

Original Article

Assessment of Blood Requisition Forms submitted to the Department of Blood Transfusion and Immunohematology of a Tertiary Care Hospital from North India: An Observational Study.

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Abstract

Background

Blood requisition form is the first line of communication between clinicians and transfusion medicine specialists. It is a very important and useful document for assessing the practice of an institution's transfusion services.

Aims and Objectives

The present study aims to assess blood requisition forms sent by the clinicians to the Blood Centre to ascertain their completeness.

Materials and Methods

A retrospective observational study was conducted in the Department of Blood Transfusion & Immunohematology SKIMS from January 2023 to June 2023 for a period of 6 months. All the blood requisition forms that were submitted during this period from different departments were compiled and revived for their completeness. A total of 14 parameters were checked in every blood requisition form. All the filled and unfilled parameters were counted, and frequencies were calculated and expressed as percentages.

Results

A total of 8835, Blood requisition forms were assessed, in which 2676 (30.29%) were complete and 6159 (69.71%) were incomplete. Parameters of Blood requisition form found complete were patients name 8835 (100%), department/ward 8835 (100%), MRD NO. 3385 (100%), Bed NO. 6570 (74.36%), Age/sex 6003 (67.97%), Clinical diagnosis 6375 (72.16%), Indications of transfusion 6507 (73.65%), Recent Hemoglobin. 5625 (63.67%), Blood Component & quantity required 8835 (100%), Date when required 8645 (97.85%), Time when required 6722 (76.08%), Routine/Emergency 7251 (82.07%), Doctors name/signature/code 7143 (80.85%), Previously transfused (any reaction) 238 (2.69%).

Conclusion

There is a need to introspect and fill up these forms completely in the improvement of clinical practices in hospitals.

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Introduction

Transfusion medicine as a medical specialty is expected to ensure that every transfusion is correctly indicated. Transfusion audits are useful tools for evaluating a procedure and educating those requesting blood and

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Keywords

Blood requisition form, complete, incomplete.

its components. Blood request forms contain information regarding patient demographics, diagnosis, hematology reports, details of blood components requested and relevant previous transfusions, and a history of sensitizing events. Doctors often ignore details on blood request forms and the completeness of these forms in general, which can lead to medical errors[1-3].

Blood request form analysis is considered one of the most efficient and effective methods for assessing and monitoring blood consumption. BRF is the first line of communication between clinicians and transfusion medicine specialists. The blood request form is the culmination of the clinical decision to transfusion. Therefore, it is a very important and useful document for assessing the practice of an institution's transfusion services. In any healthcare system, safe blood transfusion practices can only be achieved with the help of a well-developed hemovigilance system and the most basic unit to operate a good hemovigilance system is a fully completed Blood request form[4]. Almost 50% to 75% of errors that occur in a laboratory are preanalytical errors, for which BRFs provide opportunities to prevent them. Today, proper test requesting and fully completed BRFs are considered the most important aspects of providing effective laboratory services[5].

Completed BRFs not only help achieve good transfusion and hemovigilance standards, but are also helpful in hospital and/or blood bank audits[6]. BRFs help ensure that the data provided is relevant and reliable and help blood banks to provide their services efficiently and effectively. In addition, they also help in calculating the exact blood transfusion needs in hospitals instead of just making a subjective estimate[7].

Aims and objectives: In this study, we retrospectively assessed blood requisition forms sent by the clinicians to the Department of Blood Transfusion & Immunohematology to ascertain their completeness.

Materials and Methods

A retrospective observational study was conducted in the Department of Blood Transfusion & Immunohematology SKIMS from January 2023 to June 2023 for a period of 6 months. All the blood requisition forms that were submitted during this period from different departments were compiled and reviewed for their completeness. A total of 14 parameters were checked in every blood requisition form.

Complete blood requisition form: It has following parameters;

1. Patients name
2. Department/Ward
3. MRD.No.
4. Bed No.

5. Age/Sex
6. Clinical diagnosis
7. Indications of transfusion
8. Recent Hemoglobin
9. Blood component and quantity required
10. Date when required
11. Time when required
12. Routine/Emergency
13. Doctors name/signature/code number
14. Previously transfused (if yes, any reaction)

Incomplete blood requisition form: In which one or more than one above parameter is missing.

Statistical analysis: Data were numerically coded and entered into a Microsoft Excel spreadsheet. All the filled and unfilled parameters were counted and frequencies were calculated and expressed as percentage.

Ethical approval for this study was obtained from Institutional Ethical Committee SKIMS (SKIMS 131/IEC-SKIMS/2023-313, Dated: 24-07-2023

Results

During the study period of 6 months a total of 8835, Blood requisition forms were assessed. Distribution of blood requisition forms based on the requesting department is shown in Table 1.

Table 1. Distribution of blood requisition forms based on the requesting department

Department	n=8835	%
1. Gynecology/Obstetrics	1760	19.92
2. Clinical Hematology	1281	14.50
3. Medical Oncology	1118	12.65
4. A/E	714	8.08
5. Neuro Surgery	536	6.07
6. Nephrology	465	5.26
7. CVTS	437	4.95
8. Radiation Oncology	356	4.03
9. Plastic Surgery	329	3.72
10. General Surgery	297	3.36
11. Surgical Oncology	290	3.28
12. Paediatrics & Neonatology	227	2.57
13. Medical Gastroenterology	224	2.54
14. Surgical Gastroenterology	201	2.28
15. General Medicine	196	2.22
16. Urology	141	1.60
17. Colo rectal surgery	125	1.41
18. Others (Cardiology, CCU, Pediatric surgery, pulmonology, endocrinology)	138	1.56

Of the total 8835 blood transfusion requests referred to the blood centre in the study period, 2676 (30.29%) were complete and 6159 (69.71%) were incomplete. (Table 2)

Table 2: Distribution of complete and incomplete blood requisition forms:

Type	n	%
COMPLETE	2676	30.29
INCOMPLETE	6159	69.71
TOTAL	8835	100

Parameters of Blood requisition form found complete were patients name 8835 (100%), department/ward 8835 (100%), MRD NO. 3385 (100%), Bed NO. 6570 (74.36%), Age/sex 6003 (67.97%), Clinical diagnosis 6375 (72.16%), Indications of transfusion 6507 (73.65%), Recent Hemoglobin 5625 (63.67%),. Blood Component & quantity required 8835 (100%), Date when required 8645 (97.85%), Time when required 6722 (76.08%), Routine/Emergency 7251 (82.07%), Doctors name/signature/code 7143 (80.85%), Previously transfused (any reaction) 238 (2.69%). (table 3). It was noted that on an average 3 to 4 parameters were missing in each incomplete blood requisition form.

Table 3: Parameters of Blood requisition form found complete and incomplete:

Parameter	Complete		Incomplete	
	n	%	n	%
1. Patients Name	8835	100.00	0	0.00
2. Department/Ward	8835	100.00	0	0.00
3. MRD No.	8835	100.00	0	0.00
4. BED No.	6570	74.36	2265	25.64
5. AGE/Sex	6003	67.95	2832	32.05
6. Clinical Diagnosis	6375	72.16	2460	27.84
7. Indications of Transfusion	6507	73.65	2328	26.35
8. Recent Hemoglobin.	5625	63.67	3210	36.33
9. Blood Component & quantity required	8835	100.00	0	0.00
10. Date When required	8645	97.85	190	2.15
11. Time when required	6722	76.08	2113	23.92
12. Routine/Emergency	7251	82.07	1584	17.93
13. Doctors name/signature/code	7143	80.85	1692	19.15
14. Previously transfused (any reaction)	238	2.69	8597	97.31

Discussion

The blood request form is an important method of communication through which clinicians help Transfusion Medicine specialists regarding the patient's clinical details. It also helps the transfusion service identify the potential for long-term transfusion therapy. A common misconception among clinicians is that a blood sample or a blood group report is all that is required for requesting blood and its components without providing clinical details of the patient. A completely filled request form enhances the efficiency in services and reduces the chances of errors[8], whereas an incomplete request form contributes to pre-analytical errors which may cause adverse consequences[9]. Among all the medical areas, blood transfusion is a process where any sort of error can result in serious outcomes[10].

A handful of studies have examined the frequency of incomplete blood requisition forms and highlighted the fact that there are deficits in completing requisition forms. Clinicians who counsel and advise patients about transfusion therapy are responsible for accurately describing the patient's details, as well as the component details[11].

In the present study, 30.29 % of the blood requisition forms were complete and 69.71% were incomplete. Patient's name, Department/ward, MRD No, Blood Component & quantity required were the most completed information on the forms evaluated, with 100% completion. Most common incomplete parameter observed was history of Previously transfusion or any reaction, it was mentioned in only 2.69% of the BRF. An incomplete blood request form, therefore, can lead to complications and can cause delay in provision of blood and/or its components.

Other commonly incomplete parameters on BRF were Recent Hb 36.33 %, Age/sex 32.05%, Clinical diagnosis 27.84%, Indications of Transfusion 26.35%. These parameters are important in prioritizing release of the blood products[12].

The clinical diagnosis is more often misinterpreted as the indication for transfusion, it should be stressed that they are not synonymous. Indication should reflect the event that culminates in the decision to transfuse. Jain et al[13] found that 19.8% of blood requisition forms were incomplete, Kensay S etal[14] found that only 3% of blood requisition forms were incomplete whereas Jegede et al[8] found that 18.8% of forms had incomplete patient details.

Patidar et al found that the highest number of incomplete fields observed (91.42%) varied from second identification (91.03%) to medical officer's name and

signature (1.48%)[15]. Prashant Panday et al.[16] found 45.77% of the blood requisition form details were complete and correct, and 19.68% of these entries were complete but incorrect. However, almost one-third (34.55%) of the requisitions were incomplete. It was noticed that after conducting CME, for all clinicians working in the hospital, to emphasize the importance of each entry on the blood requisition form and the implications of incomplete or incorrect entries majority (76.75%) of the blood requisition forms were complete and correct and one-tenth (10.78%) of the requisitions were incomplete. Deb et al.[17] audited blood requisition forms and found that 56% of forms did not mention the blood group of patients and urgency of requirement. They also found that 3.7% did not mention the indication of transfusion, 25.1% did not mention the history of previous transfusion, and 37.38% did not mention pregnancy history in the blood request forms. The comparison regarding completeness and incompleteness of blood requisition forms in various studies is tabulated in Table 4.

In our study clinical diagnosis of the patient was mentioned in 72.16% of BRF. In a study reported from Australia, 16% of the red cell transfusions were not appropriate mostly because the clinician did not document the indication for transfusion, other studies also support this issue[18]. The results reflected that quite a number of forms with incomplete entries were received in the transfusion service and that incomplete requests had the potential to cause unnecessary delays in transfusion and increased the burden on the blood centre staff to obtain the correct details on the form. Reason for these variations in our setting may be related to work pressure on physicians working at root levels. Sometimes there are scarcity of junior doctors who usually initiate the process of transfusion by issuing the BRFs. Another important point is probably improper orientation regarding the impact of incomplete BRFs on the quality of patient care.

In our study most of the BRFs (80.85%) were signed by referring physicians with their full name and code number. The results are comparable with to Nutt et al.[19] in which 90.1% BRFs were fully signed by the physician. Blood centre staff should be eased out by the physicians as much as possible by providing maximum information. From our study it is obvious that there is a lack of coordination between clinicians and transfusion medicine specialists. To achieve success in this endeavor, our department has to adopt multiple approaches.

1. Educating the clinicians and their hospital staffs through Continuous medical education as it is the most established tool for increasing clinician's knowledge.

2. Hospital Transfusion Committee (HTC) can play a key role in the improvement of this situation. The HTC should organize sensitization and advocacy sessions with the clinicians and especially with the new resident doctors.

3. On-line blood transfusion requests which are not accepted unless all parameters are not filled can be introduced in our setup.

Table 4: Comparison of completely filled and incompletely filled blood requisition forms in various studies

Studies (Year) ffg	Geographic Area	Area	Completely Filled BRFs (%) (%)	Incomplete BRF(%)/complete BRF(%)
Jain et al (2015) aUjji	India		80.2	19.8
Kansay S et al (2016)*z	India		97.0	3.0
Jegede et al (2016)	Nigeria		81.2	18.8
Patidar and Kaur (2018)	India		8.58	91.42
Prashant Pandey (2020)	India		65.45	34.55
Our Study, SKIMS (2023)	India		30.29	69.71

Conclusion

The blood requisition forms were not filled completely in our institution. The percentage of blood requisition forms which were filled completely was only 30%. The blood request forms evaluated were not covering acceptable demographic and clinical data of the patients. There is a need to introspect and fill up these forms completely in the improvement of clinical practices in hospitals.

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