HopeRxPharma

Comprehensive App Overview (Repository Evidence)

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Executive Overview

HopeRxPharma is a pharmacy management web application. The repository contains a Next.js frontend and a Node.js/Express backend with Prisma-managed PostgreSQL models. The backend exposes /api/v1 routes for inventory, sales, prescriptions, patients, suppliers, reports, alerts, and a patient portal.

The app exists to digitize and streamline pharmacy operations. The README and user guide describe a platform that centralizes inventory tracking, billing, prescription handling, supplier workflows, and patient engagement, with compliance and auditability called out as key concerns.

Evidence:
- /Users/dikshantjangra/Desktop/hoperxpharma/README.md
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/index.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/app.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/prisma/schema.prisma
- /Users/dikshantjangra/Desktop/hoperxpharma/docs/user-guide.md
- /Users/dikshantjangra/Desktop/hoperxpharma/app/portal/page.tsx

Target Users

Primary Users

- Pharmacists and pharmacy staff running day-to-day dispensing and sales workflows.

- Pharmacy owners and managers overseeing inventory, purchasing, and business performance.

Secondary or Edge Users

- Patients using the portal to view prescriptions and request refills.

- Prescribers and suppliers represented in system records and workflows.

- Compliance or audit reviewers using audit logs and consent history.

- System admins managing roles, permissions, and subscriptions.

Use Cases and Scenarios

- Receive inventory via purchase orders and GRNs, including batch tracking and barcode enrollment.

- Manage stock levels, adjustments, expiries, and FEFO batch recommendations.

- Run point-of-sale transactions with barcode or QR scanning, split payments, and invoices.

- Capture or upload prescriptions, manage refills, and track patient consent status.

- Provide patients with a portal to access prescriptions and submit refill requests.

- Ingest medicines with OCR and salt composition mapping, then search via a medicine master.

- Review sales and operational reports with KPIs and export options.

- Engage patients through WhatsApp or other messaging flows tied to consent.

Evidence:
- /Users/dikshantjangra/Desktop/hoperxpharma/README.md
- /Users/dikshantjangra/Desktop/hoperxpharma/app/portal/dashboard/page.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/index.js
- /Users/dikshantjangra/Desktop/hoperxpharma/components/pos/BarcodeScannerModal.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/components/grn/ReceivingTable.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/docs/user-guide.md
- /Users/dikshantjangra/Desktop/hoperxpharma/lib/api/scan.ts
- /Users/dikshantjangra/Desktop/hoperxpharma/lib/api/whatsapp.ts

Features and Capabilities

Inventory and Procurement

- Inventory stock tables, filters, and adjustment workflows.

- Batch management, expiry tracking, and FEFO recommendations.

- Purchase orders, GRNs, supplier invoices, and supplier profiles.

- Barcode enrollment and QR code generation for batches.

Sales and POS

- Point-of-sale basket, payment panel, and split payment flows.

- Barcode and QR scanning to add items to a sale.

- Sales, consolidated invoices, and margin related endpoints.

Prescriptions and Patients

- Prescription creation, filtering, and detail views.

- Patient profiles, consent management, merges, and history timelines.

- Prescription upload with OCR and refill workflows.

- Patient portal authentication, prescription access, and refill requests.

Medicine Intelligence and Search

- Medicine master ingestion routes and salt intelligence dashboards.

- Substitute discovery and salt mapping audit trails.

- Typesense-backed medicine search with client-side caching for fast lookup.

Reporting, Alerts, and Governance

- Sales reports with KPIs, charts, and export options.

- Alert system with event rules and dashboard widgets.

- Audit logs, access logs, and role-based access control management.

Integrations and Messaging

- Razorpay payment flows with webhook verification.

- OCR extraction endpoint using Google Vision service integration.

- WhatsApp Business messaging APIs for conversations and templates.

Limitations and Gaps Implied by the Repo

- Multi-subscription capability is documented as a future, documentation-only architecture.

- The README lists a FastAPI backend and a React Native mobile app, but the repo contains an Express backend and no mobile app source.

- Security checklist items such as encryption at rest, backups, and vulnerability scans are listed as not yet verified.

- Some marketing claims in the landing FAQ are not corroborated by implementation details in the codebase.

Evidence:
- /Users/dikshantjangra/Desktop/hoperxpharma/components/inventory/StockTable.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/components/grn/ReceivingTable.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/components/pos/PaymentPanel.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/components/prescriptions/PrescriptionDetail.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/components/patients/PatientConsentsTab.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/index.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/fefo.routes.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/ocr.routes.js
- /Users/dikshantjangra/Desktop/hoperxpharma/lib/cache/medicineCacheService.ts
- /Users/dikshantjangra/Desktop/hoperxpharma/components/Reports/Sales/SalesReportPage.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/ALERT_SYSTEM_README.md
- /Users/dikshantjangra/Desktop/hoperxpharma/components/rbac/RoleEditor.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/payment.routes.js
- /Users/dikshantjangra/Desktop/hoperxpharma/lib/api/whatsapp.ts
- /Users/dikshantjangra/Desktop/hoperxpharma/docs/architecture/multi-subscription-backend.md
- /Users/dikshantjangra/Desktop/hoperxpharma/docs/security-checklist.md
- /Users/dikshantjangra/Desktop/hoperxpharma/components/landing/FAQ.tsx
- /Users/dikshantjangra/Desktop/hoperxpharma/README.md
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/package.json

How It Works

Runtime Flow (High Level)

- The Next.js frontend renders UI modules and calls a shared API client for server data.

- Authentication uses access tokens stored in memory and refresh tokens in httpOnly cookies. The client refreshes tokens via /auth/refresh when needed.

- Requests are sent to the Express backend, which applies security middleware, logging, rate limits, SQL injection detection, and a session timeout.

- Domain routes under /api/v1 handle inventory, prescriptions, sales, patients, suppliers, payments, and portal operations.

- Prisma models map these domains to PostgreSQL tables and relations.

- Background services initialize alert event processing, scheduled jobs, payment jobs, and a daily behavioral scoring job, with optional Typesense keep-alive pings in production.

- Offline mutations are queued in IndexedDB when the network is down and replayed when connectivity returns.

- Medicine search and ingestion use Typesense schemas and client-side caching for fast lookup and offline support.

- The patient portal uses a dedicated JWT type to fetch prescriptions and submit refill requests.

Request and Response Lifecycle

- Client requests are wrapped by baseFetch, which handles timeouts, parses responses, and normalizes errors.

- On 401 responses, the client clears tokens and redirects to login unless a logout is in progress.

- Network errors during write operations are queued for later sync to prevent data loss.

- Backend responses are served through documented routes and include health and Swagger endpoints for monitoring and documentation.

Background Jobs and Integrations

- Alert event listener and rule engine for operational alerts.

- Payment jobs plus Razorpay order creation, verification, and webhook processing.

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WhatsApp retry worker and messaging endpoints for patient communications.

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OCR extraction endpoint using Google Vision API services.

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Typesense health checks and keep-alive pings for search availability.

Evidence:
- /Users/dikshantjangra/Desktop/hoperxpharma/lib/api/client.ts
- /Users/dikshantjangra/Desktop/hoperxpharma/lib/offline/sync-manager.ts
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/app.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/server.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/index.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/prisma/schema.prisma
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/payment.routes.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/v1/ocr.routes.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/routes/portal.routes.js
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/src/lib/typesense/schema.ts
- /Users/dikshantjangra/Desktop/hoperxpharma/backend/ALERT_SYSTEM_README.md
- /Users/dikshantjangra/Desktop/hoperxpharma/lib/api/whatsapp.ts