PROCEDURE
Corewell Health East - Blood Bank Quality Performance Activities - Troy

This Procedure is Applicable to the following Corewell Health sites:
Corewell Health Beaumont Troy Hospital

Applicability Limited to: N/A

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Functional Area: Clinical Operations, Laboratory

Lab Department Area: Lab - Blood Bank

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1. Principle

This document provides policies and instructions relating to the daily, weekly and monthly quality assurance (QA) and quality control (QC) activities that are documented in the Blood Bank.

2. Responsibility

Personnel who have completed the competency requirements will perform these tasks.

3. Definitions

A. Quality Assurance (QA): Set of activities aimed at preventing defects with a focus on the process. It is a proactive quality process. The goal of QA is to improve development and test processes so that defects do not arise when the product is being developed.
B. Quality Control (QC): QC aims to identify and correct defects in the finished product. Quality control, therefore, is a reactive process. The goal of QC is to identify defects after a product is developed and before it's released.
C. Designee: Any Blood Bank technical director, or transfusion medicine fellow.
D. MSBOS: Maximum Surgical Blood Order Schedule
E. QSR: Quality Safety Report
F. RhIG: Rh immune globulin is a medication that contains antibodies to Rh antigen D (RhD), which may be present on the surface of red blood cells in some individuals. It prevents a person's immune system from recognizing RhD, thus suppressing a potentially fatal immune reaction.
G. RPM: Revolutions Per Minute
H. OR: Operating Room

4. Policies

A. Failing Quality Control (QC)

1. The expected results for each QC measure is defined and listed at the bottom of the Transfusion Medicine form, *Temperature QC Log*.
    a. The QC passes if the observed results are within the expected results range, and the QC fails if the observed results are not within the expected results range.
    b. If the QC fails, repeat the QC testing (if applicable); QC passes if the repeat is in the acceptable range.

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c. If the QC fails after the repeat, do not use the item (equipment, reagent, instrument, etc.) of which the QC failed.
   1) Tag effected equipment with Transfusion Medicine form, *Out of Order/Service Called*, and place effected reagents in quarantine.
   2) Make a notation of the QC failure on Transfusion Medicine form, *Blood Bank Reagent or Equipment Problems Log*.
d. The supervisor or designee will submit a variance report for each equipment or reagent problem, will document the follow up on the variance report, and will determine whether it is acceptable to place the equipment or reagent back into use.
e. If applicable, arrange for repair from facilities management or the applicable manufacturer.

B. Blood Bank Equipment List

1. The Transfusion Medicine form, *Troy Blood Bank Equipment List*, is used to keep track of the Corewell Health property numbers for Troy Blood Bank Equipment.
2. If any of these pieces of equipment are moved or replaced the form should be updated accordingly.
3. A current copy of this form is maintained in the Supervisor's office.

C. Failures / Adjustments / Additional Actions

1. Record any notes, adjustments, or additional actions on the back page of Transfusion Medicine form, *Temperature QC Log*, in the *Corrective Action* Section.
2. Evidence of corrective action must be recorded if acceptable temperature ranges are not maintained.

5. Procedure

This procedure provides directions for documenting QA /QC that is performed in the Blood Bank. Each shift is tasked with performing, documenting on the appropriate form and troubleshooting activities in the Blood Bank to comply with established standards.

A. Day Shift Blood Bank Checklist - Daily

Document the Transfusion Medicine form, Dayshift Quality Checklist, with the initials of the day-shift lab assistant (LA) or technologist (MT) who performs each of the following:

1. Cell Washer
   a. Document the daily fill volume as described in Transfusion Medicine policy, *Preventative Maintenance of Blood Bank Thermo Scientific CW3 Cell Washer - Troy*.
2. Ortho® Gel Workstation
   a. Start the workstation centrifuges (I and II) and document the RPM's displayed on the monitor on the Transfusion Medicine form, *Temperature QC Log*.
   b. Document "OK" to indicate that the temperature display status light is green.
   c. Document the digital thermometer temperature readout on the Transfusion Medicine form, *Temperature QC Log*.
3. Expiring Products
   a. At the beginning of the shift, print a list of all blood products expiring within the next seven days from SafeTrace and physically account for each unit on the list.
   b. For any units that expire in the next seven days, attach a *Blood Outdates; Use First* index card to each unit.
   c. Post the expiring list on the freezer.
   d. At the end of the shift, print another list of products expiring within the next seven days, and physically account for each unit on the list.
   e. Attach to shift report to alert afternoon and midnight shift to issue expiring units.
4. Pending Test Report
   a. Print, review, and resolve the Outstanding List from the LIS at the beginning of the shift and at the end of the shift.
   b. Save the report in the *Pending Log* binder.

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5. SafeTrace Backup Files
    a. Two computers in the Blood Bank have been designated to receive the SafeTrace backup files.
    b. On even dates, the triage computer will be checked, and on odd dates the computer at bench 2 will be checked.
    c. Refer to Transfusion Medicine procedure, *Using the SafeTrace Backup Files during SafeTrace Downtime*.
6. Bench Cleaning / Empty Waste
    a. Clean each of the benches with the Sani-Cloth® Germicidal Disposable wipes and initial the log.
    b. Empty the biohazard waste containers as needed and initial the log.
7. Temperature of Equipment / Environment
    a. Verify that Transfusion Medicine log, *Temperature QC Log*, has been completed. Refer to Transfusion Medicine policy, *Blood Bank Temperature Monitoring - Troy*.
8. Coolant Blocks
    a. Confirm the rotation of ice blocks.
    b. Previously used coolants may be moved from the "Not Ready" bin in the freezer to the "Ready" bin in the freezer once the blocks are frozen to the solid state.
    c. Any blocks displaying liquid will remain in the “Not Ready” bin until they have reached the solid state.
9. Preventative Maintenance
    a. Complete any preventative maintenance in the Weekly/Monthly/Quarterly PM Binder.
10. Blood Product Inventory
    a. Monitor blood product inventory levels and order blood products as needed.
    b. Refer to Transfusion Medicine policy, *Inventory and Ordering Blood Products from Established Suppliers - Troy*.
    c. Blood Products are ordered directly from Versiti Michigan. Units from additional suppliers, such as American Red Cross (ARC) may be received via Corewell Health William Beaumont University Hospital (Royal Oak), during blood shortages, or in the case of patients with antibodies that require compatible units that are difficult to find.
    d. Directed and autologous donations may be sent from Versiti Michigan or ARC.
11. Surgical Services Operating Room (OR) Report
    a. Every weekday morning a technologist will generate an OR report for review
        1) Log into the Laboratory Information System (LIS)
        2) Select Master Daily Schedule
        3) Select the Areas for the Report
            a) Troy Area A Surgery
            b) Troy Area D Surgery
            c) Cardiac Cath Lab
            d) OB Surgery
        4) Print the report for next day procedures
        5) Determine if any patients have any unexpected antibodies or transfusion related issues that have the potential to cause a delay in obtaining crossmatch compatible blood
        6) Use the MSBOS as a guide determine the recommended transfusion protocol
        7) Fill out and distribute the form, *OR Patients with Historical or Current Antibodies* to the appropriate departments
12. Presumed Transfused & Irradiation Billing
    a. Use the SafeTrace Daily Transfusion Report in Tableau to verify that the units transfused match the dispense sheets from the previous day
        1) Set the issue date to the previous day and set the issue location to Troy
        2) Print the report
        3) Confirm that all the dispensed units have either been returned to the Blood Bank or transfused to the patient

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4) Identify all irradiated units on the report. Check each patient to determine if they are supposed to be billed for irradiation. For any patient that is not supposed to be billed, send an e-mail to RMS to have the charges adjusted from irradiated to leukoreduced.
5) Attach all the dispense forms to the printed report, date and initial the report, and file them in the current Presumed Transfused file box

13. OB Delivery Log
    a. Verify that a Post Partum RhIG Evaluation has been ordered on all Rh Negative and weak D positive women who delivered the previous day.
    b. Verify that women with completed Post Partum RhIG Evaluations have received their rhogam dose and the charge has been added.
    c. Verify that all babies of moms with antibodies have had appropriate testing and documentation.
14. Antenatal RhIG
    a. The technologist will check the Pending Work Log in SafeTrace for any outstanding derivative orders and follow up with the provider to ensure the patient gets their indicated RhIG dose.
        1) For any situations where the patient will not be getting RhIG despite being a RhIG candidate, the provider or the patient will fill out the applicable form; *Physician's Decision NOT to Administer Rhogam* or *RhIg Refusal Form*. The Lead Medical Technologist will be notified and an internal variance will be written.
15. QC Racks
    a. Daily QC will be reviewed by the Medical Technologist. Refer to Transfusion Medicine policy, *Review of Quality Control and Preventative Maintenance*.
16. Versiti Reference Lab Report
    a. Final test results are routinely sent to the referring institution by fax, secure email and/or mail when all tests on a sample have been completed. This report includes interpretation of all test results.
    b. Some test results are available as interim reports. This includes individual tests which are resulted while other tests are in progress. Interpretation will only be included on the final report.
    c. When a final report is received from Versiti, record the results on the patient's orange card, if applicable, and in the patient's electronic health record.
    d. Refer to Transfusion Medicine policy, *Submitting Samples to External Reference Laboratory*
17. Suspected Bacterial Contamination
    a. Check for growth in units that were sent to the microbiology laboratory for suspected transfusion reactions.
    b. In the LIS perform a Specimen Inquiry (By Specimen) by scanning the patient's culture label given to Blood Bank by the Microbiology staff member.
    c. Document the Transfusion Medicine log, *Suspected Bacterial Contamination of a Transfused Component Log*, with the correct day of growth.
    d. If the results cannot be located, contact the Royal Oak Microbiology department, ask for the sterility bench and refer to the specimen number when asking for the results.
18. Unprocessed Reagents
    a. Each day a technologist will make certain that all reagents have been processed, and that QC has been performed if applicable.
    b. Refer to Transfusion Medicine policy, *Critical Blood Bank Reagents and Supplies*.
19. Shift to Shift Communication
    a. Review and initial the *Shift to Shift Communication Log* at the start of the shift.
    b. In order to maintain continuity of care across all three shifts in the Blood Bank, the Medical Technologist (MT) will utilize Transfusion Medicine Log, *Shift to Shift Communication Log.*
    c. Any information that needs to be conveyed to the other two shifts shall be documented on this log.

d. Every technologist that is working in Blood Bank on that day must read and initial the Shift to Shift Communication Log as an acknowledgement of the information provided from the previous 2 shifts.

B. Day Shift Blood Bank Checklist - Weekly/Monthly

Document the date and initials of the medical technologist (MT) or lab assistant (LA) who performs the weekly or monthly task.

1. Empty and refill the saline bottles and update the sticker (Saline Bottle Sticker) accordingly.
   a. In addition, on the first Monday of each month replace the existing bottles with clean saline bottles and label the new bottles appropriately.
2. Perform QC on Panel A, 0.8%.
   a. A primary panel (0.8% Ortho® Panel A) is QC'd every Monday and put into use, and again after the box has been in use for at least two weeks, if applicable.
   b. Refer to Transfusion Medicine policy, Quality Control of the Manual Gel System Reagents.
3. Temperature Graphs
   a. Change the temperature graphs on the refrigerators, freezers, and platelet incubator every Monday.
      1) The graphs being installed should be marked to indicate "START" initialed and dated, also include the equipment name (e.g., Helmer® Single Door #1).
      2) The graph being removed should marked to indicate "END" initialed and dated.
      3) Confirm that the temperature graphs are marking appropriately 24 hours later.
4. Ordering Reagents and Supplies
   a. Incoming reagents, critical supplies, and labels must be received, inspected and tested as necessary prior to use. Refer to Transfusion Medicine policy, *Critical Blood Bank Reagents and Supplies - Troy*
   b. All materials shall be stored and used in accordance with the manufacturer's written instructions and shall meet specified requirements.
   c. All reagents (chemicals, stains, controls, media, antibodies, test strips, testing cartridges, etc.) are used within their indicated expiration date.
      1) If the reagent does not have an expiration date indicated by the manufacturer, the laboratory will assign an expiration date based on known stability, frequency of use, storage conditions and risk of deterioration.
   d. All suppliers of critical materials and services are required to be qualified by the facility leadership.
5. Reagent Discard
   a. Discard any expired panels, reagent cells appropriately.
      1) Retain expired panels and reagent cells for 90 days past the expiration date.
      2) Remove the expired antigram sheets from the "current lot" file and replace with copies of the current lot.

C. Afternoon Shift Blood Bank Checklist - Daily

Document the form with the initials of the afternoon-shift technologist who performs each of the following tasks:

1. Review and initial the *Shift to Shift Communication Log* at the start of the shift. Any information that needs to be conveyed to the other two shifts shall be documented on this log.
   a. Every technologist that is working in Blood Bank on that day must read and initial the *Shift to Shift Communication Log* as an acknowledgement of the information provided from the previous 2 shifts.
2. Blood Product Inventory
   a. Verify that adequate blood product levels are maintained. Refer to Transfusion Medicine policy, *Inventory and Ordering Blood Products from Established Suppliers.*
   b. Blood Products are ordered directly from Versiti Michigan. Units from additional suppliers, such as American Red Cross (ARC) may be received via Corewell Health William

Beaumont University Hospital (Royal Oak), during blood shortages, or in the case of patients with antibodies that require compatible units that are difficult to find.
   c. Directed and autologous donations may be sent from Versiti Michigan or ARC.
3. Process any incoming blood or blood products.
4. Pending Test Report
   a. Print, review, and resolve the Outstanding List from the LIS at the beginning of the shift and at the end of the shift.
   b. Save the report in the *Pending Log* binder.
5. Expiring Products
   a. Review the list of expiring products.
   b. The technologist will identify products (e.g. platelets and thawed plasma) that expire at midnight.
   c. The technologist will then call the Royal Oak Blood Bank to determine if they can be used before expiration and if appropriate, send as soon as possible by courier.
6. Delivered Reagents
   a. Check for any delivered reagents in the hallway between 5 and 8 pm. Store at appropriate temperature.
7. Review Transfusion Medicine log, *Temperature QC Log* for completeness and initial where indicated.
   a. Complete any missing documentation. Refer to Transfusion Medicine policy, *Blood Bank Temperature Monitoring - Troy*
8. Evaluate Platelet Inventory
   a. Transfer up to three platelets expiring the following day to Royal Oak Blood Bank. Document the Transfusion Medicine log, Troy Inventory, with the number of platelets transferred and amount received.
9. Initial that each of the benches was cleaned with the Sani-Cloth® Germicidal Disposable wipes, supplies were stocked, and the trash was emptied as needed.

D. Midnight Shift Blood Bank Checklist - Daily

Document the form with the initials of the midnight-shift technologist who performs each of the following tasks:

1. Shift to Shift Communication
   a. Review and initial the *Shift to Shift Communication Log* at the start of the shift. Any information that needs to be conveyed to the other two shifts shall be documented on this log.
   b. Every technologist that is working in Blood Bank on that day must read and initial the *Shift to Shift Communication Log* as an acknowledgement of the information provided from the previous 2 shifts.
2. Blood Product Inventory
   a. Verify that adequate blood product levels are maintained. Refer to Transfusion Medicine policy, *Inventory and Ordering Blood Products from Established Suppliers.*
   b. Blood Products are ordered directly from Versiti Michigan. Units from additional suppliers, such as American Red Cross (ARC) may be received via Corewell Health William Beaumont University Hospital (Royal Oak), during blood shortages, or in the case of patients with antibodies that require compatible units that are difficult to find.
   c. Directed and autologous donations may be sent from Versiti Michigan or ARC.
3. Trauma Basket
   a. Check the expiration date/time of the plasma in the trauma basket. Discard any expired products.
   b. Confirm there are at least 2 thawed A plasma available for a Level 1 trauma. If necessary, thaw additional plasma for the trauma basket.
4. Pending Test Report
   a. Print, review, and resolve the Outstanding List from LIS at the beginning of the shift and at the end of the shift.

b. Save the report in the *Pending Log* binder.

5. QC of the Reagent Racks
   a. Perform the following quality control and document the results on the applicable logs:
      1) *Tube ABORh, Tube DAT, Manual Gel Screen & Gel DAT, LISS Surgiscreen, 60 Minute No LISS Surgiscreen*
   b. Refer to Transfusion Medicine policy, *Quality Control of the Manual Gel System and Quality Control of Routine Blood Bank Reagents.*
6. Expired Units
   a. The midnight technologist will locate any expired units in inventory, update their status in SafeTrace to discarded and write the information on the Transfusion Medicine log, *Blood Product Quarantine / Discard Log.* These units will be discarded in a biohazard waste bin.
   b. In addition, any AB positive or AB negative red blood cells must be documented on the Versiti Component Credit Form for a credit to be issued.
7. Coolant Blocks
   a. Confirm the rotation of ice blocks.
   b. Previously used coolants may be moved from the "Not Ready" bin in the freezer to the "Ready" bin in the freezer once the blocks are frozen to the solid state.
   c. Any blocks displaying liquid will be kept in the “Not Ready” bin until they have reached the solid state.
8. Expired Reagents
   a. Reagents expire at 23:59 on their expiration date. Remove any expired reagents from use.
   b. Replace any expired reagents with in-date reagents.
   c. All expired reagents will be placed on the quarantine shelf, except for any expired panels, which will be placed on the expired panel shelf.
9. Bench Cleaning
   a. Initial that each of the benches was cleaned with the Sani-Cloth® Germicidal Disposable wipes, supplies were stocked, and the biohazard was emptied as needed.

6. Revisions

Corewell Health reserves the right to alter, amend, modify or eliminate this document at any time without prior written notice.

7. References

A. AABB, Standards for Blood Banks and Transfusion Medicine Services, current edition.
B. AABB, Technical Manual, current edition.

8. Procedure Development and Approval

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9. Keywords

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