



BSIS V1.3.0 | Linkages & Haemovigilance

Release Notes

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SUMMARY

The V1.3 release of BSIS includes three new features:

- The ability for donor counsellors to record and report on referrals of TTI Positive donors to services for further testing, care and treatment.
- The ability to add and process a Patient Request to record an order for an individual patient.
- The ability to record and report transfusion information for any blood unit issued by the blood service. The new features support the haemovigilance programmes being implemented in some countries and allows for vein-to-vein traceability.

NEW FEATURES

1. Donor Counselling

1.1. Recording referrals of TTI Positive Donor for testing, care and treatment

Donor Counsellors are now able to record whether a TTI positive donor was referred to other services for further testing, care or treatment during post-donation counselling. They can do this by selecting a checkbox.

The screenshot shows the 'Donor Counselling' form. At the top, there are fields for 'Counselling Date' (15/07/2016), 'Counselling Status' (Received Counselling), and 'Referred To' (dropdown). Below these are 'Counselling Notes' and buttons for 'Save', 'Cancel', and 'Remove Status'. The main content area is divided into two columns. The left column contains donor details: DN (0000031), Date (20/05/2016), Time (04:05 PM to 04:05 PM), Venue (Clinic), Pack (Triple), Donor (Voluntary), ABO/Rh (A+), Race, Hb, Bp, Weight, and Adverse Event fields. The right column shows 'TTI Outcomes' and 'Blood Group Serology Outcomes'. The 'TTI Outcomes' table is as follows:

Test	Outcome	Tested On
HIV	POS	20/05/2016
HIV Repeat 1	POS	20/05/2016
HIV Repeat 2	POS	20/05/2016
HBV	NEG	20/05/2016
HCV	NEG	20/05/2016
Syphilis	NEG	20/05/2016
HIV Conf	POS	20/05/2016

The 'Blood Group Serology Outcomes' table is as follows:

Test	Outcome	Tested On
ABO	A	20/05/2016
Rh	POS	20/05/2016
Titre	HIGH	20/05/2016
AbScr	POS	20/05/2016
ABO Repeat 1	A	20/05/2016
Rh Repeat 1	POS	20/05/2016

A Donor Counsellor can now also record the referral site that the donor was referred to. The referral sites must be configured as a location in Settings.

This screenshot shows the 'Donor Counselling' form with the 'Referred To' dropdown menu set to 'Referral Clinic'. The other fields and buttons are the same as in the previous screenshot.

1.2. Donor Counselling report

The Donors Flagged for Counselling report has been renamed to Donor Counselling Report and in addition to listing all donors who have been flagged for counselling due to a positive TTI outcome, donor counsellors are now able to produce a report showing the counselling and referral status of those donors. The report can generate a list of:

- a. Donors who refused counselling
- b. Donors who did not receive counselling
- c. Donors that have been counselled and if so, whether or not they were referred

Donor Counselling

Venues:

Any Venue

Donation Period: To:

Any Date

Flagged for Counselling:

Counselling Status:

Include Donors That Have Been Referred

Include Donors That Have Not Been Referred

1.3. Date for post donation counselling limited to a past and current date

Donor Counselling staff are now only allowed to select a Counselling Date that is current or in the past

Counselling Date:

Counselling Status:

Referred To:

Counselling Notes:

April 2017

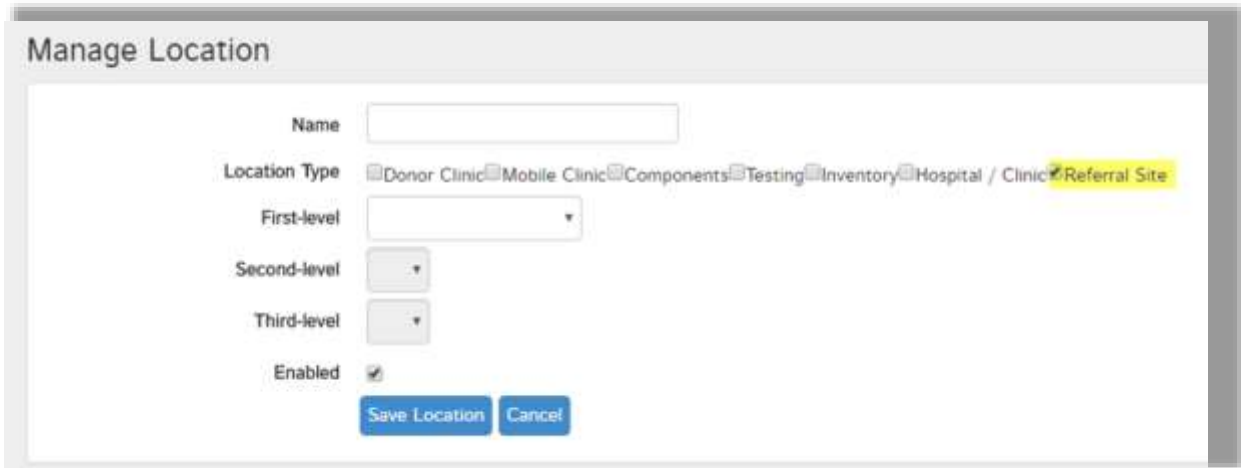
Mon	Tue	Wed	Thu	Fri	Sat	Sun
27	28	29	30	31	01	02
03	04	05	06	07	08	09
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
01	02	03	04	05	06	07

TTI Test Status: TTI_UNSAFE
Blood Group Serology Test Status: COMPLETE - MATCH

Test	Outcome	Tested On	Blood Gro
HIV	NEG	06/02/2017	ABO
HBV	POS	06/02/2017	Rh

1.5 Set up Referral Site

An Administrator is able to add and edit a referral site under 'Manage Locations', which can be found under the Settings menu.



The screenshot shows a web form titled "Manage Location". It contains the following fields and controls:

- Name:** A text input field.
- Location Type:** A group of radio buttons with options: Donor Clinic, Mobile Clinic, Components, Testing, Inventory, Hospital / Clinic, and Referral Site. The "Referral Site" option is selected and highlighted in yellow.
- First-level:** A dropdown menu.
- Second-level:** A dropdown menu.
- Third-level:** A dropdown menu.
- Enabled:** A checkbox that is checked.
- Buttons:** "Save Location" and "Cancel" buttons.

2. Transfusions

2.1. Configure Transfusion Reaction Types

Transfusion Reaction Types can be configured under the Settings menu. Note that Transfusion Reaction Types are pre-populated according to the guidelines of the W.H.O. but these may be amended during installation and set-up to better reflect the reporting needs of the blood service. Transfusion Reaction Types simply consist of a name (short name or code) and a description.

Name	Description
ABO incompatibility	Immunological haemolysis due to ABO incompatibility
Allo-antibody	Haemolysis Immunological haemolysis due to other allo-antibody
NI Haemolysis	Non-immunological haemolysis
Anaphylaxis	Anaphylaxis/hypersensitivity
TACO	Transfusion-associated circulatory overload
TRALI	Transfusion-related acute lung injury
TTBI	Transfusion-transmitted bacterial infection
TT-HBV	Transfusion-transmitted viral infection HBV
TT-HCV	Transfusion-transmitted viral infection HCV
TT-HIV	Transfusion-transmitted viral infection HIV
TT-Other	Transfusion-transmitted viral infection other
TT-Malaria	Transfusion-transmitted parasitical infection (malaria)
TT-Parasitical	Transfusion-transmitted parasitical infection (other)
PTP	Post-transfusion purpura
TA-GVHD	Transfusion-associated – graft versus host disease
Other	Other reactions

2.2 Adding a new Transfusion Reaction Type

An Administrator or Superuser is able to add a new Transfusion Reaction Type.

Manage Transfusion Reaction Types

15 transfusion reaction type(s) found | [Add New Transfusion Reaction Type](#)

Name	Description	Enabled
ABO incompatibility	Immunological haemolysis due to ABO incompatibility	<input checked="" type="checkbox"/>
Allo-antibody	Haemolysis Immunological haemolysis due to other allo-antibody	<input checked="" type="checkbox"/>
Anaphylaxis	Anaphylaxis/hypersensitivity	<input checked="" type="checkbox"/>
NI Haemolysis	Non-immunological haemolysis	<input checked="" type="checkbox"/>
Other	Other reactions	<input checked="" type="checkbox"/>
PTP	Post-transfusion purpura	<input checked="" type="checkbox"/>
TA-GVHD	Transfusion-associated – graft versus host disease	<input checked="" type="checkbox"/>
TACO	Transfusion-associated circulatory overload	<input checked="" type="checkbox"/>
TRALI	Transfusion-related acute lung injury	<input checked="" type="checkbox"/>
TT-HBV	Transfusion-transmitted viral infection HBV	<input checked="" type="checkbox"/>

1 2 ...

2.3 Editing Transfusion Reaction Types

Transfusion Reaction Types can also be edited by clicking on an entry, editing it and then saving it.



The screenshot shows a web form titled "Manage Transfusion Reaction Type". It contains two text input fields: "Name" with the value "ABO incompatibility" and "Description" with the value "Immunological haemolysis due to ABO incompatibility". Below these fields is a checkbox labeled "Enabled" which is checked. At the bottom of the form are two buttons: "Save Transfusion Reaction Type" and "Cancel".

2.5 Recording Transfusions

If the blood service receives transfusion information from hospitals that is related to issued blood units, the blood service staff are now able to record this transfusion data in BSIS to allow for vein-to-vein traceability. Staff can now select 'Record Transfusions' under the Inventory menu. The data that can be recorded includes the transfusion site where the transfusion took place, the transfusion outcome (Transfused Uneventfully, Transfusion Reaction Occurred, Not Transfused and Unknown) and the type of transfusion reaction. Additional data about the patient that received the transfusion may also be captured if available. In the case where multiple units are produced from a selected component type, (specifically paediatric units) the component code for the transfused unit needs to be captured.

Record Transfusions

DIN Component Code

Component Type

Transfusion Site

Transfusion Outcomes

Transfusion Reaction Type

Transfusion Notes

Date Transfused

Patient Name

Patient No

Blood Bank

Ward No

Date of Birth

Gender

Blood Group

2.4 Finding Transfusions

Components that have transfusion information can be identified using the 'Find Transfusion' report under the Inventory menu. Any component that does not have an associated transfusion record to it will be omitted from the report. Note that the 'DIN' and 'Component Code' fields are compulsory if searching for a specific component. The report can be generated according to transfusion site, type of transfusion outcome and/or component type and within a selected period based on the date of transfusion.

Find Transfusions

DIN Component Code

Component Type

Transfusion Site

Transfusion Outcomes

Period: To:

2.6 Viewing and Updating Transfusions

Viewing of transfusions can be done by selecting 'Find Transfusion' under the Inventory menu. The user has the option of searching for a specific component by providing the DIN and component code or can search according to component type, transfusion site and/or type of transfusion outcome. Double clicking on the returned result will allow the user to view or edit the transfusion record. Note that it is not possible to edit the DIN, Component Code or Component Type.

The screenshot shows the 'Find Transfusions' interface. On the left is a sidebar menu with a 'Find Transfusions' option highlighted. The main area contains search filters: DIN, Component Code, Component Type, Transfusion Site, Transfusion Outcome, and a date range (Period: 25/03/2017 to 05/04/2017). Below the filters are 'Search' and 'Clear' buttons. A 'Data Export' section has 'PDF' and 'CSV' buttons. The main data table is as follows:

DIN	Component Code	Component Type	Transfused On	Outcome	Transfusion Site
123456	401	Plasma Concentrate - White Skel	28/03/2017	TRANSFUSED_SINEVENTFULLY	Butterworth Hospital
888888	201	Packed Red Cells - CPDA	04/04/2017	TRANSFUSED_SINEVENTFULLY	ABC Teaching Hospital

Record Transfusions

DIN: 1234545 Component Code: 4001

Component Type: Platelets Concentrate - Whole Blood

Transfusion Site: Butterworth Hospital

Transfusion Outcomes: Transfused Uneventfully

Transfusion Reaction Type:

Transfusion Notes: Notes

Date Transfused: 29/03/2017

Patient Name: nameOne nameTwo

Patient No: 22222

Blood Bank: 33333

Ward No: 44444

Date of Birth: 01/01/1970

Gender: Male

Blood Group: O+

[Save Transfusion](#) [Clear](#)

2.7 Voiding a Transfusion

If transfusion data has been incorrectly captured, a transfusion record can be voided by clicking on the 'void' button on the 'Record Transfusion' screen. Note that this will not void the component record, only the transfusion data associated with it.

Record Transfusions

DIN: 1234545 Component Code: 4001

Component Type: Platelets Concentrate - Whole Blood

Transfusion Site: Butterworth Hospital

Transfusion Outcomes: Transfused Uneventfully

Transfusion Reaction Type:

Transfusion Notes: Notes

Date Transfused: 29/03/2017

Patient Name: nameOne nameTwo

Patient No: 22222

Blood Bank: 33333

Ward No: 44444

Date of Birth: 01/01/1970

Gender: Male

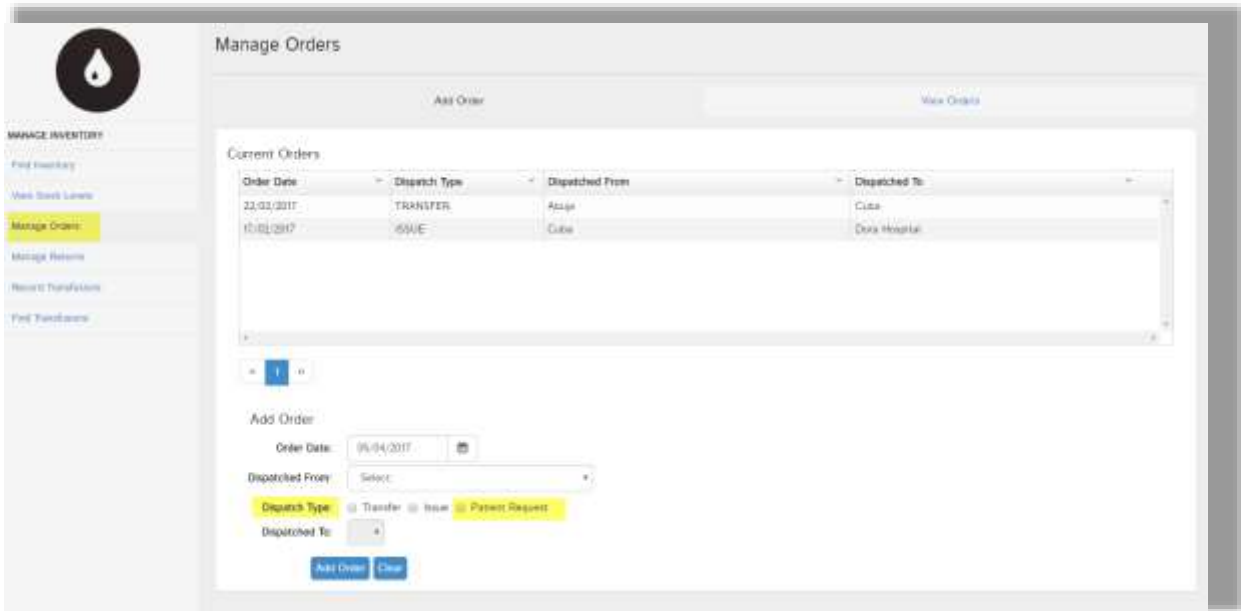
Blood Group: O+

[Save Transfusion](#) [Clear](#) [Void](#)

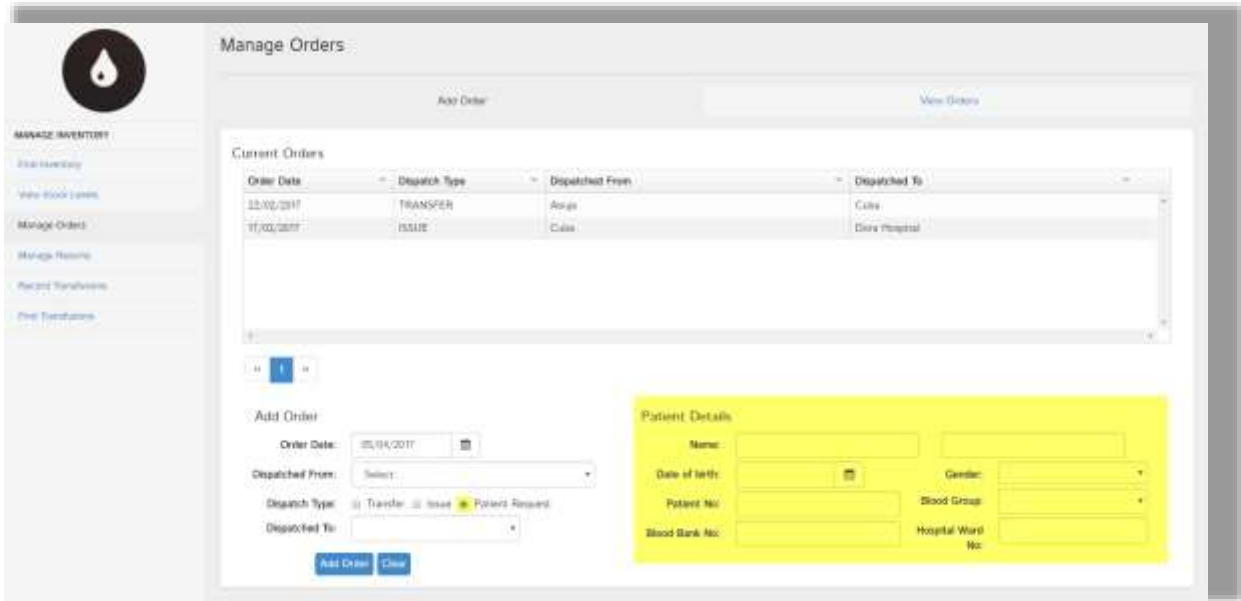
3. Patient Request

3.1 New 'Patient Request' order type.

When adding a new order, the user has an option to select 'Patient Request' for orders that are received for a specific patient .



On selection of 'Patient Request' as a Dispatch Type, the user will have to add the patient details to the order. These are the patient's name (first and last name – both mandatory) and if available, the patient's date of birth, gender, patient number and blood group as well as the blood bank number and ward no of the hospital. The rest of the order details are entered as normal i.e. the number of blood units required by component type and blood group.



4. Reports

4.1. Additional columns in the Blood Units Issued Summary Report

Extra columns have been added to this report to cater for the new Patient Request type of order. The new additional columns are:

- Patient Requests – This is the total blood units ordered via - patient requests.
- Issued – This is the total blood units issued against patient requests.
- Gap – The difference between the total units ordered via patient request and the Total units issued against patient requests.
- % Issued vs Ordered – The percentage of units issued against units ordered via patient requests.

The existing columns show the total number of blood units order and issued against a bulk order where the Dispatch Type is Issue.

Blood Units Issued Summary Report

Period: 29/03/2017 To: 05/04/2017

Search Clear

3 item(s) found | Data export: PDF CSV

Distribution Site	Component Type	Ordered	Issued	Gap	% Issued vs Ordered	Patient Requests	Issued	Gap	% Issued vs Requests
Cuba	Fresh Frozen Plasma - Whol	0	0	0		1	1	0	100.00
	Total Blood Units	0	0	0		1	1	0	100.00
Alawattra	Platelets Concentrate - Who	0	0	0		1	1	0	100.00
	Total Blood Units	0	0	0		1	1	0	100.00
JHS	Whole Blood - CPDA	1	0	1	0.00	0	0	0	
	Packed Red Cells - CPDA	1	1	0	100.00	0	0	0	
	Fresh Frozen Plasma - Whol	1	1	0	100.00	0	0	0	
	Total Blood Units	3	2	1	66.67	0	0	0	

4.2. Transfusions Summary Report

This new report provides information on:

- The total number of blood units recorded as “Transfused Uneventfully”
- The total number of all blood units recorded as ‘Not Transfused’
- The total number of transfusion reactions according to reaction type and the total number of all blood units recorded as “Transfusion Reaction Occurred”.
- The total number of all blood units recorded as ‘Transfusion Unknown’.

Transfusions Summary Report

Usage Site: + flag

Period: 30/03/2017 To: 06/04/2017

Search Clear

3 item(s) found | Data export: PDF CSV

Usage Site	Total Transfused (Units)	Total Not Transfused (Units)	AMS (Transfused)	AMU (Transfused)	AMV (Transfused)	AMW (Transfused)	AMX (Transfused)	AMY (Transfused)	AMZ (Transfused)	AMAA (Transfused)	AMAB (Transfused)	AMAC (Transfused)	AMAD (Transfused)	AMAE (Transfused)	AMAF (Transfused)	AMAG (Transfused)	AMAH (Transfused)	AMAI (Transfused)	AMAJ (Transfused)	AMAK (Transfused)	AMAL (Transfused)	Total Reactions	Total Unknown

4.3 TTI Prevalence Report updated

This report has been amended so that if there are no donations records (by gender, for a venue within the selected time period, then the row for that gender will be omitted from the report.

4.4 Donation Types Report updated

This report has been amended so that if there are no donations records (by gender, for a venue within the selected time period, then the row for that gender will be omitted from the report.

5. Donor Management

5.1 Improvement to 'Find Donor' search

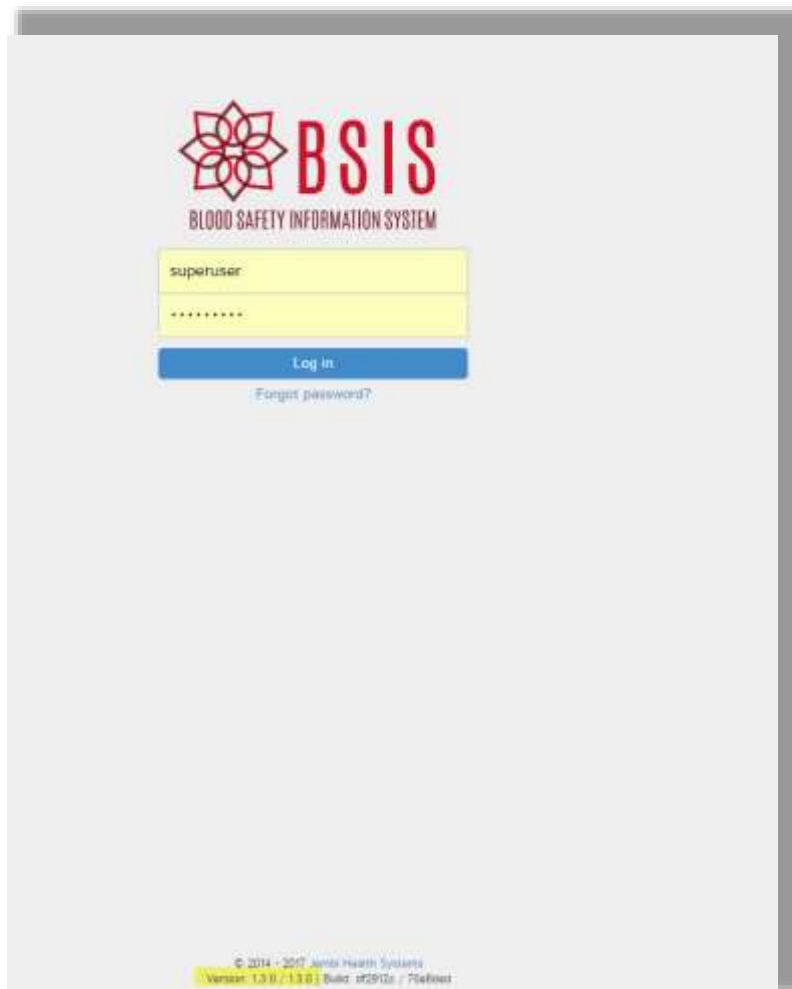
When a user enters a Donor's name (first and/or last), DIN or Donor Number, the other search fields become disabled. Previously a combination of search criteria could be entered but the search only used the donor's names and ignored the DIN or Donor Number, which was confusing.

The screenshot shows a web application interface for finding donors. On the left is a sidebar with a circular icon containing a document and a magnifying glass. Below the icon are several menu items: 'DONOR RECORDS' (with 'Manage Donors' highlighted), 'Duplicate Donors', 'DONOR CLINIC' (with 'Manage Donation Batches'), 'POST DONATION' (with 'Donor Counseling'), and 'DONOR COMMUNICATIONS' (with 'View / Export Donor List'). The main area is titled 'Find Donor' and contains search fields: 'Name' with sub-fields for 'First' and 'Last', a 'Donor #' field containing '000065', and a 'DIN' field. There are 'Search' and 'Clear' buttons, and a checkbox labeled 'Include Similar Results'.

IMPROVEMENTS AND UPDATES

1. BSIS version will display on the front-end

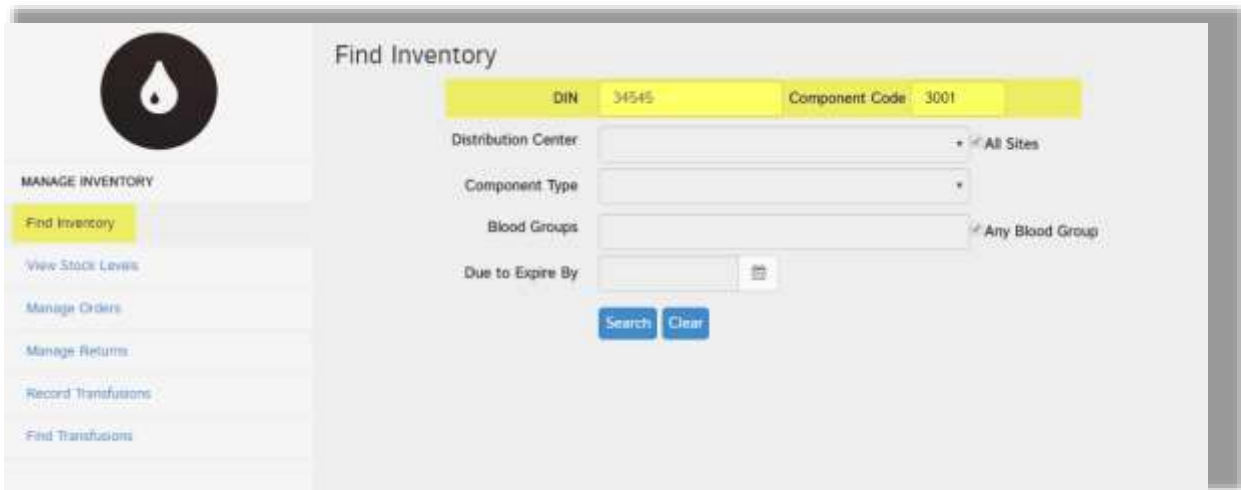
The BSIS Login Page now displays the version of BSIS installed, making it easier to identify for upgrade and support purposes.



BUG FIXES

1. 'Find Inventory' search criteria disables other search fields

When a user enters a DIN and Component Code in order to search for a specific component, the other search fields are now disabled. Note that it is still possible to search using a combination of the other search criteria if the DIN and Component Code are left blank.



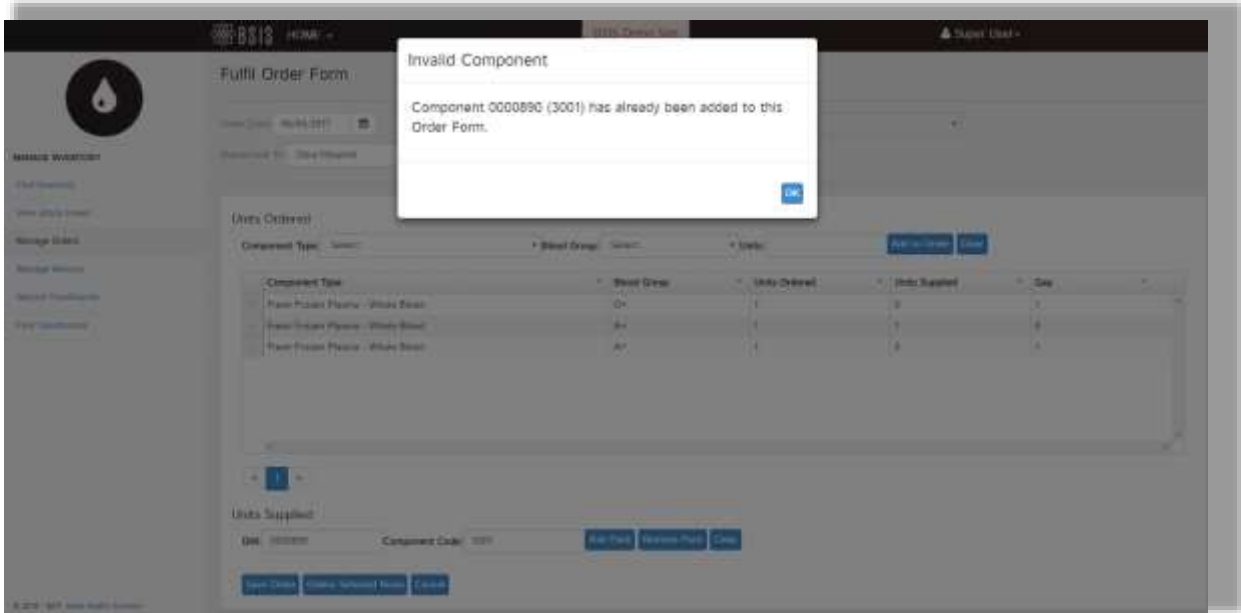
2. When merging Donor details, the name display order is now correct

When merging donor details, the donor name details now display in the following sequence: first name, middle name, last name.



3. Cannot create multiple issue orders with the same component

The same component cannot be assigned to another order which has been saved but not yet dispatched. When this happens an alert is rendered to the user that the component has been saved to another order.



4. Changed the error message for saving an invalid component code

The error message for when an invalid component is entered during the create order process has been updated to a more appropriate error message.



5. Default BSIS Date Format is now used throughout the BSIS application

The default date format as specified under settings is now applied throughout the BSIS application.

6. Table headers showing full text

All table headers in the BSIS application now show the full text. This text may wrap if it is too long for the column width but is not cut off as was happening previously.

Venue	Accident	Allergy	Arterial puncture	Convulsions	Haematoma	Hyperventilation	Nausea	Nerve injury	Thrombophlebitis	Vasovagal	Other	Total Adverse Events
-------	----------	---------	-------------------	-------------	-----------	------------------	--------	--------------	------------------	-----------	-------	----------------------