

An audit of blood bank services

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ABSTRACT

Background: An audit is a written series of simple, direct questions, which when answered and reviewed, tell whether the laboratory is performing its procedures, activities, and policies correctly and on time. **Aim:** The aim of this study is to briefly highlight the importance of audit in blood bank services. **Materials and Methods:** An Audit of Blood Bank Services was carried out in a Blood bank of the tertiary care hospital, Central India by using the tool kit, (comprised of checklists) developed by Directorate General of Health Services, Dhaka WHO, July 2008. **Results:** After going through these checklists, we observed that there is no system for assessing the training needs of staff in the blood bank. There was no provision for duty doctor's room, expert room, medical technologist room and duty care service. There was no checklist for routine check for observation of hemolysis and deterioration of blood and plasma. There was no facility for separate private interview to exclude sexual disease in the donor. Requisition forms were not properly filled for blood transfusion indications. There was no facility for notification of donors who are permanently deferred. There were no records documented for donors who are either temporarily or permanently deferred on the basis of either clinical examination, history, or serological examination. It was found that wearing of apron, cap, and mask was not done properly except in serology laboratory. When the requisition forms for blood transfusions were audited, it was found that many requisition forms were without indications. **Conclusion:** Regular audit of blood bank services needs to be initiated in all blood banks and the results needs to be discussed among the managements, colleagues, and staffs of blood bank. These results will provide a good opportunity for finding strategies in improving the blood bank services with appropriate and safe use of blood.

Key words: Audit, blood bank, checklists, quality control

INTRODUCTION

Blood Transfusion Services is the important part of modern healthcare system without which efficient medical care is

not possible.^[1] Every hospital/blood transfusion center is expected to develop a system of audit that is appropriate to its needs.^[2] In simpler terms, an audit is a written series of simple, direct questions, which when answered and reviewed, tell whether the laboratory is performing its procedures, activities, and policies correctly and on time. Audits are valuable, if written with the intent to review thoroughly all the crucial systems within the laboratory.^[3] All audits are carried out on the basis of a predescribed method. The audit is a system of investigation, evaluation and measurement, and also a means of continuous assessment and therefore improvement. The audit is based on set guidelines, but in fact consists of determining the difference between the directions given and what has actually been done.^[4] The aim of this study is to briefly highlight the importance of audit.

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MATERIAL AND METHODS

Setting and design

The study was carried out in the Blood bank of a tertiary care hospital, Central India over a period of 19 months, from November 1, 2009 to May 31, 2011.

Type of study

It was a prospective study.

Methods

The tool kit (which comprised of checklists), developed by Directorate General of Health Services, Dhaka WHO, July 2008 was used for auditing the blood bank services.^[5]

The checklists, which were used in our study, were comprised of -

- Reviewing Quality system
- Reviewing the Quality Control System
- Monitoring basic facilities
- Checklists to assess laboratory performance on Blood transfusion
- Ensuring ideal donor screening
- Checking records on Blood transfusion activities
- Donor records
- Activities done in the blood transfusion unit
- Monitoring of Procedural practices
- Monitoring of Blood Transfusion management Activities
- Monitoring of the Status of the supplied major equipment and instrument
- Installation of equipment
- Comprehensive performance monitoring checklist for a Blood bank.

RESULTS

After going through these checklists, we observed that there is no system for assessing the training needs of staff in the blood bank. All other parameters in the checklists for reviewing quality system were routinely done as required. On checking the basic facilities, it was observed that all the basic facilities as required by the Food and Drug Administration were complied with; however, there was no provision for duty doctor's room, expert room, medical technologist room, and duty care service.

As per accuracy of the checklists is concerned, all the checklists in the blood bank were used routinely and were complete in all aspects and were quite good, however, there was no checklist for routine check for observation of hemolysis and deterioration of blood and plasma.

All the parameters for ideal donor screening were fulfilled except that there was no facilities for separate private interview to exclude sexual disease in donor. Requisition forms were not properly filled for blood transfusion indication. There was no facility for notification of donors who are permanently deferred but confidentiality is maintained.

There were no records documented for donors who are either temporarily or permanently deferred on the basis of either clinical examination, history, or serological examination.

It was found that wearing of apron, cap, and mask was not done properly except in serology laboratory. Hand washing is done properly and regularly along with visitor control in the laboratory in all aspects. Disposal of laboratory waste was done properly to prevent any biological hazard.

Procedural techniques were found adequate, done properly and regularly, fulfilling the Standard Operating Procedures (SOPs) requirements.

Blood transfusion management activities were done properly in every aspect from donor selection to temperature monitoring and cold chain maintenance. All instruments were in working condition, they were regularly calibrated and serviced. The instruments were placed properly and have alarm system to indicate change in the temperature. All the parameters in the checklists were done properly according to SOPs.

A total of 8944 blood requisition forms were audited for the indications of whole blood transfusion. It was observed that in 6082 (68%) of requisition forms, indications were not mentioned for transfusion while in 2862 (32%) of requisition forms, indications were mentioned as shown in Table 1.

A total of 779 blood requisition forms were audited for indications for transfusion of packed red cells transfusion. In 673 (86.40%) of requisition forms, indications were mentioned while in 106 requisition forms (13.6%), indications were not mentioned as shown in Table 2.

A total of 376 blood requisition forms were audited for indication for platelet concentrate transfusion. In 299 (79.5%) requisition forms, indications were mentioned for their need of transfusion while in 77 (20%) requisition forms, indications were not mentioned as shown in Table 3.

A total of 325 blood requisition forms were audited for fresh frozen plasma indications. In 230 (79.9%) requisition forms, indications were mentioned while in 95 (29.1%) requisition forms, indications were not mentioned as shown in Table 4.

Table 1: Audit of requisition forms for indication of whole blood transfusion

Requisition forms audited	8944 (100%)
Indication mentioned	2862 (32%)
Indication not mentioned	6082 (68%)

Table 2: Audit of requisition forms for indication of packed red cells transfusion

Requisition forms audited	779 (100%)
Indication mentioned	673 (86.4%)
Indication not mentioned	106 (13.6%)

Table 3: Audit of requisition forms for indication of platelet concentrate transfusion

Requisition forms audited	376 (100%)
Indication mentioned	299 (79.5%)
Indication not mentioned	77 (20.5%)

Table 4: Audit of requisition form for indication of fresh frozen plasma transfusion

Requisition forms audited	325 (100%)
Indication mentioned	230 (70.76%)
Indication not mentioned	95 (29.24%)

DISCUSSION

The present study was undertaken to audit the blood bank of a tertiary care hospital. There were many guidelines and formats, which are available for auditing the blood bank. After going through many formats we found that the formats given by the Program Manager (BAN-BCT), WHO Directorate General of Health Services Mohakhali, Dhaka-1212 in July 2008, which was based on strategic papers developed by WHO for ensuring quality assurance of safe blood transfusion, was ideal to audit our blood bank. This program was developed for surveillance and monitoring the quality of blood bank in developing countries.^[5]

In our blood bank after performing the audit, we observed that the blood bank though provides facilities as required by Food and Drug Administration has no facility for duty doctors and technologists because these are not the requirements of Food and Drug Administration.^[6] There is also no mechanism to get feedback from the staff regarding the training needs. The hospital authorities also do not pay much attention for these basic facilities. The major problem that was observed related to the blood requisition forms, which were also not properly filled. Similarly donor deferral registers are not properly maintained. This is probably due to misunderstanding that the filling of requisition forms and maintenance of donor deferral register is not activity of importance. Therefore they are given less attention.

All other remaining parameters were mostly being observed except for correct wearing of apron, cap, and masks, which needs to be emphasized to the blood bank staff for maintaining much required relatively sterile atmosphere in the working premises.

The blood bank has prepared their own SOPs, which also helped in maintaining quality of blood and blood products.

Quality control for whole blood, platelet concentrate, packed red cells, and fresh frozen plasma in our study, fulfilling WHO criteria for quality control.^[1] We believed that this study may have two limitations and interpretation of results must take these into accounts:

- There is a chance of bias in the process of gathering data because of retrospective review and audit used. Ideally the audit should have been done by actual observations
- Defining the rate of appropriate use of blood is controversial.

However, this is first time that audit of blood bank services has been carried out in our blood bank and thus these results represent with starting point from which the use of medical technology must be improved. There is need to design regular audit programs to cover all aspects of blood bank and to be carried out at regular intervals so that there is assurance of quality of the blood products, which are supplied to the population through blood banks.

CONCLUSION

A more comprehensive prospective audit is required to understand whether the transfusion services are being appropriately used for indications of blood use. Regular audit of blood bank services needs to be initiated in all blood banks and the results needs to be discussed among the managements, colleagues, and staffs of blood bank. These results will provide a good opportunity for finding strategies in improving the blood bank services with appropriate and safe use of blood.

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