

Incomplete blood request forms, incomplete care: Evaluation of gaps in blood request forms: a prospective analysis in a tertiary care hospital

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ABSTRACT

Objective: To evaluate blood request forms received in the Blood Bank to ascertain their completeness

Methodology: A prospective study was done at the Blood Bank of Fauji Foundation Hospital RWP from 16 July 2025 to 20 December 2025 using non-probability sampling technique, all blood request forms received during six months from different wards were included in the analysis. Key variables assessed included demographic details, requisition number, name of patient, sign and stamp of requesting doctor, provisional diagnosis, history of transfusion reaction or any previous transfusion, type of component and unit of component requested.

Results: A total of 2,700 blood requisition forms received over a six-month period were analyzed. Parameters were grouped into administrative and clinical categories. A marked difference in completeness was observed. Administrative details demonstrated a mean incompleteness of 10.0%, whereas clinical and safety-related details showed a substantially higher mean incompleteness of 49.4%. Clinical details were ~5 times more incomplete than administrative details.

Conclusion: It is concluded that strict compliance to complete documentation of blood request forms is necessary to ensure safe blood transfusion.

Keywords: Blood request form, Transfusion medicine, Transfusion reaction

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INTRODUCTION

Blood Transfusion is a complicated process. It is a complex chain comprising of group of various medical professionals, patients and donors [1]. For implementation of safe blood transfusion services, proper documentation of detailed information about patients is mandatory [2]. This communication needs to be organized in developing countries. Thus, whole process can lead to improved hemovigilance [3]. Blood Request forms (BRFS) are the most important channel of communication between physicians and blood bank staff. The significance of complete documentation of blood request forms is usually overlooked by clinicians which can result in unnecessary delay in patient management and can lead to medical errors [4].

Critical evaluation of Blood request forms (BRF) is mandatory for implementation of safe blood transfusion. Therefore, it is a very useful document for assessing the practice of an institution's

transfusion services [5]. Completely filled blood request form is the basic part of a well-developed hemovigilance system in any health care system. Almost 50% of errors that occur in a laboratory are pre-analytical errors, for which well- documented BRFs provide opportunities to prevent them [6]. Most common pre-analytical errors in context of blood request forms are mislabeling of blood samples. Also, inadequate blood samples, wrong patient identification and erroneous handling of blood components can lead to unsafe transfusion practices. [7]

The report of "serious hazards of transfusion" which was published in 2008, revealed that most of the errors were the consequence of incomplete blood requisition forms sent to the blood bank. Guidelines of the British Committee for Standards in Hematology (BCSH) suggested that local policies should be established to reduce documentation errors in all blood request forms [8]. Incomplete blood request forms usually lack important details such as patient full name, age, gender, ward, indication of transfusion, transfusion history, transfusion reaction, blood group, blood component, number of blood units, sign and stamp of requesting doctor [9]. Moreover, non-reporting or under-reporting data of blood transfusion reactions significantly undermine national blood safety efforts. To maximize safety and utility of the blood component clinicians or requesting

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physician should document type and units of component required [10]. Hence, this documentation is the need of an hour for improving the correct blood utilization and setting ideal policies related to blood transfusion [11]. For implementation of safe blood transfusion practices, it is mandatory for health care personnel to get adhered to the guidelines and thoroughly complete transfusion requisition forms. Every Hospitals should have hospital transfusion committee for implementation of strict policy against accepting partially filled forms [12].

According to literature various studies have revealed shortcomings in transfusion medicine services in context of transfusion reactions but there is scarcity in data regarding preanalytical phase in transfusion medicine i.e. complete documentation of blood request forms which is first step towards safe blood transfusion [13]. This study identified the gaps in pre-analytical phase providing evidence for improvement of Hemovigilance.

MATERIAL AND METHODS

A prospective observational study was done at the Blood Bank of Fauji Foundation Hospital RWP from 16 July 2025 to 20 December 2025. Ethical approval was taken by Ethical review board Ref No 1067/RC/FFH/RWP. All blood request forms received during six months from different wards were included in the analysis. However, duplicate forms were excluded from study. As this study included all blood request forms submitted over a six-month period ($n = 2,700$), including the entire population of interest during the study period. Therefore, this study represents a comprehensive assessment of all incomplete blood request forms during six months, and it provides sufficient statistical power to detect relevant trends. Total ten variables were assessed. Key variables included gender, ward, age, requisition number, name of patient, sign and stamp of requesting doctor, diagnosis, previous transfusion reaction or any previous transfusion, type of component and unit of component requested. SPSS version 20.0 was used for data analysis.

All the information on blood request forms was entered into a Microsoft excel sheet and thorough data analysis was carried out using SPSS version 20.0. Descriptive statistics comprising of percentages and frequencies were applied to summarize data. Categorical variables, such as completeness of blood request forms and individual parameters, were presented as frequencies and percentages.

Continuous variables (if any) were expressed as mean $\pm$ standard deviation (SD).

RESULTS

A total of 2,700 blood requisition forms received over a six-month period from various wards were analyzed to assess the completeness and accuracy of information provided. The findings showed considerable variability in the documentation quality, with several critical fields either missing, incomplete, or incorrectly filled.

Table-I shows the ward-wise distribution of blood request forms received during the study period, with the highest proportion originating from the Gynaecology ward (621; 23.0%). Speciality departments such as Nephrology, Cardiology, Burns, Urology, and Neurology contributed fewer requisitions.

None of the forms were completely error-free, with varying degrees of missing, incomplete, or incorrect entries observed across multiple parameters.

Basic patient identifiers such as patient name and blood requisition number were missing or incorrect in 8.9% and 5.2% of forms respectively. Age was missing on 3.5% forms. Physician authentication was suboptimal, with 17.9% of forms lacking the name or signature of the requesting doctor, and 7.9% missing the official stamp (Figure-I).

Clinically critical information including history of transfusion reaction, diagnosis and indication for transfusion showed significantly higher rates of incompleteness. Indication for transfusion and diagnosis were absent in 38.1% and 38.0% of requisition forms respectively. Details regarding donor availability were missing in 44.2% of forms. While the type of blood component required was specified in most cases, errors or omissions were still observed in 5.8% of forms. The number of units required was adequately mentioned in nearly all forms. Patient safety-related information which included history of prior transfusion and history of transfusion reactions were absent in 68.7% and 58.0% of forms respectively. Although blood samples were provided in most cases, 1.0% of forms still lacked appropriate sample documentation (Figure-II). When parameters were grouped into administrative and clinical categories, a marked difference in completeness was observed. Administrative details demonstrated a mean incompleteness of 10.0%, whereas clinical and safety-related details showed a substantially higher mean incompleteness of 49.4%. Clinical details are ~5 times more incomplete than administrative details (Figure-III).

Table-I: Ward-wise distribution of blood transfusion forms.

Wards	Number of forms	percentage
Gynecology	621	23%
Medicine	319	11.8%
Surgery	232	8.6%
Pediatric	221	8.2%
Oncology	173	6.4%
Neurology	38	1.4%
Urology	32	1.2%
Burns	30	1.1%
Nephrology	22	0.8%
Cardiology	22	0.8%

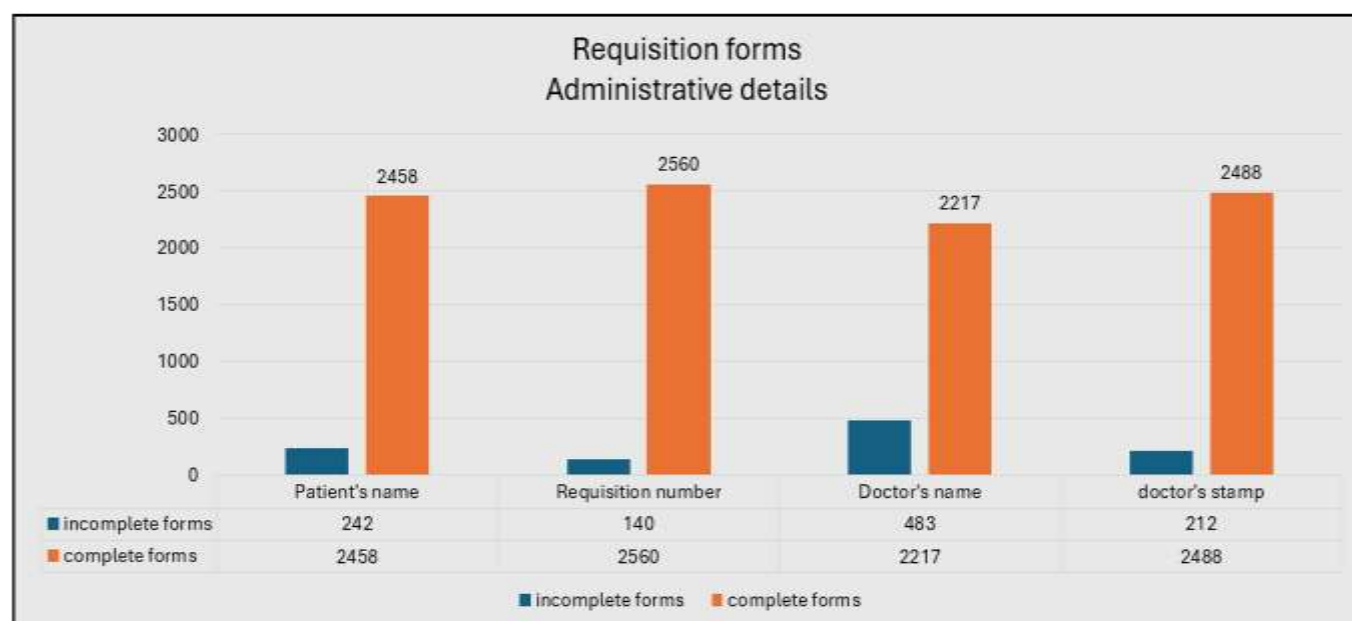


Figure-I: Missing administrative information frequency in blood transfusion requisition forms

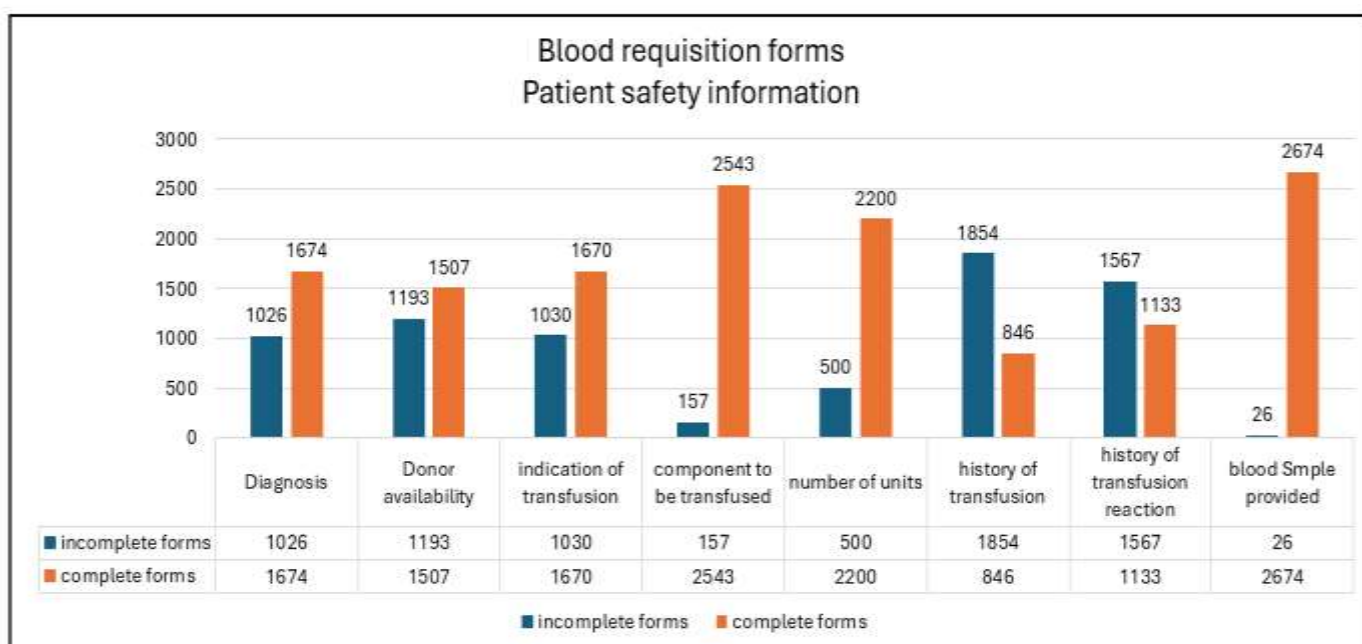


Figure-II: Missing Patient safety information frequency in blood transfusion requisition forms.

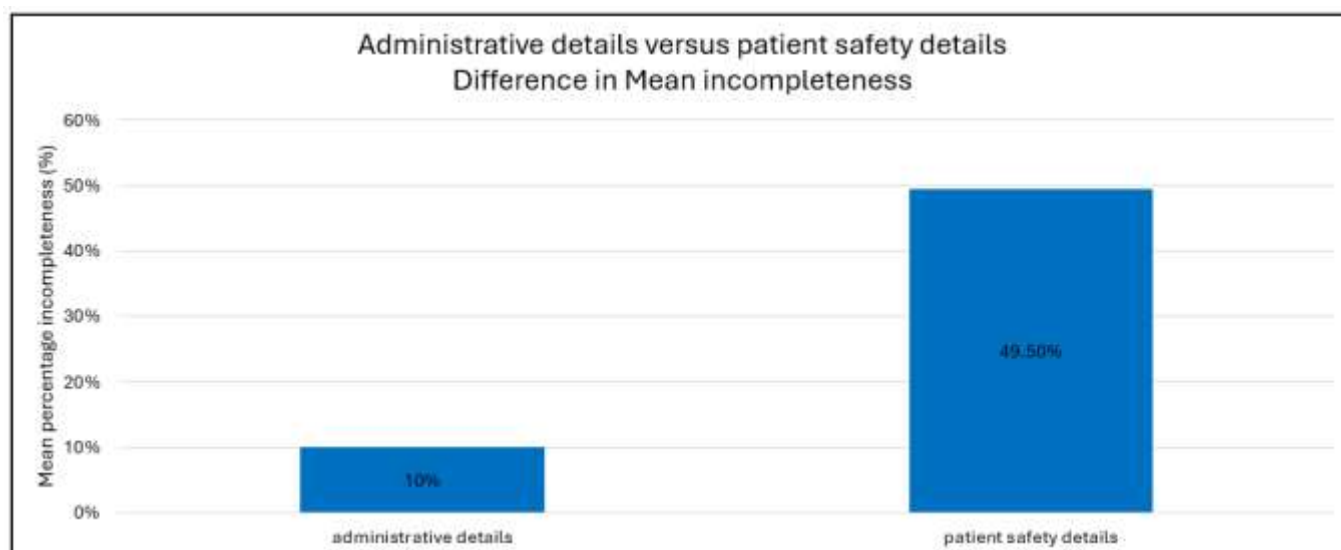


Figure-III: Difference in mean incompleteness of forms; administrative details versus patient safety details

DISCUSSION

Complete documentation of each parameter included in a blood request form is the first step in complex chain of safe transfusion. Safe blood transfusion guidelines cover proper patient identification, appropriate indication, compatibility testing, safe administration and monitoring to minimize transfusion-related risks and errors. In our study, thorough evaluation of each blood request form received during study period was performed. Results were broadly divided into clinical and administrative errors. Moreover, percentage of blood forms received from different departments was also calculated.

The predominance of requisitions from high-volume wards highlighted areas where targeted interventions may have the greatest impact on improving requisition completeness and reducing transfusion delays. Overall, the high prevalence of incomplete requisition forms was identified as a major contributor to delays in blood issue, increased administrative workload, and potential compromise of transfusion safety.

In a study conducted by Naureen *et al* among the 1000 analyzed BRFs, the demographic data was mentioned in 72.5% and ward in 67.2%, demographic details were in alignment with results of our study but in contrast to our study clinical details related to transfusion reactions and history of previous transfusions were 62.8% and 62.4% respectively. In our study documentation of indication for transfusion and diagnosis were absent in 38.1% and 38.0% of requisition forms respectively. Another difference observed in this study was related to blood components required that was mentioned in 74.5% but in our study, it was present in 100% forms [12]

A study conducted by Ghazanfar *et.al* showed that out of total 1052 BRFs, 6.8% (n=72) were completely filled, incompletely filled forms were 93.2%. Demographic information were filled in 100% forms. MR numbers filled in 99.4% (n=1046) forms. This finding is slightly aligned with results of our study in which demographic details were incomplete in only 8.9% and blood requisition number was missing in 5.2% forms. Other findings related to history of previous transfusion were mentioned in 40.9%, transfusion reactions were mentioned in 37.6% and Diagnosis was mentioned in 22.4%. These results were similar to results of our study revealing overlooking of clinical details by staff members. However, units of components to be transfused were filled in 96% of the forms as also represented in our study [13].

In contrast to our study, Shaukat *et al* reported that almost 75.4% of blood request forms showed complete documentation of type of blood components requested [14].

In another study conducted by Duraiswami *et al* the clinical diagnosis and history were filled in 39.62% and 0.27% respectively. However significant lack of information regarding the particulars of requesting doctor was observed which was mentioned in only 8.47% forms. According to their analysis clinical details such as diagnosis, transfusion reaction and history of previous transfusion were recorded in 48.7%, 62.8%, and 62.4% of the forms, respectively. These findings are approximately similar to results of our study in which history of prior transfusion and history of transfusion reactions were absent in 68.7% and 58.0% of forms respectively [15].

In another study Daanish *et al* stated that out of total 32,133 Blood requisition forms 15.2% of forms were completed. According to their study more blood request forms were received for females (52.02%) as compared to males (47.98%). In contrast to results of our study the most common incomplete areas in this study were requesting doctor's name and designation (88%) whereas in our study only 17.9% forms showed incomplete doctors' particulars. Other results related to documentation of clinical history or differential diagnosis of the patient (52.66%) were similar to our findings but in contrast to our results previous transfusion history was documented in (95.9%) forms [16].

In order to identify and prevent human errors The Indus Hospital Blood Centre (TIHBC) introduced a "Blood Bank Management Information System (BBMIS)". This system minimizes errors to almost zero even in times of high throughput. Another study conducted in China based on a similar electronic system also proved this system to be time saving, accurate and cost-effective [17,18].

In a study conducted by Mohd Zubair total 8835 Blood requisition forms were evaluated, in which 6159 (69.71%) were incomplete and 2676 (30.29%) were complete. Parameters of Blood requisition form found 100 % complete were name of patient, ward, blood requisition number, name of blood component required and units required. These results are in accordance with our findings. However significant differences in percentages in other parameters including Clinical diagnosis (72.16%), routine/emergency (82.07%) and doctors name/signature/code (80.85%) were observed. History of previous transfusions was documented only in 2.69%. [19]

A study published in Brazil reported that only 63% of the Blood request forms were filled out according to the current transfusion recommendations. [20]

Transfusion audit done in Iran Showed that complete documentation in blood request forms was achieved in 62.6%. Such audits can be used for feedback regarding the compliance and effectiveness with local and national transfusion guidelines [21].

According to the results of our study parameters were grouped into administrative and clinical categories, a marked difference in completeness was observed. Administrative details showed incompleteness of 10.0%, whereas clinical details showed a higher mean incompleteness of 49.4%. Thus, clinical details are ~5 times more incomplete than administrative

details. These deficiencies pose significant administrative

and medico-legal challenges. None of the studies in literature have provided this categorization of data. This provides useful information for targeting specific areas for implementation of strict policies in complex chain of transfusion. Moreover "Blood Bank Management Information System (BBMIS)" is a useful system to prevent errors even in blood banks of increased work load.

LIMITATIONS

1. The inability to assess the effect caused by incomplete blood request forms on turnaround time for blood issuance and on patient's management.
2. Single center study

CONCLUSION

It is concluded that incomplete blood request form is the most common pre-analytical error in transfusion medicine. Less attention has been paid to documentation of clinical details as compared to administrative details. Special Emphasis should be given on complete documentation of blood request forms for successful implementation of safe blood transfusion services. Continuous Medical Education Programs highlighting the importance of each item requested on the forms should be scheduled under supervision of Hospital Transfusion Committee.

CONFLICT OF INTEREST

None

GRANT SUPPORT & FINANCIAL DISCLOSURE

Declared none

AUTHORS CONTRIBUTION

Madeeha Rehan: Substantial contributions to study design, acquisition of data, manuscript drafting, reviewing critically for intellectual contents, final approval, accountable for all aspects of publication.

Attika Khalid: Substantial contributions to acquisition of data, manuscript drafting, reviewing critically for intellectual contents, final approval, accountable for all aspects of publication.

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