

## Audit of Blood Requisition Forms (BRFs) and Their Compliance at a Tertiary Care Hospital of AJ&K

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### ABSTRACT

**Background:** Blood Requisition forms are a way of communication between clinicians and the blood bank. Lack of crucial information can lead to disastrous consequences. To achieve Haemovigilance, an audit of current practices is necessary. It enables the transfusion authorities to pinpoint the errors and to rectify them while monitoring progress. The aim of this study was to analyse the practices of clinicians while filling the blood requisition forms in a tertiary care hospital in state of AJ&K.

**Materials & Methods:** A retrospective descriptive study, was conducted in the blood bank of Divisional Headquarters Teaching Hospital Mirpur AJ&K over a period of two and half months. A total of 2040 forms were analysed for clinicians' practices while filling blood requisition forms. Twelve categories were made which included name, gender, age, ward, bed number, indication of transfusion, history of blood transfusion, requested blood component, number of units required, nature of request (urgent, immediate, when convenient), date & time of when required and requesting doctor's name and signature.

**Results:** Out of the 2040 forms, the category name was filled in 100%, age in 73.6%, gender in 56.1%, ward in 95.7%, bed number in 4.7%, provisional diagnosis in 17.4%, history of previous transfusion in 17.1%, blood component required in 66.2%, number of units requested in 75.4%, nature of request in 10.6%, date & time when required in 8.9% and doctor's name & signature was filled in 96.1% forms. For the forms signed by the requesting doctor only 85.4% had both the name and signature while 14.6% only had the signature. The percentage of completely filled out forms was 0.29% whereas forms having one deficiency were 2.55%, having two deficiencies were 1.62% and those having multiple deficiencies were 95.54%.

**Conclusion:** There is huge deficit in this area of practice which can be improved by conducting regular trainings and education of the requesting clinicians by the hospital transfusion committee. Pre and post education status of practices should be closely monitored to achieve Hemovigilance.

### Introduction

Blood transfusion services have great significance in health care system. Hemovigilance plays a key role in ensuring the quality of blood transfusion chain. It delivers the safe and rational use of blood products along with documentation of the measures taken for improvement and its results (1).

To maintain adequate communication between blood transfusion services and clinicians, Blood Request Forms and Blood Transfusion Forms are available. These tools of communication are vital in monitoring and evaluating the quality control process. An audit of these services is necessary in identifying the errors and maintaining the criteria of international guidelines (2). Most of the laboratory errors (50-70%) are pre-analytical in nature and the major contributory factor is incomplete lab request forms (3,4). Most of the preventable adverse reactions in blood transfusion are caused by clerical errors which can be prevented by careful completion of the blood request forms by clinicians (1). According to WHO recommendations, a standard blood request form should consist of

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demographic data related to the patient including name, age, gender, patient identification number and indication of blood transfusion. The haematological reports of the patient, blood group of the patient if known, detail of the component of blood and number of units required are also mentioned along with the requesting clinician's name and signature. Date of request and date of transfusion along with other crucial data is also required(2,5,6). Unfortunately these details on the BRF are often ignored by the requesting clinicians which might lead to disastrous consequences (5,6). Callum et al in 2001, evaluated the blood transfusion request forms for a period of nineteen months in which he reported that 7.4% of the events were life-threatening. He also reported that near miss events were five times more than the actual blood transfusion reactions and about 61% of the errors were generated from the patient areas (7). In a study conducted in Nigeria in 2014, the BRF completion was 81.2% (4). Pandey et al in 2020 reported that only 45.7% blood requisition forms had complete correct entries and after educating the clinicians it rose to about 76.7% (5). Similarly Patidar et al reported that after educating the clinicians BRF completion improved by 42.66%(8). In a study published in 2020, Ghazanfer et al reported that in a research carried out for 6 months in a tertiary care hospital in Pakistan, only 6.8% forms were completely filled, with 97% forms only having the complete demographic data of the patients while other fields of the blood request form were ignored (9). Likewise in 2017, another study was published which reported only 12.7% BRF were completely filled by the clinicians requesting blood components in a tertiary care hospital of Pakistan (10). It is necessary to generate awareness among the clinicians regarding importance of completely and correctly filled BRFs in Pakistan to improve the current situation. Transfusion medicine requires regular audits, not only to generate data on hospital requirements but also to identify

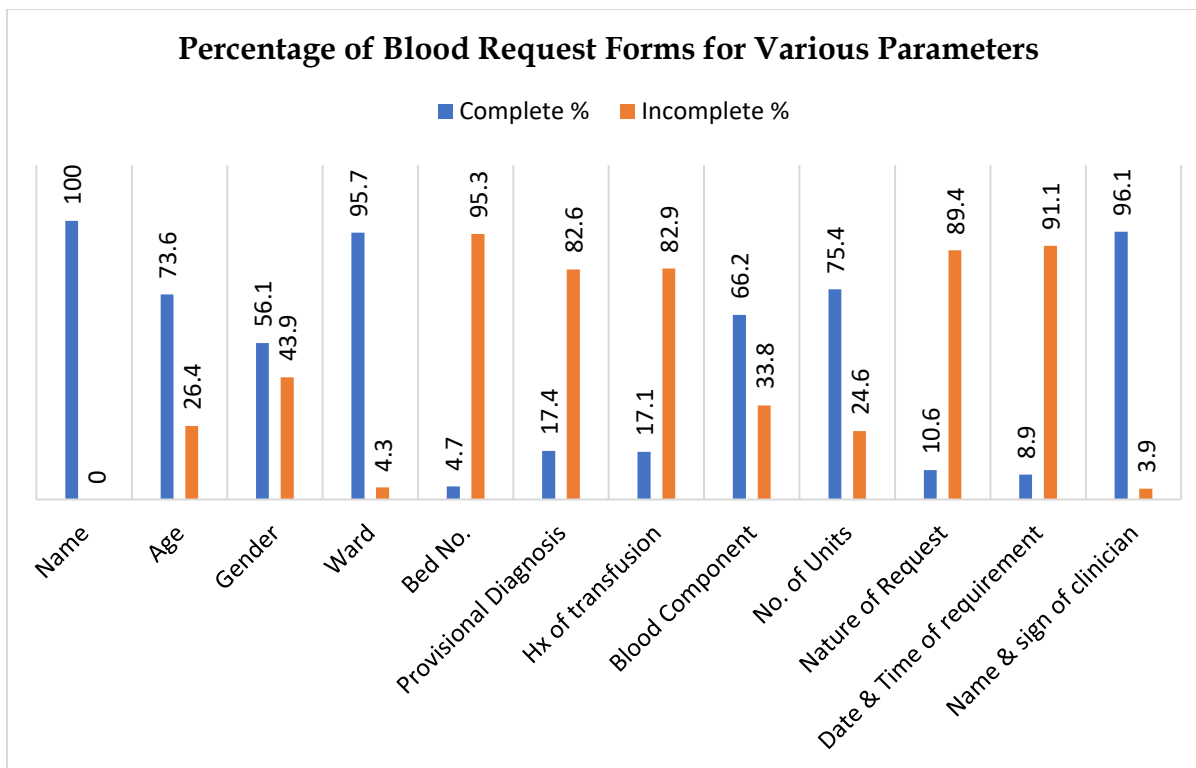
errors and monitor progress after making required changes. After introduction of the standardized BRF provided by the Safe Blood Transfusion Pakistan (SBTP) it was necessary to generate data on current practices, in order to identify errors and for solving problems to attain Hemovigilance. The current study was performed in order to analyse the practices of clinicians while requesting blood from the blood bank of Divisional Headquarters Teaching Hospital Mirpur Azad Jammu and Kashmir.

## **Materials and Methods**

This was a retrospective descriptive study, conducted in the blood bank of Divisional Headquarters Teaching Hospital Mirpur AJ&K over a period of 4 months. A total number of 2040 forms were included, requested within the period of Sep 1<sup>st</sup>, 2020 to Jan 1<sup>st</sup>, 2021. Twelve categories were made which included name, gender, age, ward, bed number, provisional diagnosis or indication of transfusion, history of blood transfusion, requested blood component, number of units required, nature of request(urgent, immediate, when convenient), date & time of when required and requesting doctor's name and signature. The number of forms filled out for these twelve categories was manually entered into SPSS V21 and analyzed.

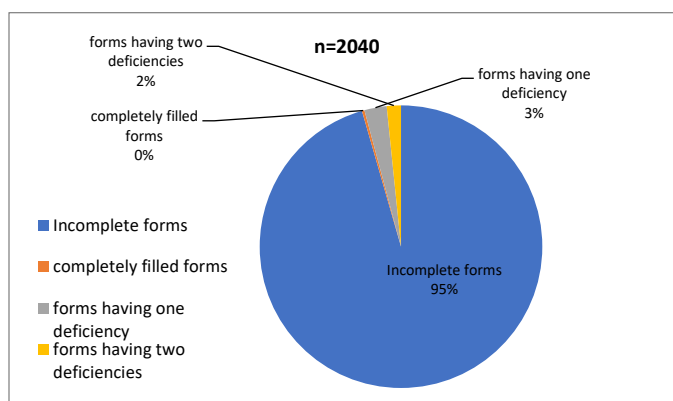
## **Results**

Among these 2040 forms included, the name was filled out in all 2040 (100%), age 1502(73.6%), gender 1145(56.1%), ward 1953(95.7%), bed number 96(4.7%), provisional diagnosis 355(17.4%), history of previous transfusion 349(17.1%), blood component required 1351(66.2%), number of units 1539 (75.4%), nature of request 217 (10.6%), date & time when required 182 (8.9%) and doctor's name & signature was filled in 1962 (96.1%) forms. For 1145 forms filled out for gender, 924(80.7%) were requested for female patients while 221(19.3%) for males (Fig.1).



For 1953 forms filled for the ward most of the forms were requested from LR that is 112(56.9%), 323(16.5%) from the Gynaecology and Obstetrics department while remaining were requested from paediatrics ward 98(5%), NICU 143(7.3%), Female Medical Ward 48(2.5%), Female Surgical Ward 63(3.2%), Male Medical Ward 34(1.7%), Male Surgical Ward 38(1.9%), Operation Theatre 30(1.5%), Neurology 18(0.9%), Burn unit 14(0.7%), ICU 16(0.8%), CCU 3(0.2%), Orthopaedics 13(0.7%). For the 1351 forms which were filled out for the blood component required, 909(67.3%) demanded whole blood, 361(26.7%), 57(4.2%) and 24(1.8%) requested RCC, Plasma and Platelet concentrate respectively. For the forms signed by the requesting doctor only 1676(85.4%) had both the name and signature while 286(14.6%) only had the signature.

The number of completely filled out forms was 06(0.29%), forms having one deficiency 52(2.55%), having two deficiencies 33(1.62%) while those having multiple deficiencies were 1949 (95.54%) Fig-2.



## Discussion

In a study conducted in Nigeria in 2014, the BRF completion was 81.2%, which is only 0.29% in current study. 1085 BRFs were evaluated for a time period of 3 months. The patient name was filled out in all the forms which is comparable to current study. The requesting physicians name and signature was filled out in 60.8% forms which is 96.1% in current study. This study also included the name and signature of the receiver of BRF which was not included in current study while rest of the parameters of evaluation were similar (4). Another study was conducted in Nigeria in 2015 which reported only 1.3% lab request forms were

completed(11). Similar studies have been conducted in India, in 2018 Patidar et al reported that the completion of BRFs was 39.1%. They also reported that after educating the clinicians for importance of responsible completion of BRF the percentage for completion improved by 42.66%(8). Pandey et al in 2020 reported that only 45.7% blood requisition forms had complete correct entries and after educating the clinicians it rose to about 76.7% which seems very promising (5). A study published in 2019 in Brazil reported that 63% of the BRFs were filled out in accordance with the current transfusion recommendations which seems promising (12).

In Pakistan a study was conducted in 2017, which reported only 12.7% BRF were completely filled by the clinicians requesting blood components in a tertiary care hospital of Pakistan, the study was conducted for over a period of four months and included 5957 forms (10). Another study was published in 2020, Ghazanfer et al reported that in a research carried out for 6 months in a tertiary care hospital in Pakistan, only 6.8% forms were completely filled, with 97% forms only having the complete demographic data of the patients while other fields of the blood request form were ignored (9). The percentage of completion is very low which is even lower in the current study. The only parameter reported to be filled out correctly in all aforementioned studies was patient name and after that requesting physicians sign and location of the patient while rest of the data is missing. The percentage of completion is far better than that of Pakistan which is highly alarming and requires drastic measures to educate the clinicians regarding importance of the correct completion of the blood request forms. This area of practice is greatly overlooked and needs improvement which can be achieved by efforts of Hospital transfusion Committee.

### **Conclusion**

The analysis of 2040 forms requested during a period of September 1<sup>st</sup> 2020 to January 1<sup>st</sup> 2021 showed that only 0.29% forms were filled in tune with the international blood transfusion recommendations while 95.54% forms had multiple deficiencies. This shows a great area of improvement in current practices. This can only be achieved by regular trainings and education of the requesting clinicians by hospital transfusion committee. A regular audit of transfusion practices should also be done in order to monitor the improvement after educating the clinicians and its overall impact on the finances of the

blood bank. Pre and post education status of practices should be closely monitored to achieve Hemovigilance

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