The Role of Hospital Transfusion Committee in Ensuring Rational Use of Blood

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Abstract

A Hospital Transfusion Committee (HTC) is a governance body established within the hospital to ensure appropriate blood product use, auditing blood use in the hospital and monitoring and preventing adverse events. The primary goal of HTC is to promote the safe and effective use of blood and components. It is important to educate the end users of blood components to close the gap in medical education pertaining to transfusion medicine. Comprehensive blood utilization review and reporting to management ensures that corrective actions are taken when needed. Meeting is held annually in our setting to discuss practices within the hospital and scope of improvement. HTC provides an active forum for communication between staff directly involved in clinical and laboratory-based patient blood management and blood transfusion activities, to provide solutions, feedback and education in relation to identified problems and to ensure that transfusion practice accords with best practice and aligns with national standards.

Keywords: transfusion, committee, audit, review, blood

Introduction

A Hospital Transfusion Committee (HTC) is a "governance" body within the hospital, which is meant to promote "transfusion of the right unit of blood to the right patient at the right time and in right quality and condition and according to appropriate guidelines."[1] WHO recommends that "A transfusion committee should be established in each hospital to implement the national policy and guidelines and monitor the use of blood and blood products at local level."[2] HTC is also known as *'Blood Management Committee', 'Blood Utilisation Committee'* or *'Blood User Groups.'*[3] Hospital transfusion committee plays a key role in dealing with hemovigilance and risk management which is recently initiated in India in December, 2012.[4] It is important to educate the end users of blood components to close the gap in medical education pertaining to transfusion medicine.[5]

The Fundamental role of HTC is to:

1. Ensure appropriate blood product use
2. Educate clinicians regarding appropriate use of blood
3. Audit blood use in the hospital
4. Monitor and prevent adverse reactions

Members of Hospital Transfusion Committee

For the Transfusion Committee, the following members are recommended:

1. Medical Director/ Superintendent of Hospital
2. Medical director of transfusion service/ Hemovigilance officer
3. Lead consultant physician/ hematologist
4. Representatives of major specialty users of blood
5. Head of Department of Anesthesia
6. Representative of junior medical staff
7. Representative from Department of Pharmacology

8. Representative from hospital administration
9. Representative from Biomedical Department
10. Nursing Head

Goal and Functions of the Hospital Transfusion Committee

The goal of HTC is to promote the safe and effective use of blood and components. Functions of HTC include:

1. To develop systems for the implementation of national guidelines within the hospital.
2. To develop and regularly review policies, procedures and guidelines covering Patient Blood Management (PBM) and transfusion practice to ensure alignment with national guidelines and standards.
3. To monitor the implementation of national guidelines within the organisation and take appropriate action to overcome any factors that may be hindering their effective implementation.
4. To observe if blood components are used appropriately and administered safely in accordance with national guidelines, standards and institutional policies. Where appropriate, compare data on appropriate use of blood components within the hospital and to that in an institute external to the organisation.
5. To monitor and review blood component wastage and develop strategies for reduction and improvement in the same.
6. To monitor, report and investigate transfusion adverse events and near misses and develop strategies for reduction and improvement in the same. Utilize these examples as educational case studies.
7. To review and analyze blood bank reports, for example regarding blood demands and usage, blood discard, adverse reactions and transfusion errors and accidents.
8. To ensure a cycle of clinical audits to check patient blood management (PBM)/transfusion practice are compliant to the national requirements and set appropriate benchmarks.
9. To liaise with blood transfusion services to ensure adequate supply of blood components and undertake strategic planning exercises (e.g. shortages, disaster impact, pandemics).
10. To liaise between the organization and the regulatory authority and agree on any submissions and inspection outcomes.
11. To ensure adequate training and assessment of all staff involved in the blood transfusion/management process.
12. To ensure appropriate education and safety and quality improvement programs are available.
13. To disseminate transfusion related information, e.g. changes in national guidelines, audit results and examples of good practice.
14. To ensure PBM initiatives including transfusion alternatives or minimization techniques (for example minimal blood sampling or intraoperative cell salvage) are used appropriately and in accordance with relevant guidelines and reviewing transfusion alternatives and making recommendations of their use.
15. To oversee and review component recalls.
16. To include processes to actively involve patients/consumers in their own care when providing safe blood management.

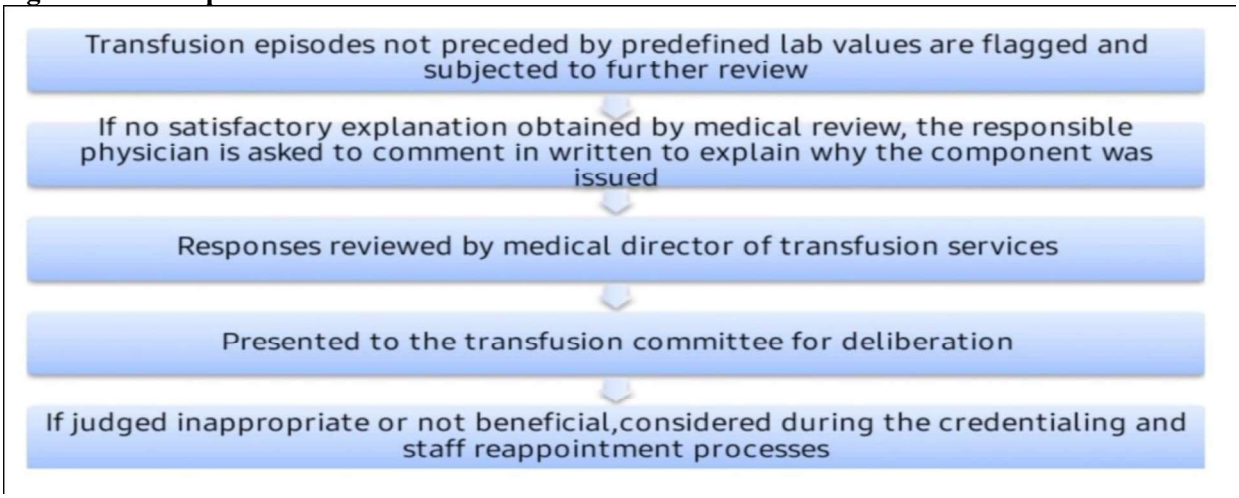
Blood Utilization Review

It is essential to provide comprehensive blood utilization reports to the management and recommend corrective actions when needed, ensuring a feedback that is meaningful and relevant to the clinical departments, where these are disseminated. Two types of reviews can be considered:

1. Concurrent Review: Occurs in real time, immediately when an order is received. It facilitates timely intervention when the order does not meet established screening guidelines based on lab parameters or clinical data. Simpson at Water Reed Hospital reported that concurrent audit and medical consultation in an army hospital were associated with a 56% reduction in the use of Platelet concentrates.[6] Hawkins et al, in New Zealand reported that a mandatory pre transfusion approval program decreased the use of FFP by 33%.[7]

2. Retrospective Review: Based on available reports of transfusion activities completed either the day before the review, or by randomly selecting two days in a month for a representative review (**Figure 1)**

Figure 1: Retrospective review of blood utilization



Peer review: Transfusing facilities should have a peer-review program that monitors and addresses transfusion practices for all categories of blood and components. In the United States, hospital-based peer review has been mandatory for accreditation by the College of American Pathologists and by the Joint Commission on Accreditation of Hospitals since 1982.[8]

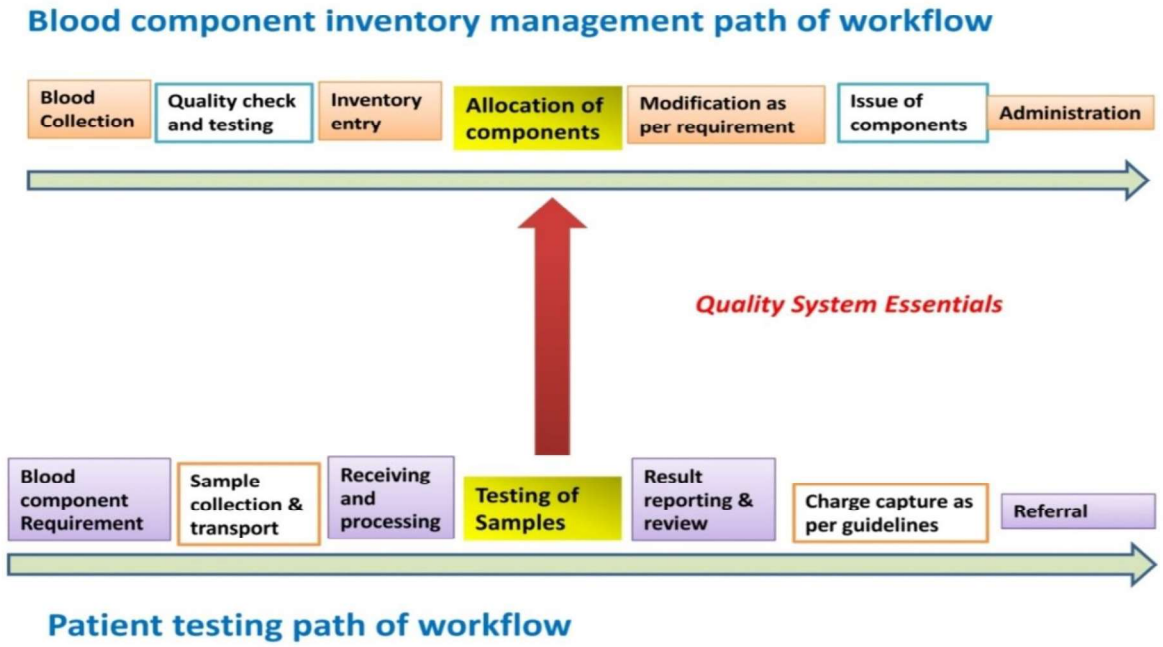
Performance improvement

Reactive: To conduct root-cause analysis (RCA) of transfusion-related adverse events and ensure RCA recommendations are disseminated, implemented and evaluated for effectiveness.

Proactive: To improve patient safety through implementation of ongoing proactive assessment and performance improvement in blood ordering, blood sample collection, blood issuance, pre-transfusion bedside clerical checking, and transfusion reaction reporting practices.

To conduct Root Cause Analysis, two workflows can be adopted. One is the blood component inventory management path and the other is patient testing path of workflow. Quality System Essentials (QSEs) provide the basic framework for transfusion service policies, processes and procedures. (**Figure 2)**

Figure 2: Workflows to conduct root cause analysis in Blood Transfusion Services[2]



Implementation and management

The HTC should have authority within the hospital to determine hospital transfusion policy and resolve problems.[9]

I. **Planning successful meetings** (preferably quarterly): It includes scheduling HTC meeting regularly (at least quarterly) and to plan agenda and to review reports of previous year before the meeting.

II. **Hospital Transfusion Committee (HTC) meeting**: Open discussion must be encouraged during the meeting. After the meeting, minutes of meeting should be distributed to all members and then presented to Medical Executive Committee for approval followed by implementation.

III. **Measuring the effectiveness of HTC**: Changes in frequency of transfusion related near misses and mis-transfusions can be tracked over time.

Hospital transfusion committee: experience at our centre

Hospital Transfusion Committee at B J Medical College and Civil Hospital, Ahmedabad is working actively to improve patient safety since for than 30 years. Meeting is held annually to discuss practices within the hospital and the scope of improvement. The agenda is usually as follows:

- To review the usage of blood and blood components by various clinical units of the hospital.
- To review transfusion related adverse events.
- To promote transfusion reaction reporting practices along with reporting back safe transfusion.
- To create awareness for the use of blood components as well as apheresis products.
- To invite suggestions for the promotion of voluntary blood donations.
- To discuss suggestions or grievances by the members to improve blood transfusion services.
- Any other matter with permission of chair.

During the last 3 years, 25 cases of adverse blood transfusion reactions were reported. Seven of these were febrile non hemolytic transfusion reactions, 1 acute hemolytic reaction, 9 allergic reactions, 4 non-immune hemolysis and 4 were unrelated to transfusion. No fatal complications were reported. On root cause analysis, wrong blood in tube was found to be the cause of acute hemolytic reaction. Improper warming of blood resulted in 50% of reported cases of non-immune hemolysis. Transfusion reactions were found to be unrecognized and underreported.

A near miss event of 'wrong blood in tube'(WBIT) was reported recently which resulted from failure to label samples at the bedside by the medical staff who collected the sample. Tube was labelled wrongly with another patient ID with the same name. Non-immune hemolysis due to improper warming of packed red cells was also reported recently. Irrational use of FFP for volume expansion in polytrauma and unnecessary demands for whole blood from medical and surgical units were also spotlighted during the period. Incomplete request forms and sample mismatches were found to be the major causes for sample rejections which was reduced by 70% with the help of concurrent review. Consent for blood transfusion was not taken in 39.8% of the transfused patients. Blood transfusion monitoring was not properly performed in 62.3% of transfusions and the responsible clinicians were informed about the same. With frequent audits, the wastage rate of blood components was reduced by 60%. An orientation program on 'Rational use of blood and blood products' for newly joined resident doctors is also conducted yearly to promote good practices.

To conclude, the responsibility of an HTC is to provide an active forum for communication between the staff directly involved in clinical and laboratory-based patient blood management and blood transfusion activities, to provide solutions, feedback and education in relation to identified problems and to ensure that transfusion practice in the hospital accords with best practice and aligns with national standards.

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