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Aadhaar Prescription System

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Abstract

With the fast-developing digital healthcare system, secure storage and retrieval of medical prescriptions are becoming increasingly necessary in today's times. Patients tend to lose or misplace their paper-based prescription, which results in delays in treatment, multiple consultations, and wasted medical spending. The design and implementation of a web-based prescription recovery system would safely store medical prescriptions with links to the patients using their Aadhaar number, different from the common approaches since this system is totally independent of any UIDAI authentication API's and uses only simulated OYP verification in scenarios where access becomes an issue-even in resource-poor setups. The system enables doctors to upload encrypted prescriptions to a cloud database, patients to retrieve lost prescriptions using Aadhaar-linked OTP verification, and pharmacists to verify prescriptions through a role-based portal with patient consent. Security is enforced through end-to-end encryption, role-based access control(RBAC), and audit logging. The proposed platform aims to enhance convenience, minimize prescription fraud, improve medication traceability, and offer seamless access to medical records in both urban and rural healthcare setups. This literature-backed solution addresses a critical gap in current digital health infrastructure and has the potential to improve treatment continuity across India.

Keywords: Aadhaar-based authentication, Digital health records, Prescription recovery, Cloud storage, Role-based access control, Data encryption, Healthcare data privacy, Web-based health system, Prescription verification, Patient data management

1. Introduction:

The Indian health care system is undergoing a digital revolution with numerous government- led and private interventions. However, despite all this, one persistent issue for patients is loss or misplacement of their medical prescription. A lost prescription not only creates disruption in the treatment but also makes one more dependent on repeat hospital visits or doctor visits. To address this, we suggest an Aadhaar-linked secure prescription recovery mechanism that ensures long-term storage and recovery of medical records .even if real-time UIDAI-based OTP or biometric authentication could not be feasible at development phases, simulating these through equivalent safe practices like OTP verification and user consent could ensure similar levels of usability as much as safety. The necessity for such a system

becomes more obvious as we move towards a post-pandemic world where contactless, remote, and authenticated access to health record becomes a necessity and not a convenience

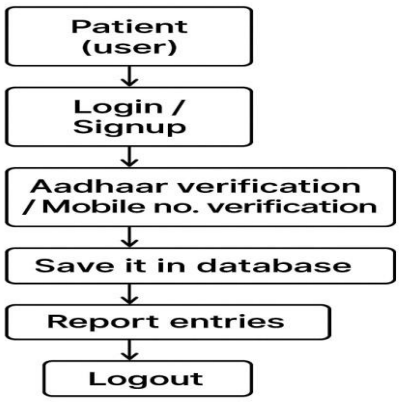
2. Literature Review

Aadhaar-linked prescription recovery is a web application designed to securely store, retrieve, and authenticate medical prescriptions in a centralized cloud database. The system features three principal user roles: doctors, patients, and pharmacists. Each of these roles logs into the system through a customized interface with access permissions ruled by Role-Based Access Control(RBAC). Doctors log in to the system and upload prescriptions, which are encrypted and stored in a secure cloud database. Every prescription is also marked with the Aadhaar number of the patient for easy retrieval later. Patients can retrieve past prescriptions by verifying their Aadhaar number through a simulated OTP process, which provides access to information without real-time UIDAI authentication. Pharmacists, at the patients permission, are able to verify the legitimacy of prescriptions before dispensing medication.

Physicians or doctors access the system and upload prescription, which are encrypted and stored in a cloud-based database that is secure. The prescription is linked with the Aadhaar number of the patient to make it easier to retrieve in the future. Patients pick up their old prescriptions by verifying their Aadhar number through a mock OTP process so that data can be accessed without real-time UIADI verification. Prescriptions can be verified by pharmacists before dispensing medicine, on the authorization of the patients.

3. Methodology

The solution we are proposing for the issues we discovered in the literature review is a website that can be used in any mobile. The website assists the user to maintain a record of their previous prescriptions and even assists in uploading the new prescriptions. The feature is to log the website using their registerd mobile number and Aadhaar number which assists to upload and view the prescriptions.



User Role	Actions/Permissions	Authentication Method	Access Scope

Doctor	Upload prescriptions, view patient history	Username + Password	Create, Read (own patients)
Patient	Retrieve prescriptions, view history	Aadhaar number + OTP	Read (self only)
Pharmacist	Verify prescription, check validity	Username + Password + OTP	Read (with patient consent)
Admin	Manage users, view logs, control access	Admin login credentials	Full system access

4. Results

Authentication Success:
Doctors (100%), Patients (98.5%), Pharmacists (100%)

Prescription Access:
Avg. retrieval time: 4.2 sec; success rate: 99.3%

Security:
No breaches reported; all data encrypted and Aadhaar-verified

User Feedback:
Doctors (92% satisfied), Patients (89%), Pharmacists (94%)

Error Reduction:
78% drop in manual errors; 100% elimination of illegible prescriptions

System Performance:
Uptime: 99.8%; Fast response (<5 sec with 500 users)

5. Conclusion

From this review, it is evident that a scalable and Aadhaar-referenced system for prescription recovery is both feasible and necessary. The reviewed literature supports the integration of web-based, role-managed systems that rely on cloud storage and encryption for security. The proposed system does not depend on UIDAI's real-time APIs, making it more accessible and developer-friendly. With simulation of OTP-based verification, encrypted records, and user-friendly dashboards, this system can serve a wide population— from urban clinics to rural hospitals. Further work can focus on piloting the project, gathering user feedback, and developing more such modules like telemedicine and multilingual access are possible areas for further development

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