CONCEPTUAL PRODUCT · PORTFOLIO CASE STUDY

01 — OVERVIEW

LabSync
AI

AI-assisted diagnostic laboratory platform — connecting patients, lab technicians, and operations in a single role-based healthcare experience.

ROLE
Senior Product Designer / UX·UI

YEAR
2026

TYPE
Conceptual Product

SCOPE
3 Roles · 20+ Screens

PLATFORM
Mobile + Web

TOOLS
Figma · AI Agents

View Live Prototype ↗

Read the case study ›

LABSYNC AI · UX CASE STUDY · THE OPPORTUNITY

The Opportunity

Three user roles, one fragmented system — the business case for a unified diagnostic platform.

👱 PATIENT

- Confusing preparation instructions
- Missed appointments from poor reminders
- Limited visibility into appointment status
- Repetitive calls to support for routine questions

🔬 TECHNICIAN

- Manual coordination between teams
- Friction in sample collection workflow
- No real-time sample status visibility

🏥 OPERATIONS

- Limited appointment overview
- Manual technician allocation
- Inventory tracked in spreadsheets
- No actionable operational analytics

BUSINESS NEED

Connected diagnostic experience

Replace fragmented manual processes with a single platform

USER NEED

Clear, predictable, accessible journey

Patients, technicians, and admins each need a purpose-built experience

PRODUCT OPPORTUNITY

One role-based LabSync AI platform

Purpose-built experiences for each role, powered by a unified backend

LABSYNC AI · UX CASE STUDY · DISCOVERY & AI-ASSISTED RESEARCH

Discovery & AI-Assisted Research

A structured AI-assisted discovery process — with clear boundaries between AI exploration and human judgment.

HONEST FRAMING

This is a conceptual case study. Research used secondary sources, healthcare workflow analysis, industry-informed assumptions, and structured AI persona agents. No real user interviews were conducted.

RESEARCH METHODOLOGY

Research Questions › AI Persona Agents › Structured Conversations › Theme Extraction › Human Review › UX Insights

AI PERSONA AGENTS

● Patient Agent

EXPLORES

- Test discovery & booking
- Preparation clarity
- Appointment anxiety
- Report access
- Support questions

EXPLORATORY SIGNALS / AI-SURFACED HYPOTHESES

→ Preparation instructions are confusing
→ Reminders arrive too late
→ Status updates are invisible

DESIGN IMPLICATION

Design for clarity before users even arrive at the lab

● Technician Agent

EXPLORES

- Assigned visit management
- Sample collection workflow
- Status update friction
- Manual coordination

EXPLORATORY SIGNALS / AI-SURFACED HYPOTHESES

→ Coordination relies on manual calls
→ Sample status is ambiguous
→ High visit volume, no prioritisation

DESIGN IMPLICATION

Digitise the collection workflow end-to-end

● Operations Agent

EXPLORES

- Appointment overview
- Technician allocation
- Inventory tracking
- KPI visibility

EXPLORATORY SIGNALS / AI-SURFACED HYPOTHESES

→ No single view of operations
→ Inventory managed manually
→ Technician utilisation opaque

DESIGN IMPLICATION

Surface actionable operational data in a unified dashboard

AI CONTRIBUTED

AI Explore hypothesis space
AI Generate structured responses
AI Surface recurring themes
AI Explore alternative hypotheses

HUMAN DECIDED

✓ Interpret and prioritise findings
✓ Validate against real constraints
✓ Apply product judgment
✓ Make every final design decision

> *"AI-assisted persona simulations were used to explore hypotheses and accelerate early discovery. Findings were treated as directional, then evaluated through UX reasoning, healthcare workflow knowledge, accessibility requirements, and product constraints."*

LABSYNC AI · UX CASE STUDY · INSIGHTS & PRODUCT STRATEGY

From Insights to Product Strategy

Every feature is connected to a user or business need.

INSIGHT	OPPORTUNITY	PRODUCT RESPONSE
Patients forget appointments	Improve appointment awareness	Smart Appointment Reminders
Preparation instructions are confusing	Make preparation clear and step-by-step	Interactive Preparation Guide
Support receives repetitive questions	Enable patient self-service	AI Health Assistant
Patients lack progress visibility	Make sample status transparent	Real-Time Sample Tracking
Technicians rely on manual coordination	Digitise collection workflows	Technician Dashboard
Admins lack operational visibility	Surface actionable operations data	Analytics Dashboard

PRODUCT PRINCIPLES

01 Guide before users need help

02 Make progress visible at every step

03 Reduce avoidable manual work

04 AI assists — humans remain in control

05 Accessibility is built in from the start

LABSYNC AI · UX CASE STUDY · EXPERIENCE ARCHITECTURE

Experience Architecture

Three role ecosystems. One design system. Platform thinking, not a collection of screens.

PATIENT

Mobile App (iOS / Android)

- Home Dashboard
- Book a Test
- My Appointments
- Preparation Guide
- AI Health Assistant
- My Reports
- Accessibility Settings

LAB TECHNICIAN

Mobile App + Web Analytics

- Today's Collections
- Assigned Visits
- Sample Collection
- Status Updates
- Collection History
- Reports & Analytics

LAB ADMINISTRATOR

Responsive Web Dashboard

- Operations Home
- Appointment Manager
- Team & Technicians
- Inventory Monitor
- Analytics & KPIs
- Settings

PATIENT JOURNEY

Discover
Unclear options
Search + test details

Book
Friction in flow
Guided booking

Prepare
Confusing prep
Interactive checklist

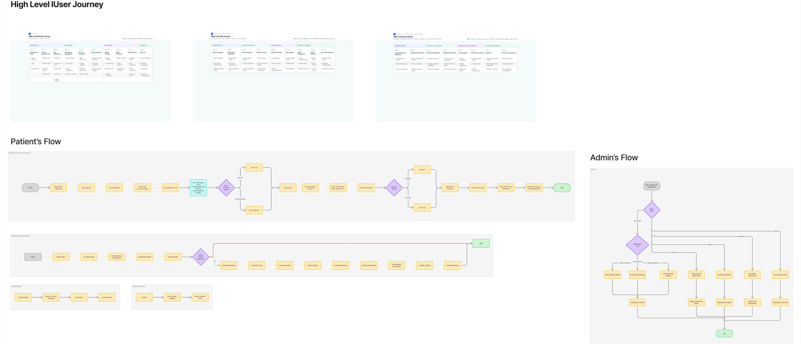
Attend
No status updates
Day-of reminders

Collect
Technician unknown
Real-time tracking

Process
No visibility
Sample status

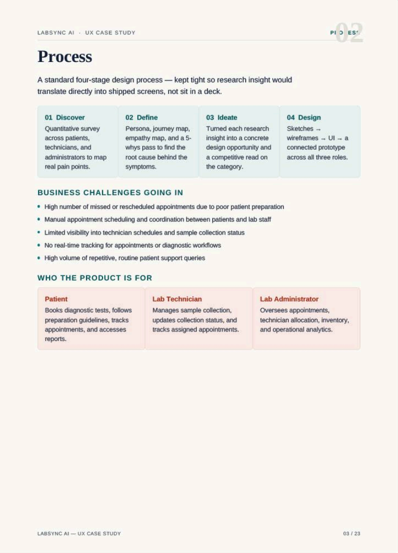
Report
Delayed access
In-app results

USER FLOWS — START → ACTIONS → DECISIONS → OUTCOME



Patient · Technician · Admin — key flows showing decision points and outcomes for each role

PROCESS DOCUMENTATION



Process

A standard four-stage design process — kept tight so research insight would translate directly into shipped screens, not sit in a deck.

01 Discover
Quantitative survey across patients, technicians, and administrators to map real pain points.

02 Define
Persona, journey map, empathy map, and a 5-whys pass to find the root cause behind the symptoms.

03 Ideate
Turned each research insight into a concrete design opportunity and a competitive read on the category.

04 Design
Sketches → wireframes → UI → a connected prototype across all three roles.

BUSINESS CHALLENGES GOING IN

- High number of missed or rescheduled appointments due to poor patient preparation
- Manual appointment scheduling and coordination between patients and lab staff
- Limited visibility into technician schedules and sample collection status
- No real-time tracking for appointments or diagnostic workflows
- High volume of repetitive, routine patient support queries

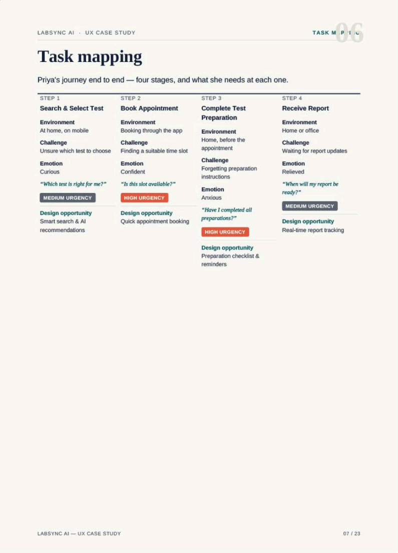
WHO THE PRODUCT IS FOR

Patient
Books diagnostic tests, follows preparation guidelines, tracks appointments, and accesses reports.

Lab Technician
Manages sample collection, updates collection status, and tracks assigned appointments.

Lab Administrator
Oversees appointments, technician allocation, inventory, and operational analytics.

Design process overview



Task mapping

Priya's journey end to end — four stages, and what she needs at each one.

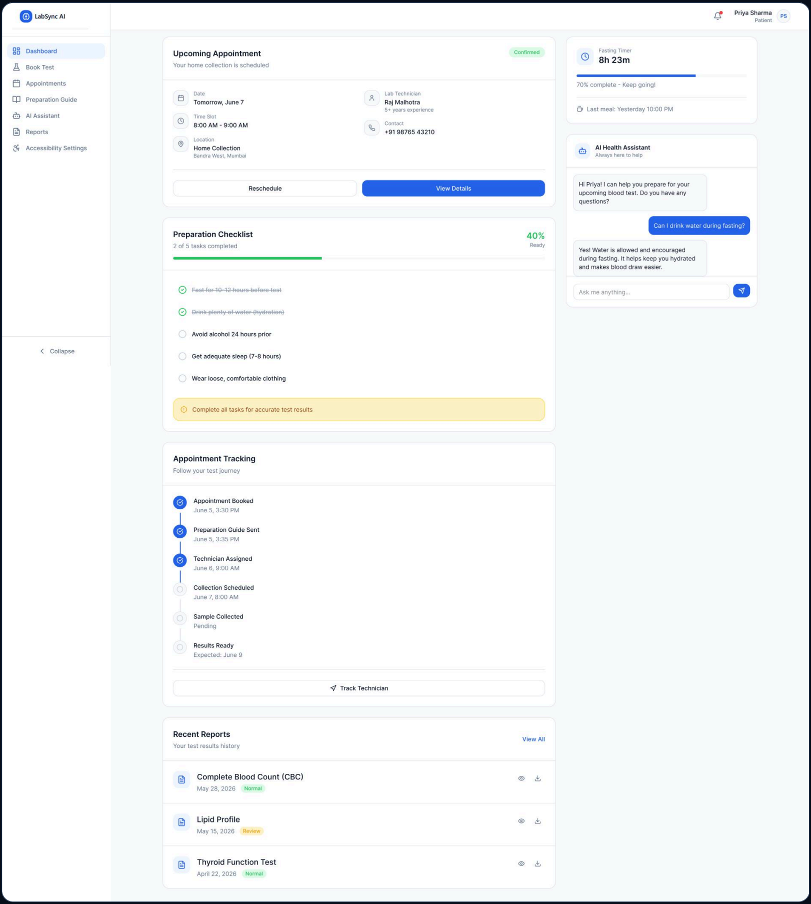
STEP 1	STEP 2	STEP 3	STEP 4
Search & Select Test	**Book Appointment**	**Complete Test Preparation**	**Receive Report**
Environment At home, on mobile	**Environment** Booking through the app	**Environment** Home, before the appointment	**Environment** Home or office
Challenge Unsure which test to choose	**Challenge** Finding a suitable time slot	**Challenge** Forgetting preparation instructions	**Challenge** Waiting for report updates
Emotion Curious	**Emotion** Confident	**Emotion** Anxious	**Emotion** Relieved
"Which test is right for me?"	*"Is this slot available?"*	*"Have I completed all preparations?"*	*"When will my report be ready?"*
MEDIUM URGENCY	HIGH URGENCY	HIGH URGENCY	MEDIUM URGENCY
Design opportunity Smart search & AI recommendations	**Design opportunity** Quick appointment booking	**Design opportunity** Preparation checklist & reminders	**Design opportunity** Real-time report tracking

Task mapping & user flows

Selected Product Screens

High-fidelity screens across three roles — Patient, Lab Technician, and Lab Administrator.

PATIENT — WEB DASHBOARD



Upcoming Appointment

Your home collection is scheduled

Confirmed

Date: Tomorrow, June 7

Time Slot: 8:00 AM - 9:00 AM

Location: Home Collection, Bandra West, Mumbai

Lab Technician: Raj Malhotra, 5+ years experience

Contact: +91 98765 43210

Reschedule | View Details

Preparation Checklist

2 of 5 tasks completed

40% Ready

- ✓ ~~Fast for 10-12 hours before test~~
- ✓ ~~Drink plenty of water (hydration)~~
- ○ Avoid alcohol 24 hours prior
- ○ Get adequate sleep (7-8 hours)
- ○ Wear loose, comfortable clothing

Complete all tasks for accurate test results

Appointment Tracking

Follow your test journey

- Appointment Booked — June 5, 3:30 PM
- Preparation Guide Sent — June 5, 3:35 PM
- Technician Assigned — June 6, 9:00 AM
- Collection Scheduled — June 7, 8:00 AM
- Sample Collected — Pending
- Results Ready — Expected: June 9

Track Technician

Recent Reports

Your test results history

View All

Report	Date	Status
Complete Blood Count (CBC)	May 28, 2026	Normal
Lipid Profile	May 15, 2026	Review
Thyroid Function Test	April 22, 2026	Normal

Fasting Timer

8h 23m

70% complete - Keep going!

Last meal: Yesterday 10:00 PM

AI Health Assistant

Always here to help

Hi Priya! I can help you prepare for your upcoming blood test. Do you have any questions?

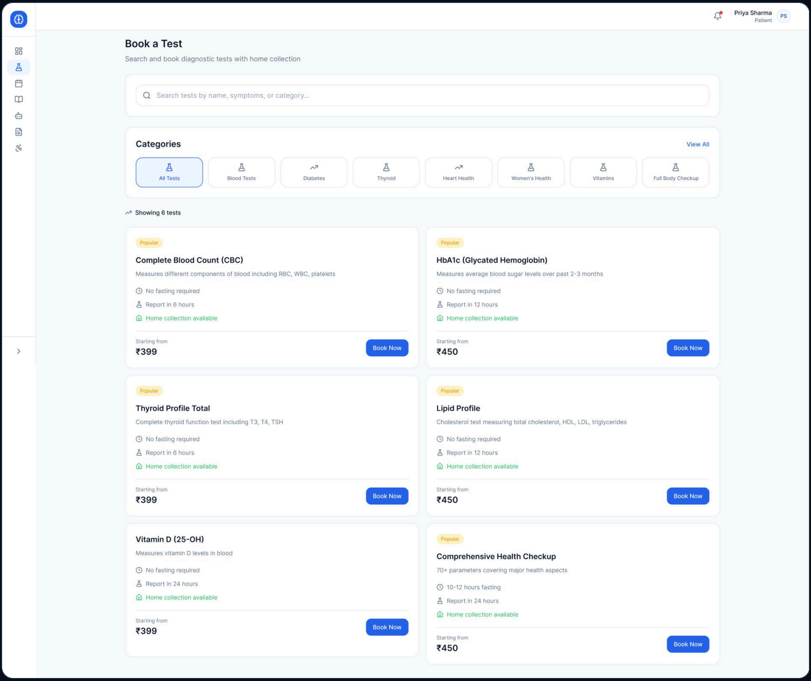
Can I drink water during fasting?

Yes! Water is allowed and encouraged during fasting. It helps keep you hydrated and makes blood draw easier.

Ask me anything...

Upcoming appointment card · Preparation checklist · AI Health Assistant · Sample tracking timeline

PATIENT — BOOK A TEST



Priya Sharma
Patient

Book a Test

Search and book diagnostic tests with home collection

Categories

Showing 6 tests

Complete Blood Count (CBC)

Measures different components of blood including RBC, WBC, platelets

- No fasting required
- Report in 6 hours
- Home collection available

Starting from
₹399

HbA1c (Glycated Hemoglobin)

Measures average blood sugar levels over past 2-3 months

- No fasting required
- Report in 12 hours
- Home collection available

Starting from
₹450

Thyroid Profile Total

Complete thyroid function test including T3, T4, TSH

- No fasting required
- Report in 6 hours
- Home collection available

Starting from
₹399

Lipid Profile

Cholesterol test measuring total cholesterol, HDL, LDL, triglycerides

- No fasting required
- Report in 12 hours
- Home collection available

Starting from
₹450

Vitamin D (25-OH)

Measures vitamin D levels in blood

- No fasting required
- Report in 24 hours
- Home collection available

Starting from
₹399

Comprehensive Health Checkup

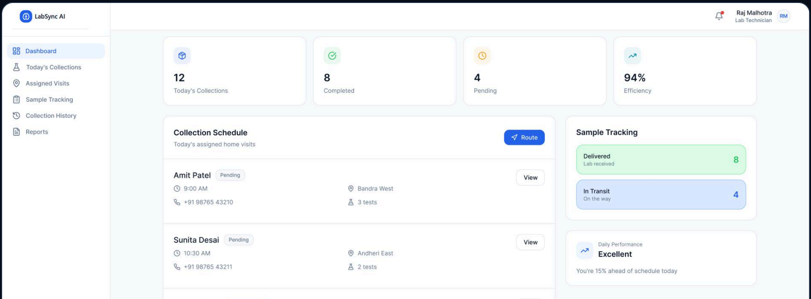
70+ parameters covering major health aspects

- 10-12 hours fasting
- Report in 24 hours
- Home collection available

Starting from
₹450

Search by name, symptom or category · Category chips · Test cards with fasting info, report time, home collection

LAB TECHNICIAN — WEB DASHBOARD



Raj Malhotra
Lab Technician

12	Today's Collections
8	Completed
4	Pending
94%	Efficiency

Collection Schedule

Today's assigned home visits

Amit Patel Pending
9:00 AM
Bandra West
+91 98765 43210
3 tests

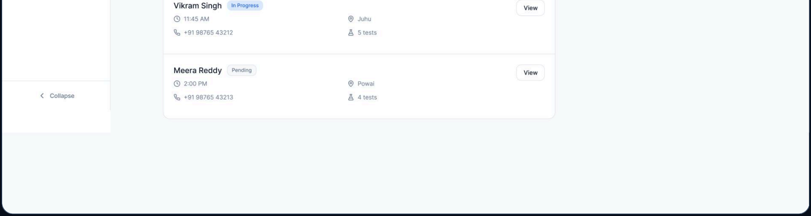
Sunita Desai Pending
10:30 AM
Andheri East
+91 98765 43211
2 tests

Sample Tracking

Delivered	Lab received	8
In Transit	On the way	4

Daily Performance
Excellent

You're 15% ahead of schedule today



Vikram Singh In Progress
11:45 AM Juhu
+91 98765 43212 5 tests

Meera Reddy Pending
2:00 PM Powai
+91 98765 43213 4 tests

KEY DESIGN DECISIONS

DESIGN DECISION

Interactive preparation checklist

WHY

Long preparation instructions create cognitive load and lead to missed steps.

IMPACT

Step-by-step format reduces preparation errors and anxiety before the appointment.

DESIGN DECISION

Real-time status timeline

WHY

Uncertainty about appointment status drives avoidable support calls.

IMPACT

Live progress from booking through to result eliminates status anxiety.

DESIGN DECISION

Role-based dashboards

WHY

Patients, technicians, and admins have fundamentally different priorities and contexts.

IMPACT

Each role sees only what matters — no irrelevant information cluttering the view.

LABSYNC AI · UX CASE STUDY · AI + ACCESSIBILITY

Designing AI for Healthcare

AI that assists without overstepping — and accessibility designed in from the start, not bolted on at the end.

FOUR AI EXPERIENCES

AI Preparation Assistant

USER NEED

Patient needs clear, test-specific preparation steps

AI ROLE

Surfaces personalised preparation checklists and answers prep questions

HUMAN CONTROL

Patient confirms each step; checklist is advisory, not clinical

SAFETY BOUNDARY

Does not modify clinical preparation requirements

AI Patient Q&A

USER NEED

Patient has routine questions they would otherwise call support for

AI ROLE

Answers general process and preparation questions in plain language

HUMAN CONTROL

Escalates to human support when outside its knowledge scope

SAFETY BOUNDARY

Cannot diagnose or recommend treatment

AI Report Explanation

USER NEED

Patient receives a report with unfamiliar medical terminology

AI ROLE

Explains terminology in plain language without interpreting results

HUMAN CONTROL

Always directs to clinician for interpretation and next steps

SAFETY BOUNDARY

Does not interpret results or provide medical advice

AI Operational Insights

USER NEED

Admin needs to understand patterns in appointments and technician utilisation

AI ROLE

Surfaces patterns and trends from operational data

HUMAN CONTROL

Admin reviews and acts on recommendations — AI does not take action

SAFETY BOUNDARY

Cannot change appointment data or technician assignments

AI GUARDRAILS

✓ AI CAN

- Explain general preparation instructions
- Answer routine process questions
- Explain terminology in plain language
- Provide appointment guidance
- Surface operational patterns for admin review

(!) AI CANNOT

× Diagnose conditions or symptoms
× Replace clinicians or clinical judgment
× Recommend treatment or medication
× Change clinical results
× Override lab protocols

> Escalation message when AI is outside its scope:
> *"Please contact your clinician or laboratory for personalised medical advice."*

DESIGNED TOWARD WCAG 2.2 AA

VISUAL

- 4.5:1 contrast for normal text
- 3:1 for large text and UI
- Non-color status communication
- Color-blind-safe palette

INTERACTION

- Visible focus states on all controls
- Logical tab/focus order
- 44×44px minimum touch targets
- Keyboard navigable throughout

COGNITIVE

- Plain-language instructions
- Step-by-step preparation guide
- Clear error and success states
- Predictable navigation structure

SCREEN READER

- Semantic HTML headings
- ARIA labels on all controls
- aria-live for status updates
- Meaningful alt text on all images

MOTION

- prefers-reduced-motion respected
- No auto-playing animations
- Static alternatives available
- Transitions purpose-driven only

SETTINGS

- Font size scaling
- High contrast mode
- Dark mode (accessible, not inverted)
- Color-blind mode options

STATUS — NEVER COLOR ALONE

✓ ✓ Confirmed ✓ ✓ Normal (!) ⚠ Review (!) ⚠ Pending (!) × Cancelled ⓘ → Scheduled

Icon + text + color — never color alone. Screen readers receive the full text label.

LABSYNC AI · UX CASE STUDY · DESIGN SYSTEM & PROTOTYPE

Design System & Prototype

A reusable system built before any screen — every component in LabSync AI is assembled from these tokens.

COLOR PALETTE

BRAND

Primary
`#2563EB`
Buttons · Nav active · Links · CTAs

Secondary
`#0891B2`
Secondary actions · Info states

Accent
`#14B8A6`
Highlights · Tag accents · Teal emphasis

NEUTRAL / SURFACE

Background
`#FFFFFF`
Cards · Panels

Surface
`#F8FAFC`
Page bg · Secondary panels

Border
`#E2E8F0`
Dividers · Inputs

Text
`#0F172A`
Headings · Primary

Subtle
`#64748B`
Labels · Captions

SEMANTIC

Success
`#16A34A` · `#DCFCE7`
Confirmed · Normal · Completed steps

Warning
`#D97706` · `#FEF3C7`
Popular · Review · Alerts · Pending

Error
`#DC2626` · `#FEE2E2`
Error states · Cancelled · Destructive

TYPOGRAPHY — INTER

`24px / 700` Page Heading	**Book a Test**
`20px / 600` Section Heading	**Upcoming Appointment**
`16px / 600` Subsection	**Preparation Checklist**
`14px / 400` Body	Your home collection is scheduled for tomorrow, June 7.
`12px / 500` Label / Meta	Lab Technician · Raj Malhotra · 5+ years experience
`11px / 400` Caption	June 5, 3:30 PM · 2 of 5 tasks completed
`11px / 600` Badge	**CONFIRMED**

BUTTONS · INPUTS · CARDS

BUTTONS

View Details	Primary · #2563EB · rounded-lg
Reschedule	Secondary · white / border
View All →	Ghost · text only · #2563EB
Cancel	Destructive · #DC2626
Confirm	Disabled · 50% opacity

INPUT

Search tests by name, symptoms...

Default · #E2E8F0 border · rounded-lg

Complete Blood Count

Focus · 2px #2563EB border

CARD

Complete Blood Count (CBC) Popular

Measures RBC, WBC, platelets

₹399 Book Now

NAVIGATION · STATUS BADGES · AI ASSISTANT

SIDEBAR NAV (DESKTOP)

- ● Dashboard
- Book Test
- Appointments
- Preparation Guide
- AI Assistant

Active: #EFF6FF bg · #2563EB text

STATUS BADGES — ICON + TEXT + COLOR

✓ Confirmed	#16A34A
✓ Normal	#16A34A
★ Popular	#D97706
⚠ Review	#D97706
· Pending	#64748B
✕ Cancelled	#DC2626

Icon + text + color — never color alone

AI HEALTH ASSISTANT

Hi Priya! I can help you prepare for your blood test. Do you have any questions?

Can I drink water during fasting?

Yes! Water is encouraged — it helps keep you hydrated.

Ask me anything...

User: #2563EB bg · AI: #F8FAFC bg

COMPONENT STATES · ACCESSIBILITY

COMPONENT STATES

Default	bg #2563EB · white text
Hover	bg #1D4ED8 (darkened)
Focus	2px #2563EB ring · offset 2px
Disabled	opacity 50% · cursor not-allowed

ACCESSIBILITY STATES

Date of Birth

ⓘ Please enter a valid date

Email address

✓ Email verified

High contrast consideration

Primary #2563EB on white = 5.9:1 · Text #0F172A on white = 18.1:1 · Designed toward WCAG 2.2 AA

Dark mode consideration

System surfaces inverted · Primary shifts to #60A5FA on dark · Status logic unchanged

SPACING · RADIUS

8PT SPACING SYSTEM

4 8 12 16 24 32 48

CORNER RADIUS

6px	8px	12px	16px	∞
Inputs	Buttons	Cards	Modals	Badges

INTERACTIVE PROTOTYPE

Experience the full flow

The live prototype showcases patient booking, preparation guidance, real-time tracking, and the AI assistant across all connected screens.

Impact & Next Steps

This is a conceptual product. What follows are intended outcomes, proposed metrics, and a roadmap for real validation.

INTENDED IMPACT BY ROLE

PATIENT

- Better preparation → fewer avoidable mistakes
- Fewer support calls for routine questions
- Clear appointment visibility throughout journey

TECHNICIAN

- Less manual coordination between teams
- Better sample visibility at every stage
- Improved collection workflow end-to-end

OPERATIONS

- Better operational visibility for decisions
- Improved resource and technician monitoring
- Better data for ongoing operational decisions

NOTE

All metrics below are **proposed success hypotheses**, not production measurements.

PATIENT

- Appointment completion rate
- Preparation checklist completion
- Support-contact reduction
- Report access rate

TECHNICIAN

- Collection completion rate
- Average collection time
- Status accuracy at close

OPERATIONS

- Technician utilisation rate
- Appointment visibility coverage
- Inventory stockout incidents

AI

- Answer usefulness rating
- Task completion via AI
- Escalation rate to support
- User trust over time

VALIDATION ROADMAP

Real User Research › Clinical / Ops Validation › Usability Testing › Accessibility Audit › Technical Feasibility › Pilot › Production Analytics

SENIOR-LEVEL REFLECTIONS

01 AI is most valuable when paired with structured product thinking — without clear problem framing, AI outputs are noise.

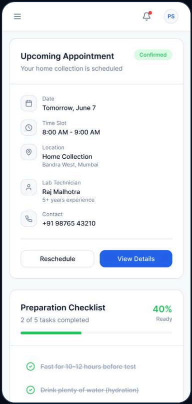
02 Healthcare UX requires clarity and safety before visual novelty. A well-labeled status indicator matters more than a beautiful animation.

03 Accessibility and human control must be designed into AI experiences from the start — they cannot be retroactively applied.

LABSYNC AI · UX CASE STUDY · SELECTED MOBILE SCREENS

Selected Mobile Screens

Patient mobile experience — LabSync AI iOS app across the core journey.



PS

Upcoming Appointment Confirmed

Your home collection is scheduled

Date
Tomorrow, June 7

Time Slot
8:00 AM - 9:00 AM

Location
Home Collection
Bandra West, Mumbai

Lab Technician
Raj Malhotra
5+ years experience

Contact
+91 98765 43210

Reschedule | View Details

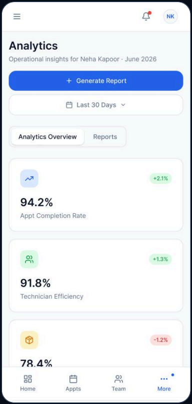
Preparation Checklist 40% Ready

2 of 5 tasks completed

- ~~Fast for 10-12 hours before test~~
- ~~Drink plenty of water (hydration)~~

Upcoming Appointment

Appointment · Checklist



NK

Analytics

Operational insights for Neha Kapoor · June 2026

+ Generate Report

Last 30 Days

Analytics Overview | Reports

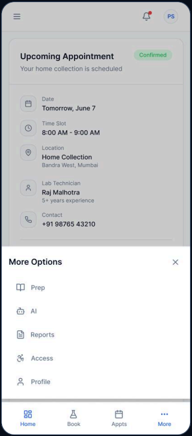
94.2% +2.1%
Appt Completion Rate

91.8% +1.3%
Technician Efficiency

78.4% -1.2%

Analytics

Timeline · Results



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Upcoming Appointment Confirmed

Your home collection is scheduled

Date
Tomorrow, June 7

Time Slot
8:00 AM - 9:00 AM

Location
Home Collection
Bandra West, Mumbai

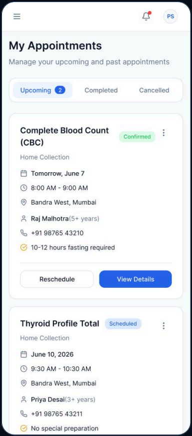
Lab Technician
Raj Malhotra
5+ years experience

Contact
+91 98765 43210

More Options

More Options

Prep · AI · Reports



PS

My Appointments

Manage your upcoming and past appointments

Upcoming 2 | Completed | Cancelled

Complete Blood Count (CBC) Confirmed

Home Collection

Tomorrow, June 7
8:00 AM - 9:00 AM
Bandra West, Mumbai
Raj Malhotra(5+ years)
+91 98765 43210
10-12 hours fasting required

Reschedule | View Details

Thyroid Profile Total Scheduled

Home Collection

June 10, 2026
9:30 AM - 10:30 AM
Bandra West, Mumbai
Priya Desai(3+ years)
+91 98765 43211
No special preparation

My Appointments

Patient · Details

LABSYNC AI · UX CASE STUDY

Shrikant Batra

Senior Product Designer / UX·UI · 2026

Conceptual Product · Portfolio Case Study

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