Health Level Seven (HL7)
Blood Bank Special Interest Group (BB SIG)

Proposal for Changes:

Blood Product Order Message
Blood Product Dispense Status Message
Blood Product Transfusion Message

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4.1 DOCUMENT OBJECTIVE

This working document is intended to serve as an organized means of communicating all the information gathered through the Blood Bank Special Interest Group (BB SIG). Information presented in this document has originated from BB SIG meeting discussions, conference calls, individual contributions, and previously existing HL7 documents.

Note: The proper name for the laboratory area, which performs pre-transfusion testing for a patient to determine product compatibility, is a transfusion service. The more commonly used name is blood bank blood. However, in the blood bank industry, blood bank usually refers to the blood center where blood donations are made. Throughout this document an attempt has been made to utilize the more appropriate name of transfusion service for the patient-related messaging.

Problem:

The current HL7 standard does not adequately address the following transfusion service related interface issues:

1. The specimen used for testing in a blood bank / transfusion service differs from a routine laboratory specimen, as it has an extended expiration date and may be used for multiple orders for the duration of the life of that specimen. This information needs to be communicated between the clinical staff and the transfusion service. Also, labeling of blood specimens must follow very stringent labeling requirements. Mis-labeled, mis-identified and expired specimens cannot be used for testing and this information must also be communicated between the hospital staff and the transfusion service.
2. There is no standard means of ordering blood products intended for transfusion to a patient, particularly for a patient with special transfusion requirements.
3. There is currently no standard means of communicating the status of blood products that are made ready for transfusion to a patient by the transfusion service, or have been dispensed or transfused to a patient.
4. In order for the transfusion service of transfusion service medical staff to perform a prospective review of appropriateness of a blood product order or subsequent transfusion, it is necessary to view the patient's current hematology results of specific tests. This is readily performed when the transfusion service computer system is a module within an LIS. However, stand-alone transfusion service computer systems do not have immediate access to such information and dependent upon receiving this information from the clinician when the order is placed. There is currently no standard means of transmitting this information.
5. Transfusion service testing frequently involves performing tests that are relevant to more than one individual, such as a mother and infant or a potential organ donor and intended recipient. There is currently no way to link the results of testing to the related individual.

This current proposal addresses these issues in the following manner:

1) The transmission of specimen information is of great importance to the BB SIG. However, a proposed solution is not included in this current proposal as the BB SIG is investigating the use of the Specimen Source segment, providing the required attributes can be added to that segment. This specimen information should be included in any new messages in this proposal since the availability and status of a blood bank specimen can change at any time. The BB SIG will seek the approval of the Specimen Source committee for the additional specimen attributes.

2) Proposed new Blood Product Order message: OMB

   a) Proposed new trigger event for the message (to be officially assigned by O/O): 26

b) New detail segment containing specific blood-product related attributes: BPO

c) New Acknowledgment message for the blood product order: ORB

d) New trigger event for the acknowledgement (to be officially assigned by O/O): 27

e) Relevant clinical information is included in the OBX segment as needed.

3) Proposed new Blood Product Dispense status message: BPS

a) Proposed new trigger event for the message (to be officially assigned by O/O): 28

b) New detail segment containing specific blood-product related attributes: BPX

c) New Acknowledgment message for the blood product order: BRP

d) New trigger event for the acknowledgement (to be officially assigned by O/O): 29

4) Proposed new blood product transfusion message: BTS

a) Proposed new trigger event for the message (to be officially assigned by O/O): 30

b) New detail segment containing specific blood-product related attributes: BTX

c) New Acknowledgment message for the blood product order: BRT

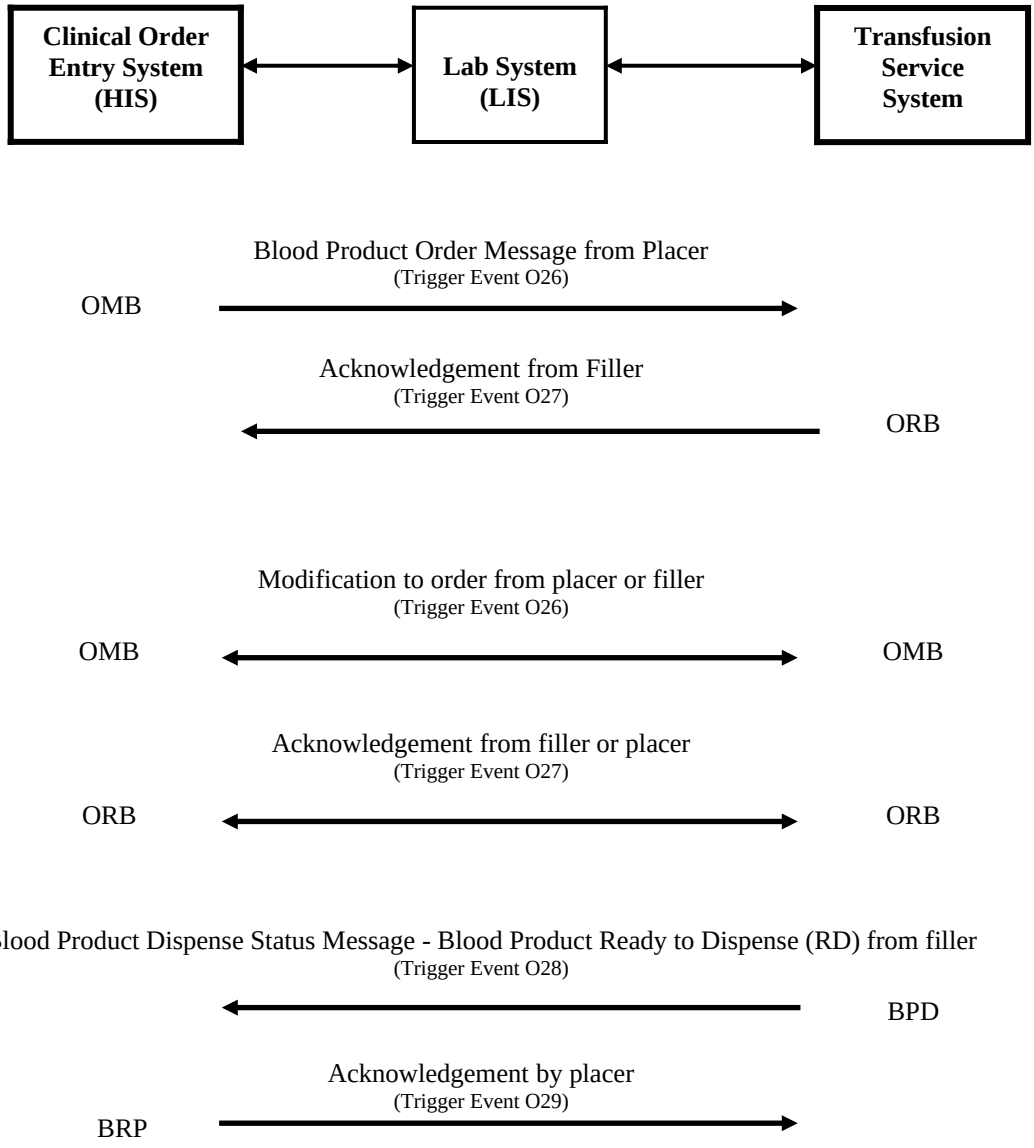
d) New trigger event for the acknowledgement (to be officially assigned by O/O): 31

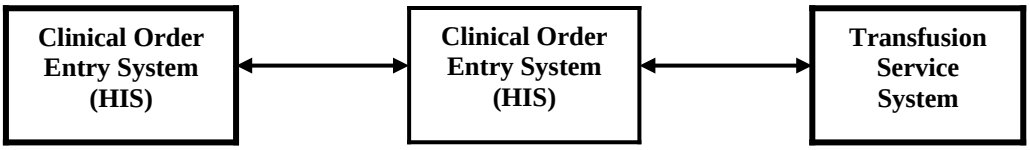
The remaining sections of the proposal include the detail descriptions of the messages, segments and message usage.

Patient Related Messages

4.2 MESSAGE IDENTIFICATION

The following diagram depicts the message flow of the proposed new blood product messages.





Blood Product Dispense Message - Blood Product Dispensed (DI)
(Trigger Event 28)

BPD

Acknowledgement by placer
(Trigger Event O29)

BRP

Stop/Cancel Transfusion
(Trigger Event O32)

BTS

Acknowledgement by filler
(Trigger Event O33)

BRT

Complete Transfusion by placer
(Trigger Event O30)

BTS

Acknowledgement by filler
(Trigger Event O31)

BRT

4.3 BLOOD BANK TRIGGER EVENTS AND MESSAGES

4.3.1 Usage notes for blood bank messages

4.3.2 OMB – blood product order message (event O26)

Blood product order messages present the need for additional information that is not included in standard HL7 order messages. Order messages need to contain accompanying details regarding the blood product component, such as special processing requirements (e.g. irradiation and leukoreduction), and the amount of the blood product to be administered. Additionally, specific relevant clinical information can be included to allow the prospective review of the appropriateness of the blood product order

Blood product orders can use the OMB message with the BPO segment for the detail segment and the acknowledgment message, ORB as described below.

OMB^O26^OMB_O26	**Blood Product Order Message**	**Chapter**
MSH	Message Header	2
[{NTE}]	Notes and Comments (for Header)	2
[		
PID	Patient Identification	3
[PD1]	Additional Demographics	3
[{NTE}]	Notes and Comments (for Patient ID)	2
[PV1	Patient Visit	3
[PV2]]	Patient Visit - Additional Info	3
[{IN1	Insurance	6
[IN2]	Insurance Additional Info	6
[IN3]	Insurance Add'l Info - Cert.	6
}]		
[GT1]	Guarantor	6
[{AL1}]	Allergy Information	3
]		
{		
ORC	Common Order	4
[		
BPO	Blood Product Order	4
[{NTE}]	Notes and Comments (for BPO)	2
[{DG1}]	Diagnosis	6
[{		
OBX	Observation/Result	7
[{NTE}]	Notes and Comments (for OBX)	2
}]		
[{FT1}]	Financial Transaction	6
[BLG]	Billing Segment	6
]		
}		

4.3.3 ORB – blood product order acknowledgment (event O27)

ORB^O27^ORB_O27	**Description**	**Chapter**
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2
[{NTE}]	Notes and Comments (for Response Header)	2
[		
[PID	Patient Identification	3
[{		
ORC	Common Order	4
[BPO]	Blood Product Order	4
}]		

```
 ]
]
```

4.3.4 BPD – blood product dispense status message (event O28)

In the pre-transfusion processing of blood products, it is necessary for the transfusion service to communicate information that is not included in the current HL7 order/observation model. Examples of pre-transfusion processing include performing a crossmatch test to ensure compatibility with the patient, or irradiation of the blood product due to a special transfusion requirement for the patient. The blood product dispense status messages need to contain additional information regarding the blood products requested such as the Donation ID number, product code, blood type, expiration date/time and current status of the blood product.

In the processing of commercial blood products, such as Rh Immune Globulin, Factor Concentrate, or Albumin Products, it is necessary for the transfusion service to communicate information that is not included in the current HL7 order/observation model. The status messages need to contain additional information regarding the blood products requested, such as the lot number and manufacturer, expiration date and status of the commercial product.

A new message type and trigger event are proposed to initiate the transmission of a blood product dispense status message each time the status of a blood product changes.

Blood product dispense status messages will use the BPS and BRP messages as described below.

BPS^O28^BPS_O28	**Blood Product dispense status Message**	**Chapter**
MSH	Message Header	2
[{NTE}]	Notes and Comments (for Header)	2
[		
PID	Patient Identification	3
[PD1]	Additional Demographics	3
[{NTE}]	Notes and Comments (for Patient ID)	2
[PV1	Patient Visit	3
[PV2]]	Patient Visit - Additional Info	3
]		
{		
ORC	Common Order	4
BPO	Blood Product Order	4
[{NTE}]	Notes and Comments (for BPO)	2
[{		
BPX	Blood Product dispense status/Observation	4
[{NTE}]	Notes and Comments (for BPX)	2
}		
}		
}		

4.3.5 BRP – blood product dispense status acknowledgment (event O29)

BRP^O29^BRP_O29	**Description**	**Chapter**
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2
[{NTE}]	Notes and Comments (for Response Header)	2
[		
[PID	Patient Identification	3
[{		
ORC	Common Order	4
[BPO]	Blood Product Order	4
[{BPX}]	Blood Product dispense status/Observation	
}]		
]		

4.3.6 BTS – blood product transfusion message (event O30)

A new message type and trigger event is proposed to notify the filler system of the final disposition (transfusion) of a blood product.

Blood product transfusion messages will use the BTS and BRT messages as described below.

BTS^O30^BTS_O30	Blood Product Transfusion Message	Chapter
MSH	Message Header	2
[{NTE}]	Notes and Comments (for Header)	2
[		
PID	Patient Identification	3
[PD1]	Additional Demographics	3
[{NTE}]	Notes and Comments (for Patient ID)	2
[PV1	Patient Visit	3
[PV2]]	Patient Visit - Additional Info	3
]		
{		
ORC	Common Order	4
{		
BPO	Blood Product Order	4
[{NTE}]	Notes and Comments (for BPO)	2
[{		
BTX	Blood Product Transfusion Status/Observation	4
[{NTE}]	Notes and Comments (for BTX)	2
}]		
}		
}		

4.3.7 BRT – blood product transfusion acknowledgment (event O31)

BRT^O31^BRT_O31	Description	Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2
[ERR]	Error	2
[{NTE}]	Notes and Comments (for Response Header)	2
[		
[PID]	Patient Identification	3
[{		
ORC	Common Order	4
[BPO]	Blood Product Order	4
[{BTX}]	Blood Product Transfusion Status/Observation	4
}]		
]		

4.4 BLOOD BANK SEGMENTS

4.4.1 ORC - common order segment

The Common Order segment (ORC) is used to transmit fields that are common to all orders (all types of services that are requested). The ORC segment is required in the Order (ORM) message. ORC is mandatory in Order Acknowledgment (ORR) messages if an order detail segment is present, but is not required otherwise.

If details are needed for a particular type of order segment (e.g., Pharmacy, Dietary), the ORC must precede any order detail segment (e.g., RXO, ODS). In some cases, the ORC may be as simple as the string `ORC|OK|<placer order number>|<filler order number>|<cr>.`

If details are not needed for the order, the order detail segment may be omitted. For example, to place an order on hold, one would transmit an ORC with the following fields completed: *ORC-1-order control* with a value of HD, *ORC-2-placer order number*, and *ORC-3-filler order number*.

There is some overlap between fields of the ORC and those in the order detail segments. These are described in the succeeding sections.

HL7 Attribute Table – ORC – Common Order

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
1	2	ID	R	N	0119	00215	Order Control
2	22	EI	C			00216	Placer Order Number
3	22	EI	C			00217	Filler Order Number
4	22	EI	O			00218	Placer Group Number
5	2	ID	O	N	0038	00219	Order Status
6	1	ID	O		0121	00220	Response Flag
7	200	TQ	O	Y		00221	Quantity/Timing
8	200	CM	O			00222	Parent
9	26	TS	O			00223	Date/Time of Transaction
10	250	XCN	O	Y		00224	Entered By
11	250	XCN	O	Y		00225	Verified By
12	250	XCN	O	Y		00226	Ordering Provider
13	80	PL	O			00227	Enterer's Location
14	250	XTN	O	Y/2		00228	Call Back Phone Number
15	26	TS	O			00229	Order Effective Date/Time
16	250	CE	O			00230	Order Control Code Reason
17	250	CE	O			00231	Entering Organization
18	250	CE	O			00232	Entering Device
19	250	XCN	O	Y		00233	Action By
20	250	CE	O		0339	01310	Advanced Beneficiary Notice Code
21	250	XON	O	Y		01311	Ordering Facility Name
22	250	XAD	O	Y		01312	Ordering Facility Address
23	250	XTN	O	Y		01313	Ordering Facility Phone Number
24	250	XAD	O	Y		01314	Ordering Provider Address
25	250	CWE	O	N		01473	Order Status Modifier

4.4.2 BPO – blood product order segment

Blood product order messages present the need for additional information that is not included in standard HL7 order messages. Order messages need to contain accompanying details regarding the blood product component, such as special processing requirements (e.g. irradiation and leukoreduction) and the amount of the blood product to be administered.

The following table was used to present various use cases surrounding blood product orders. Discussions of these examples led to the identification of new fields needed that are required for blood product order messages.

Universal Service ID [ISBT-128 Universal Service ID]	Blood Product Attribute	Quantity	Blood Product Amount	Units
002^Red Blood Cells	Leukoreduced	2	300	ml
002^Red Blood Cells	Leukoreduced	1	60	ml
002^Red Blood Cells	Irradiated	2	15	ml

002^Red Blood Cells	Leukoreduced	1		
020^Platelets	Leukoreduced Irradiated	6		
024^ Apheresis Platelets	Irradiated	1		
002^Red Blood Cells		1		
Factor VIII		2	910	IU

As can be seen from this table, in addition to the Universal Service ID, it may be necessary to order special blood product attributes, such as leukoreduced or irradiated, or it may be necessary a particular volume of red blood cells required for transfusion. The attributes for the BPO Segment are defined below.

HL7 Attribute Table – BPO – Blood Product Order

SEQ	LEN	DT	OPT	RP/#	TBL #	ITEM #	ELEMENT NAME
1	4	SI	R				Set ID – BPO
2	250	CE	R				BP Universal Service ID
3	250	CE	O	Y			BP Attributes
4	5	NM	O				BP Amount
5	250	CE	O				BP Units
6	26	TS	O				BP Intended Use Date/Time
7	80	PL	O				BP Intended Dispense From Location
8	26	TS	O				BP Requested Dispense Date/Time
9	80	PL	O				BP Requested Dispense To Location
10	250	CE	O				BP Indication for Use
11	1	ID	O				BP Informed Consent Indicator

4.4.2.0 BPO field definitions

4.4.2.1 BPO-1 Set ID – BPO (SI)

Definition: This field contains the sequence number for the BPO segment within the message. For the first order transmitted, the sequence number shall be 1; for the second order, it shall be 2; and so on.

4.4.2.2 BPO-2 BP Universal service identifier (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the identifier code for the requested observation/test/battery. This can be based on local and/or “universal” codes. We recommend the “universal” procedure identifier. The structure of this CE data type is described in the control section. The preferred coding system is the *ISBT 128 Product Cod e.*

Blood Product Orders for commercial products such as Rh Immune Globulin or Factor VII concentrate are not defined in an international or national coding system as are blood product. Therefore, locally defined codes can be used of the Universal Service Identifier for commercial products.

Appendix 1 - ISBT 128 Product Code Database Documentation Version 1.2.0

Code	*ISBT 128* Component Class
001	WHOLE BLOOD
002	RED BLOOD CELLS
003	WASHED RED BLOOD CELLS
004	FROZEN RED BLOOD CELLS
005	FROZEN REJUVENATED RED BLOOD CELLS
006	DEGLYCEROLIZED RED BLOOD CELLS
007	DEGLYCEROLIZED REJUVENATED RED BLOOD CELLS
008	REJUVENATED RED BLOOD CELLS
009	APHERESIS RED BLOOD CELLS
010	FRESH FROZEN PLASMA
011	THAWED FRESH FROZEN PLASMA
012	APHERESIS FRESH FROZEN PLASMA
013	THAWED APHERESIS FRESH FROZEN PLASMA
014	APHERESIS PLASMA
015	THAWED APHERESIS PLASMA
016	LIQUID PLASMA
017	PLASMA
018	THAWED PLASMA
019	PLATELET RICH PLASMA
020	PLATELETS
021	WASHED PLATELETS
022	POOLED PLATELETS
023	WASHED POOLED PLATELETS
024	APHERESIS PLATELETS
025	FROZEN APHERESIS PLATELETS
026	THAWED APHERESIS PLATELETS
027	WASHED APHERESIS PLATELETS
028	CRYOPRECIPITATE
029	THAWED CRYOPRECIPITATE
030	POOLED CRYOPRECIPITATE
031	THAWED POOLED CRYOPRECIPITATE
032	APHERESIS CRYOPRECIPITATE
033	THAWED APHERESIS CRYOPRECIPITATE
034	GRANULOCYTES
035	APHERESIS GRANULOCYTES
036	POOLED GRANULOCYTES
037	APHERESIS GRANULOCYTES /PLATELETS
038	LEUKOCYTES
039	APHERESIS LEUKOCYTES
040	POOLED PLASMA

4.4.2.3 BPO-3 BP Special Transfusion Requirements (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains additional information about the blood component class associated with the Universal Service ID. The placer of the order can specify any required product attributes or special processing requirements for the blood product, which must be completed prior to

transfusion to the intended recipient. Examples of processing requirements or product attributes include CMV Negative, HLA Matched, Irradiated or Leukoreduced. Refer to HL7 Table #### (to be assigned) - Blood Component Transfusion Requirements for suggested values.

This is an optional, repeating field.

HL7 Table #### (to be assigned) - Blood Component Transfusion Requirements

Value	Description
LR	Leukoreduced
IR	Irradiated
CS	CMV Safe
FR	Fresh unit
AU	Autologous Unit
DI	Directed Unit
HL	HLA Matched
CM	CMV Negative
HB	Hemoglobin S Negative
WA	Washed
IG	IgA Deficient

4.4.2.4 BPO-4 BP Amount (NM)

Definition: This field contains the ordered amount (volume) associated with each quantity of blood product.

This field is optional so that a unit of blood can be ordered without an amount or unit specified.

4.4.2.5 BPO-5 BP Units (CE)

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
             identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
             (ST)>
```

Definition: This field contains the units for the blood product amount. This field contains the designation for unit of measure for blood products. See 7.15.3.3.2.

This field is optional so that a unit of blood can be ordered without an amount or unit of measure specified.

4.4.2.6 BPO-6 BP Intended Use Date/Time (TS)

Definition: This field specifies the date/time associated with the scheduled availability of the blood product.

This is the time when the product is expected to be available within the transfusion service. For example, the product should be available for use but not dispensed on this date/time. This field is optional.

4.4.2.7 BPO-7 BP Intended Dispense From Location (PL)

```
Facility:  <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)
```

Definition: The first component contains location from which the blood component is to be issued (if applicable). Locally defined codes can be used for this field. This field is an optional field and is used when the transfusion service has more than one site from which blood products can be dispensed. This location would indicate the specific facility from which the blood product should be dispensed.

4.4.2.8 BPO-8 BP Requested Dispense Date/Time (TS)

Definition: This field specifies the date/time that the requested blood products must be ready to dispense. This date/time may be different from the Intended Use Date/time. For example, the patient may be scheduled to come in for a transfusion at a specified time. However, the placer would request that the blood product be ready to dispense prior to that in order to have the blood component ready for transfusion at the scheduled time.

4.4.2.9 BPO-9 BP Requested Dispense To Location (PL)

```
Components:  <point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ <location
             status  (IS)> ^ <person location type (IS)> ^ <building (IS)> ^ <floor (IS)>
             ^ <location description (ST)>

Subcomponents of facility:  <namespace ID (IS)> & <universal ID (ST)> & <universal ID type
             (ID)
```

Definition: The first component contains the inpatient or outpatient location to which the blood component is to be dispensed. The default (null) value is the current census location for the patient. Site-specific table. The first eight components have the same form as the first eight components of *PV1-3-assigned patient location.* The final eight components replace the ninth component of *PV1-3-assigned patient location* and represent the full address specification.

4.4.2.10 BPO-10 BP Indication for Use (CE)

```
Components:  <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
             identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
             (ST)>
```

This is a coded optional field. The value indicates the reason that the blood product was ordered. Locally defined codes can be used for this value. This information is helpful for prospective review or retrospective studies of blood product ordering practices of the ordering provider by the Quality Assurance Department and/ or Transfusion Committee.

4.4.2.11 BPO-11 BP Informed Consent Indicator (ID)

This field indicates whether consent for the transfusion has been obtained.

This is an optional yes/no field.

4.4.3 BPX – blood product dispense status segment

In the processing of blood products, it is necessary for the transfusion service to communicate information that is not included in the current HL7 order/observation model. The status messages need to contain additional information regarding the blood products requested such as the unique donation ID, product code, blood type, expiration date/time of the blood product, and current status of the product. This segment is similar to an OBX segment, but contains additional attributes.

A new message type and trigger event is proposed to initiate the transmission of a blood product dispense status message each time the blood product dispense status changes.

HL7 Attribute Table – BPX – Blood Product dispense status

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	4	SI	R				Set ID – BPX
2	250	CE	R				BP Status
3	1	ID	R				BP Observation Status
4	26	TS	R				BP Date/Time of Status
5	15	ST	C				BP Donation ID +
6	250	CE	C				BP Component +
7	250	CE	C				BP Donation Type / Intended Use +
8	250	CE	C				BP Commercial Product *
9	250	XON	C				BP Manufacturer *
10	22	EI	C				BP Lot Number *
11	250	CE	O				BP Blood Group +
12	250	CE	C	Y			BP Special Testing +
13	26	TS	O				BP Expiration Date/Time
14	5	NM	R				BP Quantity
15	5	NM	O				BP Amount
16	250	CE	O				BP Units
17	22	EI	O				BP Unique ID
18	80	PL	O				BP Actual Dispense To Location
19	250	CE	O				BP Dispensed to Receiver
20	250	XCN	O		-		BP Responsible Observer
21	22	EI	O				BP Equipment Instance Identifier

4.4.3.0 BPX field definitions

The daggered (+) items in this segment are specific for blood component transactions, such as red blood cells, fresh frozen plasma and platelets.

The starred (*) items in this segment are relevant only for commercial blood product transactions., such as Factor Concentrate and Rh Immune Globulin.

4.4.3.1 BPX-1 Set ID – BPX (SI)

Definition: This field contains the sequence number for the BPX segment under the related BPO segment. For the first blood product dispense status transmitted, the sequence number shall be 1; for the second product dispense status, it shall be 2; and so on.

4.4.3.2 BPX-2 BP Status (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field is used to indicate the current status of the specified blood product as indicated by the filler. For example, the first status change of a product that may trigger a Blood Product dispense status Message is when it first becomes linked to a patient and is ready to dispense to a patient. When the blood product is delivered or issued to a patient, the status of the blood product would be changed to indicate that it has now been "dispensed." A final status would indicate that the product has actually been "transfused." Refer to *HL7 Table #### (to be assigned) - Blood Product dispense status* for suggested values.

HL7 Table #### - Blood Product dispense status

Value	Description	Placer(P)/Filler (F)
RI	Received into inventory (for specified patient)	F
RD	Reserved and ready to dispense	F
RS	Reserved (ordered and product allocated for the patient)	F
RE	Released (no longer allocated for the patient)	F
DS	Dispensed to patient location	F
RA	Returned unused/no longer needed	F
RL	Returned unused/keep linked to patient for possible use later	F
WA	Wasted (product no longer viable)	F
PT	Presumed transfused (dispensed and not returned)	F
CR	Released into inventory for general availability	F
RQ	Request to dispense blood product	P

4.4.3.3 BPX-3 BP Observation status (ID)

Definition: The most commonly used values in a BPX will be preliminary and final. A status is considered preliminary until a blood product has reached a final disposition for the patient. For example, when the product is first cross-matched and a status message is sent, it would be considered preliminary. When the product is dispensed to the patient, that status would also be considered preliminary. However, once the product is transfused, the status would be considered final. The status of a blood product can continue to change and the previous result should be overwritten until it reaches a final status.

Table 0085 - Observation result status codes interpretation

Value	Description
C	Record coming over is a correction and thus replaces a final result
D	Deletes the OBX record
F	Final results; Can only be changed with a corrected result.
I	Specimen in lab; results pending
N	Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought.
O	Order detail description only (no result)
P	Preliminary results
R	Results entered -- not verified
S	Partial results
X	Results cannot be obtained for this observation
U	Results status change to final without re-transmitting results already sent as 'preliminary.' E.g., radiology changes status from preliminary to final
W	Post original as wrong, e.g., transmitted for wrong patient

4.4.3.4 BPX-4 BP Date/time of status (TS)

Definition: This field indicates the date and time that the status of the blood component was changed. For example, if the blood component had a status, of "RD" (Ready to Dispense) , the date and time in this field would indicate the date and time that component was made ready to dispense by the filler system. This is a required field.

4.4.3.5 BPX-5 BP Donation ID (ST)

Definition: The donation ID is the unique identification number assigned to a blood donation. The donation number will depend upon the bar code labeling system used for the component. There

are currently two blood component labeling standards: *ABC CODABAR* and *ISBT 128*. If using *ISBT 128*, the donation ID Number is an internationally unique identifier consisting of the following 13 characters:

Country Code
Collection Facility
Donation Year
Serial Number

This is a conditional field and is required for blood components. It is not applicable for commercial product messages.

4.4.3.6 BPX-6 BP Component (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: The Blood Component field includes a description of the specific blood component.

1st component: The numeric or alphanumeric product code, which represents the type of blood component. The coding system will be determined by the bar code labeling system on the particular component of blood. The preferred coding system is *ISBT 128*. If using *ISBT 128* labeling standard, the product code will consist of an 8-character alphanumeric code, starting with an alpha character and will include the component class, donation type/intended use and division indicator.

If using CODABAR product labeling standard, the product code will consist of a 5-character numeric.

2nd Component: Product Description: The Product Description is a textual description of the numeric or alpha numeric product code.

This is a conditional field and is required for blood components. It is not applicable for commercial product messages.

4.4.3.7 BPX-7 BP Donation type / intended use (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: Donation Type is used to indicate the type of donation or collection/intended use. This value is populated from the list of Reference values below. The default value is "0" or "Unspecified." Other values will indicate if the blood product is an allogeneic unit from a volunteer donor, or is intended for a specific recipient but may be crossed over and used for another recipient, or is an autologous donation intended only for that particular recipient. Refer to Table 5 -Type of Donation in the ISBT 128 Bar Code Symbology and Application Specification for Labeling of Whole Blood and Blood Components

Value	Description
0	Not specified
1	For autologous use only
X	For autologous use only – biohazardous
V	Voluntary allogeneic
D	Directed voluntary donation – eligible for crossover
Small d	Directed paid donation – eligible for crossover

Value	Description
P	Paid allogeneic donation
2	Directed voluntary allogeneic donation – for directed donor use only
L	Directed voluntary allogeneic donation – for directed donor use only – limited exposure
3	Directed voluntary allogeneic donation – for directed donor use only – biohazardous
4	Designated voluntary allogeneic donation
5	Dedicated voluntary allogeneic donation
R	Voluntary research donation
Small r	Paid research donation
S	Voluntary source donation
T	Voluntary therapeutic collection

This is a conditional field and is optional for blood component messages. It is not applicable for non-commercial product messages.

4.4.3.8 BPX-8 BP Commercial Product (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the code and description to identify a commercial product. Examples of commercial products are blood derivatives such as Rh Immune Globulin and Factor VIII concentrate, Leukoreduction filters, and blood administration sets.

A site-specific table determines the value of the Commercial Product field. Free text can be utilized if no update is to occur.

This is a conditional field and is required for commercial blood products. It is optional for blood component messages.

4.4.3.9 BPX-9 BP Manufacturer (XON)

Definition: This field identifies the manufacturer of the commercial product. The manufacturer may not be the same as the supplier of the commercial product.

This is a conditional field and is required for commercial blood products. It is not applicable for blood component messages.

4.4.3.10 BPX-10 BP Lot Number (EI)

Definition: This field identifies the lot number for blood derivatives or commercially supplied items used as accessories to transfusion.

This is a conditional field and is required for commercial blood products. It is not applicable for blood component messages.

4.4.3.11 BPX-11 BP Blood group (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field indicates the blood group of the blood component. The preferred values for the blood group are the ISBT 128 specified values in Table 3A Encodation of Blood Group in the *ISBT 128* Bar Code Symbology and Application Specification.

This is a conditional field and is required for blood components. It is not applicable for commercial product messages.

Table 3A Encodation of Blood Group

Value	Description
95	O Rh negative
51	O Rh positive
06	A Rh negative
62	A Rh positive
17	B Rh negative
73	B Rh Positive
28	AB Rh negative
84	AB Rh positive
55	O
66	A
77	B
88	AB
D6	para-Bombay Rh negative
E6	para-Bombay Rh positive
G6	Bombay Rh negative
H6	Bombay Rh positive

4.4.3.12 BPX-12 BP Special testing (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This is a repeating optional field – to allow multiple entries for special testing that was performed. The Special Testing code is used to indicate any types of Special Testing performed on the blood component. The preferred coding system for Special Testing is defined in the *ISBT 128* Bar Code Symbology and Application Specification. Proposals have been developed and will soon be published by ICCBBA, Inc. for the encodation of other antigen and antibody specificities including, HLA, platelet, red cell and other types of markers.

This is a conditional field and is optional for blood component messages. It is not applicable for non-commercial product messages.

Refer to Table Table I3 Special Testing Codes of the *ISBT 128* Bar Code Symbology and Application Specification,

Table I3 Special Testing Codes

Code	**Description**
N0000	default
N0001	HLA phenotyped
N0002	HPA phenotyped

N0003	IgA deficient
N0004	RBC phenotyped
N0005	RBC antibody(ies) present
N0006	RBC antibody absent
N0007	Specific antibody present
N0008	CMV seronegative
N0009	CMV seropositive
N0010	HLA antibody(ies) present
N0011	HLA antibody absent
N0012	HPA antibody(ies) present
N0013	HPA antibody absent
N0014	HLA phenotyped HPA phenotyped
N0015	HLA phenotyped IgA deficient
N0016	HLA phenotyped RBC phenotyped
N0017	HLA phenotyped RBC antibody(ies) present
N0018	HLA phenotyped RBC antibody absent
N0019	HLA phenotyped CMV seropositive
N0020	HLA phenotyped CMV seronegative
N0021	HLA phenotyped HLA antibody(ies) present
N0022	HLA phenotyped HLA antibody absent
N0023	HLA phenotyped HPA antibody(ies) present
N0024	HLA phenotyped HPA antibody absent
N0025	HLA phenotyped HPA phenotyped RBC phenotyped
N0026	HLA phenotyped HPA phenotyped RBC phenotyped CMV seronegative
N0027	HLA phenotyped HPA phenotyped RBC phenotyped CMV seropositive
N0028	HLA phenotyped RBC phenotyped RBC antibody(ies) present
N0029	HLA phenotyped RBC phenotyped RBC antibody absent
N0030	HLA phenotyped HLA antibody absent

	RBC phenotyped
N0031	HLA phenotyped HLA antibody absent RBC phenotyped CMV seronegative
N0032	HPA phenotyped IgA deficient
N0033	HPA phenotyped RBC phenotyped
N0034	HPA phenotyped RBC antibody(ies) present
N0035	HPA phenotyped RBC antibody absent
N0036	HPA phenotyped CMV seronegative
N0037	HPA phenotyped CMV seropositive
N0038	HLA antibody(ies) present HPA phenotyped
N0039	HLA antibody absent HPA phenotyped
N0040	HPA phenotyped HPA antibody(ies) present
N0041	HPA phenotyped HPA antibody absent
N0042	RBC phenotyped IgA deficient
N0043	IgA deficient CMV seronegative
N0044	IgA deficient CMV seropositive
N0045	RBC phenotyped RBC antibody(ies) present
N0046	RBC phenotyped RBC antibody absent
N0047	RBC phenotyped Specific antibody present
N0048	RBC phenotyped CMV seronegative
N0049	RBC phenotyped CMV seropositive
N0050	HLA antibody(ies) present RBC phenotyped
N0051	HLA antibody absent RBC phenotyped
N0052	HPA antibody(ies) present RBC phenotyped
N0053	HPA antibody absent RBC phenotyped
N0054	RBC phenotyped RBC antibody absent CMV seronegative

N0055	RBC phenotyped RBC antibody absent CMV seropositive
N0056	HLA antibody absent RBC phenotyped RBC antibody absent CMV seronegative
N0057	HLA antibody absent RBC phenotyped RBC antibody absent CMV seropositive
N0058	HLA antibody absent HPA antibody absent RBC phenotyped RBC antibody absent CMV seronegative
N0059	HLA antibody absent HPA antibody absent RBC phenotyped RBC antibody absent CMV seropositive
N0060	RBC antibody(ies) present Specific antibody(ies) present
N0061	RBC antibody(ies) present CMV seronegative
N0062	RBC antibodiy(ies) present CMV seropositive
N0063	HLA antibody(ies) present RBC antibody(ies) present
N0064	HLA antibody absent RBC antibody(ies) present
N0065	HPA antibody(ies) present RBC antibody(ies) present
N0066	HPA antibody absent RBC antibody(ies) present
N0067	RBC antibody absent Specific antibody present
N0068	RBC antibody absent CMV seronegative
N0069	RBC antibody absent CMV seropositive
N0070	HLA antibody(ies) present RBC antibody absent
N0071	HLA antibody absent RBC antibody absent
N0072	HPA antibody(ies) present RBC antibody absent
N0073	HPA antibody absent RBC antibody absent
N0074	CMV seronegative Specific antibody present
N0075	CMV seropositive

	Specific antibody present
N0076	HLA antibody(ies) present Specific antibody present
N0077	HLA antibody absent Specific antibody present
N0078	HPA antibody(ies) present Specific antibody present
N0079	HPA antibody absent Specific antibody present
N0080	HLA antibody(ies) present CMV seronegative
N0081	HLA antibody absent CMV seronegative
N0082	HPA antibody(ies) present CMV seronegative
N0083	HPA antibody absent CMV seronegative
N0084	HLA antibody(ies) present CMV seropositive
N0085	HLA antibody absent CMV seropositive
N0086	HPA antibody(ies) present CMV seropositive
N0087	HPA antibody absent CMV seropositive
N0088	HLA antibody(ies) present HPA antibody(ies) present
N0089	HLA antibody(ies) present HPA antibody absent
N0090	HLA antibody absent HPA antibody(ies) present
N0091	HLA antibody absent HPA antibody absent
N0092	For future use
N0093	For future use
N0094	For future use
N0095	For future use
N0096	For future use
N0097	For future use
N0098	For future use
N0099	For future use
N0100	CMV antibody present
N0101	Anti-D present
N0102	HAV antibody present
N0103	HBV antibody present
N0104	Tetanus antibody present
N0105	Varicella Zoster antibody present

4.4.3.13 BPX-13 BP Expiration date/time (TS)

Definition: The expiration date/time specifies the date and time that the blood product expires. The blood product is no longer considered acceptable once the expiration date has been reached unless cleared by the blood bank medical staff.

4.4.3.14 BPX-14 BP Quantity (NM)

Definition: This field indicates the number of blood bank products or components.

This is a required field.

4.4.3.15 BPX-15 BP Amount (NM)

Definition: This field contains the ordered amount (volume) associated with each quantity of a blood bank component. This is an optional field.

4.4.3.16 BPX-16 BP Units (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the units for the blood product quantity. (See Chapter 7 for more details about identifying reporting units.) This field may be used to specify the units of measure for volume of a blood component (i.e. 50 ml). It may also be used to indicate the unit of measure or dosage of a commercial product (i.e. 910 I.U. - International Units - of Factor VIII Concentrate).

4.4.3.17 BPX-17 BP Unique ID (EI)

```
Components: <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^
            <universal ID type (ID)>
```

Definition: **T**his field is a unique system-generated number assigned to the blood product to which the message is referring. Each time the status is updated, the new message should replace the previous message if the Blood Product dispense status ID Number is the same. If the Blood Product dispense status ID Number is different, it indicates that the status applies to a different blood product.

This is an optional field and its use must be agreed upon by the sending and receiving systems.

4.4.3.18 BPX-18 BP Dispensed to Location (PL)

```
Components:  <point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ <location
             status  (IS)> ^ <person location type (IS)> ^ <building (IS)> ^ <floor (IS)>
             ^ <location description (ST)>

Subcomponents of facility:  <namespace ID (IS)> & <universal ID (ST)> & <universal ID type
             (ID)
```

Definition: The first component contains the inpatient or outpatient location to which the blood component was actually dispensed. The default (null) value is the current census location for the patient. Site-specific table. The first eight components have the same form as the first eight components of *PV1-3-assigned patient location.* The final eight components replace the ninth component of *PV1-3-assigned patient location* and represent the full address specification

This field is optional.

4.4.3.19 BPX-19 BP Dispensed to receiver (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This is the person who picked up the blood unit(s) and transported them. The code for the receiver is recorded as a CE data type. If the code is sent as a local code, it should be unique and unambiguous when combined with *BPX-250-producer ID*. This field can be free-text to permit capture without table update. In this case, the receiver must be recorded as the second component of the field.

This field is optional.

4.4.3.20 BPX-20 BP Responsible Observer (XCN)

```
Components: In Version 2.3 and later, use instead of the CN data type.  <ID number (ST)> ^
            <family name (FN)> ^ <given name (ST)> ^ <second or further given names or
            initials thereof (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR)
            (ST)> ^ <degree (e.g., MD) (IS)> ^ <source table (IS)> ^ <assigning authority
            (HD)> ^ <name type code (ID)>  ^ <identifier check digit (ST)> ^ <code
            identifying the check digit scheme employed (ID)> ^ <identifier type code
            (IS)> ^ <assigning facility (HD)> ^ <name representation code (ID)> ^ <name
            context (CE)> ^ <name validity range (DR)> ^ < name assembly order (ID)>

Subcomponents of assigning authority:  <namespace ID (IS)> & <universal ID (ST)> &
            <universal ID type (ID)

Subcomponents of assigning facility:  <namespace ID (IS)> & <universal ID (ST)> &
            <universal ID type (ID)
```

Definition: This field is used to indicate the identification of the individual who prepared the blood component. The values for this field would reference a site-specific table of employees. This is an optional field.

4.4.3.21 BPX-21 BP Equipment Instance Identifier (EI)

```
Components: <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^
            <universal ID type (ID)>
```

Definition: This field identifies the Equipment Instance (e.g., Analyzer, Analyzer module, group of Analyzers) responsible for the production of the observation. This is the identifier from an institution's master list of equipment, where the institution is specified by the *namespace ID* or if it is blank, then by the "BP Producer's ID" (BPX-7). It should be possible to retrieve from this master list the equipment type, serial number, etc., however it is not planned to transfer this information with every BPX. The repeating of this field allows for the hierarchical representation of the equipment (lowest level first), e.g., module of an instrument, instrument consisting of modules, cluster of multiple instruments, etc.

4.4.4 BTX – blood product transfusion segment

HL7 Attribute Table – BTX – Blood Product Transfusion

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	4	SI	R				Set ID – BTX
2	15	ST	C				BT Donation ID +
3	250	CE	C				BT Component +

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
4	250	CE	C				BT Blood Group +
5	250	CE	C				BT Commercial Product *
6	250	XON	C				BT Manufacturer *
7	22	EI	C				BT Lot Number*
8	5	NM	R				BT Quantity
9	5	NM	O				BP Amount
10	250	CE	O				BT Units
11	250	CE	R				BT Transfusion Status
12	1	ID	R				BT Observation Status
13	26	TS	R				BT Date/Time of Status
14	250	XCN	O				BT Verifier 1
15	250	XCN	O				BT Verifier 2
16	26	TS	O				BT Start Date/Time
17	26	TS	O				BT End Date/Time
18	1	ID	O				BT Adverse Reaction Indicator
19	250	CE	O				BT Adverse Reaction Type
20	1	ID	O				BT Transfusion Interrupted
21	250	CE	O				BT Transfusion Interrupted Reason

4.4.4.0 BTX field definitions

The daggered (+) items in this segment are specific for blood component transactions, such as red blood cells, fresh frozen plasma and platelets.

The starred (*) items in this segment are relevant only for commercial blood product transactions., such as Factor Concentrate and Rh Immune Globulin.

4.4.4.1 BTX-1 Set ID – BTX (SI)

Definition: This field contains the sequence number for the BTX segment under the related BPO segment. For the first product dispense status transmitted, the sequence number shall be 1; for the second product dispense status, it shall be 2; and so on.

4.4.4.2 BTX-2 BT Donation ID (ST)

Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
Definition: The donation ID is the unique identification number assigned to a blood donation. The donation number will depend upon the bar code labeling system used for the component. There are currently two blood component labeling standards: *ABC CODABAR* and *ISBT 128*. If using *ISBT 128*, the donation ID Number is an internationally unique identifier consisting of the following 13 characters:

Country Code
Collection Facility
Donation Year
Serial Number

This is a conditional field and is required for blood components. It is not applicable for commercial product messages.

4.4.4.3 BTX-3 BT Component (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: The Blood Component field includes a description of the specific blood component.

1st component: The numeric or alphanumeric product code, which represents the type of blood component. The coding system will be determined by the bar code labeling system on the particular component of blood. The preferred coding system is *ISBT 128*. If using *ISBT 128* labeling standard, the product code will consist of an 8-character alphanumeric code, starting with an alpha character and will include the component class, donation type/intended use and division indicator.

If using CODABAR product labeling standard, the product code will consist of a 5-character numeric.

2nd Component: Product Description: The Product Description is a textual description of the numeric or alpha numeric product code.

This is a conditional field and is required for blood components. It is not applicable for commercial product messages.

4.4.4.4 BTX-4 BT Blood Group (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field indicates the blood group of the blood component. The preferred values for the blood group are the ISBT 128 specified values in Table 3A Encodation of Blood Group in the *ISBT 128* Bar Code Symbology and Application n Specification.

This is a conditional field and is required for blood components. It is not applicable for commercial product messages.

Table 3A Encodation of Blood Group

Value	Description
95	O Rh negative
51	O Rh positive
06	A Rh negative
62	A Rh positive
17	B Rh negative
73	B Rh Positive
28	AB Rh negative
84	AB Rh positive
55	O
66	A
77	B
88	AB
D6	para-Bombay Rh negative

E6	para-Bombay Rh positive
G6	Bombay Rh negative
H6	Bombay Rh positive

4.4.4.5 BTX-5 BT Commercial Product ( )

Definition: This field contains the code and description to identify a commercial product. Examples of commercial products are blood derivatives, such as Rh Immune Globulin and Factor VIII Concentrate and transfusion accessories, such as Leukoreduction filters, and blood administration sets.

This is a conditional field and is required for commercial blood products. It is optional for blood component messages.

4.4.4.6 BTX-6 BT Manufacturer (XON)

Definition: This field identifies the manufacturer of the commercial product. The manufacturer may not be the same as the supplier of the commercial product.

This is a conditional field and is required for commercial blood products. It is not applicable for blood component messages.

4.4.4.7 BTX-7 BT Lot Number (EI)

Definition: This field identifies the lot number for blood derivatives or commercially supplied items used as accessories to transfusion.

This is a conditional field and is required for commercial blood products. It is not applicable for blood component messages.

4.4.4.8 BTX-8 BT Quantity (NM)

Definition: This field indicates the number of blood bank products or components.

4.4.4.9 BTX-9 BT Amount

Definition: This field contains the ordered amount (volume) associated with each quantity of a blood bank component. This is an optional field.

4.4.4.10 BTX-10 BT Units (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the units for the blood product quantity. (See Chapter 7 for more details about identifying reporting units.) This field may be used to specify the units of measure for volume of a blood component (i.e. 50 ml). It may also be used to indicate the unit of measure or dosage of a commercial product (i.e. 910 I.U. - International Units - of Factor VIII Concentrate.

4.4.4.11 BTX-11 BT Transfusion Status (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field is used to indicate the current status of the specified blood product as indicated by the placer. For example, the placer may return the blood product to the transfusion service unused or wasted because an IV could not be started. A final status would indicate that the product has actually been "transfused." Refer to *HL7 Table #### (to be assigned) - Blood Product Transfusion Status* for suggested values.

HL7 Table #### - Blood Product Transfusion Status

Value	Description
DS	Dispensed to patient location
RA	Returned unused/no longer needed
RL	Returned unused/keep linked to patient for possible use later
WA	Wasted (product no longer viable)
TX	Transfused
TR	Transfused with adverse reaction

4.4.4.12 BTX-12 BT Observation status (ID)

Definition: The most commonly used values in a BTX will be preliminary and final. A status is considered preliminary until a blood product has reached a final disposition for the patient. For example, when the product is first cross-matched and a status message is sent, it would be considered preliminary. When the product is dispensed to the patient, that status would also be considered preliminary. However, once the product is transfused, the status would be considered final. The status of a blood product can continue to change and the previous result should be overwritten until it reaches a final status.

Table 0085 - Observation result status codes interpretation

Value	Description
C	Record coming over is a correction and thus replaces a final result
D	Deletes the OBX record
F	Final results; Can only be changed with a corrected result.
I	Specimen in lab; results pending
N	Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought.
O	Order detail description only (no result)
P	Preliminary results
R	Results entered -- not verified
S	Partial results
X	Results cannot be obtained for this observation
U	Results status change to final without retransmitting results already sent as 'preliminary.' E.g., radiology changes status from preliminary to final
W	Post original as wrong, e.g., transmitted for wrong patient

4.4.4.13 BTX-13 BT Date/time of status (TS)

Definition: This field indicates the date and time that the status of the blood component was changed. For example, if the blood component had a status, of "TX" (Transfused), the date and time in this field would indicate the date and time that component was transfused the placer system.

4.4.4.14 BTX-14 BT Verifier 1

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the identity of the individual who administers the transfusion of the blood product. The code for the verifier is recorded as a CE data type. If the code is sent as a local code, it should be unique and unambiguous when combined with *BPX-250-producer ID*. This field can be free-text to permit capture without table update. In this case, the verifier must be recorded as the second component of the field.

This field is optional.

4.4.4.15 BTX-15 BT Verifier 2

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the identity of the individual who assists in the identification of the patient and verification of the product information prior to transfusion of the blood product. The code for the verifier is recorded as a CE data type. If the code is sent as a local code, it should be unique and unambiguous when combined with *BPX-250-producer ID*. This field can be free-text to permit capture without table update. In this case, the verifier must be recorded as the second component of the field.

This field is optional.

4.4.4.16 BTX-16 BT Start Date/time of status (TS)

Definition: This field indicates the date and time that the verifier started the transfusion of the blood component or commercial product.

This is an optional field.

4.4.4.17 BTX-17 BT End Date/time of status (TS)

Definition: This field indicates the date and time that the transfusion of the blood component or commercial product was completed or stopped.

This is an optional field.

4.4.4.18 BTX-18 BT Adverse Reaction Indicator (ID)

This field indicates whether the recipient of the blood product experienced an adverse reaction.

This is an optional yes/no field.

4.4.4.19 BTX-19 BT Adverse Reaction Type (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the type of adverse reaction that the recipient of the blood product experienced. Locally defined codes for this value can be used. This is an optional field.

4.4.4.20 BTX-20 BT Transfusion Interrupted (ID)

This field indicates whether the transfusion of the blood product experienced was interrupted or stopped prior to the completion of the transfusion.

This is an optional yes/no field.

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the type of adverse reaction that the recipient of the blood product experienced. Local codes for this value can be used. This is an optional field.

4.4.4.21 BTX-21 BT Transfusion Interrupted Reason (CE)

```
Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate
            identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system
            (IS)>
```

Definition: This field contains the reason that the transfusion of the blood product was interrupted. Locally defined codes for this value can be used. This is an optional field.