

Enhancing Operational Efficiency and Financial Stability in Tulip Hospital: A Data-Driven Approach

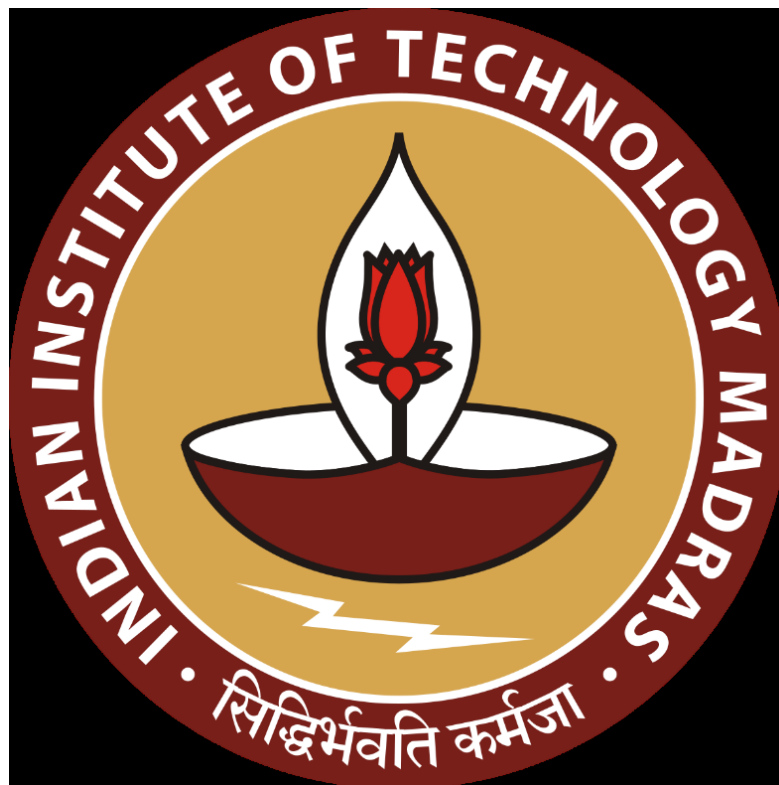
A Proposal report for the BDM capstone Project

Submitted by

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Contents

1. Executive Summary and Title	3
2. Organization Background	3-4
3. Problem Statement	4
• Problem statement 1	4
• Problem statement 2	4
• Problem statement 3	4
4. Background of the Problem	4-5
5. Problem Solving Approach	5-6
6. Expected Timeline	6-7
7. Expected Outcome	7

Declaration Statement

I am working on a Project Title “Enhancing Operational Efficiency and Financial Stability in Tulip Hospital: A Data-Driven Approach” . I extend my appreciation to Tulip Hospital for providing the necessary resources that enabled me to conduct my project.

I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered through primary sources and carefully analyzed to assure its reliability.

Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

I am dedicated to adhering to the information of academic honesty and integrity, and I am receptive to any additional examination or validation of the data contained in this project report.

I understand that the execution of this project is intended for individual completion and is not to be undertaken collectively. I thus affirm that I am not engaged in any form of collaboration with other individuals, and that all the work undertaken has been solely conducted by me. In the event that plagiarism is detected in the report at any stage of the project's completion, I am fully aware and prepared to accept disciplinary measures imposed by the relevant authority. I agree that all the recommendations are business-specific and limited to this project exclusively, and cannot be utilized for any other purpose with an IIT Madras tag. I understand that IIT Madras does not endorse this.



Signature of Candidate: **(Digital Signature)**

Name: Shubh Bhaskar

Date: 05/04/2024

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Executive Summary

Tulip Hospital, located in Sonipat, Haryana, is a prominent healthcare facility in the region, offering comprehensive medical services to both B2B and B2C clients. Tulip Hospital has steadfastly pursued its vision of delivering top-notch healthcare at affordable rates, backed by a dedicated team of seasoned medical professionals.

The hospital faces significant challenges in accurately tracking billable hours for doctors, attributing procedures across departments, managing varying patient influx, and addressing cash flow issues. These problems hinder operational efficiency, resource allocation, and financial stability, necessitating immediate attention for sustainable growth and quality healthcare provision.

To tackle these issues, a data-driven approach comprising data analysis and root cause analysis will be employed. By meticulously conducting RCA and analysing historical records related to Patients in each month over a period of one year ,billing(credit and cash) and attribution of procedures to doctors in different departments ,targeted interventions will be devised to improve data management, enhance resource allocation strategies,address cash flow constraints, and increase employee satisfaction. These solutions aim to optimize operational processes, ensure efficient service delivery, and foster long-term sustainability.

Organizational Background

The project focuses on a hospital located in Sonipat,Haryana. The business is B2B and B2C and is a part of the healthcare service industry.Tulip Hospital emerged from the amalgamation of seasoned Physicians, Gynaecologists, and Surgeons, leveraging decades of collective expertise from Dr. Sethi's Amar Hospital, established in 1961 in Kharkhoda.

Since its inception in 2013, Tulip Hospital has been steadfast in its vision of delivering world-class healthcare at affordable rates, emphasizing illness prevention, health promotion, and disability elimination. With two units—a 100-bed state-of-the-art facility in Sonipat and a 65-bed setup in Kharkhoda—the hospital caters to diverse healthcare needs.

Upholding core values of Quality Care, Commitment, Ethics, Empathy, and Teamwork, Tulip Hospital fosters continuous growth. Bolstered by a highly qualified medical and administrative team, alongside expert consultants across specialties, the organization prioritizes ensuring high-quality, reliable healthcare services for all patients.

Problem Statement

1. To improve the efficiency of the existing system/process that tracks billable hours for the doctors and attributes procedures to different doctors across departments .
2. To optimize management of varying patient influx throughout the year in the hospital.
3. To identify the causes of cash flow issues faced by the hospital administration.

Background of the Problems

Inaccurate Tracking of Billable Hours and Procedure Attribution: The hospital faces difficulties in accurately tracking billable hours and attributing procedures to specific doctors across departments. This leads to dissent from doctors pertaining to discrepancies in the billing done by the hospital for the procedures they perform. Some Inconsistent billing and procedure attribution impacts resource allocation and individual doctor performance assessment, affecting operational efficiency and patient care quality.

Varying Patient Influx: The hospital experiences variations in patient influx, leading to challenges in resource allocation and capacity planning. The unpredictable patient flow

complicates financial forecasting and operational management. Some periods see strain on resources and infrastructure, affecting service delivery and patient satisfaction, while some periods result in underutilized capacity.

Cash flow issues: The hospital faces shortage in cash inflows . Insufficient cash reserves hinder day-to-day operations, leading to delays in bill payments and purchasing essential supplies. Addressing this is crucial for ensuring financial stability, operational continuity, and quality healthcare provision.

Internal problems

The internal problem in the chosen organization is the inefficient data collection and management , varying patient influx, and cash flow issues

External Problems

The hospital faces no external problems that align with our project objectives.

Problem Solving Approach

- **Data Analysis**

Data analysis plays a crucial role in identifying patterns, trends within the hospital's data. By analyzing historical billing records, patient flow data, and financial records , we will try to gain insights into the root causes of the identified problems and suggest solutions for improvement. For the inaccuracies in tracking billable hours and procedure attribution, data analysis can help identify common errors or inconsistencies in documentation practices. By analyzing billing records and patient records we will identify trends and patterns that could indicate areas for improvement in the data management process undertaken by the hospital. In the case of variation in patient influx, data analysis can help identify peak and off-peak periods of patient demand. By analyzing historical patient data and seasonal trends, we will suggest ways to manage those variations more effectively. This will improve resource allocation decisions and capacity planning strategies to better accommodate fluctuations in patient volume. Regarding the cash flow issues, data analysis can help identify trends in cash flow patterns and credit payments. By analyzing

payment records, we will calculate the cash to credit ratio of the hospital and compare it to industry benchmark and suggest strategies to improve liquidity.

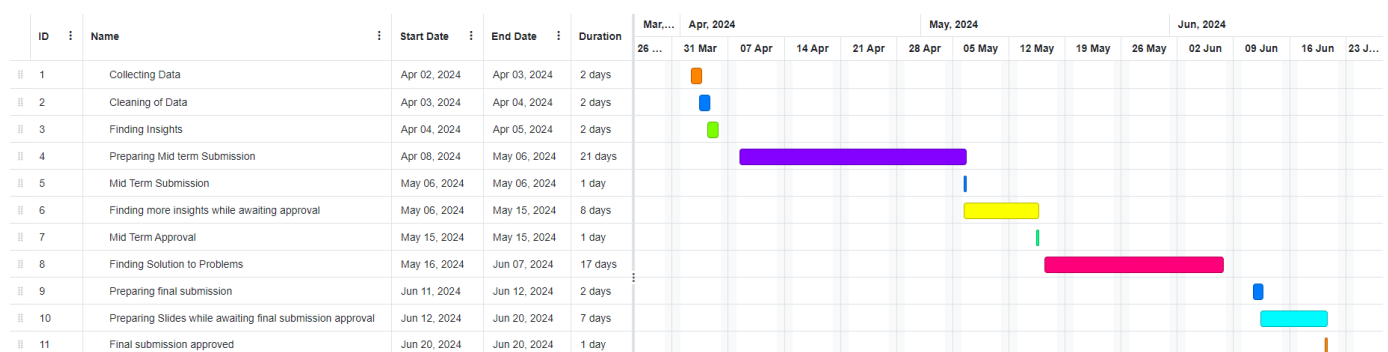
- **Root Cause Analysis (RCA)**

Root cause analysis (RCA) is a systematic approach to identifying the underlying causes of problems and developing effective solutions to address them. By conducting RCA for the identified problems, We will identify the root causes of inaccuracies in tracking billable hours and procedure attribution, variation in patient influx, and cash flow issues. For inaccuracies in tracking billable hours and procedure attribution, RCA may reveal underlying issues. By addressing these root causes we will suggest targeted solutions to improve data accuracy. Regarding variation in patient influx, RCA may uncover factors which leads to inadequate capacity planning, and inefficient resource allocation. By identifying these root causes we will suggest strategies to better anticipate and respond to changes in patient demand, ensuring optimal resource utilization and patient satisfaction. For the cash flow issues, RCA may reveal factors that put the hospital in a cash flow crunch. By identifying these root causes, we will suggest measures to improve cash flow. Data analysis, and RCA will be utilized to develop effective solutions for addressing the identified problems.

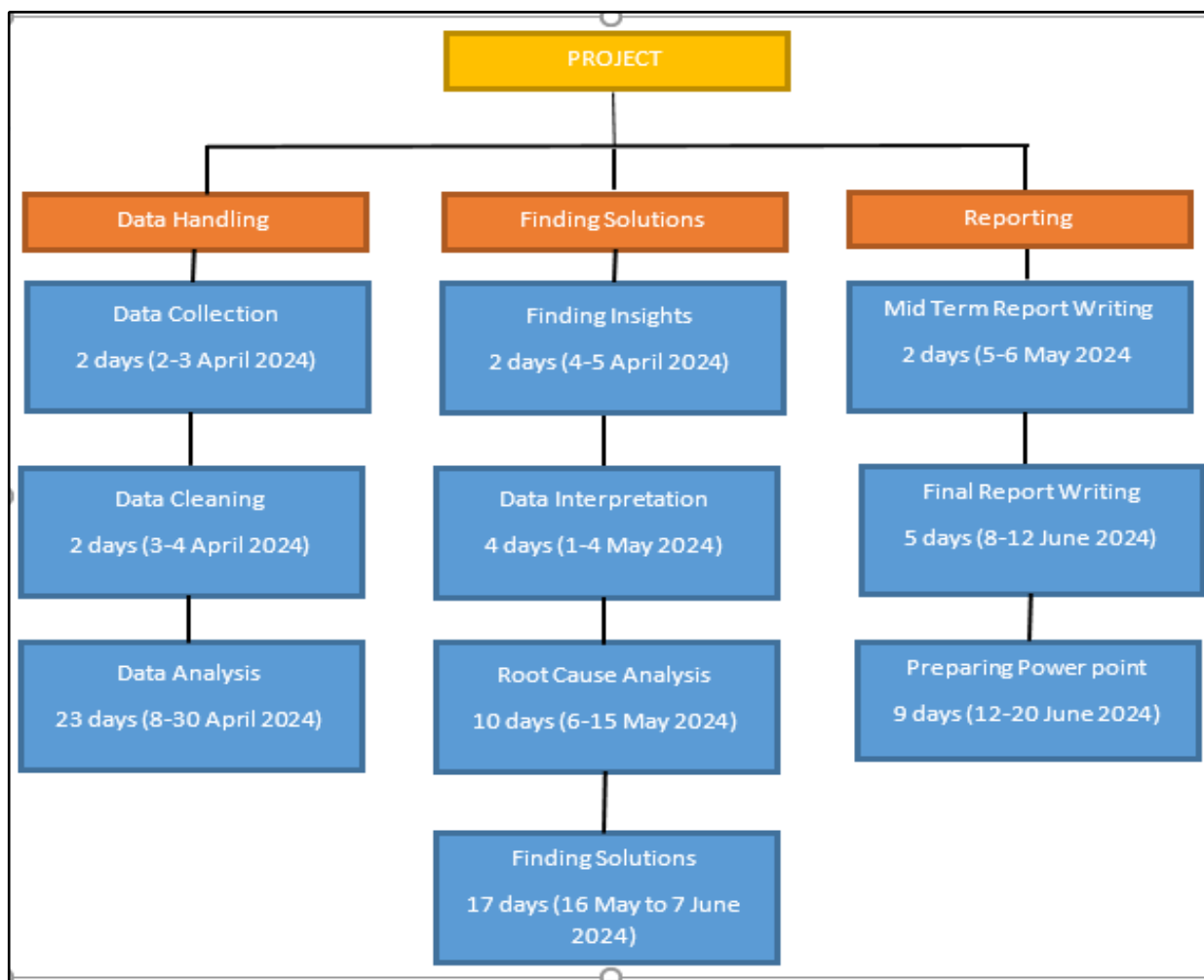
Through collaborative open ended probing, data analysis, and systematic RCA, we will identify targeted interventions to drive improvements in operational efficiency, financial management, and patient care quality

Expected Timeline

GANTT CHART



WORK BREAKDOWN STRUCTURE



Expected Outcome

The expected outcome of this project is to implement targeted interventions that address the identified internal problems within the hospital, including inaccurate tracking of billable hours and procedure attribution, varying patient influx, and cash flow issues. By leveraging data analysis and root cause analysis methodologies, the project aims to enhance operational efficiency, financial management, and patient care quality. Through improved data management practices and strategic resource allocation, the hospital can realize a reduction in billing discrepancies, better capacity planning to handle fluctuations in patient volume, and enhanced liquidity to ensure smooth day-to-day operations. Ultimately, these interventions are expected to lead to a more streamlined and effective healthcare delivery system, resulting in increased satisfaction among both medical staff and patients.