# Streamlining Multi-Departmental Coordination for Timely Healthcare Facility Launch

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*Abstract* — *This paper addresses the formidable challenge of establishing a new primary care facility in response to the healthcare needs of a 5,000-member community in Florida within a stringent one-year timeframe. The synchronization of ten internal key departments is crucial for delivering a fully operational healthcare facility to the operations department. These departments encompass Legal, Infrastructure, Licensing, Insurance, Purchasing, Infrastructure Technology (Hardware and Software), Human Resources, Operations, Credentialing, and Facilities. To tackle this challenge effectively, the requirement phase of the Waterfall project management methodology was employed. This approach was used to gather information to develop a detailed project plan that facilitated efficient coordination among the departments. The critical path identified in the project plan is: Location Selection, Letter of Intent, Lease, City Permit, Construction, and Opening Day. Any delays in these stages will significantly affect the project's timeline.*

*Key Terms* — *Waterfall Methodology, Healthcare Facility, Project Management Methodologies, Synchronization.*

## INTRODUCTION

In response to the growing healthcare needs of a membership of 5,000 patients in Florida, an insurance company hired a healthcare provider to establish a new primary care facility within a year. The healthcare provider is responsible for offering this membership primary care services. For this to happen, the healthcare provider needs to orchestrate the synchronization of ten internal key departments to deliver a fully functional healthcare facility. This facility is ultimately delivered to the Operations department.

This project does not involve the day-to-day operations of the facility. The project does involve all the tasks needed to deliver a fully functional primary care facility to the operations department. The departments involved in the delivery of a fully functional facility are Infrastructure, Licensing, Insurance, Purchasing, Infrastructure Technology (Hardware and Software), Human Resources, Operations, Credentialing, and Facilities.

The space normally needed for a primary care facility is 4,500 square feet. It needs to be in an accessible area to the members like a medical building that complements the primary care services of this new facility. The facilities within the building need to be newly constructed and no second-generation healthcare centers can be used as an option. The new facility services involve family medicine and primary care services, including annual checkups, health screenings, women's health, men's health, and vaccinations.

Synchronizing the efforts of ten distinct departments to collectively accomplish the establishment of a fully operational primary care facility within the constraints of a one-year timeframe represents a challenge. This requires adeptly managing interdependencies, reconciling disparate priorities, and optimizing resource allocation, all while upholding regulatory compliance and ensuring consistent adherence to quality standards.

In response to this challenge, the aim was to develop a comprehensive project plan that intricately outlines all activities and their corresponding timelines and tasks per department, facilitating the efficient and coordinated launch of the new primary care center within the challenging timeframe.

## LITERATURE REVIEW

Project management methodologies (PMM) are a vital component in the effective planning of projects. There is no exact demarcation of what would be considered a project management methodology. Nonetheless, utilizing a PMM ensures a standardized framework to secure timely project completion within budget and while maintaining uniformity across operations. In addition, the adoption of a PMM yields work processes that are more efficient and effective while aiding in the recognition and management of risks and difficulties, among other benefits [1].

PMMs have been classified into five distinct tiers: Level 1 encompasses widely recognized best practices, standards, and guidelines, exemplified by the Project Management Institute's Body of Knowledge. At Level 2, sector-specific methodologies take center stage, addressing the unique demands of industries like construction. Level 3 revolves around organization-specific customized methodologies, often adapted from broader industry methods. Level 4 delves into methodologies tailored for individual projects within an organization, while Level 5 pertains to meticulously crafted methodologies for singular, one-of-a-kind projects [1].

The Waterfall project management methodology is a well-known and used PPM that belongs to the Level 1 tier [1]. The Waterfall methodology, introduced by Dr. Winston Royce, is a traditional plan-driven approach to software development that follows a linear sequence of phases [2]. In general, the Waterfall approach has been found to be unsuitable for small projects and has similar drawbacks for medium term projects. However, for large, complex projects that involve multiple teams working concurrently in different aspects, the Waterfall methodology is more suitable due to its well-defined phases, rigorous documentation, and meticulous control processes, ensuring greater coordination throughout the project's lifecycle [2] – [3].

Waterfall project management is employed in scenarios necessitating a sequential and linear progression of steps. This methodology is particularly advantageous when crafting a solution design to traverse from point A to point B through a well-defined series of sequential steps aimed at achieving a specific goal. Given the inherently linear nature of this approach, any deviations or delays introduced can significantly impact the project's timeline. This methodology has five phases: requirements phase, design phase, implementation phase, testing/verification phase, and maintenance phase [4] – [5].

The Requirements Phase is the initial planning stage of a project, vital in the waterfall model. It involves thorough information gathering to ensure project success. A detailed project plan, also known as a project requirements document, is created, specifying project phases, team responsibilities, dependencies, necessary resources, and stage timelines. This phase consumes a significant portion of the project timeline. This phase will be the focus of this project [4].

## METHODOLOGY

The project focused on the initial phase of the Waterfall methodology, which is the requirements gathering stage. During this stage, a meticulous effort was dedicated to accumulating comprehensive information to ensure the project's success. To collect the necessary information for developing the project plan, as stipulated in the requirement phase, the following methodology was adopted:

- Step 1: Interviews and Task Analysis. The process began by engaging with each department lead to comprehending the tasks they managed. A one-hour interview was scheduled with each department lead. During this time, information was gathered to identify tasks, task duration, the interconnections between tasks, and the necessary resources.
- Step 2: Defining Interdependencies. Following the interviews, the focus shifted to outlining how tasks across departments were linked. This

helped create a clear picture of how different departments relied on one another.

- Step 3: Creating the Project Plan. Next, a comprehensive project plan was developed. This plan incorporated the insights gained from the interviews and interdependency analysis. It provided a roadmap for the project's execution.
- Step 4: Identifying the Critical Path. Within the project plan, the critical path was pinpointed – the sequence of tasks that determined the project's timeline. This allowed for prioritizing tasks that had the most significant impact on the project's success.
- Step 5: Validation and Finalization. In the last phase, a return was made to the department leaders. The project plan was presented, seeking their input and final approval. This step ensured alignment between the plan and the actual operational processes.

## RESULTS

A comprehensive project plan was developed to encompass the tasks and subtasks performed by the 10 key departments. The project plan was designed to unfold over a one-year timeline. Table 1 presents the identified tasks, including their respective durations, per department. The dates used for the exercise was the calendar year 2024.

**Table 1**
**Comprehensive Project Plan**

| Task Name | Days | Start Date | End Date |
|---|---|---|---|
| Infrastructure | 45 | 01/01/24 | 02/15/24 |
| Select Location | | | |
| *Identify* | 45 | 01/01/24 | 02/15/24 |
| *Review* | | | |
| *Approved* | | | |
| Legal | 60 | 02/15/24 | 04/15/24 |
| Letter of Intent | | | |
| *Draft* | | | |
| *Sent to LL* | 30 | 02/15/24 | 03/16/24 |
| *Received from LL* | | | |
| *Signed* | | | |
| Lease | | | |
| *Draft* | | | |
| *Sent to LL* | 30 | 03/16/24 | 04/15/24 |
| *Received from LL* | | | |
| *Signed* | | | |

| Task Name | Days | Start Date | End Date |
|---|---|---|---|
| Infrastructure - Medical Center Design | 70 | 02/15/24 | 04/25/24 |
| Architect Selection | 50 | 02/15/24 | 04/05/24 |
| *Market research* | 20 | 02/15/24 | 03/06/24 |
| *Receive proposals* | 20 | 03/06/24 | 03/26/24 |
| *Compare chart* | 1 | 03/26/24 | 03/27/24 |
| *Final Revision* | 2 | 03/27/24 | 03/29/24 |
| *Select architect* | 2 | 03/29/24 | 03/31/24 |
| *Sign contract* | 5 | 03/31/24 | 04/05/24 |
| Construction Document (CD) | 40 | 03/16/24 | 04/25/24 |
| *Siti Visit* | 1 | 03/16/24 | 03/17/24 |
| *Design Develop* | 15 | 03/17/24 | 04/01/24 |
| *Design Approved* | 10 | 04/01/24 | 04/11/24 |
| *100% CD* | 14 | 04/11/24 | 04/25/24 |
| Infrastructure - Construction | 246 | 04/25/24 | 12/27/24 |
| City Permit | 81 | 04/25/24 | 07/15/24 |
| *Submit* | 1 | 04/25/24 | 04/26/24 |
| *Approve* | 80 | 04/26/24 | 07/15/24 |
| GC Selection | 50 | 03/26/24 | 05/15/24 |
| *Market research* | 30 | 03/26/24 | 04/25/24 |
| *Prepare RFP* | 5 | 04/25/24 | 04/30/24 |
| *Sent RFP* | 1 | 04/30/24 | 05/01/24 |
| *Received Bids* | 2 | 05/01/24 | 05/03/24 |
| *Comparison chart* | 3 | 05/03/24 | 05/06/24 |
| *Select General Contractor (GC)* | 4 | 05/06/24 | 05/10/24 |
| *Sign GC* | 5 | 05/10/24 | 05/15/24 |
| Construction | 165 | 07/15/24 | 12/27/24 |
| *Mobilization* | 5 | 07/15/24 | 07/20/24 |
| *Demolition* | 10 | 07/20/24 | 07/30/24 |
| *Construction* | 130 | 07/30/24 | 12/07/24 |
| *Signage* | 10 | 12/07/24 | 12/17/24 |
| *Punch List* | 10 | 12/07/24 | 12/17/24 |
| *Final Inspection* | 10 | 12/07/24 | 12/17/24 |
| *Certificate of Occupancy* | 10 | 12/17/24 | 12/27/24 |
| Insurances | 256 | 04/15/24 | 12/27/24 |
| General Liability | 45 | 04/15/24 | 05/30/24 |
| Builder Risk | 5 | 05/15/24 | 05/20/24 |
| Property Insurance | 45 | 11/12/24 | 12/27/24 |
| Malpractice Insurance | 45 | 11/12/24 | 12/27/24 |
| Licenses | 165 | 07/15/24 | 12/27/24 |
| Medical Licenses (AHCA, CLIA, HCCE) | 165 | 07/15/24 | 12/27/24 |
| Purchasing | 316 | 02/15/24 | 12/27/24 |
| Item Specification | | | |
| *Utilities* | | | |
| *Waste Management* | | | |
| *Shedder Company* | | | |
| *Internet Connection* | 120 | 02/15/24 | 06/14/24 |
| *Cleaning Services* | | | |
| *Pest Control* | | | |
| *Minor Equipment* | | | |
| *Signage* | | | |
| *Furniture* | | | |

A high-level Gantt chart of the project plan is depicted in Table 2. The interdependencies among the departments are illustrated in Figure 1. The initial step in the project involves identifying a location, followed by sending the letter of intent. The lease phase proceeds concurrently with the design of the construction documents. Once both phases are completed, the city permit is submitted, and the process of selecting the general contractor commences. After the city permit is approved, construction begins. The opening day of the new facility is projected for two weeks after construction culmination. The procurement of items initiates upon the completion of the construction documents. Additional tasks and subtasks are performed throughout the project but are not part of the critical path. The critical path is highlighted in red in Figure 1.

| Task Name | Days | Start Date | End Date |
|---|---|---|---|
| *Medication* | | | |
| *Office Supplies* | | | |
| *Medical Supplies* | | | |
| Vendor Evaluation & Negotiation | 60 | 06/14/24 | 08/13/24 |
| Items Delivered | 15 | 12/12/24 | 12/27/24 |
| Infrastructure Technology | 165 | 07/15/24 | 12/27/24 |
| Medical Security | 165 | 07/15/24 | 12/27/24 |
| *Requirements* | 45 | 07/15/24 | 08/29/24 |
| *Access points* | 45 | 07/15/24 | 08/29/24 |
| *Panic Botton* | 45 | 07/15/24 | 08/29/24 |
| *Camaras* | 45 | 07/15/24 | 08/29/24 |
| *Alarms* | 45 | 07/15/24 | 08/29/24 |
| *Installation & Configuration* | 30 | 11/27/24 | 12/27/24 |
| IT Specification | | | |
| *Printer* | | | |
| *Laptop* | | | |
| *Accessories* | 30 | 07/15/24 | 08/14/24 |
| *Phones* | | | |
| *Fax* | | | |
| *Antivirus* | | | |
| *Office 365* | | | |
| Internet Connection | 90 | 09/28/24 | 12/27/24 |
| *Evaluation* | 60 | 09/28/24 | 11/27/24 |
| *Installation* | 30 | 11/27/24 | 12/27/24 |
| Electronic Medical Records | | | |
| *Facility Creation* | | | |
| *Fax Line* | | | |
| *Laboratory interphase* | | | |
| *Provider Set-up* | 65 | 10/23/24 | 12/27/24 |
| *Imaging Interface Request* | | | |
| *Card reader configuration* | | | |
| *Insurance plans configuration* | | | |
| *Configuration* | | | |
| Human Resources | 120 | 08/29/24 | 12/27/24 |
| *Supervisor* | 45 | 11/12/24 | 12/27/24 |
| *Medical Doctor* | 60 | 08/29/24 | 10/28/24 |
| *Nurse Practitioner* | 45 | 11/12/24 | 12/27/24 |
| *Medical Assistance* | 30 | 11/27/24 | 12/27/24 |
| *Administrative Assistance* | 30 | 11/27/24 | 12/27/24 |
| Credentialization | 60 | 10/28/24 | 12/27/24 |
| Operations | 15 | 12/12/24 | 12/27/24 |
| *Call center readiness* | | | |
| *Laboratory Set Up* | 15 | 12/12/24 | 12/27/24 |
| *Administrative Process* | | | |
| Facility | 15 | 12/12/24 | 12/27/24 |
| Set up clinic | 15 | 12/12/24 | 12/27/24 |
| Opening Day | 1 | 12/27/24 | 12/27/24 |

**Table 2**
**High Level Gantt Chart of Project Plan**

| Task Name | Months (Year - 2024) | | | | | |
|---|---|---|---|---|---|---|
| | Jan - Feb | Mar - Apr | May - Jun | Jul - Aug | Sep - Oct | Nov - Dec |
| **Infrastructure** | | | | | | |
| Select Location | ■ | | | | | |
| **Legal** | | | | | | |
| Letter of Intent | ■ | | | | | |
| Lease | | ■ | | | | |
| **Infrastructure - Medical Center Design** | | | | | | |
| Architect Selection | | ■ | | | | |
| Construction Document | | ■ | | | | |
| **Infrastructure Construction** | | | | | | |
| City Permit | | | ■ | ■ | | |
| GC Selection | | ■ | | | | |
| Construction | | | | ■ | ■ | ■ |
| **Insurances** | | | ■ | | | |
| **Licenses** | | | | ■ | | |
| **Purchasing** | | ■ | ■ | | | |
| Item Specification | | ■ | ■ | | | |
| Vendor Evaluation & Negotiation | | | | ■ | | |
| Items Delivered | | | | | | |
| **Infrastructure Technology** | | | | ■ | ■ | ■ |
| Medical Security | | | | ■ | | |
| IT Specification | | | | ■ | | |
| Internet Connection | | | | | ■ | ■ |
| Electronic Medical Records | | | | | | ■ |
| **Human Resources** | | | | ■ | ■ | |

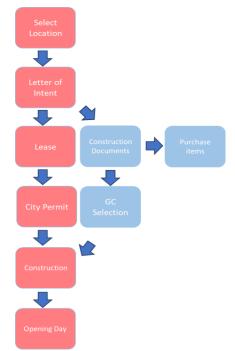| Task Name | Months (Year - 2024) | | | | | |
|---|---|---|---|---|---|---|
| | Jan - Feb | Mar - Apr | May - Jun | Jul - Aug | Sep - Oct | Nov - Dec |
| Credentialization | | | | | | ■ |
| Operations | | | | | | ■ |
| Facility | | | | | | ■ |
| Opening Day | | | | | | ■ |



**Figure 1**
**Interdependencies with critical path highlighted in red**

## CONCLUSIONS

The requirement phase of the Waterfall methodology was employed to provide the structured framework needed to navigate the project's tasks and interdependencies. This methodology's linear approach aligns with the project's nature and emphasizes the importance of requirements gathering.

The resulting project plan encompasses an aggressive timeline of one year to deliver a new and fully functional healthcare facility, involving the synchronization of 10 key departments. The critical path of the project includes the following stages: Location Selection – Letter of Intent – Lease – City Permit – Construction – Opening Day. If any of these tasks experiences delays, the project will be delayed

by the same amount. Nonetheless, all tasks need to be performed to deliver a fully functional health care facility.

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