e_Dialysis Clinical Systems

QA Test Plan

Version: <3.0>

Prepared By:
Group 7
Deep Siroya – 002704239
Udaykumar Shelke – 002727131
Shivani Rahatwad – 002734520
Seone Rodrigues - 002760607

Table of Contents

1 Document Acceptance and Sign-Off 3
2 Revision History 4
3 Introduction 5
3.1 Purpose 5
3.2 Project Overview 5
4 Scope 6
4.1 In-Scope 6
4.2 Out-of-Scope 6
5 Testing Strategy 7
5.1 Test Objectives 7
5.2 Risks & Assumptions 8
5.3 Data Approach 8
5.4 Types of Testing 9
5.5 Unit Testing 9
5.6 Functional Testing 10
5.7 User Acceptance Testing 12
5.8 Regression Testing 12
5.9 Performance Testing 13
6 Execution Strategy 14
6.1 QA Entrance Criteria 14
6.2 QA Exit criteria 14
6.3 Defect Management 15
7 Environment Requirements 17
7.1 Test Environments 17
8 Dependencies 18

1 DOCUMENT ACCEPTANCE AND SIGN-OFF

By signing below, I acknowledge that I have read the entire contents of this document and accept the document in this form as reasonably fulfilling the goals described in the section titled Document Purpose. I further agree that this will constitute the document of record and cannot be changed without review and acknowledgement of the groups shown below:

Group / Role	Approver Name	Approver Signature	Date Approved
Group 1 / Test Manager	Deep Siroya	DS	04/20/2024
Group 1 / Test Analyst	Shivani Rahatwad	SR	04/20/2024
Group 1 / Dev Manager	Udaykumar Shelke	US	04/20/2024
Group 1 / Test Lead	Seone Rodrigues	SR	04/20/2024

2 REVISION HISTORY

Document/Department Editor:			
Date	**Revision #**	**Editor**	**Description of Change**
04/15/2024	1.0	QA	*Team Initial version of the document for registration of all the entities*
04/18/2024	2.0	QA	*The team Incorporated feedback from review by other peers*
04/20/2024	3.0	QA	*Team Updated test scenarios and added new test cases for additional functionality to include seamless entity registration.*

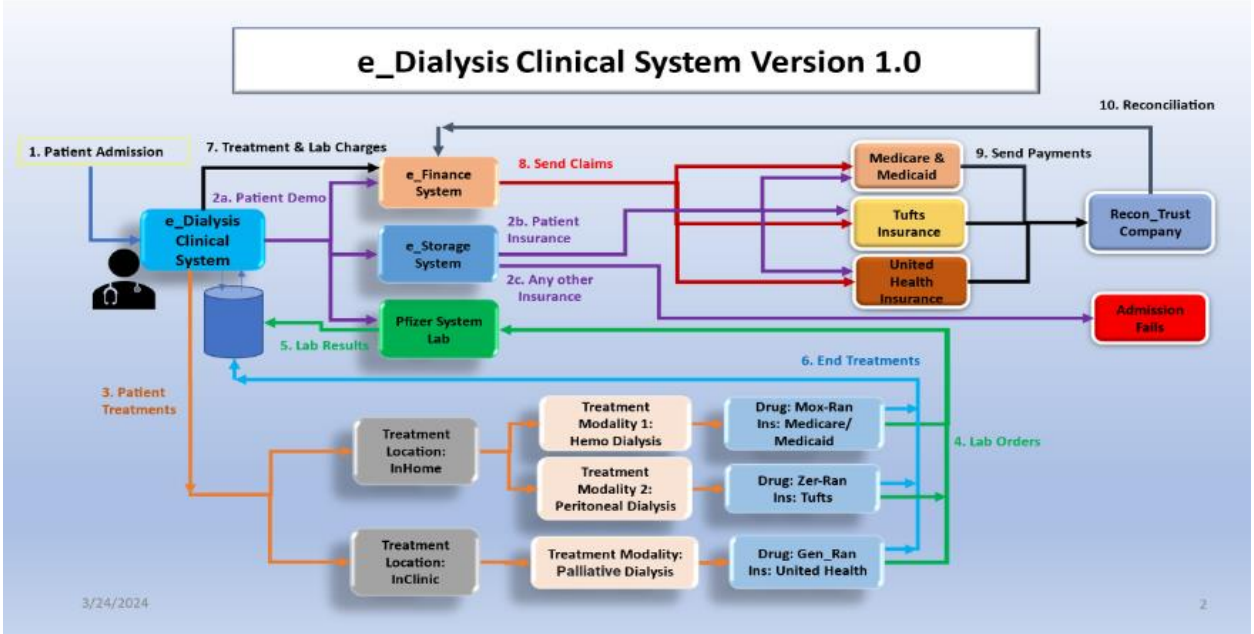
3 Introduction

3.1 Purpose

The purpose of this test plan is to outline the strategy, approach, execution plan, and management of testing for the e_Dialysis Clinical System. It provides a comprehensive overview of how testing will be conducted to ensure the system meets its functional requirements and delivers the expected outcomes.

3.2 Project Overview

The project involves testing the e_Dialysis Clinical System, which replaces the legacy TSS application. This system is designed to manage patient admissions, treatments, lab orders and results, as well as financial billing and reconciliation processes. The system interfaces with various external systems such as the e_Finance system, e_Storage system, Pfizer System Lab, and insurance companies. It is crucial to ensure that the system functions correctly, adheres to business requirements, and integrates seamlessly with external systems to provide efficient and accurate patient care.



4 Scope

4.1 IN-SCOPE

The e_Dialysis Clinical System project represents a pivotal advancement in managing dialysis patient care processes. It aims to provide an integrated platform for efficient patient admissions, treatment administration, lab order processing, financial billing, and reconciliation. The test plan encompasses various functionalities, including but not limited to:

- Patient admission processes based on financial and clinical clearance flags.
- Treatment administration for different patient types and modalities (InHome and InClinic).
- Lab order generation and results processing for different treatment locations and insurance types.
- Financial billing procedures, including treatment and lab charge submissions to the e_Finance system.
- Reconciliation processes with the Recon_Trus Company for auditing purposes.
- Integration with external systems such as the e_Finance system, e_Storage system, and Pfizer System Lab.

4.2 OUT-OF-SCOPE

The e_Dialysis Clinical System project focuses on enhancing dialysis patient care processes and streamlining administrative tasks. The following aspects are considered out-of-scope for this test plan:

- *Performance testing under extreme conditions, such as high patient volumes or system overload scenarios.*
- *Compatibility testing with all possible browser versions and older operating systems, as the system may have specific requirements or limitations.*
- *Testing of integrations with unspecified third-party systems or services beyond those explicitly mentioned in the project documentation.*

5 Testing Strategy

5.1 TEST OBJECTIVES

- *Validate that the e_Dialysis Clinical System functions according to the specified business requirements outlined in the Business Requirements Document (BRD) and Functional Specification Document (FSD).*
- *Ensure seamless integration with external systems such as the e_Finance system, e_Storage system, and Pfizer System Lab.*
- *Verify that all patient admission processes, treatment administrations, lab order processing, financial billing procedures, and reconciliation processes are executed accurately and efficiently.*
- *Validate user roles and permissions, ensuring appropriate access controls are implemented for different user types.*
- *Confirm the system's ability to handle various scenarios, including different treatment modalities, insurance types, and patient statuses.*
- *Identify and report any defects or discrepancies found during testing, ensuring they are addressed and resolved promptly.*
- *Provide stakeholders with confidence in the system's reliability, performance, and compliance with regulatory requirements.*

Tasks and Responsibilities:

- *QA Team: Responsible for creating test plans, and test cases, and executing tests.*
- *Development Team: Responsible for resolving defects and implementing any necessary changes based on testing feedback.*
- *Business Analysts: Responsible for validating that the system meets business requirements and providing input on test scenarios.*
- *Project Managers: Responsible for coordinating testing efforts and ensuring alignment with project timelines and objectives.*

5.2 RISKS & ASSUMPTIONS

List the key risks and assumptions of the project and the test plan.

Risks/Assumptions	Mitigation
Incomplete requirements may lead to inadequate test coverage.	Regular review and update sessions with stakeholders to clarify and finalize requirements.
Delays in the test environment setup could impact the testing schedule.	Work on a detailed environment setup plan with identified responsibilities and timelines.
The limited availability of test data might not cover all testing scenarios.	Create synthetic test data that encompasses a broad range of test conditions
The assumption is that all stakeholders have a unified understanding of the system's functionality	Conduct training sessions and ensure comprehensive documentation is available.
Changes in project scope during the testing phase could invalidate existing test cases.	Implement a change management process to assess and incorporate scope changes effectively.

5.3 DATA APPROACH

- ***Test Data Creation:*** *Generating realistic test data that covers a wide range of scenarios, including typical and atypical use cases.*
- ***Data Privacy:*** *Ensuring that test data used is compliant with data privacy regulations and does not compromise real user data.*
- ***Data Validation:*** *Regular checks for data accuracy and integrity throughout the testing process.*

5.4 Types of Testing

List the types of testing to be performed.

Test Type	Description	Responsible Parties
Unit Testing	Testing of individual components to ensure each one functions correctly in isolation.	Test Analyst
Functional Testing	Verification of specific actions within the application to ensure they meet the defined requirements.	Test Lead
User Acceptance Testing (UAT)	Testing with end-users to confirm the system meets their requirements and is ready for production.	Test Manager
Regression Testing	Repeated testing after changes to ensure new code does not disrupt existing functionality.	Test Analyst
Performance Testing	Evaluating the system's behavior under a particular workload to ensure it performs well under high traffic.	Test Lead

5.5 Unit Testing

1. **Patient Admission Components**:
   - Verify that the admission process correctly evaluates the FinAdmit_Flag and admits patients based on their financial and clinical clearance.
   - Test the creation or updating of patient admission folders in the e_Finance system, e_Storage system, and Pfizer System Lab.

2. **Treatment Administration Components:**
   - Ensure that patients are treated according to their clinical clearance status and treatment location/modalities.
   - Test the administration of different drugs based on insurance types and treatment modalities (e.g., Mox-Ran, Xer-Ran, Gen-Ran).

3. **Lab Order Processing Components:**
   - Validate the generation and processing of lab orders based on patient demographics, treatment modalities, and insurance types.
   - Test the sending and receiving of lab results from the Pfizer System Lab to the e_Dialysis Clinical System.

4. **Financial Billing Components:**
   - Verify that treatment and lab charges are accurately calculated and stored in the e_Dialysis Clinical System's database.
   - Test the nightly transmission of treatment and lab charges to the e_Finance system for claims processing.

5. **Integration Components:**
   - Ensure seamless integration with external systems such as the e_Finance system, e_Storage system, and Pfizer System Lab.
   - Test data exchange and communication protocols to ensure proper data flow between systems.

Participants:

Tester's Name	Department/ Area	Role
Deep Siroya	QA	Test Manager
Shivani Rahatwad	QA	Test Analyst
Seona Rodrigues	QA	Test Lead

5.6 FUNCTIONAL TESTING

1. ***Patient Admission Process:***
   - *Validate the admission process for new and existing patients based on their FinAdmit_Flag.*
   - *Verify that patient demographics are accurately sent to the e_Finance system, e_Storage system, and Pfizer System Lab.*
   - *Test the rejection mechanism for patients with invalid insurance types.*

2. ***Treatment Administration Process:***
   - *Verify that patients are treated according to their clinical clearance status and treatment location/modalities.*
   - *Validate the administration of drugs based on insurance types and treatment modalities.*
   - *Test the recording of treatments in the e_Dialysis Clinical System's database.*
3. ***Lab Order Processing:***
   - *Validate the generation and processing of lab orders for patients receiving treatments.*
   - *Verify the correct sending and receiving of lab results between the Pfizer System Lab and the e_Dialysis Clinical System.*
4. ***Financial Billing Process:***
   - *Verify the accuracy of treatment and lab charges calculated and stored in the e_Dialysis Clinical System's database.*
   - *Test the nightly transmission of charges to the e_Finance system for claims processing.*
   - *Validate that claims are sent to the appropriate insurance companies based on treatment location and insurance types.*
5. ***Reconciliation Process:***
   - *Validate the weekly reconciliation process between the e_Finance system and the Recon_Trus Company.*
   - *Test the accuracy and completeness of reconciliation results for auditing purposes.*

Participants:

Tester's Name	Department/ Area	Role
Deep Siroya	QA	Test Manager
Shivani Rahatwad	QA	Test Analyst
Seona Rodrigues	QA	Test Lead

5.7 User Acceptance Testing

- *Usability and accuracy of the user interface for the registration and transaction processes.*
- *Validate the entire patient admission workflow, from initial registration to admission into the system. Ensure that all patient demographics are accurately recorded and transmitted to relevant systems.*
- *Overall user satisfaction with the system and whether it meets the business requirements.*

Participants:

Tester's Name	Department/ Area	Role
Deep Siroya	QA	Test Manager
Shivani Rahatwad	QA	Test Analyst
Seona Rodrigues	QA	Test Lead

5.8 Regression Testing

- Stability of existing functionalities after integration of new code changes.
- Registration and transaction process integrity post updates or bug fixes.

Participants:

Tester's Name	Department/ Area	Role
Deep Siroya	QA	Test Manager
Shivani Rahatwad	QA	Test Analyst
Seona Rodrigues	QA	Test Lead

5.9 PERFORMANCE TESTING

- *System performance under peak load conditions for registration and transaction processes.*
- *Response times for user interactions and transaction processing.*
- *System stability and handling of concurrent user sessions.*

Participants:

Tester's Name	Department/ Area	Role
Deep Siroya	QA	Test Manager
Shivani Rahatwad	QA	Test Analyst
Seona Rodrigues	QA	Test Lead

6 Execution Strategy

6.1 QA Entrance Criteria

- *The entrance criteria refer to the desirable conditions to start test execution.*
- *Entrance criteria are flexible benchmarks. If they are not met, the test team will assess the risk, identify mitigation actions, and provide a recommendation.*

QA Entrance Criteria	Test Team	Technical Team	Notes
Test environment(s) is available	✔	✔	Verify environment stability.
Test data is available	✔		Cover edge cases and negative scenarios.
The code has been merged successfully		✔	Ensure no merge conflicts.
Development has completed unit testing		✔	Check unit test coverage and results.
Test scripts are completed, reviewed, and approved by the Project Team	✔		Include traceability to requirements.

6.2 QA Exit criteria

- *The QA exit criteria are the desirable conditions that need to be met to proceed with the implementation.*
- *QA Exit criteria are flexible benchmarks. If they are not met, the test team will assess the risk, identify mitigation actions, and provide a recommendation.*

Exit Criteria	Test Team	Technical Team	Notes
100% Test Scripts executed	✔		Document test evidence.
90% pass rate of Test Scripts	✔		Prioritize critical tests.

No open Critical and High-severity defects	✔		Must resolve or mitigate high risks.
All remaining defects are either canceled or documented as Change Requests for a future release	✔		Track in the defect management system.
All expected and actual results are captured and documented with the test script	✔		Ensure clarity for audit purposes.
All test metrics collected based on reports from daily and Weekly Status reports	✔		Use for project assessment and reporting.
All defects logged in the Defect Tracker/Spreadsheet	✔		Full defect lifecycle tracking.
Test environment cleanup completed and a new backup of the environment		✔	Prepare for subsequent projects.

6.3 Defect Management

- **Test case and scenario validation:** Each test case and scenario should be cross-checked with the functional requirements to ensure they map directly to the expected outcomes. Validation involves confirming that each step in the test case is clear, testable and provides expected results for given input conditions.

- **Defect management:** Defects identified during testing are logged in a dedicated Defect Tracker or Spreadsheet, which captures the defect details, severity, impact, and status throughout its lifecycle.

- **Tester responsibilities:** Testers are tasked with the full cycle of defect handling, which includes identifying defects, documenting them in the tracker, verifying fixes once they are implemented, and closing the defects upon successful retest.

- **Execution of test scripts:** Testers are expected to thoroughly execute all test scripts as per the test plan for each testing cycle, ensuring that all functionalities are verified.

- **Retesting and closure:** Upon defect resolution, testers must retest the affected functionality and only close the defect if the retest confirms that the issue has been adequately addressed.

Defects found during the Testing should be categorized as below:

Severity	Impact
1 (Critical)	▪ *Functionality is blocked and no testing can proceed* ▪ *Application/program/feature is unusable in the current state*
2 (High)	▪ *Functionality is not usable and there is no workaround but testing can proceed*
3 (Medium)	▪ *Functionality issues but there is a workaround for achieving the desired functionality*
4 (Low)	▪ *Unclear error message or cosmetic error which has minimum impact on product use.*

7 Environment Requirements

7.1 TEST ENVIRONMENTS

The quality of an application is assessed by testing teams in environments that closely replicate the actual conditions under which the software will run post-deployment. This process is crucial for identifying and rectifying any issues that could compromise the application's functionality.

- **Testing Environment:** Utilized for the primary phase of testing, focusing on functional and regression tests.

- **Staging Environment:** Acts as a pre-production setup for final testing rounds, mirroring the production environment.

- **Production Environment**: Reserved for smoke testing to ensure the application's stability after deployment.

8 Dependencies

Dependencies	Comments
Test Data Availability	Test data & database should also be made available to the testers for use during testing.
Software Availability	Selenium, E-treatment system, JIRA, Load Runner
Resource Availability	Testing must be conducted with an adequate number of resources
Budget Constraint	Testing should be funded adequately

Test Schedule

Deliverable	***Start Date***	***End Date***
Design and Functional Requirements Review	*May 1, 2024*	*Jun 2, 2024*
User Story Reviews	*Jun 12, 2024*	*Jun 19, 2024*
Sprint 1 to Sprint 5	*July 10, 2024*	*Aug 28, 2024*
Test Plan Review	*Jun 10, 2024*	-
Test Cases Review, Before each Sprint	*Jun 30, 2024*	-
Performance & Load Testing	*Sep 1, 2024*	*Sep 15, 2024*
Pilot Release	*Oct 1, 2024*	-
Full Deployment	*Nov 1, 2024*	-
Project Retrospective	*Dec 1, 2024*	-