

## 1. Executive Summary

- HealthFirst Care aims to improve operational efficiency due to rising patient complaints.
- The analysis focused on appointment scheduling delays and communication inefficiencies.
- Stakeholder insights were gathered and categorized based on influence and interest.
- Process inefficiencies were mapped through As-Is and To-Be diagrams.
- Data analysis showed peak congestion times, low resource utilization, and patient dissatisfaction.
- Recommendations include automation, improved dashboards, and enhanced training programs.

## 2. Introduction

HealthFirst Care Hospital is addressing an increase in patient complaints related to operational inefficiencies.

This analysis investigates the current challenges in appointment scheduling and communication, identifies gaps using stakeholder feedback and data analytics, and proposes data-driven solutions for sustainable improvement.

## 3. Business Objectives

- Reduce average patient wait times by 20%.
- Improve communication flow between departments.
- Increase scheduling efficiency through automation.
- Enhance stakeholder visibility with dashboards.
- Improve patient satisfaction scores by 15%.

## 4. Business Requirements Document (BRD)

Problem Statement:

Patients experience long wait times and inconsistent communication due to manual appointment systems.

Key Requirements:

- Real-time scheduling notifications.

- Centralized patient and resource data.
- Automated workflow alerts.

Constraints:

- Limited IT staff.
- Budget restrictions.
- Integration with legacy systems.

Acceptance Criteria:

- System must reduce wait times by 20%.
- Notifications must reach 95% of patients.
- Dashboards must be accessible to all departments.

5. Requirements Traceability Matrix (RTM)

Requirement ID	Description	Priority	Stakeholder
Project Objective	Related Data File	Status	
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RQ01	Real-time appointment notifications	Must Have	Admin & IT Teams
	Reduce wait times and complaints		appointment_data.csv
	Proposed		
RQ02	Dashboard for resource tracking	Should Have	Ops Manager
	Improve visibility and planning		resource_data.csv
	Planned		
RQ03	Feedback integration module	Could Have	Service Quality
	Understand patient satisfaction		feedback_data.csv
	Planned		

6. Stakeholder Analysis and Engagement Plan

Stakeholders: Hospital Admin, IT Department, Front Desk Staff, Medical Staff, Patients.

Influence/Interest Matrix:

- Key Players: Hospital Admin, IT Department.
- Keep Satisfied: Medical Staff.
- Keep Informed: Front Desk Staff.
- Monitor: Patients.

Engagement Strategies:

- Regular meetings with Admin and IT.
- Monthly updates for medical staff.
- Newsletters for front desk and patients.

Communication Strategies:

- Dashboards, email updates, feedback loops, live briefings.

## **7. Scope Management Plan**

In Scope:

- Automating appointment scheduling.
- Developing notification systems.
- Creating dashboards for feedback and resource tracking.

Out of Scope:

- Building new hospital infrastructure.
- Hiring additional staff.

Assumptions:

- Existing IT infrastructure supports upgrades.
- Staff available for training.

Constraints:

- Budget and legacy system limitations.

WBS Phases:

- Requirements Gathering > Design > Development > Testing > Deployment.

Scope Change Management:

- Submit request > Assess impact > Steering committee decision > Document change.

## 8. Process Mapping

As-Is Process:

- Patient requests appointment > Manual entry > Long wait > Missed communication.

To-Be Process:

- Patient requests > System auto-confirms and schedules > Notifications sent > Real-time updates on portal.

## 9. Advanced Process Mapping

Includes BPMN with Swimlanes for:

- Patients, Admin Staff, and IT.
- Shows parallel flows, gateways for “reschedule required?” decisions, and automated notifications.

## 10. Data Analysis

- Peak appointment times were between 9:00 AM–11:30 AM and 2:00 PM–4:00 PM.
- Resource utilization was below 60% on average across departments.
- Patients frequently left negative comments about wait time and rescheduling confusion.
- Feedback patterns indicated repeated complaints about delays and lack of clarity.

## 11. Data Visualization

- Line Chart: Patient visit trends show cyclical peaks on Mondays and Fridays.
- Bar Chart: Administrative staff had higher resource idle times.
- Pie Chart: Feedback sentiment shows 40% negative, 45% neutral, 15% positive.
- Heatmap: Department efficiency varies with lowest in general outpatient and highest in radiology.

## 12. Risk Assessment Plan

Key Risks:

- Staff resistance to change.

- Integration delays with legacy systems.
- Budget constraints.

Assessment Matrix (Impact vs Likelihood):

- High: Integration delays (High Impact, Medium Likelihood)
- Medium: Staff resistance (Medium Impact, High Likelihood)
- Low: Budget overrun (Medium Impact, Low Likelihood)

### **13. Risk Mitigation Plan**

Mitigation Strategies:

- Provide training and change support for staff.
- Allocate buffer time for system testing.

Contingency Plans:

- Use manual backup if systems fail during transition.
- Rollout new features in phases.

Risk Prioritization:

- Address system integration and staff engagement first.

### **14. Key Findings**

- Long wait times correlated with manual processes and high appointment volumes.
- Resource data shows underutilization despite staffing availability.
- Feedback highlights need for better patient communication.

### **15. Key Recommendations**

- Implement automated appointment and notification system.
- Develop real-time dashboards for operations and feedback.
- Train staff in digital tools and communication workflows.
- Conduct quarterly audits and updates for improvement.

## 16. Conclusion

The analysis identified process inefficiencies at HealthFirst Care that significantly impact patient experience and operations. Key improvements include automation, better data use, stakeholder engagement, and risk mitigation. Implementing the recommendations will enhance service quality and operational resilience.