



## Oncology Chemotherapy Management System

### General Overview

The project aims to develop an application for the Oncology department that facilitates the management of chemotherapy plans. The application will provide comprehensive features for tracking patient information, managing chemotherapy cycles, monitoring medications and dosages, and documenting each cycle's details. Additionally, the application will incorporate essential technical functionalities such as authentication, authorization, data security, and reporting capabilities.

## Features Requirements

Requirement	DESCRIPTION
Patient Information Management	<ul style="list-style-type: none"><li>• The application should allow the storage and retrieval of patient data, including vital signs, pathology history, radiology history, and cancer condition (stage, phase, etc.).</li><li>• The system should provide a user-friendly interface for updating and maintaining patient information accurately.</li></ul>
Chemotherapy Plan and Cycle Management	<ul style="list-style-type: none"><li>• The application should enable the creation and management of chemotherapy plans for each patient.</li><li>• Chemotherapy plans should be divided into cycles, with each cycle representing a session for the patient to receive chemotherapy dosages and medications.</li><li>• The system should allow the scheduling and tracking of chemotherapy cycles, including start dates, end dates, and duration.</li><li>• The user should be able to view and modify chemotherapy plans as needed.</li></ul>
Medication and Dosage Tracking	<ul style="list-style-type: none"><li>• The application should provide functionality to record and monitor medications and chemotherapy dosages for each patient.</li><li>• The system should allow the user to specify medication details, such as name, dosage, frequency, and administration route.</li><li>• There should be provisions for documenting changes in medications and dosages over the course of treatment.</li></ul>
Cycle Documentation	<ul style="list-style-type: none"><li>• The application should allow comprehensive documentation of each chemotherapy cycle.</li><li>• Users should be able to record date and time, dosages administered, medications and pre-medications administered, notes, and any side effects experienced during the cycle.</li><li>• The system should provide a means to associate cycle documentation with the corresponding patient and chemotherapy plan.</li></ul>

## Technical Requirements

Requirement	DESCRIPTION
User Authentication and Authorization	<ul style="list-style-type: none"><li>• The application should include a login functionality to authenticate users.</li><li>• User roles and permissions should be implemented to control access to specific features and data.</li><li>• Protected routes should be established to ensure appropriate authorization for accessing sensitive information.</li></ul>
Data Security and Administration	<ul style="list-style-type: none"><li>• The system should employ robust security measures to protect sensitive patient data.</li><li>• Encryption techniques should be applied to safeguard confidential information during storage and transmission.</li><li>• Users' administrative privileges should be established to manage user accounts, roles, and restrictions effectively</li></ul>
API Security and Validation	<ul style="list-style-type: none"><li>• Secure APIs should be implemented to prevent unauthorized access and protect against potential security vulnerabilities.</li><li>• Input validation mechanisms should be in place to ensure the integrity and validity of user-provided data.</li></ul>
Data Reporting and Visualization	<ul style="list-style-type: none"><li>• The application should support the generation of reports and visualizations based on patient data and chemotherapy plans.</li><li>• Integration with tools like PowerBI or similar platforms should be considered to facilitate data analysis and visualization.</li></ul>

## Additional Points

- The application should have an intuitive and user-friendly interface to enhance usability and ease of navigation.
- Adequate error handling and notifications should be implemented to provide meaningful feedback to users.
- The system should be scalable to accommodate a growing number of patients and chemotherapy plans.
- Consideration should be given to data backup and disaster recovery mechanisms to ensure data integrity and availability.
- Documentation and user manuals should be provided to guide users on using the application effectively.