Sample

A guide to development of a hospital blood transfusion Policy at the hospital level

Name of Policy	Blood Transfusion Policy

Effective from	April 2009

Approved by	Hospital Transfusion Committee

A practical sample

Kindly note this is a sample to assist Hospital transfusion Committees develop individual hospital blood transfusion Policy according to the specific hospital needs. However the overall policy guidelines are the National Blood Policy, National Standards for Blood transfusion services in Kenya and the guidelines on appropriate use of blood and blood products

Blood Transfusion Policy

XY Provincial Hospital

Content

1. Introduction

It is well recognized that many errors in blood transfusion practices are operational. Thus, errors in obtaining and labeling blood samples, requesting, storage, collection and administration of blood or blood components can lead to significant risk to patients. Many episodes of "wrong blood" transfusion involve multiple errors at various stages of blood transfusion. It is believed that such errors can be prevented if appropriate steps are taken to ensure that transfusion practices are performed to high standards of safety and effectiveness

The purpose if this policy is to detail best practice to reduce the potential risk of transfusion errors and to assist identified practitioners with all aspects related to blood transfusion. **The procedures set out in this document constitute the XY hospital Transfusion Policy**

The Policy has been developed by the hospital transfusion committee and conforms to the National Standards of Blood Transfusion Services in Kenya, National Blood Policy and the Guidelines of Appropriate Use of Blood and Blood Products. This document will be reviewed on annual basis in order to take into account the clinical and technological development in transfusion medicine..

2. Roles and Responsibilities

a. **Medical Superintendent**.

She/he is responsible for the following:

- Ensuring the senior management commitment to good transfusion practice
- Ensuring appropriate membership and function of the HTC
- Ensuring appropriate blood transfusion polices are in place, implemented and monitored
- Supporting CME for all clinical staff

b. Hospital transfusion Committee

It is responsible for the following:

- Promoting best practices through local protocols based on national guidelines
- Auditing the use of blood and blood components within the hospital
- Auditing the blood transfusion practice against the hospital policy and national guidelines
- Providing feedback on audit of transfusion service and the use of blood to all staff involved in blood transfusion
- Promoting education and training of all clinical, laboratory and support staff involved in blood transfusion.

c. Doctors

They are responsible for the following:

- Promoting the appropriate use of blood by observing the guidelines on appropriate use of blood and blood products
- Discussing risks and benefits of transfusion with patients
- Requesting and prescribing blood and blood components
- Ensuring adequate documentation is recorded in the medical notes.
- Reporting of transfusion reactions or other incidences related to transfusion reactions to the hospital transfusion unit as soon as possible
- Recording the reason of transfusion and any benefits gained in the patient's record
- Attending CMEs for updates

d. Nurses

They are responsible for the following

- Taking blood sample for compatibility testing
- Arranging for or collecting blood and blood components prior to transfusion
- Carrying out the procedure of pre-transfusion checks and administration of blood and blood components
- Monitoring patients during transfusion and carrying our appropriate actions in the event of adverse events
- Maintaining adequate documentation
- Reporting transfusion reactions or other incidents related to the transfusion

e. Laboratory staff in the hospital Blood Unit

They are responsible for the following:

- Ensuring labeling of request forms and samples comply with guidelines
- Blood grouping and compatibility testing
- Checking whether there are special requirements when blood and blood components are requested
- Ensuring blood components are issued under local guidelines
- Ensuring blood and blood products are properly labeled

f. Phlebotomies

- Taking blood sample for grouping and compatibility testing provided they have been given formal training

3. Reasons for Transfusion

a. Before asking for blood to be cross-matched consider whether the blood transfusion is necessary. There are many risks from transfusion and this should always be taken to account
   - First consider the patients underlying pathology and the HB level appropriate for transfusion
   - Consider the co-morbidities e.g. Coronary heart disease etc.
   - Consider the patient's symptoms, e.g. breathlessness, chest pains, fatigue etc.

b. In most cases patients will tolerate a HB below 8g/dl. A trigger HB of 5g/dl has been adapted by the transfusion Committee.

c. In those patients who are bleeding rapidly, HB is a poor indicator of the need for transfusion: In these cases, it is more appropriate to use the volume of blood lost, either measured or estimate, in assessing the need for transfusion
N.B Patients who have lost less than 30% of their blood volume are unlikely to require transfusion

d. Appropriate use of blood components must be encouraged to minimize the risk for the patient. If in doubt, contact the consultant on call

4. Preparing a patient for transfusion

a. The reason for transfusion must be discussed with the patient, giving the risks and benefits of transfusion so they can make an informed choice
b. Verbal consent will be required and the patient has a right to refuse
c. A prescription is required for transfusion. This is the responsibility of the doctor requesting the blood to complete the prescription.
d. The patient will need IV access. This should be in place before sending for the blood
e. All patients must wear an ID wrist band for transfusion, regardless of why they need the transfusion or where this is taking place

No wrist band, no blood

f. Check baseline observation prior to sending for the blood
g. Ensure there is someone available to check the blood with you before sending for it
h. Avoid sending for blood over the handover period as delays occur and blood gets wasted

5. Collection of cross-match Samples

a. Transfusions carried out at night have been identified as having an increased risk of error. For this reason it is advisable remove sample, request for blood and administer transfusion during normal working hours. The exception would be in emergency situations.
b. Timing of samples for transfusion is important due to antibody production and delayed reactions. The timing are as follows:

Patient transfused within previous	Sample to be taken not more than
3-14 days	24 hours before transfusion
15-28 days	72 hours before transfusions
29 days- 3 months	7 days before transfusion (Day sample taken is deemed day 1

c. Requesting blood for blood transfusion

i. Only a qualified doctor may order blood. However in an emergency, blood may be requested by a nurse or a CO on a doctor's behalf

ii. Urgent samples must be discussed directly by phoning the laboratory and the form should then be labeled "URGENT". Please avoid the term "ASAP" as this does not help the laboratory staff to determine priorities

iii. The laboratory will record all telephone requests including the patients' details, the requesting doctor and the person making the phone call

iv. The lab will require a sample to issue any blood component

v. Only in extreme emergency will the O negative blood be issued. A sample will be required to issue further blood

d. The Group and save or cross match sample

This stage has been identified as a relatively common source of error

i. A group and save or cross match sample, should only be taken by one who is competent at venepuncture and who has the appropriate training

ii. ALWAYS POSITIVELY IDENTIFY THE PATIENT before taking the sample. **This can be achieved by asking the patient for a full name and age. Check the patient's details against the ID wristband,** which must be exactly the same.

iii. If the patient is unable to identify themselves, then 2 members of staff should confirm the identity using the patients notes and identification wristband

iv. Only one patient should be bled at a time to avoid confusion. If in doubt re-bleed the patients

v. The blood should be taken then labeled immediately at the patient's side by the person taking the blood

vi. The wrist band must be used as the source for the patients details

vii. Never use notes or request cards for the patient details

viii. It is not acceptable to ask another person to label a sample they have not taken

ix. The sample details **MUST** be hand written

x. NEVER PRE-LABEL SAMPLES FOR TRANSFUSION

xi. The minimum details required are

Sample	Request forms
Two names	As sample plus
Inpatient number	The reason for transfusion
Age	Transfusion history
Signed and dated	Quantities of components needed
	Gender
	Date and time required

xii. Inadequately labeled samples may be changed by the person who took the sample, at the discretion of the Hospital Transfusion Unit. **It is unacceptable to ask another member of staff to alter details on a specimen they did not take**. Anyone altering the details on a specimen takes full responsibility for the specimen and will be required to fill a sample amendment form in the lab.

xiii. All request details will be checked against previous records for patients

6. **Prescription of blood components**

a. It is the responsibility of a doctor to prescribe all blood components
b. All units of blood transfused must be prescribed
c. Blood should be prescribed on the appropriate transfusion record. Any drugs which need to be given during transfusion can be prescribed on the same record
d. It is not necessary to routinely prescribe diuretics with blood
e. The reason for transfusion must be recorded
f. The component and how much to be transfused must be stated

Component infusion times

Component	Duration
Red cells	2-3 hours Maximum 4.5hours
Platelets	23-30 minutes
FFP	20- 30 minutes
Cryoprecipitate	Stat

N.B. Any of the above can be given more quickly if the patient's condition dictates

7. **Collection of blood from the laboratory refrigerator**

This stage has been identified as a relatively common source of error

NB. Only ask for blood when the patient is ready to start the transfusion

a. Blood may be collected by any member of staff who has had specific training. No one should access the blood fridge without authority
b. When collecting blood it is essential to have all the patients' details including full names, age, IP No.
c. Only one unit may be taken out from the blood fridge at a time. It should be transported to the wards in a cold box
d. Unused blood must be returned to blood bank within 30 minutes
e. The person collecting the blood from the blood fridge should make sure that all details on the blood pack are identical to the details which have been given

8. **Administration Blood and Blood Components**

This is the final opportunity to detect any errors before the patient receives blood. The patient is most likely to have a reaction within the first few mls of blood transfused

N.B. Only in an emergency should a transfusion take place at night. The decision to give a routine transfusion over night cannot be supported

a. The bed side check

i. Each bag of blood should be checked at the patient's bedside NEVER away from the patient's side. This can be carried out by two people, qualified doctor or nurses.
ii. Always positively identify the patient by asking the patients full name and age prior to pre-transfusion check where possible
iii. Check the details given against the patients ID wristband where the hospital number will be found
iv. Check the blood is prescribed for the patient
v. Check the names, age gender, IP No. are exactly the same on the blood pack label, prescription and ID wrist band
vi. Check the blood pack for label for the patient donor blood group
vii. Check the blood pack label against the blood bag for blood group, donation number and expiry date
viii. Check special requirements against the prescription
ix. Visually inspect the bag for any leaks, color, obvious clots etc.
x. Start and finish time should be recorded in the transfusion record. If there are any discrepancies phone Hospital Transfusion Unit (ext, ????), for advice

b. Monitoring patients

i. Patients receiving transfusion should only be nursed in an area where they can be easily observed
ii. This is specifically important during the first 15 minutes when they are most likely to have a reaction and this is the main reason why routine transfusions should not occur at night
iii. All the transfusion observations should be recorded separately from the regular observations or be easily identified as transfusion observations on the observation chart
iv. Baseline observation of BP, pulse, Respiration and temperature should be carried out before the transfusion begins. This should be carried out after 15 minutes and thereafter at 30 minutes intervals throughout the transfusion and at the end of the transfusion

N.B This is the minimum requirement. More frequent observations are suggested if the patient's conditions warrants it, or the person looking after the patient feels is appropriate

v. Each unit is a separate transfusion. Observations at the end of each unit, provide a base line for the next provided they are given in succession
vi. Encourage the patient to report anything; which they feel odd or different
vii. At the end of transfusion, file the transfusion record in the patient's notes
viii. Record the effectiveness of the transfusion, any adverse events and subsequent treatment in the notes

9. Transfusion Reactions and Incidents

(See Appendix 1, reactions flow chart)

a. If you suspect the patient is having a reaction i.e. the patients develops a rash, rigor, shivering, pain to the chest , loin or abdomen, or reports feeling unwell or is distresses or agitated in any way
b. STOP THE TRANSFUSION IMMEDIATELY
c. Send for a doctor
d. Repeat clinical observation
e. Repeat the bedside check to make sure it is the right blood for the patient
f. If you find the patient has received the wrong blood, find the patient whom it was and make sure they are not receiving the wrong blood
g. In case of a severe reaction, contact the hospital Transfusion Unit (ext XXX) for advice on the procedure to follow
h. All transfusion reactions and incidents **must** be reported to the Hospital transfusion Unit.
i. All transfusion reactions will be investigated by the HTC
j. All transfusion incidences will be reported using the appropriate forms
k. Incidents will be registered with RBTS/NBTS
l. Serious incidents must be reported and discussed by the HTC

10. Training

a. All staff with a role in transfusion process must receive training specific to their role
b. All clinical staff involved in blood transfusion should have an induction course in blood transfusion
c. Laboratory staff in the transfusion Unit are required to work within the laboratory SOPs and be updated annually

11. Monitoring effectiveness

a. HTCs should regularly audit the hospital transfusion practice to monitor effectiveness of the policy
b. Any alternatives to blood transfusion will be reviewed and audited as appropriate

12. Technical Aspects of transfusion

a. A standard blood giving set should be used and no additional filter is required
b. If giving several units of blood, the set should be changed after 4 units or 12 hours
c. In an emergency, if O negative is used, the giving set should be changed when blood of the patient's own group is available
d. Giving sets must be changed between different components to prevent inappropriate clotting
e. Drugs must not be added to blood components under any circumstances
f. Continuous infusions should not be given through the same cannula for blood
g. The giving set should be disposed of in sharps bins
h. Empty bags should be kept for 48 hours and stored in a plastic bag

13. References

a. National standards for blood transfusion in Kenya 1st edition
b. Guidelines of appropriate use of blood and blood products
c. National Blood Policy

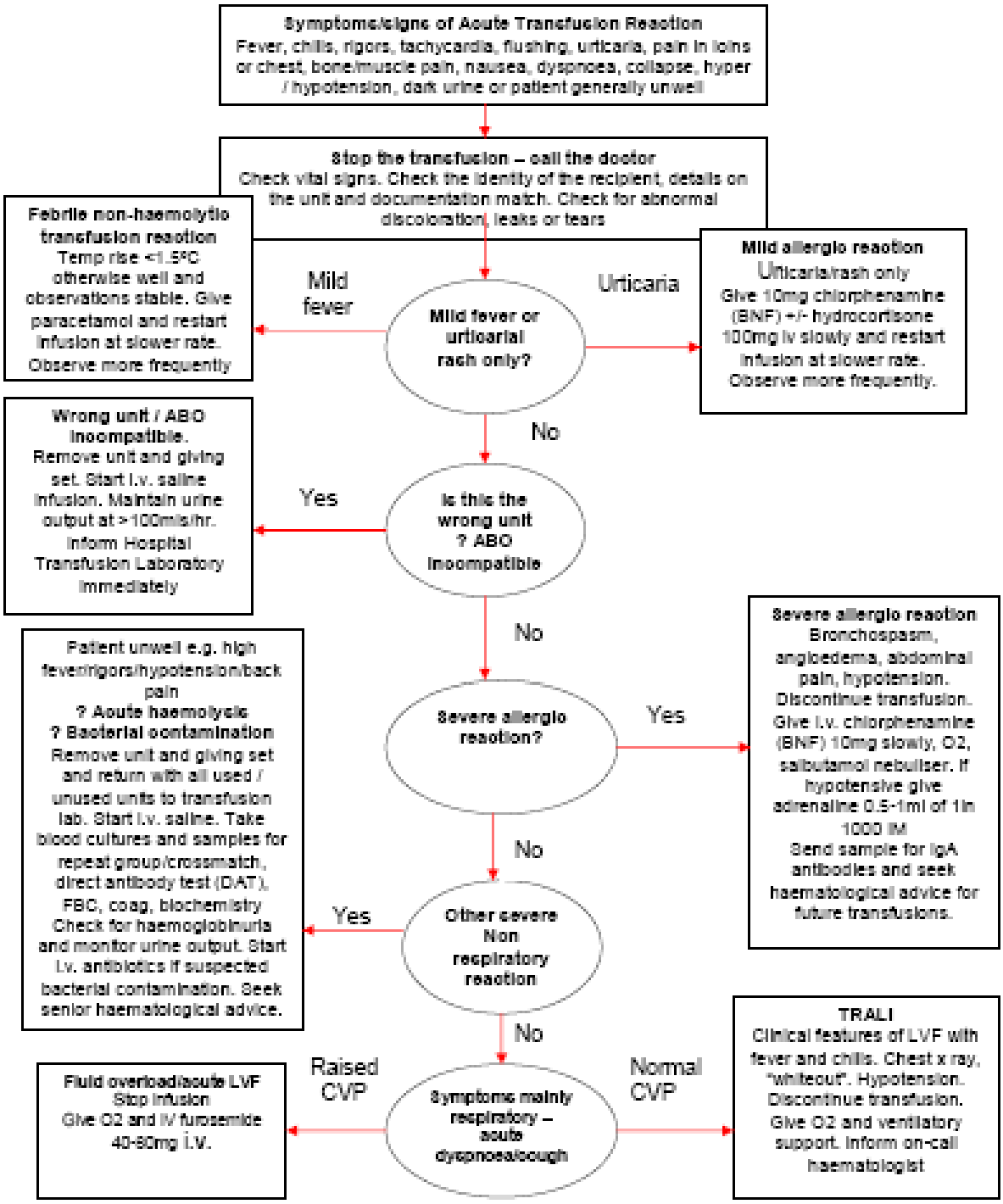
d. Etc
e. Etc

14. Appendixes

1. Management of acute transfusion reaction
2. Guide to blood transfusion request (Maximum Surgical blood order schedule

Appendix 1

Flowchart for the management of acute transfusion reactions



Management of a transfusion reaction

If a transfusion reaction is suspected:

1. Stop the transfusion and check pack.

2. Reassure the patient, inform medical staff immediately of the suspected reaction.

3. Record and identify the nature of the reaction and based on the patient's symptoms implement appropriate treatment .
Contact BTS Duty Medical Officer if necessary.

4. Maintain close observation and patient monitoring.

If the decision is taken to discontinue the transfusion:

Clamp off giving set and take blood pack and giving set down together. DO NOT SEPARATE.

Maintain venous access. Replace with fresh giving set and 0.9% Sodium Chloride.

Put blood pack with clamped off giving set attached and intact, into a plastic bag
Return these and all other blood packs used and unused promptly to BTS with the following blood samples:

NB Take blood samples from a vein other than the infusion site used to administer blood.
2.7ml in a citrated tube (Blue Top) – [coagulation screen (PT, APTT, fibrogen)]
4ml EDTA tube (Purple Top) (FBC)
5ml clotted (Yellow Top)– (U's + E's)
5ml EDTA clotted (Pink Top) – repeat compatibility test (including direct antiglobulin test or DCT or Coombs test)
Blood cultures to be sent to the microbiology laboratory

Retain the patient's next urine to test for haemoglobinuria.
Maintain an accurate fluid balance record.

Record in patient's records details of the unique number and blood group of the unit, type of blood component, time at which the transfusion was commenced/discontinued and all other action taken.

NB If bacterial contamination is suspected, seek urgent expert advice from BTS as immediate treatment with a broad spectrum antibiotic may be indicated.

Appendix 2

Guide to blood transfusion requests – Maximum Surgical Blood ordering Schedule

Procedure	Tariff	Procedure	Tariff
Abdomino-Peroneal resection	4	Laparotomy	G&S
Amputation	G&S	Liver Biopsy	G&S
Aortic aneurysm - elective	4	Liver resection	6
Aortic iliac surgery	G&S	Mastectomy	G&S
Appendectomy	0	Myomectomy	2
AV shunt for haemodialysis	G&S	Nephrectomy	G&S
Bile duct stricture/tumour	2	Nephrolithotomy	2
Bowel resection (inc. large bowel)	2	Oesophagectomy	4
Breast biopsy lump excision	0	Ovarian Cystectomy	2
Caesarean section	G&S	Pacemaker insertion	G&S
Carotid endarterectomy	2	Panproctocolectomy	4
Cholecystectomy	G&S	Prolapse repair (inc. colposuspension)	G&S
Cone biopsy	0	Prostatectomy - open	2
Cystectomy (total)	2	Pulmonary resection	3
Cystoscopy	G&S	Pyeloplasty	G&S
Dilatation and Curettage	0	Splenectomy (elective)	2
Exploratory Thoracotomy	2	Termination of pregnancy	G&S
Femoral popliteal bypass	3	THR	G&S
Fracture neck of femur	G&S	THR - revision	4
Gastrectomy: Partial	G&S	Thymectomy	2
Gastrectomy: Total	4	Thyroidectomy	G&S
Haemorrhoidectomy	G&S	TKR	2
Hernia Repair	0	TKR - revision	4
Hiatus hernia	2	Total proctocolectomy	4
Hysterectomy - vaginal/abdominal	G&S	Translumbar aortogram	G&S
Hysterectomy (radical)	G&S	TUR biopsy	0
Ileostomy	G&S	TURP	G&S
IM Nail for # NOF	G&S	Vagotomy & drainage/pyroplasty	G&S
IM Nail for # tibia	G&S	Varicose Vein Strip	0
Laminectomy	G&S	Vulvectomy (radical)	4
Laparoscopy	G&S		

NB: This tariff allows for flexibility depending upon clinical circumstances

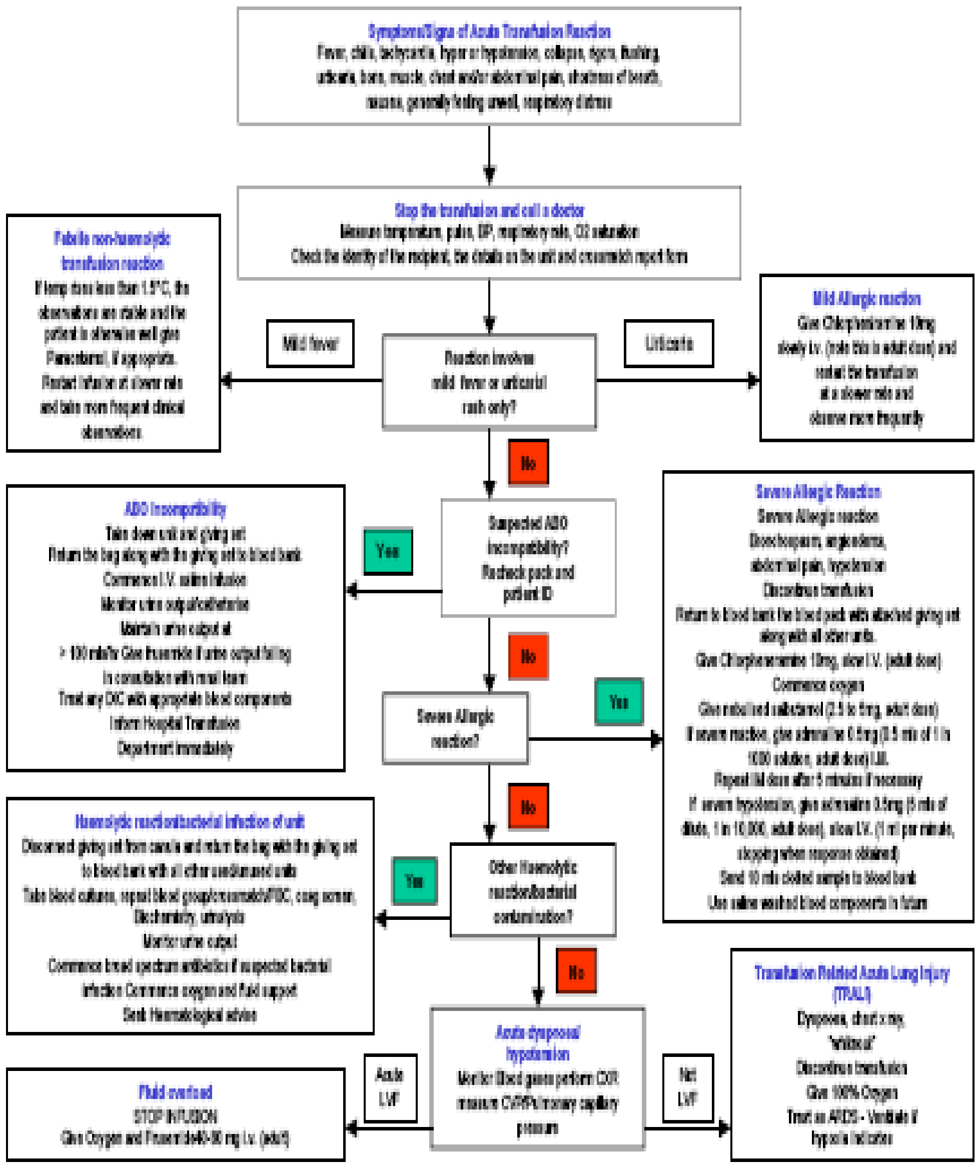
APPENDIX 2 – forms back of Blood Component Prescription Chart

Note: All drug doses given on this algorithm are for adults.

Management of transfusion reaction

ACTION POINTS

- Stop transfusion and inform doctor.
- Examine patient
- Initiate investigations and treatment as appropriate
- Decide if it is safe to resume transfusion
- Monitor patient closely
- If in doubt, seek advice from senior colleagues, blood bank / haematologist



Symptoms/Signs of Acute Transfusion Reaction
Fever, chills, tachycardia, hyper or hypotension, collapse, rigors, flushing, urticaria, bone, muscle, chest and/or abdominal pain, shortness of breath, nausea, generally feeling unwell, respiratory distress
Stop the transfusion and call a doctor
Measure temperature, pulse, BP, respiratory rate, O2 saturation
Check the identity of the recipient, the details on the unit and crossmatch report form
Mild fever
Urticaria
Reaction involves mild fever or urticarial rash only?
Febrile non-haemolytic transfusion reaction
If temp rises less than 1.5°C, the observations are stable and the patient is otherwise well give Paracetamol, if appropriate. Restart infusion at slower rate and take more frequent clinical observations
Mild Allergic reaction
Give Chlorpheniramine 10mg slowly i.v. (note this is adult dose) and restart the transfusion at a slower rate and observe more frequently
No
Suspected ABO incompatibility? Recheck pack and patient ID
Yes
ABO Incompatibility
Take down unit and giving set
Return the bag along with the giving set to blood bank
Commence I.V. saline infusion
Monitor urine output/catheterise
Maintain urine output at > 100 mls/hr Give frusemide if urine output falling
In consultation with renal team
Treat any DIC with appropriate blood components
Inform Hospital Transfusion Department immediately
No
Severe Allergic reaction?
Yes
Severe Allergic Reaction
Severe Allergic reaction
Bronchospasm, angioedema, abdominal pain, hypotension
Discontinue transfusion
Return to blood bank the blood pack with attached giving set along with all other units.
Give Chlorpheniramine 10mg, slow I.V. (adult dose)
Commence oxygen
Give nebulised salbutamol (2.5 to 5mg, adult dose)
If severe reaction, give adrenaline 0.5mg (0.5 mls of 1 in 1000 solution, adult dose) I.M.
Repeat IM dose after 5 minutes if necessary
If severe hypotension, give adrenaline 0.5mg (5 mls of dilute, 1 in 10,000, adult dose), slow I.V. (1 ml per minute, stopping when response obtained)
Send 10 mls clotted sample to blood bank
Use saline washed blood components in future
No
Other Haemolytic reaction/bacterial contamination?
Yes
Haemolytic reaction/bacterial infection of unit
Disconnect giving set from canula and return the bag with the giving set to blood bank with all other unused units
Take blood cultures, repeat blood group/crossmatch/FBC, coag screen, Biochemistry, urinalysis
Monitor urine output
Commence broad spectrum antibiotics if suspected bacterial infection Commence oxygen and fluid support
Seek Haematological advice
No
Acute dyspnoea/hypotension
Monitor Blood gases perform CXR measure CVP/Pulmonary capillary pressure
Acute LVF
Fluid overload
STOP INFUSION
Give Oxygen and Frusemide 40-80 mg i.v. (adult)
Not LVF
Transfusion Related Acute Lung Injury (TRALI)
Dyspnoea, chest x-ray 'whiteout'
Discontinue transfusion
Give 100% Oxygen
Treat as ARDS - Ventilate if hypoxia indicates

(H Qureshi/DMurphy/tralgo/V1/Oct 02 - ref: BCSH)