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Revision / Document History

Version	Date	Changed by	Modifications
1.0.0	30-June-2025	Srigowri N	Project Kick Start

List of Abbreviations

DFD	Data Flow Diagram
E-R	Entity Relationship
RS	Requirement Specification

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Introduction

1.1 Purpose

The purpose of the Claim Processing System is to develop a robust, user-friendly, and efficient web application using React that streamlines the entire insurance claim lifecycle for Sun Health and Allied Insurance. This system aims to automate and simplify the submission, validation, tracking, and approval of insurance claims by providing a centralized platform for all stakeholders including claimants, insurance coordinators, claims officers, medical reviewers, and approvers.

The system will enhance operational efficiency, reduce manual errors, improve transparency, and speed up claim settlements, thereby increasing customer satisfaction and trust. By integrating role-based access and workflow automation, the project seeks to ensure secure and compliant handling of sensitive claim data while supporting timely decision-making.

1.2 Scope

The Claim Processing System will cover the following key functionalities and features:

- **Claim Submission:** Enable Claimants, Policy Holders, and Insurance Coordinators to submit new insurance claims digitally with necessary documentation and proofs.
- **Claim Tracking:** Allow users to track the real-time status of their claims through an intuitive dashboard.
- **Claim Validation:** Facilitate Claims Processing Officers to validate claims, perform documentation checks, and detect potential fraud.
- **Medical Verification:** Provide Medical Practitioners and Internal Medical Reviewers with tools to verify treatment authenticity and submit medical proofs.
- **Claim Approval:** Support Claims Approvers, Managers, and Regional Heads in reviewing and granting final approval for high-value claims, including escalation and revalidation workflows in case of conflicts.
- **User and Role Management:** Allow System Administrators to manage user accounts, assign roles, and configure system settings to ensure secure and appropriate access.

1.3 Definitions, Acronyms and Abbreviations

CPS - Claims Processing System

CRUD - Create Read Update Delete

1.4 References

Not Applicable

1.5 Coordinators

1. Naveenkumar Kandala
2. Roopesh Burra
3. Srigowri N

2. Software Requirements

2.1 Operational Requirements

1. It should handle more users and claims easily, even during busy times.
2. Strong login and access controls are required to keep users and claim data safe.
3. The system should respond quickly for all user actions and process claims fast.
4. Keep detailed records of all claim activities for audits and fraud checks. Admins should be able to manage users, roles, and system settings easily.
5. The system must connect smoothly with outside services like fraud checks and payment systems.
6. Regularly back up data and have plans to recover quickly from disasters.
7. Always watch system health and send alerts for any problems or security issues.

2.2 Functional Requirements

1. Claim Submission:

- a. Allow Claimants, Insurance Coordinators, and Policy Holders to submit new insurance claims with required details and supporting documents via a user-friendly interface.
- b. Support uploading multiple document types (images, PDFs, medical reports, receipts) with version control.

2. Claim Tracking:

- a. Enable users to track the status of their claims in real-time through dashboards or notifications, providing transparency and reducing inquiry calls.

3. Claim Validation:

- a. Claims Processing Officers shall validate claims by checking documentation completeness, verifying policy coverage, and performing fraud checks.

4. Medical Verification:

- a. Medical Practitioners and Internal Medical Reviewers shall verify treatment authenticity and submit medical proofs, which the system will securely store and link to claims.

5. Claim Approval Workflow:

- a. Claims Approvers, Managers, and Regional Heads shall review claims, especially high-value ones, and grant final approval or escalate for revalidation in case of conflicts.

6. User and Role Management:

- a. System Admins shall create and manage user accounts, assign roles (e.g., Claimant, Claims Officer, Medical Reviewer, Approver), and configure system settings to enforce access control and workflow rules.

7. Document Management:

- a. Store and manage all claim-related documents securely with access control, search, and retrieval capabilities.

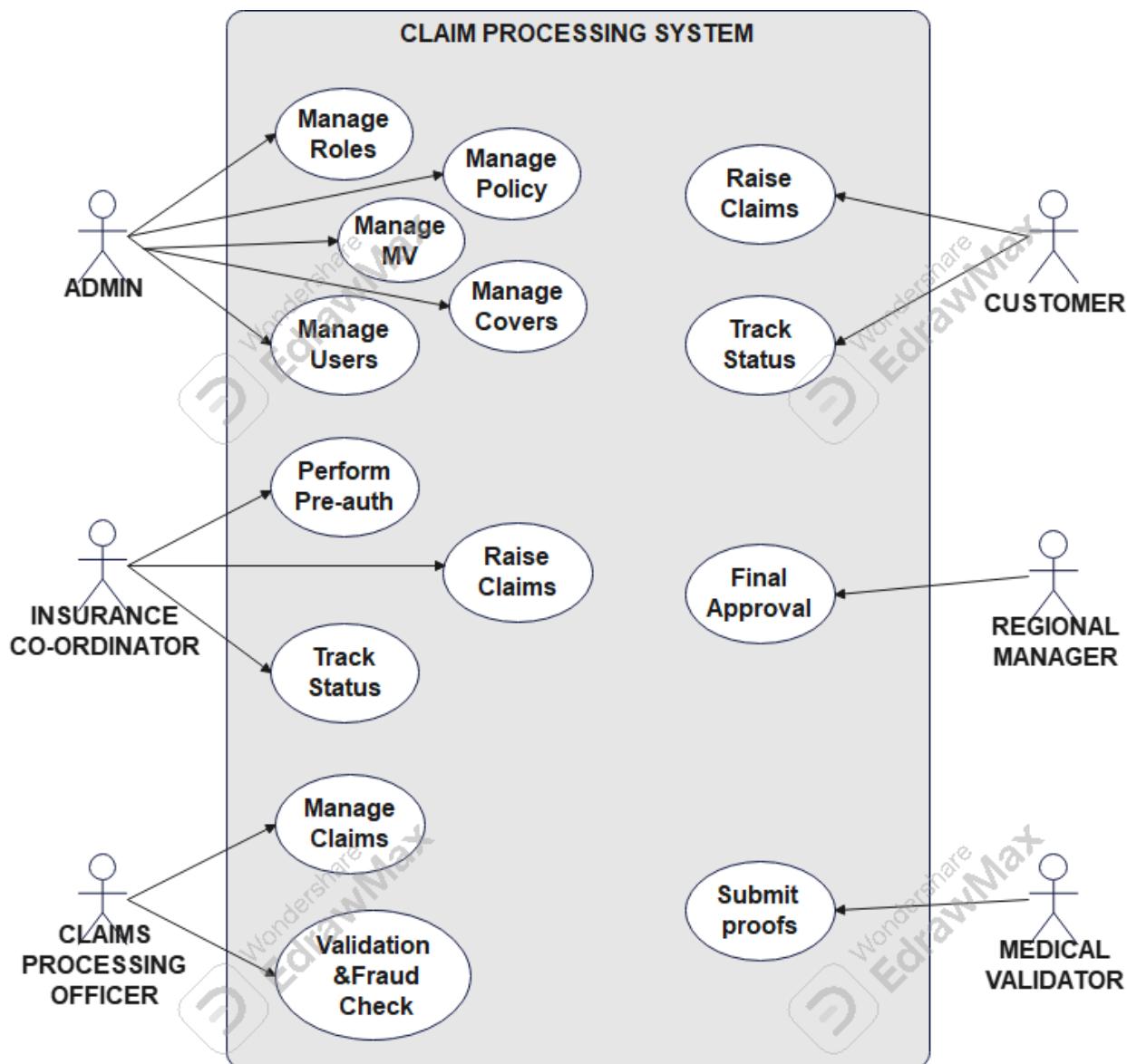


FIGURE 2.1 USE CASE DIAGRAM FOR TMS

Requirement Tag ID	RS-1-1 [Manage Roles Details]	
Source/Trigger	ADMIN	
Description	Input	Roles
	Process	Perform CRUD operation on the Roles
	Output	Roles details added successfully
Validation Method	Data Validation	

Requirement Tag ID	RS-1-2 [Manage User]	
Source/Trigger	ADMIN	
Description	Input	User
	Process	Perform CRUD operation on the User
	Output	User details added successfully
Validation Method	Data Validation	

Requirement Tag ID	RS-1-3 [Add Policies & Covers]	
Source/Trigger	ADMIN	
Description	Input	Create Operation
	Process	Add Policy and Covers
	Output	View Policies and Covers
Validation Method	Data Validation	

Requirement Tag ID	RS-2-1 [Raise Claims]	
Source/Trigger	Policy Holder / Customer	
Description	Input	Customer & Policy Details
	Process	Submit documents
	Output	Updates on documents & view status
Validation Method	Data Updation	

Requirement Tag ID	RS-2-2 [Track status]	
Source/Trigger	Policy Holder / Customer	
Description	Input	Customer & Policy Details
	Process	Track Status
	Output	Final Approval with amount / claim reject status
Validation Method	Data Updation	

Requirement Tag ID	RS-3-1 [Perform Pre-auth]	
Source/Trigger	<i>Insurance Co-ordinator</i>	
Description	<i>Input</i>	<i>Pre-auth on Customer</i>
	<i>Process</i>	<i>Validation</i>
	<i>Output</i>	<i>Submit documents</i>
Validation Method	<i>Data Updation</i>	

Requirement Tag ID	RS-3-2 [Raise Claims]	
Source/Trigger	<i>Insurance Co-ordinator</i>	
Description	<i>Input</i>	<i>Customer & Policy Details</i>
	<i>Process</i>	<i>Submit documents</i>
	<i>Output</i>	<i>Updates on documents & view status</i>
Validation Method	<i>Data Updation</i>	

Requirement Tag ID	RS-3-3 [Track status]	
Source/Trigger	<i>Insurance Co-ordinator</i>	
Description	<i>Input</i>	<i>Customer & Policy Details</i>
	<i>Process</i>	<i>Track Status</i>
	<i>Output</i>	<i>Final Approval with amount / claim reject status</i>
Validation Method	<i>Data Updation</i>	

Requirement Tag ID	RS-4-1 [Manage Claims]	
Source/Trigger	<i>Claims Processing Officer</i>	
Description	<i>Input</i>	<i>Claims</i>
	<i>Process</i>	<i>Manage on Claims</i>
	<i>Output</i>	<i>Query + Notify & Set Expected Amount</i>
Validation Method	<i>Data Validation & Updation</i>	

Requirement Tag ID	RS-4-2 [Approve or Reject]	
Source/Trigger	<i>Claims Processing Officer</i>	
Description	<i>Input</i>	<i>Claims</i>
	<i>Process</i>	<i>Manage on Claims</i>
	<i>Output</i>	<i>Approve or Reject</i>
Validation Method	<i>Data Updation</i>	

Requirement Tag ID	<i>RS-4-3 [Track status]</i>	
<i>Source/Trigger</i>	<i>Claims Processing Officer</i>	
<i>Description</i>	<i>Input</i>	<i>Document verification</i>
	<i>Process</i>	<i>Track Status</i>
	<i>Output</i>	<i>Final Approval with amount / claim reject status</i>
<i>Validation Method</i>	<i>Data Updation</i>	

Requirement Tag ID	<i>RS-5-1 [Verification]</i>	
<i>Source/Trigger</i>	<i>Medical Validator</i>	
<i>Description</i>	<i>Input</i>	<i>Document verification + Submission</i>
	<i>Process</i>	<i>Visiting hospital for proofs</i>
	<i>Output</i>	<i>Comments with approve / reject</i>
<i>Validation Method</i>		

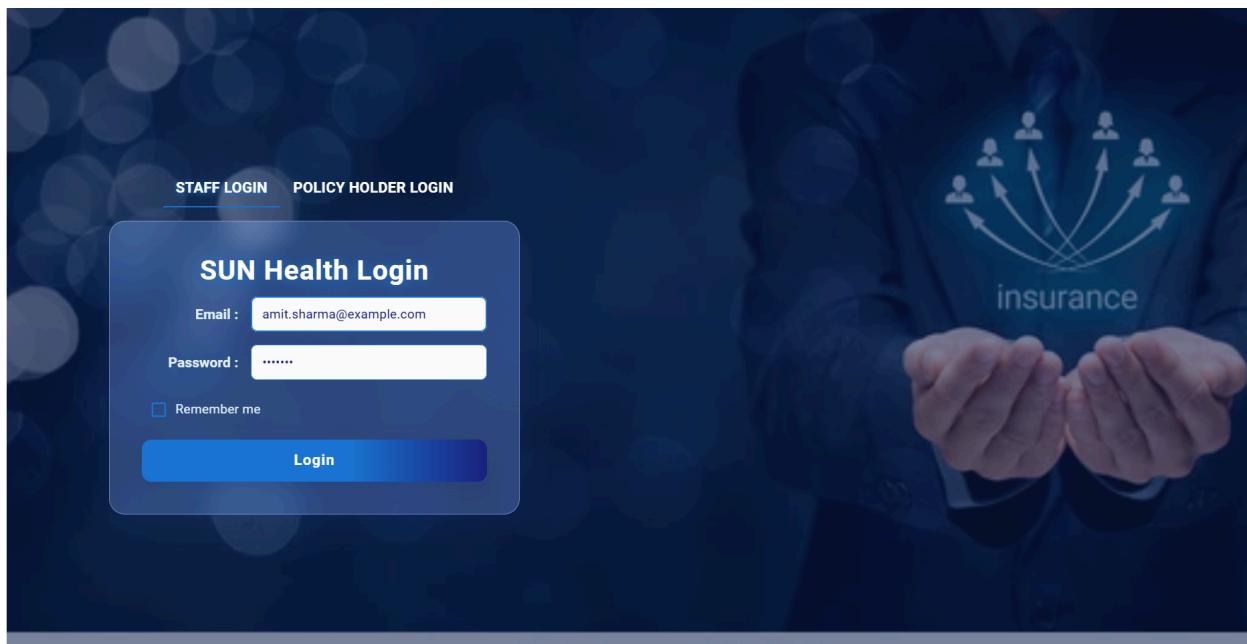
Requirement Tag ID	<i>RS-6-1 [Final Approval]</i>	
<i>Source/Trigger</i>	<i>Regional Manager</i>	
<i>Description</i>	<i>Input</i>	<i>Notification</i>
	<i>Process</i>	<i>Approve or Reject Claims</i>
	<i>Output</i>	<i>Comments</i>
<i>Validation Method</i>	<i>Data Updation</i>	

2.3 User Interface Requirements

A. Regional Head Dashboard



B. Users Login



C. Policy Holder Dashboard

The screenshot shows the 'Policy Holder' dashboard. On the left is a sidebar with icons for Home, My Policy, Claims, and More. The main area has a 'Welcome, Amit Sharma!' message with a nominee detail. Below it is a section titled 'Why Take Health Insurance?' with a brief description and a bulleted list of key benefits.

Welcome, Amit Sharma!

Nominee: Neha Sharma (Wife), born on 1988-07-20

Your health and peace of mind are our top priorities. Explore your policies and claims using the menu.

Why Take Health Insurance?

Health insurance protects you and your family from unexpected medical expenses, ensuring access to quality healthcare without financial stress. It covers hospitalization, surgeries, critical illnesses, and more.

Key Benefits:

- Cashless treatment at network hospitals
- Covers pre and post-hospitalization expenses
- Tax benefits under Section 80D
- Peace of mind for you and your loved ones

D. Policy Holder Dashboard - Home

The screenshot shows the 'Policy Holder' dashboard. On the left is a sidebar with icons for Home, My Policy, Claims, and More. The main area has a 'Welcome, Amit Sharma!' message with a nominee detail. Below it is a section titled 'Why Take Health Insurance?' with a brief description and a bulleted list of key benefits.

Welcome, Amit Sharma!

Nominee: Neha Sharma (Wife), born on 1988-07-20

Your health and peace of mind are our top priorities. Explore your policies and claims using the menu.

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Health insurance protects you and your family from unexpected medical expenses, ensuring access to quality healthcare without financial stress. It covers hospitalization, surgeries, critical illnesses, and more.

Key Benefits:

- Cashless treatment at network hospitals
- Covers pre and post-hospitalization expenses
- Tax benefits under Section 80D
- Peace of mind for you and your loved ones

E. Policy Holder - My Policies

☰ Policy Holder

My Policies

 Sun Unique Health Customer ID: 201 Sum Assured: ₹500,000 Premium: ₹12,000 Validity: 2025-07-01 to 2026-06-30 DETAILS MORE	 Diabetes Safe Customer ID: 201 Sum Assured: ₹300,000 Premium: ₹16,000 Validity: 2025-07-01 to 2026-06-30 DETAILS MORE
---	---

F. Raise Claims

☰ Policy Holder

Claims Raised

Claim #3001 Cashless Approval Pending Expected Amount: ₹50000 Approved Amount: ₹45000 Submitted Date: 2023-06-01 VIEW STATUS	Claim #3002 Reimbursement Approval Pending Expected Amount: ₹25000 Approved Amount: ₹1000 Submitted Date: 2023-07-15 VIEW STATUS
---	---

+ RAISE CLAIM

G. Policy Holder - Raise Claim Form [Policy Dropdown]

The screenshot shows a modal window titled "Raise New Claim". The form fields include:

- Customer ID: 201
- Policy Name * (dropdown menu)
- Expected Amount (₹) * (text input field)
- Upload Documents section with fields for Blood Test, Prescription, Insurance Form, and Other, each with a "Browse..." button.
- Admission Note * (text input field)
- X-Ray Report (text input field)
- Discharge Summary (text input field)
- Submitted Date: 2025-07-08
- Last Updated: 2025-07-08 05:24:09
- Buttons: SUBMIT, CANCEL, RAISE CLAIM

H. Policy Holder - More

The screenshot shows a sidebar menu titled "More" with the following options:

- Home
- My Policy
- Claims
- ...
- More
- My Profile
- Nominee Details
- Service Request Archives
- Hospital Locator
- Settings
- Contact Us
- Logout

I. Policy Holder - Update profile

Main Menu

- Home
- My Policy
- Claims
- More

More

My Profile

Customer Details

- Customer ID: 201
- Name: Amit Sharma
- Email: amit.sharma@example.com
- Phone: 8765789878
- Address: 123, MG Road, Mumbai, Maharashtra
- DOB: 1985-04-15
- Aadhaar: 1234-5678-9012

UPDATE PROFILE

J. Policy Holder - Service Request Archives

Main Menu

- Home
- My Policy
- Claims
- More

Nominee Details

Service Request Archives

Claim #3001 Cashless Paid

Expected Amount: ₹50000
Approved Amount: ₹45600
Submitted Date: 2023-06-01
Feedback: Approved

Raised Validating Medical Validator Visiting Hospital Approval Pending Paid

This claim has been paid.

K. Policy Holder - Hospital List

The screenshot shows a mobile application interface for a 'Policy Holder'. The main menu on the left includes 'Home', 'My Policy', 'Claims', and 'More'. A central modal window is open, titled 'Hospitals in Mumbai', displaying a list of three hospitals with their addresses and contact numbers:

- Fortis Healthcare: 1, Mahatma Gandhi Road, Contact: +91 22 3983 3333
- Lilavati Hospital: A-791, Bandra Reclamation, Contact: +91 22 2675 4444
- Kokilaben Dhirubhai Ambani Hospital: Andheri West, Contact: +91 22 3099 3333

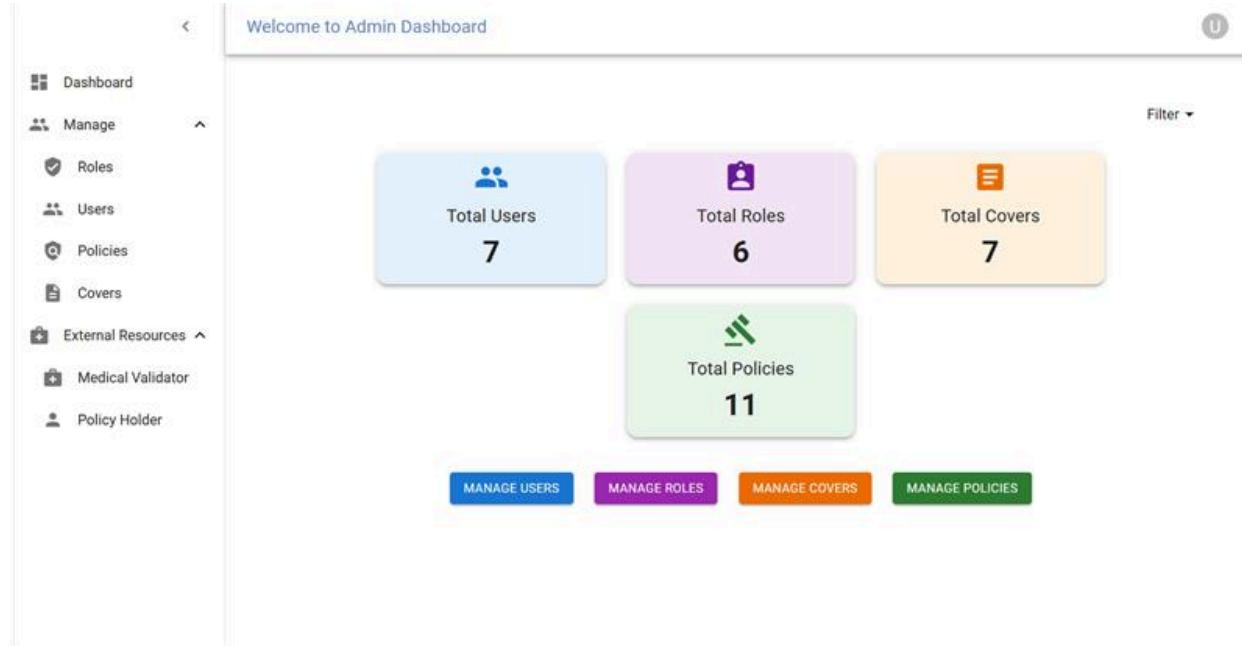
At the bottom right of the modal is a 'CLOSE' button. Below the modal, the main menu items 'Vellore' and 'Settings' are visible.

L. Policy Holder - Settings and Logout

The screenshot shows the 'Settings' section of the Policy Holder app. The main menu on the left includes 'Home', 'My Policy', 'Claims', and 'More'. The 'More' item is highlighted. The settings section contains the following options:

- Change Password**: Includes a 'CHANGE PASSWORD' button.
- Terms and Conditions**
- Privacy Policy**
- Rate Our App**
- About**
- Contact Us**
- Logout**

M. ADMIN Dashboard



N. ADMIN - User Management

The User Management page includes a search bar and a table with columns for ID, Name, Email, Address, Hire Date, Active, Role ID, and Actions. Each row contains a blue pencil icon for edit and a red trash bin icon for delete.

ID	Name	Email	Address	Hire Date	Active	Role ID	Actions
1	Vinod Kumar	vinod.k@example.com	123 Main St, Bengaluru	2024-05-01	Yes	1	
2	Priya Sharma	priya.sharma@example.com	456 Green Ave, Hyderabad	2023-11-20	Yes	3	
3	Amit Verma	amit.verma@example.com	789 Hill Road, Mumbai	2022-09-15	Yes	1	
4	Naveen Joshi	naveen.j@insurance.com	22 Lotus Street, Pune	2024-02-10	Yes	4	
5	Roopesh	roopesh@cpo.com	35 Pearl Enclave, Chennai	2023-08-05	Yes	6	

O. ADMIN - Covers Management

Welcome to Admin Dashboard

Welcome to Dashboard

Covers

+ ADD COVER

ID	Name	Amount	Premium	Actions
1	Health Basic	₹100,000	₹2,000	
2	Premium Plus	₹250,000	₹10,000	
3	Family Pack	₹500,000	₹15,000	
4	Senior Secure	₹150,000	₹8,000	
5	Child Care Cover	₹75,000	₹3,000	

P. ADMIN - Policy Management

Welcome to Admin Dashboard

Dashboard

Manage

Roles

Users

Policies

Covers

External Resources ^

Medical Validator

Policy Holder

Policy Management

+ ADD POLICY

ID	Name	Sum Assured	Validity	Exclusions	Actions
226f	Sun Unique Health	₹500,000	2025-07-01 to 2026-06-30	Pre-existing diseases covered after waiting period; No coverage for cosmetic procedures	
6e40	Sun Wedding Gift	₹400,000	2025-07-01 to 2026-06-30	No coverage for fertility treatments; 9 months waiting period for maternity benefits	
0efd	Medi Classic	₹700,000	2025-07-01 to 2026-06-30	No coverage for pre-existing diseases for 2 years; No coverage for alternative therapies	
e7d4	Diabetes Safe	₹300,000	2025-07-01 to 2026-06-30	No coverage for complications before policy start; No coverage for non-allopathic treatments	

Q. ADMIN - Policy Holder/ Customer Management

Welcome to Admin Dashboard

Policy Holders

Name	Aadhaar	Email	DOB	Address	Nominee	Nominee DOB	Relation	Actions
Karan Mehta	5678-9012-3456	karan.mehta@example.com	1978-06-22	102, Churchgate, Mumbai, Maharashtra	Rina Mehta	1980-03-10	Wife	

+ ADD POLICY HOLDER

Navigation: Dashboard, Manage, Roles, Users, Policies, Covers, External Resources (Medical Validator, Policy Holder).

R. ADMIN - Add Policy Holder/ Customer

Welcome to Admin Dashboard

Add Policy Holder

Customer Name *	<input type="text"/>
Aadhaar	<input type="text"/>
Email *	<input type="text"/>
Date of Birth	<input type="text"/> mm/dd/yyyy
Address	<input type="text"/>
Nominee Name	<input type="text"/>
Nominee DOB	<input type="text"/> mm/dd/yyyy
Nominee Relation	<input type="text"/>

CANCEL **ADD**

Navigation: Dashboard, Manage, Roles, Users, Policies, Covers, External Resources (Medical Validator, Policy Holder).

S. ADMIN - Medical validator Management

ID	Expertise Field	Status	Assigned Claim	Actions
7001	Ortho	Available	3001	
7002	Cardiologist	Occupied	3001	

T. Insurance Coordinator Dashboard

Claims Raised	Pending Approvals	Completed Claims
38	12	26

Pre Authorization

Initiate pre-authorization requests.

Raise Claim

Submit a new claim form.

Track Claim

Track status of submitted claims.

Final Claim

Submit final claim settlement details.

U. Insurance Coordinator - Pre-auth

Insurance Coordinator Dashboard

Pre Authorization

Health Card Number: HC005678 Verify

Policy Found - You can proceed

Patient Name: Naveen Sharma

Policy Number: POL-2024-002

Policy Type: Basic Health

Coverage Amount: ₹2,00,000

Valid Until: 2025-06-30

Status: Active

Proceed to Claim Request

V. Insurance Coordinator - Raise Claim

Insurance Coordinator Dashboard

Raise Claim

ID	Patient Name	Health Card
3001	Rajesh Kumar	HC001234
3002	Naveen Sharma	HC005678

Add Claim

Patient Name

Health Card Number

Registration Date mm/dd/yyyy

Time AM/PM AM

Sex Male

DOB mm/dd/yyyy

Phone

CANCEL ADD

W. Insurance Coordinator - View Documents

The screenshot shows the 'Insurance Coordinator Dashboard' with a sidebar on the left containing links: Home, Pre Authorization, Raise Claim, Final Claim, Track Claim, and Documents (which is selected). The main area is titled 'Claim Documents' and contains a table with two rows of data. The columns are ID, Claim ID, Blood Test, Admission Note, Prescription, X-Ray Report, Insurance Form, Discharge Summary, and Actions. Each row has a 'View' link for each column and edit/delete icons in the Actions column.

ID	Claim ID	Blood Test	Admission Note	Prescription	X-Ray Report	Insurance Form	Discharge Summary	Actions
5001	3001	View	 					
5002	3002	View	 					

X. Insurance Coordinator - Add Documents

The screenshot shows a modal window titled 'Add Document' over a background of the 'Claim Documents' list. The modal has fields for 'ID' and 'Claim ID'. Below these are five upload input fields labeled: 'UPLOAD BLOOD TEST (PDF/IMAGE)', 'UPLOAD ADMISSION NOTE (PDF/IMAGE)', 'UPLOAD PRESCRIPTION (PDF/IMAGE)', 'UPLOAD X-RAY REPORT (PDF/IMAGE)', and 'UPLOAD INSURANCE FORM (PDF/IMAGE)'. At the bottom right are 'CANCEL' and 'ADD' buttons.

Y. Claim Processing Officer Dashboard

Welcome!

Total Claims 2	Cashless Claims 0	Reimbursement Claims 0	Approved 0
Rejected 0	Pending 0	Validating 0	Available Validators 1

Z. Claim Processing Officer - Cashless

Cashless Claims Processing

Search by Claim ID, Hospital ID, or Customer ID **SEARCH**

Raised (0) Validating (0) Pending (0) Final Approval (0) Completed (2)

REFRESH

Claim #3001 Customer: 3 Hospital: 401 Expected: ₹50,000 Approved: ₹45,000 Submitted: 6/1/2023 Updated: 7/6/2025	Claim #3002 Customer: 501 Hospital: Expected: ₹2,500,000 Approved: ₹1,000 Submitted: 7/15/2023 Updated: 7/6/2025
---	--

AA. Claim Processing Officer - Cashless Stats

Main Items

- Dashboard
- Cashless
- Reimbursement

Analytics

- Stats
- CashlessStats**
- ReimbursementStats

Cashless Claims Report

Overview of approved, rejected, and pending cashless claims.

Percentage Breakdown

Status	Percentage
Approved	100.0%
Rejected	0.0%
Pending	0.0%

BB. Claim Processing Officer - Reimbursement

Main Items

- Dashboard
- Cashless
- Reimbursement**

Analytics

- Stats

Reimbursement Claims Processing

Search by Claim ID, Hospital ID, or Customer ID

SEARCH

Raised (2) Validating (0) Pending (0) Final Approval (0) Completed (0)

REFRESH

Claim #3002 Raised By Customer	Claim #3003 Raised By Customer
Customer: 501	Customer: 201
Hospital: N/A	Hospital: N/A
Expected: ₹2,500,000	Expected: ₹50,000
Approved: ₹300,001	Approved: ₹0
Submitted: 7/15/2023	Submitted: 7/7/2025
Updated: 7/8/2025	Updated: 7/7/2025
Feedback: Success	
VALIDATE	VALIDATE

CC. Claim Processing Officer - Reimbursement [Validating with Amount]

The screenshot shows the 'Reimbursement Claims Processing' section of the application. On the left, a sidebar menu includes 'Dashboard', 'Cashless', and 'Reimbursement' (which is selected). Below that are 'Analytics' sections for 'Stats' and 'ReimbursementStats'. The main area has a search bar and a status summary: 'Raised (0)', 'Validating (0)', 'Pending (1)', 'Final Approval (0)', and 'Completed (1)'. A modal window displays a claim detail for 'Claim #3002' with a 'Verified' status. It shows the customer ID (501), hospital ID (N/A), expected amount (₹2,500,000), approved amount (30001), submission date (7/15/2023), update date (7/8/2025), and feedback (Success). Buttons for 'SAVE', 'CANCEL', 'APPROVE', 'REJECT', and 'QUERY' are present.

DD. Claim Processing Officer - Reimbursement Stats

The screenshot shows the 'Reimbursement Claims Report' section. The sidebar includes 'Dashboard', 'Cashless', 'Reimbursement' (selected), 'Stats', 'CashlessStats', and 'ReimbursementStats'. The main area displays a donut chart titled 'Percentage Breakdown' showing the distribution of claims: Approved (green), Rejected (red), and Pending (orange). Below the chart, specific percentages are listed: Approved: 0.0%, Rejected: 50.0%, and Pending: 50.0%.

EE. Medical Validator Dashboard

The screenshot shows the 'Medical Validator Dashboard'. On the left, there's a sidebar with 'Dashboard' and 'Validation' options. The main area has a title 'Medical Validator Dashboard' and two summary boxes. The first box, 'Pending to Verify', contains an icon of a clipboard with a magnifying glass, the text 'Pending to Verify', a large '0', and the subtitle 'Claims waiting for your verification'. The second box, 'Submitted for Approve', contains a green checkmark icon, the text 'Submitted for Approve', a large '0', and the subtitle 'Claims submitted for approval'. A toggle switch labeled 'Available' is also present. A red circle with the letter 'R' is overlaid on the bottom-left corner of the dashboard area.

FF. Medical Validator - Validation

The screenshot shows the 'Proof Documents (Validating Claims)' section of the 'Validation' page. The left sidebar has 'Validation' selected. The main area displays a table with columns for Claim ID, Blood Test, Admission Note, Prescription, X-Ray Report, Insurance Form, Discharge Summary, Other, Feedback, Last Updated, Edit, and Validation. A red circle with the letter 'R' is overlaid on the bottom-left corner of the validation table area. At the bottom of the table, there is a small URL: 'localhost:5173/valid'.

GG. Regional Head Dashboard

The dashboard features a sidebar with icons for Dashboard, Cashless, Reimburse..., Stats, and a three-dot menu. The main area has a "Good Day!" header and a welcome message for Priya Mehta. It displays user details (User ID: 101, Email: priya.mehta@example.com, Address: 123, Main Road, Mumbai, Hire Date: 2020-04-10) and a status indicator (Available). Below this is a section about insurance.

Good Day!

Welcome, Priya Mehta!

We are delighted to have you onboard. Our mission is to empower you with transparent, efficient, and secure insurance solutions.

Your Details

User ID: 101
Email: priya.mehta@example.com
Address: 123, Main Road, Mumbai
Hire Date: 2020-04-10

Available

About Insurance

Insurance is more than a product—it's a promise of support when you need it most. At our company, we focus on:

HH. Regional Head Dashboard

The dashboard features a sidebar with icons for Dashboard, Cashless, Reimburse..., Stats, and a three-dot menu. The main area has a "Welcome, Regional Head!" header and a message about monitoring key insurance metrics. It displays six performance metrics in colored boxes: Total Policies (11), Networked Hospitals (10), Customers (5), Pending Claims (2), Approved Claims (0), and Rejected Claims (0).

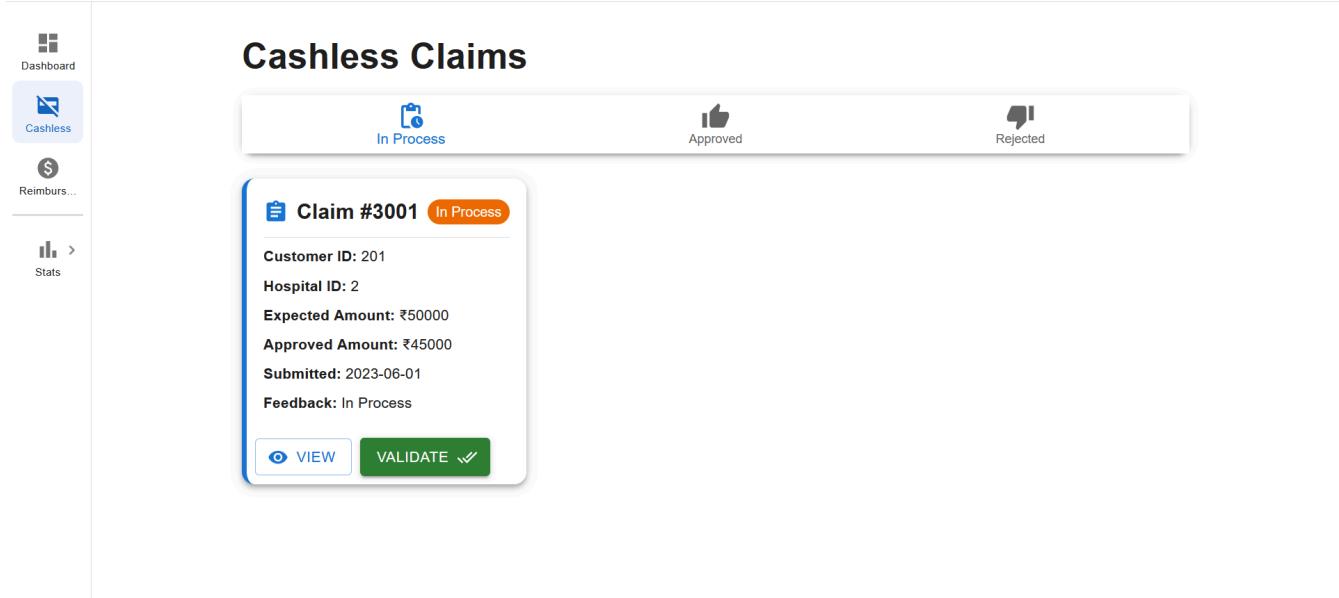
Welcome, Regional Head!

Here you can monitor key insurance metrics and track your region's performance at a glance.

Total Policies 11	Networked Hospitals 10	Customers 5	Pending Claims 2
Approved Claims 0	Rejected Claims 0		

II. Regional Head - Cashless Claims

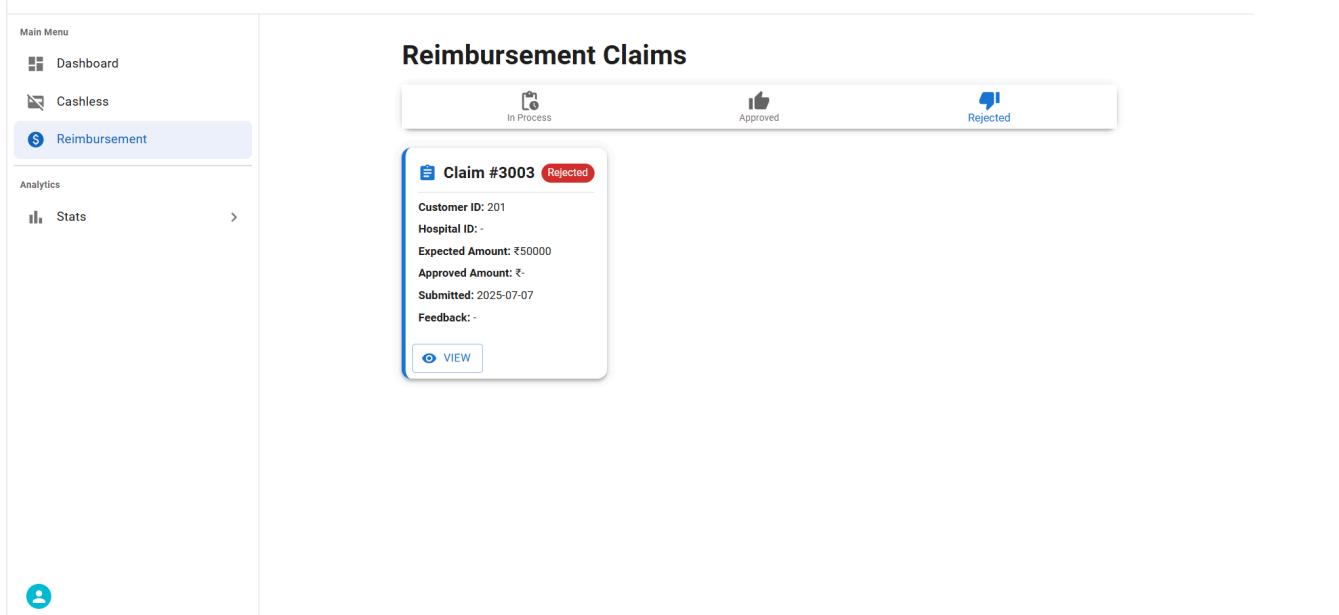
☰  Regional Head



The screenshot shows the 'Cashless Claims' section of the application. On the left is a vertical sidebar with icons for Dashboard, Cashless (selected), Reimbursement (disabled), and Stats. The main area has a header 'Cashless Claims' with three status filters: 'In Process' (blue icon), 'Approved' (green icon), and 'Rejected' (red icon). A card displays claim details for 'Claim #3001' (status: In Process): Customer ID: 201, Hospital ID: 2, Expected Amount: ₹50000, Approved Amount: ₹45000, Submitted: 2023-06-01, and Feedback: In Process. Buttons for 'VIEW' and 'VALIDATE' are at the bottom.

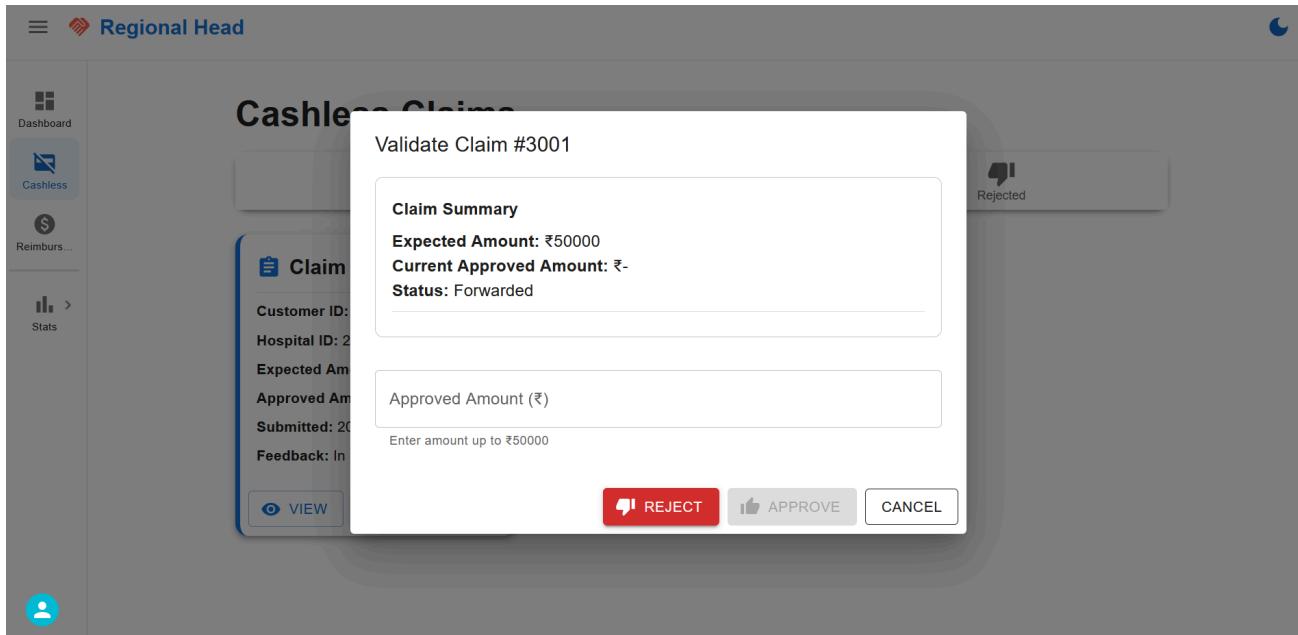
JJ. Regional Head - Reimbursement Claims

☰  Regional Head

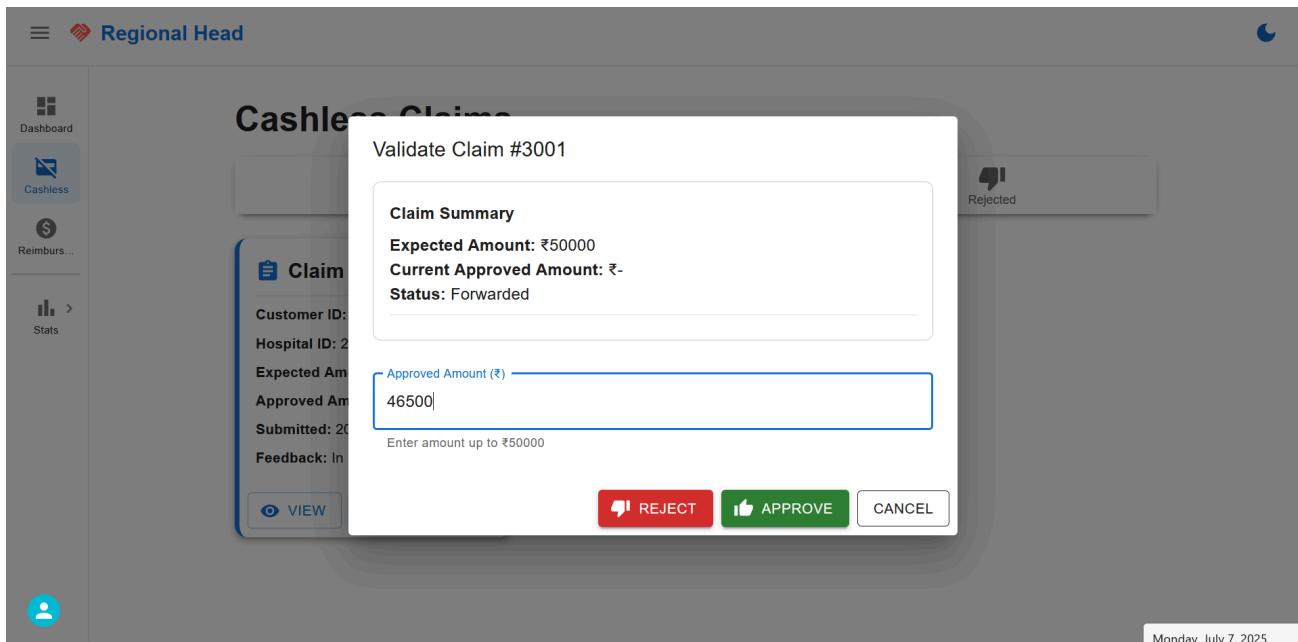


The screenshot shows the 'Reimbursement Claims' section. The sidebar includes Main Menu (Dashboard, Cashless, Reimbursement selected), Analytics (Stats), and a user profile icon. The main area has a header 'Reimbursement Claims' with three status filters: 'In Process' (blue icon), 'Approved' (green icon), and 'Rejected' (red icon). A card displays claim details for 'Claim #3003' (status: Rejected): Customer ID: 201, Hospital ID: -, Expected Amount: ₹50000, Approved Amount: ₹-, Submitted: 2025-07-07, and Feedback: -. A 'VIEW' button is at the bottom.

KK. Regional Head - Cashless and Reimbursement - On clicking [Validate]

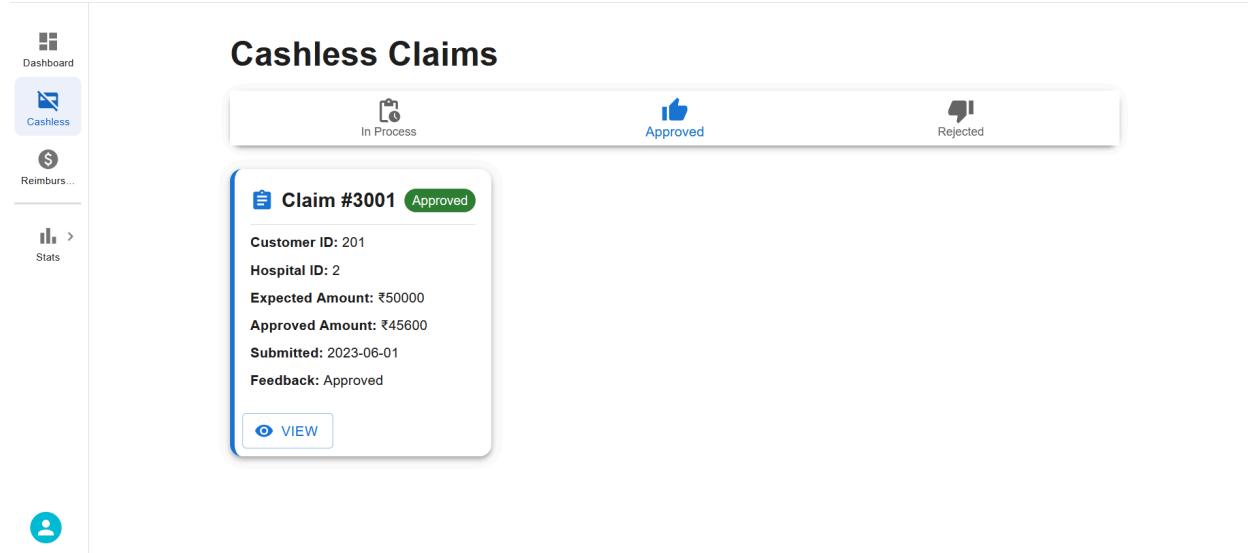


LL. Regional Head - Cashless and Reimbursement - Approve [only on setting Amount] / Reject



MM. Regional Head - Cashless Claim [Approved]

≡  **Regional Head**



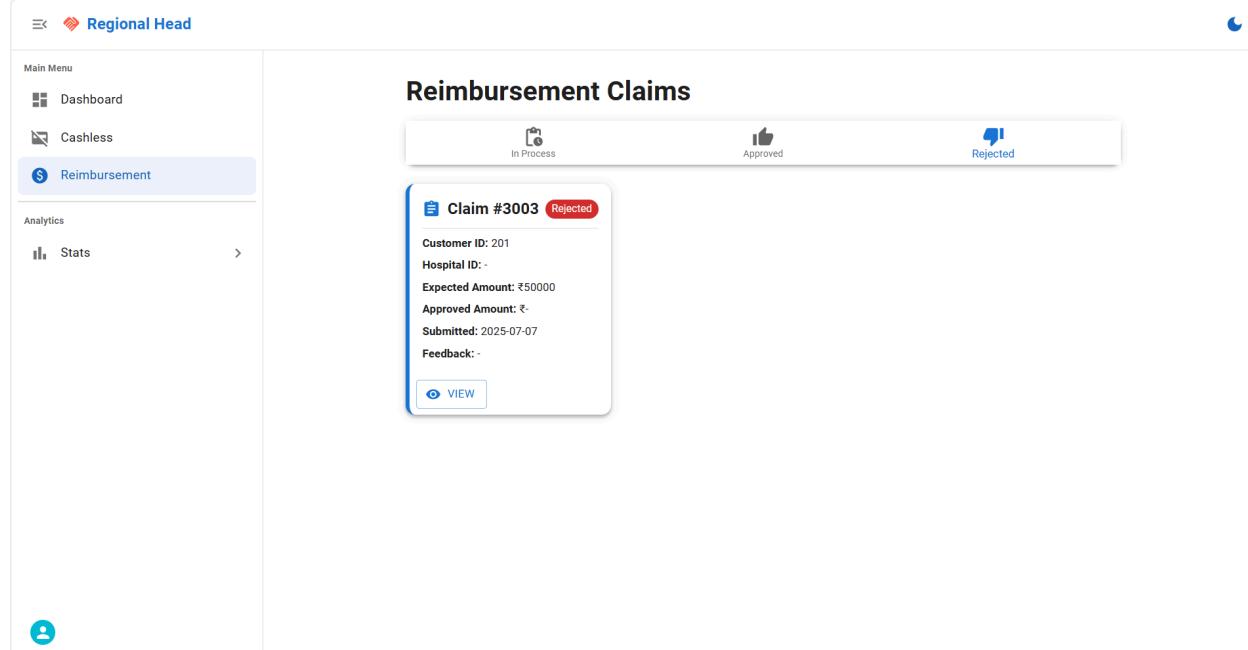
The screenshot shows a user interface for managing cashless claims. On the left, there's a sidebar with icons for Dashboard, Cashless (selected), Reimbursement..., and Stats. The main area is titled "Cashless Claims". It features three status filters: "In Process", "Approved" (which is selected and highlighted in blue), and "Rejected". A single claim is listed under the "Approved" filter:

- Claim #3001 Approved**
- Customer ID: 201
- Hospital ID: 2
- Expected Amount: ₹50000
- Approved Amount: ₹45600
- Submitted: 2023-06-01
- Feedback: Approved

A blue "VIEW" button is at the bottom of the claim card.

NN. Regional Head - Reimbursement Claims [Rejected]

≡  **Regional Head**

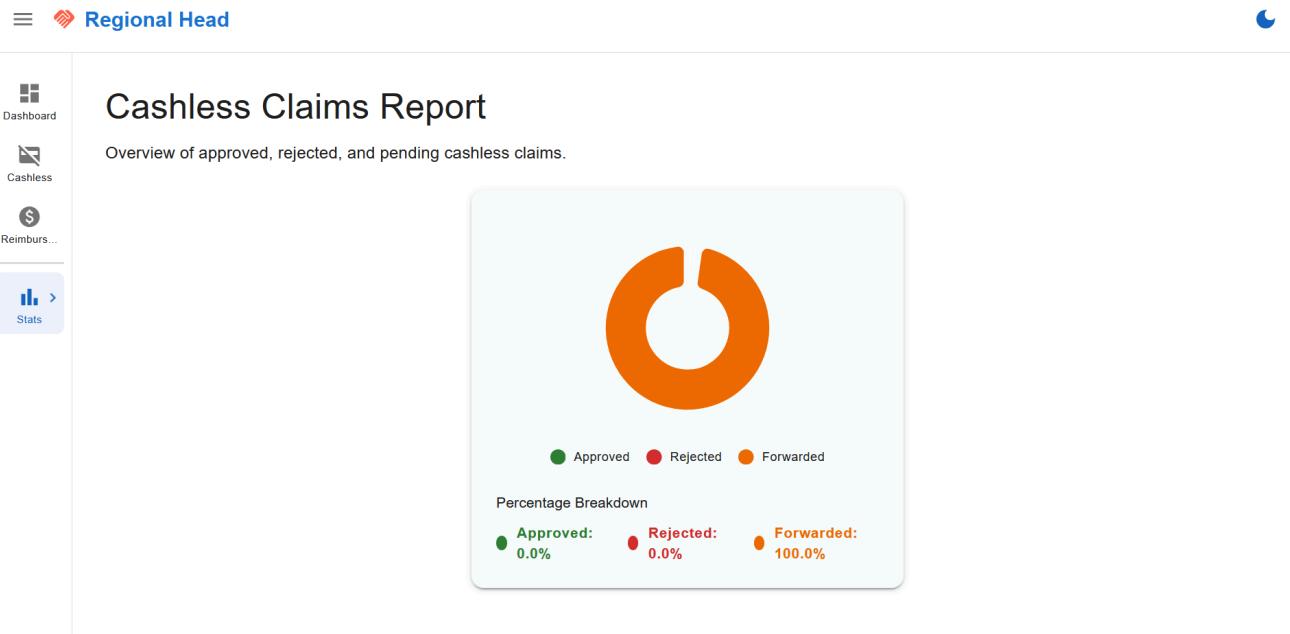


The screenshot shows a user interface for managing reimbursement claims. On the left, there's a sidebar with icons for Dashboard, Cashless, Reimbursement (selected and highlighted in blue), and Stats. The main area is titled "Reimbursement Claims". It features three status filters: "In Process", "Approved" (which is selected and highlighted in blue), and "Rejected". A single claim is listed under the "Rejected" filter:

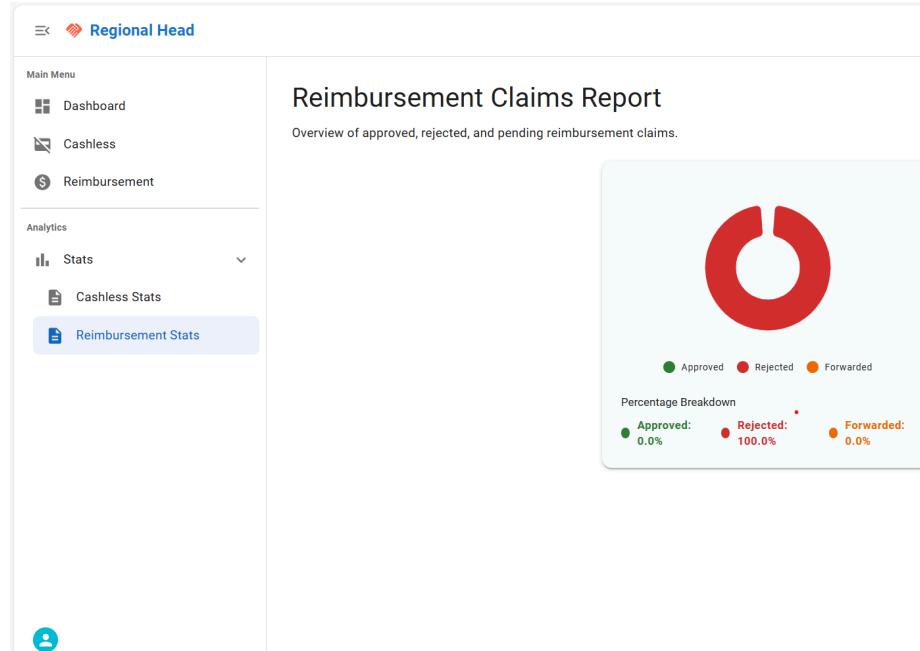
- Claim #3003 Rejected**
- Customer ID: 201
- Hospital ID: -
- Expected Amount: ₹50000
- Approved Amount: ₹-
- Submitted: 2025-07-07
- Feedback: -

A blue "VIEW" button is at the bottom of the claim card.

OO. Regional Head - Cashless Stats



PP. Regional Head - Reimbursement Stats



Database Design:

A. Policies

```
(1) db.json  X
src > API > {} db.json > [ ] claims > {} 0
  1  {
  2    "policies": [
  3      {
  4        "policy_id": 101,
  5        "policy_name": "Sun Unique Health",
  6        "sum_assured": 500000,
  7        "premium": 12000,
  8        "validity": "2025-07-01 to 2026-06-30",
  9        "exclusion": "Pre-existing diseases covered after waiting period; No coverage for cosmetic procedures"
 10       "id": "226f"
 11     },
 12     {
 13       "policy_id": 102,
 14       "policy_name": "Sun Wedding Gift",
 15       "sum_assured": 400000,
 16       "premium": 11000,
 17       "validity": "2025-07-01 to 2026-06-30",
 18       "exclusion": "No coverage for fertility treatments; 9 months waiting period for maternity benefits",
 19       "id": "6e40"
 20     },
 21     {
 22       "policy_id": 103,
 23       "policy_name": "Medi Classic",
 24       "sum_assured": 700000,
 25       "premium": 15000,
 26       "validity": "2025-07-01 to 2026-06-30",
 27       "exclusion": "No coverage for pre-existing diseases for 2 years; No coverage for alternative therapies"
 28       "id": "0efd"
 29     }
  
```

B. Covers

```
(1) db.json  X
src > API > {} db.json > [ ] claims > {} 0
  103  "covers": [
  104    {
  105      "cover_id": 1,
  106      "cover_name": "Silver",
  107      "cover_amount": 300000,
  108      "addon": [
  109        "Annual health check-up",
  110        "Teleconsultation services"
  111      ],
  112      "id": "91c7"
  113    },
  114    {
  115      "cover_id": 2,
  116      "cover_name": "Gold",
  117      "cover_amount": 500000,
  118      "addon": [
  119        "Annual health check-up",
  120        "Teleconsultation",
  121        "Ambulance cover"
  122      ],
  123      "id": "2d3b"
  124    },
  125    {
  126      "cover_id": 3,
  127      "cover_name": "Platinum",
  128      "cover_amount": 1000000,
  129      "addon": [
  130        "Annual health check-up",
  131        "Teleconsultation",
  132        "Ambulance cover",
  133        "Wellness program",
  134        "Mental health support"
  135      ],
  
```

C. Customers

```
① db.json  X
src > API > {} db.json > [ ] claims > {} 0
163   "customers": [
164     {
165       "id": "201",
166       "customer_name": "Amit Sharma",
167       "customer_address": "123, MG Road, Mumbai, Maharashtra",
168       "customer_aadhaar": "1234-5678-9012",
169       "customer_email": "amit.sharma@example.com",
170       "customer_password": "amit123",
171       "customer_dob": "1985-04-15",
172       "nominee_name": "Neha Sharma",
173       "nominee_dob": "1988-07-20",
174       "nominee_relation": "Wife",
175       "policies": [
176         {
177           "policy_id": 101,
178           "cover_id": 2
179         },
180         {
181           "policy_id": 104,
182           "cover_id": 3
183         }
184       ],
185       "customer_phone": "8765789876"
186     },

```

D. Hospital

```
① db.json  X
src > API > {} db.json > [ ] hospitals > {} 2
268   "hospitals": [
269     {
270       "id": "1",
271       "hospital_name": "Apollo Hospitals",
272       "address": "21, Greams Lane, Thousand Lights",
273       "city": "Chennai",
274       "contact": "+91 44 2829 3333"
275     },
276     {
277       "id": "2",
278       "hospital_name": "Fortis Healthcare",
279       "address": "1, Mahatma Gandhi Road",
280       "city": "Mumbai",
281       "contact": "+91 22 3983 3333"
282     },
283     {
284       "id": "3",
285       "hospital_name": "AIIMS",
286       "address": "Ansari Nagar, Gautam Nagar",
287       "city": "New Delhi",
288       "contact": "+91 11 2658 8500"
289     },
290     {
291       "id": "4",
292       "hospital_name": "Manipal Hospitals",
293       "address": "98, Old Airport Road",
294       "city": "Bangalore",
295       "contact": "+91 80 2502 4444"
296     },

```

E. Roles

```
① db.json  X
src > API > {} db.json > [ ] hospitals > {} 2
340 "roles": [
341   {
342     "role_id": 1,
343     "role_name": "Regional Head",
344     "role_desc": "Oversees regional operations and performance",
345     "id": "ecad"
346   },
347   {
348     "role_id": 2,
349     "role_name": "Claims Processing Officer",
350     "role_desc": "Manages and Validates Claims",
351     "id": "7bcd"
352   }
353 ],
```

F. Users

```
① db.json  X
src > API > {} db.json > [ ] hospitals > {} 2
354 "users": [
355   {
356     "id": "101",
357     "user_name": "Priya Mehta",
358     "user_address": "123, Main Road, Mumbai",
359     "user_email": "priya.mehta@example.com",
360     "user_password": "pass",
361     "hire_date": "2020-04-10",
362     "is_active": true,
363     "role_id": 1
364   }
365 ],
```

G. Claims

```
① db.json  X
src > API > {} db.json > [ ] hospitals > {} 2
366 "claims": [
367   {
368     "id": "3001",
369     "customer_id": 201,
370     "given_policy_id": null,
371     "hospital_id": 2,
372     "doc_id": 5001,
373     "expected_amount": 50000,
374     "approved_amount": null,
375     "submitted_date": "2023-06-01",
376     "last_updated_date": "2025-07-02T16:26:24.362Z",
377     "status": "Forwarded",
378     "feedback": "In Process",
379     "document": 5001,
380     "medical_valid": [
381       7001
382     ]
383   },
384   {
385     "id": "3002",
386     "customer_id": 202,
387     "given_policy_id": null,
388     "hospital_id": 3,
389     "doc_id": 5002,
390     "expected_amount": 60000,
391     "approved_amount": null,
392     "submitted_date": "2023-06-02",
393     "last_updated_date": "2025-07-02T16:26:24.362Z",
394     "status": "Forwarded",
395     "feedback": "In Process",
396     "document": 5002,
397     "medical_valid": [
398       7002
399     ]
400   }
401 ],
```

H. Medical Validator

```
{ db.json  X
src > API > {} db.json > [ ]hospitals > {} 2
418   "medicalValid": [
419     {
420       "id": "7001",
421       "expertise_field": "Ortho",
422       "is_Active": "Occupied",
423       "claim_id": "3001"
424     },
425     {
426       "id": "7002",
427       "expertise_field": "Cardiologist",
428       "is_Active": "Occupied",
429       "claim_id": "3002"
430     }
431   ],
432 }
```

I. Documents

```
{ db.json  X
src > API > {} db.json > [ ]hospitals > {} 2
432   "documents": [
433     {
434       "id": "5001",
435       "claim_id": 3001,
436       "blood_test": "claims/3001/blood.pdf",
437       "admission_note": "claims/3001/admission.pdf",
438       "prescription": "claims/3001/prescription.pdf",
439       "xray_report": "claims/3001/xray.pdf",
440       "insurance_form": "claims/3001/form.pdf",
441       "discharge_summary": "claims/3001/discharge.pdf",
442       "other": "",
443       "last_updated": "2025-07-02",
444       "verified_by": 7001
445     },
446   ],
447 }
```

J. Pre-Authorization

```
{ db.json > [ ]preAuthorization > {} 1
  "preAuthorization": [
    {
      "cardNumber": "HC001234",
      "policyNumber": "POL-2024-001",
      "patientName": "Rajesh Kumar",
      "policyType": "Premium Health",
      "validUntil": "2025-12-31",
      "coverageAmount": "₹5,00,000",
      "status": "Active",
      "id": "c20e"
    },
    ...
  ],
  "totalCoverage": "₹5,00,000"
}
```

2.4 External Interface Requirements

NA

3. Project Execution Related Requirements

3.1 Development Environment

Technologies to be used for development of the Application:

- React + material UI with version 22
- MongoDB Database

Software tools that can be used for development:

- EA (Enterprise Architect) / EdrawMax Tool
- VS Code

3.2 Design requirements

Not Applicable

3.3 Coding requirements

Technologies used include React with Material UI version 22 for building a responsive frontend, and MongoDB for flexible, scalable database management. Development tools include Enterprise Architect or EdrawMax for design and VS Code as the primary code editor. Coding requirements emphasize functional React components with hooks, Material UI theming, secure API integration, and maintainable, testable code.

Coding Standards:

- Emphasize reusable, testable React components with clear separation of concerns.
- Implement role-based access control.
- Follow best practices for input validation, error handling, and performance optimization.

3.4 Error handling requirements

NA

3.5 Resource Requirements

Technologies to be used for development of the Application:

A. Technologies:

- React - Frontend
- Spring - Backend
- MongoDB - Database

B. Software Tools:

VS Code
Enterprise Architect (EA)
JDeveloper

C. Module Allocation and Role Responsibilities

1. Naveenkumar Kandala - [Admin, Roles, Insurance Co-ordinator, Admin Login]
2. Roopesh Burra - [Claims Processing Officer, Medical Validator]
3. Srigowri N - [Policy Holder, Regional Head, Policy Holder Login]

3.6 Training Requirements

End-user training will be conducted to equip claimants, claims officers, medical reviewers, approvers, and system administrators with the necessary skills to effectively use the Claim Processing System. The training program will include hands-on sessions, role-based walkthroughs, and comprehensive user manuals to ensure users can confidently submit, validate, track, and approve claims while navigating the system efficiently.

4. Testing Requirements

A comprehensive testing strategy will be implemented to ensure the Claim Processing System meets all functional and non-functional requirements.

Unit Testing: Individual components and modules such as claim submission forms, document uploads, validation logic, and approval workflows will be tested in isolation to verify correct functionality according to design specifications.

5. Quality Assurance Activities

NA

6. Software Acceptance Criteria

The Claim Processing System (CPS) will be considered accepted upon the successful completion of User Acceptance Testing (UAT). This process involves executing the fully developed application and rigorously testing all functionalities—including claim submission, validation, tracking, approval workflows, and user management—against the specified requirements. Formal approval must be obtained from key stakeholders at Sun Health and Allied Insurance, confirming that the system meets business needs, is user-friendly, secure, and performs reliably in the intended operational environment. Only after this formal sign-off will the application be deemed ready for production deployment.

7. Deliverables

7.1 List of Deliverables

Not applicable

7.2 Delivery

Not Applicable

8. Requirements Acceptance Statement

The software will be considered acceptable when the following criteria are met:

- All documented functional requirements are implemented and pass all levels of testing.
- The system demonstrates stability and performance within defined parameters.