



KAISER PERMANENTE®

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Transfusion Reaction

Purpose	This procedure provides instructions for detection, investigation, and reporting of suspected transfusion reactions.
Scope	This procedure is intended for all staff who may evaluate suspected transfusion related adverse events.
Policy	<ul style="list-style-type: none">• The attending or ordering physician and the laboratory must be notified as soon as possible of the suspected transfusion reaction (immediately after taking care of the patient).<ul style="list-style-type: none">– When a suspected transfusion reaction is observed, the unit being transfused at that time must be disconnected, unless the reaction is an urticarial reaction.• The investigation of suspected transfusion reactions must be initiated as soon as possible by the transfusion service laboratory, and if the results of testing confirm the transfusion reaction, the attending physician must be notified immediately.• Transfusion associated fatalities are reported to the FDA/CBER (and COLA if applicable) within 24 hours, with a written report to follow within seven days.• The call reporting a suspected transfusion reaction to the Transfusion Service may be documented per local protocol.<ul style="list-style-type: none">– If related information and/or blood samples are not received within one hour, the location reporting the suspected transfusion reaction may be called and the issue resolved.• If an extended workup is required (necessitating repeat or additional testing of the pre-transfusion specimen), then the Medical Center Transfusion Service that has possession of the pre-transfusion specimen must perform the testing.<ul style="list-style-type: none">▪ The Transfusion Service which has dispensed the blood will notify the pre-transfusion testing Medical Center of the suspected transfusion reaction and the requirement to perform additional or repeat testing.▪ Results of the pre-transfusion specimen testing will be documented on the <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form by the Transfusion Service which dispensed the blood.

Continued on next page

Transfusion Reaction, Continued

Policy,
 continued

- The blood supplier is notified when blood or blood components are a suspected primary cause of an adverse reaction (e.g., TRALI, transfusion-related infection).

Safety

Refer to the safety manual for general safety requirements.

**Before you
 begin**

- This procedure describes the process where the transfusionist has notified the Transfusion Service of an immediate suspected transfusion reaction.
 - The signs and symptoms are recognized during the transfusion or within 24 hours of the transfusion end.
 - For suspected delayed adverse patient events related to transfusion such as delayed serological/hemolytic reactions, or possible transfusion transmitted infectious disease refer to separate documents.

**Procedure-
 Provider and
 Nursing**

Refer to the steps below for recognition and reporting of the suspected transfusion reaction.

Step	Action
1	Recognize a suspected transfusion reaction. <ul style="list-style-type: none"> • Refer to symptoms listing in the regional clinical document <i>Blood Administration and Transfusion Reaction</i> and SCPMG form <i>Transfusion Reaction: Investigation of Suspected Reaction</i>. • Refer to Attachment A: Blood Transfusion and Respiratory Distress to differentiate symptoms of Transfusion Related Acute Lung Injury (TRALI) and Transfusion Associated Circulatory Overload (TACO).
2	Stop the transfusion immediately <ul style="list-style-type: none"> • Notify physician/provider • Notify Transfusion Service
3	If physician/provider suspects a transfusion reaction complete the form <i>Transfusion Reaction: Investigation of Suspected Reaction</i> .

Continued on next page

Transfusion Reaction, Continued

**Procedure-
 Provider and
 Nursing,**
 continued

Step	Action
4	<ul style="list-style-type: none"> • Have an order for Transfusion Reaction Workup placed in Health Connect (213123) • Obtain properly labeled EDTA specimen STAT from patient avoiding hemolysis (except for minor skin rashes or mild hives).
5	Submit specimen, form, and remaining blood product with the attached infusion set and all attached fluid bags to the Transfusion Service. <ul style="list-style-type: none"> • Remove all sharps (needles)

**Procedure-
 Laboratory**

Follow the steps below to investigate the reported suspected transfusion reaction.

Step	Action
1	The call from the nursing service or attending physician may be documented per local protocol. <ul style="list-style-type: none"> • If the expected specimen, form, and remaining blood product is not received in the laboratory within one hour from the initial call, the location reporting the reaction is called to resolve the problem.
2	Check the <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form for completeness, and that the blood specimen (if submitted) was properly labeled. <ul style="list-style-type: none"> – In most cases there should be a minimal delay from the time the reaction is recognized to the time the transfusion is stopped. <ul style="list-style-type: none"> ▪ If an unexpected delay is noted (greater than 1 hour), identify the reason for the delay (such as respiratory symptoms suggestive of TRALI/TACO)

Continued on next page

Transfusion Reaction, Continued

Procedure-
 Laboratory,
 continued

Step	Action									
3	<p>Immediately perform a clerical check by comparing and ensuring that the information on the <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form, transfusion tag (Cerner generated) and the donor unit ISBT label contain no discrepancies. This includes:</p> <ul style="list-style-type: none"> • Patient’s name and medical record number • Patient’s ABO/Rh • Donor unit number and expiration date • Donor unit ABO/Rh • On the <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form document Yes or No for “Clerical Check Satisfactory” <p>NOTE: If there are any unusual or unexpected results, report them immediately to the attending physician.</p>									
4	<p>Document answers on <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form to questions:</p> <ul style="list-style-type: none"> • Are solutions and infusion set attached? <ul style="list-style-type: none"> – If bag is not returned document on form. • Are solutions only 0.9% saline? <ul style="list-style-type: none"> – If the answer to the question above is NO, specify what was attached to the bag. 									
5	<p>Check for a rise in patient temperature</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">If product transfused was...</th> <th style="text-align: center;">And temperature rise...</th> <th style="text-align: center;">Then...</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Platelets</td> <td style="text-align: center;">≥1°C (1.8°F)</td> <td style="text-align: center;">Submit product for culture</td> </tr> <tr> <td style="text-align: center;">Not platelets (another component)</td> <td style="text-align: center;">≥2°C (3.6°F)</td> <td style="text-align: center;">Submit product for culture</td> </tr> </tbody> </table> <p>Refer to <i>Cultures of Blood and Blood Components Suspected to be Bacterially Contaminated</i> if temperature rise in patient requires submission of product for culture.</p> <ul style="list-style-type: none"> • Document accession number of product sample submitted for culture on <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form. 	If product transfused was...	And temperature rise...	Then...	Platelets	≥1°C (1.8°F)	Submit product for culture	Not platelets (another component)	≥2°C (3.6°F)	Submit product for culture
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Transfusion Reaction, Continued

Procedure-
 Laboratory,
 continued

Step	Action															
6	<p>For Urticarial reactions ONLY (when urticarial is marked as the only symptom on the upper right portion of the <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form), no serological testing is required.</p> <ul style="list-style-type: none"> • After documenting the clerical check and the check for a rise of temperature, write “no sample” in the Transfusion Service Summary part of the form. • Sign your name and date in the Technologist field on the form. • In Cerner, go to ORV and cancel the TrxnABORhPost and TRxnDATPost • Forward to Transfusion Service Medical Director or designee for evaluation. 															
7	<ul style="list-style-type: none"> • For all other suspected transfusion reactions (not urticarial) <ul style="list-style-type: none"> – Spin the pre- and post-transfusion specimen tubes and observe for hemolysis and/or icterus. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">If ...</th> <th style="text-align: center;">And...</th> <th style="text-align: center;">Then ...</th> </tr> </thead> <tbody> <tr> <td>Evidence of hemolysis or icterus</td> <td>Transfused product was red blood cells</td> <td>Proceed to next step to determine if Extended Transfusion Reaction is required</td> </tr> <tr> <td>Evidence of hemolysis or icterus</td> <td>Transfused product was plasma, cryo, or platelets</td> <td> <ul style="list-style-type: none"> • Perform the serological testing on the post sample, ABORh and DAT • Do not initiate the extended transfusion reaction order. </td> </tr> <tr> <td>No evidence of hemolysis or icterus</td> <td>Transfused product was red blood cells</td> <td>Proceed to next step to determine if Extended Transfusion Reaction is required</td> </tr> <tr> <td>No evidence of hemolysis or icterus</td> <td>Transfused product was plasma, cryo, or platelets</td> <td> <ul style="list-style-type: none"> • In Cerner, go to ORV and cancel the TrxnABORhPost and TrxnDATPost tests. • On the ISR Form in the TS Summary, write “No testing needed” </td> </tr> </tbody> </table> <p>NOTE: Results must be recorded in computer system and recorded on the transfusion reaction form. Refer to <i>Result Entry- Resulting Patient Tests in Cerner Millennium</i></p>	If ...	And...	Then ...	Evidence of hemolysis or icterus	Transfused product was red blood cells	Proceed to next step to determine if Extended Transfusion Reaction is required	Evidence of hemolysis or icterus	Transfused product was plasma, cryo, or platelets	<ul style="list-style-type: none"> • Perform the serological testing on the post sample, ABORh and DAT • Do not initiate the extended transfusion reaction order. 	No evidence of hemolysis or icterus	Transfused product was red blood cells	Proceed to next step to determine if Extended Transfusion Reaction is required	No evidence of hemolysis or icterus	Transfused product was plasma, cryo, or platelets	<ul style="list-style-type: none"> • In Cerner, go to ORV and cancel the TrxnABORhPost and TrxnDATPost tests. • On the ISR Form in the TS Summary, write “No testing needed”
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Transfusion Reaction, Continued

Procedure-
 Laboratory,
 continued

Step	Action								
Serologic testing post transfusion specimen									
8	<p>Perform DAT and ABO/Rh testing on patient post transfusion sample.</p> <p>If the transfused product was red blood cells, refer to the troubleshooting section below to determine if additional testing is required.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">If...</th> <th style="text-align: center;">Then...</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"> Post transfusion sample is not hemolyzed or icteric and has a negative DAT </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • Document “NA” or “not tested” in the pretransfusion DAT box. • Proceed to next step-no extended workup necessary. </td> </tr> <tr> <td style="vertical-align: top;"> Post transfusion DAT is positive, hemolyzed and icteric </td> <td style="vertical-align: top;"> This is an extended work-up: <ul style="list-style-type: none"> • Perform a DAT on the pre-transfusion sample • If both Pre- and Post- DATs are positive and of the same strength, continue to the section directly below </td> </tr> <tr> <td style="vertical-align: top;"> Post transfusion sample has a positive DAT or is hemolyzed or icteric AND Pre-transfusion DAT is negative or weaker than the post-transfusion sample. </td> <td style="vertical-align: top;"> This is an extended work- up: Retype (ABO and Rh) the donor rbc unit. <ul style="list-style-type: none"> • If no discrepancy found, go to next step (Do not perform testing below.) • If discrepancy found, then perform testing as follows: <ul style="list-style-type: none"> – Repeat antibody screen on the pre and post-transfusion samples – Perform serological AHG crossmatch of the transfused donor unit using the pre- and post-transfusion samples – Document results on the transfusion reaction form and enter in computer system. – Immediately notify the patient’s physician </td> </tr> </tbody> </table>	If...	Then...	Post transfusion sample is not hemolyzed or icteric and has a negative DAT	<ul style="list-style-type: none"> • Document “NA” or “not tested” in the pretransfusion DAT box. • Proceed to next step-no extended workup necessary. 	Post transfusion DAT is positive, hemolyzed and icteric	This is an extended work-up: <ul style="list-style-type: none"> • Perform a DAT on the pre-transfusion sample • If both Pre- and Post- DATs are positive and of the same strength, continue to the section directly below 	Post transfusion sample has a positive DAT or is hemolyzed or icteric AND Pre-transfusion DAT is negative or weaker than the post-transfusion sample.	This is an extended work- up: Retype (ABO and Rh) the donor rbc unit. <ul style="list-style-type: none"> • If no discrepancy found, go to next step (Do not perform testing below.) • If discrepancy found, then perform testing as follows: <ul style="list-style-type: none"> – Repeat antibody screen on the pre and post-transfusion samples – Perform serological AHG crossmatch of the transfused donor unit using the pre- and post-transfusion samples – Document results on the transfusion reaction form and enter in computer system. – Immediately notify the patient’s physician
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Transfusion Reaction, Continued

Procedure-
 Laboratory,
 continued

Step	Action						
9	<p>Phone the results of the investigation to the physician or nursing station if the physician requests the results. (Normal or Abnormal Results).</p> <p>Notify the Physician for the following abnormal results:</p> <ul style="list-style-type: none"> • Clerical check discrepancy that resulted in an ABO mismatch or mis-transfusion • Hemolysis/icterus and DAT post -txn positive (pre-trans negative). <p>Document the notification on the <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form.</p>						
10	<p>If additional blood and/or blood products are requested, follow the table below.</p> <table border="1" data-bbox="574 957 1408 1440"> <thead> <tr> <th data-bbox="574 957 992 993">If ...</th> <th data-bbox="992 957 1408 993">Then ...</th> </tr> </thead> <tbody> <tr> <td data-bbox="574 993 992 1146">If the testing reveals no abnormal results</td> <td data-bbox="992 993 1408 1146">Blood and/or blood components may be released to the patient following current procedures.</td> </tr> <tr> <td data-bbox="574 1146 992 1440">If the testing reveals an abnormal result of ABO mismatch AND/OR Hemolysis/icterus and DAT post -txn positive (pre-trans negative).</td> <td data-bbox="992 1146 1408 1440">Blood and/or blood components MUST be released on an EMERGENCY release basis until the Transfusion Services MD has completed the evaluation</td> </tr> </tbody> </table>	If ...	Then ...	If the testing reveals no abnormal results	Blood and/or blood components may be released to the patient following current procedures.	If the testing reveals an abnormal result of ABO mismatch AND/OR Hemolysis/icterus and DAT post -txn positive (pre-trans negative).	Blood and/or blood components MUST be released on an EMERGENCY release basis until the Transfusion Services MD has completed the evaluation
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11	Sign and date in the Technologist field and forward the form to the Transfusion Services MD or designated pathologist for evaluation.						

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Transfusion Reaction, Continued

**Procedure-
 Laboratory,**
 continued

Step	Action												
	If the decision is made by the provider to cancel the transfusion reaction workup order after the form, product, and/or sample is received follow the steps below.												
12	<table border="1"> <thead> <tr> <th style="text-align: center;">If ...</th> <th style="text-align: center;">Then ...</th> </tr> </thead> <tbody> <tr> <td>Sample received; no testing completed</td> <td> <ul style="list-style-type: none"> • Add the test HOLD BB to the accession number. • Add result note to HOLD BB test that “Original order cancelled” • Cancel the Tx Rx Initial test (Reason: “Test Cancel at Provider’s request”) </td> </tr> <tr> <td>Sample received, testing completed, and no abnormal results found</td> <td>Test will be completed with pathologist evaluation.</td> </tr> <tr> <td>Sample received, testing completed, and abnormal results found</td> <td>Test will be completed with pathologist evaluation.</td> </tr> <tr> <td>No sample received; clerical check OK</td> <td>Cancel the test Tx Rx Initial (Reason: “Test Cancel at Provider’s request”)</td> </tr> <tr> <td>No sample received; clerical check NOT OK</td> <td>Do not cancel the Tx Rx Initial Test, notify manager/designee</td> </tr> </tbody> </table>	If ...	Then ...	Sample received; no testing completed	<ul style="list-style-type: none"> • Add the test HOLD BB to the accession number. • Add result note to HOLD BB test that “Original order cancelled” • Cancel the Tx Rx Initial test (Reason: “Test Cancel at Provider’s request”) 	Sample received, testing completed, and no abnormal results found	Test will be completed with pathologist evaluation.	Sample received, testing completed, and abnormal results found	Test will be completed with pathologist evaluation.	No sample received; clerical check OK	Cancel the test Tx Rx Initial (Reason: “Test Cancel at Provider’s request”)	No sample received; clerical check NOT OK	Do not cancel the Tx Rx Initial Test, notify manager/designee
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No sample received; clerical check NOT OK	Do not cancel the Tx Rx Initial Test, notify manager/designee												
13	<p>In the case where the form, product, and/or sample is received by the laboratory and upon confirmation that a Transfusion Reaction Order will NOT be placed by the provider, document on form “No transfusion reaction ordered by Provider” and file per local protocol.</p> <ul style="list-style-type: none"> • Notify manager or designee. 												

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Transfusion Reaction, Continued

Procedure- Pathologist Evaluation

Follow the steps below for completion of evaluation and final review.

Step	Action
1	<p>The Transfusion Service Medical Director enters his/her evaluation and comments of the Transfusion Reaction in the computer system and records them on the <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form.</p> <ul style="list-style-type: none"> • Additional serological tests may be requested and performed as directed by the pathologist, Transfusion Service manager or designee. • Refer to Attachment B for transfusion reaction interpretations which use the national classifications recognized the CDC/NHSN • Refer to <i>Result Entry-Resulting Patient Tests in Cerner Millennium</i> • The form is returned to the Transfusion Service.
2	<p>The CLS will review the pathologist's evaluation and enter comments or transfusion requirements in PPI as recommended.</p>
3	<p>For suspected TRALI evaluations the blood supplier will be notified.</p> <ul style="list-style-type: none"> • All documents will be retained in the transfusion service with the original completed <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form.
4	<p>The original <i>Transfusion Reaction: Investigation of Suspected Reaction</i> is filed in the Transfusion Service.</p> <ul style="list-style-type: none"> • The results are sent electronically at the time the Transfusion Service Medical Director verifies the evaluation in the computer system. • A copy of the completed <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form is scanned into the patient electronic chart (Health Connect). <ul style="list-style-type: none"> – If requested the completed <i>Transfusion Reaction: Investigation of Suspected Reaction</i> form may be faxed (or sent by another local process) by the transfusion service to the clinical team.
5	<p>Completed <i>Transfusion Reaction: Investigation of Suspected Reaction</i> forms are retained as required per current standards and regulations.</p>

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Transfusion Reaction, Continued

**Procedure-
 Reporting
 Fatalities**

Reporting a transfusion related fatality to FDA/CBER and COLA (if applicable)

Step	Action								
1	Upon receipt of a report of a suspected fatality associated with a blood transfusion: <ul style="list-style-type: none"> • Notify the transfusion service medical director at the earliest opportunity. • Notify the Regional Laboratory Quality Representative at the earliest opportunity. • Notify the local Quality/Patient Risk Management department. 								
2	Determine if this should be reported to FDA/CBER and COLA (if blood product was dispensed to site with COLA oversight.) <ul style="list-style-type: none"> • Have the transfusion service medical director review the case. • Have the transfusion service medical director (usually in consultation with the attending physician) determine if the death was directly related to the transfusion of the blood. 								
3	When the review is completed by the transfusion service medical director. <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="text-align: center;">If ...</th> <th style="text-align: center;">Then ...</th> </tr> </thead> <tbody> <tr> <td>The case was judged to be reportable to FDA/CBER and COLA</td> <td> <ul style="list-style-type: none"> • Notify FDA/CBER within 24 hours. • Complete a written report within 7 days to FDA/CBER. </td> </tr> <tr> <td>The laboratory at the site where the transfusion has occurred is accredited by COLA, then COLA must also be notified as described above.</td> <td>Refer to www.cola.org for contact information for report submission</td> </tr> <tr> <td>The case was judged to not be reportable to FDA/ CBER.</td> <td>Collect all the data from the investigations, and file with initial report (Transfusion Reaction or Quality Improvement Monitoring Report)</td> </tr> </tbody> </table>	If ...	Then ...	The case was judged to be reportable to FDA/CBER and COLA	<ul style="list-style-type: none"> • Notify FDA/CBER within 24 hours. • Complete a written report within 7 days to FDA/CBER. 	The laboratory at the site where the transfusion has occurred is accredited by COLA, then COLA must also be notified as described above.	Refer to www.cola.org for contact information for report submission	The case was judged to not be reportable to FDA/ CBER.	Collect all the data from the investigations, and file with initial report (Transfusion Reaction or Quality Improvement Monitoring Report)
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Transfusion Reaction, Continued

**Procedure-
 Reporting
 Fatalities,
 continued**

Step	Action
4	<p>Include the following information in the initial notification (within 24 hours of determination that death was directly related to transfusion of blood):</p> <ul style="list-style-type: none"> • Date and time of the notification (if not via e-mail) • Your name, title, telephone number, and fax (if available) • The facility name, mailing address, and FDA registration number (if applicable) • Age and sex of the deceased • Date, time, and cause or suspected cause of death • If an autopsy was or will be performed. • Transfusion date(s) • Blood/blood component(s) and unit numbers(s) of product(s) that may be implicated. • Name and address of facilities providing the blood • Brief description of event that led to the fatality (i.e., underlying medical condition, reason for transfusion, etc.)
5	<p>A written report is required within 7 days after the fatality and must include new findings or information and the follow-up investigation and conclusions.</p> <p>Include the following information if not provided in the initial notification:</p> <ul style="list-style-type: none"> • Discharge summary and/or death certificate • Autopsy report (if performed) • Conclusions and follow-up actions (corrective action plan) <p>This report to CBER may be amended by filing additional information as it becomes available.</p>

Continued on next page

Transfusion Reaction, Continued

**Procedure-
Reporting
Fatalities,
continued**

Step	Action
6	The notification and/or reports can be submitted to the FDA as follows: <ul style="list-style-type: none"> • E-mail: fatalities2@cber.fda.gov • Telephone: 301-827-6220 • Fax: 310-827-6748, Attn CBER Fatality Program Manager • Mail: Office of Compliance and Biologics Quality/CBER Attn: Fatality Program Manager 1401 Rockville Pike, Suite 200N Rockville, MD 20852-1448
7	Records are retained as required per current standards and regulations.

**Controlled
Documents**

The following controlled documents support this procedure.

Attachment A: Blood Transfusion and Respiratory Distress
Attachment B: Transfusion Reaction Interpretations
Transfusion Reaction: Investigation of Suspected Reaction form
Blood Administration and Transfusion Reaction (SC.QRM.PCS.029)
Delayed Transfusion Reaction: How To Investigate And Report
Cultures of Blood and Blood Components Suspected to be Bacterially Contaminated
Transfusion Transmitted Infections-Transfusion Service and Blood Supplier Notifications
Result Entry-Resulting Patient Tests in Cerner Millennium
Blood Transfusion Clinical Guidelines

**Non-Controlled
Documents**

The following non-controlled documents support this procedure.

AABB Standards, current ed.
CAP Requirements, checklist, current ed.
Cohn, C.S., Delaney, M., Johnson, S.T. & Katz, L.M. (2020). Technical Manual. Bethesda, MD: AABB.
National Healthcare Safety Network (NHSN) Biovigilance Component, Hemovigilance Module Surveillance Protocol, v2.8, January 2023

Authors

Transfusion Services Working Group

Attachment A: Blood Transfusion and Respiratory Distress

Acute onset Dyspnea, Tachycardia, Pulmonary Edema

Transfusion Related Acute Lung Injury (TRALI)	Transfusion Associated Circulatory Overload (TACO)
Blood Pressure: Decreased	Blood Pressure: Increased
Chest X-Ray: Non-cardiogenic pulmonary edema (bilateral whiteout)	Chest X-Ray: Pulmonary edema with cardiac symptoms
Mechanism: Immune mediated	Mechanism: Volume related
Management: Oxygen therapy	Management: Diuretics, O2 therapy
Prevention: Identification and elimination of blood donors implicated in TRALI cases.	Prevention: Patients at risk should receive transfusion slowly with attention to total fluid

IMMEDIATE ACTIONS:

- Stop the transfusion
 - Call physician
 - Call Transfusion Service
 - Send to Transfusion Service
 - infusion set along with any solution attached to the bag
 - fresh blood sample to the Transfusion Service
 - completed *Investigation of Suspected Transfusion Reaction* form
-

Attachment B: Transfusion Reaction Interpretations

NHSN Classifications	Cerner Interpretations
Allergic reaction	Allergic reaction
Febrile non-hemolytic transfusion reaction (FNHTR)	Febrile non-hemolytic transfusion reaction (FNHTR)
Delayed hemolytic transfusion reaction (DHTR)	Delayed hemolytic transfusion reaction (DHTR)
Delayed serologic transfusion reaction (DSTR)	Delayed serologic transfusion reaction (DSTR)
Acute hemolytic transfusion reaction (AHTR)	Acute hemolytic transfusion reaction (AHTR)
Transfusion-related acute lung injury (TRALI)	Transfusion-related acute lung injury (TRALI)
Transfusion-associated circulatory overload (TACO)	Transfusion-associated circulatory overload (TACO)
Transfusion-associated dyspnea (TAD)	Transfusion-associated dyspnea (TAD)
Hypotensive transfusion reaction	Hypotensive transfusion reaction
Transfusion-associated graft vs host disease (TAGVHD)	Transfusion-associated graft vs host disease (TAGVHD)
Post-transfusion purpura (PTP)	Post-transfusion purpura (PTP)
Transfusion-transmitted infection (TTI)	Transfusion-transmitted infection (TTI)
Other or Unknown	Other: Unable to Classify
Other or Unknown	Other: Unlikely related to transfusion
	Ext Workup Pending

Each National Healthcare Safety Network (NHSN) defined transfusion-associated adverse reaction is found in the table above. The Cerner laboratory information system is aligned so the final report format uses the nationally recognized classifications for these patient adverse events.

Signature Manifest

Document Number: RL TS Transfuse - 0004

Revision: 11

Title: Suspected Transfusion Reaction Process

Effective Date: 15 Dec 2023

All dates and times are in Pacific Standard Time.

Suspected Transfusion Reaction Process

Lab Managers Approval

Name/Signature	Title	Date	Meaning/Reason
Ryan Isla (C363303)	Area Lab Manager	11 Sep 2023, 07:22:01 AM	Complete
Brevet Dao (Y363374)	Transfusion Manager	11 Sep 2023, 11:49:02 AM	Complete & Quit
Alejandra Salazar (K233690)	MGR OPER AREA LAB	11 Sep 2023, 12:37:50 PM	Complete
Romina Pineda (X944311)	Lab Section Manager	12 Sep 2023, 12:08:46 PM	Complete
Jennifer Zalamea (P303429)	Manager Operations Area Lab	14 Sep 2023, 10:00:13 AM	Complete
Loretta West (K560700)	Area Lab Manager	14 Sep 2023, 10:02:08 PM	Complete
Jennifer Aidikoff (Q382370)	Blood Bank Manager	15 Sep 2023, 11:14:55 AM	Complete
Duane Doerr (T865608)	MGR OPER AREA LAB	19 Sep 2023, 08:59:56 AM	Complete
Gloria Escobedo (K255208)	MGR OPER AREA LAB	19 Sep 2023, 06:14:59 PM	Complete
German Morera (C114993)	Mgr Oper Area Lab	20 Sep 2023, 10:06:13 AM	Complete & Quit
Dennis Reyes (X840074)	CLS	21 Sep 2023, 09:31:34 AM	Complete
Ann Sintef (G938509)	Regional Blood Bank Compliance	27 Sep 2023, 03:55:11 PM	Complete

Operation Director Approval

Name/Signature	Title	Date	Meaning/Reason
Jocelyn Javier (T684676)	Director	27 Sep 2023, 04:43:52 PM	Approved
Janice Wolf (K119893)	Director Operations Area Lab	29 Sep 2023, 06:43:45 AM	Approved
Trang Vo (I879089)	Director of Operations	29 Sep 2023, 03:57:54 PM	Approved
Annaleah Raymond (Q741709)	Laboratory Operations Director	30 Sep 2023, 05:14:32 PM	Approved
Scott Young (P476670)	Chief of Pathology	03 Oct 2023, 09:30:17 AM	Approved
Armond Mehdikhani (A081527)	DIR OPER AREA LAB	05 Oct 2023, 08:18:20 PM	Approved
Marina Bonus (F234915)	ASST DIR OPER AREA LAB	12 Oct 2023, 10:09:46 AM	Approved
Diane Giles (K123520)	Director	17 Oct 2023, 11:01:09 AM	Approved
Qiyamaa Portillo (K237031)	DIR OPER AREA LAB	25 Oct 2023, 04:29:41 PM	Approved
Myra Wong (O028828)	Quality Systems Leader	17 Nov 2023, 01:48:16 PM	Approved
System Administrator (SYSADMIN)		17 Nov 2023, 02:08:06 PM	Approved

Lab Director Approval

Name/Signature	Title	Date	Meaning/Reason
Sungeun Yang (A148114)	RL TS Lab Director	28 Sep 2023, 04:29:08 PM	Approved
Gary Gochman (P091953)	SCPMG Laboratories AP Dir	15 Nov 2023, 07:18:29 AM	Approved
Myra Wong (O028828)	Quality Systems Leader	17 Nov 2023, 01:48:30 PM	Approved
System Administrator (SYSADMIN)		17 Nov 2023, 02:07:58 PM	Approved

CLIA Directors

Name/Signature	Title	Date	Meaning/Reason
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Hedyeh Shafi (I086749)	Pathologist	27 Sep 2023, 04:12:29 PM	Approved
Andrea Chang (P161703)	CLIA Laboratory Director	27 Sep 2023, 04:16:54 PM	Approved
William Wu (K397694)	Medical Director	27 Sep 2023, 04:38:14 PM	Approved
Joan Mao (P161807)	CLIA Director	27 Sep 2023, 04:46:15 PM	Approved
Neena Singh (H657418)	CLIA Lab Director	28 Sep 2023, 10:15:22 AM	Approved
Mark Taira (P161328)	CLIA Director	02 Oct 2023, 07:22:43 PM	Approved
Scott Young (P476670)	Chief of Pathology	03 Oct 2023, 09:30:30 AM	Approved
Majid Ghassemi (Q211585)	PATHOLOGY	03 Oct 2023, 06:04:43 PM	Approved
Roger Chan (Y604955)	MEDICAL DIRECTOR	11 Oct 2023, 05:38:03 PM	Approved
Sajjad Syed (M401383)	Chief of Laboratory/Pathology	12 Oct 2023, 06:00:01 PM	Approved
Sony Wirio (A478893)	Pathologist, Medical Director	20 Oct 2023, 06:13:42 PM	Approved
Myra Wong (O028828)	Quality Systems Leader	17 Nov 2023, 01:48:38 PM	Approved

Set Effective Dates

Name/Signature	Title	Date	Meaning/Reason
Myra Wong (O028828)	Quality Systems Leader	17 Nov 2023, 02:32:04 PM	Approved

Notify Users

Name/Signature	Title	Date	Meaning/Reason
Romina Pineda (X944311)	Lab Section Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Dennis Reyes (X840074)	CLS	17 Nov 2023, 02:32:05 PM	Email Sent
German Morera (C114993)	Mgr Oper Area Lab	17 Nov 2023, 02:32:05 PM	Email Sent
Ani Momjyan (D194309)	Area Lab Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Ryan Isla (C363303)	Area Lab Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Duane Doerr (T865608)	MGR OPER AREA LAB	17 Nov 2023, 02:32:05 PM	Email Sent
Scott Young (P476670)	Chief of Pathology	17 Nov 2023, 02:32:05 PM	Email Sent
Ronald Villanueva (P383012)	CLS	17 Nov 2023, 02:32:05 PM	Email Sent
Loretta West (K560700)	Area Lab Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Monica Flores (K112468)	LIS Application Specialist	17 Nov 2023, 02:32:05 PM	Email Sent
Stephanie L Soliven (K215385)	Lab Area Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Armineh Amirian (K230074)	LIS Application Specialist	17 Nov 2023, 02:32:05 PM	Email Sent
Alejandra Salazar (K233690)	MGR OPER AREA LAB	17 Nov 2023, 02:32:05 PM	Email Sent
Gloria Escobedo (K255208)	MGR OPER AREA LAB	17 Nov 2023, 02:32:05 PM	Email Sent
Dina Amirian (L788238)	Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Jennifer Zalamea (P303429)	Manager Operations Area Lab	17 Nov 2023, 02:32:05 PM	Email Sent
Test BB Mgr (Z123456)	NA	17 Nov 2023, 02:32:05 PM	Email Sent
Jennifer Aidikoff (Q382370)	Blood Bank Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Myrna Goekler (S875870)	Laboratory Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Myra Wong (O028828)	Quality Systems Leader	17 Nov 2023, 02:32:05 PM	Email Sent
Brevet Dao (Y363374)	Transfusion Manager	17 Nov 2023, 02:32:05 PM	Email Sent
Jenny McNish (Y479271)	Clinical Laboratory Scientist	17 Nov 2023, 02:32:05 PM	Email Sent

PAN TS Approval 3

CLIA Director Approval

Name/Signature	Title	Date	Meaning/Reason
Juan Guo (G693210)	MEDICAL DIRECTOR	03 Jun 2024, 09:35:26 AM	Approved

TS Doc Approval 2

Dir Approval

Name/Signature	Title	Date	Meaning/Reason
Jason Scapa (F838517)	Transfusion service Medical Director	16 Sep 2024, 12:41:12 PM	Approved
Albert Huang (C137273)	CLIA Director	16 Sep 2024, 05:38:13 PM	Approved