|  |  |  |  |
| --- | --- | --- | --- |
|  | **Investigation of Suspected Adverse Reactions to Transfusion**  **BB.Routine.1010.4** | **Dept:**  | **324311** |
| **Dept Name** | **Blood Bank** |
| **Effective Date:** | **<10/3/2007** |
| **Revised Date:** | **1/21/2020** |
| **Name & Title: CLIA Laboratory Medical Director** | **Contact:** | **JH Simmons/ CS Warren** |
| **Signature:** | **G. Pomper** | **Date:** | **2/11/2020** |

**1. General Procedure Statement:**

1. **Purpose:**

The Blood Bank will investigate all reported suspected transfusion reactions experienced by a patient in association with transfusion of blood and/or blood products including blood crossmatched and products dispensed by Wake Forest Baptist Blood Bank and sent to other associated facilities. The investigation includes: 1) reactions reported to the Blood Bank, 2) delayed reactions due to the formation of antibody following transfusion and 3) if the wrong patient and/or wrong product was transfused.

Blood transfusion may result in an adverse event. Any adverse event experienced by a patient in association with a transfusion shall be regarded as a suspected transfusion complication. All suspected transfusion complications shall be evaluated promptly, and reviewed by the medical director.

 **B.** **Responsible Department/Scope:**

1. Procedure owner/Implementer: Julie H. Simmons/ Christina S. Warren
2. Procedure prepared by: Julie H. Simmons

iii Who performs protocol: Department staff/management

 **C. Definitions:**

|  |  |
| --- | --- |
| **Adverse Reactions** | Adverse reaction due to a blood product transfusion |
| **Acute Hemolytic** | Acute hemolysis due to red cell incompatibility |
| **Febrile, non hemolytic**  | Non hemolytic, due to accumulated cytokines and/or antibody to donor white cells |
| **Urticarial** | Simple localized/allergic reaction due to Antibody to donor plasma proteins |
| **Anaphylactic** | Severe reaction due to anti-IgA antibody to donor plasma proteins |
| **TRALI**  | Transfusion-related acute lung injury due to WBC antibodies and or other WBC-activating agents in components |
| **Transfusion associated sepsis** | Severe reaction due to bacterial contamination |
| **Circulatory Overload (TACO)** | Transfusion Associated Circulatory Overload; Volume overload |
| **Delayed Hemolytic** | Anamnestic immune response to red cell antigens. Direct Antiglobulin Test positive. Antibody eluted from cells |
| **PTP** | Post transfusion purpura due to recipient platelet antibodies that destroy autologous platelets |
| **Non-immunologic** | Adverse reaction due to improper handling or administration of blood products. (Overheating of red cells, freezing of red cells, improper infusion solution used, etc.) |
| **Market withdrawals / Look backs** | Investigation initiated by blood supplier due to potential donor issue. |
| **TRX1** | Transfusion Reaction work-up routine |
| **TRX2**  | Additional testing performed for Transfusion Reaction work-up if hemolytic |

 **D. Sections**: NA

**E. Adverse Reactions to Transfusion Protocols**

1. It is the protocol of the Wake Forest Baptist Health (WFBH) Blood Bank to investigate all reported suspected transfusion reactions experienced by a patient in association with transfusion of blood and/or blood products. This includes blood crossmatched and/or products prepared by WFBH and sent to other facilities or blood transfused by Air Care and EMS Ground.
2. The responsible patient’s physician will determine that a transfusion reaction has occurred.
3. Blood and urine samples will be collected and submitted to the Blood Bank with the unit(s) transfused for the transfusion reaction work-up of all suspected transfusion reactions with the exception of simple localized urticarial (hives) reactions as determined by the responsible physician.
4. The pathology resident and/or medical director should be paged as soon as a transfusion reaction is reported to the Blood Bank so that they can check on the clinical status of the patient.
5. Notification of the pathology resident or medical director should occur before testing is started and the notification should be documented on the Suspected Adverse Transfusion Reaction Investigation Part II form including the name of the person notified.
6. The medical director or pathology resident MUST approve the issue of additional products after the reaction work-up has been completed and should be contacted if products are requested before this occurs.
7. All reported transfusion reactions will be recorded in the Transfusion Reaction Log Book with patient name, medical record number, donor number/component involved, time of reaction, time reported to Blood Bank, time pathologist called, time additional blood products are made available, results of Gram stain and culture report if applicable, and Medical Director comments.
8. The pathology resident will evaluate the initial results and obtain clinical information as needed. They will document their findings in WakeOne.
	1. The pathology resident will consult with the patient’s physician and medical director and order additional testing as needed.
9. The pathology resident will complete the Blood Utilization Review Form.
10. Interpretation of the evaluation shall be recorded in the patient’s medical record and communicated to the patient’s physician for all reported reactions including; but, not limited to, hemolytic reaction, bacterial contamination, TRALI, or other serious complication of transfusion.
11. Cancel any tests that are not performed to avoid billing the patient. Do not use “Not Tested” or “Not Done”.
12. Urticarial (hives) and allergic mild reactions (itching, rash, pruritus, hives)
	1. Mild reactions (allergic/urticarial) need NOT be evaluated as possible hemolytic reactions.
	2. It will be evaluated based on the responsible physician’s determination that the reaction is a simple localized urticarial (hives) and the patient is stable.
	3. Simple localized urticarial reactions do NOT require that a blood or urine specimen be sent to the Blood Bank. The transfusionist should indicate that a transfusion reaction has occurred by checking “yes” on the transfusion unit tag, marking urticarial on the unit tag and writing “no specimens collected” on the unit tag.
13. If ‘No Specimen collected’ is not written on the transfusion unit tag, then Blood Bank staff may record it on the transfusion product tag to document.
14. For Simple Localized Urticarial Reactions:

|  |  |
| --- | --- |
| IF | DO |
| NO blood or urine samples are sent to Blood Bank and/or only the blood bag is received | 1. Order Transfusion Reaction in Beaker and accept into SCC (TRX1).
2. Page or call pathology resident and ask if a transfusion work-up is needed.
3. Pathology resident will determine within an hour if a work-up is needed, notify Blood Bank AND notify the floor to send specimens.
4. Pathology Resident or Medical Director will write the WakeOne note.
5. Record in the Transfusion Reaction Log Book.
6. Tests that are not completed will be cancelled in SCC.
 |
| Blood and Urine samples are sent to Blood Bank with a simple localized urticarial reaction indicated | 1. Order Transfusion Reaction in Beaker and accept into SCC (TRX1).
2. Page or call pathology resident and ask if a transfusion work-up is needed.
3. Pathology resident will determine within an hour if a work-up is needed and notify Blood Bank.
4. Pathology Resident or Medical Director will write the WakeOne note.
5. Record in the Transfusion Reaction Log Book.
6. Tests that are not completed will be cancelled in SCC.
 |

1. In SCC the special message: TRXI must be added to the patient’s Patient Caution Window to indicate that a Transfusion Reaction is in process and units have not been approved for Issue without emergency release.
2. Do not issue any part or split of the product under Adverse investigation without approval of Medical Director. Quarantine all parts and splits until the Adverse investigation is completed. Review the release of splits and parts with the Medical Director.
3. All suspected transfusion complications are considered a STAT procedure and are to be acted upon immediately.
	1. The pathology resident will notify the patient’s physician and blood bank medical director.
	2. The reaction should be signed off by the medical director/designee on the next business day after the suspected reaction has been reported.
4. Blood Bank Staff will notify Medical Director or Pathology Resident (when Medical Director is not available) by phone or web page. This notification will be RECORDED on transfusion reaction form.
	1. Response by Pathology Resident is required. If no response, notify Pathologist on call.
5. Adverse Transfusion Reaction Forms
	1. Part I of the transfusion reaction is completion of the lower section of the transfusion product tag indicating a suspected transfusion reaction.
	2. Part II (Suspected Adverse Transfusion Reaction Investigation Part II) is the routine document for investigation of adverse reactions and is routinely used to document time pathologist notified and is also used during downtime.
	3. Part III (Hemolytic Work-up form) is initiated if an acute hemolytic reaction is suspected.
	4. The Blood Utilization Review form will be completed by the Medical Director or Pathology Resident.
	5. Part II and Part III are used to document testing during downtime.
6. Once the computer system is back up, the information contained on the forms will be entered into SCC.
7. Unit bags must be saved for 7 days following the reaction. Units must not have any needles on tubing and unit should be placed in a plastic bag and labeled with the discard date.
8. The post reaction sample should be labeled “post reaction” and stored in the appropriate specimen rack (day of reaction).
9. Culture results
	1. Keep transfusion reaction documents in Pathology completed letter file when culture results are pending.
	2. Completed culture results:
10. Negative or no growth results is documented in Adverse Transfusion Reaction log.
11. Reported on Part II Suspected Adverse Transfusion Reaction Investigation form when it is initiated. Exception: When SCC printout of Adverse Reaction is the only report generated.
	1. All positive culture results are submitted to Medical Director immediately for additional review.
12. All paperwork is reviewed by the manager/designee for completeness.
13. Manager/designee records the pathologist interpretation of the transfusion reaction in the Transfusion Reaction Log, enters the interpretation into SCC, and verifies that the Transfusion Reaction log entry is complete.
14. The Blood Utilization Review form is placed in the Blood Utilization Review notebook.
15. These are kept in the notebook for approximately 1 year.
16. Greater than one (1) year forms are filed in the irradiator room and kept indefinitely.
17. A physical copy of the completed adverse transfusion reaction documents is made.
18. The work-up may include one or more of the following forms:

 1) Transfusion product tag

 2) Suspected Adverse Transfusion Reaction Investigation Part II

 3) Hemolytic work-up Part III

 4) SCC Adverse Transfusion Reaction Report) is made

1. The original completed adverse transfusion reaction document will be sent via interoffice mail to Medical Records.
2. The physical copy of the adverse transfusion reaction will be filed alphabetically in the Adverse Transfusion Reaction file located in the Irradiator Room.
3. Transfusion Reactions will be scanned internally by Blood Bank or sent to an external company (currently Archive Information Management) so that the report can be maintained electronically.
	1. All scans must be verified per procedure.
	2. The scanned verified copy will be available in the Scanned Documents folder

 (Lab\_Shared/BloodBankStaff/Scanned Documents/Adverse Transfusion Reactions).

1. Delayed hemolytic reactions may be suspected in the presence of a newly identified clinically significant antibody in a patient transfused within the previous three months. These reactions will be initiated by Blood Bank Technologist. Notify Pathology Resident to investigate and speak with patient’s clinicians and place note in Wake One.

 *Refer to Attachment 1: Suspected Hemolytic Reactions, Immunologic*

1. Blood Suppliers are required to report potential problems with blood products to the transfusion facility. These look backs and/or recalls are investigated by the Medical Director. Potential blood product issues identified by the Blood Bank will be appropriately reported to the blood supplier.

*Refer to Quality Plan: Deviations, Nonconformances and Adverse Events.*

*Refer to Special Procedures: General Guidelines for Lookbacks*

1. Reporting fatalities is the responsibility of the medical director and section manager. The medical director is also responsible for notifying risk management and other departments and personnel as needed.

*Refer to Quality Plan: Deviations, Nonconformance and Adverse Events.*

* 1. When a complication of transfusion is confirmed to be fatal, the Director, Office of Compliance and Biologics Quality, Center for Biologics Evaluation and Research (CBER), shall be notified by phone, fax, mail or electronically as soon as possible but within 24 hours; a written report of the investigation shall be submitted within 7 days after the fatality per CFR title 21, part 606.1710(b) 2001.

*Refer to QP: Errors: Errors and Accidents*

* 1. The collecting facility shall be notified immediately and subsequently in writing, when a suspected transfusion fatality or other serious unexpected complication occurs and is suspected to be due to an attribute of the donor or a unit of blood or component.
1. A negative Direct Antiglobulin Test (DAT) does not rule out acute hemolysis if all transfused cells have been destroyed. The pathology resident will review the clinical picture and may request additional tests including the antibody screen on the post transfusion sample in these cases.
2. Blood suppliers provide plasma and whole blood for allogeneic transfusion from males, females who have not been pregnant or females that test negative for HLA antibodies to mitigate the risk for TRALI.
3. The following protocols reflect current CAP and AABB Standards.

Refer to *Attachment 6: Adverse Reactions- CAP and AABB Standards.*

**2. Procedure: Transfusion Reaction Work-up**

Chemical Risk Assessment: None

Biological Risk Assessment: Low

Protective Equipment: Lab coat, gloves

Supplies: None

Reagents: None

Equipment: None

Specimen Requirements: Post Transfusion Urine sample

 Post Transfusion properly labeled EDTA tube: 6.0 mL pink top is preferred

3.0 mL or 10.0 mL lavender top is also acceptable

A properly labeled clot tube, no serum separator, may be used if EDTA is not available.

Refer to Specimen Labeling Requirements and BBID Numbers- BB.FD.1001

| **STEPS** | **INSTRUCTIONS** | **CHANGE/****APPROVAL** |
| --- | --- | --- |
| **1.0** | **The transfusionist will:****1.1 Take actions as outlined in Blood Administration Policy and Procedure.***Refer to WFBMC-169 Administration of Blood and Blood Components.* |  |
| **2.0** | **Page the pathology resident for all reactions.** *Refer to E: Protocols: Step 12.0 for instructions on simple localized urticarial reactions.* **NOTE:** Phone calls received about possible transfusion reactions PRIOR to any reaction specimen should be considered potential transfusion reactions and reported to the pathology resident. 2.1 Relay pertinent information by paging Web on call or paging pathology resident. Web  on call is an efficient way to relay the pertinent information while testing is in progress. 2.2 Provide the following information: * Patient’s Name
* MR #
* Location and extension
* Product
* Testing in progress

2.3 Call the blood bank medical director if no response.2.4 Document the date/time and who was called on the Suspected Adverse Transfusion  Reaction Investigation Part II form Communication Section only.  |  |
| **3.0** | **The technologist will order the reaction in WakeOne when the specimens and paperwork arrive in the blood bank and receive in SCC.** *Refer to FD. Specimen Receipt, Section IV.*3.1 Check that unit tag (Part I) is returned and completed. 1. Return Part I to floor for completion if incomplete.
2. Make a copy of incomplete Part I to retain until original returned.
3. Begin work-up while waiting for Part I to be returned.
4. Obtain the Suspected Adverse Transfusion Reaction Investigation Part II form and complete the communication section.

3.2 Enter the special message TRX1 in SCC to indicate transfusion reaction in process and  units have not been approved for issue without emergency release. |   |
| **4.0** | **Go to Inventory>Edit>Status to check for additional parts, splits, or products with the same whole blood number.**4.1 Enter only the whole blood number (not the product code) to pull up all products associated with the whole blood number. F12 to accept.4.2 Change the status of any splits or products that are in inventory or allocated to Quarantine immediately.a. If they were issued, notify the pathology resident or medical director. b. Do NOT issue any part, split or other product without the approval of the  medical director. 4.3 Document these tasks on Suspected Adverse Transfusion Reaction Investigation Part II –Communication Section. |  |
| **5.0** | **Confirm the transfusion in SCC.**5.1Go to Patient>Transfusions>Confirm.a. NOTE: If unit is in a presumed/confirmed transfused status, then the following must be performed under Patient>Transfusion>Edit. b. If the reaction is due to a unit transfused at another facility, you cannot confirm the transfusion in SCC. *Refer to Attachment 3: Transfusion Reaction Work Flow*5.2 Enter Patient’s MRN number.5.3 Choose the unit from the list and F12 to Accept.5.4 Edit the date and time the transfusion started, if needed.5.5 Enter the date and time transfusion ended.5.6 Enter the transfusion Nurse’s name.5.7 Edit the volume transfused if desired.5.8 Enter the observations (signs and symptoms of reaction) from the transfusion product tag. Up to five (5) observations can be entered. 1. If more than 5 observations, then click F7 and add the additional observations in comment section.

5.9 F12 to accept and save the changes.5.10 Select canned message ‘Transfusion workup initiated’ when TREAC (Transfusion Reaction) exception appears. F12 to accept.  |  |
| **6.0**  | **Report any abnormalities in appearance in the blood bag.** Example: Hemolysis in the bag may indicate a solution other than saline was added.  Discoloration, purple or brown, may suggest bacterial contamination. 6.1 Notify the pathology resident immediately if abnormality is present.*Refer to Protocols: Visual Inspection of Blood and Blood Products* |  |
| **7.0** | **Request gram stain and culture on all components stored at room temperature or manipulated within the blood bank such as pooling, splitting washing, deglycerolized, etc. and/or as ordered by a physician.**7.1 Complete a Clinical Laboratory Requisition form.7.2 Notify the pathology resident immediately if the gram stain is positive.  a. Pathology resident must notify the medical director and the patient’s physician.  b. The blood supplier will be notified by the medical director. |  |
| **8.0** | **Result Transfusion Reaction Workup for Phase 1 (TRX1).***Refer to Attachment 3: Transfusion Reaction Work Flow*8.1 Go to Patient>Transfusion>Workup8.2 Enter MRN if it does not default and F12 to accept.8.3 Click OK if the message “Patient caution window has changed” is displayed.8.4 Click Esc-Quit if the patient caution window opens to close it after review.8.5 Double click the unit with the transfusion reaction; F12 to accept and Yes to save.8.6 The system displays the Transfusion Reaction Result Screen with tests built for the Pre-  Transfusion specimen, the Post-Transfusion specimen and the Unit testing.8.7 Click F7-Results at each result field to open the resulting window.8.8 Click the drop down to select the rack (QC) if not defaulted.8.9 *Refer to Table below for list of tests that can be resulted.* a. Cancel any test that is not actually performed.

| **Test** | **Instructions** |
| --- | --- |
| *Hemolysis Check* | 1. Check for hemolysis: Pre and Post transfusion specimens. Select grade from drop down box.
2. Grade as: NONE (0) , SLIGHT (SL), MODERATE (MD), MARKED (MK).

1. If hemolysis is present, verify with another sample (either from Core lab or new collection) that hemolysis is not mechanical hemolysis due to phlebotomy.
2. Notify the pathology resident immediately if hemolysis is present in both samples.
 |
| *Icteric Check* | 1. Visually check for icterus in both the pre and post transfusion sample.
2. Grade as: +, -, NA in first column.
3. Interpret as POS or NEG in second column.

Examples of icteric samples.Icteric Plasma Color |
| *Clerical Check* | 1. Perform a Clerical Check ON Pretransfusion Sample, Post transfusion sample and Unit involved following grid below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Patient Name** | ***MRN #*** | **BBID#** | **ABO/RH** | **Unit bag** |
| **Pre** | **Post** | **Pre** | ***Post*** | **Pre** | **Post** | **Pre** | **Post** |  |
| **Specimen** | X | X | X | X | X | X | X | X |  |
| **Issue slip** | X |  | X |  |  |  |  |  | X |
| **Computer** | X |  | X |  |  |  | X | X | X |
| **Requisitions** | X |  | X |  | X | X | X | X | X |
| **Other documents** | X |  | X |  |  |  |  |  | X |
| **Unit tag** | X |  | X |  | X |  |  | X | X |
| **Unit bag** |  |  |  |  |  |  |  | X | X |

  |
| **Test** | **Instructions** |
| Clerical Check cont’d | 1. Report any discrepancies immediately to: pathology resident or medical director and section manager.
2. Check records and specimens for other patients performed around the same timeframe to be sure there are no other patients at risk.
3. Each step of the process must be checked to find out if and where an error has occurred.
 |
| *DAT – Gel, Poly, IgG, C3d, Control* | 1. Perform Direct Antiglobulin Test on the pre, if available, and post specimen. Check for mixed field on post specimen.
2. Grade the reactions for Poly, anti-IgG, Anti-C3d and IgG Gel DAT and enter in SCC.
	1. Perform follow-up testing for a positive DAT on the post specimen.
3. Determine if Antibody Screen needs to be repeated based on Post Reaction DAT Results.

|  |  |
| --- | --- |
| *DAT Results* | *Instructions* |
| *Positive*  | *Repeat the antibody screen on the pre and post transfusion samples* |
| *Negative*  | *No need to repeat the antibody screen unless delayed or acute hemolytic reaction is suspected.*  |

*Refer to Specials: Direct Antiglobulin Test* |
| *Urine*  | 1. Check post transfusion urine with dipstick for blood.
2. Select from drop down box the results.

|  |  |  |
| --- | --- | --- |
| Code | *UHGB* | Translation |
| NA | NOTDN | Not Done – Do NOT Use. Cancel test. |
| 0 | NEG | Neg |
| TR | TRACE | Trace |
| MD | MOD | Moderate |
| HT | H-TR | Hemolyzed Trace |
| HS | H-SM | Hemolyzed Small |
| HM | H-MOD | Hemolyzed Moderate |
| HL | H-LRG | Hemolyzed Large |

1. Refer to Routine: Hemastix Procedure.
 |
| **Test** | **Instructions** |
| *Urine Sediment* | 1. Centrifuge urine.
2. Observe the color of the sediment after centrifugation.
3. Select from drop down box.

|  |  |  |
| --- | --- | --- |
| Code | *U-Sed* | Translation |
| NA | NOTDN | Not applicable – do NOT use – cancel test. |
| NO | None | None |
| WH | White | White |
| BR | Brown | Brown |
| TN | Tan | Tan |
| PK | Pink | Pink |
| RD | Red | Red |

 |
| *ABORh* | 1. Perform ABO/Rh on post-transfusion specimen.
2. Notify the medical director and manager immediately if results are discrepant.

*Refer to: Attachment 1: Suspected Acute Hemolytic Reaction Due to Red Cell Incompatibility**Refer to: ABORh Testing Manual method; BB.Routine.1004* |
| *TXRN Review* | 1. Medical Director or Path Resident’s interpretation of reaction.
2. Management or designee will enter into SCC.

*Refer to Attachment 4,5* |

8.10 Enter a short comment or Click F4 to add a long comment.8.11 F12 to save results and Yes to save. |  |
| **9.0** | **Print Report.**9.1 Go to Patient>Transfusion>Workup.9.2 Enter MRN if it does not default in. a. F12 to accept, then Esc-Quit and Enter to enter workup. 9.3 Click Ctrl+P-Report from the navigation bar to print and select printer.9.4 Esc Quit to exit. 9.5 Document time called to Pathology Resident on printed copy. |  |
| **10.0** | **Inform the pathology resident of the results and perform any additional testing ordered.**  10.1 Record the event in the Adverse Reaction Investigation Log. a. Management or designee will document culture results and enter Medical Director  comments into computer when transfusion reaction is finalized. 10.2 Remove special message TRX1 after pathologist approves additional products. |  |
| **11.0**  | **Refer to the following attachments for additional information for specific reaction types:***Attachment 1: Suspected Hemolytic Reaction due to Red Cell Incompatibility* |  |

 **3. Review/Revised/implemented:**

 All procedures must be reviewed according to Document Control Protocol.

 All new procedures and procedures that have major revisions must be signed by the CLIA Director.

 All reviewed procedures and procedures with minor revisions can be signed by the designated section medical

 Director or designee.

**4. Related Procedures:**

Routine: Direct Antiglobulin Test

Routine: ABO/Rh Testing

Routine: Antibody Screen and Identification

Quality Plan: Deviations, Nonconformances, and Adverse Events

Special Procedures: General Guidelines for Look back

Special Procedures: Suspected Post Transfusion Infection

WFBMC-169 Administration of Blood and Blood Components

  **5. References**:

Technical Manual, American Association of Blood Banks (AABB). Revised periodically

Standards for Blood Banks and Transfusion Services. Revised periodically.

7.2, 7.3, 7.5, 7.5.1, 7.5.1.1, 7.5.1.2, 7.5.2, 7.5.2.1, 7.5.2.2, 7.5.2.3, 7.5.2.4, 7.5.3

CAP Transfusion Medicine Checklist. Revised periodically.

TRM.41650, TRM.41750, TRM.41770, TRM.41800, TRM.41850, TRM.42000, TRM.42050, TRM.42060, TRM.42100, TRM.42110, TRM.42120, TRM.42135, TRM.42170, TRM.42185

 **6. Attachments**:

Attachment 1: Suspected Hemolytic Reaction due to Red Cell Incompatibility

Attachment 2: Transfusion Reactions During Downtime

Attachment 3: Transfusion Reaction Work Flow

Attachment 4: Resulting the Pathologist’s Transfusion Reaction Interpretation

Attachment 5: Finalizing a Transfusion Reaction Interpretation

Attachment 6: Adverse Reactions- CAP and AABB Standards

 **7. Revised/Reviewed Dates and Signatures:**

 See Archived Document Change Control

**Attachment 1: Suspected Hemolytic Reaction due to Red Cell Incompatibility**

| **STEPS** | **INSTRUCTIONS** | **CHANGE/****APPROVAL** |
| --- | --- | --- |
| **1.0** | **Add the Phase 2 work up to the Transfusion Work up order in SCC.*** 1. Go to Patient >Transfusion>Workup
	2. Enter Patient’s MRN.
	3. Select unit with reaction and enter.
	4. Click Ctrl+T to add Phase 2 testing for a hemolytic reaction to the current transfusion reaction order.
 |  |
| **2.0** | **Perform the following serological testing indicated in the table below.** * 1. Click F7-Results at each result field to open the resulting window.
	2. Enter results into SCC.

| **Test** | **Instructions** |
| --- | --- |
| ***ABO******Rh*** | 1. Perform ABO/Rh on pre and post transfusion specimen.
2. Enter results into SCC.
3. Select interpretation.
4. Notify the medical director and manager immediately if results are discrepant.
 |
| ***ABS*** | 1. Perform the antibody screen on the pre and post transfusion specimen in the media that it was originally performed.
2. Enter results into SCC.
3. Select interpretation

*Refer to Routine: Antibody Screen Procedure* |
| ***XMP*** | 1. Perform the full crossmatch which includes the immediate spin and antiglobulin phase on the pre and post transfusion specimen.
2. Perform using the antiglobulin media of the original crossmatch or PEG if antiglobulin not performed originally.
3. Enter results into SCC.
4. Select interpretation.

*Refer to Routine: Crossmatch Procedure* |

* 1. Report to the pathology resident, medical director and manager.
 |  |
| **3.0** | **Send specimens for additional testing as ordered by the pathology resident and/or medical director.*** 1. Additional testing may include; but, not limited to: H/H, Total Bili., 5-7 hrs. post reaction, haptoglobin, coagulation studies, urinalysis, other as directed.
 |  |
| **4.0** | **The medical director is responsible for review and notifying/follow-up with the patient’s physician.** |  |
| **5.0** | **Delayed hemolytic reactions are ordered and tested as in steps 1-4 above.*** 1. Pull previous specimen (last negative screen but not current sample), if available, and repeat antibody screen with method used on that sample.
	2. Notify management if antibody is detected in previously negative specimen. Management will direct testing in different medias.
	3. Obtain segments from units previously transfused and antigen type.
	4. Review Direct Antiglobulin Results and take actions as outlined below.

|  |  |
| --- | --- |
| DAT Results | Actions |
| Negative | 1. Follow procedures for obtaining compatible units.
2. It is NOT necessary to initiate a transfusion reaction investigation unless the new antibody identified is anti-Jka or anti-Jkb. For Kidd antibodies – test DAT (Poly, IgG, C3d, Gel) and consult with management.
 |
| Positive | 1. Initiate a transfusion reaction investigation form and record results.
2. Notify the pathology resident
3. Follow procedures for obtaining compatible units.
4. Do NOT issue any blood/blood products until the pathology resident has reviewed the reaction and given approval.
5. Perform any additional testing according to instructions
6. Crossmatch subsequent units using the plasma and eluate (if eluate is positive and unable to identify antibody in eluate)
 |

 |  |

**Attachment 2: Transfusion Reactions During Downtime**

|  |  |  |
| --- | --- | --- |
| **STEPS** | **INSTRUCTIONS** | **CHANGE/****APPROVAL** |
| **1.0** | **Obtain Suspected Adverse Transfusion Reaction Investigation – Part II.*** 1. Complete clerical check and testing as outlined in the transfusion reaction procedure.
	2. Document results on Suspected Transfusion Reaction Investigation – Part II form.
	3. Document suspected hemolytic reactions on Investigation of Hemolytic Transfusion Reaction form – Part III.
	4. Enter results into SCC when computer system becomes available.
	5. Initial and date the downtime form and record entered into SCC.
	6. Record transfusion reaction in the Transfusion Reaction Log book.
	7. Leave for Blood Bank Medical Director review on next business day.
 |  |