medical facilities available in the private sector.

## 2.2.9 Average Length of Stay

It is calculated by the formula

$$\text{AVLS} = \frac{\text{Cumulative IP days}}{\text{Number of Discharge}}$$

Length of stay (LOS) is an important performance indicator for costing and hospital management and a key measure of efficiency of NHS. It is the single most important component in the consumption of hospital resources. LOS for a resource group is used for two different audit and planning purposes:

first for estimating costs and

second as a high-level performance indicator

It is also very important for hospital planning since it is a direct determinant of the number of beds to be provided. Moreover, LOS is a frequent point of comparison between patients, hospitals. The average length of stay as the name suggests represents the time the patient is retained in the hospital. As in the case of the turn over rate, a longer average length of stay is to be expected in the case of hospitals having better facilities such as the District Hospitals. In the case of Community Health Centers where the level of treatment in general is lower, the average length of stay is likely to be less.

### 2.2.10 Other KPIs

S.No.	KPI	Description
<b>OPERATIONS MANAGEMENT</b>		
	Inpatient	<ol style="list-style-type: none"> <li>1. Quantitative parameters on number of admissions, unplanned re-admits, average length of stay, extended stay patients, long stay patients, wait time for admissions, emergency cases handled, etc. These numbers compared on monthly and YTD basis against the goal set.</li> <li>2. Capacity utilisation and target utilisation.</li> <li>3. Inpatient Diagnosis Related Groups (DRGs) including the number of cases attended and revenues generated indicating most revenues generated, lowest margin and highest margin, etc.</li> </ol>
	Emergency Rooms (ER)	<ol style="list-style-type: none"> <li>1. Quantitative measurements around ER admit, ER presents, Diverts, time taken in ER, time to treatment, etc. These numbers compared on monthly and YTD basis against the goal set.</li> <li>2. ER Capacity utilisation and target utilisation.</li> <li>3. ER Procedure indicators like procedure of cases handled most revenues, lowest margin, highest margin, etc.</li> </ol>
	Surgery	<ol style="list-style-type: none"> <li>1. Quantitative measurements around total number of surgeries, OR waiting time and waiting list, OR utilisation and idle time as well as its comparison with the Goal set.</li> <li>2. Operation Theatre capacity utilisation and target utilisation.</li> <li>3. Operation Theatre pre-operative time and idle time Surgical procedure indicators like procedure of cases handled most revenues, lowest margin,</li> </ol>

		highest margin, etc.
	Outpatient	<ol style="list-style-type: none"> <li>1. Quantitative measurements around total number of outpatient admits, Relative Value Units (RVUs), average appointment wait time, registration wait time, no shows, operation time and lead time.</li> <li>2. Achievements across various indicators against the Goal set.</li> <li>3. Reduction in and control over number of “No Show”</li> <li>4. Capacity utilisation and target utilisation.</li> <li>5. Outpatient procedure indicators like procedure of cases handled most revenues, lowest margin, highest margin, etc.</li> </ol>
<b>HOSPITAL PROCESS TIME ANALYSIS</b>		
	Clinical	<ol style="list-style-type: none"> <li>1. KPIs like initial assessment, patient information to the consultant, bed allocation time, first in ward assessment, reporting investigation results, diagnostic analysis and treatment etc...</li> <li>2. Achieving good results against ER and Non ER Parameters according to checklist.</li> <li>3. Achieving minimum time lag between various activities and processes mentioned above.</li> </ol>
	Non-clinical	<ol style="list-style-type: none"> <li>1. KPIs like pre-authorization processes, counseling of relatives (timing, sensitivity and quality), quality of food, beverages and miscellaneous services, timely medication, discharge process including billing and payment</li> <li>2. Achieving good results against ER and Non ER parameters according to check list .</li> <li>3. Achieving minimum time lag between various activities and processes mentioned above.</li> </ol>
<b>WAITING time and OT</b>		
	PAC time analysis	<ol style="list-style-type: none"> <li>1. Reducing PAC time during the operation to less than 2 hours to achieve a higher per cent of success rate.</li> <li>2. Reducing the risk of SSI following asepsis during the operation.</li> <li>3. Reducing the overall waiting time for active and new additions.</li> </ol>

**Table 2.0**

## 2.2.11 Finance

Managing financial aspects of a hospital is a crucial function for the Government as well as the private sector operators. Financially well managed hospitals not only help in providing cost effective healthcare solutions but also provides quality services to the patients at an affordable price. Developing and maintaining hospitals is a capital intensive affair and therefore managing costs, achieving profitability and sustainable growth are very important for any successful hospital venture. Apart from the profitability, maintaining cash flow and working capital for day to day smooth functioning of a hospital is a key to successful running of a hospital. These challenges have a significant impact on the working of the hospital as well as the credibility of the hospital. Following are some of the financial challenges that need to be addressed on a priority basis.

1. Cash flow and working capital management.
2. Achieving operating profitability on a sustainable basis.
3. Optimising resources and processes and thereby reducing overall cost.
4. Improving overall margin.
5. Derive financial performance indicators for different departments or service lines.
6. Managing employee cost without affecting the staff turnover ratio.
7. Analyse and optimise workforce and benefits.
8. Generating and retaining funds for future capitalization, modernization and expansion.
9. Cash embezzlement, wastage, fraud and leakages.

### **2.3.1 Interpreting KPI data**

Conducting sound analysis and interpretation of performance data is as important as establishing good indicators and targets in the first place. When conducting program M&E, analysts can easily misread trends in performance

To the extent possible, KPI analysis and reporting should consider all factors, good and bad, in order to facilitate an honest assessment of program results. Moreover, reporting should support interpretation of results by multiple audiences, not only that of policymakers, program managers, and budget analysts. For example, health professionals may benefit from information presented with clinical details.

**Following are some examples of administrative output indicators:**

1. Number of actions initiated or completed
2. Average time per completed action
3. Average cost per completed action
4. Number of actions completed within deadline
5. Administrative cost as percentage of total cost.

**Other ways of measuring administrative performance include the following:**

1. Percentage of staff with a certain qualification, certification, or training
2. Error rate in performing a task
3. Operational working analysis
4. Customer satisfaction; for example, percentage that patient rate the service provided as “high quality” (as measured in surveys or feedback forms)

### 3.1.1 Results

### 3.1.2 Patient satisfaction ( KPI )

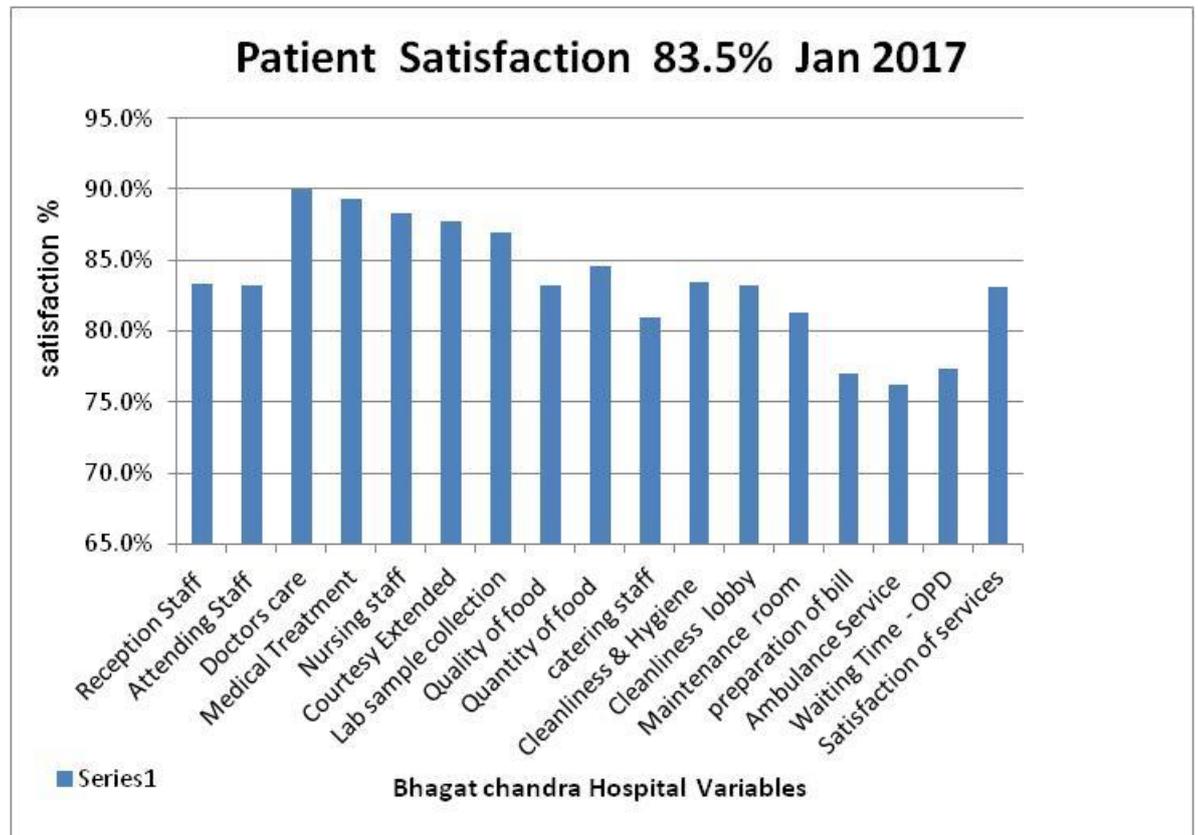


FIG 3.0

#### Observation

For the month of Jan 2017 data indicates 83.5% of Patients satisfaction. The major contribution in satisfaction is due to Doctor care, treatment and nursing care on the other hand the area which contribute to poor quality performace in service i.e. Billing, Ambulance, Housekeeping and OPD.

**Root Cause Analysis:** The major problem in above said areas was waiting time for the patient and eliminating avoidable wait times is the ultimate goal. When we think about value from a patient's perspective, waiting is waste. The idea would be to get the patient

to the care — whether it's the provider, the bed or the procedure — in the shortest amount of time possible. It's great to get rid of the wait.

The average patient spends about 22 minutes waiting to see a doctor at a clinic, and more than four hours from entrance to discharge in the ED. As wait times balloon, the patient's experience worsens, and so does the risk of infection. One study by the firm found that those who waited five minutes or less expressed 95% satisfaction with their experience; that dropped to 80 percent when the wait swelled above 30 minutes. About 63% of patients believe the amount of time spent in a waiting room is "very" or "extremely" important. ." In days past, consumers may have been willing to sit in a waiting room for 22 minutes to see a trusted doctor, but now they're walking out.

**Corrective measures:** BCH has started using PRACTO software in OPD or installing kiosks for speedier check-in for eliminating avoidable wait times is the ultimate goal. When we think about value from a patient's perspective, waiting is waste. The idea would be to get the patient to the care — whether it's the provider, the bed or the procedure — in the shortest amount of time possible. It's great to get rid of the wait.

**Conclusion :** Quality corrective action taken Getting to that ideal state starts by figuring out what's causing the bottlenecks that lead to longer wait times. So, hospitals are mining data to pinpoint the root causes of downtime, utilizing such manufacturing methods of continuous improvement as the Japanese kaizen, and providing patients on ways to improve the health care experience.

## Patient satisfaction ( KPI )

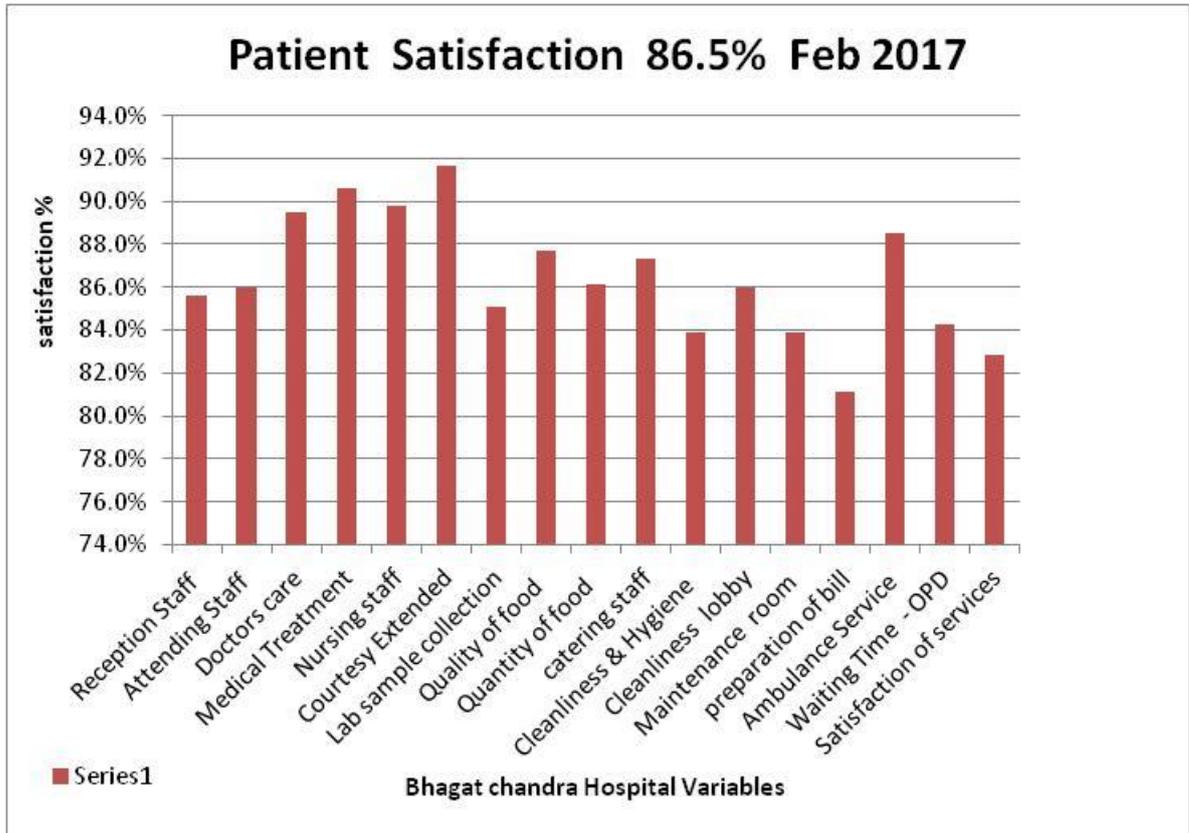


FIG 4.0

### Observation

For the month of Feb 2017 data indicates 86.5% of Patients satisfaction. The major contribution in satisfaction is due to Doctor care, treatment and nursing care on the other hand the area which contribute to poor quality performance in service is billing Section.

### Conclusion :

Poor performing Service areas need quality corrective action and improvement was registered after reporting i.e Ambulance, housekeeping and OPD.

## Patient satisfaction (KPI)

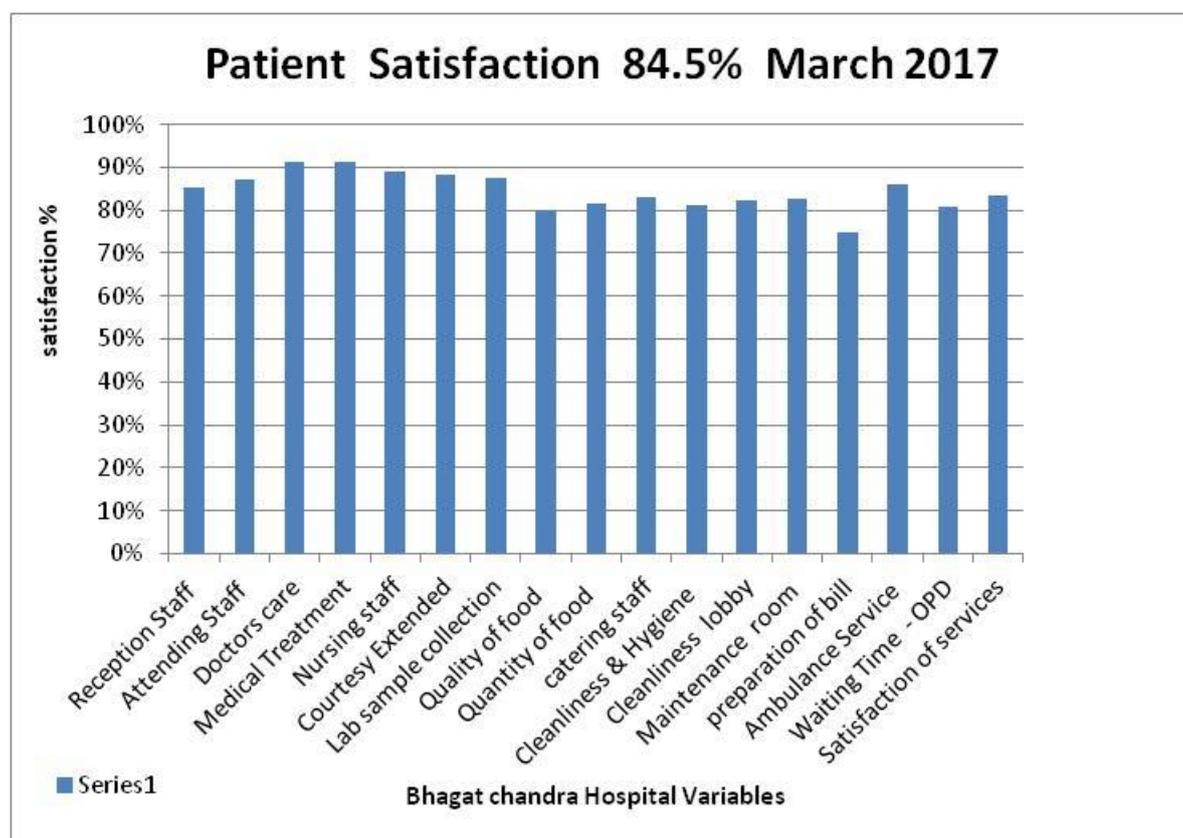


FIG 5.0

### Observation

For the month of March 2017 data indicates 84.5% of Patients satisfaction. The major contribution in satisfaction is due to Doctor care, treatment, Attending Staff and nursing care on the other hand the area which contribute to poor quality performance in service is billing Section.

### Conclusion :

performing Service areas improved overall after quality corrective actions and reporting.

### 3.1.3 Average length of stay in the hospital (KPI)

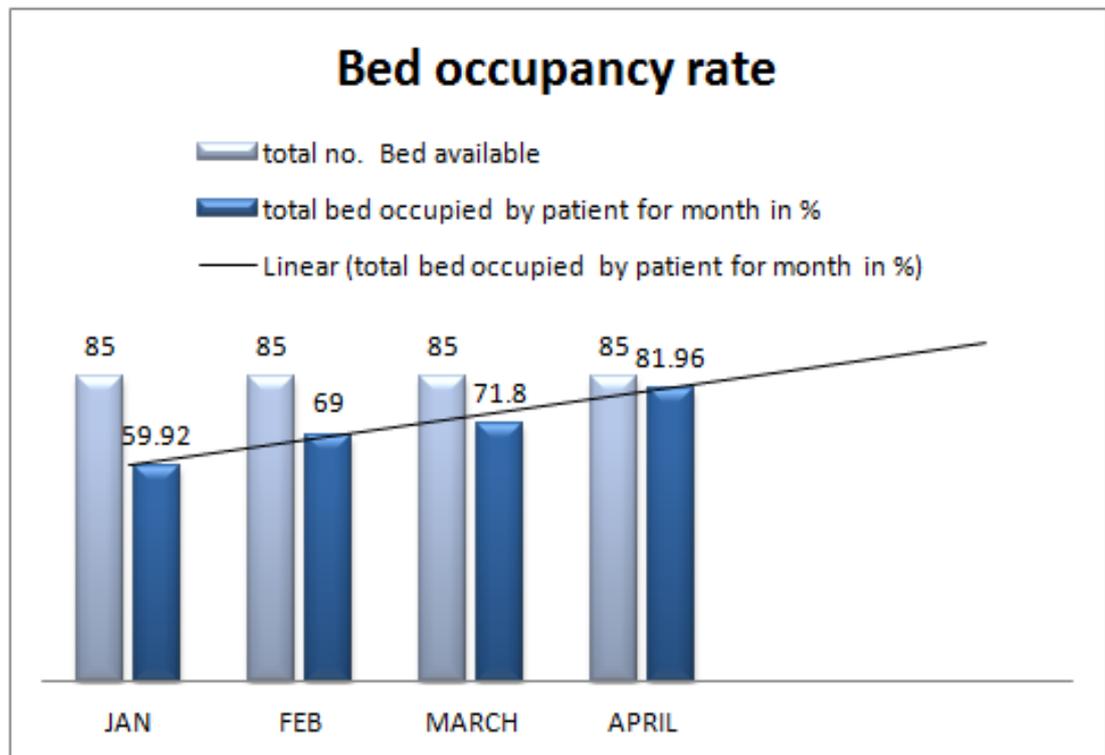


FIG 6.0

#### Observation

The Bed occupancy ratio reflects the popularity of the hospitals in terms of Inpatients and has two major variables bed occupancy rate and average length of stay , for the months Jan, Feb, March and April 2017, data for bed occupancy has increasing trend hence good performing KPI

#### Conclusion :

Good performing KPI reflects the popularity of Bhagat Chandra Hospital.

## Average length of stay in the hospital (KPI)

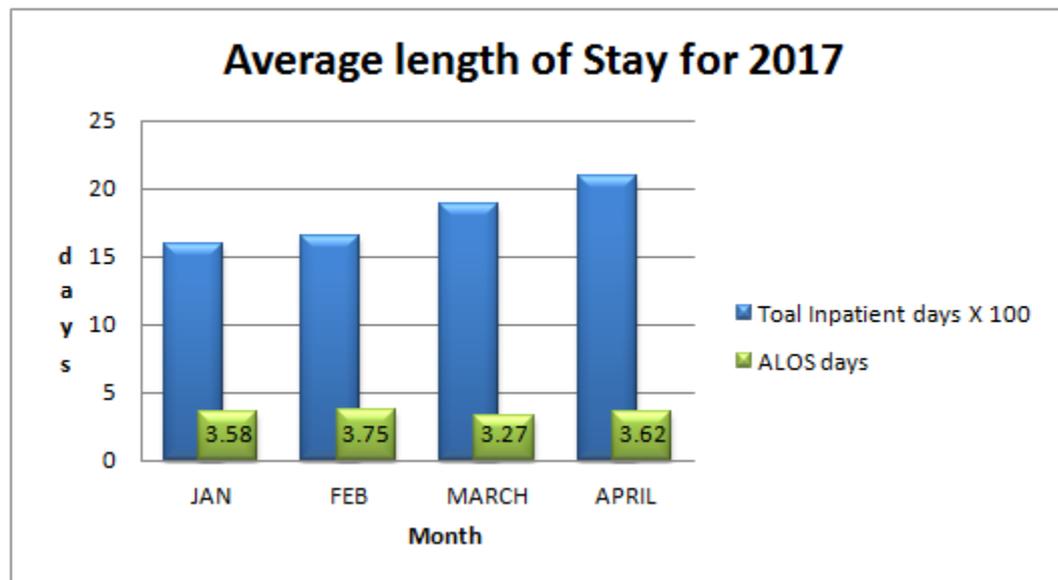


FIG 7.0

### Observation

The average length of stay as the name suggests represents the time the patient is retained in the hospital. As this is single most important component in the consumption of hospital resources. It is evident from the graph that Average length of stay is 3.55 days and indicate reasonable good turn over rate and costing can be based on the proportion of patient's average stay.

### Conclusion :

Good performing KPI reflects the popularity of Bhagat Chandra Hospital.

### 3.1.4 Hospital acquired infection

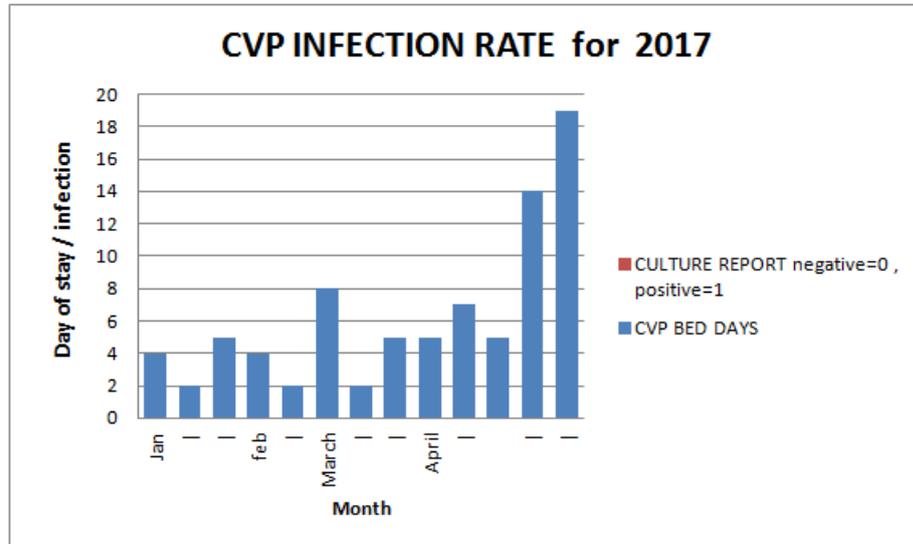


FIG 8.0

#### Observation

It was noted that there was no infection in the months of JAN, FEB, MARCH and APRIL. The culture for CVP was noted to 0% rate.

#### Conclusion :

Hospital Staff are following the aseptic technique and sterile (germ-free) protocol laid by hospital properly as:

- Washing their hands.
- Putting on a mask, gown, cap and sterile gloves i.e. PPE
- Keeping Clean the site where the central line will be placed
- Using a sterile cover for your body
- Making sure everything they touch during the procedure is sterile
- Covering the catheter with gauze or clear plastic tape once it is in place

This KPI reflects good performance in quality of Bhagat Chandra Hospital.

## Hospital acquired infection

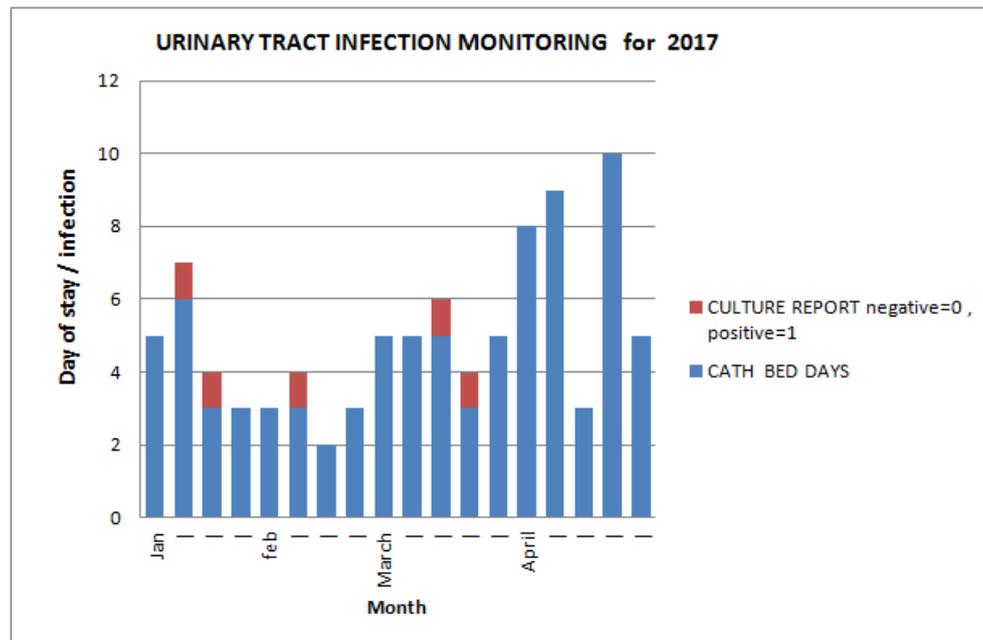


FIG 9.0

### Observation

The overall prevalence of UTI was 1.2%. The prevalence of UTI was higher in intensive care units (ICUs) with 0.77% versus 0.33% outside ICUs the risk factors increasing the likelihood of infection in urine culture were being female, history of urinary tract operation, no use of antibiotics in the preceding three months and infection outside the urinary tract. There were 6 patients with *E. coli* or *Klebsiella*. positive in culture.

**RCA:** It is seen that there are various reasons for UTI & they can be any of the following reasons:

- When blood sugar is high, the excess sugar is removed through the urine; this makes a favorable environment for bacterial infection.
- Catheter-related urinary tract infection (UTI) occurs because urethral catheters inoculate organisms into the bladder and promote colonization by providing a surface for bacterial adhesion and causing mucosal irritation. The presence of a

urinary catheter already in outside the hospital is the most important risk factor for bacteriuria.

- Non adherence to aseptic indwelling catheter during insertion.
- The presence of potentially pathogenic bacteria and an indwelling catheter predisposes to the development of a nosocomial UTI.
- Enteric pathogens (e.g. *Escherichia coli*) are most commonly responsible, but *Pseudomonas* species, *Enterococcus* species, *Staphylococcus aureus*, and yeast also are known to cause infection. *Candida*, especially *Candida albicans*, is also most common organism that can cause catheter-associated urinary tract infection.

#### **Preventive Action:**

- Aseptic indwelling catheter insertion, a properly maintained closed-drainage system (with ports in the distal catheter for needle aspiration of urine), and unobstructed urine flow are essential for prevention of UTI.
- Because many of these infections occur in clusters, good hand washing before and after catheter care is essential.
- Urinary catheters coated with silver alloy also reduce the risk of infection. An alternative is to use the Lubricath, which has a hydrophilic coating that decreases tissue irritation and nosocomial UTIs.
- Using antibiotics prior to catheter insertion.

#### **Conclusion**

UTIs are the most common type of healthcare-associated infection looking at the patient's Safety. Among UTIs acquired in the hospital, approximately 75% are associated with a urinary catheter, which is a tube inserted into the bladder through the

urethra to drain urine. As this PI shows weak area in Bhagat hospital, further 200 hand wash culture were done, and six positive results were seen. Then after preventive & curative actions re-testing was done and found negative results.

## Hospital acquired infection

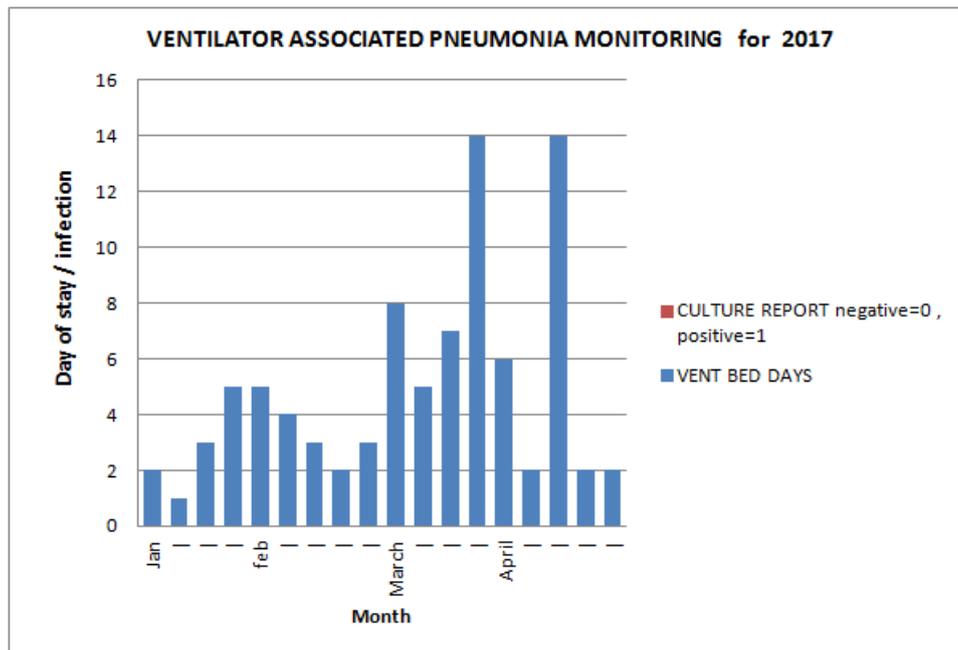


FIG 10.0

### Observation

There was no nosocomial infection in the months of JAN, FEB, MARCH & APRIL there was no positive culture report. Ventilator-associated pneumonia (VAP) is a type of lung infection that occurs in people who are on breathing machines in hospitals. As such, VAP typically affects critically ill persons that are in an intensive care unit (ICU). VAP is a major source of increased illness and death.

### Conclusion :

This KPI reflects good performance in quality of Bhagat Chandra Hospital.

Decline in ICU adverse events, nosocomial infections and cost, through a quality improvement initiative is taken by BCH.

### 3.1.5 Nursing care assessment

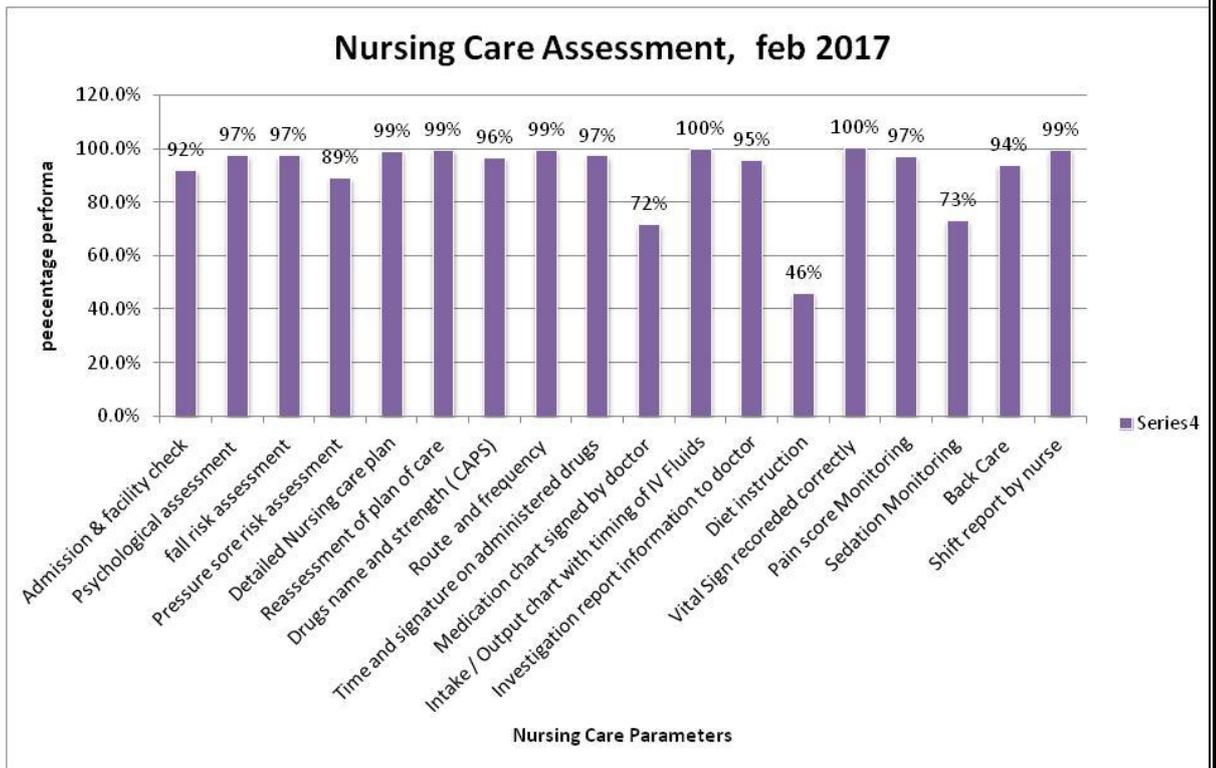


FIG 11.0

#### Observation

While looking at this performance indicator it was noted that nursing & medical care of Bhagat hospital is marvellous as we can see in the graph scoring 99%. On the other hand diet instruction & medication charts were not signed by doctors , these indicators are to be improved.

#### Conclusion :

Good performing KPI reflects the better skills & services provided by staff of Bhagat Chandra Hospital.

## Nursing care assessment

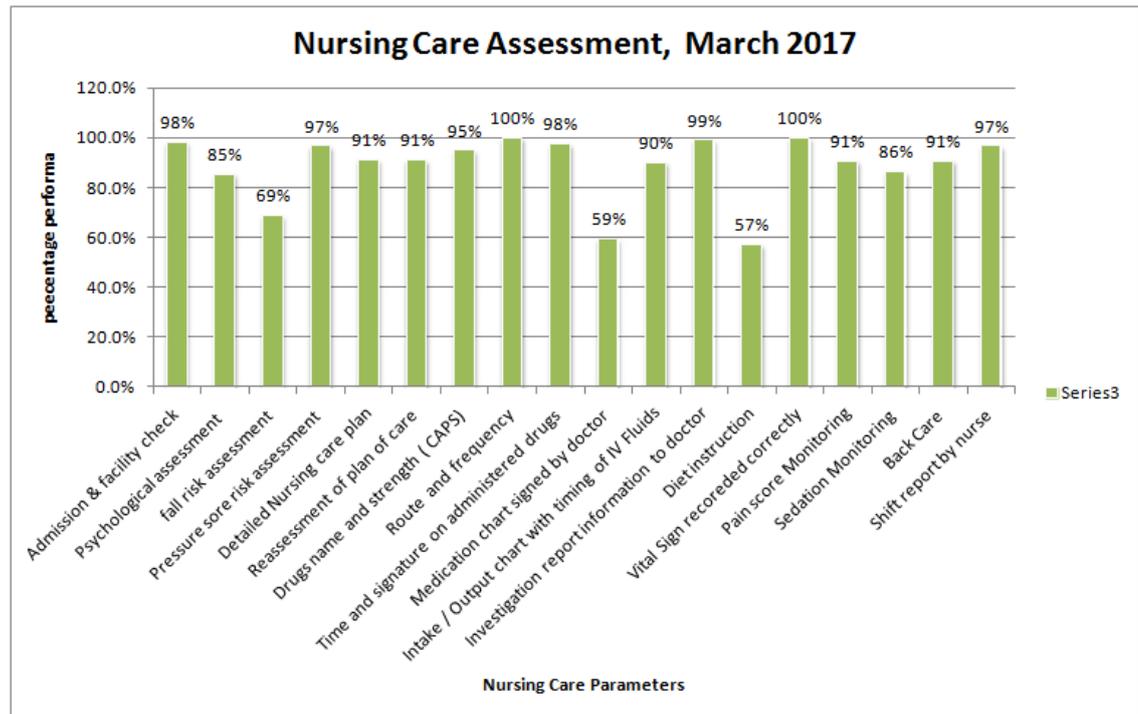


FIG 12.0

### Observation

Nursing care assessment is an essential nursing function which provides foundation for quality. This graph describes the basics of a head-to-toe assessment which is a vital aspect of nursing. Lacking area can easily be seen i.e. diet instruction & medication chart signed by doctor. It was reported and further action was taken to have improvement.

### Conclusion

Good performing KPI reflects the popularity & service quality of the medical professionals of Bhagat Chandra Hospital.

## Nursing care assessment

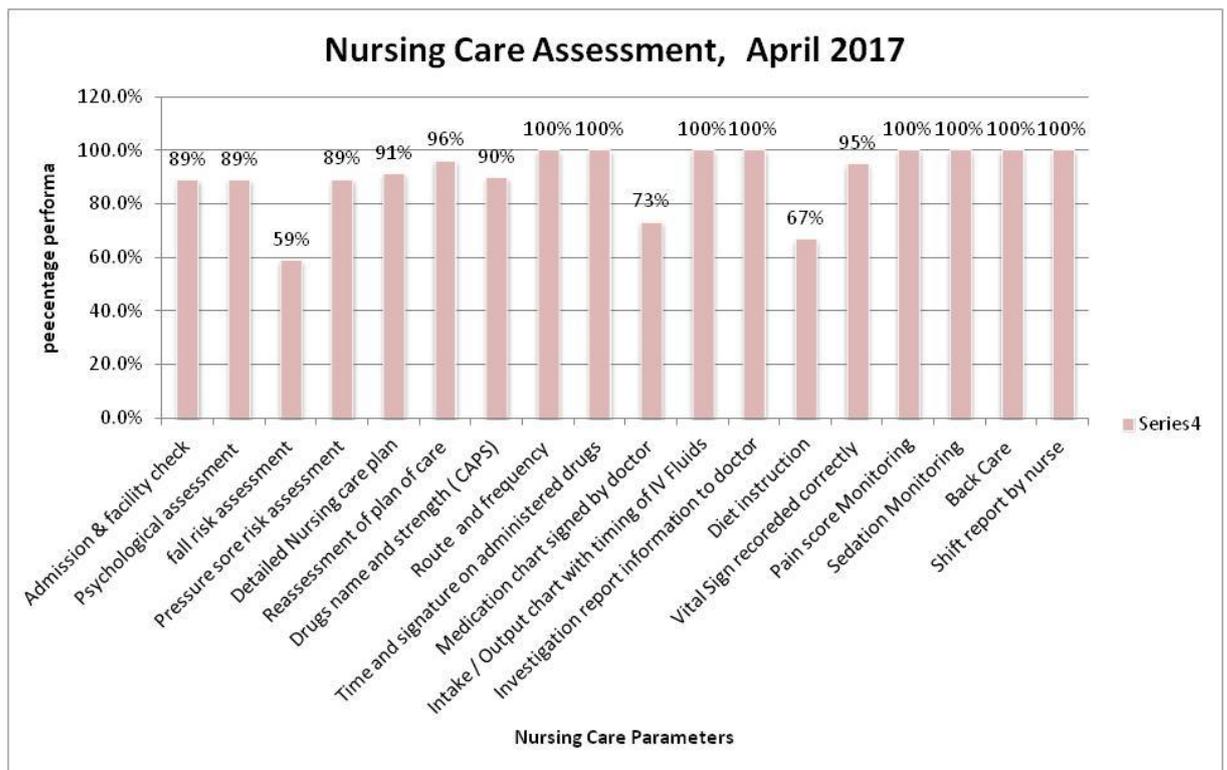


FIG 13.0

### Observation

There is tremendous improvement in all the parameters of nursing care assessment, but the continuity of improvement is still needed in certain spheres specially fall risk assessment, which is also one of the important parameters in patients safety.

### Conclusion

Good performing KPI reflects the efficiency & regular monitoring and evaluation leads to better performance of Bhagat Chandra Hospital.

### **3.2.1 Discussion**

What are KPI?

Simply defined, KPIs are measures that a sector or organization uses to define success and track progress in meeting its strategic goals. This focus on *strategic* or long-term goals is what distinguishes KPIs from the wider array of “performance indicators” (PIs) that do not necessarily rise to the attention of policymakers, but may be important for quality managers. KPIs are by no means a new phenomenon. The private sector has long embraced them as an important management tool to track and explain progress toward corporate or organizational goals.

KPIs have become an important part of the suite of tools hospital used in most to systematically monitor, evaluate, and continuously improve service performance. In and of themselves, KPIs cannot improve performance. However, they do provide “signposts” that signal progress toward goals and objectives as well as opportunities for improvement.

#### **USING KPIS IN THE HEALTH SECTOR**

Few sectors of the economy depend on performance metrics as much as the health sector does. Within any health system, there can be many indicators of performance, from the facility level (hospitals, clinics, pharmacies), to the district or provincial level, all the way up to the national level, where information on the performance of health sector programs is typically aggregated for consideration by government leaders and policymakers. Yet, only a select group of these indicators are systematically measured, aggregated, and tracked at BHAGAT CHANDRA HOSPITAL. These *key* performance

indicators, or KPIs, are used because they highlight those aspects of performance that are integral above all others in providing insights on attaining the health sector's strategic goals, whether they be around promoting healthy populations, equitable access to health services, or reduction of preventable diseases.

Well-designed KPIs should help health sector decision makers to do a number of things, including:

1. Establish baseline information (i.e., the current state of performance)
2. Set performance standards and targets to motivate continuous improvement
3. Measure and report improvements over time
4. Compare performance across different departments.
5. Benchmark performance against departmental peers or norms.
6. Allow stakeholders to independently judge health sector performance.

The performance information generated from KPIs can help to underscore the relationship between resources, activities, and results. KPIs can allow the administrators to show how resource changes affect outcomes and to project, year by year, the resources required to meet service standards, keep up with workloads, or even secure *future* cost savings, for instance, through investments in program , process improvement, or technology upgrades *today*.

In turn, these performance measures can be used to define performance commitments, in terms of service delivery and internal efficiency, and the outcomes a spending ministry or agency expects to achieve through its budget allocations. Resource

allocation choices, thus, can be better informed by—or even linked to—sectoral performance, targets, and projected workloads.

## **LINKING KPIS TO PLANINNG**

KPIs must be part of the health sector's planning framework. KPIs, thus, should not be thought of as standalone measures, but rather as the *product* of strategic thinking, analysis, and negotiation around policy problems and responses. A useful tool to help conceptualize this model lays out a three-stage process for:

1. Identifying the problem(s), or the community need
2. Developing policies or measures to address the problem(s)
3. Articulating the desired goals—the end-state of affairs or vision for the future.

KPIs, then, provide the measurable evidence that programs are, in fact, helping to advance progress toward expressed goals, outcomes, and results.

Moreover, it is important to recognize that understanding the problem, and defining the nature of the problem objectively, is as important as naming its solution. Otherwise, the actions taken may not solve anything and instead end up wasting scarce budgetary resources.

## **CHARACTERISTICS OF GOOD KPIS**

Potentially many KPIs can be identified and used in any context, but the objective should be to select those measures that have certain inherent qualities that deliver the

most value as a tool for policy analysis, program M&E, performance improvement, and communication of results.

People often use the acronym “SMART” to refer to the characteristics of good performance indicators. Each letter of the acronym represents an important characteristic. To determine whether the performance indicator meets the criteria for each characteristic, one should consider the following checklist:

1. **Specific:** Does the indicator convey at a glance what it is measuring, and how the measurement is derived? KPIs should communicate clearly to the managers what the hospital is doing.
2. **Measurable:** Can the measurement be expressed as an objective value (e.g., # of persons vaccinated, percentage of population infected)? Do reliable data exist? Can they be easily collected? Better yet, are they already being collected at some level of the health system?
3. **Achievable:** Does the indicator measure something within the program or activity’s manageable control?
4. **Relevant:** Does the indicator measure the most important result of the activity?
5. **Time-bound:** Is there a deadline for achieving the performance indicator? Are data reported at sufficiently regular intervals to support tracking and management decision making?

## **DISTINGUISHING CAUSES FROM RESULTS**

Selecting the right PIs to track and evaluate program performance requires an understanding of the causal relationship presented: what cause leads to what result. Indicators of causes and results are important elements in monitoring and evaluating

program performance. Line managers need more information about the resources they have and how the program is using them; these indicators are typically tracked internally and administrators care more about the results that a program achieves.

KPIs measuring cause indicators generally reflect the use of resources or admin action, results (good and bad) could potentially be influenced by a host of factors outside the control of hospital administrators, such as economic fluctuations, demographic changes, an exogenous rise in transport costs, or changes induced by other policies and programs.

## **TYPES OF INDICATORS**

KPIs come in many combinations and permutations. Among the many variants are *quantitative indicators* that can be presented with a number, *qualitative indicators* that cannot be presented numerically, *leading indicators* that can predict the outcome of an activity, and *lagging indicators* that present that activity's success or failure post hoc. KPIs can also assess the *quality* of service delivery (e.g., access, reliability) or *customer satisfaction* (e.g., customer complaints, responses to patient surveys).

All of these are useful ways to think about KPIs and even ordinary PIs. Yet, for the sake of alignment and consistency, this guide divides KPIs and PIs into four categories—*inputs*, *processes*, *outputs*, and *outcomes*. Input, process, output, and outcome indicators are commonly accompanied by specific measures of *efficiency*. Each indicator type is described below.

1. **Input indicators** measure resources, both human and financial, devoted to a particular program or activity (e.g., number of hospital beds, average length of

stay). They can include, among other items, buildings, equipment, supplies, and personnel. Input indicators can also include measures of characteristics of a target population (e.g., number of persons eligible for a diagnostic trial).

2. **Process indicators** look at the ways in which goods and services are provided. In the context of health care, they often measure the consistency or timeliness of activities carried out in assessing and treating service recipients (e.g., diagnosis error rates, order fill rates, stock wastage due to expiration or damage) and, in some cases, compliance with recommended practice (e.g., percentage of nursing care assessment).
3. **Output indicators** measure the quantity of goods and services produced, the results of process activities, or the efficiency/efficacy of those activities (e.g., live births per caesarean deliveries performed, post-surgical infection rate hospital acquired infection).
4. **Outcome indicators** measure the broader results achieved through the provision of goods and services. These indicators can exist at various levels: population, agency, program, and/or activity. *Population-level indicators* measure Changes in population-level indicators are often long-term results of the efforts of a number of different programs, agencies, and initiatives.
5. **Efficiency indicators** describe how well a given level of resources produces outputs (e.g., percentage of outpatient surgeries resulting in same-day discharge). They can also describe the level of work process efficiency, including administrative tasks involved in operating a particular program or service, which can be useful for planning and program managers in assessing program performance and funding requirements.

Ultimately, deciding which types of indicators to use to measure health sector performance, and in what combinations, is part of the menu of options that hospital will confront in defining and setting KPIs, and depends on factors specific to that hospital and its circumstances.

### **USING HEALTH INFORMATION SYSTEMS TO MANAGE KPI DATA**

Developing and using KPIs requires systematic processes and methods for gathering, managing, analyzing, distributing, and ultimately reporting performance information.

Therefore, once KPIs and targets have been developed, it is necessary to establish:

1. The minimum data that need to be collected
2. Data sources
3. Data collection methods
4. Policies, capacities, and infrastructure needed to support data access, processing, and management.

The health sector has made particular strides in the collection and management of performance data. HIS, or health management information systems (HMIS) as they are alternately called, represent an important innovation in this area. It generate data about the operation of the services, such as individual records (tracking patient history), service records (also sometimes referred to as routine health information), and resource records (tracking revenue and costs, personnel deployed, beds available, etc.).

Production and dissemination of newsletters and other reports, providing feedback on program performance and evidence of where data were used to improve performance at various levels.

Data quality audits not only serve to validate the data collected, but also to identify and minimize the risks of reporting and input errors at all stages of the measurement process

### **3.2.2 Conclusion**

**Bhagat Chandra Hospital management** was updated to note the Key Performance Indicators Report and consider whether there is appropriate assurance regarding current and future performance

The validation of the performance model in health services has been accomplished based on tracking a set of 4 indicators in the Bhagat Chandra Hospital as sample.

The functionality of this study has been proved by validating the interpreting possibilities of the collected data using the indicators, as well as by validating the connections between the different values of the indicators and their implications.

In order to complete the static vision of performance reports; maintaining and improving performance systematically, through the suggested regulating mechanism; and last, but not least, using the model multi-dimensionally, in medical functionality matters as well as the economic or administrative matters within a hospital.

#### **Main Conclusion for all KPIs:**

- Poor performing Service areas need quality corrective action, and improvement was registered after reporting i.e Ambulance, housekeeping and OPD waiting time.
- KPI- Bed occupancy 92% Good Performance indicator.
- KPI-Hospital acquired infection 0.1/% average Performance indicator need to be improved
- KPI-Nursing care assessment 99.1% Very Good Performance indicator.

### 3.2.3 Instrumentation

		BCH/QM/F-23/R-03
Frequency : Monthly		Sample Size:
<b>Nursing Care Audit Sheet</b>		<b>Duration : 30days</b>
S.No	<i>Day 1 8/2/17</i>	patient name
	<i>Doctor Incharge</i>	
<b>Nursing Care Parameters</b>		description
<b>DIAGNOSIS</b>		
1	Admission & facility check	0/5/10 ranking
2	Psychological assessment	0/5/10 ranking
3	fall risk assessment	0/5/10 ranking
4	Pressure sore risk assessment	0/5/10 ranking
5	Detailed Nursing care plan	0/5/10 ranking
6	Reassessment of plan of care	0/5/10 ranking
7	Discharge planned	yes/no
8	Discharge checklist follow up	yes/no
9	Patient Identification ( UHID/ details)	yes/no
10	Drug allergy mentioned	yes/no
11	Drugs name and strength ( CAPS)	0/5/10 ranking
12	Route and frequency	0/5/10 ranking
13	Time and signature on administered drugs	0/5/10 ranking
14	Medication chart signed by doctor	0/5/10 ranking
15	Intake / Output chart with timing of IV Fluids	0/5/10 ranking
16	Investigation report information to doctor	0/5/10 ranking
17	Diet instruction	0/5/10 ranking
18	Vital Sign recorded correctly	0/5/10 ranking
19	Pain score Monitoring	0/5/10 ranking
20	Sedation Monitoring	0/5/10 ranking
21	Back Care	0/5/10 ranking
22	Shift report by nurse	0/5/10 ranking
Signature of Auditor		Signature Audit Incharge :

Table: 3.0

 <b>Hospital Acquired Infection rate</b> <span style="float: right;">Date : mm/yy</span>												
S.No	NAME	D.O.A	STAY	SECTION	DIAGNOSIS	CVP IN DATE	CVP OUT DATE	CVP BED DAYS	PT ON ANTIBIOTIC	CVP CULTURE TIP SEND	CULTURE REPORT	SIGN
Sequenc e	Arti yadav	date	ICU , G-ward	MEDICAL, Surgical	type of disorder	date	date	No. of bed days occupied	medicine	yes/no	negative positive	

**Table: 4.0**

 <b>Bhagat chanadra Hospital report</b>				
<b>Bed occupancy rate</b>				
Description	Month			
	JAN	FEB	MARCH	APRIL
total no. of inpatient				
total no. of Discharge				
total no. Bed available				
total bed occupied by patient for month in %	59.92	69	71.8	81.96
<b>Average length of Stay</b>				
Description	Month			
	JAN	FEB	MARCH	APRIL
Toal Inpatient days X 100				
total no. of death				
ALOS days				

**Table : 5.0**

		<b>PATIENT S' FEEDBACK ANALYSIS</b>					<b>BCH/FR-02/R.01</b>		
Sr. No.	Date	Sample size: 20					Total Respon	Rating	Remarks
		High	- Scale -		Low				
		5	4	3	2	1			
1	Reception								
	a) Reception Staff - helpful & polite								
	b) Attending Staff - helpful & polite								
2	Medical Care								
	a) Doctors								
	b) Medical Treatment								
3	Nursing Care								
	a) Care taken by Nursing staff								
	b) Courtesy Extended								
	c) Lab sample collection								
4	Diet								
	a) Quality of food served								
	b) Quantity of food served								
	c) Courtsey & Efficiency of catering staff								
5	House Keeping								
	a) Cleanliness & Hygiene of the room & Bathroom								
	b) Cleanliness & Hygiene of lobby								
	c) Maintenance of room, light fixture & othr electrical								
6	Billing								
	a) Efficiency in preparation of bill								
7	Miscellaneous								
	a) Ambulance Service (if availed)								
	b) Waiting Time - OPD								
	c) What is your satisfaction level for our services								
	Sub Total								
	Weighted Average								
	Overall Satisfaction Rating							%=	

**Table : 6.0**

## 5.1.1 Appendix

### 5.1.2 collection of data UTI Jan – April 2017

BHAGAT CHANDRA HOSPITAL												
URINARY TRACT INFECTION MONITORING SHEET												

JANUARY, 2017												
S.No	PATIENT NAME/UHID	AGE	D.O.A	STAY	SECTION	DIAGNOSIS	CATH IN DATE	CATH OUT DATE	CATH BED DAYS	PT ON ANTIBIOTIC	CULTURE REPORT	SIGN
1	Rukmani	58 yrs.	14-01-17	ICU	Medical	IHD/CAD	14-01-17	18-01-17	5	Inj. Mertios	0	
2	P.D. Gupta	89 yrs.	11-01-17	ICU	Medical	CKD/HTN	13-01-17	18/1/17	6	Inj.Tazocil	10	
3	Omvir	60 yrs.	20-01-17	ICU	Medical	GTCS old CVA	20-01-17	23-01-17	3	Inj. Monocrit	10	
4	Ajab Singh	59 yrs.	26-01-17	ICU	Surgical	Bipolar /Herniopathy	26-01-17	28-01-17	3	Inj. Supacef	0	

FEBRUARY, 2017												
S.No	PATIENT NAME/UHID	AGE/S EX	D.O.A/D.O. D	STAY	SECTION	DIAGNOSIS	CATH IN DATE	CATH OUT DATE	CATH BED DAYS	PT ON ANTIBIOTIC	CULTURE REPORT	SIGN
1	Beena Shrivastav	65yrs.	06-02-17	ICU	Medical	Ac. LVF/CAD	07-02-17	09-02-17	3	Inj.Ciplox/Tazocil	0	
2	Hari Prasad	77 yrs.	12-02-17	ICU	Medical	COPD/LRTI/HTN	24-02-17	26-02-17	3	Inj.Ciplox/Tazocil	10	
3	Rajender Singh	50 yrs.	18-02-17	ICU	Medical	CCD/ Shock/ Resp. Distress	18-02-17	19-02-17	2	Inj. Monocef	0	
4	Sultan Singh	83 yrs.	16-02-17	ICU	Medical	CAD	18-02-17	20-02-17	3	Inj. Monocef	0	

MARCH, 2017												
S.No	PATIENT NAME/UHID	AGE/S EX	D.O.A/D.O. D	STAY	SECTION	DIAGNOSIS	CATH IN DATE	CATH OUT DATE	CATH BED DAYS	PT ON ANTIBIOTIC	CULTURE REPORT	SIGN
1	Yogesh Arora	34 yrs.	04-03-17	ICU	Medical	DM-II/CKD/HTN	04-03-17	08-03-17	5	Inj. Monocef	0	
2	Arti Yadav	31 yrs.	04-03-17	ICU	Medical	ARDS /Seizure Disorder	04-03-17	08-03-17	5	Inj.Tazocil ,Inj. Civid	0	
3	Bhupender	18 yrs.	10-03-17	ICU	Medical	Hepatic Encephelitis	10-03-17	14-03-17	5	Inj. Monocef	10	
4	Parwati Devi	60 yrs.	12-03-17	ICU	Medical	CVA	12-03-17	15-03-17	3	Inj. Kephtoz	10	
5	Birbhadra	77 yrs.	08-03-17	ICU	Medical	COPD/DM	08-03-17	12-03-17	5	Inj.Tazocil ,Inj. Civid	0	

APRIL, 2017												
S.No	PATIENT NAME/UHID	AGE/S EX	D.O.A/D.O. D	STAY	SECTION	DIAGNOSIS	CATH IN DATE	CATH OUT DATE	CATH BED DAYS	PT ON ANTIBIOTIC	CULTURE REPORT	SIGN
1	Raghu Nadar	83 yrs.	04-04-17	ICU	MEDICAL	HTN/CRF	10-04-17	17-04-17	8	INJ.Tazocil	0	
2	Anandi	70 yrs.	10-04-17	ICU	MEDICAL	COPD/ DM	10-04-17	18-04-17	9	INJ.Tazocil	0	
3	B.K. Talwar	82 yrs.	10-04-17	ICU	MEDICAL	DM/HTN/CAD/POST PTCA	11-04-17	13-04-17	3	I NJ.Kaftaz	0	
4	Suraj Prakash	54 yrs.	05-04-17	ICU	MEDICAL	Ac. Abdomen	11-04-17	20-04-17	10	Inj. Mertior	0	
5	Pranab kumar	82 yrs.	13-04-17	ICU	MEDICAL	LRTI/CVA/SEPSIS/	13-04-17	17-04-17	5	INJ.Tazocil	0	

Table. 7.0 , UTI infection

### 5.1.3 collection of data VAP Jan – April 2017

BHAGAT CHANDRA HOSPITAL												
VENTILATOR ASSOCIATED PNEUMONIA MONITORING SHEET												
JANUARY, 2017												
S.No	PATIENT	AGE/S EX	D.O.A	STAY	SECTION	DIAGNOSIS	VENT IN DATE	VENT OUT DATE	VENT BED DAYS	PT ON ANTIBIOTIC	CULTURE REPORT	SIGN
1	Parneswara	80Y/F	11-01-17	ICU	Medical	AC/HTN/AC LUF/LRTI	11-01-17	12-01-17	2	inj.kephatoz	0	
2	Kalawati	67Y/F	09-01-17	ICU	Medical	CKD/DM2/CO PD	14-01-17	14-01-17	1	inj.tazocil	0	
3	Rukmani	71Y/M	14-01-17	ICU	Medical	IHO/CKD	14-01-17	16-01-17	3	inj.Meritor	0	
4	R.R.Sharma	82Y/M	27-01-17	ICU	Medical	SHOCK	27-01-17	31-01-17	5	inj.Talact CLARIFID	0	

Feb-17												
S.No	PATIENT	AGE/S EX	D.O.A	STAY	SECTION	DIAGNOSIS	VENT IN DATE	VENT OUT DATE	VENT BED DAYS	PT ON ANTIBIOTIC	CULTURE REPORT	SIGN
									5		0	
									4		0	
									3		0	
									2		0	
									3		0	

MARCH, 2017												
S.No	PATIENT	AGE/S EX	D.O.A	STAY	SECTION	DIAGNOSIS	VENT IN DATE	VENT OUT DATE	VENT BED DAYS	PT ON ANTIBIOTIC	CULTURE REPORT	SIGN
1	Ashok kr.	36 yrs.	01-03-17	ICU	Medical	Cellulitis /sepsis/shock	01-03-17	08-03-17	8 days	Inj. Meropenam/colistin inagm/tcop	0	
2	Arti Yadav	31 yrs.	04-03-17	ICU	Medical	ARDS/Seizure Disorder	04-03-17	08-03-17	5 days	Inj.Tazocil/Inj. Cinid	0	
3	Naval Kishore	51 yrs.	08-03-17	ICU	Medical	IHD/Post PTCA	09-03-17	15-03-17	7 days	Inj. Maripor/Inj. Clindamycin	0	
4	Sunila Anand	60 yrs.	21-03-17	ICU	Medical	DM/AGE/SEPSIS/AKD	22-03-17	04-04-17	14 days	Inj.Tazocrit/Linid +Inj.Clox	0	

APRIL, 2017												
S.No	PATIENT	AGE/S EX	D.O.A	STAY	SECTION	DIAGNOSIS	VENT IN DATE	VENT OUT DATE	VENT BED DAYS	PT ON ANTIBIOTIC	CULTURE REPORT	SIGN
1	Raghu Nandan	82 yrs.	16-03-17	ICU	Medical	HTN/MILD LRTI	13-04-17	18-04-17	6 DAYS	Inj.Tazocil	0	
2	Promila Khanna		24-03-17	ICU	Medical	LRTI	30-04-17	01-05-17	2 days	Inj.Tazocil/Inj. Cinid	0	
3	Suraj Prakash	54yrs.	05-04-17	ICU	Medical	Ac. Abdomen	05-04-17	18-04-17	14 days	Inj. Meritor	0	
4	Rama Anand	82 yrs.	16-04-17	ICU	Medical	CVA/COPD	16-04-17	18-04-17	2 DAYS	Inj. Supacef	0	
5	Santosh	70 yrs.	09-04-17	ICU	Medical	CVA/HTN	09-04-17	10-04-17	2 DAYS	Inj. Meritor	0	

**Table 8.0 , VAP infection**

## 5.1.4 collection of data CVP Jan – April 2017

<b>BHAGAT CHANDRA HOSPITAL</b>
<b>CVP INFECTION RATE</b>

Jan, 2017

S.No	NAME	D.O.A	STAY	SECTION	DIAGNOSIS	CVP IN DATE	CVP OUT DATE	CVP BED DAYS	PT ON ANTIBIOTIC	CVP CULTURE TIP SEND	CULTURE REPORT negative=0 , positive=1	SIGN
1	Rukmani devi	14-01-17	ICU	MEDICAL	CHD,CAD	15-01-17	19-01-17	4	Inj. Monocef,met rofyl	yes	0	
2	Kanta devi	23-01-17	ICU	MEDICAL	HTN/CVA	25-01-17	27-01-17	2	Inj. Monocef,	No	0	
3	Raj sharma	27-01-17	ICU	MEDICAL	CVA/Shock	27-01-17	31-01-17	5	Inj. Tazact 4.5,Cloribid 500	Pt. expired	0	

FEBRUARY, 2017

S.No	NAME	D.O.A	STAY	SECTION	DIAGNOSIS	CVP IN DATE	CVP OUT DATE	CVP BED DAYS	PT ON ANTIBIOTIC	CVP CULTURE TIP SEND	CULTURE REPORT negative=0 ,	SIGN
1	Samunder	01-02-17	ICU	surgical	Ac. Abdomen	01-02-17	05-02-17	4	Inj. Monocef,met rofyl	yes	0	
2	Mrs. Kalita	25-02-17	ICU	MEDICAL	Cellulitis of foot	25-02-17	27-02-17	2	Inj. Tazocil	No	0	

MARCH, 2017

S.No	NAME	D.O.A	STAY	SECTION	DIAGNOSIS	CVP IN DATE	CVP OUT DATE	CVP BED DAYS	PT ON ANTIBIOTIC	CVP CULTURE TIP SEND	CULTURE REPORT negative=0 ,	SIGN
1	Ashok Kr.	01-03-17	ICU	MEDICAL	CVA/Shock, Cellulitis	01-03-17	08-03-17	8	Inj. M	yes	0	
2	Kanta devi	23-03-17	ICU	MEDICAL	HTN/CVA	25-01-17	27-01-17	2	Inj. Monocef,	No	0	
3	Raj sharma	27-03-17	ICU	MEDICAL	CVA/Shock	27-01-17	31-01-17	5	Inj. Tazact 4.5,Cloribid 500	Pt. expired	0	

APRIL, 2017

S.No	NAME	D.O.A	STAY	SECTION	DIAGNOSIS	CVP IN DATE	CVP OUT DATE	CVP BED DAYS	PT ON ANTIBIOTIC	CVP CULTURE TIP SEND	CULTURE REPORT negative=0 , positive=10	SIGN
4	Arti yadav	04-04-17	ICU	MEDICAL	ARDS /Seizure disorder	04-04-17	08-04-17	5	Inj. Tazact 4.5,Cloribid 500	No	0	
5	Naval kishor	09-04-17	ICU	MEDICAL	HD POST PTCH	09-04-17	15-04-17	7	inj.meripor clind anyciue	Yes	0	
6	Sunita khanna	22-04-17	ICU	MEDICAL	AGE DHYDRIAATI ON	22-04-17	26-04-17	5	inj TAZOCRIT	No	0	
7	Sunila anand	22-03-17	ICU	MEDICAL	DM AGE SEZURE DISORDER	22-03-17	04-04-17	14	inj linid inj delox	No	0	
8	Suraj		ICU	MEDICAL	Acute Abdomen Sepsis	04-04-17	22-04-17	19		Yes	0	

**Table 9.0 , CVP infection**





### 5.1.7 collection of Data Nursing Care Audit Feb 2017

		<b>BCH/QM/F-23/R-02</b>			
		Frequency : Quaterly	Sample Size: file/ month		
<b>Nursing Care Audit Analysis Sheet :</b>		<b>: feb 2017</b>			
S.No	Nursing Care Parameters	Total : 10 Comple e	Total : 5 Partial	Total : 0 Incomplete	%
1	Admission & facility check	104	21	0	91.6%
2	Psychological assessment	121	0	4	97.1%
3	fall risk assessment	121	0	4	97.1%
4	Pressure sore risk assessment	110	1	15	88.9%
5	Detailed Nursing care plan	122	1	1	98.9%
6	Reassessment of plan of care	124	0	1	99.3%
7	Drugs name and strength ( CAPS)	117	7	1	96.5%
8	Route and frequency	123	2	0	99.2%
9	Time and signature on administered drugs	120	2	3	97.0%
10	Medication chart signed by doctor	84	5	37	71.6%
11	Intake / Output chart with timing of IV Fluids	124	1	0	99.6%
12	Investigation report information to doctor	125	0	7	95.2%
13	Diet instruction	47	0	71	45.8%
14	Vital Sign recoreded correctly	125	0	0	100.0%
15	Pain score Monitoring	118	6	1	96.9%
16	Sedation Monitoring	89	2	38	72.7%
17	Back Care	116	0	9	93.5%
18	Shift report by nurse	123	2	0	99.2%
19		Signature Audit Incharge :			
20	sample size	2255			91.1208
21					
22					
Signature of Auditor					

**Table 12.0 , Nursing Care Assessment**

### 5.1.8 collection of Data Nursing Care Audit March 2017

		BCH/QM/F-23/R-02			
		Frequency : Quaterly	Sample Size: file/ month		
Nursing Care Audit Analysis Sheet :		: march 2017			
S.No	Nursing Care Parameters	Total : 10	Total : 5 Partial	Total : 0 Incomplete	%
1	Admission & facility check	102	4	0	98.1%
2	Psychological assessment	87	4	15	85.4%
3	fall risk assessment	66	7	33	68.7%
4	Pressure sore risk assessment	102	0	4	96.6%
2	Detailed Nursing care plan	84	14	2	91.2%
6	Reassessment of plan of care	90	10	5	91.0%
7	Drugs name and strength ( CAPS)	95	11	0	94.8%
8	Route and frequency	106	0	0	100.0%
9	Time and signature on administered drugs	105	0	3	97.5%
10	Medication chart signed by doctor	55	6	44	59.4%
11	Intake / Output chart with timing of IV Fluids	97	0	12	90.1%
12	Investigation report information to doctor	99	2	0	99.0%
13	Diet instruction	55	2	50	57.0%
14	Vital Sign recoreded correctly	106	0	0	100.0%
15	Pain score Monitoring	91	7	7	90.7%
16	Sedation Monitoring	93	8	13	86.2%
17	Back Care	95	2	10	90.7%
18	Shift report by nurse	106	4	2	96.6%
19		Signature Audit Incharge :			
20	sample size	1915			88.50
21					
22					
Signature of Auditor					

**Table 13.0 Nursing Care Assessment**

### 5.1.9 collection of Data Nursing Care Audit April 2017

		BCH/QM/F-23/R-02			
		Frequency : Quaterly	Sample Size: file/ month		
Nursing Care Audit Analysis Sheet :		: April 2017			
S.No	Nursing Care Parameters	Total : 10	Total : 5 Partial	Total : 0 Incomplete	%
1	Admission & facility check	53	9	3	88.9%
2	Psychological assessment	53	7	4	88.9%
3	fall risk assessment	28	31	18	58.8%
4	Pressure sore risk assessment	43	0	6	89.0%
2	Detailed Nursing care plan	42	5	2	91.2%
6	Reassessment of plan of care	47	4	0	96.1%
7	Drugs name and strength ( CAPS)	42	11	0	89.6%
8	Route and frequency	53	0	0	100.0%
9	Time and signature on administered drugs	53	0	0	100.0%
10	Medication chart signed by doctor	28	19	5	73.1%
11	Intake / Output chart with timing of IV Fluids	49	0	0	100.0%
12	Investigation report information to doctor	49	0	0	100.0%
13	Diet instruction	45	15	22	66.7%
14	Vital Sign recorded correctly	49	2	2	94.7%
15	Pain score Monitoring	53	0	0	100.0%
16	Sedation Monitoring	53	0	0	100.0%
17	Back Care	53	0	0	100.0%
18	Shift report by nurse	53	0	0	100.0%
19		Signature Audit Incharge :			
20	sample size	1011			90.95
21					
22					
Signature of Auditor					

**Table 14.0 Nursing Care Assessment**

**Hopital aquired Infection ( Hand Wash Reports)**

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**Actual data sheets attached**

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**Annexure -1**

**NABH Accreditation Certificate**

# **National Accreditation Board for Hospitals & Healthcare Providers**

## *Certificate of Accreditation*

Bhagat Chandra Hospital  
(A Unit of Bhagat Hospitals Pvt. Ltd.)  
RZ, F-1/1, Mahavir Enclave  
New Delhi - 110045

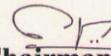
*has been assessed and found to comply with NABH  
Accreditation requirements. This certificate is valid for  
the Scope as specified in the annexure subject to continued  
compliance with the accreditation requirements.*

Valid from : October 10, 2014  
Valid thru : October 09, 2017



Certificate No.  
H-2014-0248

  
Chief Executive Officer

  
Chairman

Annexure-II

**AHPI Green Hospital Award**



Annexure-III

**Participation certificate award for CAHOCON**



Dr. C.M Bhagat , Dr. Renu Sharma, Dr. Upasana Bhagat



Dr. Kamal Parwal, M.S. (Mentor)