TITLE: Pre-transfusion ABO/RhD Verification (ABO2)

PRINCIPLE:

To test a second sample collected for the purpose of verifying the ABO/RhD on patient who lacks historical typing in the Rush Copley Medical Center (RCMC) Blood Bank (BB). The order may be placed in EPIC as an auto reflex test by ordering provider or by a BB technologist in SOFTBank during patient history check.

The order will be transmitted through SOFTID for collection by phlebotomist or a nurse. The test, ABO2, is required for all patients over 4 months old for whom a Type and Screen (TS) is ordered with no blood type on file.

CLINICAL SIGNIFICANCE:

ABO/RhD typing on a separately collected 2nd patient sample is considered the best practice to better detect wrong blood in tube (WBIT) errors and has been instituted in an effort to increase patient transfusion safety and to comply with current AABB/CAP standards.

PERSONNEL:

All blood bank staff must be familiar with this procedure.

SPECIMEN:

See [Proc.#4840-BB-100] – Sample Requirements and Ordering Blood and Other Components

REAGENTS AND EQUIPMENT:

1. Laboratory Information System – SoftBank
2. Blood Bank analyzer – ECHO Lumena
3. 7mL or 3mL EDTA tube
4. 0.90% isotonic saline
5. 12 x 75 mm test tubes
6. Centrifuge
7. ABO anti-seras and reverse cells

QUALITY CONTROL:

Reagent QC must be done daily.

POLICY:

1) In keeping with Proc. #4840-BB-100 (Sample Requirements and Ordering Blood and Other Components), all sample **must** be labeled with at least two of the following patient identifiers.
   a. Full name (first and last)
   b. Medical record number
   c. Date of birth (DOB)
2) **TS and ABO/RhD Verification testing must be received, testing completed, and results identical before issuing non-group O or electronically crossmatched blood for patients who do not have a historical type on record in our BB.**
3) TS and ABO/RhD verification sample (ABO2 or other order used to verify type) must have a different collection time (at least one-minute apart).
   a. If both samples were drawn together, the verification sample must be recollected.
   b. The ABO2 will be collected in an EDTA tube (both pink and purple tops are acceptable).
   c. Another sample with different collection time meeting BB label requirements can be used for ABO Verification, i.e. CBC and HBA1c samples
   d. Clotted sample may still be used for testing after the clot has been removed from the sample
4) A sample MAY be rejected at the discretion of the BB technologist if there is evidence that collection protocol has been compromised.
5) The ABO2 sample is to be processed and tested as soon as it is received in the BB.
   a) Expedite testing whenever emergency blood products have been requested or issued for a patient.
6) For red cells prior to ABO2:
   a) If blood is needed on a patient with sickle cell anemia before completion of the ABO/RhD Verification, provide group O RBC that is antigen negative for C, E, K, and Hemoglobin S. See proc. #4840-BB-333 (Sickle Cell Patient Transfusion Protocol).
   b) **Emergency Release.** Refer to proc. #4840-BB-412 (Massive Transfusion & Emergency Release Protocol)
7) ABO/RhD Verification is not required prior to issue of Rhogam.
8) Modification of the type and screen order may be needed for allocation of packed red blood cells when ABO2 is resulted as an individual test AFTER a type and screen is done.
   a) SOFTBank>Modify>Enter RC units needed
   b) Cancel the duplicate orders

DEFINITION:

TS: Type and Screen
ABO2: ABO/RhD Verification
RBC: Red Blood Cells
MRN: Medical Record Number
DOB: Date of Birth
LIS: Laboratory Information System
OR: Operating Room
WBIT: Wrong Blood in Tube

NOTES AND LIMITATIONS:

1) Outpatient clinic for transfusion:
   a) If TS received and ABO2 is not ordered, order ABO2. ABO2 may be drawn on a return visit for transfusion if TS was collected earlier. Order should display as pending upon patient return for OR or transfusion.
   b) ABO2 order will auto-cancel if not received within 4 days. If >4 days and order is no longer active, new TS can serve as ABO/RhD verification.
2) Blood Product Order received from Operative Room (OR) and no ABO2 received:
   a) Place ABO2 order if not already placed (may be from pre-op days prior) OR MUST be called to request an ABO2 sample be collected.
   b) Immediate collection of ABO2 is required only if there is an acute need for blood products.
   c) A pending report should be printed during each shift.

STEPWISE PROCEDURE:

1) Check for ABO/RhD type on file
   a) When TS sample is received and is acceptable, the BB technologist will continue with patient history check.
   b) If there is no blood type history, the BB technologist will search for another sample with different collection time meeting BB label requirements that can be used for ABO Verification, i.e. CBC and HBA1c samples.
      i) <u>If such sample is found, order ABO2</u>
         (1) Perform ABO2 testing and result as usual
      ii) <u>If no such sample is found, order ABO2 in Order Entry (OE)</u>
         (1) Call to request an ABO2 sample be collected
            (a) Care team can decide rather or not to collect the ABO2 sample, right away or wait for the next scheduled blood drawn, based on patient's transfusion schedule.

2) Reporting Patient Results & Interpretation of Results:
   a) Upon receipt of ABO2, sample must have a different collection date/time from TS
   b) If other sample (purple tops) is used for ABO/RhD verification,
      i) Order ABO2, in SoftBank>Modify>ABO2
      ii) Specify the collection date and time of the other specimen in comment (F8) – i.e. Tested on CBC specimen collected on date at time.
   b) ABO/RhD Verification results must match the ABO/RhD of the patient's TS sample type on file.
   c) All blood type discrepancies with verification sample must be investigated further by requesting a new TS and a new ABO2
   d) An Occurrence report must be submitted for any blood type discrepancies related to Wrong Blood in Tube (WBIT).
3) Results of the ABO/RhD Verification are entered into the SOFTBank under the ABO2 accession number
   a) ABO/RhD of the TS/historic type and the verification sample are in agreement:
      i) Transmit/Enter ABO2 reactions and interpretation
   b) ABO/RhD of the TS/historic type and the verification sample are in disagreement:
      i) Result reactions as tested
      ii) Result interpretation as inconclusive
      iii) Enter comment – "Notified (RN name) of probable WBIT, redraw requested."
      iv) Submit occurrence report
4) The ABO2 specimen may be used for additional patient testing (antibody identification, DAT, and crossmatching).
5) No sample received:
   a) If ordered ABO2 is not received within 4 days of the scheduled collection, it will be automatically cancelled as "specimen not received by the lab".
   b) If an inpatient is discharged before the actual scheduled collection, the order will automatically cancel.

SAMPLE RETENTION:

1) Samples are retained for a minimum of 7 days post transfusion.

RELATED DOCUMENTS:

1) Proc. #4840-BB-100 (Sample Requirements and Ordering Blood and Other Components)
2) Proc. #4840-BB-333 (Sickle Cell Patient Transfusion Protocol)
3) Proc. #4840-BB-412 (Massive Transfusion & Emergency Release Protocol)

REFERENCES:

1) AABB, Standards for Blood Banks and Transfusion Services, *current edition*
2) CAP, Transfusion Medicine Checklist – Requirement for ABO Group and Rh(D) Type Verification

JOB AID:

1) Proc.#4840-BB-109JA (ABO/RhD Verification Decision Making Flow Chart)