

NOS-Network for Organ Sharing

Chaitanya Joshi¹, Vidyashri Jadhav², Shriya Karanjkar³, Rohit Kamble⁴, Shubham Deshmukh⁵,

Prof. Mr. Sagar Patil⁶

^{1,2,3,4,5}U.G.students, Department Of CSE, Bharati Vidyapeeth's College Of Engineering, Kolhapur, Maharashtra, India
⁶Professor, Dept. Of Computer Science and Engineering, Bharati Vidyapeeth's College of Engineering, Maharashtra, India

Abstract - There is a shortage of organs for donation in India, not because of lack of organs but because of the lack of the donors who could have saved a life. Organ donation in India is not very popular because of the lack of awareness as well as organs cannot be available at proper time but the need for organ donation is huge.

For this purpose we are making a web-based model for donating organ and finding desired organ easily and quickly. Hospitals have to register to NOS website. People who are interested can registered themselves to the system through registered hospitals. After doing registration once, hospital can login anytime. Doctors will get information about available organs, quantity of organs, location etc. quickly.

Key Words: NOS, Organ, Hospital, Donor, Seeker

1. INTRODUCTION

Organ donation in India has always been on a lower side and around 5 lakh people die every year in India due to unavailability of organs. Lack of knowledge, awareness, and infrastructures are some of the reasons behind the shortage of organ donation.

People might hear about organ donation, but do they really know what it means to those who really need organ transplantation. According to the National Transplant Resource Centre, there are thousands of patients on the waiting list for kidney, heart and lung transplants. However, one in three patients on the waiting list dies before a donor is found. Campaigns by the government to educate peoples on the importance of becoming organ donors were launch, but most people were still reluctant to do so. At present, out of the 1,50,000 patients requiring kidney transplants across India, only 200 get kidneys by the way of donations from the deceased.

The NOS is a web based model for donating organ and finding desired organ easily and quickly. This system is used only by the authorized doctors in authenticated hospitals. At first, hospital must register to NOS website to access this system. People

who want to become donor can register their details to through any registered hospitals. Registered hospitals can login any time.

2. LITERATURE REVIEW

There is a huge gap between the number of patients who need organ transplants and the number of organs that are available. The details of such cases are, however, not maintained locally. For this purpose 'NOS' plays an important role. The people who are interested to donate organ can contact with donor hospitals. The donor hospitals must have to register with 'NOS' website. The people who needs organ have to contact with recipient hospital and recipient hospital must register with 'NOS' website.

For this project we have referred some IEEE papers and what we have studied in this paper is shortly described as follows:

"Increasing Human-Organ Transplant Availability: Argumentation-Based Agent Deliberation" highlights human-organ transplantation is the only effective therapy for many life-threatening diseases. However, despite an increase in transplantation successes, the lack of a concomitant increase in organ availability has led to growing disparity between supply and demand. Much research has thus focused on defining and implementing policies. [1]

"Promoting and Assisting Eye Donation Using Mobile Application" highlights the problems and misconceptions, religious views, illiteracy and many factors which are root causes that prevent eye donation. [2]

"Issues in Ethics" paper focuses on difficult ethical questions regarding to organ donation. It contains Limited Supply of Organs, Financial Incentives, Animal Donors, Organ from Healthy Donors, The Changing Physician – Patient Relationship. [3]

"Characterizing Organ Donation Awareness From Social Media" suggest that the most effective solution is to increase organ donor rates; current, proposals

range from expanding the donor eligibility criteria to performing mass media campaigns. [4]

3. PROPOSED SYSTEM

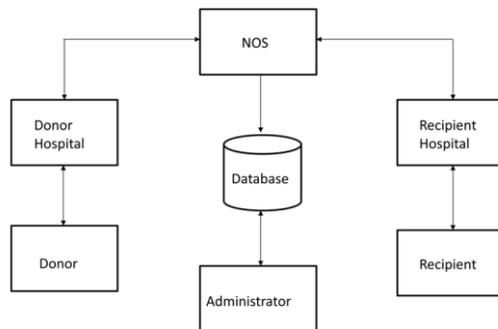


Fig-1: System Architecture

The NOS system consists of different modules which are described below.

1. Home Page Module

This is main module of this system. Home Page consists of menu bars like Registration, Login, Questions, Mission, and Contact Us. There is a need for educating people regarding organ donation hence we are describing need of awareness, knowledge and attitude regarding organ donation among people.

2. Registration Module

Hospitals can register themselves through Hospital Registration. User is an authenticated doctor in case of Hospital Registration. In the registration phase, user registers with all his information to NOS website. This page contains Hospital details, Doctors details, Information regarding donating and receiving organ as well as username and password. User should enter the required information correctly. When information of registered hospital is verified by our verification team, particular user will get message through SMS.

3. Verification Module

This module will take place after registration of hospital to NOS website. Verification module is responsible for performing verification of registered hospital. Verification task is performed by verification team members. This module consists of information of team members to verify details of registered hospital within some period. The maximum time required for verification is one week. After getting positive results from verification team then and only then registered hospital can login to NOS website otherwise it cannot login.

4. Login Module

After doing Hospital Registration user can login after some period. Individual person cannot Login to NOS system. For successful login, the username and password should match with the values stored in the database otherwise login will be denied. Login Module consists of three fields – Search, Donate, Edit. Search - By clicking this option user can search desired organ.

Donate - By clicking this option user need to fill the patient details and information regarding to organ donation.

Edit – User can edit their information through Edit option.

5. Donor Module

This module will take place after the successful login. This module is used to collect details of organ donor. As organ matching is a complex process hence we are trying to collect more health details of an organ donor. Donor has to fulfill all the required information and submit the form.

Through this system, organs of alive as well as dead donor can be donated. Alive donor can donate any organ from Kidney and Bone marrow while user can donate any one or multiple organs from Kidney, Bone marrow, Eye and Heart of dead donor.

Every organ has different lifespan. The timer of donated organ will get started in this module and it will be stopped when lifespan of an organ will get over or respected organ will get retrieved from the system. A particular organ will automatically destroy from the database of the system when timer will get stopped for that particular organ.

6. Seeker Module

Seeker module depends on the Donor module as we display the available results to seeker which is obtained from donor module. This module is useful for searching and sorting a desired organ based upon lifespan of an organ and location of donor. Here list of all the available organs in the system and their detailed information is displayed. Seeker can select any organ that satisfies required matching conditions.

In this module, when desired organ from the available results is obtained, seeker has to send organ request to the respected organ donor hospital. For this we are providing SMS service. After accepting the organ request by donor hospital, the desired organ is destroyed from the system.

7. Admin Module

This module maintains all other modules. Admin has the responsibility to handle the database. Admin has

all authorities related to this system. After getting successful verification of registered hospital, it provides access to the respective hospital.

In this module, list of all the registered hospitals is displayed to the admin. Admin has authority to give or denied access for the system to registered hospitals. Admin can also see the list of donated organs and their details.

4. CONCLUSION

Every year thousands of people die while waiting for an organ transplant because there is a shortage of organ donors. There is a shortage of organs for donation in India, not because of lack of organs but because of the lack of the donors who could have saved a life. Organ donation in India is not very popular because of the lack of awareness as well as organs cannot be available at proper time but the need for organ donation is huge.

Internet use is at an all-time high, creating an opportunity to increase public commitment to organ donation through the broad reach of Web-based behavioral interventions. So, the more people that register, the more likely someone will be able to get the life-changing transplant they are desperately waiting for.

With the help of this system people can donate and receive a desired organ easily. Hence becoming a donor is easy. By making such a system for organ donation is good opportunity to help people who are in need.

ACKNOWLEDGEMENT

We express our deep gratitude and sincerity to our project guide Mr. S. B. Patil and the HOD Mrs. S. M. Mulla under whose valuable guidance; the whole project work was carried out.

REFERENCES

- [1] "Increasing Human-Organ Transplant Availability: Argumentation-Based Agent Deliberation" published by Pancho Tolchinsky and Ulises Cortés, Technical University of Catalonia Sanjay Modgil, Cancer Research UK Francisco Caballero and Antonio López-Navidad, Hospital de la Santa Creu i Sant Pau, Barcelona.
- [2] "Promoting and Assisting Eye Donations Using Mobile Application" published by M.I. Salagar, P.G. Kulkarni, S. Gondane Walchand College of

Engineering, Sangli, India Department of Computer Science and Engineering.

[3] "Issues in Ethics: Organ Transplants " published by John H. Fielder.

[4] "Characterizing Organ Donation Awareness from Social Media" published by Diogo.

[5] "An Intelligent Organ Distribution Using Internet Of Things-Driven Systems " published by Ms. Benita Jose Chalissery (Author) Department of MCA, Krupanidhi Degree College, ChikkaBellandur, Off Sarjapur Road, Bangalore

[6] <https://notto.gov.in/>

[7] <https://www.organdonor.gov/about/process/matching.html>

[8] <https://www.kidney.org/atoz/content/BloodTests-for-Transplant>