**User Acceptance Testing (UAT)**

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| --- | --- |
| Date | 30 june 2025 |
| Team ID | LTVIP2025TMID60863 |
| Project Name | Revolutionizing liver care; Predicting liver cirrhosis using advanced machine learning techniques |
| Maximum Marks |  |

**Project Overview**

**Project Name:** Liver Cirrhosis Prediction Using Machine Learning  
**Project Description:**  
This project involves the development and testing of a predictive analytics tool that uses advanced machine learning techniques to assess the likelihood of liver cirrhosis in patients based on clinical and laboratory data. The goal is to support early detection and clinical decision-making.

**Project Version:** 1.0  
**Testing Period:** July 1, 2025 – July 15, 2025

**Testing Scope**

**Features and Functionalities to be Tested:**

* Data preprocessing and normalization
* Feature selection and importance ranking
* Model training (Random Forest, XGBoost, Neural Networks, etc.)
* Model validation and performance metrics (accuracy, ROC-AUC, precision, recall)
* User interface for data input and result interpretation
* Data security and compliance (e.g., HIPAA/GDPR if applicable)

**User Stories or Requirements to be Tested:**

* As a doctor, I want to input patient data and receive a cirrhosis risk score.
* As a researcher, I want to view feature importance and model performance metrics.
* As an admin, I want to upload new datasets and retrain models as needed.

**Testing Environment**

**URL/Location:** [https://liver-ai-predictor.healthcaretool.io] *(Example)*  
**Credentials (if required):**  
Username: test\_user  
Password: Test@1234

**Test Cases**

| **Test Case ID** | **Test Scenario** | **Test Steps** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| TC-001 | Validate data input form | 1. Navigate to input page 2. Enter sample patient data 3. Submit the form | Model predicts risk score accurately and displays on UI | [Record actual outcome] | [Pass/Fail] |
| TC-002 | Check model performance on validation data | 1. Load validation dataset 2. Run prediction 3. Check metrics (accuracy, ROC-AUC) | Metrics match expected benchmarks (e.g., >90% accuracy) | [Record actual outcome] | [Pass/Fail] |
| TC-003 | Test user login | 1. Go to login page 2. Enter credentials 3. Click login | User is redirected to dashboard | [Record actual outcome] | [Pass/Fail] |
| TC-004 | Upload new training dataset | 1. Navigate to admin panel 2. Upload CSV 3. Start training | Dataset uploads successfully, training starts | [Record actual outcome] | [Pass/Fail] |

**Bug Tracking**

| **Bug ID** | **Bug Description** | **Steps to Reproduce** | **Severity** | **Status** | **Additional Feedback** |
| --- | --- | --- | --- | --- | --- |
| BG-001 | Model crashes on missing albumin value | 1. Enter patient data with blank albumin 2. Submit 3. App crashes | High | Open | Add input validation for null values |
| BG-002 | ROC-AUC plot not rendering | 1. Go to performance tab 2. Click on ROC-AUC 3. Graph is blank | Medium | In Progress | Check frontend JS for chart rendering issues |

**Sign-Off**

**Tester Name:** [Dr. Alex Rivera]  
**Date:** [July 15, 2025]  
**Signature:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Notes:**

* Ensure coverage of both normal and abnormal patient scenarios.
* Test edge cases such as null values, extreme lab test values, and duplicate records.
* Document all model outputs and compare against expected clinical results.
* Ensure the interface is interpretable for both clinicians and non-technical users.
* Final sign-off required by the **Project Manager** and **Product Owner** prior to deployment in clinical settings.