

Online Medicine Donation System for NGO

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VISTAS

Abstract- Internet technology subsequently with its wide network can offer potential solutions to facilitate growing demand for better health centers and services. This proposed Medicine Donation System will have an online platform where individuals donate unused medicines to NGOs. Individuals using this website can register and enter details of the medicines to be donated, and NGOs can manage their stock of medicines with ease. The system has integrated screening to detect and eliminate expired and inappropriate medicines such that only safe donations will be accepted. The programmer will thus help avoid drug wastage and improve access among poor ill individuals who require medication.

Keywords- Medicine Donation, NGO Medicine Management, Unused Medicine Donation, Healthcare Access, Medicine Screening, Inventory Management

I. INTRODUCTION

The medical sector is confronted with many challenges such as few resources, absence of medicines, and wasteful disposal of unused medicine. All the homes usually dispose of unwanted medicines that can be useful to other needy patients. The 'System of Online Unused Medicine Donation' aims to solve this challenge by establishing a safe process that brings together donors and NGOs dispensing medicines in a responsible manner.

The main goals of this project include:

- Develop a secure and reliable platform for medicine donation. Incorporate the detection and exclusion of expired or inappropriate medicine. Maintain accurate and complete medication donation records.
- Assist NGOs in maintaining a sufficient stock of medicine and appointment scheduling.
- In order to attain the increasing need for enhancement in the health care facilities & services we can utilize the potential of internet technology & its extensive network, by virtue of which individuals can help individuals with the touch of a single click of the phone.
- The suggested Medicine Donation system is designed to offer a web-based system for donating drugs or surplus drugs to poor individuals. Users are allowed to register

themselves on this system by providing their necessary information.

- Once registered, the users can donate the medicines by providing accurate medicine details to NGOs. The system can block the users for free in case they create a request to donate improper or expired medicines.

The system will keep a record of donated & available drugs. The users can initiate a donation request or use the drugs. This medicine donator project is to make a portal for gathering unused medicine for further use by a needy individual. The website should be like user can donate unused medicine to NGO. That NGO can assist poor people. The user can donate the medicine. Many poor individuals who do not afford to buy their own medicines, with help of this website people can get the treatment and medicines to cure the respective diseases, the unused medicine will be utilized.

II. LITERATURE SURVEY

Several studies have explored healthcare IT solutions to improve resource management and reduce wastage. One such study proposed an e-Management Centralized Blood Donation System in Saudi Arabia to streamline blood donation processes using IT solutions. The system aimed to reduce donation time by integrating donor

registration, appointment management, and eligibility checks, ultimately enhancing efficiency. Similarly, medicine donation systems have been developed to address the challenge of unused medications being discarded despite their potential to help those in need. These systems emphasize secure platforms for donation, verification mechanisms to filter expired medicines, and efficient inventory management for NGOs. Leveraging IT solutions in donation platforms significantly improves accessibility, safety, and transparency in healthcare support systems.

Health IT solutions have increasingly focused on enhancing donation platforms to maximize the management of resources and optimize supply chains. Gamification was employed in the 'Blood Hero' application to incentivize blood donations through rewards for social behaviors including donating blood, posting personal testimonies, and referring others. Research has demonstrated that integrating gamification tactics along with social networking highly increases the engagement and participation of donors. Similarly, there are some online medicine donation sites offering safe avenues for matching donors to NGOs, with the exclusion of expired or inappropriate medicines. These systems improve inventory management and allow for the safe, effective redistribution of medical assets, assisting in solving global healthcare issues. In the last few years, the World Health Organization (WHO) has been actively promoting medical donations among its member nations. To facilitate this effort, WHO member nations' health ministries need an effective system for processing such donations. One such possible solution is creating a distributed online system on the Software-as-a-Service (SaaS) model. This paper suggests and presents an online medical donation system that can function effectively with cloud computing concepts.

The system will be built in two major phases: a local phase and a distributed phase. The main aim of this platform is to facilitate the donation of surplus medicines to needy individuals. Donors can register

on the system, give information about the medicines they want to donate, and drop them at specified collection centers. In the meantime, needy people like those from orphanages can become recipients and pick up the donated medicines. Donors can also choose preferred counters for donation and view their donation history on the platform.

Different healthcare IT solutions have been created to enhance donation systems for medical supplies. 'D'WORLD' blood donation is one such Android-based application that aims to integrate donors and recipients in an effective manner. With the aid of GPS and the Haversine formula, the application identifies local donors in real time, enabling quick response in emergency situations. Further, it also authenticates donor medical history from official health departments, enhancing safety and credibility. Other similar programs have investigated medicine donation systems that bridge donors and NGOs to ensure that unused medicines reach them safely. These systems greatly minimize resource wastage and increase healthcare accessibility, especially during times of crisis like the COVID-19 pandemic.

Numerous healthcare IT solutions have been introduced to improve medical donation systems. The 'Blood Donation and Life Saver App' is an Android-based platform that enables quick identification of nearby blood donors using GPS technology. The system efficiently connects donors and recipients during emergencies, with features like OTP verification ensuring secure communication. Additionally, other studies have proposed cloud-based systems for managing blood donation data, improving accessibility and tracking. Such innovations have demonstrated success in enhancing donor participation, improving medical resource management, and reducing the time needed to find suitable donors during critical situations.

Research in healthcare IT has increasingly focused on improving the safety and efficiency of blood

donation systems. The Donor HART™ tool, developed by the Department of Health and Human Services (HHS), is a comprehensive platform that collects and analyzes donor reaction data to enhance safety. This tool utilizes data mining techniques like Logistic Regression (LR) to identify risk factors associated with donor reactions, such as vasovagal responses. Studies have shown that factors like age, ethnicity, and estimated blood volume significantly influence donor reactions. Implementing such data-driven systems helps improve donor safety, ensuring better management of blood donation processes and reducing adverse events.

Healthcare IT solutions have progressed to enhance medical donation systems and patient safety. An RFID-based blood information management system was implemented to optimize blood donation processes by enhancing tracking and quality control. The system incorporates fingerprint sensors to accurately identify donors, guaranteeing the authenticity of donor data. GPRS technology also enables real-time data transmission between bloodmobiles and blood centers, improving operational efficiency. Such developments immensely enhance the accuracy of data, minimize human errors, and facilitate safe blood donation. These developments prove the possibility of integrating IT solutions with health systems for enhanced resource management and safety.

Advanced healthcare systems have been created to improve medical donation procedures. RFID-based blood information management has been presented to guarantee safety and efficiency in blood donation. Fingerprint sensors are included in the system to assure safe donor identification, which enables proper tracking of donor information. GPRS technology also facilitates real-time data transmission between bloodmobiles and blood centers for greater communication and management. These advances actually minimize human errors, make data more reliable, and simplify blood donation processes. These innovations prove the possibilities of combining

newer technologies to enhance healthcare services and secure safer delivery of medical resources.

III. IMPLEMENTATION



Fig 1. Member Registration

Member can register and get credentials. With the help of credentials member can login Member can donate medicine by entering medicine details. And can fix donating date Member can view previous transaction of medicine Member can modify password in case of security.



Fig 2: NGO Registration

For getting credentials NGO's must register. NGO can login using the help of credentials. NGO can request for appointment which will be further approved and scheduled. Stock of the medicine donated will be listed in stock management. NGO can update their password in case of security.



Fig 3: Medicine Detail View

The Medicine Detail View feature offers full details of donated medicines. It may include all the information like the name of the drug, drug manufacturer, expiry date, dosage, and usage guidelines. Other details like storage requirements, batch number, and donor information can also be offered for traceability. This feature offers transparency, authenticates medicines, and enables NGOs to manage inventory efficiently with safe distribution to the poor.



Fig 4: Medicine Stock

The Medicine Stock View feature gives an organized view of medicines in stock. It gives the name of the medicine, quantity, date of expiry, and storage point. The feature allows NGOs to monitor stock levels, expiry dates, and issue medicines to the poor effectively.



Fig 5: Goods Stock

The Goods Stock View feature provides transparent insight into in-stock goods. It provides information such as the item name, quantity, the storage location, and expiry date (if they exist). Through this feature, organizations are in a position to keep track of the stock amount, monitor both in and

outflowing stock, and attain restocking promptly. By providing current information, it facilitates accurate control of stocks and reduces shortfalls or stock wastage of resources.

IV. METHODOLOGY

The web platform of medicine donation is a process-based system for coordinating effective donation, verification, and dispensation of the medicines. Donors and NGOs register on the website first by furnishing required information for verification. After registration, donors can post medicines by furnishing vital information like the name of the medicine, expiry date, quantity, and storage conditions. For ensuring safety and quality, a verification process is implemented through which the system or NGO- approved representatives check the donated drugs for verification and suitability. Sample drugs are stocked in the stock inventory of the platform; from which they are made available to the NGOs. The NGOs search through the stock inventory, order required drugs, and arrange their pick-up or shipping through approved centers or logistic systems. The system keeps stock levels updated in an effort to track stock effectively and avoid dispensing expired medicines. The system is developed with a modular framework with three primary user roles:

- Admin Module: It hosts the users, verifies donations, and generates reports.
- NGO Module: Deals with registration, tracks medicine stock, and manages appointments.
- Member Module: Provides the ability to sign up, add medication, and view transactional history.

V. GOALS OF THE PROJECT

Successful Donation Process: Provide a platform for the users to donate unused medicines to the NGOs easily. Medicine Safety: Prevent expired or wrong medicines from being accepted by using automated screening. NGO Support: Enable NGOs

to track medicine stock levels, schedule appointments, and control donations efficiently. Transparency and Security: Maintain transparent donation records and enforce secure.

Software Requirements:

- Windows 7 or above
- VS Code

Hardware Requirements:

- I3 Processor
- Memory:4 GB RAM
- Hard Drive:512
- Internet Connection

Front End:

.PHP

Back End:

.MYSQL

VI. RESULT AND DISCUSSION

The online unused medicine donation system efficiently streamlined the process of matching donors of medicine and need- based NGOs. The interface was simple to use to register donors, post available medicines, and furnish relevant details such as expiry date and quantity. NGOs were able to effectively search for medicines listed and order required supplies with minimal wastage and prompt delivery. The notification system on the website facilitated enhanced communications through automated notifications, faster responses, and enhanced inventory monitoring. Transparency was also ensured by maintaining donation records, allowing trust to be built between NGOs and donors. Medicine verification and eligibility screening ensured safety and authenticity of donated drugs. Feedback from users demonstrated enhanced accessibility and ease of use, validating the potential of the system for effective support to healthcare endeavors. The system could be enhanced with larger outreach of users and use of advanced analytics for tracking donation patterns.

VII. SYSTEM DESIGN

The system architecture of the Online Unused Medicine Donation System is a well-structured one with no loose ends when interfacing administrators, NGOs, and donors. The system is made up of three core modules which are the donor module, the NGO module, and the admin module. The donors are able to register on the site, input medicine details like name, expiry date, and quantity, and make a donation request. After submission, the system checks the eligibility of the medicines prior to making them visible for viewing by NGOs. NGOs browse the available medicines, order stock-in-hand items according to their needs, and get automated new donation alerts. The admin module is responsible for managing user accounts, authentication of the genuineness of medicines, and ensuring donations are safe. The system is based on the MVC (Model- View-Controller) structure for scalability, flexibility, and modularity in development. The system utilizes a MySQL database for efficient management of donor data, stock of medicines, and NGO records. HTML, CSS, and JavaScript are used to frame the front end of the system for an interactive user interface, whereas the back end is developed using PHP, Python, or Node.js for server-side execution. Data validation, encryption methods for sensitive information, and role-based access control are implemented for secure transactions. The implementation of an automated email notification system also keeps the users updated about the status of the donation, request for medicines, and critical alerts, ensuring effective communication and transparency in the donation process.

VIII. CONCLUSION

The Online Medicine Donation System for NGOs is a streamlined and efficient system to bridge the gap between donors and needy organizations. Safe and genuine medicine donations through the system prevent wastage of medicines and maximize the utilization of unused medicines. The system

provides enhanced transparency and trust through registration of users, tracking of donations, inventory management, and verification process. NGOs are able to control their inventory effectively, order medicines on demand, and distribute the medicines to beneficiaries. The system prevents expired or unsafe medicines, providing quality and safety. Real-time monitoring and feedback mechanism enhance the donation process. The project benefits poor people by enhancing access to critical drugs as well as encourages drug disposal. The site, through the use of technology, assists NGOs in their efforts to offer improved healthcare solutions and social welfare inputs.

REFERENCES

1. F. Alharbi, "Progression towards an e-Management Centralized Blood Donation System in Saudi Arabia," 2019 International Conference on Advances in the Emerging Computing Technologies (AECT), Al Madinah Al Munawwara, Saudi Arabia, 2020, pp. 1-5, Doi: 10.1109/AECT47998.2020.9194178
2. A. Meiyappan, K. Logavignesh, R. Prasanna and T. Sakthivel, "D'WORLD: Blood Donation App Using Android," 2019 IEEE International Conference on System, Computation, Automation and Networking (ICSCAN), Pondicherry, India, 2019, pp. 1-5, doi: 10.1109/ICSCAN.2019.8878830.
3. J. Kaur, A. Gupta, A. Tripathi, A. K. Gupta and A. Srivastava, "RaktFlow - Blood Bank Management and Donation System," 2022 OPJU International Technology Conference on Emerging Technologies for Sustainable Development (OTCON), Raigarh, Chhattisgarh, India, 2023, pp. 1-6,doi: 10.1109/OTCON56053.2023.10113983.
4. P. U. Pratyusha, K. Chaitanya, A. Saranam, K. Manideep and S. Kranthi, "Smart Intelligent Web based Online Blood Donation System," 2021 2nd International Conference on Smart Electronics and Communication (ICOSEC), Trichy, India, 2021, pp. 1813-1819, doi:10.1109/ICOSEC51865.2021.9591811.
5. M. R. A. Brislin, J. A. Mayan, R. A. Canessane and M. R. A. Hamlin, "Blood donation and life saver app," 2017 2nd International Conference on Communication and Electronics Systems (ICCES), Coimbatore, India, 2017, pp. 446-451, doi: 10.1109/CESYS.2017.8321318.
6. F. M. Enescu, G. -C. Flintaşu, M. M. Jătaru, N. Bizon and V. M. Ionescu, "System for Smart Blood Donation and Stimulation with Block chain," 2023 15th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), Bucharest, Romania, 2023, pp. 01-06, doi:10.1109/ECAI58194.2023.10194192.
7. D. Becker et al., "Automated Insulin Delivery - Continuous Blood Glucose Control During Ex Situ Liver Perfusion," in IEEE Transactions on Biomedical Engineering, vol. 68, no. 4, pp. 1399-1408, April 2021, doi: 10.1109/TBME.2020.3033663.
8. R. Kumar, R. Kumar and M. Tyagi, "Web Based Online Blood Donation System," 2021 3rd International Conference on Advances in Computing, Communication Control and Networking (ICAC3N), Greater Noida, India, 2021, pp. 16301632,doi:10.1109/ICAC3N53548.2021.9725558
9. S. Nayak, S. Kumar, P. K. Sarao and N. Kaur, "An App for the Self-Assembly of Blood in Patron Registration: A Systematic Approach," 2023 2nd International Conference on Futuristic Technologies (INCOFT), Belagavi, Karnataka, India, 2023, pp. 1-5, doi: 10.1109/INCOFT60753.2023.10425126
10. A. M. Basahel, N. M. Bahbouh, A. A. Abi Sen and M. Yamin, "Smart Application for Blood Donation Management in Health Domain," 2023 10th International Conference on Computing for Sustainable Global Development (INDIACom), New Delhi, India, 2023, pp. 589-594.

