

Bar Code Expansion Positive Patient Identification (BCE PPI)

Increment 2

Test Script B

SQA Internal

Version 1.0



April 2013

Revision History

Revision # & Date	Description / By
Rev. 0.1, 04/1/2013	Draft of Increment 2 test script B/ [REDACTED].
Rev. 1.0, 04/15/2013	Final candidate: [REDACTED]. Additional contributions: [REDACTED] [REDACTED]

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1. Introduction

1.1. Purpose

The purpose of this test script is provide a basic set of test cases to be used for User Acceptance Testing (UAT) at pilot test sites of the Transfusion Verification software which is Increment 2 of the Bar Code Expansion-Positive Patient Identification (BCE-PPI) project. **It is assumed that pilot test sites that are involved in the UAT effort will understand the need of their own creation and execution of additional test cases they may deem necessary based on day-to-day workflow.**

This test script will include much of the functionality of the system and includes good examples of day-to-day workflow. It is not intended to fully exercise all possible scenarios of VistA Applications interfacing with the Pyxis® Transfusion Verification (CareFusion Vendor Product) and the VistA Blood Establishment Computer Software (VBECs) on the Hand-Held Device (HHD).

1.2. Test Objectives

Test the interface and communication between VistA and the COTS product for Increment 2 to support the following objectives:

1. Pyxis® Transfusion Verification uses bar code scanning for patient identification and blood transfusion at the point of care. The software integrates with the Vitals database.

2. Pyxis® Transfusion Verification VA

2.1. Requirements

From the Bar Code Expansion - Positive Patient Identification (BCE-PPI) VistA Interfacing with Mobile Hand-Held Device (HHD) COTS Solutions using Remote Procedure Call (RPC) Broker, Version 1,3 Requirements Specification Document (RSD).

2.2. Required Setup and Test Prerequisites

If there are currently test patients and orders in your sites test account those can be utilized for testing but will need to conform to the requirements below in the Patient Information Set Up and the Blood Product Types and Assignment to Patient tables below.

In order to perform these scripts, ensure that:

- The test user has valid access/verify codes.
- The test user has the correct menus and keys to access CPRS (OR GUI CHART secondary menu)
- The test user has the correct menus and keys to access Rapid Infusion
- The test user has the correct menus and keys to access Vitals
- Prerequisite processes in VBECS and VistA/CPRS must be completed to provide products for testing in Transfusion Verification
- Bar codes of the test Patient's ID's (SSN).
- Bar codes of Blood Unit ID's from local blood bank inventory.
- Bar codes of Product Codes for those Blood Units.
- Access to stationary workstation or WOW, with the Transfusion Verification application installed.
- Stationary computer set up for verification on CPRS, Vitals Lite and VBECS
- Transfusion Verification Pocket Controller (PDA, HHD)

- Patients need to be set up using the information below. These test patients need to be named in such a way that the tester can identify which patient reflects which attributes below in order to attach the correct patient to the appropriate test case. (Note that these are the minimum number of patients required to complete the test cases but it would be advantageous to have additional test patients prepared before beginning testing.)

Patient Information Setup			
	Patient Admit Location	Inpatient/Outpatient	Blood Product
NEW Patient	Any	Any	Any

2.3. Test Cases

Before beginning complete the Setup Requirements and Testing Prerequisites in Section 2.2

The screen captures that are included in the test cases are intended to be used as examples only and not as exact references. During execution of the tests the actual test result may vary depending on; whether the tester is using the PDA, using the desktop version of the application, what test patients are being used, what blood products have been set up assigned, etc.

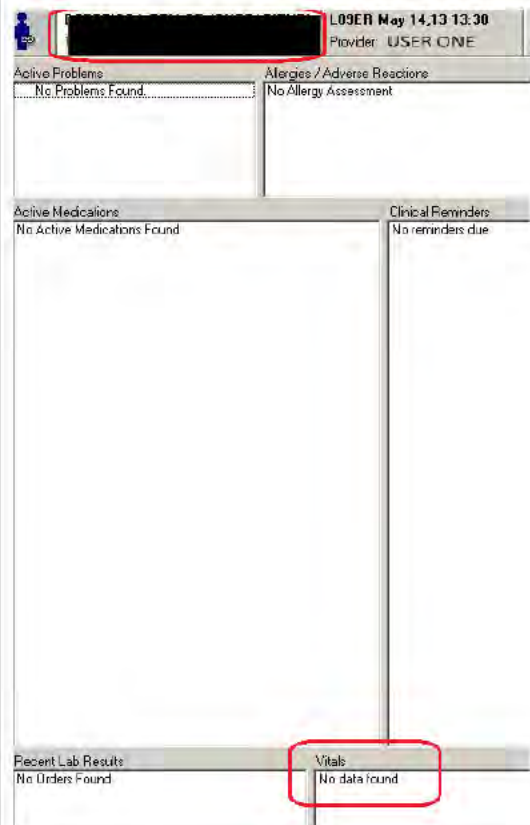
2.3.1 Site Ad Hoc Testing Blank Form

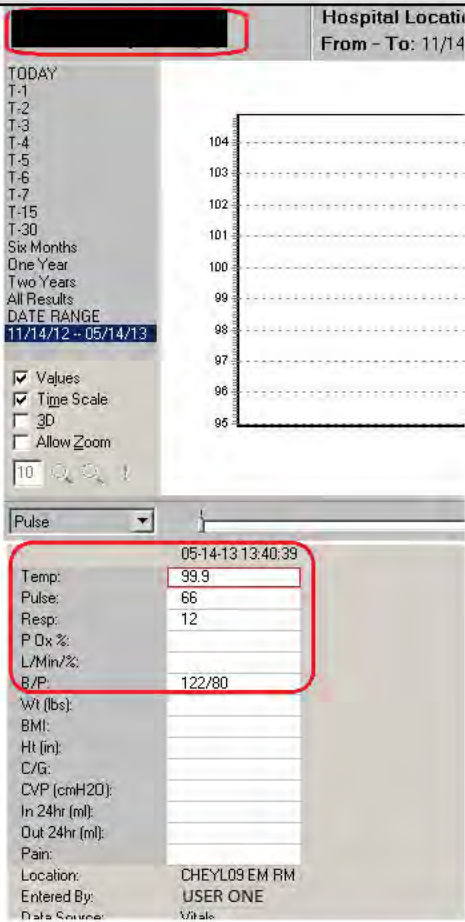
If any step does not pass it is imperative that all steps leading up to and causing the failure are fully documented. If possible obtain Screenshots via Pocket Controller (For PDA use) or Print Screen (for desktop/laptop use). This will aid in attempts to reproduce and document the failure.

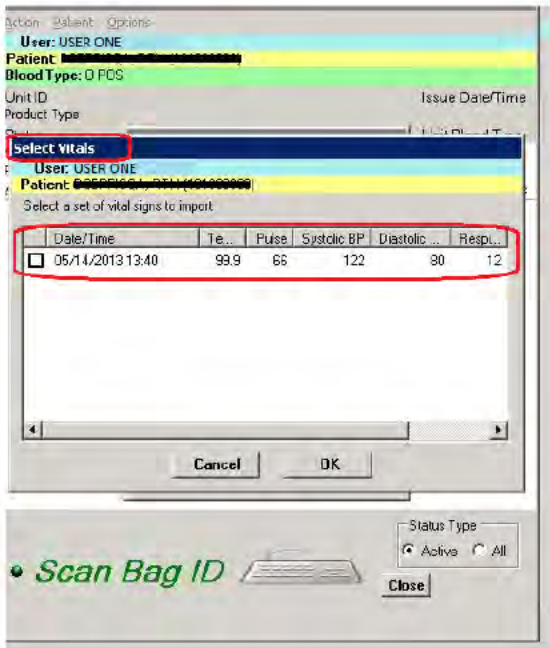
Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.0	Supplemental testing			

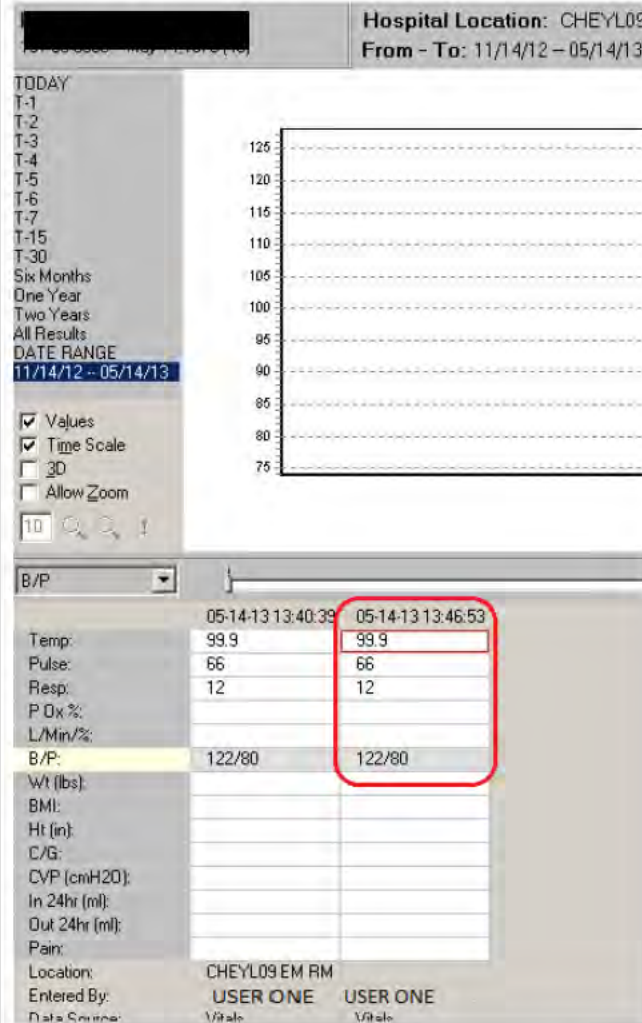
Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.1	Complete setup instructions. <ol style="list-style-type: none"> 1. Create new test patient that by default, will have no existing vital sign data in CPRS. 2. Set up blood unit and assign/issue to new patient just created. 			

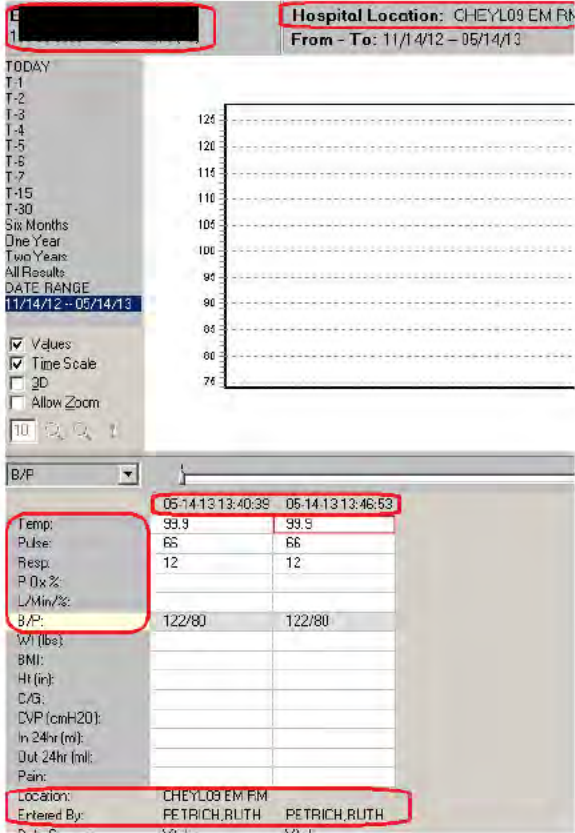
Number and Name	Steps	Expected Result	Actual Result	P/F																
TCB-1.2	Record testing information:			P																
	This is required in order for this test item to be regarded as “Passed”.																			
	Some of this information may not be available until actually beginning the steps below. The tester may need to return to this item to complete this step as the test progresses.																			
	Testing record for single pass.																			
	<table><tr><td>Date/Time</td><td>05/14/13 1:00-3:00 EST</td></tr><tr><td>Device Used</td><td>TV Desktop Application</td></tr><tr><td>Name of Tester</td><td></td></tr><tr><td>Name/SSN Patient</td><td>BCEPPISQA, RTM SR/101009999</td></tr><tr><td>Division</td><td>N/A</td></tr><tr><td>Ward/Clinic</td><td>N/A</td></tr><tr><td>Blood Unit ID</td><td>W035213146217</td></tr><tr><td>Blood Product Code</td><td>E0336V00</td></tr></table>				Date/Time	05/14/13 1:00-3:00 EST	Device Used	TV Desktop Application	Name of Tester		Name/SSN Patient	BCEPPISQA, RTM SR/101009999	Division	N/A	Ward/Clinic	N/A	Blood Unit ID	W035213146217	Blood Product Code	E0336V00
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Example of cumulative testing record of multiple passes for final testing report.																				
<table><tr><td>Date/Time</td><td>Device Used</td><td>Name of Tester</td><td>Name/ Patient ID</td><td>Division</td><td>Ward/ Clinic</td><td>Blood Unit ID</td><td>Blood Product Code</td><td>Script</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>			Date/Time	Device Used	Name of Tester	Name/ Patient ID	Division	Ward/ Clinic	Blood Unit ID	Blood Product Code	Script									
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Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.3	Open/Login to CPRS/VistA VitalsLite	Application opens.		
TCB-1.4	Search New Patient created for this test scenario and validate that no Vitals record exists for this patient.	No Vitals record exists for New Patient.	 <p>The screenshot displays the VistA VitalsLite application interface. At the top, a status bar shows the date and time as 'L09ER May 14, 13 13:30' and the provider as 'USER ONE'. Below this, the patient's name is redacted with a black box. The interface is organized into several sections: 'Active Problems' with 'No Problems Found', 'Allergies / Adverse Reactions' with 'No Allergy Assessment', 'Active Medications' with 'No Active Medications Found', 'Clinical Reminders' with 'No reminders due', 'Recent Lab Results' with 'No Orders Found', and 'Vitals' with 'No data found'. The 'Vitals' section is highlighted with a red box.</p>	

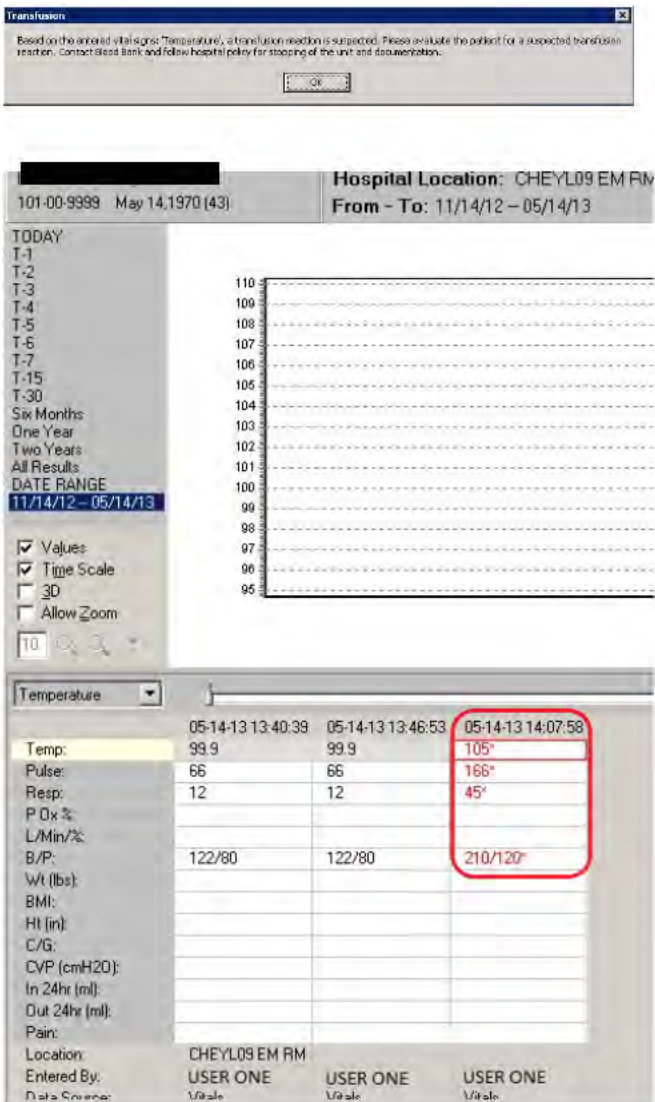
Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.5	Enter set of Vitals for Patient A <ul style="list-style-type: none"> • blood pressure • temperature • pulse • respiration 	Vitals entered.	 <p>The screenshot shows the TCB-1.5 software interface. At the top, there is a patient selection dropdown and a date range selector (11/14/12 to 05/14/13). Below this is a list of vitals to be entered: Temp, Pulse, Resp, P O2 %, L/Min/%, B/P, Wt (lbs), BMI, Ht (in), C/G, CVP (cmH2O), In 24hr (ml), Out 24hr (ml), Pain, Location, Entered By, and Data Source. The vitals values are: Temp: 99.9, Pulse: 66, Resp: 12, P O2 %: , L/Min/%, B/P: 122/80. The location is CHEYL09 EM RM and the user is USER ONE. A graph area is also visible on the right side of the interface.</p>	

Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.6	Start Transfusion Verification (TV) application.	TV application started.		
TCB-1.7	Enter New Patient ID	Patient confirmation screen is displayed.		
TCB-1.8	Begin transfusion. Import existing vitals just entered in CPRS/VistA VitalsLite.	Vitals recently entered are imported.	<p>Selection screen for importing previously entered vitals in CPRS/VistA VitalsLite.</p> 	





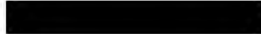



Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.9	<p>Validate that vital components are included:</p> <ul style="list-style-type: none"> • blood pressure • temperature • pulse • respiration 	Four vital components included.	<p>Imported vitals in to TV from CPRS are recorded as a separate set of vitals and displayed as such in CPRS.</p>  <p>The screenshot displays the CPRS interface for patient vitals. At the top, the hospital location is 'CHEYL09' and the date range is '11/14/12 - 05/14/13'. Below this, there is a list of time points (TODAY, T-1, T-2, T-3, T-4, T-5, T-6, T-7, T-15, T-30, Six Months, One Year, Two Years, All Results) and a 'DATE RANGE' section. The 'DATE RANGE' section shows '11/14/12 - 05/14/13' selected. Below the date range, there are checkboxes for 'Values' (checked), 'Time Scale' (checked), '3D' (unchecked), and 'Allow Zoom' (unchecked). A '10' button is also visible. The main display area shows a table of vital signs for two time points: '05-14-13 13:40:39' and '05-14-13 13:46:53'. The table includes columns for Temp, Pulse, Resp, P O2 %, L/Min/%, B/P, Wt (lbs), BMI, Ht (in), C/G, CVP (cmH2O), In 24hr (ml), Out 24hr (ml), Pain, Location, Entered By, and Data Source. The 'B/P' row is highlighted in yellow. The 'Temp' and 'Pulse' rows are highlighted with a red box. The values for Temp and Pulse are 99.9 and 66 respectively for both time points. The B/P value is 122/80 for both time points.</p>	

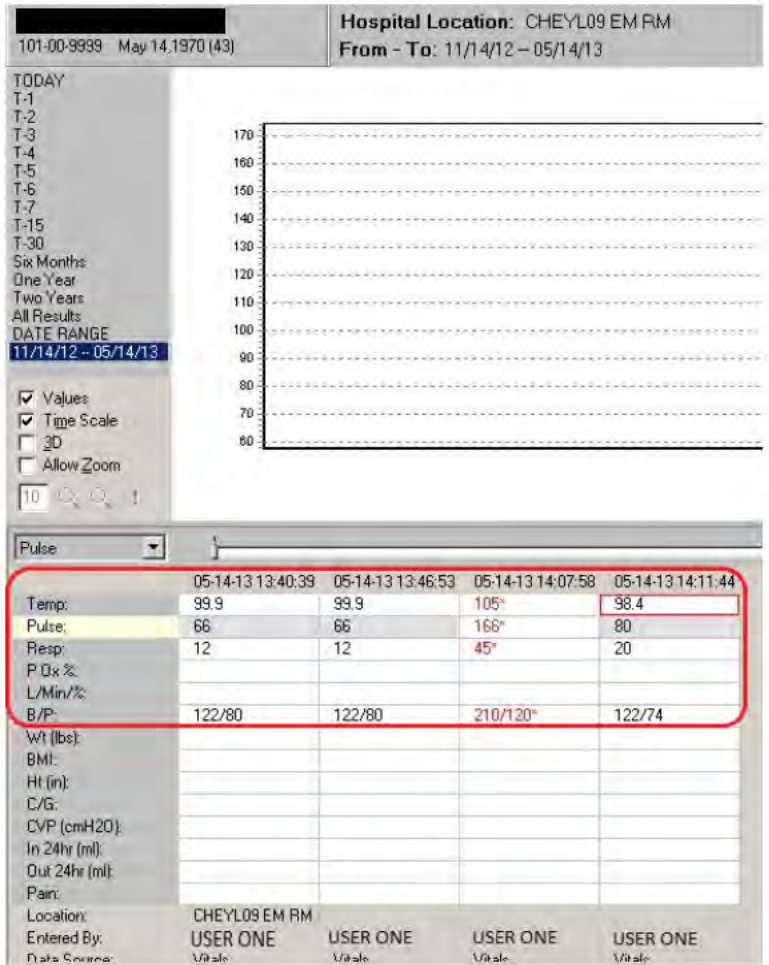
Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.10	<p>Validate that vital information is included:</p> <p>(#.01) DATE/TIME VITALS TAKEN [1D]</p> <ul style="list-style-type: none"> • (#.02) PATIENT [2P:2] • (#.03) VITAL TYPE [3P:120.51] • (#.04) DATE/TIME VITALS ENTERED [4D] current date/time • (#.05) HOSPITAL LOCATION [5P:44] • (#.06) ENTERED BY [6P:200]] logged on user (#1.2) RATE [8F] 	<p>Vital information included.</p> <p>Location is not expected to be displayed if vitals entered from TV application, since RPC being used does not provide this item. Additional inpatient</p>	<p>Location is displayed within VitalsLite for initial vital signs since entry occurred within VitalsLite tool.</p> <p>Location not clinically relevant per BCRO.</p> <p>Date/Time Vitals Taken and Date/Time Vitals Entered same information since recorded in real time and no process in application to allow delineation.</p> 	

Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.11	Validate that vital signs and date and time is stored in FILE 120.5 GMRV VITALS MEASUREMENT	Vital signs and date and time is stored in FILE 120.5	<div>FILE 120.5</div> <hr/> <div>Select GMRV VITAL MEASUREMENT DATE/TIME VITALS TAKEN: 5/4 MAY 04, 2013 ??</div> <div>37 5-14-2013@13:40:39 <div></div></div> <div>TEMPERATURE</div> <div>38 5-14-2013@13:40:39 <div></div></div> <div>PULSE</div> <div>39 5-14-2013@13:40:39 <div></div></div> <div>RESPIRATION</div> <div>40 5-14-2013@13:40:39 <div></div></div> <div>BLOOD PRESSURE</div> <div>41 5-14-2013@13:46:53 <div></div></div> <div>TEMPERATURE</div> <div>42 5-14-2013@13:46:53 <div></div></div> <div>PULSE</div> <div>43 5-14-2013@13:46:53 <div></div></div> <div>RESPIRATION</div> <div>44 5-14-2013@13:46:53 <div></div></div> <div>BLOOD PRESSURE</div>	

Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.12	<p>Enter interim/updated set of vitals</p> <p>Enter vitals that vary enough to display transfusion reaction alert (out-of-range) and cause vitals to be flagged as out of range in CPRS.</p>	<p>Vitals entered.</p> <p>Reaction alert displayed to user in TV.</p> <p>Out-of-Range vitals displayed in RED in CPRS/VistA VitalsLite</p>	 <p>Transfusion</p> <p>Based on the entered vital signs (Temperature), a transfusion reaction is suspected. Please evaluate the patient for a suspected transfusion reaction. Contact blood bank and follow hospital policy for stopping of the unit and documentation.</p> <p>OK</p> <p>101-00-9999 May 14, 1970 (43)</p> <p>Hospital Location: CHEYL09 EM RM</p> <p>From - To: 11/14/12 - 05/14/13</p> <p>TODAY</p> <p>T-1</p> <p>T-2</p> <p>T-3</p> <p>T-4</p> <p>T-5</p> <p>T-6</p> <p>T-7</p> <p>T-15</p> <p>T-30</p> <p>Six Months</p> <p>One Year</p> <p>Two Years</p> <p>All Results</p> <p>DATE RANGE</p> <p>11/14/12 - 05/14/13</p> <p><input checked="" type="checkbox"/> Values</p> <p><input checked="" type="checkbox"/> Time Scale</p> <p><input type="checkbox"/> 3D</p> <p><input type="checkbox"/> Allow Zoom</p> <p>10</p> <p>Temperature</p> <p>05-14-13 13:40:39 05-14-13 13:46:53 05-14-13 14:07:58</p> <p>Temp: 99.9 99.9 105*</p> <p>Pulse: 66 66 166*</p> <p>Resp: 12 12 45*</p> <p>P O₂ %</p> <p>L/Min/%</p> <p>B/P: 122/80 122/80 210/120*</p> <p>Wt (lbs):</p> <p>BMI:</p> <p>Ht (in):</p> <p>C/G:</p> <p>CVP (cmH₂O):</p> <p>In 24hr (ml):</p> <p>Out 24hr (ml):</p> <p>Pain:</p> <p>Location: CHEYL09 EM RM</p> <p>Entered By: USER ONE USER ONE USER ONE</p> <p>Data Source: Vitals Vitals Vitals</p>	

Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.13	Validate that current set of vitals entered in TV/BPOC is received by VistA and is stored as a unique record	CPRS/VistA Vitals will display vitals as a separate record.	See above screen in step TCB-1.12.	
TCB-1.14	Validate that current set of vitals entered in TV/BPOC is received by VistA via Remote Procedure Calls (RPCs).	CPRS/VistA Vitals will display vitals as it is received via RPC.	See above screen in step TCB-1.12.	
TCB-1.15	Validate that out-of-range vitals just entered are displayed in RED in CPRS/VistA VitalsLite	Out-of-range vitals just entered are displayed in RED	See above screen in step TCB-1.12.	

Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.16	Validate that information is stored in FILE 120.5 GMRV VITALS MEASUREMENT	Vital information is stored in FILE 120.5	<p>FILE 120.5</p> <hr/> <p>Select GMRV VITAL MEASUREMENT DATE/TIME VITALS TAKEN: 5/4 MAY 04, 2013 ??</p> <p>45 5-14-2013@14:07:58 </p> <p>TEMPERATURE</p> <p>46 5-14-2013@14:07:58 </p> <p>PULSE</p> <p>47 5-14-2013@14:07:58 </p> <p>RESPIRATION</p> <p>48 5-14-2013@14:07:58 </p> <p>BLOOD PRESSURE</p>	
TCB-1.17	Complete transfusion. Enter final set of vitals that are within acceptable range.	Vital signs entered and transfusion completed.		
TCB-1.18	Validate that new information is stored in FILE 120.5 GMRV VITALS MEASUREMENT	Vital information is stored in FILE 120.5	<p>FILE 120.5</p> <hr/> <p>Select GMRV VITAL MEASUREMENT DATE/TIME VITALS TAKEN: 5/4 MAY 04, 2013 ??</p> <p>49 5-14-2013@14:11:44 </p> <p>TEMPERATURE</p> <p>50 5-14-2013@14:11:44 </p> <p>PULSE</p> <p>51 5-14-2013@14:11:44 </p> <p>RESPIRATION</p> <p>52 5-14-2013@14:11:44 </p> <p>BLOOD PRESSURE</p>	

Number and Name	Steps	Expected Result	Actual Result	P/F																																																																																										
TCB-1.19	Validate that all vitals are displayed CPRS/VistA VitalsLite	Vitals information displayed in CPRS/VistA VitalsLite.	<p>All vitals recorded and displayed.</p>  <p>The screenshot displays the VitalsLite interface for patient 101-00-9999. The patient's date of birth is May 14, 1970 (43 years old). The hospital location is CHEYL09 EM RM. The date range for the data is 11/14/12 to 05/14/13. The interface includes a list of vitals (T-1, T-2, T-3, T-4, T-5, T-6, T-7, T-15, T-30, Six Months, One Year, Two Years, All Results) and a DATE RANGE selector. The DATE RANGE is set to 11/14/12 -- 05/14/13. The interface also has checkboxes for Values, Time Scale, 3D, and Allow Zoom. A table of vital signs is displayed, with a red box highlighting the following data:</p> <table border="1"> <thead> <tr> <th></th> <th>05-14-13 13:40:39</th> <th>05-14-13 13:46:53</th> <th>05-14-13 14:07:58</th> <th>05-14-13 14:11:44</th> </tr> </thead> <tbody> <tr> <td>Temp:</td> <td>99.9</td> <td>99.9</td> <td>105*</td> <td>98.4</td> </tr> <tr> <td>Pulse:</td> <td>66</td> <td>66</td> <td>166*</td> <td>80</td> </tr> <tr> <td>Resp:</td> <td>12</td> <td>12</td> <td>45*</td> <td>20</td> </tr> <tr> <td>P O₂ %</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L/Min/%</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B/P:</td> <td>122/80</td> <td>122/80</td> <td>210/120*</td> <td>122/74</td> </tr> <tr> <td>Wt (lbs):</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>BMI:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ht (in):</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>C/G:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CVP (cmH₂O):</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>In 24hr (ml):</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Out 24hr (ml):</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pain:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Location:</td> <td>CHEYL09 EM RM</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Entered By:</td> <td>USER ONE</td> <td>USER ONE</td> <td>USER ONE</td> <td>USER ONE</td> </tr> <tr> <td>Data Source:</td> <td>Vitals</td> <td>Vitals</td> <td>Vitals</td> <td>Vitals</td> </tr> </tbody> </table>		05-14-13 13:40:39	05-14-13 13:46:53	05-14-13 14:07:58	05-14-13 14:11:44	Temp:	99.9	99.9	105*	98.4	Pulse:	66	66	166*	80	Resp:	12	12	45*	20	P O ₂ %					L/Min/%					B/P:	122/80	122/80	210/120*	122/74	Wt (lbs):					BMI:					Ht (in):					C/G:					CVP (cmH ₂ O):					In 24hr (ml):					Out 24hr (ml):					Pain:					Location:	CHEYL09 EM RM				Entered By:	USER ONE	USER ONE	USER ONE	USER ONE	Data Source:	Vitals	Vitals	Vitals	Vitals	
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Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.20	Validate that the VISTA system receives an acknowledgement from the TV/BAPOC system to end a successful transmission.	Transmission successful without error. Vitals information displayed in CPRS/VistA VitalsLite.	<p>Indicated as "Not Testable" due to the method by which Vital Sign data is transferred (RPC). RPC functionality does not include the ability for ACK/NACK responses.</p> <p>However, it can be confirmed that Vital Sign data is being received appropriately based on ability to view, store and retrieve Vital Sign data in VistA as demonstrated in the validation of other related requirements and test cases. (See screen capture in Actual Result column in TCB-1.19.)</p>	

Number and Name	Steps	Expected Result	Actual Result	P/F
TCB-1.21	Validate that TIU Note is created and includes Vitals data.	TIU Note created and includes Vitals data.	<div> <div> [REDACTED] (OUTPATIENT) [REDACTED] [REDACTED] </div> <div> LOSER May 14, 13 13:30 Provider: USER ONE </div> <div> Primary Care Team Unassigned </div> </div> <div> 10 Signed Notes (Total) : All signed notes May 14, 13 T </div> <div> Visit: 05/14/13 TRANSFUSION VERIFICATION (B TRF) NOTE, "No Location", USER ONE (May 14, 13@14:13) : Verify patent IV access Yes Transfusion Documentation Workflow: Standard TRANSFUSION INFORMATION: Transfusionist ID #1: USERONE Transfusionist ID #2: USERTWO Transfusion Begin Date/Time: 05/14/2013 13:48:35 Admin Set/Filter Type: Alaris Blood Tubing (Pump) Admin Set/Filter Lot Number: 722776210024 Transfusion Completed Date/Time: 05/14/2013 14:13:09 Completed Volume (ml): 325 Completed By: USERONE VITAL SIGNS INFORMATION: Vitals Taken: 05/14/2013 13:46:53 Entered By: USERONE Temp: 99.9 Pulse: 66 Resp: 12 Systolic BP: 122 Diastolic BP: 80 Vitals Taken: 05/14/2013 14:07:58 Entered By: USERONE Temp: 105 Pulse: 166 Resp: 45 Systolic BP: 210 Diastolic BP: 120 S/S Reaction: No Vitals Taken: 05/14/2013 14:11:44 Entered By: USERONE Temp: 98.4 Pulse: 80 Resp: 20 Systolic BP: 122 Diastolic BP: 74 S/S Reaction: No </div>	