

MediPing: A Web-Based E-Pharmacy with Donation and Expiry Alert Features

Author 1: J. Christy Andrews, Author 2: Priyadharshini S, Author 3: Helina Rose M

1,2,3: Department of Computer Science, Sri Krishna Arts and Science College

1.christyandrews@skasc.ac.in , 2.priyadharshinisaravanan0506@gmail.com , 3.rosehelina445@gmail.com

Abstract:

The evolution of the digital age has radically changed how individuals purchase medications and obtain medical care [4]. However, much is left to be desired, such as expired medications at hand [3], excessive drugs disposed [7], and lack of accessibility, especially in remote areas [4]. MediPing is a novel web-based e-pharmacy platform that solves these problems by merging structured donation management, expiry notification, and sale of stockpile drugs. MediPing ensures reliability, usability, and scalability through its responsive HTML/CSS/JavaScript interface [5], MySQL behind the scenes for relational database management [2], and Flask (Python) at the backend [1]. In contrast to a typical online pharmacy with a main focus of selling [8], MediPing combines its services available by real-time expiration notification [3] and the ability to donate still-safe unused medications to those in need privately or organizationally [7]. This double approach would obviously increase access and safety, but singly promote social responsibility by reducing waste and favoring the reallocation of essential medical materials [3]. In conclusion, MediPing offers a complete package that marries public health

objectives with a responsible and convenient point of care system.

Introduction:

Public health is critically predicated on access to safe and affordable medication [4], yet existing systems often fail to accommodate both access and responsible use. The classical way of reaching physical pharmacies may not be feasible, especially in remote or less developed areas for patients [4]. Despite advances in the delivery of medication to a patient's home from online pharmacies and alternative methods of paying for drug products, these aspects have concentrated mainly on sales [8]. However, less attention is paid to critical issues such as expiration date monitoring [3] and waste reduction [7], as well as donation establishment in these systems. Waste of medications Medication waste remains a major problem, and substantial amounts of unused or unexpectedly expired medications are disposed [3]. At the same time, accidentally consuming expired medicine can create major health hazards [3]. Such a situation identifies a clear requirement for an infrastructure not only to enable the distribution of medicines as a commodity but also to inform patients with adequate head-time of the expiration [3] and permit safe redistribution

of over-supplies [7]. MediPing is designed to overcome these issues. This is an application that integrates the management of donations, ensuring the expiration date and place of purchase of medicines from a donation. Leveraging the secure architecture of databases [2] as well as modern technologies like Flask (Python [6] based framework) and Python, MediPing ensures streamlined operations, social responsibility, and sustainable health care with more efficiency.

Existing System:

Present existing e-pharmacy services provide basic functionality like Home delivery, Online ordering, and Medicine browsing [8]. These on-demand services are easier to use, but they do not meet some major needs in the pharma industry. In particular, no provisions to return unused medicine [7], track expiration dates [3], or for receiving alerts due to ill-effects from incorrect consumption of that drug [3] are available. Furthermore, the social effect of such systems is constrained as they are not well integrated with civil society organizations (CSOs) and donation services [7]. Medication is still difficult to access in rural areas [4] and the majority of platforms do not adequately raise awareness about the importance of medication wastage [3].

Challenges in Existing System:

- No expiry tracking and automated alerts to the users. [3]
- Lack of a well-organized approach for donating unused but safe drugs. [7]
- It has limited features and transactions only. [8]
- Loosely coupled user, pharmacy, and NGO collaboration. [7]

- Rural areas have restricted opportunities to access these platforms. [4]
- Almost no perception of the outcome of wastage. [3]

Proposed System:

Medi ping's offers a liable and liberal approach to the more convenient online pharmacy service model. Its features include, notably, a medication donation module [7] and expiration alert notifications [3], in conjunction with an inventory-based ordering system and secure purchase process [8]. Users are warned before their medications expire, which supports safe use [3] and enables better waste prevention [7]. Moreover, the donate function allows for donations of bona fide unused medications to those who need them most [7]. MediPing promotes social health by offering a user-friendly interface [5] that runs smoothly, secure and efficient data management with MySQL [2], and Flask as the backend framework. [1]

Advantages of the Proposed System:

- One platform to Buy, Track & Donate Medicines. [8]
- Expiration alerts contribute to safety and the avoidance of misuse. [3]
- Aids in minimizing waste, promoting sustainable healthcare. [7]
- Promotes involvement in the community through contribution. [7]
- Web interface available in various geographic regions. [5]

➤ Bridging users, drugstores, and NGOs for a bigger social impact. [7]

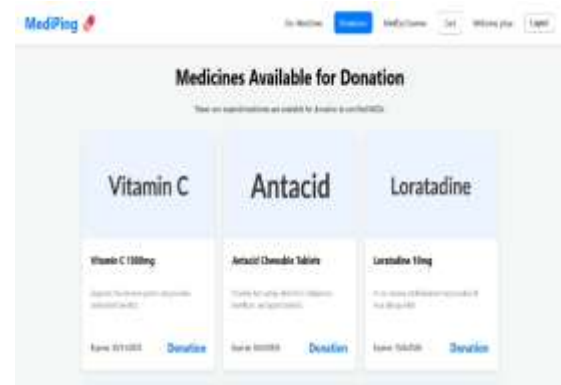
Implementation Results:

MediPing is also a sophisticated web-based application developed to improve the interaction of users with pharma services, focusing on healthcare logistics (operability/accessibility in delivering health care) [4]. Interface Users are guided through the platform with an intuitive UI [5], and everything you expect to be is where it should be. These concerns include personalization of medication profiles based on individual health criteria, and methods to manage personal health data such as medication history or dosage schedules [6]. The Home Page serves as a central hub, providing an extensive list of drugs, including Product Descriptions (PD) with dosing rules and pricing [8]. This level of specificity puts patients in the position to make an informed choice about their HC provider, and consequently supplies them with enough information to manage their medications confidently [4].



One interesting feature of MediPing is its Expiry Tracker, based on advanced barcode scanner technology [3] that carefully checks medicine stock. Such a feature enables users to receive timely reminders for upcoming expiring medications [3], leading to waste prevention [7], and it increases medication safety use [3]. Second, the Donation Page allows secure recording of unexpired medicals

and their distribution to needy individuals or institutions [7]. This is a feature not only of responsible healthcare but also enhances community interaction and support [7].



For better transparency of operations and efficient management, the Admin Panel has been designed as a powerful management tool for administrators [2]. It offers tracking and monitoring of information as well as combat, both in the form of textual logs (screen scraping) and analysis of real-time interaction [2]. This overview allows administrators to maintain efficient system operation that can quickly respond to user questions and resolve any problems as they occur [4]. In conclusion, the MediPing system is an innovative example of dedicated support for easier access to healthcare [4] and a sense of responsibility toward enabling medication management and well-being in general at the community level [7].

Conclusion:

MediPing is a great example of how an online pharmacy platform can make an enormous social contribution beyond commercial success [8]. The platform not only increases access to drugs [4], but it also ensures the safety of both loaners and lenders through functionalities like expiry tracking [3], real-time notifications [3] (as well as a donation

management interface, which is integrated) [7] implemented in a coherent way. Through adding the socially responsible features, MediPing becomes beneficial for an individual user and also for the community [7]. This model showcases the ability of digital to improve access and accountability to healthcare, combined with sustainability, usability as well and operational efficacy [5].

Future Scope :

- Mobile application for faster and easier access. [6]
- AI-assisted recommendations for replacing or substituting medications. [6]
- Automated recurring donations with reminders. [7]
- Improved security with role-based authentication. [2]
- Complete references on orders, donations, and expiry statistics. [2] Feedback mechanisms to control donated medicine quality. [7]

References:

1. Flask Documentation – Python Web Framework. Available:
<https://flask.palletsprojects.com>
2. MySQL Developer Guide – Oracle Corporation. Accessed May 30, 2006
3. World Health Organization (WHO), Guidelines for Medicine Disposal and Waste Management, 2023.
4. International Journal of Health Informatics, E-Pharmacy Systems in Developing Countries: Prospects and Challenges, Vol. 18, Issue 3, 2022.

5. W3C, HTML, CSS, and JavaScript Web-Standards Available: <https://www.w3.org>
6. Python Software Foundation, Python 3.11 documentation
Available: <https://docs.python.org>
7. Journal of Sustainable Healthcare IT, Digital Solutions for Reducing Medicine Wastage, Vol. 15, Issue 2, 2021.
8. IEEE Xplore, Online Pharmacy Platforms: Technological Challenges and Future Trends, 2020.2