



Bridge Blood Transfusion Blood Bank Processes

October 31, 2022

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Overview of Bridge Transfusion Administration

- **Bridge Transfusion Administration** supports patient safety through Positive Patient Identification (PPID) at the bedside.
- **Bridge Transfusion Administration** improves productivity and workflow through bar-code technology. Scan the blood bank recipient document and compare this to the donor bank label on the blood product. This ensures patients are receiving the specified unit of blood that was typed and crossmatched for them.
- **Bridge Transfusion Administration** allows positive identification of the patient as well as validation of the administration of blood products using bar code technology at the bedside.
- **Bridge Transfusion Administration** includes the following features:
 - Identifies and documents potential system administration errors for process improvement analysis.
 - Allows printing of transfusion records, management reports, and error-tracking reports.
 - Provides reminder and warning messages regarding the start of a transfusion event and vital signs collection.

Identifying a Patient

- Scan the patient's wristband to identify the patient. The system populates the Patient ID box with the following text: **Looking for patient**. When the system locates the patient, the patient main menu is displayed.

Reviewing the Main Menu

- The patient demographic information is displayed at the top of the main menu when the patient is identified.

- The information below is displayed in the demographics bar:
 - Patient Name: Name is displayed in the format Last, First, Middle.
 - ID Number: The ID number is the patient’s Financial Identifier Number (FIN).
 - Patient Age: If the patient is deceased, age is followed by (D).
 - Patient Gender
 - Patient Date of Birth
 - Patient MRN
 - Patient Blood Type
 - Patient Bed



- Patient information in the demographics bar, except blood type, is displayed through an interface with the organization’s admission, discharge, transfer (ADT) system.
- There is an **action** button for transfusions under the demographics bar.
- When an action is complete, the system displays the **patient main menu**. From the PathNet menu, users can view the Identify Patient page or log out. Click the **X** (Close) button in the upper right corner to view the Identify patient page. Click **Log Out** to log out.

Viewing Laboratory Results

- Results for selected laboratory Procedures can be viewed in Bridge Transfusion Administration.
 - Select **Results** to display laboratory results sent from the laboratory information system. Bridge displays one set of results for each procedure. The latest results are displayed based on the collection date and time. The Results sections is active and available on the Start Transfusion pages, Raped Start Transfusion pages, and the patient main menu. A message will display if no results are available.



The following results information is displayed:

Name	Description
Date and Time	The collection date and time of the procedure.
Test	The procedure name as defined in the System Manager.
Result Value	The result value sent from the LIS with any flags and the reference range with the units of measure.

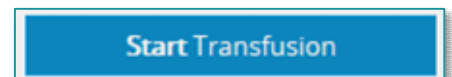
NOTE: If labs are drawn on another encounter, they do not display in the Bridge System. They can be viewed in Results Review.

Viewing Dispensed Blood Products

- Some blood bank systems can send transactions outbound when blood products are dispensed. Select **Products** to display the information about the blood dispensed. The unit information includes the dispensed date and time, blood product name, volume (if indicated), unit number and donor blood type.
- The blood products are displayed on the time frame defined in System Manager. The default is 5 hours from the dispensed time.
- If the patient does not have any dispensed blood products, or the time has elapsed for displaying the products, the system displays a message indicating so. You can collapse the blood product information and return the page to normal. The Products button is available in all Start Transfusion pages, Rapid Start Transfusion pages, and on the patient main menu.

Starting a Transfusion

- Complete the following steps to start a transfusion:
 - Scan the ID bar code on the patient's wristband.
 - Select **Start Transfusion**. The system will display a warning if the patient has not had a predefined blood bank procedure collected, or if the transfusion was started but not ended.
 - If required, scan the secondary identifier.
 - Complete any pretransfusion checks. These are recorded in the Transfusion report and the Transfusion Reactions report.
 - On the recipient page, scan the required information.



Start Transfusion

*MRN: 3371803

*Patient name: TESTPATIENTPPID, AARON A

*Unit number: W12345678

*Patient blood type: O positive

Comments: 60

Start Transfusion

* Transfusion order reviewed

* Informed consent verified per policy

* Pre-transfusion medications given

* IV Site:

* Blood filter utilized

Transfusion education provided

Blood warmer used

IV pump used

Pressure bag used

- On the Donor page, scan the required information.
- Obtain a cosignature for the transfusion. Have a second user enter their ID and password (This is their network sign on and password).

Start Transfusion

Proposed Transfusion

Unit number: W12345678

Blood product: CPDA-1 RBCs

Donor blood type: O positive

Patient blood type: O positive

Cosignature

I confirm that this transfusion is accurately recorded.

*User ID:

*Password:

- Record the pretransfusion vital signs.

The screenshot shows a 'Start Transfusion' form with the following fields and values:

- Observation Date/Time: 5/29/2020 11:16 EDT
- *Temperature: 36.1 °C, 97.0 °F
- *Site: Tympanic
- *Heart Rate: 76 beats/minute
- *Site: Radial
- *Blood Pressure: 136 / 78 mmHg
- *Method: Cuff - Arm, Right
- *Respirations: 18 breaths/minute
- O² Saturation: %
- Comment: (empty)

The screenshot shows the bottom portion of the 'Start Transfusion' form with the following elements:

- Start Transfusion
- Select START after spiking the blood bag and starting the infusion.
- Start (blue button)
- Exit (grey button)

- Complete any additional **Start Transfusion** checks.
- Select **Start** to administer the blood product.

Entering Recipient Information

- Bridge Transfusion Administration is used with a bar-coded crossmatch recipient document generated by the blood bank. The crossmatch recipient document has the following purposes:
 - The crossmatch recipient document ensures that the delivered blood product belongs to the patient by verifying that the patient information matches. This information includes the primary patient identifier, secondary identifier, and patient name.
 - The crossmatch recipient document establishes the unit number assigned to the patient that is compared to the donor unit number. If configured, it can also initially record the patient blood type for comparison to the donor blood type and validate that the patient blood type is identical to what was previously recorded.
 - The crossmatch recipient document can replace the manual double-checking of patient and donor blood types, and patient and donor unit numbers by two individuals. An electronic cosignature will occur in the system.
 - Complete the following information on the Recipient page:

Name	Description
Patient ID	This ID can be the patient’s account number or the patient’s medical record number.
Secondary ID	This ID corresponds to the secondary identifier that was captured from the transfusion – specific patient armband. If the secondary identifier is configured to be captured from the patient’s armband, this ID is always displayed on the recipient page.

Patient Name	This name corresponds to the patient’s name received through the Admit, Discharge, and Transfer (ADT) interface. Note that the Patient Name box is an optional item to be checked on the crossmatch recipient document.
Unit Number	This is the number that has been assigned to this blood product.
Patient Blood Type	This is the blood type that the blood bank has determined for the patient. The first time the patient has a transfusion in Bridge Transfusion Administration, the blood type is recorded and reflected in the patient demographics bar. All future blood product administrations that require blood type matching between the donor and the recipient are compared against this recorded blood type. This box is not displayed if the Patient Blood Type box is disabled on the Recipient page.
User ID	This box is displayed if the user has privileges to change the patient’s blood type with cosignature. Enter or scan the witness user ID in this box.
Password	This box is displayed if the user has privileges to change the patient’s blood type with cosignature. Enter or scan the witness password in this box. The system can be configured to not require the password when the User ID is scanned. In this case, the box is removed when the user ID is scanned.
Comments	Users can enter up to 60 characters of free text in the Comments box. Comments are optional.

- For each of the options above, when scanning a bar code, the system advances to the next box if there are no errors and the value is accepted. If the bar code is unavailable and the information is manually entered, press **ENTER** for each box. As each entry is completed, the system ensures that the value is acceptable. If a value is not expected, the system stops the user from continuing. For example, if the unit number is scanned instead of the patient’s ID, the transfusion process stops. Users are given an opportunity to correct the information, or to exit the transfusion process.
- When all information on this page is scanned or entered successfully, select **Continue** to advance to the Donor page.

Entering a Non-ISBT Unit Number with a Subunit ID

- It may be necessary to transfuse a blood product that has been divided from the original unit. The system accommodates this with International Society of Blood Transfusion (ISBT) units in the donor product bar code. To accommodate this process with Codabar bar codes, it is performed with the unit bar code. The system accepts the subunit ID with the unit number on the Recipient page and prompts for the information on the Donor page to validate against.

- The crossmatch recipient document contains a bar code for the unit number that includes the subunit ID (or division) value. The bar code must be configured with the correct prefix, unit number, percentage, and the subunit ID (division) value, or scan the bar code with the value. When the correct value is entered, the system accepts the value and prompts for the blood product.

Entering Donor Information

- The Donor page contains information on the blood product. Users can complete the following information:

Name	Description
Expiration	If configured, scan the expiration bar code for the unit. This is the expiration of the blood product being transfused. Each blood product can be separately configured to require a check for expiration date, a check for expiration date and time, or no expiration check.
Donor Blood Type	This is the blood type of the donor unit. The blood type on the donor center label must match or be a suitable substitution for the blood type scanned on the Recipient page. While the human-readable value for both the donor and the recipient are typically identical, Bridge Transfusion Administration can distinguish between the patient and donor blood types by the characteristics assigned to each bar code.
Blood Product	This is the code established for each blood product the hospital blood bank issues for transfusion.
Center Code	This is the code of the donor center that collected the unit from the donor. The hospital determines if documenting this information is required and can be displayed on the Donor page. This determination is made at the Point of Care (POC) level. For Red Cross units, scan the bar code for the donor center code. For International Society of Blood Transfusion (ISBT) units, the system determines the donor center from the unit number and populates this box automatically. If you cannot scan the bar code, manually select the correct donor center code and press ENTER .
Unit Number	This is the unit number the donor center has assigned to the blood product. The unit number on the donor center label must match the unit number scanned on the crossmatch recipient document. While the human-readable value on both the recipient document and the donor label is identical, Bridge Transfusion Administration can distinguish between the patient and donor unit numbers by the characteristics assigned to each bar code.

Attributes	<p>Blood product attributes can be assigned to each blood product. Individual blood products can have specific attributes requested by the physician. For example, the physician can request packed red blood cell units that have been irradiated for the patient. This configuration allows documentation of the specific attributes of each blood product given to the patient.</p> <p>All possible attributes may not apply to all blood products. The assignment of attributes to blood products is not required.</p> <p>If attributes are assigned to a product, during the Start Transfusion process you can select None or any of the defined attributes for the specific product being administered. If None is selected, it is mutually exclusive and no other blood product attributes can be selected during the administration process.</p> <p>Check box values can be manually selected or the user can scan a bar code predefined to the corresponding attribute. Scanning the bar code selects the attribute and users can continue scanning instead of manually selecting the value.</p> <p>The ISBT 128 standard defines specific product codes for each of the possible blood product and attribute contributions. The need to document the potential attributes can be eliminated with the use of blood product codes. Blood products can also be configured so the check that compares the donor blood type and the recipient blood type is not performed. This can be appropriate for blood products where a patient can receive any blood type of the blood product.</p>
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- After the required information has been entered, select **Continue**. Required information includes the unit number, center code (if required for that POC), blood product, attributes (if applicable), expiration date and time (if applicable), and blood type.

Scanning an Autologous Unit

- For non-ISBT units, the same bar code value is typically used to indicate an autologous unit for the blood type. The actual value is configured in System Manager. When users scan the donor blood type of an autologous unit from the donor label on the Donor page, the system displays the following message: **The bar code scanned is for an autologous unit, please manually select the donor blood type from the dropdown list.**
- Select the identical blood type to the patient blood type to continue. An exact match is required.

- When entering the donor information, Bridge Transfusion Administration ensures that the bar code scanned is appropriate, and that the value is acceptable. If any value is not expected, Bridge Transfusion Administration stops users from continuing. Users are given an opportunity to correct the information or may exit the transfusion process.
- The system validates each item on the Donor page using the following criteria:
 - The correct bar code is scanned,
 - The unit number scanned on the Recipient page for the patient is identical to the unit number scanned on the Donor page for the donor.
 - The donor unit number and product code combination are unique and has never been previously administered.
 - The patient blood type and the donor blood type are identical, or the donor blood type is a suitable substitution.

Entering ISBT Unit Numbers and Blood Products

- The ISBT 128 standard for the unit number is a 15-character bar code. The bar code contains a 13-character unit number (comprising a 5-character ISBT donor center code, 2-character year of collection, and 6-character serial unit number), and 2 flag characters in the 14th and 15th positions. These flag characters are an optional feature used for process control and are not a part of the unique identification of the product. Because of this, the flag characters are always removed from the unit number if they are scanned with the unit number on both the Recipient and Donor pages. Only the first 13 characters are saved as the unit number.
- There is subtle difference between the Codabar and ISBT 128 versions of the Donor page. The information on the ISBT 128 Donor page is identical to the Codabar Donor page except for the unit number and blood product.
- As stated above, the unit number on the donor center label is a 15-character ISBT 128 bar code. The first five characters of the bar code identify the donation center where the unit of blood was physically collected. As such, the Center Code box is not available upon entry of the donor and is populated until the ISBT 128 donor unit number is entered.
- Complete the following steps to enter ISBT unit numbers and blood products:
 1. Scan or manually enter the ISBT 128 donor unit number. The system populates the Center Code box with the first five characters of the donor unit number.
 2. If a donor unit number is manually entered, enter the check digit value. This value is located on the physical donor center label, in a box at the end of the bar code. The system validates the unit number and check digit. If acceptable, the check digit box disappears, and the Center Code value is displayed.

3. Scan, manually enter, or search for the blood product. This value is typically like the following example: E0336V00.
 - If a value is manually entered, the system populates the Blood Product, Donation Type, and Division boxes.
 - If searching for the blood product, select **Blood Product Lookup**. Select a value, such as Red Blood Cells, and then select the correct product. The system populates the Blood Product box, and users must manually enter the donation type and division value.
- The Expiration Timestamp and Donor Blood Type boxes behave the same regardless of which format (Codabar or ISBT 128) is used by the donor center in labeling the blood product.

Using Concatenated Scanning

- The system can accommodate scanning more than one bar code on the donor center label, or a single two-dimensional (2D) bar code containing all the donor center elements. For a concatenated scan to occur, the bar-code scanner must be configured to accept concatenated scans or must be configured to read 2D bar-code symbology.
- When scanning a concatenation of ISBT bar codes or a 2D bar code, the multiple values are parsed into their respective elements (unit number, product code, expiration, or blood type). The system displays the Donor page, and the donor label information can be entered in any order. Therefore, none of the data elements are unavailable. The ISBT center code is the only exception because it is based on the donor unit number and cannot be edited.

Substituting a Blood Type

- When the blood type of the donor product does not match the patient's blood type, the system displays the following warning message: **This blood type does not match the patient's blood type [blood type value]. Do you want to continue with the transfusion?**
- The message is only displayed if the blood product being given requires matching between the donor and the recipient blood type, and the donor's blood type is a suitable substitution. The warning message is displayed in a yellow dialog box when the blood type mismatch is for blood type level 2 substitution. For other blood type substitutions, the warning message is displayed in a red dialog box. Select **Yes** to continue, and the system displays the Cosign page. Select **No** to remove the warning message and return to the Blood Type box on the Donor page.
- The Cosign page summarizes the discrepancies between the patient's blood type and the donor's blood type. Depending on configuration, the following prompts may be displayed.

Prompt	Description
<p>Has the blood type substitution been approved by the blood bank?</p>	<p>Valid responses are Yes and No. Users can select a response from the list, enter the first character of the response, or use the arrow keys to this question. If No is selected, the page is updated with the following error message: A question has been answered as No indicating the substitution is not approved.</p> <p>Select Exit to cancel this transfusion.</p>
<p>Do you agree with the substitution?</p>	<p>Valid responses are Yes and No. If No is selected, the page is updated with the following error message: A question has been answered as No indicating the substitution is not approved.</p> <p>Select Exit to cancel this transfusion.</p>
<p>Reason for blood type substitution?</p>	<p>The blood type mismatch reasons are defined by the client in System Manager. There are several methods to enter the reason for substitution: select a response from the list, enter the first character of the reason, or use the arrow keys to select the reason for substitution.</p> <p>This prompt is always displayed when substituting a blood type.</p>

- Additional questions may be asked before this page can be completed. The questions can be set at the substitution chart and for the individual blood product. If the responses are displayed, a selection is required. Valid responses to the additional processing prompts are **Yes** and **No**.
- Any authorized user who has the privilege to cosign transfusions can provide the mismatch cosignature for blood type substitution.

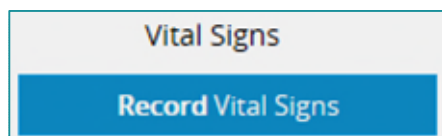
NOTE: If a user has the privilege to cosign, but the point of care (POC) does not require a cosignature for a mismatch, the option to continue without cosignature is displayed. When selected, this is noted on the Transfusion report and on the Browse Transfusion History page.

- While all transfusions intend for patients to receive an exact match for their specific blood type, this is not always possible or required based on the blood product being administered. Depending on the blood product being given, a difference between the donor and the patient blood types may not be an issue. For other products, such as packed red blood cells, type-specific donor units may not be available.

- Note that the check for identical blood types between the donor and the recipient is determined on a per blood product basis and defined in System Manager. Some products can have specific hospital-defined rules for acceptable blood type substitutions based on the patient's blood type and the donor's blood type. Acceptable blood type substitutions based on the blood product are defined in System Manager.
- Bridge Transfusion Administration does not determine compatibility of donor and recipient blood types for blood products. Compatibility of products between donor and recipient is determined in the blood bank, either through the blood bank's software applications or through manual processes. Bridge Transfusion Administration provides a mechanism for positive patient identification. Specifically, for blood product administration, Bridge Transfusion Administration matches the patient identification on the patient's wristband to information on the bar-coded recipient document. In addition, Bridge Transfusion Administration provides a means to electronically match the following information:
 - The patient's ABO/Rh on the recipient document and the donor's ABO/Rh on the blood product.
 - The patient's unit number on the recipient document and the donor's unit number on the blood product.

Recording Vital Signs

- Vital signs can be recorded during the Start, End, and Post-Transfusion Reactions workflows. Users can also select **Record Vital Signs** from the patient's main menu page.

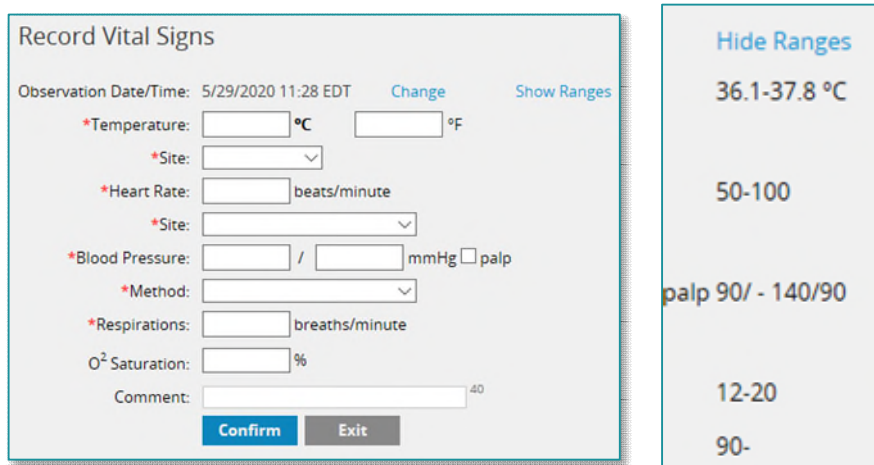


- If vital signs have previously been entered, information about the last vital sign entry is displayed at the bottom of the page.
- Enter the information below as appropriate to complete the vital sign entry. Press **TAB** to advance to the next box. Select **Continue** when complete. Required vital signs are indicated with a red asterisk.

Name	Description
Observation Date and Time	The current system date and time are displayed. Select Change to change the observation date and time, if necessary. Observation times can only be changed within two hours of the current time. Future dates and times are not accepted. Changing the observation time is not required.
Temperature	Enter a number for the patient's temperature. The option to record temperature as Centigrade, Fahrenheit, or both is determined during system implementation. If both are enabled and a value is entered for either Centigrade or Fahrenheit, the system converts the remaining value.
Site (Temperature)	From the list, select the site where the temperature was taken. If a temperature is recorded, the site of that temperature must also be recorded, regardless of the Required setting in System Manager
Heart Rate	Enter a number for the patient's heart rate.
Site (Heart Rate)	If Site is configured to be displayed, select the site where the heart rate was taken. If heart rate is recorded, the site of that heart rate also needs to be recorded, regardless of the Required setting in System Manager
Blood Pressure	Enter a number for the systolic blood pressure followed by a number for the diastolic blood pressure. If the blood pressure is taken by palpation, select the Measure by Palp check box, and do not enter the diastolic blood pressure.
Method	Select the method by which the patient's blood pressure was determined. If blood pressure is recorded, the method also needs to be recorded, regardless of the Required setting in System Manager.
Respirations	Enter a number for the patient's respirations.
Oxygen Saturation	Enter a number for the patient's oxygen saturation level.
Comment	There is a 40-character free-text comment associated with this set of vital signs. The comment is displayed on the Transfusion report. Entering a comment is optional and not required.

Viewing Reference Ranges

- The acceptable range for each vital sign parameter is defined in System Manager. If defined, users can select **Show Reference Ranges**. The system displays the ranges to the right of the vital signs. When entering vital signs, the system evaluates the entered value immediately and updates with the correct flag, if applicable. These flags are displayed next to each applicable vital sign in the following locations: The Browse Vital Sign History page, the Transfusion Details page (on the Browse Transfusion History page), the Transfusion report, the Transfusion Reaction report, and they are also included in outbound transactions.



- The following ranges will be used:

Name	Range
Temperature	36.1 – 37.8 Celsius
Heart Rate	50 - 100
Blood Pressure	90/ - 140/90
Respirations	12- 20
Oxygen Saturation	0 - 100

- Bridge Transfusion Administration is not intended to and does not validate that the recorded vital signs are compatible with human life.

Recording Vital Signs with CareAware iBus

- If CareAware iBus is installed and configured to pull vital signs from a device, simply scan the device bar code while on the vital signs page. The system then displays the data. Any reference range checking is applied at this time. The data can be modified if needed. The date and time come from the device and cannot be changed. Select **Continue** to accept the values.

NOTE: There is a known issue that Blood Pressures will not pull into the system. Blood Pressures will need to be manually entered into Bridge.

NOTE: After a transfusion is started, the system displays messages on the main menu page indicating when the transfusion was started and when the next vital signs can be recorded. The system displays the Record Vitals message only if the POC has been configured in System Manager to request vital sign entry at client-defined time intervals.

Understanding Delta Checking

- Delta checking can be set up in System Manager for each vital sign. Delta checking compares the vital sign value to the value entered during a Start Transfusion workflow. If more than one transfusion has been started on the patient, the system compares the values to the transfusion started first. Vitals entered after a transfusion has ended also have delta checking performed. The system uses the time defined in the following System Manager setting: **After a Transfusion has Ended include Vital Signs for [Number] Minutes.**
- Therefore, the system performs delta checking after a transfusion has ended for vital signs that were recorded in the number of minutes defined in the setting.
- Delta checking is performed during vital sign entry. For ad hoc vital signs, delta checking can be performed when the Start Transfusion event occurs within 300 minutes of the current date and time.

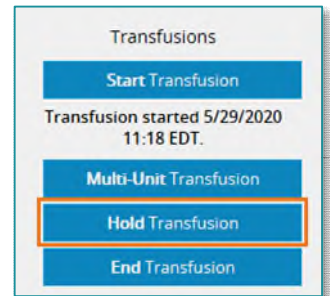
Completing Vital Signs Checks

- Depending on configuration, users may be required to perform vital sign checks. If vital signs have not been completed and the user attempts to move to the next page, the system displays an error message that lists each required check at the top of the checks table.

Holding a Transfusion

- After the blood product has been started, situations can occur that require temporarily stopping or holding a transfusion. See the following examples:
 - The patient's vein collapses and a new IV is needed.
 - The patient starts experiencing symptoms, but the physician approves continuing the transfusion.

- The transfusion can be stopped to engage and consult with the physician and administer medication. Then, the transfusion can be restarted.
- The Hold Transfusion button is only available when a transfusion has started, but not ended. After a transfusion has ended, you do not need to document a hold and the option is unavailable.
- Users must have the required privilege to access the Hold Transfusion workflow. If the user does not have the privilege, the Hold Transfusion button remains unavailable even after the transfusion has started for a patient.
- Complete the following steps to hold a transfusion:
 - Select **Hold Transfusion**. The Unit Number and Blood Product page is displayed



The 'Hold Transfusion' form has two input fields: '*Unit number:' and '*Blood product:'. Below these are 'Continue' and 'Exit' buttons. A section titled 'Active Transfusions' contains a table:

	Started	Unit #
<input type="radio"/>	5/29/2020 11:18 EDT	W23456789

- Scan or enter the unit number from the donor label or recipient document.
- Scan or select the product code from the donor label. If the product code is manually selected, and the unit number is a non-ISBT value, the system displays a list of hospital-defined available product codes. If an ISBT unit number was scanned, the system displays the **Blood Product Lookup** link.

NOTE: Depending on configuration, the system may display all units that have been started for the patient. A unit can be selected instead of scanning it.

- Select **Continue**. The Hold Transfusion page is displayed.
- Select the **Start Hold Transfusion Date and Time** box, and then select a date from the calendar. The time can be adjusted as needed. The current date and time are selected by default.

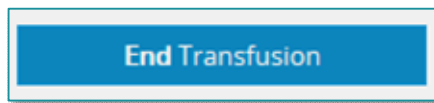
The 'Hold Transfusion' form shows the 'Start Hold Date and Time' field with a calendar open. The calendar is for May 2020, and the date 29 is selected. The 'End Hold Date and Time' field is empty. The 'Reason for Hold' dropdown is also empty. The 'Comments' field is empty. The current date and time are 'Today: May 29, 2020'.

NOTE: The hold date and time cannot be earlier than the start date and time of the transfusion. The start date and time are displayed on this page but cannot be edited.

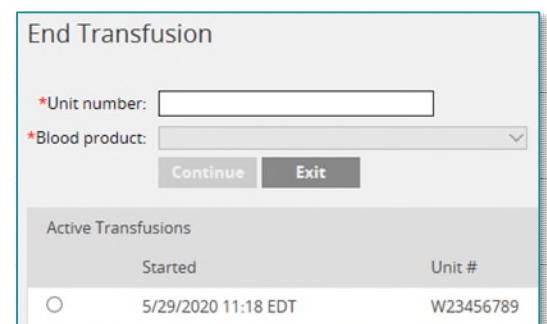
- Select a reason for holding the transfusion from the list.
 - Select the **End Hold Transfusion Date and Time** box, and then select a date and time. Alternatively, leave this information blank, and select the end date and time later.
 - Enter a comment, if needed.
 - Select **Continue** to save the information and return to the main menu page. If configured, a preview of the Preliminary Transfusion report is displayed with the transfusion information. If **Exit** is selected, the information is not saved.
- There can be several Hold Transfusion events for one transfusion.
 - If only the Start Hold Transfusion Date and Time and Reason for Hold Transfusion boxes are populated, the system considers the unit still in a **Hold** status. This does not prevent ending the transfusion. Hold functionality allows users to complete the hold process and document the time the transfusion was not being infused. Users can access the held transfusion again and enter the end date and time to denote the hold is no longer in effect. If **End Transfusion** is selected instead, the system notes that the hold is no longer applicable.

Ending a Transfusion

- Complete the following steps to end a transfusion:
 - Select **End Transfusion**. The Unit Number and Blood Product page is displayed.



- Scan or enter the unit number from the donor label or the recipient document. Depending on configuration, scanning may be required for the unit number and blood product.
- Scan or enter the product code from the donor label. If manually entering an ISBT unit, enter the entire value (for example, **E0336V00**). The system accepts the blood product, donation type, and division value, populating all three of the boxes.
- If unable to scan or manually enter the bar code, select **Blood Product Lookup**. The system displays the product class options. These are the values defined as the Blood Product Substitution Charts in System Manager.

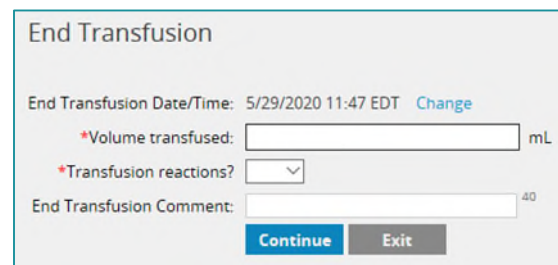
A screenshot of the "End Transfusion" screen. It features a title bar "End Transfusion" and two input fields: "*Unit number:" with a text box and "*Blood product:" with a dropdown menu. Below these are "Continue" and "Exit" buttons. At the bottom, there is a table titled "Active Transfusions" with columns "Started" and "Unit #". The table contains one row with a radio button, the date and time "5/29/2020 11:18 EDT", and the unit number "W23456789".

Active Transfusions	
Started	Unit #
<input type="radio"/> 5/29/2020 11:18 EDT	W23456789

- Select a value (for example, **Red Blood Cells**). The system displays the list of ISBT products.
- Select the correct blood product. The system populates the Blood Product box. Enter the donation type and division value manually.

NOTE: Depending on configuration, the system may display all units that have been started for the patient, users can select a unit instead of scanning it.

- Select **Continue**. The Volume Transfused page is displayed.
- The date and time the transfusion was ended can be adjusted if needed. Future dates and times are not accepted.
- If required, enter the volume transfused. A number from 0 – 9999 can be entered. The system accepts up to six characters, including a decimal.
- From the Transfusions Reactions list, select **Yes** or **No**. If **Yes** is selected, the Transfusions Reactions page is displayed. Complete the following steps if a reaction occurred:
 - From the Clinical Signs and Symptoms list, select the appropriate item or items.
 - A comment can be entered if needed.
 - Select **Continue**.
 - Review the information on the Transfusions Reactions Instructions page. Ensure that the correct protocol is followed if a reaction is observed or suspected.
 - Select **Continue** to proceed with ending the transfusion.
- If required, record the vital signs.
- Select **Continue**.
- If required, complete any transfusion checks. If reactions were recorded, transfusion reaction checks are also displayed.
- Select **Continue**. Depending on configuration, the following reports may be generated:
 - **Final Transfusion Report:** A preview may be displayed. Select **Print** to print the report or select **Cancel** to close the report.
 - **Transfusion Reaction Report:** If reactions are recorded, this report is automatically generated and sent to a specified printer.



End Transfusion

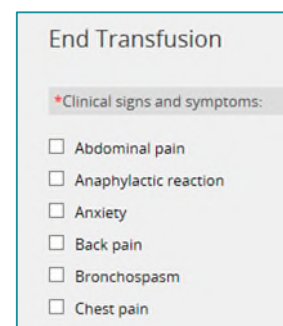
End Transfusion Date/Time: 5/29/2020 11:47 EDT [Change](#)

*Volume transfused: mL

*Transfusion reactions?

End Transfusion Comment: 40

[Continue](#) [Exit](#)



End Transfusion

*Clinical signs and symptoms:

Abdominal pain

Anaphylactic reaction

Anxiety

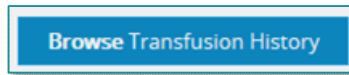
Back pain

Bronchospasm

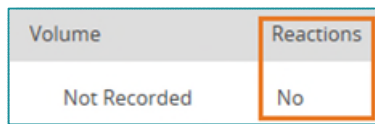
Chest pain

Recording Post-Transfusion Reactions

- Post-transfusion reactions (a transfusion reaction after the transfusion process has been ended) can be documented in Bridge Transfusion Administration.
- Complete the following steps to record post-transfusion reactions:
 - Select **Browse Transfusion History**.



- In the Reactions column, select **No**. You can only record reactions one time per unit.

A screenshot of a table with two columns: "Volume" and "Reactions". The "Volume" column contains the text "Not Recorded". The "Reactions" column contains the text "No". The "Reactions" column is highlighted with an orange border.

Volume	Reactions
Not Recorded	No

NOTE: The time limit to enter a post-transfusion reaction on a unit is defined in System Manager. The time limit begins once the transfusion has ended. If the time has elapsed beyond the acceptable number of hours, the No link becomes unavailable.

- From the Clinical Signs and Symptoms list, select the appropriate item or items.
- A comment can be entered if needed.
- Select **Continue**.
- Review the information on the Transfusion Reaction Instructions page. Ensure the correct protocol is followed if a reaction is observed or suspected.
- Select **Continue**.
- If required, record the vital signs.
- Select **Continue**.
- If required, complete any transfusion reaction checks.
- Select **Continue**. Depending on configuration, the following reports may be generated:
 - **Addendum Transfusion Report:** A preview may be displayed. The system indicates that vital signs were recorded the Post-Transfusion Reaction workflow with an asterisk (*), and they are displayed as **Post**. Select **Print** to print the report or select **Cancel** to close the report.
 - **Transfusion Reaction Report:** If reactions are recorded, this report is automatically generated and sent to a specified printer.

Starting a Rapid Start Transfusion

- If enabled, Rapid Start transfusion can be used to document the donor information for a blood product. The recipient document information is not entered. With Rapid Start, users can quickly scan the blood product information and start the transfusion, for documentation purposes only.
- Rapid Start does not perform any of the following actions, even if they are enabled for the point of care (POC):
 - Pretransfusion checks
 - Additional Start Transfusion checks
 - Secondary identification
 - Vital signs collection
- Complete the following steps to start a rapid start transfusion:
 - Scan the ID bar code on a patient's wristband.
 - Select **Rapid Start**. The top of the Rapid Start page displays the donor, start, and print pathways.
 - Scan or manually enter the required donor information.
 - If required, obtain a cosignature for the transfusion. Have a second authorized user scan or enter their username and password.
 - Depending on privileges and POC, users may also have the option to continue without cosignature. If this option is selected, the information is documented on the Transfusion report and is also displayed on the Browse Transfusion History page.
 - If a blood type mismatch occurs, document the reason for substitution. Additional substitution information may be required.
 - Select **Start** to administer the blood product. If configured, a preview of the Preliminary Transfusion report may be displayed. Select **Print** to print the report or select **Cancel** to close the report.
 - You can begin another Rapid Start transfusion immediately or select Exit to close the workflow. The system is configured to allow you to enter multiple units instead of exiting after each unit, which would force you to select Rapid Start again

Administering Derivatives

- Administration of blood plasma derivatives can be documented on the Administer Derivative page. Users will be prompted to select a derivative from the list. After a derivative is selected, the system displays the attributes to complete. The attributes are selected when the blood plasma derivative product is defined in the system in System Manager.

NOTE: This functionality is for recording purposes only and does not perform any matching except for the Patient ID and Patient Name information. All other information is recorded but not matched for validity.

- The bar code from the Recipient Product tag can be used (similar what is used in the Start Transfusion workflow). The system only recognizes the two-dimensional (2D) bar code used on a Recipient Product tag. Ensure that the information on the Administer Derivative page for the selected derivative matches the bar code in the same order. For example, if the system prompts for patient ID, patient name, patient blood type, and lot number, in this order, ensure that the bar code also contains the patient ID, patient name, patient blood type, and lot number in the same order.
- When using the 2D bar-code functionality to start transfusions, the system can prompt for the same information when administering derivatives. The bar code that contained a unit number for a blood product can contain the lot number for a plasma derivative. If the lot number prompt is in the same sequence as the unit number, the system populates the box with that value. If the values in the bar code are not aligned with the boxes on the page, the system does not populate the boxes and must be manually entered.
- Select **Confirm** when all prompts have been answered. If required, have a cosigner scan their credentials. Depending on configuration, the cosigner's password may not be required.
- The derivative information is displayed on the Browse Transfusion History page.

Browsing Transfusion History

- Use the **Browse Transfusion** page to review a summary of the administration activity for a patient.
- The page displays all transfusion activity that has been recorded in Bridge Transfusion Administration for the patient selected. Each row corresponds to a specific blood product that was or is in the process of being transfused. The most recent blood product administered is displayed at the top of the list and the transfusions are listed in reverse chronological order.
- The **Browse Transfusion History** page displays the following information:

Name	Description
Edit	This column is available if you have the privilege to correct transfusion information. Select the Edit icon to view the transfusion details. Some information cannot be edited. You can edit the following information: Start date and time End date and time

	<p>Start hold date and time</p> <p>End hold date and time</p> <p>Transfusion reactions</p> <p>Volume</p> <p>You can only correct the blood product for units where the blood product was manually selected in the End Transfusion workflow, and it does not match a unit that was started on the patient. If the blood product was scanned in the End Transfusion workflow, this information cannot be edited. After the correction is applied, select Confirm to return to the Browse Transfusion History page.</p> <p>The system displays a correction icon next to the value that has been modified. Select the icon to view the previous value.</p> <p>The corrections are also displayed in the Transfusion Details section. When selected, the system displays the transfusion details. The page below displays the same correction icon to indicate that the date and time and blood product were corrected.</p> <p>NOTE: If you start a unit, and then end a unit with the same unit number but a different blood product, two separate entries are created on the Browse Transfusion History page. When you change the blood product to match the started unit number, the system displays them as a complete transfusion because the unit number and blood product are now the same value.</p>
Info	Select the information icon to view more information about the specific transfusion.
Started	This column displays the date and time the unit was started in either the Start Transfusion or Rapid Start Transfusion workflows. The initials of the user who started the transfusion are displayed in parentheses. This information is highlighted in red when the transfusion has been started but not ended. After the end occurs, the color changes to black.
Ended	This column displays the state and time the unit has ended. The initials of the user who ended the transfusion are displayed in parentheses. If the transfusion has been started, but has not yet been ended, this box is blank until it has been ended.

Unit Number (Product Name)	This column displays the unit number and the blood product that was scanned or entered.
Volume	This number reflects the volume of the blood product received by the patient as entered during the End Transfusion process. Accordingly, if the transfusion has only been started and is not yet ended, the Volume box is blank. If the Volume box is disabled in the End Transfusion workflow, the volume is displayed as 0.
Edit Reactions	Click this link to edit the reactions that were recorded for the ended transfusion. When clicked, the Reactions page is displayed. You can select and deselect the reactions, as well as edit the vital signs.

- Select **Back** to return to the patient's main menu page.

Reusing a Blood Product

- Users who have the privilege may unlock blood products. Select the **Unlock** check box to unlock and reissue a previously used blood product. Transfusions can be unlocked individually or collectively.
- Only units that are started, but not ended may be unlocked. Unlocking a unit allows reuse of the unit, but it does not remove the unit from any patient-specific transfusion reports.
- The Browse Transfusion Details page displays more information about a specific unit. From this page, a blood product can be reused and the Transfusion report can be printed.
- The following sections are available:
 - **General:** This section contains the information about the actual administration of the blood product.
 - **Reactions:** This section displays any transfusion reactions recorded.
 - **Vitals:** This section displays any vital signs recorded during the transfusion process.
 - **Checks:** This section displays the details about any checks that were performed during the transfusion process.
 - **Holds:** This section displays any Hold events that may have been recorded.

Reviewing General Information

- The following information is available in the General section:

Name	Description
Date and Time Started	This displays the date and time the transfusion was started. If the unit was started with Rapid Start, the system displays **R . If this symbol is not displayed, the unit was started through Start Transfusion.
Started By	This displays the full name of the user who started the transfusion.
Date and Time Ended	This displays the date and time the transfusion was ended.
Ended By	This displays the full name of the user who ended the transfusion.
Blood Product	This displays the name of the blood product that was scanned or entered during the Start Transfusion process.
Donation Type	This displays the donation type that is part of an ISBT blood product bar code scanned or entered during the Start Transfusion process.
Division	The displays the division value that is part of an ISBT blood product bar code scanned or entered during the Start Transfusion process.
Unit Number	This displays the unit number of the blood product that was scanned or entered during the Start Transfusion process.
Center Code	This displays the center code of the blood product that was scanned or entered during the Start Transfusion process.
Unit Expiration	This displays the expiration date and time of the blood product that was scanned or entered during the Start Transfusion process. If the system only requires the expiration date, but not the time for a specific blood product, Bridge Transfusion Administration appends a time of 23:59 as the time of expiration. If the specific product requires an expiration time in addition to the expiration date, the actual time that was scanned or entered is displayed. This information is captured during the Start Transfusion process.
Cosigned By	This displays the full name of the user who cosigned the transfusion. This information is captured during the Start Transfusion process. If a cosignature is not required, the cosignature is displayed as N/A . If a cosignature was prompted, but the user selected to continue without a cosignature, the system displays Cosignature Bypassed .

Patient Comments	This displays any comments entered during the Start Transfusion process.
Patient Blood Type	This displays the patient's blood type that was scanned or entered from the recipient document during the Start Transfusion process.
Donor Blood Type	This displays the donor's blood type that was scanned or entered from the donor label on the blood product during the Start Transfusion process. If you use ISBT 128 bar codes to scan the donor blood type from the donor center label, a description can also be included (for example, autologous, directed, emergency, and so on).
Reason for Substitution	This displays the value selected in Start Transfusion when a blood type mismatch occurs. If the substitution is allowable, you can continue with the transfusion, but must select a reason. The system displays the reason selected during that workflow. If the donor and the recipient blood type are identical, the reason is displayed as N/A .
Held	If a Hold Transfusion workflow was performed on the selected unit, the system displays Yes . If no Hold Transfusion workflow was performed, this remains blank.
Volume Transfused	This displays the value entered in End Transfusion for the volume.
End Transfusion Reactions	This value can either be Yes or No .
Post-Transfusion Reactions	This value can either be Yes or left blank.
Date and Time Recorded	This displays the date and time a post-transfusion reaction was recorded.
Recorded By	This displays the full name of the user who recoded the post-transfusion reaction.
Secondary ID Value	If Bridge Transfusion Administration has been configured to capture a secondary patient identified as part of the Start Transfusion process, the value that was scanned or entered from the patient's transfusion - specific armband is displayed. If you are not using the secondary identifier, the value is N/A .
End Transfusion Comments	If comments were entered during the End Transfusion process, they are displayed here.

Browsing Vital Signs

- The following information is available in the Vitals section:

Name	Description
Time	This displays the workflow the vital signs were entered in. The options include Start, End, Post/Tx, or a specific date and time.
Comments	Any comments entered while recording vital signs are displayed below the other vital sign information on the same line.
User	The full name of the user who recorded the vital signs is listed in the column.
Temperature and Site	This displays the recorded temperature and the sure of the temperature.
Heart Rate	This displays the recorded heart rate. If the heart rate site is configured, it is included after the heart rate.
Blood Pressure	This displays the recorded blood pressure in the following format: [Systolic]/[Diastolic].
Respirations	This displays the recorded respiratory rate.
O2 Saturation	This displays the recorded oxygen saturation percent.

Reviewing Checks

- The following information is available in the Checks section:

Name	Description
Check	This displays the description of the check that was performed. This is the same value presented during the workflow.
Response	This displays the value entered or selected. When the check is a check box, the name of the user who performed the check is displayed.
Type	This is the workflow the check was performed in. The options include: Pretransfusion (during Start Transfusion), Start Transfusion (Additional Start Transfusion), End Transfusion, and Post Transfusion.

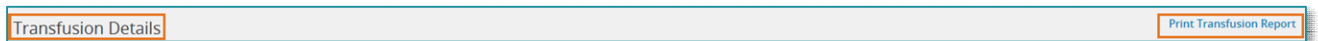
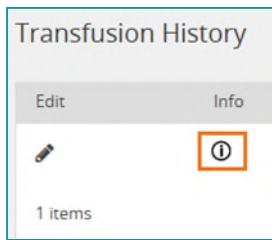
Reviewing Holds

- The following information is displayed in the **Holds** section:

Name	Description
Hold Started	This displays the date and time selected for the Start Hold transfusion.
Hold Ended	This displays the date and time selected for the End Hold transfusion.
Reason	This displays the selected reason for the Hold transfusion.
Additional Information and Comment	This displays any comments entered in the Hold transfusion workflow.
User	This displays the full name of the user who started the Hold transfusion.

Printing the Transfusion Report

- The Transfusion report can be reprinted from the Transfusion Details page.



- Select **Print Transfusion Report**.
- Any Transfusion report printed from the Browse Transfusion History page has a duplicate designation depending on the state of the transfusion at the time the report is printed. The following report designations are used:
 - **Preliminary Duplicate:** The transfusion has been started but not ended.
 - **Final Duplicate:** The transfusion has been started and ended. The report was generated from the Browse Transfusion History page after the End Transfusion workflow.
 - **Addendum Duplicate:** The transfusion has been started, ended, and has a reaction recorded. The Transfusion report was generated from the Browse Transfusion History page after the reaction workflow.
- Select **Back** to return to the Browse Transfusions page.

Changing a Blood Type

- Users who have the appropriate privileges, can change a patient's blood type. The Change Blood Type feature allows a patient's blood type to be changed, whether a blood type has been established for the patient through a previous blood transfusion administration or not.
- Complete the following steps to change a patient's blood type:
 - On the patient's main menu page, select **Change Blood Type**. Alternatively, when starting a transfusion, if a recipient document value that is different from the previously recorded blood type for the patient is scanned or entered, the system displays a warning message. Select **Yes** to change the blood type value. If you select **No**, the system returns to the Recipient page.
 - **Current Blood Type:** This is the blood type that is currently stored for the patient, which matches the blood type displayed on the patient's demographics bar. This value cannot be edited.
 - **New Blood Type:** Select the new blood type for the patient.
 - **Confirm New Blood Type:** Select the new blood type for the patient.
 - **Reason for Change:** Select the reason for the blood type change.
 - **User ID:** If required, have a witness scan or enter their ID for cosignature.
 - **Password:** If required, have a witness scan or enter their password for cosignature.
 - Select **Confirm** to save the changes or select **Exit** to close the workflow without saving.

Browsing Vital Signs

- Use the Vital Signs History page to review all the vital signs activity recorded for a patient. Vital signs associated with a transfusion administration are also displayed on the Browse Transfusion History page.
- The page displays all vital signs activity recorded for the patient selected. Each row corresponds to a specific set of vital signs that were recorded. The most recent vital signs are displayed at the top of the list. The vital signs are displayed in reverse chronological order. If multiple pages are available, page numbers are displayed at the bottom of the page. To advance through the pages, select the appropriate page number.

- The Vital Signs History page displays the following information:

Name	Description
Edit	<p>This column is available to users who have the privilege to correct vital signs. Select the Edit icon to view all the vital signs for the selected row. Vital signs checks cannot be edited. After you correct the value, select Confirm to return to the Vital Signs History page.</p> <p>Users who have the appropriate privilege can click the edit icon to modify a vital signs value if needed in the Vital Signs History page. The system displays all the vital sign values entered from the line selected. Vital Sign checks cannot be modified. After the value is corrected, click Confirm to return to the Vital Signs History page.</p> <p>The system displays a correction icon next to the value that has been modified. Select the icon to view the previous value. The corrections are also displayed in the Vitals tab on the Transfusion Details page.</p>
Time	<p>This column displays information about when the vital signs were recorded. The time is displayed in 24-hour format. If a comment was entered during the vital sign entry, Comment is displayed below the user.</p>
User	<p>This column displays the full name of the user who recorded the vital signs (last name followed by first name). In addition, if a comment was entered during the recording of the vital signs, the comment is displayed below the user.</p>
Temperature and Site	<p>This column displays the temperature and the site of the temperature that was recorded.</p>
Blood Pressure	<p>This displays the recorded blood pressure in the following format: [Systolic]/[Diastolic].</p> <p>If the blood pressure was taken by palpation, the diastolic blood pressure was not entered, and the value is displayed as [Systolic]/PALP. See the following example: 120/PALP.</p> <p>If the blood pressure method is configured, it is included after the blood pressure.</p>
Heart Rate	<p>This displays the recorded heart rate. If the heart rate site is configured, it is included after the heart rate.</p>

Respirations	This displays the recorded respiratory rate.
O2 Saturations	This displays the recorded oxygen saturation percent.
Transfusion	<p>If the vital signs were recorded during the Start, End, or Post-Transfusion Reaction workflow, a label is displayed in this column. The following labels can be displayed:</p> <p>Start: The vital signs were recorded as a part of the Start Transfusion process.</p> <p>End: The vital signs were recorded as part of the End Transfusion process.</p> <p>End/Trx: The vital signs were recorded as part of the End Transfusion process. In addition, a transfusion reaction was noted during the End Transfusion process.</p> <p>Post/Trx: The vital signs were recorded as part of the Post-Transfusion Reaction process.</p> <p>Blank: The vital signs were not recorded through any step of the transfusion process. This indicates that the vital signs were recorded through Record Vital Signs from the patient’s main menu page.</p> <p>If you select the vital sign value in the Transfusion column, the system displays the Transfusion History page for the unit associated with the vital sign entry. Select Back to return to the Vital Signs history page.</p>
Checks	This column is displayed if Vital Sign checks are configured. If checks were recorded, the system displays Yes with a link. Select the link to view the checks and responses. If no checks were recorded, the system displays No.

- Select **Back** to return to the patient’s main menu page.

Performing an MTP Transfusion

- Users having the appropriate privileges, can perform multi-unit transfusions.
- Complete the following steps to perform a multi-unit transfusion:
 - Scan the bar code on a patient’s wristband and select **Multi-Unit Transfusion**.
 - If required, complete any pretransfusion checks and select **Continue**.

- On the Recipient/Donor page, scan the unit numbers to add multiple blood products to the table. The system automatically selects the **Verify** check box for each unit number scanned.
 - Alternatively, manually enter and verify the blood product information.
 - If a unit number scanned is already on the table, the system prompts the user verify the product.
 - Depending on configuration, cosignature may be required for both crossmatched and uncrossmatched blood, or for uncrossmatched blood only.
 - The system may also check for the BBID.
- If required, record the pretransfusion vital signs.
- Select **Start** to start a transfusion.
- If required, enter the transfused volume.
- Complete the following steps if the patient has a reaction to a transfusion:
 - In the Reactions column, select **Yes**. The system displays the Reactions dialog box.
 - Document the reaction and select **Continue**.
 - To view the documented reaction, select the **information** icon.
- If no reactions are associated with all started transfusions, select the **No Transfusion Reactions** check box.
- If required, complete any transfusion checks. If reactions were recorded, transfusion reaction checks are also displayed.
- After the No Transfusion Reactions check box is selected, select **End All Transfusions**. Alternatively, select **End** to end an individual transfusion.
- If required, record the post-transfusion vital signs.
- To release an unused (not started) blood product, select the **Release** button.