

MEDTAKE: A Web-Based Platform for Medicine Sharing

Prof. Nayan V. Ahire¹, Sakshi Ahire², Bhumika Gaikwad³, Arya Aher⁴, Aditi Gadekar⁵

Professor, Computer Engineering¹

Students, Computer Engineering²⁻⁵

Mahavir Polytechnic, Nashik, Maharashtra, India

Abstract: *MedTake is a web-based mobile platform designed to reduce medicine wastage and make healthcare more affordable through community sharing. Many households have unused and unexpired medicines that are often discarded, while many people cannot afford essential medicines. MedTake provides a digital platform where users can donate unused medicines and people in need can request them. The system allows users to upload verified medicine details such as medicine name, expiry date, and quantity to ensure safe reuse. By connecting donors and recipients, MedTake promotes affordable healthcare and encourages responsible medicine reuse. The platform also contributes to environmental sustainability by reducing pharmaceutical waste.*

Keywords: Medicine Sharing, Web Application, Healthcare Platform, Medicine Donation, Sustainable Healthcare

I. INTRODUCTION

Healthcare accessibility remains a major concern in many regions of the world. While modern medicine has advanced significantly, the cost of healthcare services and medications continues to rise. Many individuals and families struggle to afford necessary medicines, particularly in low-income communities. At the same time, millions of medicines are discarded every year because they remain unused after treatment. This leads to unnecessary waste and contributes to environmental pollution. Unused medicines are often disposed of in household garbage or flushed into drainage systems, which can contaminate water sources and harm ecosystems. Furthermore, improper disposal of medicines may create health risks for communities. Addressing medicine wastage and improving medicine accessibility are therefore important goals for sustainable healthcare systems. MedTake is proposed as a solution to this problem by creating a web-based platform that enables medicine sharing within communities. The main concept of the platform is to connect individuals who have unused medicines with those who need them. By providing a digital platform for medicine donation and requests, MedTake encourages responsible reuse of medicines that are still safe and unexpired. The platform also promotes community support by allowing users to help others by donating their unused medicines. This approach not only reduces medicine wastage but also helps individuals save money and access essential healthcare resources. Through the use of modern web technologies, MedTake aims to create an efficient, secure, and user-friendly platform for medicine sharing.

II. LITERATURE REVIEW

Several studies have explored the problem of medicine wastage and the need for better healthcare resource management. Researchers have identified that a large portion of medicines prescribed to patients remain unused due to changes in treatment plans, early recovery, or over-purchasing of medicines. Previous research has also highlighted the importance of medicine donation programs and community healthcare initiatives. Some healthcare organizations and non-profit groups have implemented medicine redistribution programs to help underserved communities access essential medications. In addition, modern healthcare systems are increasingly adopting digital technologies to improve accessibility and efficiency. Web-based healthcare platforms allow users to access information, manage medical



resources, and communicate with healthcare providers more easily. However, many existing systems focus primarily on hospital management or pharmacy operations rather than community medicine sharing.

III. SYSTEM METHODOLOGY

The MedTake system is designed as a web-based platform that allows users to interact with the system through an online interface. The system includes several modules that manage user interactions, medicine data, and administrative control.

A. User Registration and Authentication

The first step in using the MedTake platform is user registration. Users must create an account by providing basic information such as name, email address, and contact details. Once registered, users can log in securely using their credentials. Authentication ensures that only authorized users can access the platform and perform actions such as donating or requesting medicines.

B. Medicine Donation Module

The medicine donation module allows users to upload details about unused medicines they wish to donate. The donor must provide information including medicine name, expiry date, quantity, and additional notes about the medicine. The system checks the expiry date to ensure that only valid and safe medicines are listed on the platform.

C. Medicine Search Module

Users who require medicines can search the system using keywords such as medicine name or category. The system displays available medicines along with relevant details such as donor location, expiry date, and quantity. This feature helps users quickly find the medicines they need.

D. Medicine Request Module

Once a user finds a suitable medicine, they can send a request to the donor through the platform. The donor can then approve or reject the request based on availability. If the request is approved, the users can coordinate medicine collection or delivery.

E. Administrative Control

The platform includes an administrative panel that allows administrators to monitor the system. The admin can verify medicine listings, manage user accounts, and remove invalid or expired medicine entries. Administrative control ensures that the platform remains safe and reliable.

IV. TECHNOLOGY USED

1. Medicine Matching Technique

The Medicine Matching Algorithm is the main algorithm used in the MedTake system. Its purpose is to match the medicine donated by donors with the medicine requested by recipients. The system compares medicine names, expiry dates, and availability stored in the database. When a recipient searches for a medicine, the algorithm checks the database and returns the medicines that match the request and are verified by the admin. This helps in efficiently distributing medicines to people who need them.

2. Database Technique

The system uses a search algorithm to quickly find medicines in the database. When a recipient enters a medicine name in the search box, the algorithm scans the database and retrieves relevant records. The search process may use SQL queries to find medicines based on name, category, location, or expiry date.

3. Verification Technique

Before medicines are available for request, they must be verified by the admin. The verification algorithm checks whether the medicine is safe to donate. It verifies conditions such as expiry date and medicine details.

4. Notification Technique

The system also uses a notification process algorithm that informs donors and recipients about updates such as donation approval, request acceptance, or medicine availability. This improves communication between users.



V. EXPECTED RESULTS

The MedTake platform is expected to provide several benefits to users and communities. First, it will help reduce the wastage of unused medicines by encouraging responsible reuse. Second, the system will help individuals access medicines at reduced costs or even free of charge. Third, the platform will promote community participation and social responsibility by encouraging people to donate unused medicines. Additionally, the system contributes to environmental sustainability by reducing pharmaceutical waste. By preventing medicines from being discarded improperly, the platform helps protect natural resources and maintain ecological balance.

VI. SYSTEM ARCHITECTURE

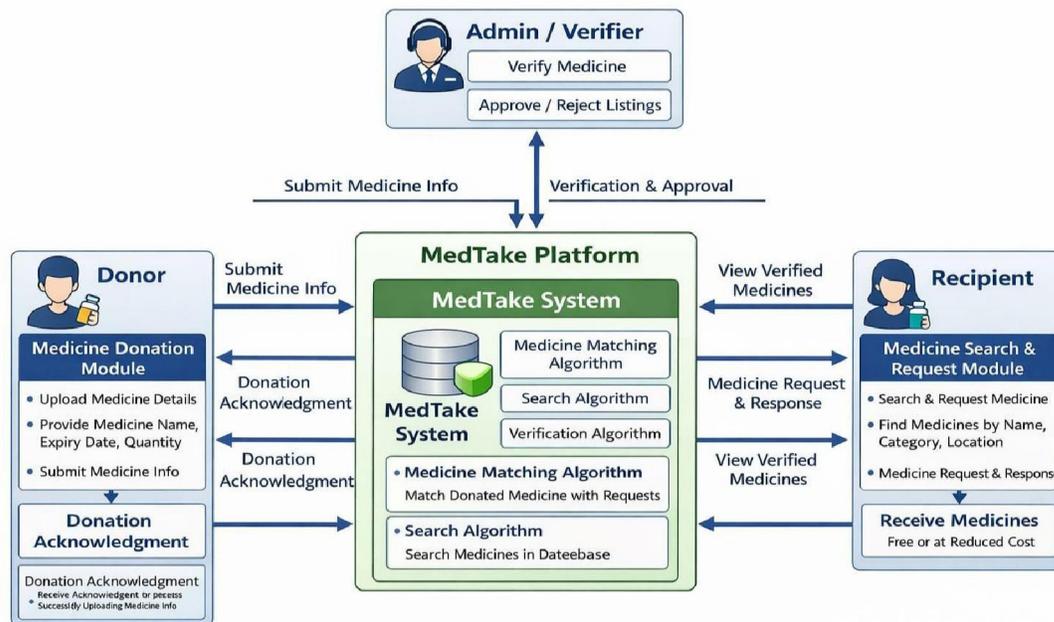


Fig.1: MEDTAKE System Architecture

Figure 1 illustrates the overall system architecture of the MedTake, a web-based platform designed to facilitate the sharing of unused and unexpired medicines among community members. The architecture consists of three main actors: Donor, Recipient, and Admin/Verifier, all connected through the central MedTake System that manages the processing and verification of medicine data. In this system, the Donor uploads medicine donation details such as medicine name, quantity, expiry date, and other relevant information to the MedTake platform. These details are sent to the central processing system, where the information is temporarily stored and marked as unverified. The Admin/Verifier then reviews the submitted medicine details to ensure that the medicines are safe, valid, and suitable for sharing. After verification, the admin provides verification results and necessary guidelines to the system. Once the medicines are verified, the MedTake System updates the database and makes the medicine information available to Recipients. Recipients can search for required medicines and submit requests through the platform. The system provides verified medicine availability information and connects the recipient with the donor if the requested medicine is available. Additionally, the system sends donation acknowledgements and status updates back to the donor, ensuring transparency in the donation process. Overall, the MedTake system promotes medicine reuse, reduces wastage, and improves access to affordable healthcare through a structured and verified sharing mechanism.



VII. CONCLUSION

The MedTake system provides an innovative and practical solution to reduce medicine wastage and improve access to essential medicines for people in need. In many households, unused medicines remain after treatment and are often discarded, which leads to both financial loss and environmental waste. At the same time, many individuals cannot afford necessary medicines due to high healthcare costs. The MedTake platform addresses this problem by creating a web-based system that allows users to donate unused but unexpired medicines and connect them with recipients who require those medicines. The system integrates various modules such as user registration, medicine donation, medicine request, verification, and administration to ensure smooth operation. Donors can upload details of medicines they wish to donate, while recipients can search and request medicines based on availability. The admin module plays an important role in verifying medicine details to ensure safety and reliability before they are shared with recipients. By implementing these features, the system ensures transparency, security, and efficient management of donated medicines. Furthermore, the platform uses modern web technologies and database systems to manage data effectively and provide a user-friendly interface. The use of structured algorithms for medicine matching and verification helps in accurately connecting donors and recipients. This improves the efficiency of the medicine distribution process and ensures that only safe and verified medicines are made available to users. Overall, the MedTake system contributes to social welfare by promoting community support, reducing unnecessary medicine wastage, and improving access to healthcare resources. The platform has the potential to make medicine sharing easier, safer, and more organized. In the future, the system can be enhanced by integrating mobile applications, real-time notifications, and location-based services to further improve accessibility and efficiency. With these improvements, MedTake can become a powerful tool for supporting affordable healthcare and sustainable medicine management.

REFERENCES

- [1]. World Health Organization, Guidelines for Safe Disposal of Unwanted Pharmaceuticals in and after Emergencies, WHO Press, Geneva, Switzerland, 1999.
- [2]. World Health Organization, Medicines: Waste and Disposal Management in Healthcare Systems, WHO Reports on Pharmaceutical Waste Management, 2018.
- [3]. R. D. Smith and K. Hanson, "Health Systems in Low-Income Countries: An Economic Perspective," Oxford Review of Economic Policy, vol. 28, no. 2, pp. 205-227, 2012.
- [4]. J. A. Glassmeyer, E. T. Furlong, and D. W. Kolpin, "Transport of Chemical and Pharmaceutical Compounds in the Environment," Environmental Science & Technology, vol. 49, no. 7, pp. 3851-3860, 2015.
- [5]. Food and Drug Administration, Safe Disposal of Medicines and Pharmaceutical Waste, U.S. FDA Guidelines, 2020.
- [6]. S. Braund, S. Peake, and L. Shieffelbien, "Medicine Waste: A Review of Causes and Solutions," Journal of Pharmaceutical Policy and Practice, vol. 2, no. 4, pp. 1-10, 2009

