4-2020

Compliance of hand written transfusion requisition form and improvement after online request - A clinical audit

Nadia Nasir
Aga Khan University, nadia.nasir@aku.edu

Mohammad Usman Shaikh
Aga Khan University, usman.shaikh@aku.edu

Natasha Ali
Aga Khan University, natasha.ali@aku.edu

Shabneez Hussain
Blood Bank and Hematological Services, Fatimid foundation, Pakistan

Compliance of hand written transfusion requisition form and improvement after online request — a clinical audit

Nadia Nasir,[1] Mohammad Usman Shaikh,[2] Natasha Ali,[3] Shabneez Hussain[4]

Abstract

Objectives: To assess the compliance of healthcare personnel with regard to sending completely filled transfusion requisition forms.

Methods: The audit was conducted at Aga Khan University Hospital, Karachi, and comprised requisition slips received at the hospital blood bank from September 2014 to February 2015. The British Committee for Standards in Haematology guidelines was used as the standard. Percentage of each variable on the proforma was analsyed. Rating <50% for each form was defined as "needs improvement", 51-99% as "good compliance" and 100% as "excellent compliance". After implementing strategies to increase awareness and the launching of an online transfusion requisition form, a re-audit of physician compliance was done from February to April 2016 and the results were compared with the initial audit.. Data was analysed using SPSS 21.

Results: The audit and the re-audit both comprised 1000 transfusion requisition forms each. In the audit, The sum of total scores of all the transfusion requisition forms was 4911, indicating a compliance rate of 46.9%, while the corresponding numbers in the re-audit were 10000 and 100%.

Conclusion: The implementation of online blood transfusion requisition system had a positive impact on compliance rate.

Keywords: Haemo-vigilance, Clinical audit, Transfusion requisition form, Online transfusion requisition system. (JPMA 70: 694; 2020) **https://doi.org/10.5455/JPMA.14958**

Introduction

Transfusion is a complex process involving members of several different professional groups, including donors and recipients.[1] Delivering safe blood and adequate transfusion to patients is critically dependent on sound communication of information to the blood bank which ultimately helps the blood bank technologist to identify appropriate blood products.[2] This needs be streamlined, especially in the developing countries. The whole process has led to the development of the concept of haemo-vigilance.

In 2008, the World Health Organisation (WHO) recommended that each institution should use a blood transfusion request form for effective communication of the patient information to the hospital blood bank.[3] According to "serious hazards of transfusion" report published in 2008, most transfusion errors occurred as a result of poor communication caused by incomplete requisition sent to the blood bank.[4] Later, in 2012, the British Committee for Standards in Haematology (BCSH) published its guidelines and recommended that organisations should have local policies to minimise the risk of misinterpretation or transcription errors in all communications, whether written, verbal or electronic.[5] The guideline also recommended that transfusion requisition slips must include the following variables; patient core identifiers, current diagnosis and significant comorbidities, clear unambiguous reason for the request, type of component and the volume of units required, clinical special requirements (such as irradiated, washed or leuko-depleted blood), time required, location of the patient, name of the requestor and the contact number of the requestor.[5]

According to these guidelines, transfusion requisition forms must be completely filled by healthcare personnel with respect to these variables and hospitals should have a zero tolerance policy about accepting partially-filled transfusion requisition forms.[5]

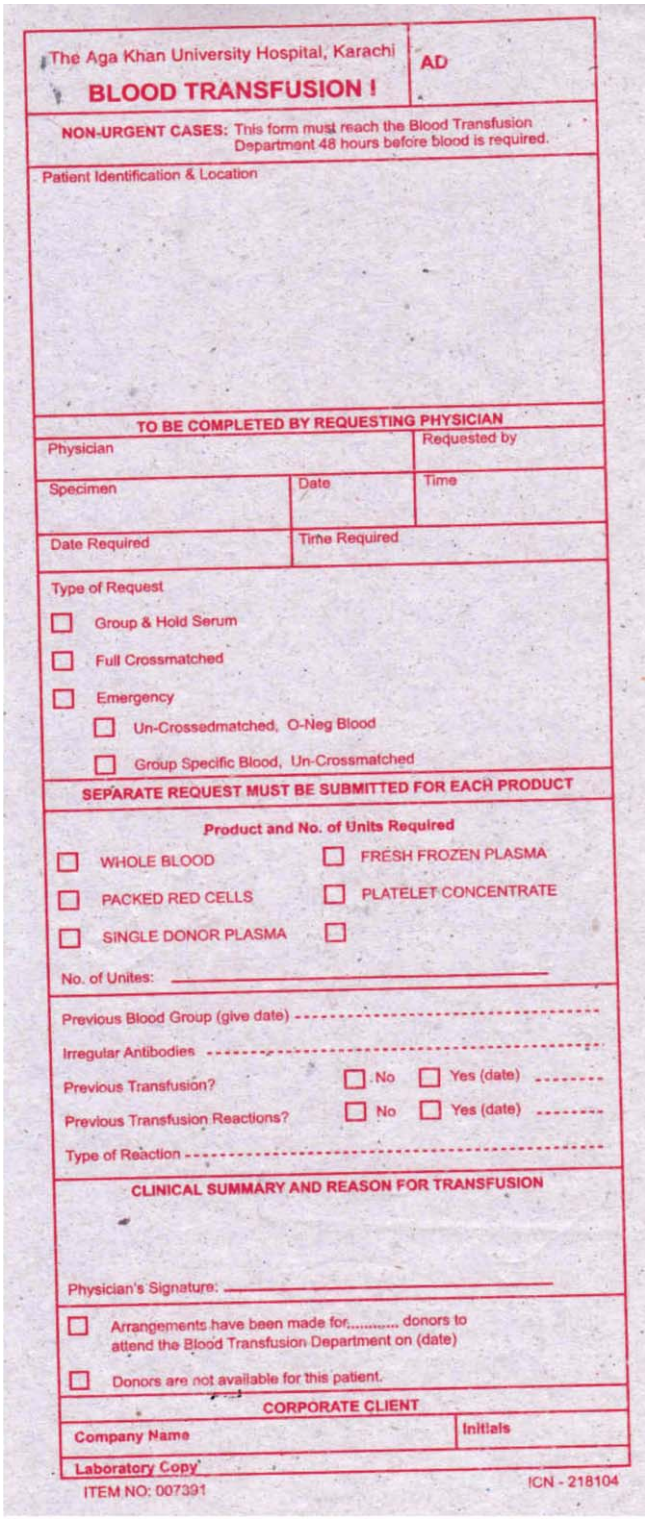
The current study was conducted to observe the transfusion practice of physicians for appropriate utilisation of blood products. The audit was also conducted as a part of quality assurance activity to improve the compliance of healthcare personnel with regard to sending completely filled transfusion requisition form.

Materials and Methods

The audit was conducted at Aga Khan University Hospital

[1-3]Department of Pathology and Laboratory Medicine, Aga Khan University, Karachi, [4]Blood Bank and Hematological Services, Fatimid foundation, Karachi, Pakistan.

Correspondence: Nadia Nasir. Email: nasir.nadia29@gmail.com



The Aga Khan University Hospital, Karachi

AD

BLOOD TRANSFUSION !

NON-URGENT CASES: This form must reach the Blood Transfusion Department 48 hours before blood is required.

Patient Identification & Location

TO BE COMPLETED BY REQUESTING PHYSICIAN

Physician | Requested by

Specimen | Date | Time

Date Required | Time Required

Type of Request

☐ Group & Hold Serum

☐ Full Crossmatched

☐ Emergency

☐ Un-Crossedmatched, O-Neg Blood

☐ Group Specific Blood, Un-Crossmatched

SEPARATE REQUEST MUST BE SUBMITTED FOR EACH PRODUCT

Product and No. of Units Required

☐ WHOLE BLOOD ☐ FRESH FROZEN PLASMA

☐ PACKED RED CELLS ☐ PLATELET CONCENTRATE

☐ SINGLE DONOR PLASMA ☐

No. of Unites: _____

Previous Blood Group (give date) ----------

Irregular Antibodies ----------

Previous Transfusion? ☐ No ☐ Yes (date) --------

Previous Transfusion Reactions? ☐ No ☐ Yes (date) --------

Type of Reaction ----------

CLINICAL SUMMARY AND REASON FOR TRANSFUSION

Physician's Signature: _____

☐ Arrangements have been made for..... donors to attend the Blood Transfusion Department on (date)

☐ Donors are not available for this patient.

CORPORATE CLIENT

Company Name | Initials

Laboratory Copy

ITEM NO: 007391

ICN - 218104

Figure-3: Antibacterial effect of Irsha.

(AKUH), Karachi, and comprised requisition slips received at the hospital blood bank from September 2014 to February 2015. Transfusion requisition forms are received for the inpatients alone (Figure-1). After the launching of an online transfusion requisition form, a re-audit was performed from February to April 2016.

After exemption was obtained from the institutional ethics review committee, information from the requisition slips was entered on a pre-designed proforma. We analysed the percentage of each variable that was completely or incompletely filled by the requesting physician or resident on the proforma. Compliance rating for each variable had to be 100%. A rating of 1was allotted to each of the 10 variables that should have been mentioned on the requisition slip as recommended by the BCHS.[5] These included patient core identifiers, current diagnosis and significant comorbidities if present, clear unambiguous reason for the request, type of component and the volume of units required, clinical special requirements (such as irradiated, washed or leuko-depleted blood), time required, location of the patient, name of the requestor and the contact number of the requestor. The ratings on each requisition slip was then added and expressed as the total rating of each form. The mean of the total ratings of all the transfusion requisition forms was calculated and expressed as a percentage. This mean percentage represented the overall compliance. Since BCSH guidelines require100% compliance in filling out the forms, we initially established our own local compliance definitions. This was needed in order to assess the improvement that was required and what steps could be further implemented to improve the compliance to 100%, eventually matching international guidelines. In order to achieve this, we devised and followed a few strategies that gradually enabled us to reach our goal. This included educational flyers, workshops for residents and physicians. We made sure that incompletely filled forms were not processed further and were sent back to the physician for completion. The next strategy was to coordinate with the information technology (IT) department to launch online requisition forms, where it would be mandatory for healthcare physicians to enter complete information while generating a request for blood component (Figure-2). Once this was achieved, we piloted the requisition forms for three months in the Surgery ward which was randomly selected because of increased transfusion requisitions. It is the ward that utilises blood the most in the hospital. The online request form was then launched across the hospital.

Rating <50% for each form was defined as "needs improvement", 51-99% "good compliance", and 100% "excellent compliance".

Data were analysed using SPSS 21. Results were expressed as frequencies and percentage for all variables.

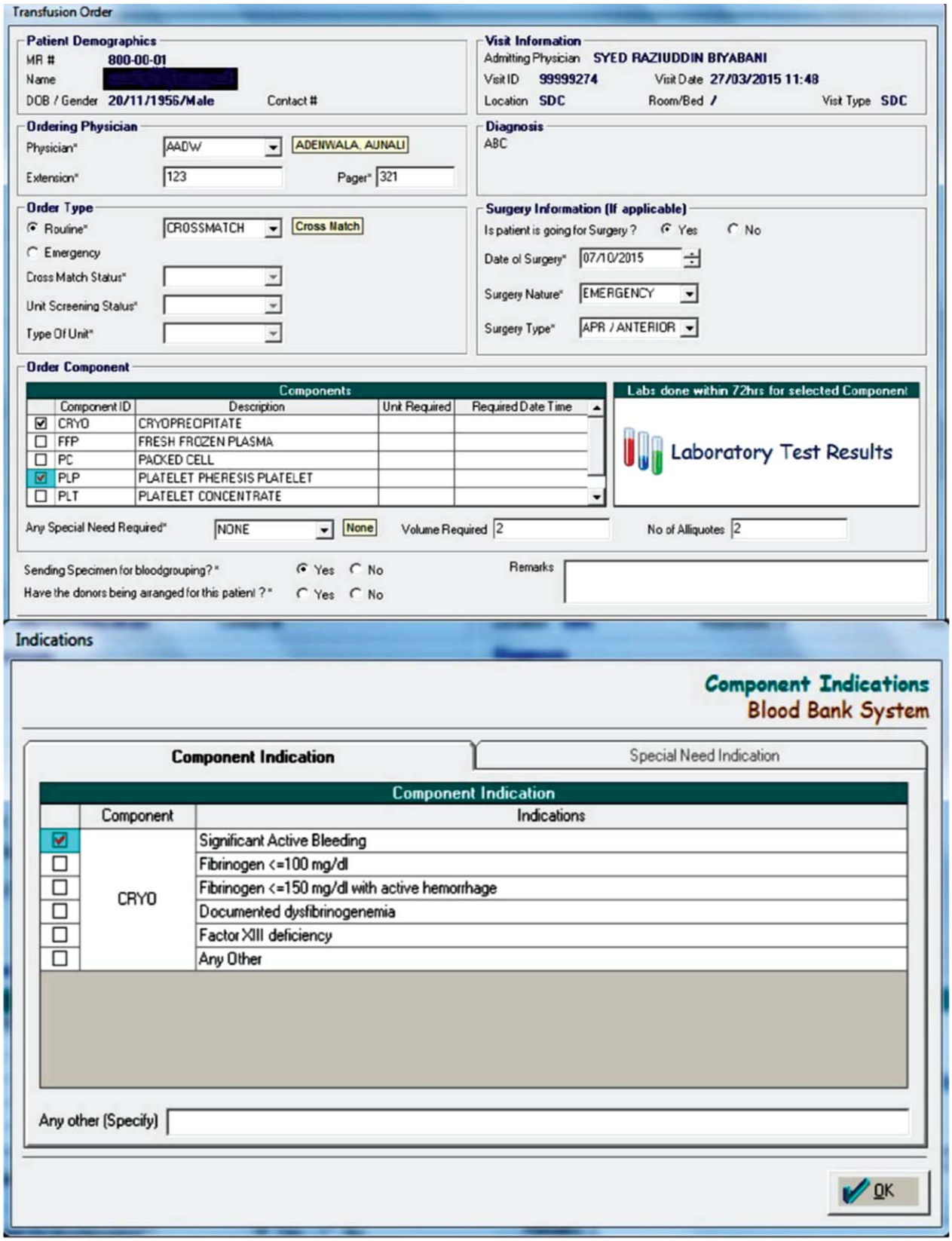


Figure-2: Online transfusion requisition slip

Overall compliance was expressed as a percentage mean of the total ratings of all the transfusion requisition slips.

Results

Both the audit and the re-audit comprised 1000 requisition forms each. The sum of total scores of all the transfusion requisition forms was 4911 and overall compliance was 46.9%. There audit showed the sum of total scores of all the transfusion requisition forms to be 10,000 and compliance rate to be 100% (Table).

Table: Individual rating of variables in the audit and the re-audit.

Variables	Audit* n (%)	Re-audit* n (%)
Age	960 (96)	1000 (100)
Location	659 (65.9)	1000 (100)
Physician	232 (23.2)	1000 (100)
Name or signature of the requester	239 (23.9)	1000 (100)
Time	551 (55)	1000 (100)
Component required	1000 (100)	1000 (100)
No. of units required	989 (98.9)	1000 (100)
Clinical details mentioned	25 (2.5)	1000 (100)
Reason for transfusion mentioned	6 (0.6)	1000 (100)
Physician's contact number	250 (2.5)	1000 (100)
Total	4911 (46.9)	10000 (100)

*The total number of forms analysed in the audit and re-audit were 1000.

Discussion

The dispensing and transfusion of blood products is a complex process comprising several phases. Since most transfusion errors occur from poor communication, which includes requests to the blood bank, organisations should have local policies to minimise the risk of misinterpretation or transcription errors in all communications, whether written, verbal or electronic. After retrospectively analysing 1000 requisition forms, our overall compliance was 46.9%. Our audit shows that there was a marked improvement in compliance after educating the staff and creating the online requisition form that achieved 100% compliance.

A similar study in Italy[6] showed that 96.8% and 98% requisition for red cells and platelets had been received. There were 27% requisitions for plasma that did not comply with the guidelines, mainly because the evidence of coagulopathy was missing.[6] The compliance rate of our audit which included all the components was approximately 47%, meaning that approximately 53% of our forms did not comply with the guidelines.

In another audit on the completion of request forms received in the blood bank in northern India,[7] physician's name was not mentioned in 1.1% of the forms whereas our physician's names were not mentioned in 76.8% and the only well-documented parameter was the patient's name. The Indian study concluded that clinicians and paramedical staff should be trained to adequately fill all the required information into the request forms and appreciate its importance to patient's management.[7] Another study compared the requests generated by the Department of Haematology (DH) and Blood Transfusion Services (BTS) of Aminu Kano Teaching Hospital, Kano, Nigeria.[8] Overall, component request form completeness was 89.5% for DH and 81.2% for BTS. The level of completeness of both forms were suboptimal and there was a need to re-design the request form according to international guidelines and to review specimen rejection practices.[8] Our compliance also required improvement but we suggested and implemented different strategies to bring about improvement.

The advantage of our online system was that It increased compliance to 100%. The physician on-call enters the request for the component online and sample is drawn from the patient, labelled with patient core identifiers, and sent to the blood bank. The technologists who receive the sample in the blood bank correlate the information with the online system, by analysing patient core identifiers to see if a request had been generated. The advantage of having such a system is that it minimises errors and near-miss events since all mandatory requirements are entered online and are not hand-written. This brings an overall improvement in haemo-vigilance. We did, however, notice a drawback in the system. There was a delay in receiving the online request at the blood bank and when the blood sample was brought to, the technologists would request the physician to re-enter the online request. The IT department was then requested to intervene, and it led to an overall improvement. In the developed countries, online requisition system is already in place so the compliance is at par, but in a third world country, acquisition of the relevant software is expensive. There is a dire need to develop local software to improve the overall working of blood banks in our country.

According to internal compliance definition, results showed good compliance of healthcare professionals when filling out patient core identifiers, location, units along with the required date and time. Improvement in compliance was required for documenting the indication for transfusion and clinical details. Because our hospital has a zero tolerance policy when complying with international guidelines, 100% compliance was required for filling out transfusion requisition forms and for that, an

intervention was required. Hence, we established an online system for requesting transfusion components which resulted in complete compliance of our physicians in filling out these forms.

Conclusion

The implementation of online blood transfusion requisition system had a positive impact on compliance rate.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

References

1. Bolton-Maggs PH, Cohen H. Cohen. Serious Hazards of Transfusion (SHOT) haemovigilance and progress is improving transfusion safety. Br J Haematol. 2013; 163:303-14.
2. Kajja I, Bimenya GS, Smit Sibinga CT. Blood request form at a university teaching hospital: evaluating design and clinician compliance. Int J Health Sci. 2008; 1: 69-73.
3. Murphy MF, SJ Stanworth, M Yazer.Transfusion practice and safety: current status and possibilities for improvement. Vox Sang; 2011; 100: 46-59.
4. Treleaven J, Gennery AJ. Marsh. Guidelines on the use of irradiated blood components prepared by the British Committee for Standards in Haematology blood transfusion task force. Br J Haematol. 2011; 152:35-51.
5. Harris AAC, Chaffe B, Elliott C. Guideline on the administration of blood components. British Committee for Standards in Haematology. 2012.
6. Marconi M, Almini D, Pizzi MN, Riccardi D, Bergamaschi W, Giovanetti AM. Quality assurance of clinical transfusion practice by implementation of the privilege of blood prescription and computerized prospective audit of blood requests. Transfus Med. 1996; 6:11-9.
7. Deb P, Swarup D, Singh MM. Audit of Blood Requisition. Med J Armed Forces India. 2001; 57:35-8.
8. Jegede F, Mbah HA, Dakata A, Gwarzo DH, Abdulrahman SA, Kuliya-Gwarzo A. Evaluating laboratory request forms submitted to haematology and blood transfusion departments at a hospital in Northwest Nigeria. Afr J Lab Med. 2016; 5:381.