

CLINICAL AUDIT ON ADHERENCE TO STANDARD OPERATING PROCEDURE OF BLOOD TRANSFUSION IN EMERGENCY AND TRAUMA DEPARTMENT

HOSPITAL SULTANAH NUR ZAHIRAH



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INTRODUCTION

Background

Blood transfusion is a life saving procedure which is indicated for a wide range of medical conditions, including polytrauma, complications during pregnancy and childbirth, anaemia, and surgical procedures. It is a very safe and effective procedure if done accordingly. Patients are exposed to the risk of transfusion error if the standard transfusion practices are not strictly followed. In Malaysia, the haemovigilance report showed the incidence of incorrect blood component transfusion (IBCT) was <0.01%. Meanwhile, a study done at Hospital Universiti Sains Malaysia found the incidence of IBCT was 1 in 13703 (0.007%) within 16 years of transfusion practice. Healthcare workers involved in blood transfusions are doctors, nurses, paramedics, and laboratory personnel. The errors can happen at any point along the transfusion chain, particularly in the following points: decision to transfuse, sample errors, laboratory errors, blood issue and administration errors. Strict compatibility alongside safe and effective procedures around collecting, storing, and using donated blood are essential to prevent adverse reactions.

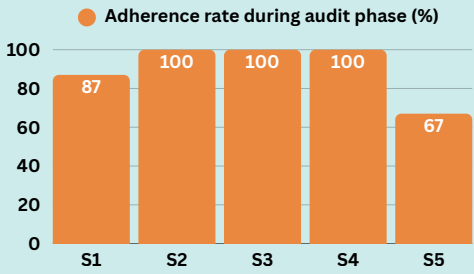
Objective

To ensure 100% compliance and adherence of medical staff to the Standard Operating Procedure (SOP) of blood transfusion in the Emergency and Trauma Department of Hospital Sultanah Nur Zahirah (ETD HSNZ), to prevent near-miss and actual transfusion error incidents that might result in fatal complications.

STANDARDS AND METHODS

Standard	Criteria	Target	Description
Standard 1 - Blood taking	1. Identify the patient indicated for GXM/GSH sampling 2. Request a test in HIS using the own doctor's ID 3. Print two barcode samples and counter check 4. Patient Identification (ask patient or check patient's wristband - Name / IC Numbers/RN) 5. Take the blood sample (withdraw blood) 6. Label the sample without delay at the patient's bedside 7. Fill out the blood request form at the patient's bedside 8. Sent blood sample with request form to the blood bank	100 %	All medical officer and house officer must follow SOP on blood taking in all patients indicated for blood transfusion
Standard 2 - Blood product collection	1. Bring the blood request form and/or collection slip with the blood transport container 2. Confirm the right blood component to the right patient (Name/IC Number/RN) 3. Ensure the use of one container per patient (ONE PATIENT, ONE CONTAINER)	100 %	All medical staff in ETD should adhere to SOP during blood product collection
Standard 3 - Pre-transfusion check	1. Place the blood components on the blood transfusion trolley at the patient's bedside 2. Confirm the right blood component for the right patient (Name/IC Numbers/RN)	100 %	Pre-transfusion check must be done to all patients indicated for blood transfusion
Standard 4 - Final pre-transfusion check (by 2 staff)	1. Place blood components on the blood transfusion trolley at the patient's bedside 2. Perform pre-transfusion check ● Check blood transfusion consent ● Confirm patient's name & ID (ask the patient or check the wristband) ● Check blood compatibility label (Do not detach blood compatibility sticker from blood product) ● Check the blood request form ● Check blood bag label (blood bag no & blood group) RIGHT PATIENT, RIGHT BLOOD 3. Attach the patient's sticker to the blood transfusion checklist	100 %	Final pre-transfusion check must be done by 2 staff following the prior procedure
Standard 5 - Patient's monitoring during blood transfusion	1. Parameters to be monitored: ● Blood pressure ● Pulse rate ● Temperature ● Clinical features of acute transfusion reactions 2. Vital signs monitored and recorded: ● Before starting a transfusion ● During the transfusion (close observation and monitoring for the first 5 to 10 minutes), half-hourly and then hourly. Perform vital sign monitoring every 15 minutes for an unconscious patient receiving a transfusion ● After completion of the transfusion	100 %	All patients receiving blood transfusion must be close monitored during the procedure

RESULTS



Data Interpretation

- The audit findings revealed that 87% of staff were compliant with Standard 1, indicating a generally good level of adherence, though with room for improvement.
- In contrast, staff demonstrated full compliance (100%) with Standards 2, 3, and 4, reflecting strong adherence to established protocols in these areas.
- However, compliance with Standard 5 was notably lower, with only 67% of staff meeting the expected criteria.

Interventional Strategies

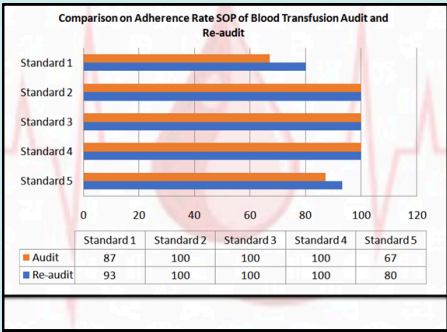
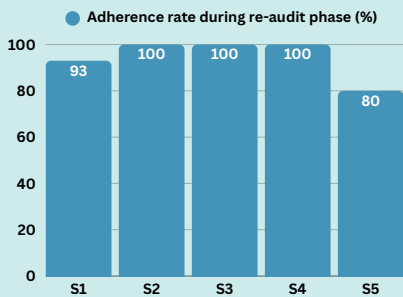
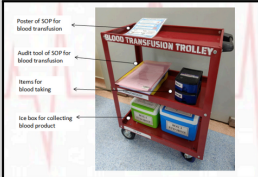
A CME session regarding SOP for blood transfusion was held for all medical staffs in ETD HSNZ.

An educational video regarding the SOP of blood transfusion were created and displayed to all staffs.

A flyer regarding the SOP of blood transfusion were prepared and then dispersed among medical staffs in ETD HSNZ.

Regular audit and reminder of blood transfusion SOP by the specialists in ETD HSNZ.

A blood transfusion trolley was prepared and placed at Red Zone ETD HSNZ.



- Post intervention study showed improvement to 93% of adherence to the Standard 1 and 80% compliance for the Standard 5. Impressively, the data showed ETD staff demonstrate full obligation to the SOP of blood transfuion for Standard 2,3 and 4 for both pre and post intervention studies.

CONCLUSION

Our audit shows that among the 5 standards that we have set in blood transfusion SOP in our department, there are 2 standards (standard 1:Blood taking and standard 5: Patient monitoring) that failed to be fully complied by our staff. Issues such as lack of staff and time for close monitoring, high turn over rate of staff, lack of awareness and infrequent audit & reminders have been addressed and noted. Implementation of improvement strategies have increased the compliance rate of those two standards, however we were still unable to achieve 100% compliance. Gaps in understanding and adherence to the SOP highlight the need for continuous training, regular audits, and stricter enforcement to ensure patient safety and prevent transfusion-related errors. We recommend a continuous process of learning, revising, reminding and auditing of transfusion procedures to prevent human errors that may lead to catastrophic events such as transfusion error. A long term solution by the department and hospital administration needs to be considered to resolve the issue of lack of staff and patient overcrowding that lead to substandard care.

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