

**QUALITY ASSESSMENT AS PER NABH GUIDELINES USING REAL TIME
MONITORING CHECKLIST FOR DIETETICS AND ANALYSIS OF TURN
AROUND TIME (TAT) OF HEALTH CHECK-UP DEPARTMENT AT THE
MISSION HOSPITAL, DURGAPUR**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

By

Aprajita

Under the Supervision and Guidance of

Dr J.P. Singh

2024



Date: 29.06.2024

TO WHOM IT MAY CONCERN

This is to certify that **Dr. Aprajita** a student of **MBA in Hospital & Health Management** at **IIHMR University, Jaipur** has undergone her 3 months **Dissertation** from 01.04.2024 to 29.06.2024 in the department of **Quality** at **The Mission Hospital, Durgapur**.

We wish her success in her future endeavors.

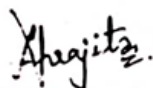
For, The Mission Hospital, Durgapur

Ramesh Lall
President- HR & Admin

Ramesh Lall
President (HR & ADMIN)
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Durgapur, West Bengal

DECLARATION BY STUDENT

I hereby declare that this dissertation titled **“QUALITY ASSESSMENT AS PER NABH GUIDELINES USING REAL TIME MONITORING CHECKLIST FOR DIETETICS AND ANALYSIS OF TURN AROUND TIME (TAT) OF HEALTH CHECK-UP DEPARTMENT”** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



(Signature)

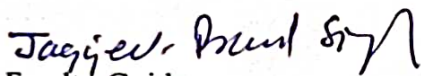
Dr. Aprajita

Date – 04/07/2024

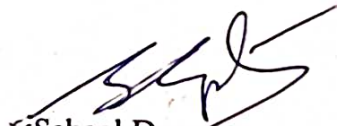
Appendix F: Certificate from Faculty Guide and School Dean

CERTIFICATE

This is to certify that dissertation title **Quality Assessment as per NABH Guidelines using Real Time Monitoring Checklist For dietetics and Analysis of Turn Around Time (TAT) of Health Checkup Department at The Mission Hospital, Durgapur** is a record of the research work undertaken by Dr. Aprajita in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.


Faculty Guide
IIHMR University, Jaipur

Date 04/07/24


School Dean
IIHMR University, Jaipur

Date 04/07/2024

ABSTRACT

BACKGROUND:

The standard of care given in medical facilities has a big influence on patient satisfaction, outcomes, and the decrease in medical errors. Following the strict guidelines established by the National Accreditation Board for Hospitals & Healthcare Providers is the goal of Mission Hospital in Durgapur. The primary objective of this study is to evaluate the quality of the dietetics and health checkup departments, which have particular difficulties that may have an impact on patient care and service delivery. For swift diagnosis, management, and general patient satisfaction, it is essential to have effective procedures, sufficient staffing, and appropriate patient flow management. The Dietetics Department plays a crucial role in the recovery and management of patients' health by providing individualized nutritional guidance. This calls for strict adherence to updated dietary protocols and efficient coordination with healthcare specialists.

OBJECTIVES:

To develop real-time monitoring checklists specifically aligned with NABH guidelines and the Ministry of Health & Family Welfare for the Dietetics Department at Mission Hospital, Durgapur and to identify and analyze factors causing delays in service delivery in the Health Checkup Department.

METHODOLOGY:

Mixed-methods approach combining a descriptive cross-sectional study for the Dietetics Department (real-time monitoring) and a retrospective study for the Health Checkup Department (historical data analysis).

DATA COLLECTION:

For the Dietary Department, Statistical data such as IPD admissions and patient footfall collected from HMIS. Data is monitored using indicators provided by the Ministry of Health & Family Welfare, analyzed monthly through data analysis software.

For the Health Checkup Department, Patient footfall, arrival, and departure times from HMIS for the last six months (December to May), analyzed using predictive analysis.

Sample Technique: Simple Random Sampling.

Data Analysis: Descriptive statistics and inferential analysis using MS Excel to identify trends and significant factors affecting compliance and delays.

KEY RESULTS:

The study identified specific areas within the Dietetics and Health Checkup departments that met or fell short of NABH standards. Key findings highlighted inefficiencies in process management and staffing within the Health Checkup Department, leading to delays in service delivery. In the Dietetics Department, gaps in maintaining updated dietary protocols and individualized patient care were identified. These findings provide detailed data on compliance with NABH standards and highlight areas needing targeted improvements.

CONCLUSION:

The assessment of the Health Checkup and Dietetics departments at Mission Hospital, Durgapur, revealed significant areas for improvement to enhance patient care and departmental effectiveness. By addressing the identified inefficiencies and gaps, the hospital can implement targeted interventions to improve compliance with NABH standards, ultimately leading to better patient outcomes and satisfaction. The study provides valuable benchmarking data that can be used by other hospitals to adopt best practices and improve their quality of care.

KEYWORDS:

Healthcare quality, NABH Standards, Dietetics Department, Health Checkup Department, Patient care, Compliance, Real-time Monitoring, Descriptive Cross-sectional Study, Retrospective Study, Patient satisfaction, Service delivery, Data Analysis, Staffing efficiency, Nutritional Advice, Quality improvement, Patient' Outcomes.

ACKNOWLEDGEMENTS

Firstly, thanks, and praise to almighty for showering his blessings throughout my journey to complete the project.

I would like to express my sincere gratitude and thanks to the Dissertation opportunity I had at **The Mission Hospital**. It was a great honor and experience to work with such splendid and experienced professionals.

I am indebted to **Dr. Partha Pal (Medical Director)** for providing me with the opportunity to perform the research and for guiding me throughout the training. I would also like to give a very big thanks to the whole **Quality Team**, for her guidance, support, and motivation during tough times. It was a great privilege to work and learn under their leadership.

Most importantly I would like to express my gratitude and thanks to my mentor **Mr. J.P. Singh (Professor, IIHMR University, Jaipur)** for his constant guidance and support throughout the study.

Also, I would like to offer my gratitude to My Parents, **Mr. A.K. Bakshi** and **Mrs. Sangita**, My Brother, Sister-in law and my Friends for encouraging me to carry out the study by supporting and guiding me on every point.

Sincerely,

Dr. Aprajita

Place: Jaipur

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ABBREVIATIONS

NABH	National Accreditation Board for Hospitals & Healthcare Providers
AHRQ	Agency for Healthcare Research and Quality
TAT	Turnaround Time
IPD	In-patient Department
OPD	Out-patient Department
MOHFW	Ministry of Health and Family Welfare
HMIS	Hospital Management Information System
USG	Ultrasonography
ECG	Electrocardiogram
TMT	Treadmill Test
PFT	Pulmonary Function Test

CHAPTER: 1

INTRODUCTION

This study focuses on assessing the quality of care provided at Mission Hospital, Durgapur, specifically within the Health Checkup Department and Dietetics department.

Quality healthcare not only improves patient outcomes but also enhances patient satisfaction and reduces medical errors ¹. The National Accreditation Board for Hospitals & Healthcare Providers (NABH) is an esteemed body in India that sets stringent standards for healthcare quality and safety. NABH accreditation signifies adherence to standardized protocols and best practices, underscoring a hospital's commitment to delivering high-quality care ². The Health Checkup Department and Dietetics Department at Mission Hospital face unique challenges that impact service delivery and patient care.

Due to inefficient processes, inadequate staffing, and improper patient flow management can not only affect patient satisfaction but also compromise the timely diagnosis and management of health issues. By pinpointing areas that meet or fall short of NABH standards and identifying gaps that cause delays in the Health Checkup Department, can implement targeted interventions to enhance patient care, staff practices, and overall departmental effectiveness.

The Dietetics Department plays a crucial role in patient recovery and overall health management by providing tailored nutritional advice and interventions. Challenges in this department include maintaining up-to-date dietary protocols, ensuring individualized patient care, and effectively communicating with other healthcare providers. Assessing the quality of care in this department against guidelines provided by Health of Ministry and Family Welfare will highlight areas for improvement in dietary services, which is vital for enhancing patient outcomes and promoting optimal health.

Despite the focus on quality standards by NABH, there is a noticeable gap in research regarding the real-time monitoring of Dietetics and Health Checkup departments in Indian hospitals.

Most current studies focus on overall hospital performance or specific clinical specialties, creating a significant gap in understanding the unique operational and quality challenges these departments face. This lack of targeted research results in an insufficient foundation for developing strategies to address the specific needs of these critical areas.

The Dietetics and Health Checkup departments are critical for preventive care and patient nutrition, which are vital for long-term health outcomes. Without in-depth research into these areas, opportunities for focused quality improvement may be overlooked.

The study aims to provide detailed data on how well the Dietetics and Health Checkup departments comply with NABH standards in real-time, identifying areas needing improvement and the reasons behind non-compliance. The findings will offer benchmarking data that other hospitals can use for comparison, promoting the adoption of best practices across institutions.

Research Questions –

1. How effectively does the Dietary Department at Mission Hospital comply with NABH standards and the guidelines established by the Ministry of Health & Family Welfare (Government of India)?
2. What are the specific reasons behind the delays in the process and service delivery of the Health Checkup Department?

Objectives –

1. To Develop real-time monitoring checklists specifically aligned with NABH guidelines and the Ministry of Health & Family Welfare for Dietetics departments and also at Mission Hospital, Durgapur.
2. To identify and analyze the factors and the gaps occurring during the processes leading to delays in service delivery in Health checkup department.

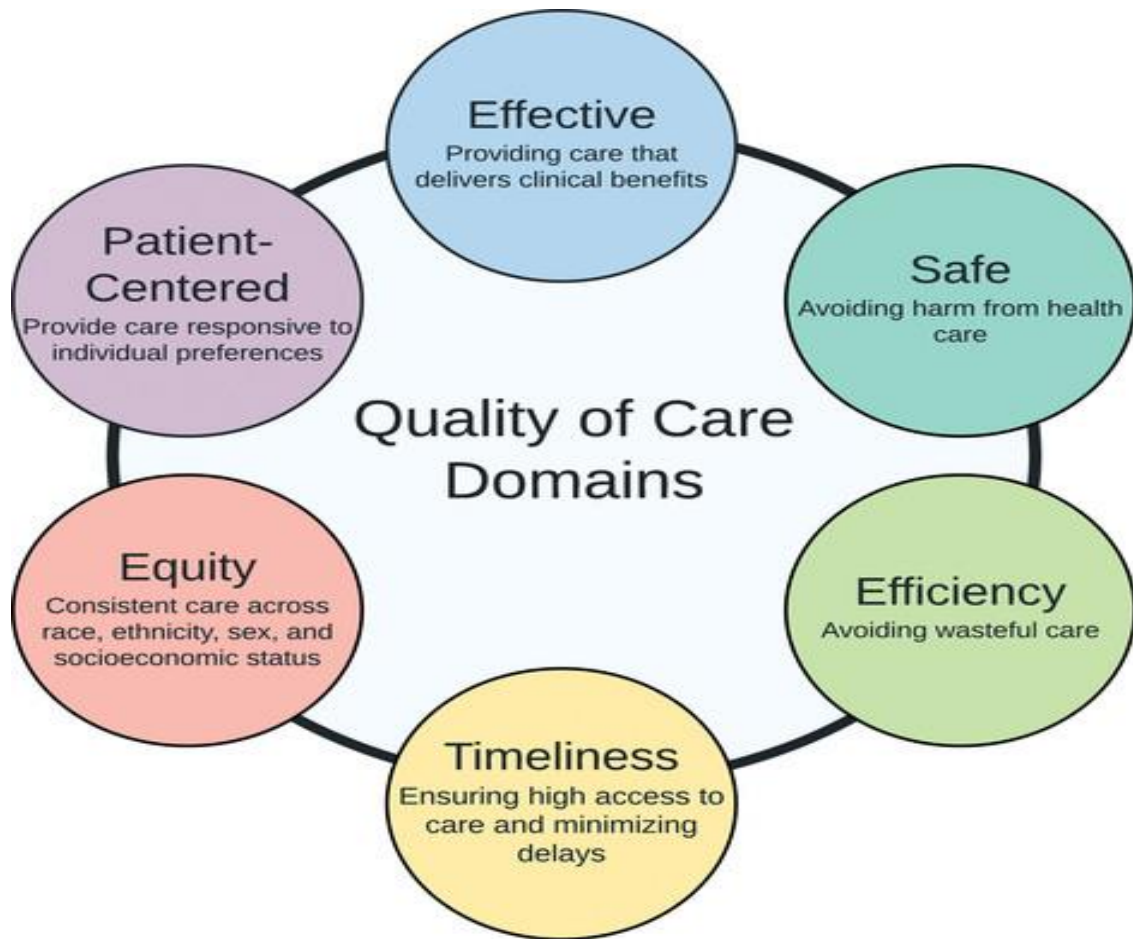


Fig 1.1: BY AGENCY FOR HEALTHCARE RESEARCH AND QUALITY (AHRO)

CHAPTER – 2

LITERATURE FREVIEW

Table 2.1: List of Literature reviewed

Title: The effects of waiting time and satisfaction among patients visiting the medical outpatient department of a tertiary care hospital place and duration of the study. On: April 2022 By: Dr. Ayesha Sarawat	This report provides information about the factors and effects of waiting time among patients visiting the medical outpatient department of a tertiary care hospital. The study emphasizes how important it is to deal with lengthy wait times and their negative impacts on patient satisfaction and care. Enhancements such as hiring more personnel and simplifying procedures may contribute to a decrease in wait times in this busy outpatient environment.
Title: Factors associated with patient waiting time at a medical outpatient clinic: A case study of University of Nairobi Health Services.	The purpose of the study was to evaluate outpatient waiting times and associated variables at the University of Nairobi health services staff clinic. After tracking and interviewing 384 ambulatory patients, it was shown that the waiting period was 55.3 minutes on average. The findings showed that waiting times were influenced by doctors' availability and gender, with women having to wait longer than males.

On: December 24, 2021 By: Rebecca Wafula	Overall, the research shows that patient waiting times are a major problem for outpatient clinics and that they can be improved with a multifaceted strategy that focuses on workflow, staffing, and patient management. Interventions can be guided by context-relevant insights obtained from additional research conducted in particular clinic settings.
Title: A study on optimization of master health checkup process at a multispeciality hospital in Coimbatore. On: January 2017 By: Kannan Vis	The article focused on how to effectively utilize patient tracking systems by merging them with lean operation approaches. The advantages and best practices for implementing various patient tracking system types were highlighted. Value stream mapping produced workable ideas for process improvement by assisting in the identification of bottlenecks in the master health check-up procedure. It was suggested that in order to improve overall process efficiency, patient tracking systems be implemented, and current display technologies be utilized. The article focused on how to effectively utilize patient tracking systems by merging them with lean operation approaches. The advantages and best practices for implementing various patient tracking system types were highlighted. Value stream mapping produced workable ideas for process improvement by assisting in the identification of bottlenecks in the master health check-up procedure. It was suggested

	that in order to improve overall process efficiency, patient tracking systems be implemented, and current display technologies be utilized.
Title: A study on Total waiting Time with Respect to Preventive Health Check-Up Programme in Tertiary Care Hospital On: November 2016 By: N. Junior Sundresh, Sakhi George, Sunny P Orathel, Sanju Cyriac	This study focuses on the point that nowadays, people look for specialized medical care with an emphasis on short hospital stays and maximum pleasure. Sixty-six percent of the 100 patients in the study were between the ages of 35 and 65. The study involved a rigorous review of patient waiting times at a tertiary care hospital. Significant wait times were found in the study for tasks like report collection, treadmill tests, ultrasound procedures, and doctor consultations. The Turn Around Time (TAT) concept was one of the recommendations made to improve overall service efficiency and shorten patient wait times in hospital departments. It is underlined that in order to improve healthcare services and satisfy patient expectations, regular monitoring of healthcare quality and patient visitation times is necessary.
Title: Patient's satisfaction regarding Dietary Service at Tertiary Hospitals. On: July 2023	In order to assess the caliber of the dietary services offered at tertiary hospitals, patient satisfaction is vital. A total of 247 patients who received nutritional services in a hospital environment were included in the cross-sectional assessment research. A crucial component of the general care of in-ward patients in tertiary hospitals is determining and monitoring patient satisfaction with dietary services. In order to determine patient satisfaction

By: Md. Rifat Uddun, Abdullah Mahmud Showray, Rifat Jahan, Md. Rahul Amin Tuhin, Md. Imtiaz Khalil Ullah, Md. Mirajbillah and K.M. Bayzid Amin	with nutritional services in tertiary hospitals, a cross-sectional assessment research comprising 247 dietary service recipients was carried out. The study aimed to discuss about the factors which were leading to the dissatisfaction among patients regarding dietary food and services.
Title: Assessment of the Key Performance Indicator Proposed by NABH in the Blood Centre of a Tertiary Health Care Hospital in Southern India. On: August 2022 By: John Gnanaraj, Abhishekh Basavarajegowda, Dibyajyoti Sahoo	Evaluating the NABH-Proposed KPI in the Blood Center of a Tertiary Medical Facility in Southern India. Repeated quality meetings, Plan-Do-Study-Act (PDSA) and implementing six sigma methodologies are recommended for achieving higher quality standards in blood centers in the future. Prioritizing continuous improvement techniques like six sigma and PDSA cycles can increase the caliber of services that blood centers in medical facilities offer.
Title: The Long Wait for Health in India”- A study of waiting time for	The purpose of the study was to assess patient wait times over a 14-day period in major Western Indian tertiary care hospitals.

patients in a tertiary care hospital in western India. On: November 2027 By: Sailee Bhambere	Patients had to wait an average of 2.10 hours from the time of admission to the time they were attended, with a standard deviation of 1.18 hours. It was concluded that most of the patient's waiting time is due to in-hospital causes, suggesting the need to address internal system inefficiencies to reduce waiting times. Recommendations include setting up a separate admission counter for emergency wards, increasing healthcare staff numbers, especially specialists in the Emergency department, and improving in-hospital ambulance services
Title: Reducing Waiting Time of Patients in Outpatient Services of Large Teaching Hospital: A Systematic quality Approach. On: November 2017 By: Rashmi Yadav	Maintaining standards for excellence in healthcare organizations requires constant improvement. To cut down on outpatient waiting times, the project made use of quality methods such waiting time analysis, FMEA, and process mapping. achieved improvements in process flow and a notable decrease in waiting times in the outpatient department. It is concluded that the reduction in waiting time in outpatient services was achieved through a quality process approach, effective communication, providing adequate manpower, and educating patients on the importance of making appointments
Title: Application of Queuing Theory to Optimize Waiting	The study's goals included studying the OPD's process flow, doing SWOT analyses, learning how patients perceive their wait times, doing time

Time in Hospital Operations.	studies, and figuring out how long a patient will wait using queuing models.
On: 2019	Long waiting time is a common challenge in Indian healthcare, particularly in big hospitals, indicating inefficiencies in operations. The Out-Patient
By: Deepak Yaduvanshi, Ashu Sharma, Praful Vijay More.	Department (OPD) typically experiences the largest queues among different hospital departments. Fortis Escorts Hospital in Jaipur manages its OPD based on experience rather than strategic queuing theory techniques, resulting in extended waiting times for patients. By conducting a SWOT analysis and applying queuing theory, solutions were identified to improve efficiency and reduce delays in the OPD, aiming for higher patient satisfaction ratings.

CHAPTER: 3

METHODOLOGY

In this research, a mixed-methods strategy is used to incorporate both quantitative and qualitative data. The study design includes two components:

Descriptive Cross-Sectional Study for the Dietetics Department: This part involves real-time monitoring of data. It seeks to give an overview of the Dietetics department's current procedures and contacts with patients.

Retrospective Study for the Health Checkup Department: This component involves analyzing historical data over the past six months to understand patterns and trends in patient footfall and service utilization in the Health Checkup department.

For the Dietetics Department:

- Data on inpatient department (IPD) admissions and outpatient department (OPD) patient footfall is collected from the Hospital Management Information System (HMIS).
- The collection follows the indicators specified in the Checklist provided by the Ministry of Health and Family Welfare, Government of India.
- The collected data is aggregated monthly and analyzed using data analysis software to identify trends and insights.

For the Health Checkup Department:

- Patient footfall data, including arrival and departure times, is gathered from the HMIS for a six-month period from December to May.
- Predictive analysis is conducted on this historical data to forecast future trends and improve departmental efficiency.

SAMPLE SIZE:

Health Check-Up Department : 2966 (No. of patients utilized the services provided by Health Check-up Department)

Overall sample population is taken as it was a retrospective study.

Dietary Department: 60 (No. of patients admitted in the hospital i.e., IPD Patients)

Sampling Technique:

Simple Random Sampling is done.

Study Duration:

For Health Check-Up Department – Retrospective study is done on 6 months data i.e., from December 2023 – May 2024.

For Dietary Department- 2 months i.e., from Mid-April to Mid-June (Real time monitoring).

Systemic Review –

Inclusion Criteria –

1. Patients admitted to the Inpatient Department (IPD) and those receiving dietary services in the Outpatient Department (OPD):
 - Including IPD patients ensures that the study reflects the needs of individuals requiring in-hospital dietary management, which is crucial for assessing compliance with National Accreditation Board for Hospitals & Healthcare Providers (NABH) standards and Ministry of Health & Family Welfare guidelines.
 - OPD patients receiving dietary services are included to represent the broader scope of nutritional management practices.
2. Patients visiting the Health Checkup Department:
 - This includes corporate patients undergoing regular health checkups as part of their employment benefits, as well as individuals seeking personal health assessments without adhering to any specific institutional protocol.

Exclusion Criteria:

1. Pediatric patients undergoing routine health checkups:
 - Since there is a dedicated Pediatrics department for children's health checkups, these patients are excluded from this study.

STRENGTHS AND LIMITATIONS:

STRENGTHS:

1. The use of real-time monitoring in the Dietetics department and historical data analysis in the Health Checkup department allows for a comprehensive understanding of service delivery and compliance with standards over time.
2. The study complies with both the Ministry of Health and Family Welfare (Gov. of India) and the National Accreditation Board for Hospitals & Healthcare Providers (NABH) guidelines, guaranteeing that the results are applicable and can be used immediately to raise standards of care in Indian hospitals.
3. The findings will help identify specific areas for improvement, leading to targeted interventions that can enhance patient care, staff practices, and overall departmental effectiveness.

LIMITATIONS:

1. The Health Checkup department's retrospective study design depends on past data, which could be affected by biases or inaccurate record-keeping.
2. A significant portion of the study's data come from the Hospital Management Information System (HMIS). The correctness and completeness of the data as well as any system flaws could have an impact on how reliable the results are.

CHAPTER - 4

RESULTS

ANALYSIS: HEALTH CHECK UP DEPARTMENT

To effectively identify the factors contributing to waiting times and understand patient flow management in the Health Checkup Department, it is essential to first outline the process flow map of the department. The process flow map provides a visual representation of the steps involved in the patient's journey, from arrival to departure. This helps in pinpointing the stages where bottlenecks occur and identifying opportunities for improvement.

The Process Flow Map of the Health Check-Up Department is shown as below-

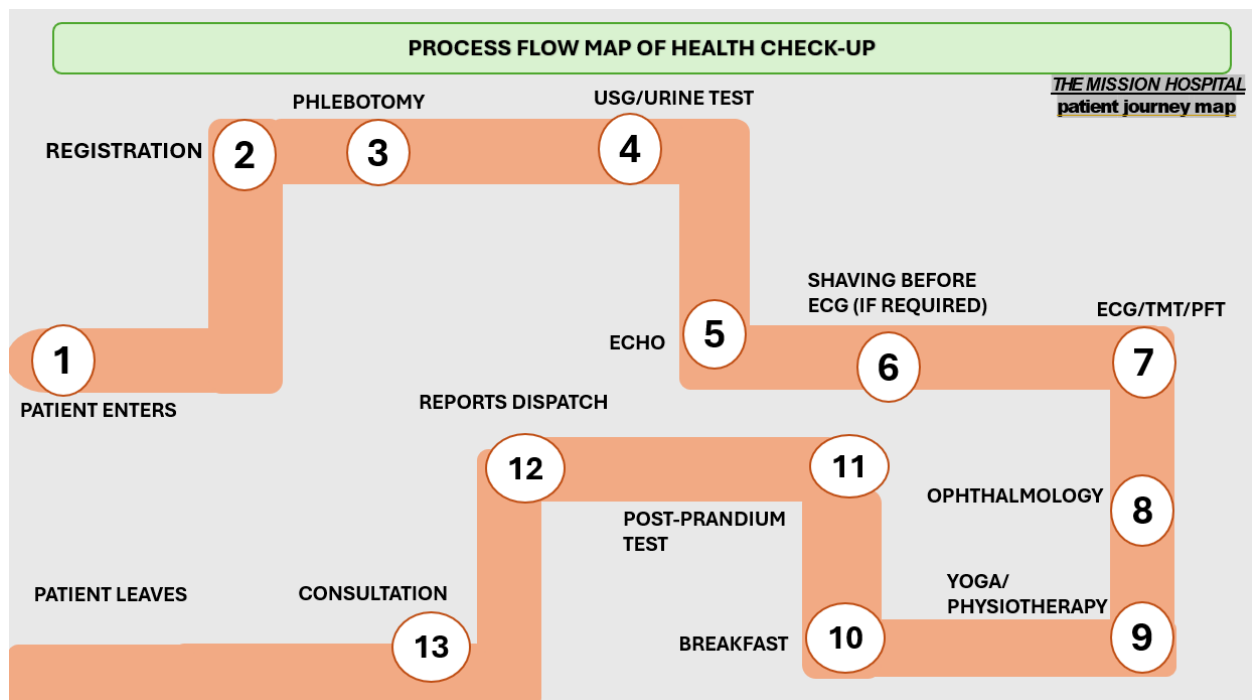


Fig 4.1: Process flow map of the Health Check-Up Department

Through close adherence to the patient journey map, the average duration needed for every single operation or step in the Health Checkup Department was estimated. This covered check-in and arrival, first screening, medical consultation, diagnostic testing, examination and interpretation of test results, billing and settlement, and, at the end, patient discharge. In addition to these time predictions, the amount of waiting time that patients encountered at every stage was also recorded.

By gathering data on both the actual time spent on each procedure and the waiting time incurred, a detailed analysis was performed to determine the duration of waiting times at each specific step. This comparison allows us to identify where the most significant delays are occurring in the patient flow process.

Understanding these specific waiting times helped to pinpoint the exact stages in the patient's journey where improvements are needed. This comprehensive analysis highlights the procedural inefficiencies and bottlenecks that contribute to overall delays. By addressing these issues, we can enhance the efficiency of the Health Checkup Department, ultimately reducing waiting times and improving the overall patient experience from the moment they arrive until their departure.

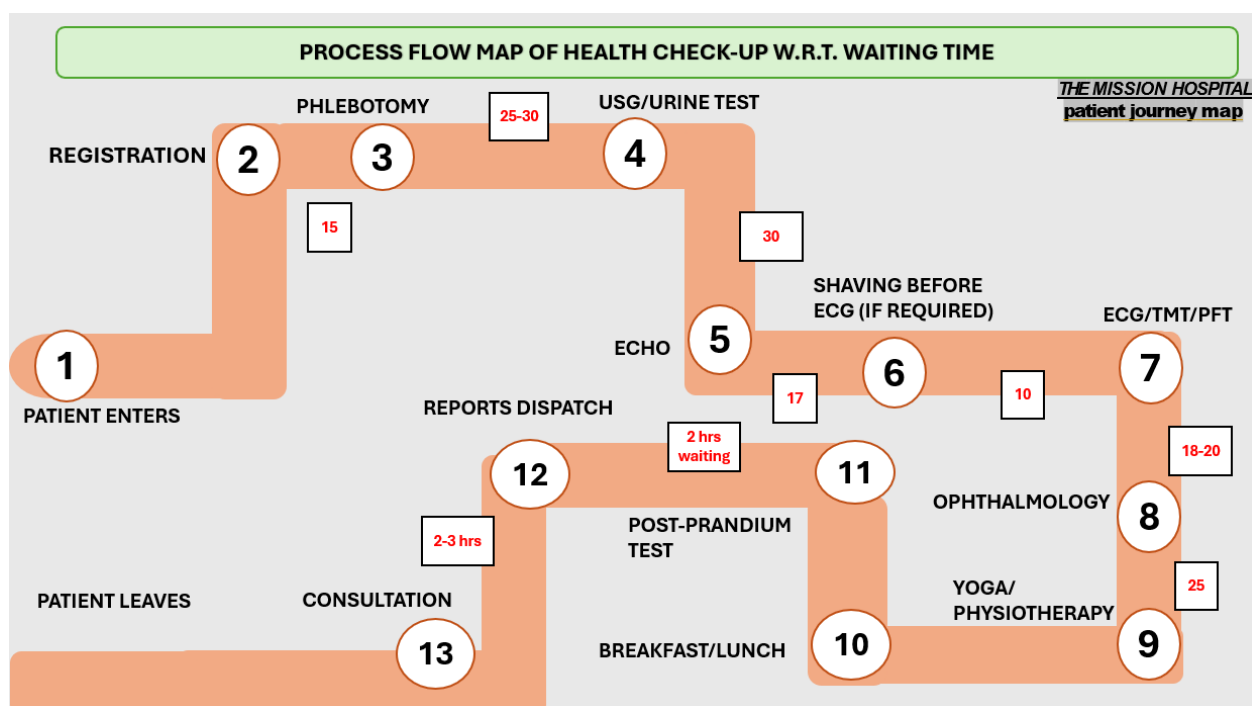


Fig 4.2: Process Flow Map of Health Check-Up Department w.r.t. Waiting Time occurred in each process of service delivery.

TASKS	PROCEDURES	PROCESS TIME IN MINUTES	WAITING TIME
1	Registration	5-6 minutes	15 – 20 mins
2	Phlebotomy	5-6 minutes	15 mins
3	Urine Test	4-5 minutes	15 mins
4	USG	10 minutes	25-30 mins
5	Shaving (as per requirement)	6-8 minutes	10 mins
6	ECG	15 mins	15-20 mins
7	TMT	10 mins	25-30 mins
8	Ophthalmology	15-20 mins	30-35 mins
9	Yoga/Physiotherapy	20 mins	25 mins
10	Breakfast	20 mins	10 mins
11	Post Prandium Test	4-5 mins	120 -140 mins
12	Reports Dispatch	5-10 mins	180 – 200 mins
13	Consultation	15-20 mins	20 mins

Fig 4.3: Expected ideal time (as per hospital's benchmark) taken to deliver the service versus the waiting time occurred for the same service being delivered.

As shown in the above figure, each activity is taking more of the expected time to deliver the service, leading to waiting time.

The phlebotomy takes 15 minutes whereas the ideal expected time to deliver the service as per the Hospital's benchmark is 5-6 minutes. For the USG Test, 10 minutes is the ideal time duration to complete the process whereas the patient takes around an average of 25-30 minutes to get the procedure done.

DIETARY DEPARTMENT

The degree of adherence to the Ministry of Health & Family Welfare's norms and NABH standards is shown by the evaluation of the nutritional services offered by Mission Hospital in Durgapur. The analysis sheds light on the Dietetics Departments advantages and disadvantages while providing insightful information about the standard of treatment and areas in need of development.

This data monitoring is conducted in accordance with a checklist developed based on guidelines provided by the Ministry of Health and Family Welfare. Data was collected daily over a period of two months to assess the compliance rate and identify areas where standards were not being met.

The department maintains a high level of care and swiftly addresses any weaknesses by routinely gathering and evaluating data. This meticulous monitoring procedure aids in upholding adherence to set norms and offers insightful information about areas in need of development, allowing for the ongoing improvement of service quality. The thorough approach taken in gathering and assessing data highlights the department's dedication to providing outstanding nutritional treatment in compliance with federal healthcare guidelines.

This rigorous monitoring process not only helps in maintaining adherence to established protocols but also provides valuable insights into areas requiring improvement, thereby facilitating continuous enhancement of service quality. The comprehensive approach to data collection and evaluation underscores the department's commitment to delivering exceptional nutritional care in alignment with national healthcare standards.

The department's compliance with the requirements was assessed using a comprehensive study that followed the methodical data collection directed by these checklists. The results of this investigation were then utilized to make analysis regarding the quality of nutritional care that is currently offered. Specific recommendations were provided to address and enhance the identified areas of insufficiency based on these conclusions. These recommendations' main goal is to improve nutrition care, which will help patients and the organization as a whole. The department works to give the best nutritional support possible by focusing on continual improvement and abiding by

national norms. This ensures patient well-being and enhances the hospital's overall efficacy and reputation.

This approach not only highlights the commitment to patient care but also reinforces the importance of ongoing quality assurance and professional development within the dietary services.

ANALYSIS: DIETARY DEPARTMENT

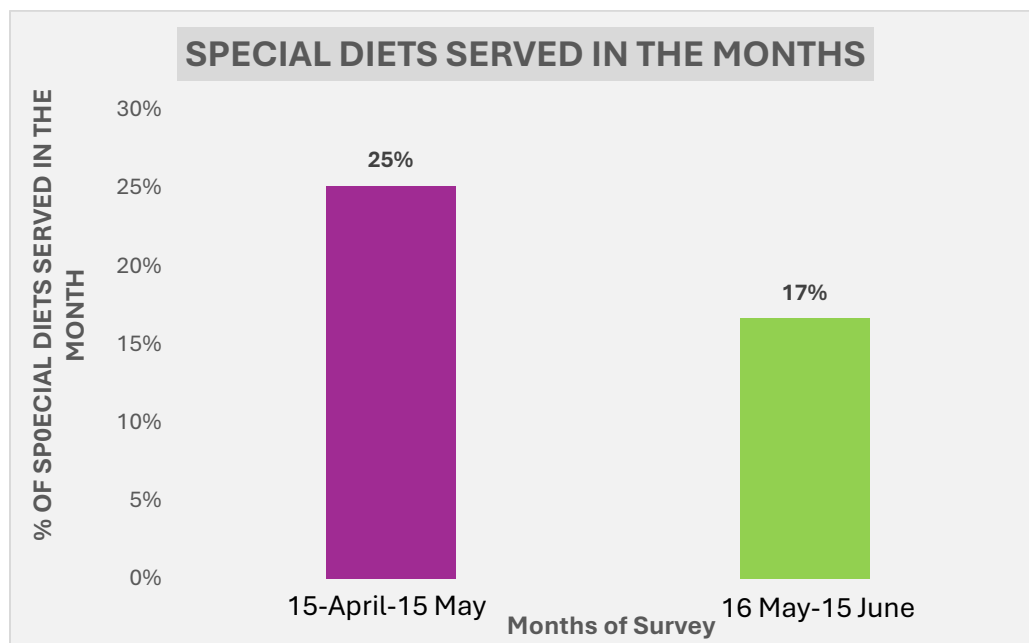


Fig 4.4: Graphical representation of percentage of special diets served in the months.

The indication provided in the MoHFW guidelines was used to guide the data analysis. A comparison of the patients' two-month special diets is done. The data for the months of May and June is displayed on the Y-Axis, while the X-Axis displays the percentage of special diets served throughout the month, as illustrated in the above figure. According to this analysis, more special diets were provided between April 15 and May 15 than between May 16 and June 15 of the following survey month. Furthermore, this showed that there were higher in-patient admissions between April 15 and May 15.

This pattern highlights the hospital's ability to adjust its culinary offerings in response to changing patient needs. It also highlights how important it is to evaluate and assess them regularly in order to ensure the dietary department can continue to provide high-quality treatment even when patient load is higher. Planning for the future will be easier with the analysis's insightful understanding of the operational dynamics of the food services, which will allow for targeted improvements and more effective resource allocation.

Formula used to calculate % of Special diets in a month –

$$\frac{\text{No. of special diets in the month}}{\text{Total no. of diets provided in the month}} \times 100$$

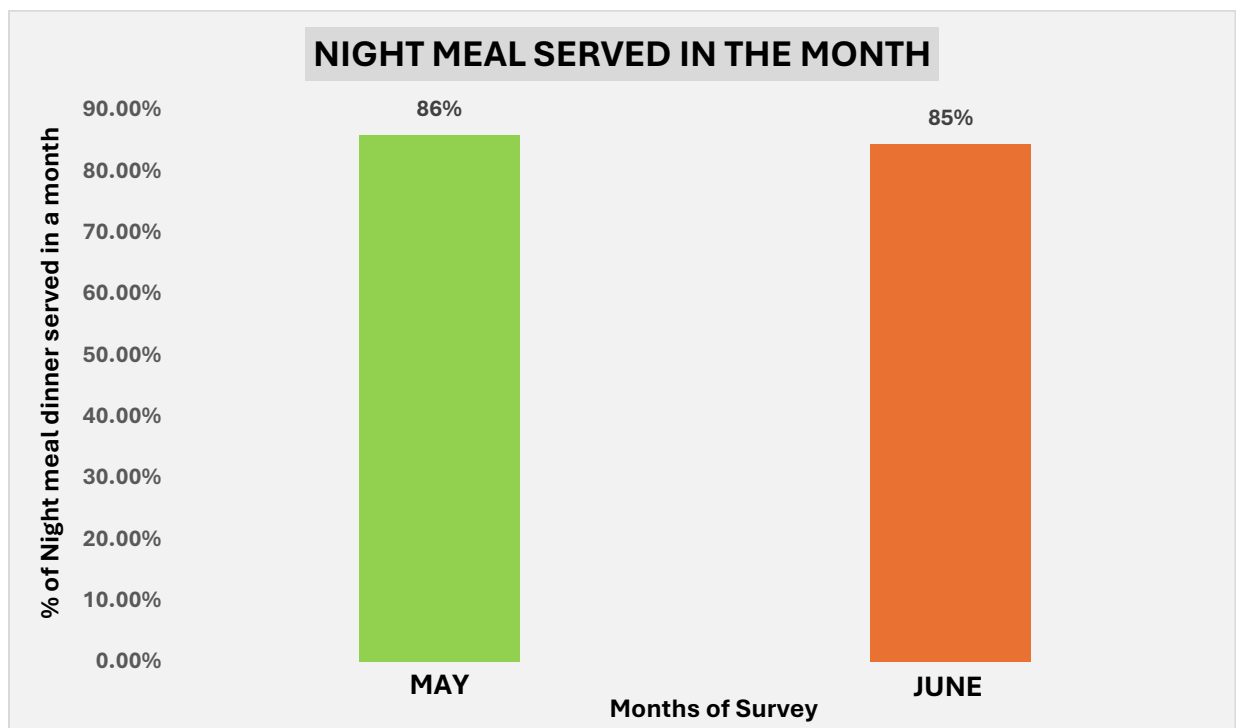


Fig 4.5: Graphical representation of percentage of night meals served in the months.

The graphical representation above illustrates the percentage of night meals served between April 15 and June 15. It is clear from analyzing the data in the figure that the percentage of night meals given over the two months under study did not significantly change. The observed consistency implies that the majority of patient discharges occurred during the day shift, resulting in a comparatively constant quantity of night meals being needed every night for the duration of the two-month period. Because most patient discharges occur during the day, it is likely that the stability in the percentage of night meals delivered reflects a steady need for nutritional services during the night. This graph reveals a regular pattern in patient turnover: fewer discharges happen at night, which means that the necessity for night meals is constant.

Formula used to calculate the % of night meal served in the month -

$$\frac{\text{No. of dinner(night meal)served in the month}}{[\text{indor admissions (mid night count)} - \text{number of new admissions}]} \times 100$$

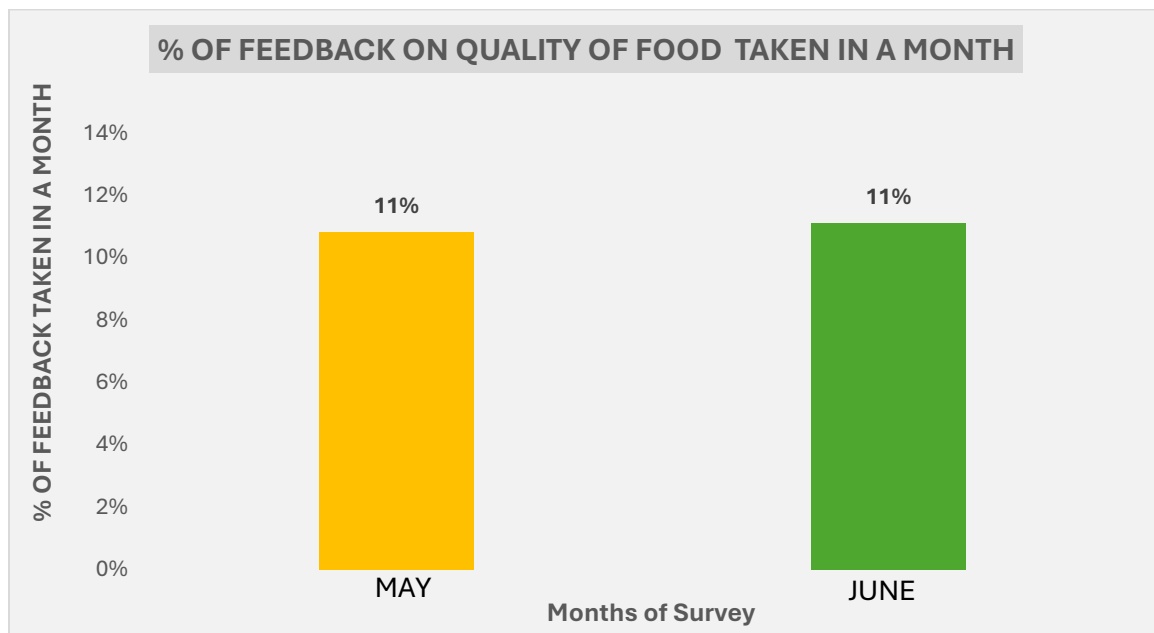


Fig 4.6: Graphical representation of percentage of night meals served in the months.

The above graph represents the percentage of feedback on Quality of food taken in a month. Patient input about food quality is crucial for a number of reasons, chief among them being that it has a direct bearing on patient physical and general health results. Patients' preferences, degrees of happiness, and any possible problems with the food service are all revealed when they provide input on the meals they get. This feedback assists the dietary department in making sure that the patient's nutritional demands are met in addition to the meals being appetizing. Meals that are high-quality and nutritious are essential to the healing process because they strengthen patients' immune systems, encourage healing, and enhance their general physical and mental health.

It is evidently seen here that during the study period, very little input was collected. This indicates a major area that needs to be addressed. Understanding patients' requirements and maintaining high standards of dietary care require actively seeking out and encouraging patient feedback regarding the quality of the meal. An improved grasp of patient satisfaction levels and particular problems that require attention will be possible with a higher volume of feedback. The nutritionist can spot patterns, handle issues more skillfully, and carry out focused enhancements by improving feedback systems

The Formula used to calculate the percentage of feedback received on the quality of food is-

$$\frac{\text{No. of patients from whom feedback was taken on quality of food}}{\text{Total no. of in – patients}} \times 100$$

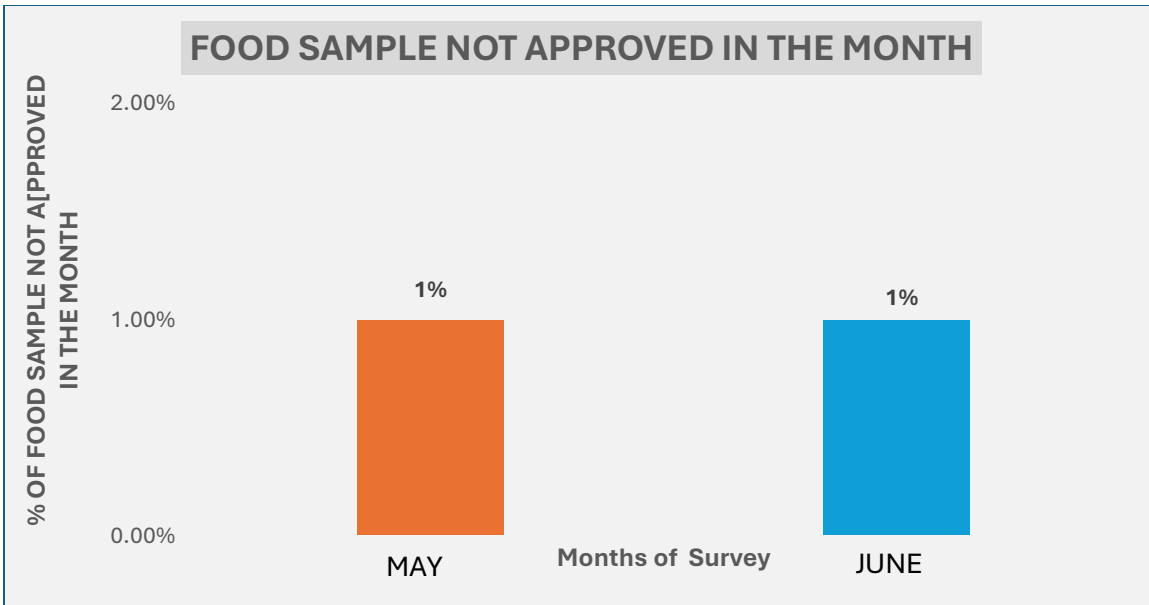


Fig 4.7: Graphical representation of percentage of night meals served in the months.

When food samples are not approved, it indicates that the meals provided did not meet the established standards or expectations set by the hospital's dietary guidelines.

In the above graph , it is evident that very less amount of food samples are getting disapproved over the study time period. It indicates minimal wastage of food reflecting the efficiency and effectiveness of the dietary department's operations. This pattern also indicates a high degree of compliance with the department's nutritional criteria guaranteeing the food is of the required standard.

The Formula used to calculate the percentage of food sample not approved –

$$\frac{\text{No. of food sample not approved by dietician}}{\text{Total meals prepared}} \times 100$$

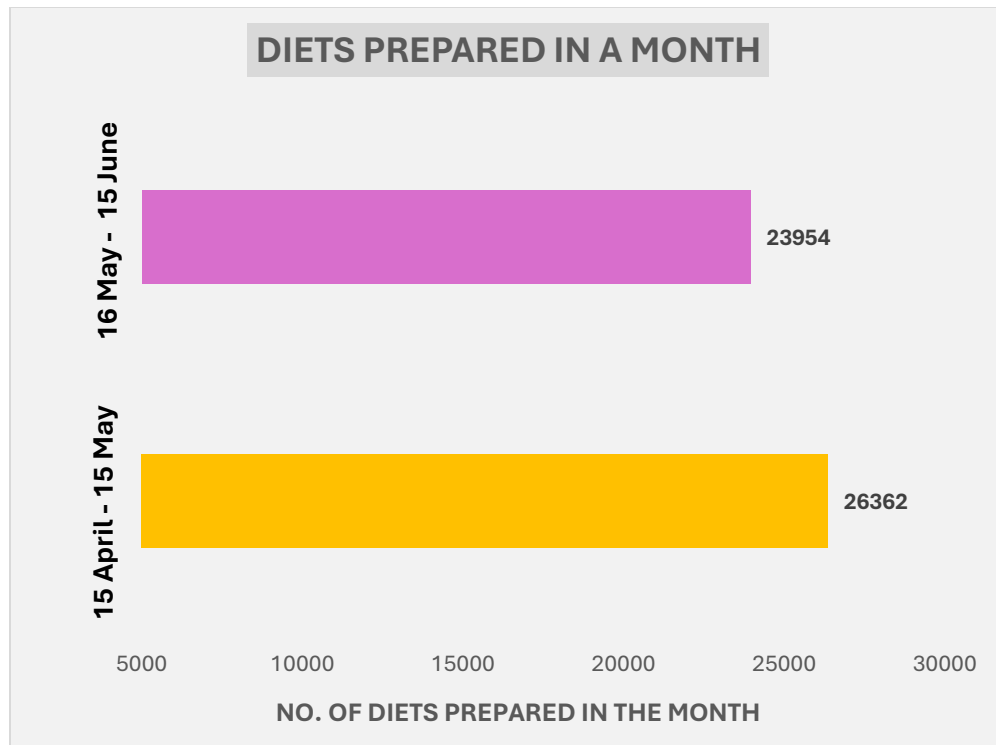


Fig 4.8: Graphical representation of percentage of night meals served in the months.

The above diagram represents the total number of diets prepared in the month. It is obvious from the graph that the major amount of diet prepared in the duration of 15 April to 15 May as compared to the subsequent next month. It implies that more patient in flow has been seen in the period of 15 April-15 May. There was a higher level of hospital activity and patient care needs during this time, as seen by the increased demand for diets during this period, which also shows that more patients were admitted or needed nutritional services.

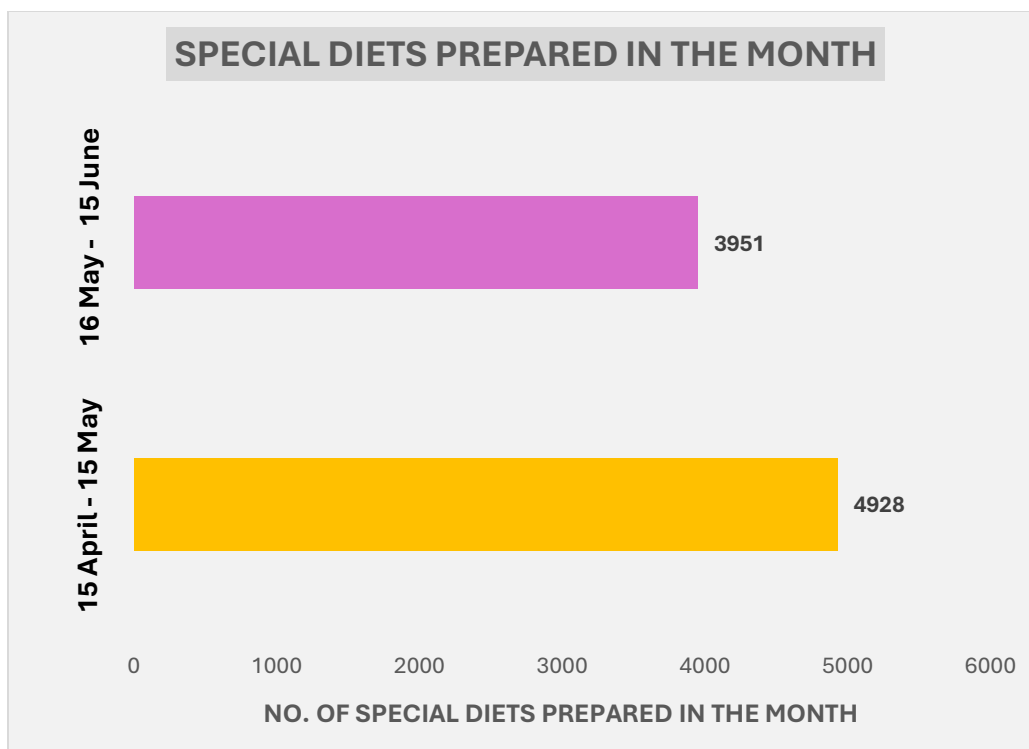


Fig 4.9: Graphical representation of percentage of night meals served in the months.

The above diagram represents the special diets prepared in the month.

Similar to the above analysis made in Fig. 4.9, it is seen in the graph that the major number of special diets prepared in the duration of 15 April to 15 May as compared to the subsequent next month. It implies that more patient in flow has been seen in the period of 15 April-15 May.

Few indicators are analyzed as per color coding since it is a qualitative analysis.

	YES	AVERAGELY POOR	NO
COLOR CODING			
Availability of signage's- Restricted area signage, storage area, cooking area, etc.			
Updated duty roster			
Standard operating procedures			
Comprehensive diet list containing type of diet			
dust and other contaminants			
The facility ensures safe, comfortable environment and essential infrastructural components			

Windows & other openings are free from accumulated dirt, those which open are fitted with insect-proof screen.			
Pipe connection of cooking gases, solar water heating system			
Efficient drainage System			
Security arrangements (Security personnel, CCTV, etc.)			
Availability of Food trolley			
Kitchen service is available as per the schedule mentioned in the guidelines			
Changing of external footwear			

Changing of clothes and wearing uniforms			
Washing hands			
No jewelry/watch should be worn in hands by the cook or service staff when on duty.			
Immunization and Regular Screening of the Staff for any disease			
Random check provided by Dietician on taste and quality of food being served to the patients			
Dietary plan by the dietician to be documented in the IP case file of patient			

General items and equipment		
Disposable items		
There is an established procedure for documentation and reporting of various activities on daily basis of the following:		
Each procedure as per SOP		
Maintenance and functionality of Utensils (including Trolley, Exhaust hood and fans)		
Stock maintenance for the consumables		
Daily cleaning of the utensils as per the cleaning schedule		

Pest control activities		
Nutritional assessment of patient done as required and directed by the doctor		
Hospital has standard procedures for preparation, handling, storage and distribution of diets, as per requirement of patients		
Monthly review of quality indicators		

Fig 4.9: Color Code representation of Checkpoints on the basis of structure.

Here, the qualitative analytical methodology is used to evaluate adherence to governmental directives concerning food services. The status of different indicators and checkpoints was indicated by the colors green, yellow, and red. Green denotes complete adherence to and maintenance of the designated indicator or checkpoint. Red signifies that the checkpoint is not being followed or maintained at all. The color yellow indicates that although the process is being followed, there are certain flaws, and it is not being properly maintained. It is easier to spot regions of compliance and non-compliance using this color-coded scheme. Maintaining the highest levels of patient care and providing the intended dietary services depend on following

these recommendations. The qualitative analysis offers insightful information on areas in need of improvement.

CHAPTER: 5

DISCUSSIONS

This study is centered on evaluating the quality of care provided at Mission Hospital, Durgapur, with a specific focus on the Health Checkup and Dietetics departments.

The National Accreditation Board for Hospitals & Healthcare Providers (NABH) is a highly respected organization in India that sets rigorous standards for healthcare quality and safety. Achieving NABH accreditation means that a hospital adheres to these standardized protocols and best practices, demonstrating its commitment to delivering high-quality care (NABH, 2020). For Mission Hospital, meeting these standards is crucial, especially within the Health Checkup and Dietetics departments, which face unique challenges impacting their service delivery and patient care.

The **Health Checkup Department** at Mission Hospital deals with some issues such as poor patient flow. These problems can lead to decreased patient satisfaction and delays in diagnosing and managing health issues.

The investigation reveals that the Health Checkup Department's Patient Flow Optimization is deficient resulting in greater wait times as compared to the Hospital's Benchmark.

As it is evident from the patient's journey map that most of the waiting time is due to ideal sitting in between the procedures. Moreover, The time slots kept for each of the procedure is also comparatively less as it was seen that the number of technician is also less for the procedures such as USG and ECG. Availability of machines are also less comparative to the number of patients being sent for the test leading to longer queue.

It an attempt to reduce wait times, hospital needs to maximize their machinery inputs and technician staff to avoid chaos and develop efficient patient flow optimization and reduce the waiting times not only for Health Checkup Department but also for other departments such as OPD, IPD and OT procedures.

The **Dietetics Department** plays a pivotal role in recovery of patient and overall health management as well by offering tailored nutritional advice and suggestion. This is done by providing individualized nutritional counseling and guidance. The dietetics department contributes significantly to patient recovery and general health management.

As the real-time monitoring was done in order to identify the gaps occurring to achieve the standard maintenance of protocols. It was evidently seen that the majority of the improvements need to be done on the infrastructural basis, such as insect proof screen

should be used in the kitchen area which is not there at present. Also, a major concern is seen that there is an inefficient drainage system which may cause major issues not only in respect to infrastructural issues but also in terms of hygiene maintenance. Additional to this, staff should be counselled regularly about the importance of hygiene maintenance. Changing external footwear, wearing jewelry such as watches and bracelets should not be worn, and use of gloves and masks should be mandatory while cooking and serving the food to the patients.

These are the basic guidelines which should be maintained. To identify other deficient areas other than these, it is important to gather feedback on a regular basis from larger groups of patients. Understanding the gaps from the patient's perspectives is essential for ensuring a health stay.

CHAPTER: 6

CONCLUSION

The comprehensive assessment of both the Health Checkup and Dietary Departments at Mission Hospital, Durgapur, underscores the crucial role of adherence to NABH standards and the guidelines provided by the Ministry of Health & Family Welfare in ensuring high-quality patient care. The Health Checkup Department revealed specific bottlenecks and delays primarily due to communication gaps and resource constraints, affecting patient flow from arrival to departure.

Despite a strong foundation in maintaining care standards, there is significant potential for enhancing operational efficiency. By implementing targeted interventions such as improved scheduling systems, better communication protocols, and enhanced staffing, and the use of digital platform to store and distribute data in the department can reduce waiting times and hence boost patient satisfaction.

Meanwhile, the Dietary Department demonstrated good adherence to dietary protocols, with patient satisfaction scores reflecting the effectiveness of its nutritional care. However, areas needing improvement were identified, particularly regarding infrastructural requirements such as the layout system for the efficient workflow and the necessity for more effective operational plans and follow-up mechanisms. It is crucial to evaluate the level of care provided in this department by complying with the Ministry of Health and Family Welfare's guidelines.

RECOMMENDATIONS:

FOR HEALTH CHECKUP DEPARTMENT:

- 1) Separate Billing Counter for Health Checkup is recommended to reduce the queue of the patients.

- 2) Scheduling of Patients should be as per time slot so that in a particular slot of time, patients will be screened for USG.
- 3) It would be better to adjust patients for yoga in the time of patients waiting for their Post Prandium test or the waiting period for the report's delivery could be utilized for Yoga training session.
- 4) E-reports or digital transfer of reports would save much of time of both hospital and the patient party and hence will reduce the total service delivery time.
- 5) Consultancy framework in such a way that even if there is urgent requirement of consultant in OT, IPD or emergency, other junior consultant will do the screening so that waiting time will be reduced and patients' satisfaction will also be maintained.

FOR DIETARY DEPARTMENT:

- 1) According to the checkpoints provided by the Ministry of Health and Family Welfare recommendations, it is advised that the Dietary Department's structural elements be improved. To give patients the best care possible, this entails making sure the department's facilities, resources, and infrastructure are up to standard.
- 2) It is advised to implement a reliable system that allows us to routinely get input on the food's quality from a significant number of patients and employees. By using this input, we can make sure that the dietary services continuously satisfy the needs and expectations of all parties involved and pinpoint areas that require improvement.

REFERENCE

1. Six Domains of Healthcare Quality. Agency for Healthcare Research and Quality. Available from: [Six Domains of Healthcare Quality | Agency for Healthcare Research and Quality \(ahrq.gov\)](https://ahrq.gov/six-domains)
2. NABH Book (5th edition).
3. N.Junior Sundresh, Sakhi George, Sunny P Orathel, Sanju Cyriac. A Study on Total Waiting Time with Respect to Preventive Health Check-Up Programme in Tertiary Care Hospital. International Journal of Scientific Research. November 2016.
4. Kannan Vis. A study on optimization of master health checkup process at a multispeciality hospital in Coimbatore. Journal of Advanced Research in Dynamical and Control Systems. January 2017. 9(14):1113-1125.
5. Md. Rifat Uddin, Abdullah Mahmud Showrav, Rifat Jahan, Md. Rahul Amin Tuhin, Md. Imtiaz Khalil Ullah, Md. Mirajbillah and K.M. Bayzid Amin. Patient's Satisfaction Regarding Dietary Service at Tertiary Hospitals. Asian Journal of Medicine and Health. July 2023.
6. Rebecca Wafula, Richard Ayah. Factors associated with patient waiting time at a medical Outpatient Clinic: A case study of University of Nairobi Health Services. International Journal of Innovative Research in Medical Science. December 2021. 6(12):915-918.
7. John Gnanaraj, Rajendra G. Kulkarni, Dibyajyoti Sahoo and B. abhishek. Assessment of the Key Performance indicator Proposed by NABH in the Blood Centre of a Tertiary Health Care Hospital in Southern India". Indian Journal of Hematology and Blood Transfusion. 39(1):3.
8. Ministry of Health and Family Welfare. "Guidelines for modern kitchen and Dietary Services" National Health system Resource Centre 2022.
9. Sailee Bhambere. The Long wait for Health in India". A study of waiting time for patients in a tertiary care hospital in Western India. International Journal of Basic and Applied Research. November 2017.
10. Rashmi Yadav. Reducing Waiting Time of Patients in Outpatient Services of Large Teaching Hospital: A Systematic quality Approach. IOSR Journal of Dental and Medical Sciences. November 2017.
11. Deepak Yaduvanshi, Ashu Sharma, Praful Vijay More. Application of queuing Theory to optimize Waiting Time in Hospital Operations. Operations and Supply Chain Management: An International Journal. 2019.

12. Ayesha Sarwat. The Effects of Waiting Time and Satisfaction among Patients visiting Medical Outpatient Department of a Tertiary Care Hospital Place and Duration of the Study. Dow University of Health Sciences. April 2022.

ANNEXURES 1: Checkpoints as per the Guidelines of Modern Kitch and Dietary Services by Ministry of Health and Family Welfare (Gov. of India).

The checklist, created following the guidelines Of Modern Kitchen and dietary Services from the Ministry of Health and Family Welfare, is detailed below:

(A) TIME FORMAT FOR KITCHEN

TIME	ACTIVITY DONE
6:00 -7:30 AM	Breakfast preparation
7:30 - 08:30 AM	Breakfast distribution
9:30 -11:30 AM	Preparation of lunch
11:30 -12:30 PM	Lunch distribution
2:30 -3:00 PM	Evening tea preparation
3:00 -3:30 PM	Evening tea distribution
4:30 - 6:00 PM	Dinner preparation
7:30 - 8:30 PM	Dinner distribution

(B) EMPLOYEES IN THE ROOM

Designation (as applicable)	Name
Dietician/Asst. Dietician	
Manager Quality and services	
Cook	
Helper	
Others	

(C) CLEANING PROTOCOLS

S.no.	Name of the articles present in the room (Kitchen, no. of utensils	Number	Frequency of cleaning	Material used to clean	Person responsible

	need not be mentioned)				
1	Utensils for cooking				
2	Utensils for serving food				
3	Trolley and utensils for carrying food				

(D) PERFORMANCE CHART

S.No.	Indicators	Previous month	Current Month
1	No. of dinner (night meal) served in the month/[indoor admissions (midnight count)- number of new admissions] X 100		
2	No. of special diets in the month/total no of diets provided in the month X 100 (Enteral foods)		
3	No. of patients from whom feedback was taken on quality of food/total no. of inpatients X100		
4	No. of food sample not approved by dietician/total meals prepared X 100		
5	No. of internal supervisory visits (other than dietary department) taken in month		
6	No. of supervisory visits in which staff was not found to be wearing cap, mask and apron		
7	% of staff vaccinated against enteric diseases in last 6 months		
8	% of staff medically examined in the last 6 months		
9	No. of pest control undertaken in last 6 months		

(E) CHECKLIST FOR MODERN KITCHEN & DIETARY SERVICES

On the basis of structure -

S.No.	Checkpoints	Yes	No	Comments
1	Availability of signage's - Restricted area signage, storage area, cooking area, etc.			
2	The facility displays-			
2.1	Updates duty roster			
2.2	Standard operating procedures			
2.3	Comprehensive diet list containing type of diet			
2.4	FSSAI License/Registration Number of food premises and place Food Safety Display Boards (FSDBs)			
3	dust & other contaminants			
4	The facility has a layout and demarcated areas as per the functions			
4.1	Administrative Area			
4.2	Receiving and Storage Area			
4.3	Preparation, Distribution and Washing Area			
5	The facility ensures safe, comfortable environment and essential infrastructural components			
5.1	The non-structural components in the facility are properly secured (cupboard, cabinets, and hanging object)			
5.2	Floor and Walls of the facility are hard having smooth , easy, to clean surface but not slippery.			
	There should be good slope for water to get out of outlet drainpipe.			

5.3	Windows and other openings are free from accumulated dirt , those which open are fitted with insect-proof screen.			
5.4	The facility has 24*7 supply of water and electricity(with 2 tier backups with ups)			
5.5	Pipe connection of cooking gases , solar water heating system			
5.6	Efficient drainage system			
6	Security arrangements (security personnel , CCTV, etc.)			
7	Complaint box is available / display of tollfree number or 104 for GRS call center			
8	Availability of food trolley			

On the basis of process

S.No.	Checkpoints	Yes	No	Comments
1	Kitchen service is available as per the schedule mentioned in the guidelines			
2	There is defined procedure before entering the main kitchen area			
2.1	Changing of external footwear			
2.2	Changing of clothes and wearing uniforms			
2.3	Washing hands			
2.4	No jewelry/ watch should be worn in hands by the cook or service staff when on duty			
3	Immunization and regular screening of the staff for any diseases			
4	Random check provided by dietician on taste and quality of food being served to the patients			
5	Dietary plan by the dietician to be documented in the IP case file a patient			
6	Segregation of different category of waste as per guidelines			
7	There is a procedure dis-infection of			
7.1	General items & equipment			

7.2	Disposable items			
8	There is an establish procedure for documentation & and reporting of various activities on daily basis of the following-			
8.1	Each procedure as per SOP			
8.2	Each cycle should be done			
8.3	Maintenance and functionality of utensils(including Trolley, Exhaust hood and fans)			
8.4	Stock maintenance for the consumables			
8.5	Daily cleaning of the utensils as per the cleaning schedule			
8.6	Pest control activities			
9	Nutritional assessment of patient done as required and directed by the doctor			
10	Hospital has standard procedure for preparation , handling storage and distribution of diets, as per requirements of patients			
11	Food is being serve with humility to the patients			

On the basis of Outcome –

S.No.	Checkpoints	Comments
1	Diet prepared for the number of patients per day	
2	Special diet prepared for the number of patients per day	
3	Monthly review of Quality indicators	
4	No. of rounds by the dietician in the ward per day	
5	No. of the trained staff out of total staff	

(F) ROLE AND RESPONSIBILITIES FOR KITCHEN –

S.No.	Important Checklist	Person responsible
1	Overall, in-charge of the kitchen and dietary services	Dietician/Assistant Dietician

1.1	Taking daily rounds of the wards, interaction with the admitted patients	
1.2	Preparing menu plan for dietary services particularly of those who have been prescribed therapeutic diet	
1.3	Inspect meals served for conformance to prescribe diets and standards of palatability and appearance.	
1.4	Monitor food service operations	
1.5	Maintain and physically verify the store	
1.6	Address complains relating to quality of the food or services	
1.7	Involvement in planning and designing of kitchen and equipment	
1.8	Member for diet related tender committee	
2	Supervise the work of the kitchen support staff	Cook
2.1	Preparing food as per the dietary plan/menu given by the dietician	
2.2	Check wastage and spoilage of food	
2.3	Care and maintenance of the equipment	
2.4	Maintain safety standards, hygiene, and conformance to nutritional and quality during food preparation	
2.5	Ensure timely service of meals	
3.	Receive weigh/check, store and maintain record of supplies	Head Cook
4	Physical verification of the store to be done every fortnight.	
5	Carry out any other duty that may be assigned by the head cook from time to time	
6	Disposal of garbage as per the defined protocol	Cleaning staff
7	Cleaning, mopping, and scribing of floors and walls	
7.1	Thorough cleaning of utensils	
7.2	Stacked and returned the utensils to the storage area	
7.3	Other assigned cleaning	
8	Ensuring tender with quality check	Hospital Manager
8.1	Analysis and review of patient feedback	

REGISTERS/RECORDS –

S.No.	Name of the Register	Key information recorded in the Register	Frequency of updating	Person Responsible	Supervisor
1	Stock and Issue register				
2	Pest control register				
3	Staff attendance register				
4	Daily cleaning checklist of different sections of kitchen				
5	Personal hygiene & medical record checklist of staff				
6	Electrical & civil complaint register				
7	Daily diet sheets & diet Summary of wards				
8	Staff training register				
9	Daily duty registers of staff				
10	Equipment Maintenance				
11	Daily exhaust and Hood cleaning				

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