University of Washington Medical Center 1959 NE Pacific Street. Seattle, WA 98195 Transfusion Services Laboratory Policies and Procedures Manual	Original Effective Date: 06-13-2022 Revision Effective Date:	Number: PC-0101.01

TITLE: **Downtime Operations at Montlake Campus**

PURPOSE:
To provide guidance for managing transfusion tests and blood product orders during a computer outage including EPIC (eHR) and Sunquest Laboratory Information System (SQ) at Montlake campus

PRINCIPLE & CLINICAL SIGNIFICANCE:
Multiple electronic systems and applications are integral to routine patient care. The UWMC Transfusion Service Laboratory (TSL) must have alternative processes in place to provide blood components when one or more electronic system fails, or during planned downtime

POLICIES:
- Notify the following for any unplanned downtime
  - TSL Medical Director on call
  - TSL Manager
- Policies and procedures for testing, crossmatching, allocation, issuing and return must be followed during downtime

EPIC Downtime (electronic Health Record- eMR): eMR used by clinical team to place test and blood component orders and request issue of blood component.

EPIC Downtime-Sunquest Online
- Orders cannot be placed in EPIC
  - Test and blood component orders will be placed using the manual requisition ***Transfusion Services Test & Blood Product Request Form*** (UH3364) and the form sent to the lab
- New patient registration in EPIC does not interface to SQ when offline
- Test results in SQ will interface to EPIC once EPIC is online
- EPIC BPAM is not available for documenting transfusions

Sunquest Laboratory Information System (SQ or LIS): LIS used by Montlake TSL to process pretransfusion testing and blood component orders for Montlake, SCCA and NW campus to receive orders, record test results that interface to EPIC, managing blood inventory, allocate and issue blood components for transfusion.
- Backup of SQ is performed daily and includes all testing done the previous day. During planned downtime a backup of SQ can occur 2 hours prior to planned downtime. Any testing performed post backup of SQ would not be available in the backup report. Refer to *SOP* ***Sunquest-Patient History Backup Reports***
- Blood Component prepare and transfuse orders may print via EPIC or sent to TSL via manual requisitions UH3364 ***Transfusion Services Test & Blood Product Request Form*** and UH2344 ***Blood Product Release Form***

Sunquest Downtime- EPIC may or may not be available
- Orders cannot be placed or received in SQ

    - Specimens for testing will be received using ***Downtime Order Entry Log***
- TSL will
    - Perform a daily backup of Sunquest regarding patient testing, history and blood components. Refer to *SOP Sunquest-Patient History Backup Reports*
        - Receive orders and perform history checks using the daily backup reports for test and blood component orders
    - Perform testing and allocates blood components for Emergency and STAT orders. Routine orders can be completed until after SQ is back online unless there is a pending blood component order and transfusion is needed
    - During Sunquest (SQ) downtime all compatibility testing for red cell components will be performed serologically
        - Immediate spin crossmatch will be performed on all red cell component orders to determine ABO compatibility
        - AHG crossmatch will be performed for patients with antibodies or history of clinically significant antibodies
        - Universal blood components will be released if SQ backup reports are not available to provide type specific compatible blood components
    - Send allocated blood components to NW TSS and SCCA TSS using the ***Downtime Component Transport Log***

NW campus

- Stock inventory at NW campus will be utilized for emergency use only
- All blood components not allocated prior to downtime will be allocated and sent from TSL
- TSL will notify TSS if a patient requires a Type and Screen or Blood Type confirmation sample collection for any pending blood component order received in TSL
- NW will fax to TSL orders that have been received using manual requisition *UH3364*

SCCA outpatient campus

- Stock inventory at SCCA campus will be utilized for emergency use only
- All blood components not allocated prior to downtime will be sent from TSL
- TSL will notify TSS if a patient requires a Type and Screen or Blood Type confirmation sample collection for any pending blood component order received in TSL
- SCCA will fax to TSL orders that have been received using manual requisition *UH3364*

Backup Reports- Refer to SOP ***Sunquest-Patient History Backup Reports***

- Backup is performed daily and available on the following network: https://portia.labmed.uw.edu/bbr/
- The following information is available on the backup
    - BBR2 U: Product File List- red blood cell component inventory in TSL
    - BBR6 U: Patient Problem Summary Report- this has any SQ problem list for the patient
    - BBR15 U: Patient Blood Type Listing- patient blood type on file. Only patient with a blood type and antibody screen result have history of testing at UWMC TSL. Patient with blood type only may be a historical download from Bloodworks NW, a second sample for blood type confirmation is still required for these patients.
    - BBR22 U: Test Result Review (Reaction Results)-testing performed in last 3 days of backup. Review this to determine if there is an active specimen available for allocation

- All communications that require TSL MD on call approval must be documented on the ***TSL Shift Hand Off Log***
- During SQ downtime, if no blood component order available for the patient or if unable to determine if a component order has been placed, request a new order from the clinical team to facilitate the process

SPECIMEN REQUIREMENTS:
NA

REAGENTS/SUPPLIES/EQUIPMENT:

Reagents:	Supplies:	Equipment:
NA	NA	NA

QUALITY CONTROL:
NA

INSTRUCTIONS:

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EPIC Downtime-Sunquest Online

<table>
<tr><th>STEP</th><th>ACTION</th></tr>
<tr><td>1</td><td>Receive and time stamp manual requisition Transfusion Services Test & Blood Product Request Form (UH3364)</td></tr>
<tr><td>2</td><td>Perform Blood Bank Inquiry in SQ
<table>
<tr><th>If</th><th>Then</th></tr>
<tr><td>Patient found in SQ</td><td>Go to next step</td></tr>
<tr><td>Patient not found in SQ</td><td>Register patient in SQ</td></tr>
</table></td></tr>
<tr><td>3</td><td>
<table>
<tr><th>If order is for</th><th>Then</th></tr>
<tr><td>Testing</td><td>• Enter and receive the order in SQ per SOP Specimen Acceptability and Receiving Test Orders</td></tr>
<tr><td>Blood Component</td><td>• Enter and receive the order in SQ per SOP Blood Component Order Receipt and Processing</td></tr>
</table></td></tr>
</table>

Sunquest Planned Downtime-Inventory Preparation

<table>
<tr><th>STEP</th><th>ACTION</th></tr>
<tr><td>1</td><td>Prior to planned downtime event perform the following in the preceding hours
• Perform SQ backup per SOP Sunquest-Patient History Backup Reports
• Thaw, perform blood component processing and relabel any plasma or cryoprecipitate for any pending transfusion orders
• Allocate thawed component to patient and attach Transfusion Records for any pending transfusion orders
• Allocate red cell components for any pending transfusion orders
• Order and receive inventory from blood suppliers
• Perform donor blood type confirmation for any unprocessed red cell components

Note: For anticipated downtime of several hours, additional frozen plasma may be thawed and kept in storage</td></tr>
<tr><td>2</td><td>Print inventory list of blood components
• Log into SmarTerm and enter the following at the specified prompt

<table>
<tr><th>AT PROMPT</th><th>ENTER</th></tr>
<tr><td>FUNCTION</td><td>• BBR
• Press <ENTER></td></tr>
<tr><td>PRINTER</td><td>• SQ Printer #
• Press <ENTER></td></tr>
<tr><td>Use Host <A></td><td>• Press <ENTER></td></tr>
<tr><td>SELECT OPTION?</td><td>• 2
• Press <ENTER></td></tr>
<tr><td>HOSPITAL ID</td><td>• U
• Press <ENTER></td></tr>
<tr><td>HOSPITAL ID</td><td>• Press <ENTER></td></tr>
<tr><td>AREA</td><td>• Press <ENTER></td></tr>
<tr><td>AREA</td><td>• Press <ENTER></td></tr>
<tr><td>HOSPITAL SELECTED</td><td>• A
• Press <ENTER></td></tr>
<tr><td>EARLIEST EXPIRATION DATE</td><td>• Press <ENTER></td></tr>
<tr><td>EARLIEST EXPIRATION TIME</td><td>• Press <ENTER></td></tr>
<tr><td>COMPONENT TYPE/GROUP</td><td>• Press <ENTER></td></tr>
<tr><td>STATUS</td><td>• INV
• Press <ENTER></td></tr>
<tr><td>STATUS</td><td>• Press <ENTER></td></tr>
<tr><td>ABO-RH</td><td>• Press <ENTER> to select default</td></tr>
<tr><td>PRINT DETAIL? Y/N</td><td>• Press <ENTER> to select default</td></tr>
<tr><td>UNITS WITH PRODUCT TESTING</td><td>• Press <ENTER> to select default</td></tr>
<tr><td>ACTIVE UNITS ONLY</td><td>• Press <ENTER> to select default</td></tr>
</table>
</td></tr>
</table>

	ACCEPT, MODIFY OR REJECT	• A • Press <ENTER>

Specimen Receipt and Patient History Check using Backup Reports

<table>
<tr><th>STEP</th><th>ACTION</th></tr>
<tr><td>1</td><td>Timestamp any manual test requisitions received in TSL</td></tr>
<tr><td>2</td><td>
<table>
<tr><th>If</th><th>Then</th></tr>
<tr><td>Specimen</td><td>• Verify sample acceptability per SOP Specimen Acceptability and Receiving Test Orders
• Go to next step</td></tr>
<tr><td>Blood Component Order</td><td>Go to step 4</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Receive specimen on Downtime Order Entry Log and document the following
• Downtime Accession number (“A” labels with barcode) to track and label specimen with A labels. Patient information does not need to be written on A label as long label does not cover patient information on the tube.
• Patient name and MRN
• Type of test requested- TSCR ,ABRH2 etc
• Date and time of receipt
• Tech ID

Note: SCCA and NW campus specimens will arrive with a Downtime Order Entry Log. Timestamp log upon receipt in TSL. Downtime accession label will accompany the specimens from both locations. If no downtime label present, apply “A” label and document on Downtime Order Entry Log</td></tr>
<tr><td>4</td><td>Perform Patient History Check. Refer to SOP Sunquest-Patient History Backup Reports Section Searching Backup Files reports BBR6, BBR15 and BBR22

Note: The date of the report indicates when last backup was performed. Testing performed after backup report will not be available and sample may need to be tested again if no results available for sample accession on Ortho Vision or Type and Screen Downtime Worksheet</td></tr>
<tr><td>5</td><td>
<table>
<tr><th>If</th><th>Then</th></tr>
<tr><td>Specimen</td><td>Go to section Patient Testing

Note: Notify clinical team or NW TSS or SCCA TSS for appropriate areas if a second specimen is required</td></tr>
<tr><td>Blood Component Order</td><td>Go to section Crossmatch and Allocation of Blood Components</td></tr>
</table>
</td></tr>
</table>

Patient Specimen Testing

STEP	ACTION
1	Prepare specimen for testing per SOP
2	Perform Patient History Check. Refer to SOP ***Sunquest-Patient History Backup Reports*** Section ***Searching Backup Files*** reports BBR6, BBR15 and BBR22 **Note:** The date of the report indicates when last backup was performed. Testing performed after backup report will not be available and sample may need to be tested again if no results available for sample accession on Ortho Vision or ***Type and Screen Downtime Worksheet***
3	**If testing is done by** / **Then** Ortho Vision: "A" labeled barcode can be used; Program appropriate test on Vision; Include patient MRN Manual Testing: Document test results and interpretation on ***Type and Screen Downtime Worksheet***
4	Print all test results from Ortho Vision

Crossmatch and Allocation of Blood Components

STEP	ACTION
1	Timestamp any manual test requisitions received in TSL
2	Perform Patient History Check. Refer to SOP ***Sunquest-Patient History Backup Reports*** Section ***Searching Backup Files*** reports BBR6, BBR15 and BBR22 **Note:** The date of the report indicates when last backup was performed. Testing performed after backup report will not be available and sample may need to be tested again if no results available for sample accession on Ortho Vision or ***Type and Screen Downtime Worksheet***
3	Select appropriate blood component per SOP and blood component order
4	**If** / **Then** RBC or Granulocyte: • Perform immediate spin crossmatch on all patients • Perform AHG crossmatch if patient has antibodies or antibody screen is positive • Document history check and crossmatch results on ***Crossmatch Downtime Worksheet*** • Go to next step Plasma or Cryo: • Go to Section **Blood Component Processing** if needed • Go to next step
5	Allocation and tagging blood components

	If	**Then**
	RBC or Granulocyte	Complete transfusion record per Appendix A **Reference Table of Blood Component Types** and Appendix B **Downtime Transfusion Record Example-Red Cell Component** **Note:** Expiration time of component is needed if component expires prior to 23:59
	Plasma or Cryo	Complete transfusion record per Appendix A **Reference Table of Blood Component Types** and Appendix C **Downtime Transfusion Record Example-Plasma Component** **Note:** Expiration time of component is needed if component expires prior to 23:59
6	**If Transfusion is at**	**Then**
	Montlake	Place component in appropriate storage or go to Section: **Issue and Return of Blood Components**
	NW campus or SCCA campus	• Complete Packing section of ***Downtime Component Transport Log*** • Pack component for transport • NW and SCCA will send ***Downtime Component Transport Log*** back to TSL after receipt of blood components

Blood Type Confirmation of Red Cell Components

STEP	ACTION
1	Check inventory list or BBR2 in Backup reports if blood component is in available status **If Blood Component is in** / **Then** Available status / Component can be used for allocation and issue Not in Available status / Component will need blood type confirmation Go to next step
2	Perform donor type confirmation testing **If donor type confirmation done** / **Then** Manually / Record results on *Crossmatch Downtime Worksheet* Vision / Print results Go to next step
3	Verify that the donor type confirmation test results match the label on the component **If results** / **Then** Agree / • Component can be used for allocation and issue Disagree / • Quarantine blood component • Complete QI

Blood Component Processing

STEP	ACTION
1	Check inventory list or BBR2 in Backup reports if blood component is in available status
2	Perform component processing per appropriate procedure
2	Perform LIS component processing per SOP ***LIS Downtime Blood Component Labeling.*** Document on ***Downtime Blood Component Prep Log***

Issue and Return of Blood Components

STEP	ACTION
1	Verify patient attributes and requirements are being met using Backup report BBR6 and BBR15
2	Refer to SOP ***Issuing Blood Components*** to complete issue of component
3	Document issue of blood component on ***Downtime Issue Log***
4	Refer to SOP ***Returning Issued Blood Components to Inventory*** when returning blood component
5	Document return of blood component on ***Downtime Issue Log***
6	Place component in appropriate storage

CALCULATIONS/INTERPRETATIONS/RESULTS REPORTING/NORMAL VALUES/CRITICAL VALUES

NA

CALIBRATION:

NA

PROCEDURE NOTES AND LIMITATIONS:

- Backup is performed daily on any testing performed till midnight of prior day. Example: backup done on 5/16/22 will include any testing performed up until midnight of 5/15/22. Any testing performed after midnight will not be available until a data extraction is performed and another backup is performed.

REFERENCES:

Standards for Blood Banks and Transfusion Services, American Association of Blood Banks, Bethesda, MD. Current Edition.

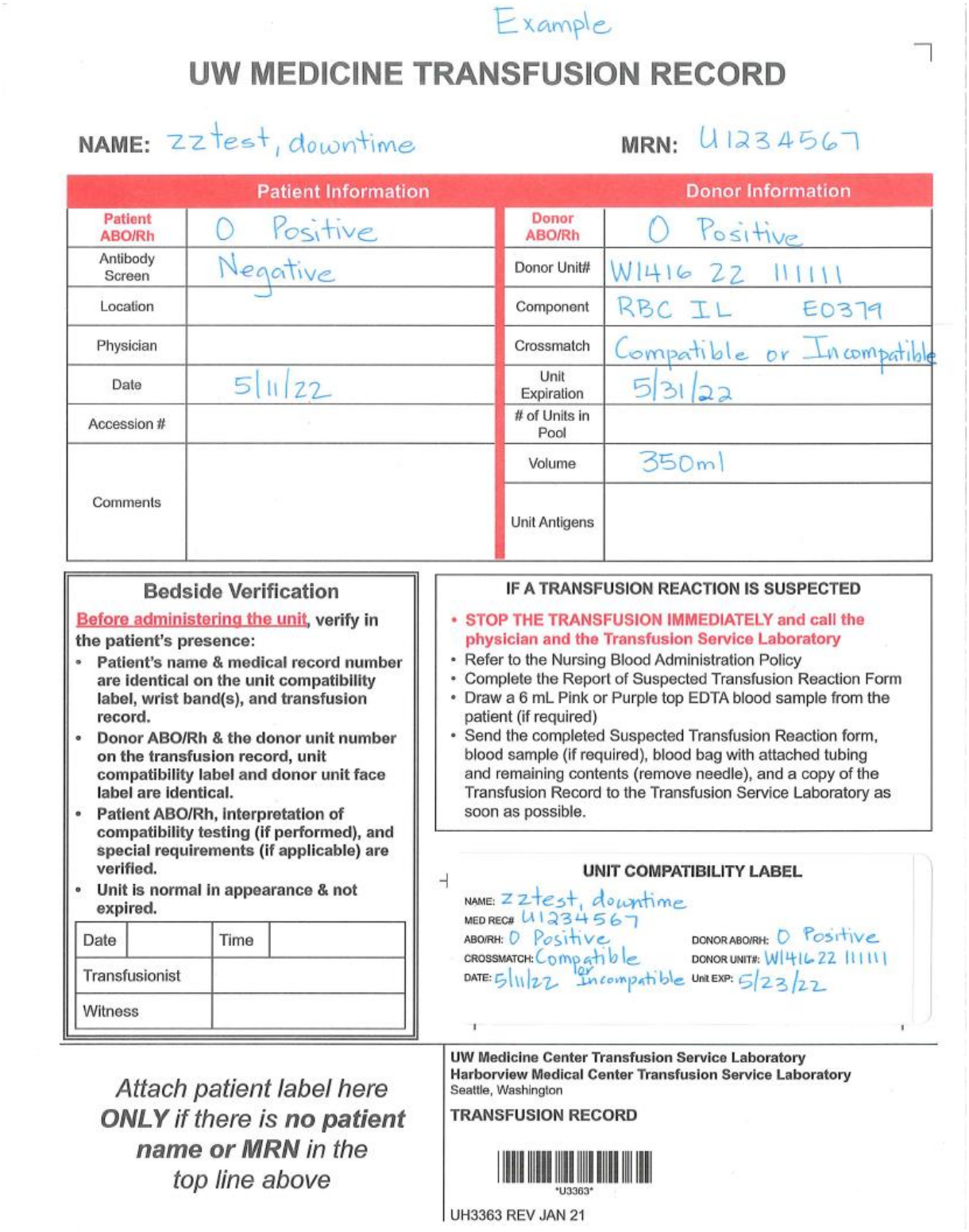
RELATED DOCUMENTS:
FORM *Downtime Order Entry Log*
FORM *Downtime Issue Log*
FORM *Downtime Component Transport Log*
FORM *Downtime Blood Component Prep Log*
FORM *Type and Screen Downtime Worksheet*
FORM *Crossmatch Downtime Worksheet*
FORM *UH3363 UW Medicine Transfusion Record*
FORM *U3934 Emergency Release of Uncrossmatched Blood*
FORM *UH3364 Transfusion Services Test & Blood Product Request*
FORM *UH2344 Blood Product Release*
SOP Sunquest-Patient History Backup Reports
SOP LIS Downtime Blood Component Labeling

APPENDICES:

Appendix A: Reference Table of Blood Component Types

Component Type	**Enter the following in Component field of Transfusion Record**
Platelet Irradiated Leukoreduced	PLT IL
Platelet Pathogen Reduced	PLT PR
Platelet PAS Pathogen Reduced	PLT PAS PR
Platelet PAS Irradiated Leukoreduced	PLT PAS IL
Platelet Pathogen Reduced 1st container	PLT PR 1st cont
RBC Irradiated Leukoreduced	RBC IL
RBC Irradiated Leukoreduced, 1st container	RBC IL 1st cont
Plasma	Plasma
Plasma AO	Plasma AO
Cryoprecipitate	Cryo
Granulocyte	Granulocyte

Appendix B: Downtime Transfusion Record Example- Red Cell Component



Example

UW MEDICINE TRANSFUSION RECORD

NAME: zztest, downtime **MRN:** U1234567

Patient Information		Donor Information	
Patient ABO/Rh	O Positive	Donor ABO/Rh	O Positive
Antibody Screen	Negative	Donor Unit#	W1416 22 111111
Location		Component	RBC IL E0379
Physician		Crossmatch	Compatible or Incompatible
Date	5/11/22	Unit Expiration	5/31/22
Accession #		# of Units in Pool	
Comments		Volume	350ml
		Unit Antigens	

Bedside Verification

Before administering the unit, verify in the patient's presence:

- Patient's name & medical record number are identical on the unit compatibility label, wrist band(s), and transfusion record.
- Donor ABO/Rh & the donor unit number on the transfusion record, unit compatibility label and donor unit face label are identical.
- Patient ABO/Rh, interpretation of compatibility testing (if performed), and special requirements (if applicable) are verified.
- Unit is normal in appearance & not expired.

Date		Time	
Transfusionist			
Witness			

IF A TRANSFUSION REACTION IS SUSPECTED

- STOP THE TRANSFUSION IMMEDIATELY and call the physician and the Transfusion Service Laboratory
- Refer to the Nursing Blood Administration Policy
- Complete the Report of Suspected Transfusion Reaction Form
- Draw a 6 mL Pink or Purple top EDTA blood sample from the patient (if required)
- Send the completed Suspected Transfusion Reaction form, blood sample (if required), blood bag with attached tubing and remaining contents (remove needle), and a copy of the Transfusion Record to the Transfusion Service Laboratory as soon as possible.

UNIT COMPATIBILITY LABEL

NAME: zztest, downtime
MED REC#: U1234567
ABO/RH: O Positive
DONOR ABO/RH: O Positive
CROSSMATCH: Compatible or Incompatible
DONOR UNIT#: W1416 22 111111
DATE: 5/11/22
Unit EXP: 5/23/22

Attach patient label here ***ONLY*** *if there is* ***no patient name or MRN*** *in the top line above*

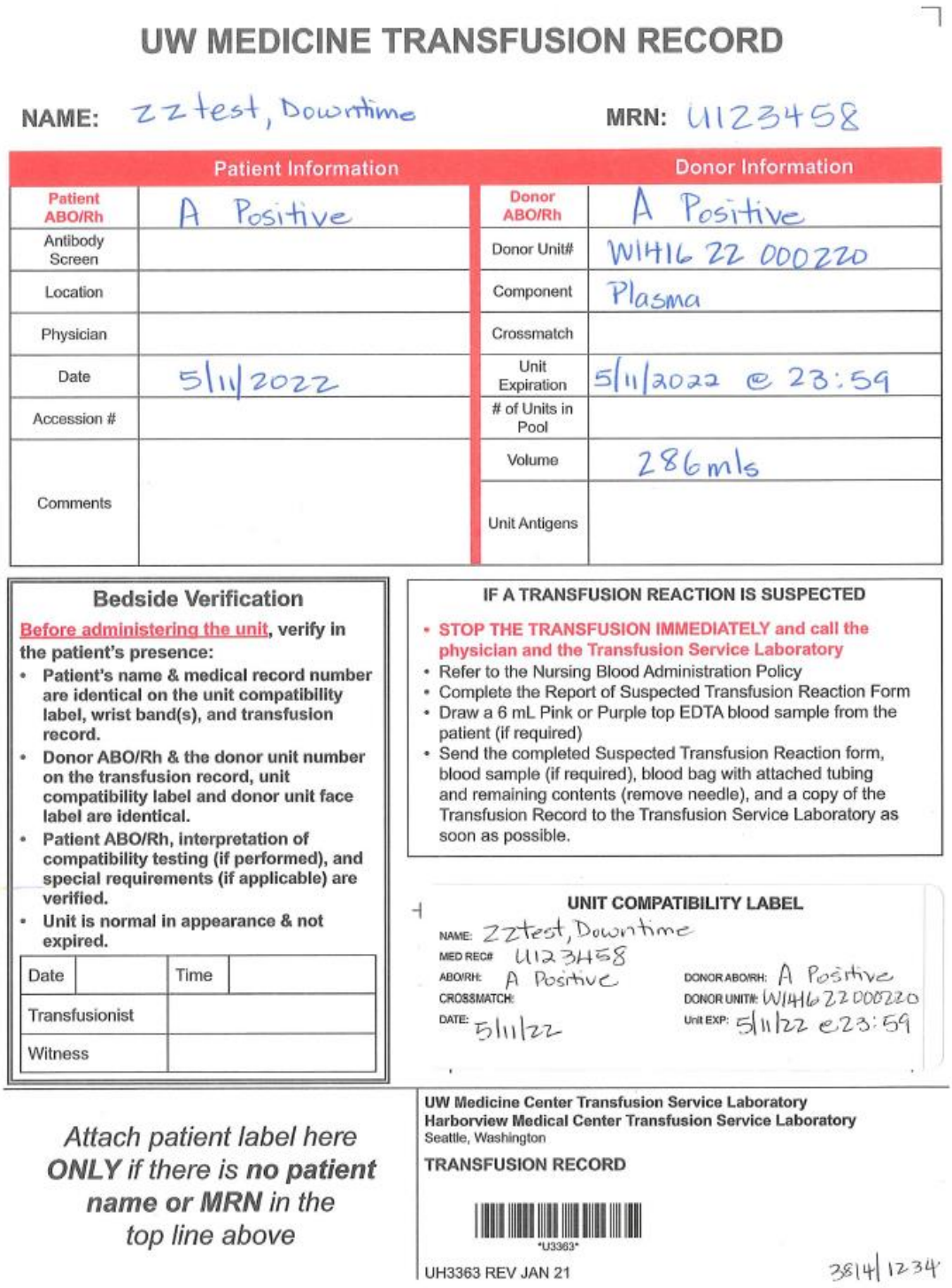
UW Medicine Center Transfusion Service Laboratory
Harborview Medical Center Transfusion Service Laboratory
Seattle, Washington

TRANSFUSION RECORD

U3363

UH3363 REV JAN 21

Appendix C: Downtime Transfusion Record Example- Plasma Component



UW MEDICINE TRANSFUSION RECORD

NAME: ZZtest, Downtime **MRN:** U123458

Patient Information		Donor Information	
Patient ABO/Rh	A Positive	Donor ABO/Rh	A Positive
Antibody Screen		Donor Unit#	W1416 22 000220
Location		Component	Plasma
Physician		Crossmatch	
Date	5/11/2022	Unit Expiration	5/11/2022 @ 23:59
Accession #		# of Units in Pool	
Comments		Volume	286mls
		Unit Antigens	

Bedside Verification

Before administering the unit, verify in the patient's presence:

- Patient's name & medical record number are identical on the unit compatibility label, wrist band(s), and transfusion record.
- Donor ABO/Rh & the donor unit number on the transfusion record, unit compatibility label and donor unit face label are identical.
- Patient ABO/Rh, interpretation of compatibility testing (if performed), and special requirements (if applicable) are verified.
- Unit is normal in appearance & not expired.

Date		Time	
Transfusionist			
Witness			

IF A TRANSFUSION REACTION IS SUSPECTED

- STOP THE TRANSFUSION IMMEDIATELY and call the physician and the Transfusion Service Laboratory
- Refer to the Nursing Blood Administration Policy
- Complete the Report of Suspected Transfusion Reaction Form
- Draw a 6 mL Pink or Purple top EDTA blood sample from the patient (if required)
- Send the completed Suspected Transfusion Reaction form, blood sample (if required), blood bag with attached tubing and remaining contents (remove needle), and a copy of the Transfusion Record to the Transfusion Service Laboratory as soon as possible.

UNIT COMPATIBILITY LABEL

NAME: ZZtest, Downtime
MED REC#: U123458
ABO/RH: A Positive
CROSSMATCH:
DATE: 5/11/22
DONOR ABO/RH: A Positive
DONOR UNIT#: W1416 22 000220
Unit EXP: 5/11/22 @ 23:59

Attach patient label here ***ONLY*** *if there is* ***no patient name or MRN*** *in the top line above*

UW Medicine Center Transfusion Service Laboratory
Harborview Medical Center Transfusion Service Laboratory
Seattle, Washington

TRANSFUSION RECORD

U3363

UH3363 REV JAN 21

3814 1234

UWMC SOP Approval:			
UWMC CLIA Medical Director	Andrew Bryan, MD	Date	
Transfusion Service Manager	Nina Sen	Date	
QA Manager	Tayler Reeves	Date	
Transfusion Service Medical Director	Monica Pagano, MD	Date	
UWMC Biennial Review:			
		Date	
		Date	