

## Blood Bank Management Information System in India

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### Abstract

A blood bank is a bank of blood or blood components, gathered as a result of blood donation, stored and preserved for later use in blood transfusion. To provide web based communication there are numbers of online web based blood bank management system exists for communicating between department of blood centers and hospitals, to satisfy blood necessity, to buy, sale and stock the blood, to give information about this blood. Manual systems as compared to Computer Based Information Systems are time consuming, laborious, and costly. This paper introduces the review of the main features, merits and demerits provided by the existing Web-Based Information System for Blood Banks. This study shows the comparison of various existing system and provide some more idea for improve the existing system. First I will give some basic introduction about blood banks then I will try to provide comparative study of some existing web based blood bank system. After that I will introduce some new idea for improving the existing techniques used in web based blood bank system and at end I will conclude this paper.

**Keyword:** Blood Bank Management Information System.

### **Blood Bank:**

Blood is universally recognized as the most precious element that sustains life. It saves innumerable lives across the world in a variety of conditions. A blood bank is a place designed especially for the storage of

blood and blood products. The term "blood bank" typically refers to a division of a hospital laboratory where the storage of blood product occurs and where proper testing is performed to reduce the risk of transfusion related events. Large coolers hold these products at a constant temperature and they are available at a moment's notice. The blood bank management information system offers functionalities to quick access to donor records collected from various parts of the country. It enables monitoring of the results and performance of the blood donation activity such that relevant and measurable objectives of the organization can be checked. They are providing the efficient search who needs the blood in their own city as fast as possible.

Blood Bank accept the donated blood, only if donor satisfy all of the following conditions:-(i) If the donor are between age group of 18-60 years.(ii) If the donor's weight is 45 kgs or more.(iii) If the donor's hemoglobin is 12.5 gm% minimum. (iv)If the donor's last blood donation was 3 or more months earlier.

Blood Bank do not accept donated blood, if donor have any of the following conditions :-(i) Cold / fever in the past 1 week. (ii) Under treatment with antibiotics or any other medication.(iii) Cardiac problems, hypertension, epilepsy, diabetes (on insulin therapy), history of cancer, chronic kidney or liver disease, bleeding tendencies, venereal disease etc.(iv) Major surgery in the last 6 months.(v) Vaccination in the last 24 hours.(vi) Had a miscarriage in the last 6 months or have been pregnant / lactating in the last one year.(vii) Had fainting attacks during last

donation.(viii) Have regularly received treatment with blood products.(ix) Shared a needle to inject drugs/ have history of drug addiction.(x) Had sexual relations with different partners or with a high risk individual.(xi) Been tested positive for antibodies to HIV.

### **Comparative Study of various Web Based Blood Bank Management Information System:**

For this I have chosen five web based blood bank system for comparative studying of their MIS.

(i) **Blood Bank India** :- The MIS of Blood Bank India keeps the name of the donor who is donating blood, a unique id through which the donor can view his account , password for accessing the account , date of birth of the donor because his age must be in the range of 18-60 years, gender status of the donor, blood group of the donor, weight of the donor, mobile no, email id, address, city, state, date of last blood donation when a new blood donor registered himself as a Blood Donor.

It provides the criteria of city wise and blood group wise search of the blood(a person who needs blood). After that when a search command is given then the MIS of Blood Bank will result the donor name from its database.

A person or a hospital can request the blood from the blood bank when they need. For this the blood bank keeps the name of the patient, a blood group which is needed, city in which the blood needed, name of the hospital where the blood will be sent, address of the hospital, name of the doctor who demands for blood, date and time when the blood will required, contact name, contact email id, contact phone number,

address, city, state of the person who needs the blood in their MIS.

(ii) **BharatBloodBank** :- The MIS of BharatBloodBank keeps the name of the donor, a unique id and password through which the donor can access his account, date of birth of the donor, gender status of the donor, blood group of the donor, weight of the donor, mobile no, email id, address, city, state, date of last blood donation, and information about Hepatitis B, C, AIDS, Cancer, Kidney disease, Heart disease(if a donor is suffered from these disease) when a new blood donor registered himself as a Blood Donor with BharatBloodBank.

It provides the city wise and blood group wise, state wise and area wise search of the blood (**a person who needs blood**).

It does not provide any mechanism that a patient can request for blood online.

(iii) **e-Blood Donors** :- The MIS of e-Blood Donors keeps the name of the donor who is donating blood, a unique id through which the donor can view his account , password for accessing the account , date of birth of the donor ,gender status of the donor, blood group of the donor, weight of the donor, photo, mobile no, email id, address, city, state, date of last blood donation when a new blood donor registered himself as a Blood Donor.

It provides the criteria of city wise and blood group wise and gender wise search of the blood(a person who needs blood).

It does not provide any mechanism that a patient can request for blood online.

(iv) **Lions Blood Bank & Research Foundation** :- Lions Blood Bank & Research Foundation keeps the

availability of bloods and its type in their MIS and they provide the current status of availability of blood through their MIS in the format of blood group, number of availability of whole blood, number of availability of packed cells, number of availability of frozen plasma, number of availability of platelet.

It does not provide any mechanism for register a person as a donor and also does not provide any mechanism that a patient can request for blood online.

(v) **Webbloodbank** :- Web blood bank keeps the name of the donor who is donating blood, an email as a unique id and password through which the donor can access his account , date of birth of the donor, gender status of the donor, blood group of the donor, RH factor of the donor, mobile no, email id, address, city, state, date of last blood donation related information in their MIS when a new blood donor registered himself as a Blood Donor.

It provides the criteria of state wise, city wise and blood group wise and Rh factor wise search of the blood(a person who needs blood).

A person or a hospital can request the blood from the blood bank when they need. For this the blood bank keeps the name of the patient, a blood group which is needed, number of unit needed, Rh factor type, city in which the blood needed, date and time when the blood will required, contact name, contact email id, contact phone number, address, city, state of the person who needs the blood in their MIS.

**Improvements:** All the above discussed web based blood bank management information have few of the demerits. Firstly these applications do not provide the better inventory solution to the end user, so that the seeker can get the information regarding a particular blood group in its location. Inventory management plays a vital role in the blood bank

management information system, because this function provides the precise information like how much unit of the particular blood group is available, which blood group is going to finish, etc. There should be proper report generation for the inventory used in the application. Inventory includes the donor inventory and the seeker inventory. Secondly there should be proper management of the expired blood group, as any blood unit will expire in 21 days, so there should be proper record keeping of the expire blood group which protect the transfusion of expire blood group. There should be function used which can generate the unique identification number for that unit, so that record keeper can check the status of particular blood group physically. This function also shows how much time is left of the particular blood group so that stockiest will give that unit first to the patient which is about to expire, as management concept follow the First In First Out concept (FIFO). Thirdly the searching technique can be improvised by giving the results area-wise and blood group-wise. Lastly there should be a function used for report generation of any time given by the end user, so that client will come to know which blood group is in demand and which is difficult to collect and also display the blood donation camp notice in order to fulfill the demand on particular blood group.

**Conclusion:** In today's world of information and communication where person can order the pizza online with the surety of getting it in 30 minutes, where person can book the movie ticket online, where person can book his holiday trip online, where person can make his train reservation online, then why not person can get the information of the blood group, just in one click. Today the world is become a Global village where every thing is online. There are so many web based solutions provided in the market for the comfort of the people. But without blood human being

is non living, just by providing the web solution of blood bank management information system is just one more step in order to serve the mankind.

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