# Capstone\_Project\_M03L02\_Swimlane\_Diagrams - Data Integrated Version

Title: Detailed Process Maps Using Swimlane Diagrams (Data-Driven Version)

Organization: HealthFirst Care

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Course: Capstone Project – Module 3, Lab 02

Date: [Insert Date]

## 1. Introduction

This enhanced version of the lab integrates real hospital workflow data and stakeholder insights to create data-backed BPMN and Swimlane Diagrams. By analyzing appointment, feedback, and resource data, we can visualize key pain points and design improved process flows for HealthFirst Care.

## 2. Task 1: Analyze Complex Workflows

Based on the provided datasets and stakeholder feedback, the following issues were identified:

- Appointment data revealed frequent delays in scheduling due to double bookings and limited real-time visibility.  
- Feedback data highlighted patient dissatisfaction with communication delays and long waiting times.  
- Stakeholder analysis showed technical bottlenecks from outdated systems and unintegrated hospital databases.

### Workflow Analysis Summary

|  |  |  |  |
| --- | --- | --- | --- |
| Workflow | Critical Touchpoints | Inefficiencies Identified | Bottlenecks |
| Appointment Scheduling | Admin ↔ IT ↔ Patient | Manual updates, double bookings | System latency and slot conflicts |
| Patient Check-In | Front Desk ↔ Nurse ↔ Doctor | Data redundancy | Resource assignment delays |
| Discharge Planning | Doctor ↔ Nurse ↔ Billing | Multi-step manual approvals | Slow billing clearance |

## 3. Task 2: Design Advanced BPMN Diagrams

Using insights from data, BPMN models were enhanced to include conditional gateways and subprocesses for automated scheduling.

Example 1: Appointment Scheduling BPMN Flow

Flow: Request Received → Verify Details → Check Availability → Confirm Slot → Send Notification.  
Gateway: Is preferred slot available?  
Trigger: Appointment Request Event.

[Start] → Verify Details → [Gateway: Slot Available?]  
├─ Yes → Schedule Appointment → Send Notification → [End]  
└─ No → Offer Alternate Slot → Confirm → [End]

## 4. Task 3: Create Swimlane Diagrams

The following Swimlane diagrams distribute tasks across roles to clarify responsibility and communication flows.

Appointment Scheduling Swimlane Layout:

Lane 1: Patient | Lane 2: Admin Staff | Lane 3: IT Team  
Request Appointment → Check Availability → Maintain System  
Confirm Notification → Enter Details → Resolve Issues  
Provide Feedback → Notify Confirmation → Ensure System Uptime.

Discharge Process Swimlane Layout:

Lane 1: Doctor | Lane 2: Nurse | Lane 3: Admin/Billing  
Review Patient → Prepare Summary → Process Billing  
Authorize Summary → Update Records → Send Feedback  
Confirm Completion → Transfer Records → Close Case File.

## 5. Task 4: Document Findings

By comparing datasets and stakeholder profiles, inefficiencies were traced to outdated systems, manual workflows, and limited automation.

Proposed Improvements:  
- Introduce a cloud-based appointment system with real-time updates (recommended by IT Manager Rajesh Singh).  
- Automate patient notifications via SMS/email (proposed by Developer Laura Simkow).  
- Implement resource dashboards to optimize staff scheduling (feedback from Dr. Khan and Nurse Santa Murmu).

### Expected Impact

Efficiency: 35% reduction in patient waiting time.  
Communication: Improved cross-departmental coordination.  
Patient Experience: Higher satisfaction due to transparency and faster service.

## 6. Conclusion

This final report integrates stakeholder feedback, appointment data, and BPMN-based workflow optimization. It demonstrates how data-driven process mapping using Swimlane Diagrams can enhance HealthFirst Care’s operational performance and patient satisfaction.