# **🏥 Health & Wellness Backend System**

**Tech Stack:** Node.js (Express)  
 A robust, scalable backend for a health-focused platform offering supplement tracking, vaccine scheduling, telemedicine, user management, and interactive health assessments.

## **📌 Overview**

This system powers a comprehensive digital health application that enables users to manage their health routines, appointments, vaccinations, and more—while giving admins and healthcare providers the tools to manage data, users, and services efficiently.

From OTP-based email verification to managing supplement inventories, from telemedicine appointment scheduling to 2FA security, this backend offers a full ecosystem to support health-conscious users, doctors, caregivers, and administrators.

## **🚀 Features at a Glance**

* **Secure Authentication** – Email OTP, Google login, and 2FA.
* **Comprehensive User Management** – Profile management, admin controls, role-based access.
* **Supplement & Vaccine Tracking** – Log, schedule, and manage health products.
* **Telemedicine Support** – Virtual consultation scheduling & communication.
* **Doctor & Caregiver Tools** – Schedule management, notes, roles, and availability.
* **Interactive Health Tools** – Quizzes, feedback, health scores, and goals.
* **Admin & Superadmin Dashboards** – Control over users, usage analytics, approvals, and more.

## **🧩 Modules Summary**

### **🔐 Auth Module**

Handles user registration, secure login, OTP verification, and Google OAuth.  
 Also includes Google reCAPTCHA for bot protection and token verification for secure sessions.

### **👤 User Module**

#### **Profile Management**

* View/update personal details
* Upload profile pictures
* Manage FCM tokens for push notifications
* Set/change/delete password
* Delete account

#### **Admin Tools**

* View all users
* Activate/deactivate accounts
* Assign/revoke admin roles
* Permanently delete users and related data

#### **Two-Factor Authentication (2FA)**

* Enable/disable 2FA
* Verify login via OTP
* Regenerate recovery codes

#### **Notification Preferences**

* View and update how users receive alerts

### **💊 Supplement Module**

Manage a database of supplements with stock tracking.

* CRUD operations for supplements
* Bulk upload via CSV/JSON
* Stock adjustments
* Admin-controlled bulk deletion

### **🗓️ Supplement Schedule Module**

Enable users to schedule supplement intake with smart tracking.

* Create/edit/delete supplement schedules
* Track daily and historical dose intake
* Update status as taken/missed
* Add quantities per schedule

### **💉 Vaccine Module**

A full registry for vaccines offered.

* Add/update/delete vaccines
* Bulk import from CSV/JSON
* Manage inventory
* Admin bulk deletion support

### **📅 Vaccine Schedule Module**

Users can schedule vaccines for themselves or dependents.

* Schedule/view/update/delete vaccinations
* Check daily logs and schedules by date
* Activate/deactivate vaccine plans

### **🩺 Telemedicine Module**

Support virtual consultations between users and doctors.

* Schedule and manage appointments
* Doctor availability management
* Users/Doctors can update/cancel appointments
* Status control for active/inactive appointments

### **🛠️ Support Module**

User support with attachment capabilities.

* Submit support tickets
* Admins can view and update ticket statuses

### **❓ Question Module**

Admin-controlled quiz questions system.

* Add, update, and delete questions
* Fetch all questions for users

### **🧠 Quiz Module**

Interactive health assessments for users.

* Create/update/delete quizzes
* List quizzes available for users
* Admin panel to manage quizzes

### **✅ Result Module**

Submit and retrieve quiz results.

* Users can submit answers
* View submitted answers and scores

### **🧮 Health Score Module**

Track personal health improvements.

* Submit and view personal health scores

### **🎯 Health Goal Module**

Record short-term and long-term health objectives.

* Save goals (admin/user)
* Retrieve saved goals

### **💬 Feedback Module**

Gather insights directly from users.

* Users can submit feedback
* Admins can view/delete feedback

### **👨‍⚕️ Doctor Module**

Comprehensive doctor management system.

* Add/edit doctor profiles with photo support
* View doctor details and appointments
* Admin and doctor roles supported

### **📚 Content Hub Module**

Share educational content with users.

* Admins can upload documents/media
* Users can view content
* CRUD operations for content

### **🧑‍🤝‍🧑 Caregiver Module**

Track caregiving relationships.

* View who cares for the user and vice versa

### **📝 Caregiver Notes Module**

Communication and documentation between caregivers and patients.

* Write/view notes for caregivers and patients

### **📞 Call Module**

Telephony integration using Twilio & WebRTC.

* Handle incoming and forwarded Twilio calls
* Set up WebRTC calls for secure real-time communication

### **⏰ Availability Module**

Manage time slots for doctor availability.

* View and update availability (Admin only)

### **👥 Admin User Management Routes**

Admin tools for user moderation and role control.

* View all user profiles
* Assign/remove admin roles
* Block/unblock users

### **📅 Admin - Schedule & Usage Routes**

Admins can monitor platform-wide health engagement.

* View all medicine/vaccine schedules
* View appointment bookings
* View usage statistics

### **👑 Super Admin Routes**

Control panel for platform ownership and oversight.

* Approve/reject new admin accounts
* View all admins
* Block/unblock administrators

## **🤖 Bot Assistant Module**

A powerful AI-driven assistant integrated into the platform to enhance user experience by automating tasks like managing medicine and vaccine schedules. This module interacts via both **API** and **WebSocket (socket.io)** and supports contextual understanding to assist users in managing their health activities.

**Base API Route:** POST localhost:8002/api/v1/bot/chat

### **🧠 Bot Capabilities**

* Create new **medicine** or **vaccine schedules** for users using natural input
* Retrieve existing medicine or vaccine schedule information
* Assist users through chat-like interaction
* Provide contextual support via conversations

### **🔄 Socket Events (Real-time Communication)**

#### **📤 request:send**

Send a caregiver request to another user.

json

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{

"receiverId": "6826cf6e99b632c7e1199414"

}

**Emits:**

* request:send:success
* request:send:error
* request:incoming

#### **🛠 request:updateStatus**

Update the status of a caregiver request (accept or reject).

json

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{

"requestId": "6826db46e6bb27d7d2dde91b",

"status": "accepted" // or "rejected"

}

**Emits:**

* request:updateStatus:success
* request:updateStatus:error
* request:accepted:notify

#### **⏳ request:getAllPending**

Fetch all pending caregiver requests.

json

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{} // no body required

**Emits:**

* request:getAllPending:success
* request:getAllPending:error

#### **🔍 user:getSuggestedUsers**

Search and fetch users that can be suggested as caregivers.

json

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{

"search": ""

}

**Emits:**

* user:getSuggestedUsers:success
* user:getSuggestedUsers:error

#### **❌ request:removeCaregiver**

Remove a caregiver relationship.

json

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{

"caregiverId": "6826db46e6bb27d7d2dde91b"

}

**Emits:**

* request:removeCaregiver:success
* request:removeCaregiver:error
* request:removedByUser

### **📚 Related API Endpoints**

* **GET** /api/v1/caregiver/my-caregivers  
   → Get users who are currently caregivers for you
* **GET** /api/v1/caregiver/i-care-for  
   → Get users for whom you are a caregiver

**Both routes require Authorization header (JWT Bearer token)**

## **🚧 Pending Integration**

**The majority of backend modules and APIs have been implemented successfully. However, certain dashboard components and features are still under development and will be integrated in upcoming phases.**

### **📊 Dashboard Modules (Pending)**

* **Health Score Dashboard  
   → Visualizations and trend analysis for submitted health scores per user**
* **Vaccine Dashboard  
   → Comprehensive overview of vaccine inventory, usage statistics, and related insights**
* **Vaccine Schedule Dashboard  
   → Calendar view and timeline display of scheduled and completed vaccinations**
* **Supplement Dashboard  
   → Insights into supplement stock levels, user consumption patterns, and automated alerts**
* **Medicine Schedule Dashboard  
   → Daily and weekly schedule monitoring, dose tracking, and completion statistics**

**Note: All other functionality-related dashboards are currently pending and will be added progressively.**

### **💬 Video Call Chat (Pending)**

* **Chat Feature for Video Calls  
   → The real-time chat system for video consultations is pending integration  
   → This module is directly dependent on the finalization of the video call system (WebRTC)  
   → Once stabilized, chat will be embedded in the video call flow to support seamless communication between doctors and users**