

## Ideation Phase

### Define the Problem Statements

Date	27 June 2025
Team ID	LTVIP2025TMID59416
Project Name	Revolutionizing Liver Care : Predicting Liver Cirrhosis using Advanced Machine Learning Techniques
Maximum Marks	2 Marks

#### Customer Problem Statement Template:

Patients and healthcare professionals are facing growing challenges in detecting liver cirrhosis at an early stage. General physicians, especially in under-resourced areas, often lack access to advanced diagnostic tools like FibroScan or liver biopsy. Patients, particularly those at risk, are unsure how to interpret their test results or when to seek treatment. Due to this, cirrhosis is often diagnosed too late for effective intervention, leading to worsened health outcomes and increased treatment costs.

Additionally, in rural or semi-urban locations, health workers are unable to perform effective screening during field visits due to a lack of portable diagnostic tools. The traditional process of diagnosis requires specialist interpretation, expensive lab equipment, and follow-up testing, making it time-consuming and not cost-effective for mass screening.

To overcome these critical issues, our team has developed and deployed a machine learning-based web application that predicts the likelihood of liver cirrhosis based on clinical and biochemical data. This system enables doctors and patients to receive instant liver health assessments, making early intervention possible. The tool is designed to be accessible, scalable, and cost-effective, especially for use in low-resource settings.

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	General Physician	Quickly identify signs of liver cirrhosis in patients	Tests like <u>FibroScan</u> and biopsy are not always available or affordable	Patients seek help only when symptoms are severe	Frustrated and worried about late detection

<b>Problem Statement (PS)</b>	<b>I am (Customer)</b>	<b>I'm trying to</b>	<b>But</b>	<b>Because</b>	<b>Which makes me feel</b>
<b>PS-1</b>	General Physician	Quickly identify signs of liver cirrhosis in patients	Tests like FibroScan and biopsy are not always available or affordable	Patients seek help only when symptoms are severe	Frustrated and worried about late detection
<b>PS-2</b>	Rural Health Worker	Screen patients for liver issues during field visits	Lack tools to analyze symptoms quantitatively	Remote areas have no access to diagnostic labs	Helpless and limited by infrastructure
<b>PS-3</b>	Patient at Risk	Understand my liver health from basic reports	I don't know how to interpret test results	Fear of being too late in getting treatment	Anxious and unsure