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Reader comments

Any comments or suggestions regarding this publication are welcomed and should be forwarded to the attention of

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Preface

The Hemocare® Advanced Blood Bank (ABB) Interface is one volume in the STAR Laboratory Reference Guide series. It provides information concerning how to build, implement, and use the Hemocare Advanced Blood Bank Interface.

The General Information Volume is prerequisite reading for all other volumes of the STAR Laboratory Reference Guide. Successful use of the Hemocare ABB Interface volume depends upon your knowledge of the concepts covered in the General Information Volume.

Documentation Conventions

Documentation for McKesson's STAR 2000™ line of products follows these conventions:

Revisions
Text revisions are indicated by a change bar in the left margin. Paragraphs that contain grammatical changes that do not affect content are not marked.

Canadian Documentation
This volume may include documentation for Canadian users of this product. Complete sections of Canadian text are identified by "CN" and "CN Only."

Key Names
Named keys, such as ENTER, SHIFT, CTRL, and ALT, appear in this document in uppercase (capital) letters. Symbol keys display according to the key name, followed by the symbol on the key in parentheses, such as hyphen (-) and asterisk (*).

Key Chords
Key chords are key entries that require you to hold down one or more keys (typically, CTRL, ALT, or SHIFT) before pressing another key. In this document, key chords display as the names of each key in the chord with a hyphen (-) between each (for example, CTRL-ALT-DEL). You should press the keys in the order indicated.

ENTER
ENTER is a key on a computer keyboard used to complete an entry on a STAR system. (This key may also be referred to as NEW LINE or NEL in the STAR system.)

Data Entries
Letters or words you enter in response to the system display in **boldface** letters in this document. For example: Enter **Y** for Yes or **N** for No.

Selecting an Entry
This document often instructs you to "select an entry." The method you use to select an entry depends on whether you are using STAR from a terminal or IBM-compatible personal computer. Entry methods include:

- Entering the option number
- Using your arrow keys to highlight the option and pressing ENTER
- Clicking on the option using a mouse or other pointing device (PC only)

For more information about these options, see the *General Information Volume*.

Prompts
System prompts display at the bottom of many STAR screens when the system requests an entry or displays a message. Prompts display in this document italicized and indented from the rest of the text. For example:

Enter patient name--

Field Characteristics

STAR product documentation provides field explanation codes, in addition to a narrative description for each field on a screen. These codes display the maximum length of your entry in the field, the type of entry you make in the field, and whether the field is required. This information displays in the following format:

- DISPLAY ONLY for a field you cannot edit.
- For X-YY-Z field types, where:
  - X is the maximum number of characters permitted in the field:
    - P for a field length determined by a Parameter
    - T for a field length determined by a Table
    - U for a field having an Undefined length
  - YY is the type of entry technique permitted in the field:
    - A for Letters only
    - N for Numerals only
    - C for Characters (including punctuation)
    - AC for Letters and Punctuation only (no numbers)
    - NC for Numerals and Punctuation only (no letters)
    - AN for Numerals and Letters only (no punctuation)
  - Z is the requirement indicator of the field:
    - R if an entry is required to complete the function

      NOTE: Facilities can designate that certain fields be Required. STAR product documentation does not display R for fields designated as Required by a facility.
    - O if an entry is Optional to complete the function
    - C if an entry is Conditionally required or optional
  - For YY-Z field types, where YY is:
    - TABLE LOOKUP for a field that enables you to select from a displayed table. See the *General Information Volume* for more information regarding this entry technique.
    - SPECIAL FORMAT for a field having data entry requirements not conforming to standard format. The field definition contains the specific data entry requirements for the field.
    - DATE for a field subject to the date entry conventions described in the *General Information Volume*.
    - TIME for a field subject to the time entry conventions described in the *General Information Volume*.

    NOTE: For use of the Z position in this format, refer to the explanations for Z under X-YY-Z.

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Introduction

STAR Laboratory supports three Advanced Blood Bank (ABB) interfaces. One interface is for use with the Mediware LifeLine® Blood Bank system, another interface is for use with the Mediware Hemocare Blood Bank system, and the final interface is for use with HL7® technology.

Although the LifeLine and Hemocare versions of the ABB interface offer similar functionality, the two applications are very independent in most regards. Each application uses separate tables, files, and programs for most functions. Data storage is completely separate.

Blood Product Availability and manual result entry are the only STAR functions shared by both applications. The Blood Product Availability processor in Patient Inquiry references all patient blood product information regardless of the source blood bank application. Manual result entry for ABB special processing result components is the same for each ABB module.

The Hemocare Advanced Blood Bank (ABB) Interface provides a bidirectional link between STAR Laboratory and the Hemocare Blood Bank system. The information presented in this volume is specific to the Hemocare interface.

Chapter 1 - Maintenance Processors

INTRODUCTION

The Hemocare blood bank system uses patient demographic data defined within the following STAR common clinical tables:

- Nursing Stations
- Physicians
- ICD CM Diagnosis
- Financial Class
- Service
- Race

These tables must be defined for proper use of the Hemocare ABB interface. For additional information, refer to the *Tables Volume* of the *STAR Patient Care Reference Guide.*

The following interface utilities are included in all maintenance function options for the Hemocare ABB interface:

- Audit - Hemocare --> Lab
- Audit - Lab --> Hemocare
- Message to Hemocare
- Start/Stop Interface

These utilities are also available through the Hemocare Interface Utilities function, which may be included as a menu option on the Blood Bank section menu. Refer to Chapter 2: Applications in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide* for more information on these Hemocare utilities.

FLAGS - GENERAL DEPARTMENT

The Flags - General Department processor allows you to select one of three ABB interface options: LifeLine (a.k.a. Western Star), Hemocare, or None. When you select the Flags - General Department option from the Flags/Utilities maintenance processor, the following screen is displayed:

```
                  General Hospital Maintenance Functions Processor
                                              Tue Aug 10, 2004 12:58 pm


Department Flags for HBOC Laboratory
 1 Lab LIVE               2 Advanced Micro Live
   Yes                      Yes
 3 Printer Matrix         4 Table Display of Sections
   Yes                      No
 5 Adv Bld Bank Interface 6 Reference Lab Interface  7 Canc Uncoll Midnight
-> HL7                      Yes                        Yes
 8 Charge Scheme          9 Misc Charges to HIS     10 Default Charge Location
   Accession                Yes                        LABORATORY NSA
11 Duplicate/Conflict Checking            12 Dup/Conf Collection Retention
   Yes                                       1 day
13 Clinical Questions Active              14 Report Clinical Questions
   Yes                                       No
15 Panic Notification
   Yes



Enter field number or '/' starting field number--
```

Field Explanations

5. ADV BLD BANK INTERFACE (1-A-C)
This field activates the advanced blood bank interface for the department. The options are LifeLine (that is, Western Star) (W), Hemocare (H), HL7 (L), or None (N). When you select this field, the following prompt is displayed:

Select ABB interface Western Star(W) Hemocare(H) HL7(L) or None(N) [N]--

The default setting is *None*.

Impact

Selecting *Hemocare(H)* will activate the Hemocare ABB Interface for the department.

MAINTENANCE - GENERAL TEST

Implementation of the Hemocare ABB interface requires specific parameters be established in the General Test maintenance processors. To define and build a test that will be ordered and resulted across the Hemocare interface, the following conditions must be met:

- Result components must be defined for serological test and blood product results.
- Crossmatch and non-crossmatch blood product result components must be defined with the special processing option *Units X-Matched Processing.*
- The test must be defined as an Advanced Blood Bank test type.

Result Components

The system provides a base component table containing approximately 500 result components. Some result components needed for the Hemocare interface are included. Below is an example of a serological test result component for ABO/Rh.

```
                General Hospital Maintenance Functions Processor
Laboratory                                        Fri May 28, 2004 10:29 am
A - Result Components
                            Component # - 10841A
 1 Result Component Name           2 Short Name   3 Units of measure
   ABO/Rh                            ABO/Rh
 4 Specimen Type                      5 QC Constituent Code (CAP)
   1 - Blood
 6 Descriptive Method              7 Lookup/CK 5 Exclusion  8 Delta
                                     No                       Not Defined
 9 Valid Values                   10 Valid Range
   Not Defined                       Not Defined
11 Panic Values                   12 Normal Ranges
   Not Defined                       Not Defined
13 Result Processing              14 Number of Decimals

15 Edit By                        16 Edit Date/Time
                                     02/16/04 11:48am



Enter field number or '/' starting field number--
```

Other result components must be defined to accommodate the Hemocare record type results schema. Refer to Appendix A: Hemocare ABB Interface File Build Guidelines in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide* for specific information on recommended result components.

For detailed information on building and maintaining result components, refer to Chapter 6: Supporting Test Files in the *Maintenance Functions Volume I* of the *STAR Laboratory Reference Guide*.

Basic Test Information

Any test which is ordered and resulted across the Hemocare interface must be defined as an Advanced Blood Bank test type. Within General Test maintenance functions, select Main Information/Labels. After you enter a valid test code, select the Basic Test information option. The following screen is displayed:

```
                General Hospital Maintenance Functions Processor
LABORATORY                                          Tue Mar 19, 1996 01:09 pm
Section - BLOOD BANK
Bay - BBL-BLOOD BANK BAY
Basic Test Information                                          Test Code - 3501
 1 Test Name                          2 Short Name         3 Test Type
   TYPE AND RH                          TYPE/RH              Adv Bld Bnk
 4 Default Sect  5 Possible Specimens                    6 Default Specimen
   BBL             1                                       1 Blood
 7 Specimen Collect Requirements   8 Max Spec Age  9 Order Category/Sample Size
                                                     R,A,S
10 Performing Bay(s),Section(s)                          11 Orderable Test
   1-BBL                                                    Table & Code
12 History Cardfile         13 Cardfile Print Queue   14 Range Heading
   Automatic                   Yes
15 Misc Charge Pro Fee      16 Pro Fee Processing
   No                          None




Enter field number or '/' starting field number--
```

Field Explanation

3. TEST TYPE
This field is used to define a test as Advanced Blood Bank. Select the Advanced Blood Bank option for any test ordered and resulted through the Hemocare ABB interface.

For detailed information on building and maintaining tests, refer to Chapter 5: Main Test Information in the *Maintenance Functions Volume I* of the *STAR Laboratory Reference Guide*.

Results and Normals

Tests used with the Hemocare ABB interface must be defined with result components that accommodate Hemocare record type results. Refer to Appendix A: Hemocare ABB Interface File Build Guidelines in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide* for specific information on recommended result components.

Result components are assigned to tests through the Results and Normals processor under Maintenance - General Test. For detailed information on building and maintaining tests, refer to Chapter 6: Supporting Test Files in the *Maintenance Functions Volume I* of the *STAR Laboratory Reference Guide*.

Result components defined for serological test results (for example, ABO/Rh), require no special processing. These are resulted through the interface as free text results. Menu selection or table selection resulting may be implemented as a backup option for these result components.

All blood product result components require special processing to accommodate blood product information for result reporting and inquiry purposes. A result component typically called *Units Crossmatched* or *Number of Units* should be defined in the Result Components table on STAR Laboratory. This component must be assigned to all ABB tests involving blood products. This includes orders for crossmatch and non-crossmatch blood components.

NOTE: This result component must be assigned only once to any ABB test, regardless of how many units are ordered or resulted for the test.

Once the Units Crossmatched result component is added to the test through the Results and Normals processor, the special processing parameter *Units X-Matched Processing* must be assigned to it.

Below is an example of a crossmatch test for red cells.

Select the Result and Normals processor from the Laboratory Test Maintenance Functions menu. After you enter a valid ABB test code, the following screen is displayed:

```
              General Hospital Maintenance Functions Processor
LABORATORY                                        Thur Sept 12, 2001 02:36 pm
Section - BLOOD BANK                              Bay - BBL-BLOOD BANK BAY
XMATCH RED CELLS X3 Results and Normals           Test Code - 3601

     S=Special Proc'ing,R=Recall Mgt     3 Results for Test 3601         Page:01
( 1)  10841A*ABO/Rh
( 2)  10856A*Antibody Screen
( 3)  S10857A No. of units









Enter option to edit or add(A)--
```

To edit a result, enter the option number. To add a result, enter **A** and indicate the result component to add.

In this example, the result component *No. of Units* is used for processing blood product information from Hemocare. When you select this result component, the following screen is displayed:

```
              General Hospital Maintenance Functions Processor
LABORATORY                                        Thur Sept 12, 2001 02:36 pm
Section - BLOOD BANK                              Bay - BBL-BLOOD BANK BAY
XMATCH RED CELLS X3 Results and Normals           Test Code - 3601

Component Name: No. of units                      Component #: 10857A

 1 Required/Optional        2 External/Internal      3 History Cardfile
   Required                   External                 No
 4 Special Processing
   Units X-Matched Processing
 5 Workload                                          6 Addendum Only
   **                                                  No

                      * COMPONENT PARAMETERS - DISPLAY ONLY *
 7 Delta Check              8 Valid Range            9 Valid Values
   Not Defined                Not Defined              Not Defined
10 Panic Values            11 Normal Ranges
   Not Defined                Not Defined
12 Recall Management       13 Number of Decimals


Enter field number or '/' starting field number--
```

Field Explanations

4. SPECIAL PROCESSING
For detailed information, refer to Chapter 6: Supporting Test Files in the *Maintenance Functions Volume I* of the *STAR Laboratory Reference Guide*.

Result components defined for serological test results (for example, ABO/Rh), require no special processing and should be set with the *Free form text* result type option. Menu selection or table selection resulting may be implemented as a backup option for these result components.

Any result component used to process blood product information from Hemocare must be defined with the special processing option *Units X-Matched Processing.* This is an option in the table that is displayed when you enter this field. It is used for ABB test results for crossmatch and non-crossmatch blood components.

Impact

The *Units X-Matched Processing* option will allow STAR Laboratory to accept and process blood product information received from the Hemocare blood bank system.

ADVANCED BLOOD BANK INTERFACE

When you select the Maintenance - Adv Bld Bank Int option on the Laboratory Maintenance Functions menu, the following screen is displayed for any laboratory department defined for the Hemocare ABB interface:

```
         General Hospital Administration Maintenance Functions Processor
LABORATORY 2                                      Thur Sept 12, 2001 09:30 am

                    Hemocare Interface Maintenance Functions            Page:01
( 1) A - Blood Bank Procedures
( 2) A - Blood Components
( 3) B - Bld Bk Procedures per Test
( 4) C - Adv Bld Bnk Result Mapping
( 5) Y - Interface Parameters
( 6) Z - Audit (HEMOCARE --> STAR Lab)
( 7) Z - Audit (STAR Lab --> HEMOCARE)
( 8) Z - Message to HEMOCARE
( 9) Z - Start/Stop Interface









Enter choice--
```

If an Advanced Blood Bank interface is not defined for the department, the following message is displayed:

Advance Blood Bank Interface not defined for this department!

Blood Bank Procedures

This processor allows you to define Blood Bank Procedure codes and descriptions and to assign Hemocare record types to each. When you select the Blood Bank Procedures menu option, the following prompt is displayed:

Hemocare procedure code--

You may enter a valid code or display a table of existing codes. These Blood Bank Procedure codes are limited to four alphanumeric characters and must be identical to the Hemocare Common Test code for test (T) requests.

If you enter a Blood Bank Procedure code that was previously filed as deleted, the inactive record is displayed along with the following prompt:

Enter delete(D) from file or activate(A)--

Enter **A** to reactivate this procedure.

NOTE: Care should be exercised when deleting records after Live. Do not delete any records that are currently used for patient orders in a Live environment.

If you add a new code, the following prompt is displayed:

Add this code `nnnn`? (Y/N) [Y]--

To add the code, press ENTER or enter **Y**. The following screen is displayed for each procedure defined:

```
            General Hospital Maintenance - Adv Bld Bank Int Processor
LABORATORY                                          Mon Mar 25, 1996 04:18 pm
Hemocare Procedures
 1 Blood Bank Procedure Code   2 Description
   CORD                          Cord Workup

 3 Record Type
   Cord Blood
 4 Edit By
   Smith, Jonathan
 5 Date/Time
   02/28/96 1053









Enter field number or '/' starting field number--
```

Field Explanations

1. BLOOD BANK PROCEDURE CODE (DISPLAY ONLY)
This field contains the unique procedure code entered at the initial prompt. The code must be limited to four characters and must be identical to Hemocare Common Test codes for test (T) procedures (see *Impact* below). This field cannot be edited.

2. DESCRIPTION (20-AN-R)
Enter the description of the procedure. This field is required.

3. RECORD TYPE (TABLE LOOKUP)
When you enter this field, a list of the Hemocare Blood Bank Record Types is automatically displayed for selection. The options are:

1. P1 - Crossmatch
2. T0 - Group & Rh
3. T1 - Antibody Screen

4. T3 - Cord Blood
5. T4 - Coombs
6. T5 - General Test

This is a required field. Each procedure must be associated with a Hemocare Record Type. The Record Type determines what type of result information is passed to STAR Laboratory from the Hemocare system. Only one record type can be defined per procedure. See *Impact* below.

4. EDIT BY (DISPLAY ONLY)
This field is automatically filled with the name of the person entering/accepting this screen of information. This field cannot be edited but is automatically updated upon entry in the Description field.

5. DATE/TIME (DISPLAY ONLY)
This field is automatically filled with the date and time of screen acceptance. This field cannot be edited but is automatically updated upon entry in the Description field.

When you complete this screen, the following prompt is displayed:

Accept this screen? (Y/N) [Y]--

You may accept the screen or continue editing. Enter **Y** or press ENTER to accept.

If you exit this screen without making any changes, you will be prompted to delete the record. If you choose to delete, the following prompt is displayed:

Enter delete(D) from file or file(F) as deleted [F]--

You may delete the record or file as deleted. If you file as deleted, the record becomes inactive and may be reactivated at a future date.

NOTE: Care should be exercised when deleting records after Live. Do not delete any records that are currently used for patient orders in a Live environment.

Impact

All Blood Bank Procedures and their corresponding Hemocare record types fall into one of two blood bank request/result categories: tests (T) or products (P). Blood Bank Procedures define the test (T) and product (P) requests that are sent to Hemocare when an ABB order is accessioned on STAR. These same procedures are also used to map the results from Hemocare back to specific ABB test or product result components on STAR.

Each Blood Bank Procedure defined using a test record type T0 through T5 generates a test (T) request on Hemocare according to the Common Test codes defined on that system. Each Blood Bank Procedure defined with a P1 Crossmatch record type generates a product (P) request on Hemocare. A product (P) request includes a product code and quantity and is appropriate for crossmatch and non-crossmatch products alike.

Each Hemocare record type corresponds to a unique Hemocare result reporting message type and result record layout that is transmitted back to STAR Laboratory. Test results and product information from Hemocare are mapped to specific ABB test or product result components according to the Blood Bank Procedures and record types defined. For additional information, refer to "Blood Bank Procedures" on page 1-9 and "Advanced Blood Bank Result Mapping" on page 1-17, as well as Appendix A: Hemocare ABB Interface File Build Guidelines in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guidelines*.

Blood Components

This processor allows you to define blood component codes and descriptions for the Hemocare ABB interface. When you select this option, the following prompt is displayed:

Hemocare blood component code--

You may enter a valid code or display a table of existing codes. Blood Component codes are limited to three alphanumeric characters and must be identical to the same blood product codes on Hemocare.

If you enter a Blood Component code that was previously filed as deleted, the inactive record is displayed along with the following prompt:

Enter delete(D) from file or activate(A)--

Enter **A** to reactivate this product.

NOTE: Care should be exercised when deleting records after Live. Do not delete any records that are currently used for patient orders in a Live environment.

If you add a new code, the following prompt is displayed:

Add this code `nnn`? (Y/N) [Y]--

To add the code, press ENTER or enter **Y**.

The following screen is displayed for each blood component defined:

```
                General Hospital Maintenance Functions Processor
LABORATORY                                          Tue Mar 26, 1996 09:48 am
Hemocare Blood Components
( 1)Code          : RBC
( 2)Description   : Red Blood Cells

( 3)Edit by       : Smith, Jonathan
( 4)Edit date     : 02/28/96 10:57A









Enter field number or '/' starting field number--
```

Field Explanation

1. CODE (DISPLAY ONLY)
This field contains the blood component code entered at the initial prompt. Blood component codes are limited to three alphanumeric characters and must be identical to the same blood product codes on the Hemocare system.

2. DESCRIPTION (25-AN-R)
This field contains the blood component description. This is a required field.

3. EDIT BY (DISPLAY ONLY)
This field is automatically filled with the name of the person entering/accepting this screen of information. This field cannot be edited but is automatically updated upon entry in the Description field.

4. DATE/TIME (DISPLAY ONLY)
This field is automatically filled with the date and time of screen acceptance. This field cannot be edited but is automatically updated upon entry in the Description field.

When you complete this screen, the following prompt is displayed:

Accept this screen? (Y/N) [Y]--

You may accept the screen or continue editing. Enter **Y** or press ENTER to accept.

If you exit this screen without making any changes, you will be prompted to delete the record. If you choose to delete, the following prompt is displayed:

Enter delete(D) from file or file(F) as deleted [F]--

You may delete the record or file as deleted. If you file as deleted, the record becomes inactive and may be reactivated at a future date.

NOTE: Care should be exercised when deleting records after Live. Do not delete any records that are currently used for patient orders in a Live environment.

Impact

Blood Component definitions are used for bbod product requests to Hemocare and for posting blood product result information from Hemocare. For additional information, refer to "Blood Bank Procedures" on page 1-9, as well as Appendix A: Hemocare ABB Interface File Build Guidelines in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guidelines*.

Blood Bank Procedures Per Test

This processor allows you to define the serological tests and blood products that will be requested on Hemocare each time an ABB test is accessioned on STAR Laboratory. Below is an example of a completed record for a valid ABB test.

```
          General Hospital Maintenance - Adv Bld Bank Int Processor
LABORATORY                                      Tue Mar 26, 1996 10:18 am
                        Hemocare Procedures per Test
Test: 3601-XMATCH RED CELLS X3

Page:01   Procedure                           Component        Quantity
( 1) ABO-ABO/Rh                                                 1
( 2) ABS-Antibody Screen                                        1
( 3) XM-Crossmatch                                 RBC          3









Select option to edit or `A` to add--
```

In this example, accessioning a *3601-XMATCH RED CELLS X3* order will generate three request messages to the Hemocare system: an ABO/Rh, an antibody screen, and a request for three units of Red Blood Cells.

When you select the Blood Bank Procedures per Test processor, a table of valid ABB tests for the department is displayed. Select a valid test from the table. If no procedures have been defined for the test, the following prompt is displayed:

NO procedures defined! Add(Y/N) [Y] --

To add a procedure to the test, press ENTER or enter **Y**. A table of user defined procedures from the Blood Bank Procedures maintenance processor is displayed for selection.

Procedures for tests or products must be added to the ABB test one procedure at a time. The following parameters apply:

- A specific procedure code may be defined only once per ABB test.
- Multiple procedures with the same test (T) record type may be defined to an ABB test.
- Procedures with a test (T) record type will not include a blood component parameter and will default to a quantity of one.
- Only one procedure with a product (P) record type may be defined to an ABB test.
- Any procedure with a product (P) record type must include a blood component parameter and quantity.

As each procedure is added to a test, the following message is displayed:

Filed!

Once a procedure has been defned for the ABB test, the following prompt is displayed:

Select option to edit or `A` to add--

You may select a procedure to delete or add a new procedure to the ABB test. If you select a procedure currently defined to the ABB test, you will be prompted to delete it from the test.

Any attempt to add the same procedure twice will cause the following message to be displayed:

Procedure already assigned to this test!

Any attempt to add a second product (P) procedure to an ABB test will cause the following message to be displayed:

Test already has 'Crossmatch' procedure type assigned to this test!

The following screen is displayed when you select a product (P) procedure for the ABB test:

```
          General Hospital Maintenance - Adv Bld Bank Int Processor
LABORATORY                                        Tue Mar 26, 1996 10:54 am
                        Hemocare Procedures per Test
Test: 3601-XMATCH RED CELLS X3

Procedure: BPR-Blood Product Reques
 1 Blood Component                                  2 Quantity
->


Page:01                Blood Components for LABORATORY 2
( 1) FFP-Fresh Frozen Plasma
( 2) PLT-Platelet Concentrate
( 3) RBC-Red Blood Cells
( 4) RCA-Red Cells, Autologous
( 5) WRC-Washed Red Cells







Enter choice--
```

Header information includes the ABB test code and description and the product (P) procedure code and description. Assigning a blood component and quantity is required.

Field Explanation

1. BLOOD COMPONENT (TABLE DISPLAY)
When you select this field, the screen automatically displays a table of the Blood Components defined for the department. This is a required field.

2. QUANTITY (2-N-R)
When you select this field, the following prompt is displayed:

Enter quantity [1]--

A number from 1 to 99 must be entered. The default is one. This is a required field.

When you complete this screen, the following prompt is displayed:

Accept this screen? (Y/N) [Y]--

You may accept the screen or continue editing.

If you exit this screen without making any changes, you will be prompted to delete the product (P) procedure from the ABB test.

Impact

Each Blood Bank Procedure is defined by a Hemocare record type. The Blood Bank Procedures per Test assignment for each ABBtest defines what serological test (T) or product (P) request messages will be sent from STAR to Hemocare once a test is accessioned. Procedures assigned to an ABB test are also used to map test results and blood product information received from Hemocare. Any additions, deletions, or modifications made in this processor will only affect future ABB orders. Previously accessioned or resulted ABB tests are not affected. For more information, refer to "Advanced Blood Bank Result Mapping" on page 1-17, as well as Appendix A: Hemocare ABB Interface File Build Guidelines in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guidelines*.

Advanced Blood Bank Result Mapping

This processor is used to define the mapping of Hemocare results and product information to the appropriate result component for each ABB test. Below is an example of a previously mapped ABB test.

```
                General Hospital Maintenance Functions Processor
LABORATORY                                      Tue Mar 26, 1996 11:32 am
                        Hemocare Interface Result Mapping
Test: 3703-XMATCH RBC X3

Page:01Result Component             Procedure                  Result
( 1) 10841-ABO/Rh                   ABO/Rh                     ABO & Rh
( 2) 11022-ABO Comment              ABO/Rh                     Comment
( 3) 10856-Antibody Screen          ANTIBODY SCREEN            ABS
( 4) 11023-ABS Comment              ANTIBODY SCREEN            Comment
( 5) 10857-No. of units             BLOOD PROD REQUEST         Units Xmatched









Select option to delete or `A` to add --
```

Result mapping is based on:

1. the result components defined for the ABB test
2. the Procedures per Test defined for the ABB test
3. the Hemocare record type results defined for each procedure

When you select the Advanced Blood Bank Result Mapping maintenance processor, a table of valid ABB tests defined for the department is displayed. Select a valid ABB test for mapping.

Below is an example screen for an ABB test with no results mapped.

```
                General Hospital Maintenance Functions Processor
LABORATORY                                        Tue Mar 26, 1996 12:04 pm
                       Hemocare Interface Result Mapping
Test: 3703-XMATCH RBC X3

Page:01                  Results for 3703-XMATCH RBC X3
( 1) 10841- ABO/Rh
( 2) 11022-*ABO Comment
( 3) 10856- Antibody Screen
( 4) 11023-*ABS Comment
( 5) 10857- No. of units









Select result to map--
```

All result components for the test are displayed and you are prompted to select a result to map. The mapping of each ABB test component to a specific Blood Bank Procedure and Hemocare record type result is performed one result component at a time.

For each component mapped, the user is prompted to select a Blood Bank Procedure based on the procedures defined for the test in the Procedures Per Test maintenance processor. Only those procedures defined for the ABB test will be displayed for mapping.

In the example below, the ABO/Rh result component of the crossmatch test is selected for mapping.

```
          General Hospital Maintenance - Adv Bld Bank Int Processor
LABORATORY                                        Tue Mar 26, 1996 12:13 pm
                       Hemocare Interface Result Mapping
Test: 3703-XMATCH RBC X3
Result: 10841-ABO/Rh


Page:01                         Hemocare Procedures
( 1) ABO-ABO/Rh
( 2) ABS-ANTIBODY SCREEN









Select the Procedure--
```

The header includes the ABB test code and description and the result component code and description selected for mapping.

The procedures that are displayed for mapping depend on:

- the type of result component selected for mapping
- the Blood Bank Procedures defined for the ABB test
- the Hemocare record type defined for the procedure

For any result component defined with a Special Processing option of *Units X-Matched Processing*, only the product procedure (the one with a P1-Crossmatch record type) defined for the ABB test will be displayed for selection.

For all other result components, all test (T) procedures (those with a T0 to T5 Hemocare record type) defined for the ABB test will be displayed for selection. If multiple test (T) procedures are defined for the ABB test, you must choose the appropriate procedure for the result component selected for mapping.

Upon selection of a procedure for the ABB test component, a list of Hemocare record type results is displayed for selection. The Hemocare record type determines what test result or product information is transmitted to STAR Laboratory from Hemocare. Most of the Hemocare record types include multiple results. The only exception is the Crossmatch (P1) record type, which has only one result.

In this example, the ABO/Rh procedure has been selected. The user is prompted to select one of the Hemocare result options defined by the procedure's record type.

```
                General Hospital Maintenance Functions Processor
LABORATORY                                          Tue Mar 26, 1996 12:26 pm
                       Hemocare Interface Result Mapping
Test: 3703-XMATCH RBC X3
Result: 10841-ABO/Rh


Page:01                     Results for ABO/Rh Procedure
( 1) 1-ABO & Rh
( 2) 2-DAT
( 3) 3-Comment









Select option to map 10841-ABO/Rh to--
```

Record type results are defined by the Hemocare results reporting message layout. For more information, refer to the chapter in Mediware Information Systems' *Hemocare Integration Module User Manual* © on Hemocare standard interface specifications.

Below is a list of all Hemocare record type results.

Hemocare Record Types:

1. P1-Crossmatch
2. T0-Group & Rh
3. T1-Antibody Screen
4. T3-Cord Blood
5. T4-Coombs
6. T5-General/Other Test

Hemocare Record Type Results

Results for Crossmatch Record type P1

1 - Units Xmatched

Results for Group & Rh Record type T0

1 - ABO & Rh

2 - DAT

3 - Comment

Results for Antibody Screen Record type T1

1 - ABS

2 - Comment

Results for Cord Blood Record type T3

1 - ABO & Rh

2 - DAT

3 - A1

4 - B

5 - AB Screen

6 - Comment

Results for Coombs Record type T4

1 - DAT

2 - IgG

3 - C-3

4 - Elution

5 - AB Screen

6 - DAT Comment

7 - ABS Comment

Results for General/Other Test Record type T5

1 - Results Line 1

2 - Results Line 2

When you select a valid procedure and record type result for the component, the following screen is displayed:

```
                General Hospital Maintenance Functions Processor
LABORATORY                                        Tue Mar 26, 1996 12:26 pm
                       Hemocare Interface Result Mapping
Test: 3703-XMATCH RBC X3
Result: 10841-ABO/Rh




10841-ABO/Rh will be mapped to
Procedure ABO-ABO/Rh result ABO & Rh









Accept (Y/N) [Y]--
```

The ABB test result component code and description, the Blood Bank Procedure code and description, and the corresponding Hemocare record type result are displayed for verification.

Upon acceptance, the following message is displayed:

Filed!

Once a result component is mapped for an ABB test, selecting the test will display the current mapping configuration along with the following prompt:

Select option to delete or `A` to add --

You may continue mapping additional result components for the ABB or you may select a result mapping option to delete.

To modify a component mapping, the current mapping must first be deleted and then mapped again. Enter **A** to continue the mapping process for another result component or enter the option number of a component mapping to delete.

```
        General Hospital Maintenance Functions Processor
LABORATORY                                        Tue Mar 26, 1996 12:48 pm
                      Hemocare Interface Result Mapping
Test: 3703-XMATCH RBC X3

Page:01Result Component             Procedure                  Result
( 1) 10841-ABO/Rh                   ABO/Rh                     ABO & Rh









Select option to delete or `A` to add --
```

If you choose to continue mapping, only those result components not currently mapped will be displayed for selection.

In the following example, the ABO/Rh result component has been selected for deletion. The following prompt is displayed:

Delete mapping for 10841-ABO/Rh? (Y/N) [N] --

Once deleted, the result component may then be remapped if indicated.

Below is an example of a previously mapped ABB test.

```
        General Hospital Maintenance Functions Processor
LABORATORY                                    Tue Mar 26, 1996 01:00 pm
                       Hemocare Interface Result Mapping
Test: 3701-XMATCH RBC X1

Page:01Result Component             Procedure                 Result
( 1) 10841-ABO/Rh                   ABO/Rh                    ABO & Rh
( 2) 11022-ABO Comment              ABO/Rh                    Comment
( 3) 10856-Antibody Screen          ANTIBODY SCREEN           ABS
( 4) 11023-ABS Comment              ANTIBODY SCREEN           Comment
( 5) 10857-No. of units             BLOOD PROD REQUEST        Units Xmatched









Select option to delete or `A` to add --
```

Field Explanations

RESULT COMPONENT (DISPLAY ONLY)
This is the ABB test result component code and description that has been mapped.

PROCEDURE (DISPLAY ONLY)
This is the Blood Bank Procedure to which the component is mapped. Procedures are based on the procedures defined for the ABB test in the Blood Bank Procedures per Test maintenance processor.

RESULT (DISPLAY ONLY)
This is the Hemocare record type result to which the component is mapped. Results are based on the Hemocare record type defined for the procedure.

Limitations

The following ABB test result mapping limitations and conditions apply:

- In the *Procedure* column, duplicate procedure codes within an ABB test are allowed.
- In the *Result* column, duplicate result codes within an ABB test are allowed.
- Duplicate procedure/result combinations within an ABB test are *not* allowed.
- Result components defined with special processing *Units X-Matched Processing* may *only* be mapped to a procedure/result defined with a product (P) record type.

Any attempt to duplicate a procedure/result combination within an ABB test will cause the following message to be displayed:

Procedure and result already in use!

Impact

The Procedures per Test configuration controls what procedures will be requested by STAR and performed on the Hemocare system once the ABB test is ordered and accessioned. As each procedure is completed on Hemocare, results and/or product information are passed back to STAR Laboratory and are mapped to the appropriate ABB test and result component according to the Advanced Blood Bank Result Mapping for each ABB test.

Interface Parameters

The Interface Parameters processor allows you to set communication and other configuration parameters for the Hemocare ABB interface. When you select the Interface Parameters processor, the following screen is displayed:

```
              General Hospital Maintenance Functions Processor
General Laboratory                                  Tue Mar 26, 1996 01:40 pm
                    HEMOCARE Adv Blood Bank Interface Parameters
 1 Send Prog      2 Sending Port        3 Receive Prog      4 Receiving Port
   ***              30                    ***                 30
 5 Incoming Transactions                          6 Error Pgm   7 Error Log
   B1,P1,T0,T1,T3,T4,T5                             ^LHCIFE       ALINLIN0 (130)
 8 Order Messg Type       9 Outgoing Transactions
   Type 1                   A1,A2,A3,A4,A5,A6,A7,C1,M1,O1,S1
10 Retain Audit          11 Format of UNIT#/MRN
   7 days                   Unit # as is (B00000123405)
12 Last Name Check
   Yes









Enter field number or '/' starting field number--
```

Field Explanations

1. SEND PROG (9-AN-R)
Contains the name of the sending program (STAR Laboratory to Hemocare). This field is for McKesson use only. If your security level is less than 90, this field displays three asterisks (***).

2. SENDING PORT (4-N-R)
Enter the port used for the STAR Laboratory to Hemocare transactions.

3. RECEIVE PROG (9-AN-R)
Contains the name of the receiving program (Hemocare to STAR Laboratory). This field is for McKesson use only. If your security level is less than 90, this field displays three asterisks (***).

4. RECEIVING PORT
Enter the port used for the Hemocare to STAR Laboratory transactions.

5. INCOMING TRANSACTIONS (TABLE)
This field lists the currently active incoming transaction types (Hemocare to STAR Laboratory). When you select this field, a table of the standard Hemocare record types and current choices is displayed:

1. B1-Billing
2. P1-Product Status Changes
3. T0-Group & RH Results
4. T1-Antibody Screen Results
5. T3-Cord Blood Test Results
6. T4-Coombs Test Results
7. T5-General Test Results

The following prompt is displayed:

Enter choices (e.g. 1,7,5-9) or '-'choices to remove--

Record types not selected will not be received by STAR Laboratory.

6. ERROR PGM (9-AN-R)
Contains the name of the error log program for the Hemocare ABB interface. This field is for McKesson use only. If your security level is less than 90, this field displays three asterisks (***).

7. ERROR LOG (TABLE)
This field displays the default Interface Report name and port number. Selecting this field displays the default and alternate Interface Report printers defined for your laboratory department. You may select an alternate printer or press ENTER to select the default.

8. ORDER MESSAGE TYPE (TABLE)
This field displays the Hemocare Order Message Type. The default is Type 1.

NOTE: Hemocare's Order Message Types 2 and 3 are not supported by STAR Laboratory.

9. OUTGOING TRANSACTIONS (TABLE)
This field lists the currently active outgoing transaction types (STAR Laboratory to Hemocare). When you select this field, a table of the standard Hemocare record types and current choices is displayed:

1. A1-Admission
2. A2-Discharge
3. A3-Transfer
4. A4-Revision
5. A5-Cancel Admission
6. A6-Unit#/MRN Change
7. A7-Pat. Deceased
8. C1-Cancel Order
9. M1-Free Text Message
10. O1-Order
11. S1-Specimen Collection Date/Time

The following prompt is displayed:

Enter choices (e.g. 1,7,5-9) or '-'choices to remove--

Record types not selected will not be sent to Hemocare by STAR Laboratory.

10. RETAIN AUDIT (1-A-R)
This field is used to enter the number of days you wish to retain an audit of interface transactions on line. The following prompt is displayed:

Enter audit retention period (0=None, 1-99 days) [7]--

11. FORMAT OF UNIT#/MRN (TABLE LOOKUP)
This field is used to set the Unit#/MRN format for all ADT transactions sent from STAR Laboratory to Hemocare. When you enter this field, the following list of format options is displayed for selection:

1. Unit # as is (B00000123405)
2. Unit # with leading zeros stripped (B123405)

3. Unit # with only facility stripped (00000123405)

4. Unit # with both facility and leading zeros stripped (123405)

For multi-facility institutions, the Unit#/MRN format must include the facility alpha identifier.

NOTE: The Unit#/MRN is the primary patient identifier on the Hemocare system. The selected format determines how patient information is passed between STAR Laboratory and Hemocare and affects the storage and retrieval of patient information on the Hemocare system. Select the option which is consistent with your facility. Once a format option is selected, it should not be changed.

12. LAST NAME CHECK (1-A-R)
This field determines whether or not the first five characters of the patient's last name is included with a Test/Product Request message to Hemocare. If included, the Hemocare system will perform a name check on selected incoming transactions. Select **Y** (Yes) or **N** (No). The default is **N** (No).

For more information on the last name check feature and Hemocare's record types, refer to the chapter on Hemocare standard interface specifications in Mediware Information Systems' *Hemocare Integration Module User Manual* ©.

Hemocare Interface Utilities

The following utilities are available with the Hemocare ABB Interface maintenance processors and as a Blood Bank section menu option through the application:

- Audit (HEMOCARE --> STAR Lab)
- Audit (STAR Lab --> HEMOCARE)
- Message to HEMOCARE
- Start/Stop Interface

For complete information on these utilities, refer to Hemocare Interface Utilities in Chapter 2: Applications in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

Chapter 2 - Applications

INTRODUCTION

Orders for ABB tests may originate from STAR Patient Care or STAR Laboratory. Once a specimen is collected and the test is accessioned, a request is passed from STAR to the Hemocare system through the interface. The order is translated into specific blood bank procedure and/or blood product request messages, depending on the accessioned test. The laboratory defines which procedures are to be performed on Hemocare for each ABB test. Demographic and specimen collection messages are also sent from STAR to Hemocare.

Procedures on Hemocare include serological tests (ABO/Rh and Antibody Screen, for example) and blood product processing. As procedures are completed on Hemocare, test results and blood product information are transmitted back to STAR Laboratory through the interface and become available on STAR. This information may then be viewed through STAR Laboratory and STAR Patient Care and may also be included on patient reports.

Billing transactions captured on Hemocare are also transmitted to STAR Laboratory in a batch mode.

This section describes:

- Order Processing
  - Test and product requests
  - Patient demographic information
  - Order cancellation
- Resulting
  - Test results
  - Product information and status updates
  - Manual Result Entry
  - Quality Assurance
- Patient Inquiry
  - Test Results
  - Product Availability

- Hemocare Interface Utilities
  - Audit - Hemocare to Lab
  - Audit - Lab to Hemocare
  - Message to Hemocare
  - Start/Stop Interface
- Billing

All communication between STAR and Hemocare is accomplished through messages sent between the two systems. Refer to the following documents for more information on message layouts and other interface parameters and conditions:

- The chapter on Hemocare standard interface specifications in Mediware Information Systems' *Hemocare Integration Module User Manual ©*
- Appendix B: Interface Flow and Processing in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide.*

ORDER PROCESSING

Order processing from STAR to Hemocare involves test and product requests, patient demographics, specimen collection, and order cancellation messages.

In order to maintain order and result mapping integrity across both sides of the Hemocare ABB interface, certain limitations apply to the ordering process. These limitations are:

- A STAR Laboratory accession may not include two or more result components, on the same or separate ABB tests, that are mapped using the same AdvancedBlood Bank Procedure code record type result.
- A STAR Laboratory accession may not include two or more ABB tests with a result component defined with the Special Processing parameter *Units X-Matched Processing*.

These limitations may be controlled through the use of build and procedural constraints. For more information, refer to Appendix A: Hemocare ABB Interface File Build Guidelines in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

Test and Product Requests

Each ABB test accessioned will generate the appropriate test (T) and/or product (P) request message(s) to Hemocare according to the test's Procedures per Test configuration. Each order will also generate one patient demographic (A1) message and one specimen collection (S1) message to Hemocare.

The specimen collection (S1) message provides a collection date/time for the order. This information will update the Specimen Indate and Intime fields on Hemocare's Patient Registry screen. Hemocare stores this information as the Last Specimen Collection Date/Time for the patient. One (S1) message is sent per ABB test ordered.

Patient Demographic Information

Each ABB order generates one patient demographic Admission (A1) record to Hemocare. As a result, the patient file on Hemocare always has the most current patient information. Updates to patient demographic records on STAR Patient Care also trigger an ADT update message to Hemocare. STAR only sends ADT update messages to Hemocare on patients that have blood bank orders.

Patient demographic (ADT) messages from STAR Laboratory to Hemocare include the following:

- Admission (A1)
- Discharge (A2)

- Transfer (A3)
- Revision (A4)
- Cancel Admission (A5)
- Unit#/MRN Change (A6)
- Patient Deceased (A7)

For information on how each ADT update message is processed by Hemocare, refer to Mediware Information Systems' *Hemocare Integration Module User Manual* ©.

Order Cancellation

Order cancellation on STAR will generate cancel request message(s) to Hemocare. When an ABB test is cancelled on STAR, a cancel request (C1) message is sent for each procedure defined for the test in the Procedures per Test maintenance processor.

Cancel request messages print to the Hemocare interface printer only. You must manually cancel the test and product requests for the order on the Hemocare system.

STAR does not support order cancellation messages from Hemocare.

RESULTING

Test results and blood product information are automatically sent to STAR Laboratory when accepted on Hemocare. Test and product information is mapped to the appropriate ABB test result component as defined in the Advanced Blood Bank Result Mapping maintenance processor. The status of the ABB test will update to *Partial* or *Done,* as indicated by the test's Results and Normals configuration for required results components.

Result mapping is based on an order's accession number and the procedure code(s) defined for the ABB test. The ABB test code itself is not used when results are posted to the result file on STAR. In order to maintain order and result mapping integrity on both sides of the Hemocare ABB interface, certain limitations apply:

- A STAR Laboratory accession may not include two or more result components, on the same or separate ABB tests, that are mapped using the same Advanced Blood Bank Procedure code record type result.

- A STAR Laboratory accession may not include two or more ABB tests with a result component defined with the Special Processing parameter *Units X-Matched Processing*.

These limitations may be controlled through the use of build and procedural constraints. For more information, refer to Appendix A: Hemocare ABB Interface File Build Guidelines in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

Test Results

Serological test results are received from Hemocare through result reporting message types T0 through T5. Record type results are defined by the Hemocare results reporting message layout. For more information, refer to Chapter 1: Maintenance Processors in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide.*

Product Information and Status Updates

Product information is received from Hemocare with the P1 result reporting message type, Product Status Change. These results map to the result component defined with a special processing parameter *Units X-Matched Processing*. An accession on STAR must contain only one ABB test with a result component configured with this special processing type.

The system updates the status of an ABB test to *Partial* or *Done* as soon as the first product (P1) message is received from Hemocare. Any number of additional product and status update messages are accepted on STAR for the order regardless of the order's status.

The Hemocare ABB interface accommodates the practice of blood product substitution. For example, an order on STAR for ten units of platelets may be filled on Hemocare by issuing one platelet pheresis unit. When the blood product information is received from Hemocare, the system does not control or validate the blood product or number of units against the original order. This allows any number of units and any type of blood product be set up for any blood bank order which includes a blood product request.

Blood product information from Hemocare includes the product code and description, unit number, blood type, compatibility results, and status. This information is displayed in Patient Inquiry through the Blood Product Availability feature. Hemocare blood product results include the following statuses:

- Hold
- Xm'd
- Issued
- Transfd
- Another
- Ret'd

When received from Hemocare, each status value is converted to a STAR Laboratory status as follows:

Hemocare	STAR Laboratory
Hold	(see note below)
Xm'd	Available
Issued	Issued
Transfd	Transfused
Another	Canceled
Ret'd	Canceled

NOTE: A product message with a Hemocare status of *Hold* is not displayed in Blood Product Availability on STAR. The *Hold* status on Hemocare applies to two situations: pre-crossmatch (for example, directed donor units) and non-crossmatch (for example, fresh frozen plasma). In either case, the product must be updated to a Released (E) status on Hemocare prior to Issue (I). A Released (E) product update on Hemocare is converted to *Xm'd* for P1 messages across the interface, whether or not compatibility testing is performed. As a result, only units Released (E) on Hemocare are truly available for the patient; therefore, only the *Xm'd* status will be used on STAR to update a product to *Available*.

As long as blood product results are received from Hemocare for an order, product information displayed through the Blood Product Availability feature continues to update, regardless of the order's status.

Manual Result Entry

If required, results for ABB tests may be entered manually on STAR Laboratory using standard result entry mechanisms.

WARNING: Proceed with caution. If manual result entry is used to add or overwrite blood bank results, these results are updated on STAR *only* and may differ from the information on the Hemocare system.

Result reporting for ABB type tests involve two processes: (1) standard result components and (2) blood product results. Result reporting for standard result components follow the same guidelines and conditions as other test results on STAR. For more information, refer to Chapter 6: Test Processing in the *General Applications Volume I* of the *STAR Laboratory Reference Guide.*

Blood product result components adhere to the unique parameters of *Units X-matched Processing*. In the following example, a crossmatch order is selected for result reporting.

```
            General Hospital Blood Bank Result Reporting Processor
AC#:1170      STAT              PLATELET PHERESIS      Wed Jun 16, 2010 05:02 pm
Unit #     Name             Sex Birthdate  Room    Physician     Srv ICD Status
B000005974 FLANDERS,ACTIVE  F  04/01/1960 3001-1  ADAIR,FRANK C CAR 10  I/P 442

                                      Specimen: Blood

( 1) ABO/Rh        : O pos
( 2)*Antibody Scre : Negative
( 3) No. of units  :









Enter number to edit, accept(A), fax(X), print(P), fill(F)--
                     * = options, replicate(R), repeat(RR)
```

The following prompt displays when no blood product information is posted to the *No. of Units* result component:

No units defined! Enter units? (Y/N) [Y]--

Enter **Y** or press ENTER to add blood product results. The following screen is displayed:

```
           General Hospital Blood Bank Result Reporting Processor
AC#:1170      STAT              PLATELET PHERESIS      Wed Jun 16, 2010 05:02 pm
Unit #     Name             Sex Birthdate  Room    Physician     Srv ICD Status
B000005974 FLANDERS,ACTIVE  F  04/01/1960 3001-1  ADAIR,FRANK C CAR 10  I/P 442
Result:  No. of units


 1 Component                        2 Unit #              3 Status
->
 4 Interpretation                   5 Unit Source         6 Pool Unit #

 7 Pool Component                   8 Unit/Pool ABO/Rh    9 Disposition

10 Product Code

Page:01                            Components
( 1) Platelets
( 2) Fresh Frozon Plasma
( 3) Red Blood Cells
( 4) Whole Blood
( 5) Washed Red Cells


Enter choice-
```

Field Explanations

1. COMPONENT (TABLE LOOKUP)
This field automatically displays the Blood Component table for selection. This is a required field.

2. UNIT # (10-C-R)
Enter the blood product unit number in this field. This is a required field.

3. STATUS (TABLE LOOKUP)
This is a required field. Select the unit status from the following entries:

- Available
- Issued
- Transfused
- Cancel

4. INTERPRETATION (15-C-R)
Enter the crossmatch interpretation for this unit. This is a required field.

5. UNIT SOURCE (15-C-O)
Enter the unit source in this field.

6. POOL UNIT # (10-C-O)
Enter the blood product pool number in this field.

7. POOL COMPONENT (TABLE LOOKUP)
This field automatically displays the Blood Component table for selection. This field is optional.

8. UNIT/POOL ABO/RH (7-A-O)
Enter the unit or pooled product ABO/Rh in this field.

9. DISPOSITION (10-C-O)
Enter the blood products final disposition in this field.

10. PRODUCT CODE(8-AN-O)
Enter the product code in this field.

Fields 5, 6, 7, and 9 arenot mapped with the HemocareABB interface andare optional for manual result entry.

Once you have completed all required entries, you can press ENTER or enter **Y** to accept the screen, or enter **N** to edit. The *No. of Units* result field and Product Availability information is automatically updated.

If blood product results already exist for the order, the following screen is displayed:

```
                  General Hospital Blood Bank Result Reporting Processor
AC#:1169      STAT               CROSSMATCH X1        Wed Jun 16, 2010 05:13 pm
Unit #     Name             Sex Birthdate  Room    Physician     Srv ICD Status
B000005974 FLANDERS,ACTIVE  F  04/01/1960 3001-1  ADAIR,FRANK C CAR 10  I/P 442
Result:  No. of units
Page:01Component           Unit#_Prod Code        Status     Interp         OT
( 1) Red Blood Cells       W045110152130_E4545100 Available  Comp          3640
( 2) Red Blood Cells       W045110152131_E4545100 Available  Comp          3640
( 3) Red Blood Cells       W045110152132_E4545100 Available  Comp          3640









Selection option to edit, add(A) or NL to accept--
```

Field Explanations

COMPONENT (DISPLAY ONLY)
This field displays the name of the blood component.

UNIT#_PROD CODE (DISPLAY ONLY)
This field displays the unit number and product code.

STATUS (DISPLAY ONLY)
One of the following statuses are displayed for each unit:

- Available
- Issued
- Transfused
- Cancelled

INTERPRETATION (DISPLAY ONLY)
This field displays the interpretation entered for this unit.

OT (DISPLAY ONLY)
This field displays the ordered test code.

At this point, you can edit a specific unit's result information by entering the corresponding option number or enter **A** to add a unit.

Quality Assurance

STAR Laboratory offers a wide range of result reporting quality assurance features. These include valid value checking, delta checking, corrected results, and other result entry options. For more information, refer to Chapter 6: Test Processing in the *General Applications Volume I* of the *STAR Laboratory Reference Guide.*

NOTE: Because each of the standard quality assurance features listed above involves some form of user intervention, they only apply to manual result entry. As a result, valid value processing, delta checking, and correction logic are all bypassed for all resulting across the Hemocare ABB interface.

PATIENT INQUIRY

Access to ABB test results is based on the same conditions and parameters as other tests in STAR. For more information, refer Chapter 1: Inquiry Processors in the *General Applications Volume I* of the *STAR Laboratory Reference Guide.*

Below is an example of a crossmatch order:

```
                General Hospital Patient Inquiry Processor
                                                Thu Jan 15, 2009 09:04 am
Unit #     Name            Sex Birthdate  Room    Physician     Srv ICD Status
A000000952 CONNEERS,MICHAEL M  11/17/1970 MICH-03 MARKS,RAY M   ERS 10  I/P 296
                            Acct #: A9515800003
              Accession # 4766 CROSSMATCH RBC, 2 UNITS
Specimen: Blood                                     Collected: 03/28/96 1508
Result Name              Results
ABO/Rh:                  O pos
Antibody Screen:         Negative
No. of units:            2









Enter option--
                                  * = Options
```

The *No. of Units* result component displays the actual number of units posted to this order. That number may be different than the number of units inferred by the order description.

Blood Product Availability

Blood product information on a patient is available in Patient Inquiry through several pathways. When you select a valid patient, the following screen is displayed:

```
              General Hospital Patient Inquiry Processor
                                                  Thu Jan 15, 2009 09:04 am
Unit #     Name             Sex Birthdate  Room    Physician     Srv ICD Status
A000000952 CONNERS,MICHAEL  M  11/17/1970 MICH-03 MARKS,RAY M   ERS 10  I/P 296

                         All Work listed       Date:  03/28/96
Acct#: A9515800003
Opt#   Order#         Acc #  Test Name                 Time       Status
  1    0241            4766  CROSSMATCH RBC, 2 UNITS   1508       Done     *STAT
                         Spec Type:Blood









                          All work listed for: 03/28/96
Enter option(s) (sep by `,`s),All(A) or date--
                                  other options(*)
```

You can enter an asterisk (*****) to display additional review options, you can select a specific order to review, or you can enter **B** to view the Blood Product Availability screen.

If you enter an asterisk (*****), the following prompt is displayed:

Reverse(R), History Cardfile(H), Blood Product avail(B), Test Lookup(L)--
primary options(*)

To view blood product information, enter **B**. The following screen is displayed:

```
               General Hospital Patient Inquiry Processor
                                                  Thu Jan 15, 2009 09:04 am
Unit #     Name             Sex Birthdate  Room    Physician     Srv ICD Status
A000000952 CONNERS,MICHAEL  M  11/17/1970 MICH-03 MARKS,RAY M   ERS 10  I/P 296

                                  Account Numbers
  #  Acct #          Type  Doctor             Service   Adm Date    Expected
( 1) A9515800003     I/P   ADAMS,JAY M          ERS     06/07/95
( 2) A9510000062     O/P   SMITH,ANNE           OPS     01/22/95









Select account(s) to view blood product availability [Current account(s)]--
                                end selection(NL)
```

Blood product information is stored at the patient level. All accounts for the patient are displayed for selection. You may select one or more accounts or press ENTER for the current account(s).

The following screen is displayed:

```
                General Hospital Patient Inquiry Processor
                                                 Thu Jan 15, 2009 09:04 am
Unit #     Name             Sex Birthdate  Room    Physician     Srv ICD Status
A000020826 TOMSON,MARY JANE F  09/08/1957 2101-01 Barnes,John   ONC 10  I/P 23

                    Ordered  Avail  Issued  Trans  Expired  Cancel  Quarantine
Cryoprecipitate        5               5
Fresh Frozen Plasma    3       2               1
Platelet Pheresis      2       1       1
Red Blood Cells        4       2       1       1
Washed Red Cell        2               2
                    -------  -----  ------  -----  -------  ------  ----------
Total                 16       5       9      2       0        0         0









View product detail(D)--
```

Blood product information is not specific to a particular accession or order. The totals reflect all accessions and orders for the account(s) selected. If more than one account exists for the patient, you are provided the option of selecting the account(s) to view.

The Blood Product Availability screen consists of the following sections:

1. A standard patient demographic header.

2. Blood Components/Products: All blood components ordered and accessioned for the patient are displayed down the left side of the screen.

3. Product Status Columns include:

    - Ordered
    - Available
    - Issued
    - Transfused
    - Expired

- Cancel
- Quarantine

The system updates the Ordered column when you accession the ordered test. The system decrements the value in the Ordered column when an order cancellation or specimen rejection is completed for any order in a *Spec Rec'd* status. If the test has a *Partial* or *Done* status, processing on the ABB system may have already occurred, and the system does not decrement the value in the Ordered column.

Each blood product status update received from Hemocare will map to one STAR Laboratory status type as follows:

Hemocare	STAR Laboratory
Hold	(see note below)
Xm'd	Available
Issued	Issued
Transfd	Transfused
Another	Canceled
Ret'd	Canceled

NOTE: A product message with a Hemocare status of *Hold* is not displayed in Blood Product Availability on STAR. The *Hold* status on Hemocare applies to two situations: pre-crossmatch (for example, directed donor units) and non-crossmatch (for example, fresh frozen plasma). In either case, the product must be updated to a Released (E) status on Hemocare prior to Issue (I). A Released (E) product update on Hemocare is converted to *Xm'd* for P1 messages across the interface, whether or not compatibility testing is performed. As a result, only units Released (E) on Hemocare are truly available for the patient and, therefore, only the *Xm'd* status will be used on STAR to update a product to *Available*.

To accommodate ABB interfaces other than Hemocare, the Blood Product Availability screen includes additional status categories. The Expired and Quarantine categories are not used with the Hemocare ABB interface.

The blood product availability display includes the following prompt:

View product detail(D)--

Entering a **D** displays blood product detail information for the patient. For example:

```
                General Hospital Blood Bank Patient Inquiry Processor
                                                    Wed Jun 16, 2010 05:30 pm
Unit #     Name             Sex Birthdate  Room    Physician     Srv ICD Status
B000005974 FLANDERS,ACTIVE  F  04/01/1960 3001-1  ADAIR,FRANK C CAR 10  I/P 442

Acct#: B0909100001           Blood Product Detail
Product                Unit#_Prod Code/Pool Unit#  ABO/Rh Status D/T Last Status
Red Blood Cells        W045110152130_E4545V00      O POS  Avail   06/16/10 1719
Red Blood Cells        W045110152131_E4545V00      O POS  Avail   06/16/10 1719
Red Blood Cells        W045110152132_E4545V00      O POS  Avail   06/16/10 1719
Platelet               W045110157901_E0010V00      O POS  Transf  06/16/10 1730
Platelet               W045110157902_E0010V00      O POS  Transf  06/16/10 1730
Platelet               W045110157904_E0010V00      O POS  Transf  06/16/10 1730
Platelet               W045110157905_E0010V00      O POS  Transf  06/16/10 1730
Platelet               W045110157896_E0010V00      O POS  Transf  06/16/10 1729
Platelet               W045110157900_E0010V00      O POS  Transf  06/16/10 1729









                     F1Prev Page F2Next Page F7  Exit
```

The blood product detail display is account specific. If the original blood product availability request included more than one account for the patient, blood product detail information will be sorted by account and displayed, one account at a time. The most current account is displayed first, followed by the next account in reverse chronological order.

Use the F1 and F2 function keys to scroll through multiple pages of blood product detail within the first patient account requested. Use the F7 key to exit this account and display blood product detail information for the next account. When all requested accounts have been reviewed, the F7 key returns you to the patient inquiry display.

For more information on scrolling screen processing, refer to Chapter 4: Information Entry Techniques in the *General Information Volume* of the *STAR Laboratory Reference Guide*.

Field Explanations

PRODUCT (DISPLAY ONLY)
This column displays the blood product description.

UNIT #_PROD CODE/POOL UNIT # (DISPLAY ONLY)
This column displays the unit number and product code, if present. If the pool unit # is also present, the next line contains *(cont'd)* followed by the pool unit #.

ABO/Rh (DISPLAY ONLY)
This column displays the blood product ABO/Rh.

STATUS (DISPLAY ONLY)
This column displays the current product status.

D/T OF LAST STATUS (DISPLAY ONLY)
This field displays the status update date/time. This is the system date/time logged when the product status update transaction is received by STAR from the ABB interface. The format is MM/DD/YY HHMM.

Blood product detail information is sorted by account, status, product, and status date/time in that order. The most current patient account is displayed first, followed by the next account in reverse chronological order.

The status column sorts in the following order:

- Available
- Issued
- Transfused
- Cancel

The status date/time will sort in reverse chronological order.

For pooled products, this display includes only the pooled unit information. Information on each unit within the pool is not sent across the interface and is not included in this display.

NOTE: *N/A* in any field denotes data not available. This typically applies to blood products that do not have a specific blood type (for example, pooled products) or units whose status update was logged on STAR prior to the implementation of the product detail display feature.

BILLING

Billing transactions captured on Hemocare are transmitted to STAR Laboratory in batch mode whenever the billing report is generated on the Hemocare system. The bill code received from Hemocare will be a valid miscellaneous charge SIM item.

Each billing message is processed as a miscellaneous charge or credit on STAR Laboratory and then networked to STAR Patient Care. Charges and credits from Hemocare may be viewed through the Miscellaneous Charge processor, and are included on the Miscellaneous Charge Report. For more information, refer to Chapter 12: Billing/Charging in the *General Applications Volume I* of the *STAR Laboratory Reference Guide*.

For the Hemocare Interface the Date of Service is the Collection Date for all procedures such as Type and Screen, Crossmatch, etc. For components such as Packed Cells, Platelets, etc. the Date of Service is the component's Transfused Date.

Any miscellaneous charges received into STAR Laboratory via the Hemocareinterface are not eligible for any compliancy checking.

HEMOCARE INTERFACE UTILITIES

The Hemocare Interface Utilities menu option may be added to the Blood Bank section menu. To add this option, refer to Chapter 4: Menus in the *Maintenance Functions Volume I* of the *STAR Laboratory Reference Guide*.

```
                      General Hospital Blood Bank Processor
                                                Mon Aug 19, 2002 09:15 am
Blood Bank Input Options

            Option No.  Option
            ----------------------------------------
                1       Patient Inquiry
                2       Order Cancellation

                3       Accessioning
                4       Routine
                5       Miscellaneous Charge/Credit
                6       Incomplete Work Report
                7       Quality Control/Workload
                8       Hemocare Interface Utilities
                9       Blood Bank Inventory
               10       Long Reports Batch
               11       Panic Notification
               12       Physician Inquiry - Lookup
               13       Result Reporting


Enter option number--
```

When you select the Hemocare Interface Utilities option, the following screen is displayed:

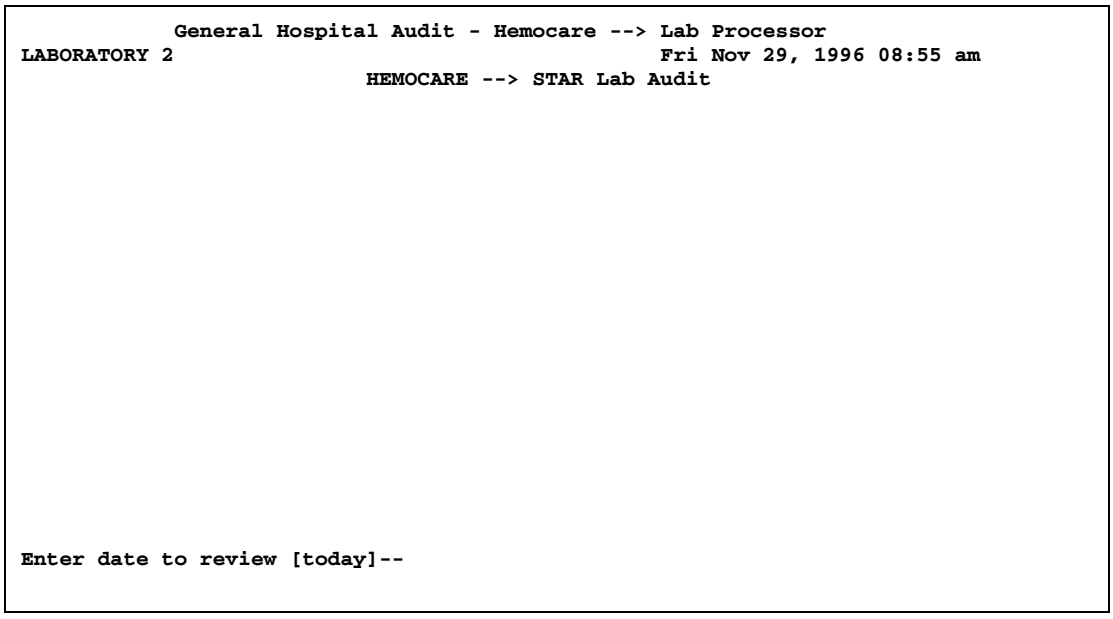
```
       General Hospital Blood Bank Hemocare Interface Utilities Processor
                                                Mon Aug 19, 2002 09:17 am
Blood Bank Hemocare Interface Utilities Input Options

            Option No.  Option
            ----------------------------------------
                1       Audit - Hemocare --> Lab
                2       Audit - Lab --> Hemocare
                3       Message to Hemocare
                4       Start/Stop Interface









Enter option number--
```

The four functional options are:

1. Audit - Hemocare to STAR Laboratory
2. Audit - STAR Laboratory to Hemocare
3. Message to Hemocare audit
4. Start/Stop the Hemocare Interface

Audit - Hemocare to Lab

This function allows you to review transaction records passed from the Hemocare system to STAR Laboratory within the audit retention period defined. When you select this option, the following screen is displayed:



Enter the date to review. The default is the current date. The date entered must be within the audit retention period defined for your laboratory. For more information on date entry conventions, refer to Chapter 4: Information Entry Techniques in the *General Information Volume* of the *STAR Laboratory Reference Guide*.

When you enter a valid date, the following screen is displayed:

```
            General Hospital Audit - Hemocare --> Lab Processor
                                                  Fri Mar 29, 1996 01:48 pm
                            HEMOCARE --> STAR Lab Audit
Date: 03/29/96

Page:01                     Incoming Transaction Types
( 1) B1-Billing
( 2) P1-Product Status Changes
( 3) T0-Group & RH Results
( 4) T1-Antibody Screen Results
( 5) T3-Cord Blood Test Results
( 6) T4-Coombs Test Results
( 7) T5-General Test Results









Select transaction type to review--
```

Incoming transaction types include:

(1) B1-Billing

(2) P1-Product Status Changes

(3) T0-Group & RH Results

(4) T1-Antibody Screen Results

(5) T3-Cord Blood Test Results

(6) T4-Coombs Test Results

(7) T5-General Test Results

General test results from Hemocare are contained in message types T0 through T5. All blood product information is contained in the P1-Product Status Changes message. The B1-Billing option includes all miscellaneous charge and credit messages.

Select an option. If there are no messages for the date and option selected, the following message is displayed:

No Entries Defined

TEST RESULTS

When you select a valid date and the T0-Group & RH Results option, the following screen is displayed:

```
          General Hospital Audit - Hemocare --> Lab Processor
                                                  Fri Nov 29, 1996 09:09 am
                          HEMOCARE --> STAR Lab Audit
Date: 11/26/96                          Transaction: T0-Group & RH Results

Page:01UNIT#/MRN  Account#    Accn#      Test code  Request Code
( 1) A391072     A9633001046  21330        1118         G/RH
( 2) A380636     A9633001015  21327        1118         G/RH
( 3) B129501     B9633000309  21337        1118         G/RH
( 4) A186671     A9633000569  21309        1118         G/RH
( 5) B230026     B9633000329  21378        1118         G/RH
( 6) A391084     A9633100001  21364        1118         G/RH
( 7) A391075     A9633001055  21299        1118         G/RH
( 8) B199869     B9633000130  21377        1118         G/RH
( 9) A238363     A9633100032  21933        1118         G/RH
(10) A386790     A9633100035  21949        1118         G/RH
(11) A360256     A9633100173  22075        1118         G/RH




Enter choice--
```

The screen header includes the date and transaction type requested. Each option represents one message from Hemocare to STAR Laboratory.

Field Explanations

UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

ACCN# (DISPLAY ONLY)
This field displays the accession number.

TEST CODE (DISPLAY ONLY)
This field displays the ABB test code.

REQUEST CODE (DISPLAY ONLY)
This field displays the Blood Bank Procedure code.

Select an option to review message detail. The following screen is displayed:

```
            General Hospital Audit - Hemocare --> Lab Processor
                                                  Fri Nov 29, 1996 09:09 am
                          HEMOCARE --> STAR Lab Audit
Date: 11/26/96                          Transaction: T0-Group & RH Results

 1 UNIT#/MRN     2 Account #     3 Accession  4 Test Code  5 Request Code
   A391084         A9633100001     21364        1118         G/RH
 6 Result Date   7 Result Time   8 Resulting Tech
   11/26/96        01:57           PCD
 9 Subrecord/Results
   ABO:  O   RH: POS  DAT:









Press NL--
```

Field Explanations

1. UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

2. ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

3. ACCESSION # (DISPLAY ONLY)
This field displays the accession number.

4. TEST CODE (DISPLAY ONLY)
This field displays the ABB test code.

5. REQUEST CODE (DISPLAY ONLY)
This field displays the Blood Bank Procedure code.

6. RESULT DATE (DISPLAY ONLY)
This field displays the result date.

7. RESULT TIME (DISPLAY ONLY)
This field displays the result time.

8. RESULTING TECH (DISPLAY ONLY)
This field displays the ID of the technologist who resulted the test on Hemocare.

9. SUBRECORD/RESULTS (DISPLAY ONLY)
This field displays the Hemocare subrecord results for the record type selected.

Screen displays for general Hemocare result record types T1 through T5 are identical to the T0 message described above except for the subrecord/results field which is unique for each record type. For more information, refer to the chapter on standard interface specifications in Mediware Information Systems' *Hemocare Integration Module User Manual* © or Hemocare Record Type Results in the Maintenance Processors chapter of this volume.

PRODUCT INFORMATION

When you select a valid date and the P1-Product Status Changes option, the following screen is displayed:

```
              General Hospital Audit - Hemocare --> Lab Processor
                                                  Fri Nov 29, 1996 09:09 am
                            HEMOCARE --> STAR Lab Audit
Date: 11/26/96                                Transaction: P1-Product Status Changes

Page:01UNIT#/MRN  Account#    Accn#      Test code  Request Code
( 1) A115942     A9629400210  17817        1015         RBC
( 2) A115942     A9629400210  17817        1015         RBC
( 3) A286769     A9632700692  17281        1015         RBC
( 4) A390846     A9632800029  21094        1015         RBC
( 5) A364425     A9633000226  21105        1015         RBC
( 6) A380636     A9633001015  21327        1015         RBC
( 7) A380636     A9633001015  21327        1015         RBC
( 8) A345689     A9629800489  21275        1015         RBC
( 9) A186671     A9633000569  21309        1015         RBC
(10) A186671     A9633000569  21309        1015         RBC
(11) A186671     A9633000569  21309        1015         RBC




Enter choice--
```

The screen header includes the date and transaction type requested. Each option represents one P1 message from Hemocare to STAR Laboratory.

Field Explanations

UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

ACCN# (DISPLAY ONLY)
This field displays the accession number.

TEST CODE (DISPLAY ONLY)
This field displays the ABB test code.

REQUEST CODE (DISPLAY ONLY)
This field displays the Blood Product code.

Select an option to review message detail. The following screen is displayed:

```
             General Hospital Audit - Hemocare --> Lab Processor
                                                  Fri Nov 29, 1996 09:09 am
                           HEMOCARE --> STAR Lab Audit
Date: 11/26/96                          Transaction: P1-Product Status Changes

 1 UNIT#/MRN     2 Account #     3 Accession  4 Test Code  5 Request Code
   A186671         A9633000569     21309        1015         RBC
 6 Result Date   7 Result Time   8 Resulting Tech
   11/26/96        02:52           PCD
 9 Subrecord/Results
   RED BLOOD CELLS          Unit: 7261037        ABO:  O Rh: POS
            Ret'd









Press NL--
```

Field Explanations

1. UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

2. ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

3. ACCESSION # (DISPLAY ONLY)
This field displays the accession number.

4. TEST CODE (DISPLAY ONLY)
This field displays the ABB test code.

5. REQUEST CODE (DISPLAY ONLY)
This field displays the Blood Product code.

6. RESULT DATE (DISPLAY ONLY)
This field displays the result date.

7. RESULT TIME (DISPLAY ONLY)
This field displays the result time.

8. RESULTING TECH (DISPLAY ONLY)
This field displays the ID of the technologist who resulted the test on Hemocare.

9. SUBRECORD/RESULTS (DISPLAY ONLY)
This field displays the Hemocare P1 subrecord results. Subfield labels and results for each P1 message include:

- blood product description
- product unit number
- product type and Rh
- crossmatch analysis
  - Compat
  - Incomp
  - Unxm'd
- unit status
  - Hold
  - Xm'd
  - Issued
  - Transsfd
  - Another
  - Ret'd

For more information, refer to the chapter on standard interface specifications in Mediware Information Systems' *Hemocare Integration Module User Manual* © or the chapter on maintenance processors in this volume.

BILLING

When you select a valid date and the B1-Billing option, the following screen is displayed:

```
            General Hospital Audit - Hemocare --> Lab Processor
                                                  Fri Nov 29, 1996 09:09 am
                          HEMOCARE --> STAR Lab Audit
Date: 11/26/96                              Transaction: B1-Billing

Page:01UNIT#/MRN   Account#      Accn#     Bill Type  Code
( 1) A342820       A9630600199   20217        Bill    1192
( 2) A342820       A9630600199   20217        Bill    1192
( 3) A338113       A9631800515   20564        Bill    1192
( 4) A338113       A9631800515   20564        Bill    1192
( 5) A129705       A9631200378   20371        Bill    1091
( 6) A129705       A9631200378   20375        Bill    1091
( 7) A113934       A9632500915   18450        Bill    1021
( 8) A113934       A9632500915   18450        Bill    1021
( 9) A375049       A9633000090   20060        Bill    1192
(10) A375049       A9633000090   20060        Bill    1192
(11) A389553       A9631300666   20745        Bill    1021
(12) A389553       A9631300666   20745        Bill    1021
(13) A390846       A9632800029   21094        Bill    1192
(14) A390846       A9632800029   21094        Bill    1192
(15) A390846       A9632800029   21094        Bill    1021

Enter choice--
```

The screen header includes the date and transaction type requested. Each option represents one B1 message from Hemocare to STAR Laboratory.

Field Explanations

UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

ACCN# (DISPLAY ONLY)
This field displays the accession number.

BILL TYPE (DISPLAY ONLY)
Bill or *Credit* will be displayed in this field.

CODE (DISPLAY ONLY)
This field displays the miscellaneous charge SIM code.

Select an option to review message detail. The following screen is displayed:

```
              General Hospital Audit - Hemocare --> Lab Processor
                                                  Fri Nov 29, 1996 09:09 am
                           HEMOCARE --> STAR Lab Audit
Date: 11/26/96                          Transaction: B1-Billing

 1 UNIT#/MRN          2 Account #       3 Accession #     4 Charge Type
   A9631300666          A389553           20745             Bill
 5 Billing Code       6 Billing Description               7 Quantity
   1021                 RBC CHARGE                          1
 8 Date of Service    9 Time of Service
   11/25/96             22:15









Press NL--
```

Field Explanations

1. UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

2. ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

3. ACCESSION # (DISPLAY ONLY)
This field displays the accession number.

4. CHARGE TYPE (DISPLAY ONLY)
Bill or *Credit* will be displayed in this field.

5. BILLING CODE (DISPLAY ONLY)
This field displays the miscellaneous charge SIM code.

6. BILLING DESCRIPTION (DISPLAY ONLY)
This field displays the miscellaneous charge SIM item description.

7. QUANTITY (DISPLAY ONLY)
This field displays the quantity of miscellaneous charge items.

8. DATE OF SERVICE (DISPLAY ONLY)
This field displays the date of service.

9. TIME OF SERVICE (DISPLAY ONLY)
This field displays the time of service.

Audit - Lab to Hemocare

This function allows you to review transaction records passed from STAR Laboratory to the Hemocare system within the audit retention period defined. When you select this option, the following screen is displayed:

```
              General Hospital Audit - Lab --> Hemocare Processor
LABORATORY 2                                      Fri Nov 29, 1996 08:55 am
                           STAR Lab --> Hemocare Audit









Enter date to review [today]--
```

Enter the date to review. The default is the current date. The date entered must be within the audit retention period defined for your laboratory. For more information on date entry conventions, refer to Chapter 4: Information Entry Techniques in the *General Information Volume* of the *STAR Laboratory Reference Guide*.

When you enter a valid date, the following screen is displayed:

```
              General Hospital Audit - Lab --> Hemocare Processor
                                                  Fri Nov 29, 1996 10:27 am
                            STAR Lab --> HEMOCARE Audit
Date: 11/29/96

Page:01                     Outgoing Transaction Types
( 1) A1-Admission
( 2) A2-Discharge
( 3) A3-Transfer
( 4) A4-Revision
( 5) A5-Cancel Admission
( 6) A6-Unit#(MRN) Change
( 7) A7-Pat. Deceased
( 8) C1-Cancel Order
( 9) M1-Free Text Message
(10) O1-Order
(11) S1-Specimen Collection Date/Time




Select transaction type to review--
```

Outgoing transaction types include:

(1) A1-Admission

(2) A2-Discharge

(3) A3-Transfer

(4) A4-Revision

(5) A5-Cancel Admission

(6) A6-Unit#(MRN) Change

(7) A7-Pat. Deceased

(8) C1-Cancel Order

(9) M1-Free Text Message

(10)O1-Order

(11)S1-Specimen Collection Date/Time

Select an option. If there are no messages for the date and option selected, the following message is displayed:

No Entries Defined

PATIENT DEMOGRAPHICS

When you select a valid date and the A1-Admission transaction type, the following screen is displayed:

```
              General Hospital Audit - Lab --> Hemocare Processor
                                                 Fri Nov 29, 1996 09:14 am
                           STAR Lab --> HEMOCARE Audit
Date: 11/27/96                          Transaction: A1-Admission

Page:01UNIT#/MRN      Account#         Name
( 1) A385799          A9631200951      SMITH,JANE
( 2) A158748          A9632800034      JONES,ROBERT
( 3) A389059          A9630800253      HURST,BETHANY
( 4) A80996           A9633100907      ALRIGHT,FRED
( 5) A337051          A9631400173      NEWSOM,GREG
( 6) B246829          B9633100309      JONES,BABY BOY
( 7) B199869          B9633000130      ROBERTS,RACHEL
( 8) A80996           A9633100907      BELLS,GEORGE









Enter choice--
```

The screen header includes the date and transaction type requested. Each option represents one A1 message from STAR Laboratory to Hemocare.

Field Explanations

UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

NAME (DISPLAY ONLY)
This field displays the patient name.

Select an option to review message detail. The following screen is displayed:

```
             General Hospital Audit - Lab --> Hemocare Processor
                                                Fri May 17, 2002 09:14 am
                           STAR Lab --> HEMOCARE Audit
Date: 11/27/96                          Transaction: A1-Admission


 1 UNIT#/MRN     2 Account #      3 Patient Name
   B147633         B9633100311      SMITHERS,SUSAN
 4 Location  5 Service   6 Admit Date 7 Sex  8 Race       9 Birthdate
   5EA         GYN         11/27/96     F      6            10/14/70
10 Attending Physician                      11 Fin Class
   700468-GONZALEZ,JORGE                       2
12 Diagnosis Description                                        13 Dis Date
   634.91-SPON ABORT UNCOMPL-INC
14 Social Security #
   069-58-3332







Place in Queue to retransmit? (Y/N) [N]--
```

Field Explanations

1. UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

2. ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

3. PATIENT NAME (DISPLAY ONLY)
This field displays the patient name.

4. LOCATION (DISPLAY ONLY)
This field displays the patient's location. For inpatients this is the nursing unit. For outpatients the patient type is substituted for patient location.

5. SERVICE (DISPLAY ONLY)
The patient's service code is displayed in this field.

6. ADMIT DATE (DISPLAY ONLY)
This field displays the patient's admit date.

7. SEX (DISPLAY ONLY)
This field displays the patient's sex.

8. RACE (DISPLAY ONLY)
This field displays the patient's race code.

9. BIRTHDATE (DISPLAY ONLY)
This field displays the patient's birthdate.

10. ATTENDING PHYSICIAN (DISPLAY ONLY)
This field displays the patient's *admitting* physician.

11. FIN CLASS (DISPLAY ONLY)
This field displays the patient's financial class code.

12. DIAGNOSIS DESCRIPTION (DISPLAY ONLY)
This field displays the patient's working diagnosis.

13. DIS DATE (DISPLAY ONLY)
This field displays the patient's discharge date.

14. SOCIAL SECURITY # (DISPLAY ONLY)
This field displays the patient's social security number.

Information included in all fields above represent current data from the patient's record in the hospital MPI at the time of the transaction is formatted and sent to Hemocare.

The following prompt is displayed:

Place in Queue to retransmit? (Y/N) [N]--

Any outgoing transaction may be retransmitted to Hemocare.

Similar screens are displayed for all Hemocare ADT transaction types A1 through A7.

NOTE: The Social Security Number field is masked according to system, facility, department, or employee parameters.

ORDER

When you select a valid date and the O1-Order transaction type, the following screen is displayed:

```
              General Hospital Audit - Lab --> Hemocare Processor
                                                  Fri Nov 29, 1996 09:14 am
                            STAR Lab --> HEMOCARE Audit
Date: 11/27/96                              Transaction: O1-Order

Page:01UNIT#/MRN  Account#     Type   Accn#        Test Code   Request Code
( 1) A385799      A9631200951    P     23293        1015        BPR
( 2) A158748      A9632800034    T     23329        1118        G/RH
( 3) A158748      A9632800034    T     23329        1118        ABSC
( 4) A389059      A9630800253    T     22707        1118        G/RH
( 5) A389059      A9630800253    T     22707        1118        ABSC
( 6) A80996       A9633100907    T     23313        1118        G/RH
( 7) A80996       A9633100907    T     23313        1118        ABSC
( 8) A80996       A9633100907    P     23313        1118        BPR
( 9) A337051      A9631400173    T     22712        1118        G/RH









Enter choice--
```

The screen header includes the date and transaction type requested. Each option represents one O1 message from STAR Laboratory to Hemocare.

Field Explanations

UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

TYPE (DISPLAY ONLY)
This field displays a *T* for any request code defined with a test (T0-T5) Hemocare record type result. A *P* is displayed in this field for any request code defined with a product (P1) Hemocare record type result.

ACCN# (DISPLAY ONLY)
This field displays the accession number.

TEST CODE (DISPLAY ONLY)
This field displays the ABB test code.

REQUEST CODE (DISPLAY ONLY)
This field displays the Blood Bank Procedure code for all test (T0-T5) requests. The Blood Product code is displayed in this field for all product (P1) requests.

Select an option to review message detail. The following screen is displayed:

```
             General Hospital Audit - Lab --> Hemocare Processor
                                                Fri Nov 29, 1996 09:14 am
                          STAR Lab --> HEMOCARE Audit
Date: 11/27/96                         Transaction: O1-Order


 1 UNIT#/MRN     2 Account #     3 Accession #   4 Test Code  5 Request Code
   A385799         A9631200951     23293           1015         BPR
 6 Req Type      7 Req Date      8 Request Time  9 Quantity
   Product         11/26/96        2230            1
10 Req Phy Code 11 Name Check Chars
   323             SMITH
12 Order Comment
   Leukopoor RBC









Place in Queue to retransmit? (Y/N) [N]--
```

Field Explanations

1. UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

2. ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

3. ACCESSION # (DISPLAY ONLY)
This field displays the accession number.

4. TEST CODE (DISPLAY ONLY)
This field displays the ABB test code.

5. REQUEST CODE (DISPLAY ONLY)
This field displays the Blood Bank Procedure code for all test (T0-T5) requests. The Blood Product code is displayed in this field for all product (P1) requests.

6. REQ TYPE (DISPLAY ONLY)
Test is displayed in this field for all test (T0-T5) requests. *Product* is displayed in this field for all product (P1) requests.

7. REQ DATE (DISPLAY ONLY)
This field displays the order request date.

8. REQUEST TIME (DISPLAY ONLY)
This field displays the order request time.

9. QUANTITY (DISPLAY ONLY)
This field displays the request quantity.

10. REQ PHY CODE (DISPLAY ONLY)
This field displays the ordering physician's code.

11. NAME CHECK CHARS (DISPLAY ONLY)
This field displays the first five characters of the patient's last name if the name check option is activated.

12. ORDER COMMENT (DISPLAY ONLY)
This field displays the order comment.

The following prompt is displayed:

Place in Queue to retransmit? (Y/N) [N]--

Any outgoing transaction may be retransmitted to Hemocare.

SPECIMEN COLLECTION

When you select a valid date and the S1-Specimen Collection Date/Time transaction type, the following screen is displayed:

```
              General Hospital Audit - Lab --> Hemocare Processor
                                                Fri Nov 29, 1996 09:14 am
                           STAR Lab --> HEMOCARE Audit
Date: 11/27/96                          Transaction: S1-Specimen Collection Date

Page:01UNIT#/MRN Account#      Collect Date&Time  Name Check
( 1) A385799     A9631200951   11/26/96 2231      RICH
( 2) A158748     A9632800034   11/27/96 0019      BURT
( 3) A389059     A9630800253   11/27/96 0021      HERMO
( 4) A80996      A9633100907   11/27/96 0021      CARPE
( 5) A337051     A9631400173   11/27/96 0021      JOHNS
( 6) B246829     B9633100309   11/27/96 0025      KI
( 7) B199869     B9633000130   11/26/96 0105      ARSTE
( 8) A80996      A9633100907   11/27/96 0021      WILLI









Select option to retransmit--
```

The screen header includes the date and transaction type requested. Each option represents one S1 message from STAR Laboratory to Hemocare.

Field Explanations

UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

COLLECT DATE&TIME (DISPLAY ONLY)
This field displays the order collection date and time.

NAME CHECK CHARS (DISPLAY ONLY)
This field displays the first five characters of the patient's last name if the name check option is activated.

The S1 transaction type does not include additional detail information. The following prompt is displayed:

Select option to retransmit--

If an option is selected the following prompt is displayed:

Place in Queue to retransmit? (Y/N) [N]--

Any outgoing transaction may be retransmitted to Hemocare.

CANCEL ORDER

When you select a valid date and the C1-Cancel Order transaction type, the following screen is displayed:

```
              General Hospital Audit - Lab --> Hemocare Processor
                                                  Fri Nov 29, 1996 01:52 pm
                            STAR Lab --> HEMOCARE Audit
Date: 11/28/96                             Transaction: C1-Cancel Order

Page:01UNIT#/MRN  Account#     Type   Accn#        Test Code   Request Code
( 1) A391291     A9633300018    T     25534        1118        G/RH
( 2) A391291     A9633300018    T     25534        1118        ABSC
( 3) A221893     A9633200802    T     25506        1115        G/RH
( 4) A221893     A9633200802    T     25506        1115        ABSC
( 5) A221893     A9633200802    P     25506        1115        BPR









Enter choice--
```

The screen header includes the date and transaction type requested. Each option represents one C1 message from STAR Laboratory to Hemocare.

Field Explanations

UNIT#/MRN (DISPLAY ONLY)
The patient's Unit# (medical record number) is displayed in this field. The format is defined in the Interface Parameters maintenance processor.

ACCOUNT # (DISPLAY ONLY)
The patient account number is displayed in this field.

TYPE (DISPLAY ONLY)
A *T* is displayed in this field for any request code defined with a test(T0-T5) Hemocare record type result. A *P* is displayed in this field for any request code defined with a product (P1) Hemocare record type result.

ACCN# (DISPLAY ONLY)
The accession number is displayed in this field.

TEST CODE (DISPLAY ONLY)
The ABB test code is displayed in this field.

REQUEST CODE (DISPLAY ONLY)
The Blood Bank Procedure code is displayed in this field for all test (T0-T5) requests. The Blood Product code is displayed in this field for all product (P1) requests.

Select an option to review message detail. The following screen is displayed:

```
              General Hospital Audit - Lab --> Hemocare Processor
                                                 Fri Nov 29, 1996 01:52 pm
                           STAR Lab --> HEMOCARE Audit
Date: 11/28/96                          Transaction: C1-Cancel Order


 1 UNIT#/MRN     2 Account #     3 Accession #   4 Test Code  5 Request Code
   A391291         A9633342456     25534           1118         ABSC
 6 Req Type      7 Req Date      8 Request Time  9 Quantity
   Test            11/28/96        0711            1
10 Req Phy Code 11 Name Check Chars
   700017          SMITH
12 Cancel Comment
   SPECIMEN QNS/ANNA NOTIFIRD 2 AT 0823 IN









Place in Queue to retransmit? (Y/N) [N]--
```

Field Explanations

1. UNIT#/MRN (DISPLAY ONLY)
This field displays the patient's Unit# (medical record number). The format is defined in the Interface Parameters maintenance processor.

2. ACCOUNT # (DISPLAY ONLY)
This field displays the patient account number.

3. ACCESSION # (DISPLAY ONLY)
This field displays the accession number.

4. TEST CODE (DISPLAY ONLY)
This field displays the ABB test code.

5. REQUEST CODE (DISPLAY ONLY)
This field displays the Blood Bank Procedure code for all test (T0-T5) requests. The Blood Product code is displayed in this field for all product (P1) requests.

6. REQ TYPE (DISPLAY ONLY)
Test is displayed in this field for all test (T0-T5) requests. Product is displayed in this field for all product (P1) requests.

7. REQ DATE (DISPLAY ONLY)
This field displays the order request date.

8. REQUEST TIME (DISPLAY ONLY)
The order request time is displayed in this field.

9. QUANTITY (DISPLAY ONLY)
The request quantity is displayed in this field.

10. REQ PHY CODE (DISPLAY ONLY)
The ordering physician's code is displayed in this field.

11. NAME CHECK CHARS (DISPLAY ONLY)
The first five characters of the patient's last name are displayed in this field if the name check option is activated.

12. CANCEL COMMENT (DISPLAY ONLY)
The cancel comment is displayed in this field.

The following prompt is displayed:

Place in Queue to retransmit? (Y/N) [N]--

Any outgoing transaction may be retransmitted to Hemocare.

FREE TEXT MESSAGE

When you select a valid date and the M1-Free Text Message transaction type, the following screen is displayed:

```
            General Hospital Audit - Lab --> Hemocare Processor
                                                Fri Nov 29, 1996 02:21 pm
                          STAR Lab --> HEMOCARE Audit
Date: 11/29/96                          Transaction: M1-Free Text Message

Page:01                First line of Free-Text Messages
( 1) Please log off.  The Hemocare interface is going down in ten minutes.
( 2) The Hemocare interface is now operational.









Enter choice--
```

The screen header includes the date and transaction type requested. Each option represents the first line of a free text message sent from STAR Laboratory to Hemocare.

Select an option to review message detail. The following screen is displayed:

```
              General Hospital Audit - Lab --> Hemocare Processor
                                                  Fri Nov 29, 1996 02:21 pm
                            STAR Lab --> HEMOCARE Audit
Date: 11/29/96                          Transaction: M1-Free Text Message

1 Please log off.  The Hemocare interface is going down in ten minutes.
2 The interface will become active again no later than 1500.
3 A follow up message will be sent upon reactivation of the interface.
4









Place in Queue to retransmit? (Y/N) [N]--
```

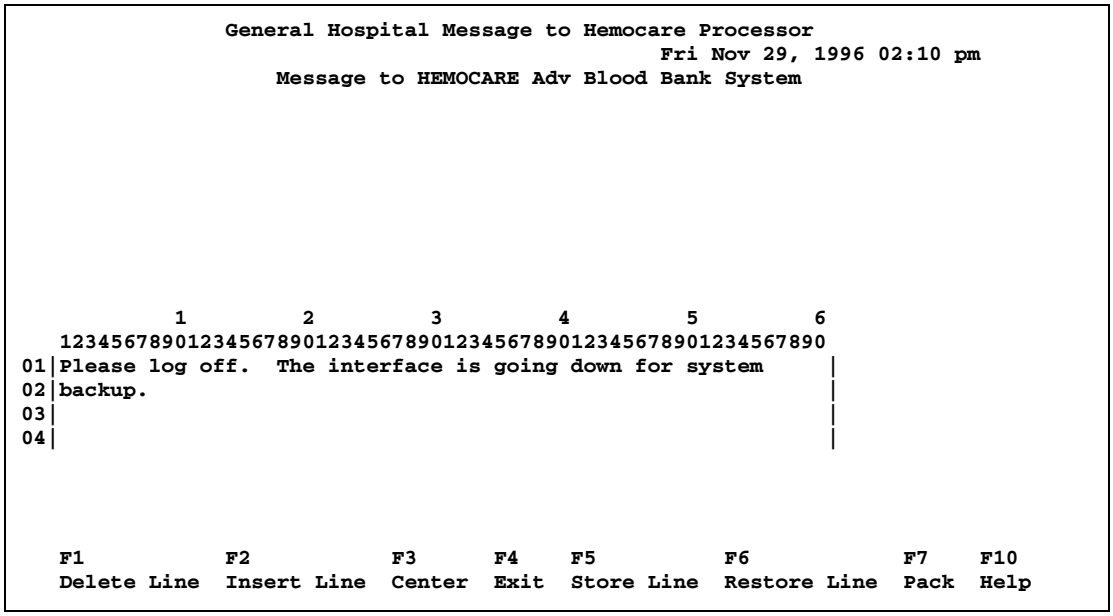
This screen will display the full four lines of text from the original message to Hemocare. The following prompt is displayed:

Place in Queue to retransmit? (Y/N) [N]--

Any outgoing transaction may be retransmitted to Hemocare.

MESSAGE TO HEMOCARE

This utility allows a STAR Laboratory user to send a four line text message to the Hemocare interface printer. When you select this option, the following screen is displayed:



Up to four lines of free text may be entered. Select F4 to exit the text editor and send the message. The following prompt is displayed:

Send Message?[Y]--

Enter **Y** or press ENTER to send the message to the Hemocare interface printer. The following message is displayed:

Message sent to HEMOCARE!

START/STOP INTERFACE

This utility is used to start or stop the Hemocare ABB interface on STAR Laboratory.

NOTE: Starting or stopping the interface requires action on both STAR Laboratory *and* Hemocare. When starting the interface, it should be started on Hemocare first. When stopping the interface, it should be stopped on STAR Laboratory first.

When you select this option, the following screen is displayed:

```
                General Hospital Maintenance Functions Processor
General Hospital Lab                                  Fri Nov 01, 1996 03:31 pm

                         HEMOCARE Interface Inactive




                             Sending Port (35)
                            Receiving Port (37)

              Interface Stopped by Smith, Jonathan on 11/01/96 1530




  Start the Hemocare Interface (Y/N)?--
```

Screen Layout

CURRENT STATUS
The current status of the interface is displayed. It is either Active or Inactive.

PORT INFORMATION
This is a bidirectional interface requiring two communication lines and ports. The Sending and Receiving port numbers are displayed.

START/STOP INFORMATION
The most recent start/stop information is displayed. This includes the action, user name, date, and time.

START/STOP PROMPT
If the interface is currently inactive, you are prompted to start the interface. If the interface is active, you are prompted to stop the interface.

The following prompt is displayed:

Start [Stop] the Hemocare Interface (Y/N)?--

Enter a **Y** to start or stop the interface. The following messages are displayed in sequence:

Sending Port (nn) Interface STARTING [STOPPING] for Laboratory

and

Receive Port (nn) Interface STARTING [STOPPING] for Laboratory

Appendix A - Hemocare ABB Interface File Build Guidelines

INTRODUCTION

The implementation of any interface requires that table and file build activities on both systems be coordinated so that each system's setup accommodates the other. The Hemocare interface is no exception. Files on both Hemocare and STAR Laboratory must also be built in a manner that is compatible with the transaction specifications defined for the standard Hemocare interface.

This chapter includes build guidelines for STAR Laboratory and Hemocare. For additional information on Hemocare files, refer to Mediware Information Systems' *Hemocare Integration Module User Manual* ©.

The Hemocare blood bank system uses patient demographic data defined in the following STAR common clinical tables:

- Nursing Stations
- Physicians
- ICD CM Diagnosis
- Financial Class
- Service
- Race

These tables must be defined and maintained on both systems for proper use of the Hemocare ABB interface. For additional information, refer to the *Tables Volume* of the *STAR Patient Care Reference Guide.*

For certain files, an Interface Code Conversion option is available on Hemocare to convert specific codes included in incoming and outgoing transactions, if indicated. Bypassing this code conversion process for Blood Bank Procedures and Blood Products is required for STAR Laboratory and mandates that these codes be identical on both sides of the interface. Additional code conversion parameters are discussed in the section on code conversion in this document.

Build guidelines discussed in this chapter include:

- system and department flags
- general test tables on STAR Laboratory
- Advanced Blood Bank tables on STAR Laboratory
- Hemocare tables

- code conversion parameters
- Hemocare Integration Module parameters
- billing files

SYSTEM AND DEPARTMENT FLAGS

Implementation of the Hemocare ABB Interface is controlled at the department level. For more information, refer to Chapter 1: Maintenance Processors in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

In order to maintain order and result mapping integrity across both sides of the Hemocare ABB interface, certain limitations apply to the ordering process. These limitations are:

- A STAR Laboratory accession may not include two or more result components, on the same or separate ABB tests, that are mapped using the same Advanced Blood Bank Procedure code record type result.

- A STAR Laboratory accession may not include two or more ABB tests with a result component defined with the Special Processing parameter *Units X-Matched Processing.*

These limitations may be controlled through the use of build and/or procedural constraints.

The STAR Laboratory application includes a system level flag that limits the number of ABB tests per accession to one. If used, the system will evaluate the type of each test ordered on STAR and process the orders as follows:

- An ABB test will be included with all other orders of like specimen type and priority on the same accession.

- Any additional ABB order(s) placed during the same ordering session will each be placed on a new accession.

- Any attempt to add a second ABB test to an existing accession will not be allowed.

The use of this flag is not required. Setting this flag should be based on specific user requirements and procedures as well as the general approach to the build described below. For additional information and guidance, refer to your McKesson STAR Laboratory representative.

GENERAL TEST TABLES

The Hemocare ABB interface requires that specific parameters be established in the General Test maintenance processors. In order to define an ABB test that will be ordered and resulted across the Hemocare interface, the following conditions must be met:

- Result components must be defined to accommodate serolgical test and blood product result information from Hemocare.
- Blood product result components must be assigned the Special Processing feature *Units X-Matched Processing.*
- The test must be defined as an Advanced Blood Bank test type.

ABB tests may include multiple result components which can be mapped to results from Hemocare. Result mapping is based on the Blood Bank Procedures defined for the ABB test. Blood Bank Procedures, in turn, are defined by Hemocare record types which determine the type of Hemocare results available for transmission back to STAR Laboratory.

Result reporting messages from Hemocare to STAR Laboratory include result subrecords that follow the Hemocare record type results schema. Since result mapping is done at the component level, test setup should take the Hemocare record type result schema into consideration when deciding what ABB tests to build and what result components to include in each test. For more information on Hemocare record type results, refer to Chapter 1: Maintenance Processors in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*, and the chapter on standard interface specifications in Mediware Information Systems' *Hemocare Integration Module User Manual* ©.

Since an ABB test may include multiple test (T) procedures with the same Hemocare record type, the only limitation for result mapping is that each result component in the ABB test must be mapped to a unique procedure and record type result combination.

Finally, each ABB test for blood products should include one and only one result component with a special processing parameter *Units X-Matched Processing*. This component will correspond to the product (P) procedure defined for the ABB test in the Blood Bank Procedures per Test Maintenance Processor and be mapped accordingly. This result component applies to crossmatch and non-crossmatch products alike.

For additional information, refer to Chapter 1: Maintenance Procedures in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

ADVANCED BLOOD BANK TABLES

This section covers build guidelines for the following STAR Laboratory ABB tables:

- Blood Bank Procedures
- Blood Components
- Blood Bank Procedures per Test
- Advanced Blood Bank Result Mapping

Blood Bank Procedures

Blood Bank Procedure codes on STAR Laboratory generate requests for "Common Tests" or blood products on Hemocare.

Blood Bank Procedure codes for test (T) requests must be identical to the Hemocare Common Test codes. Code conversion for the Test and Remote Test files on Hemocare must be bypassed for STAR Laboratory (see chapter on code conversion in this volume).

Blood Bank Procedure codes for product (P) requests do not reference the Hemocare Common Test file. A product request code on STAR Laboratory is used as a reference point for the blood component and quantity settings in the Blood Bank Procedures per Test maintenance processor.

Since the blood product request from STAR to Hemocare is defined for an ABB test in the Procedures per Test maintenance processor, only one "product request" procedure code per blood bank department is required, although multiple codes may be defined and used, if desired.

For additional information, refer to Chapter 1: Maintenance Processors in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

Blood Components

STAR Laboratory Blood Component codes must be identical to Hemocare Blood Product codes and limited to three characters. Code conversion for the Blood Product and Remote Blood Product files on Hemocare must be bypassed for STAR Laboratory (see chapter on code conversion in this volume).

For additional information, refer to Chapter 1: Maintenance Processors in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

Blood Bank Procedures Per Test

The procedure per test configuration affects orders and resulting across the interface for each ABB test:

- Each procedure defined for an ABB test will create a corresponding test (T) request or product (P) request on Hemocare.
- Result mapping is controlled by the Hemocare record types for each procedure assigned to the ABB test.

Each test (T) procedure will generate a Common Test order on Hemocare. ABO/Rh and Antibody Screen are examples of this. When defining these procedures for an ABB test, the component field will remain blank and the quantity field will default to one. More than one procedure with the same record type may be defined for an ABB test as long as each procedure has a unique code and description.

A product request procedure (one defined with a P1 record type) will generate a blood product request on Hemocare. The *Component* field must include a Blood Product code and the *Quantity* field value should correspond to the order. An ABB test must have no more than one product request procedure defined.

For additional information, refer to Blood Bank Procedures Per Test in Chapter 1: Maintenance Processors in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

Advanced Blood Bank Result Mapping

Result mapping is based on:

1. the result components defined for the ABB test
2. the Procedures per Test defined for the ABB test
3. the Hemocare record type results defined for each procedure

The mapping of each ABB test component to a specific Blood Bank Procedure and Hemocare record type result is performed one result component at a time. For each component mapped, the user is prompted to select a Blood Bank Procedure based on the procedures defined for the test in the Procedures Per Test maintenance processor. Only those procedures defined for the ABB test are displayed for mapping.

For any result component defined with a special processing parameter of *Units X-Matched Processing,* only the product (P) procedure defined for the ABB test is displayed for selection.

For all other result components, all test (T) procedures (those with T0 to T5 Hemocare record types) defined for the ABB test are displayed for selection. You must choose the appropriate procedure for the result component selected for mapping.

Result reporting messages from Hemocare include result subrecords that follow Hemocare's record type result schema. For more information on Hemocare record type results, refer to Advanced Blood Bank Result Mapping in Chapter 1: Maintenance Processors in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide* and the chapter on standard interface specifications in Mediware Information Systems' *Hemocare Integration Module User Manual* ©.

When you select a procedure for the ABB test's result component, a corresponding list of Hemocare record type results is displayed for selection. Most of the Hemocare record types have multiple results. The only exception is the Crossmatch (P1) record type, which has only one result.

As you proceed through the result mapping process for each result component, the following limitations and conditions apply:

- In the *Procedures* column, a specific procedure code may be used more than once within the ABB test.
- In the *Results* column, a specific result code may be used more than once within the ABB test.
- Duplicate procedure code and result combinations are *not* allowed; a specific procedure/result combination may be used only once within the ABB test.
- Result components with special processing *No. of Units* may **only** be mapped to a procedure/result defined with a product (P) record type result.

For additional information, refer to Advanced Blood Bank Result Mapping topic in Chapter 1: Maintenance Processors in the *Advanced Blood Bank (Hemocare)* of the *STAR Laboratory Reference Guide*.

HEMOCARE FILES

The following interface files are required on the Hemocare system:

- Location Code
- Service Code
- Physician Code
- Common Test Code
- Blood Product Code

The Location file on Hemocare should only include STAR nursing stations, not room and bed information. For all patients on STAR not assigned to a nursing station (for example, outpatients and contract patients), the patient type is sent from STAR to Hemocare in place of the nursing station. The patient type code is then recorded as the patient's location on Hemocare. To support data reporting and tracking on Hemocare, you may include these patient type codes in the Location file.

The Service and Physician files on Hemocare are analogous to like files on STAR. These files must be built and maintained on both systems.

Common Test Code

Records maintained in the Hemocare Common Test Code file are analogous to the test (T) Blood Bank Procedures defined on STAR Laboratory. Corresponding codes on the two systems must be identical. Deactivation of code conversion for this file is mandatory (see topics below on code conversion and Hemocare Interface options).

Blood Product Code

Blood Product Codes on both Hemocare and STAR Laboratory must be identical for the ABB interface. Deactivation of code conversion for this file is mandatory (see topics below on code conversion and Hemocare Interface options).

Code Conversion

Code Conversion files (translation tables) are available on Hemocare to convert the codes of incoming and outgoing transactions when the codes used on Hemocare and STAR are not the same. The primary criteria for code conversion is the field length. Below is an outline of conversion files available for each transaction category including the Hemocare file code, the transaction data field, and the maximum field length specifications for both Hemocare and STAR.

HC File Code	File Name/ Field	HC Field Length	STAR Field Length	Notes for STAR Laboratory
ADT Transactions from STAR to Hemocare				
F	Financial Class	2	2	Conversion is not required.
R	Race	1 (A)	1 (N)	Conversion is required.
S	Service	4	3	Conversion is not required.
N	Hospital Location	4	3	Conversion is not required.
P	Physician	10	6	Conversion is not required.
Test/Product Request Transactions from STAR to Hemocare				
Q	Test	4	4	Conversion cannot be used with STAR Laboratory
D	Blood Product	3	3	Conversion cannot be used with STAR Laboratory
Test Result/Product Status from Hemocare to STAR				
A	Remote Test	4	7	Conversion cannot be used with STAR Laboratory
B	Remote Blood Product	3	4	Conversion cannot be used with STAR Laboratory
U	Remote Location	4	3	Conversion is not required.

Activation of code conversion is done on a file by file basis on Hemocare. The conversion of race codes is required only if this data is to be tracked on Hemocare.

NOTE: Code conversion should be avoided unless required.

Hemocare Interface Options

Mediware's Hemocare Integration Module is designed as a standard interface to be used with a variety of laboratory and hospital information systems. The chapter on available interface options in Mediware Information Systems' *Hemocare Integration Module User Manual* © includes a listing of system options which control various aspects of interface functionality.

The following parameter settings are **required** or **recommended** to accommodate STAR Laboratory and the Hemocare ABB interface:

Option	Required/Recommended	Setting
Interface Receiver - Front End Protocol Handler		
None		
Interface Receiver - Back End Protocol Handler		
+Location_code	Recommended	Off
+Service_code	Recommended	Off
+Test_code	Required	Off
+Fin_class	Recommended	Off
+Product_code	Required	Off
+Doctor_code	Recommended	Off
+Race_code	Required	On
Interface Transmitter - Front End Protocol Handler		
None		
Interface Transmitter - Back End Protocol Handler		
P2	Required	Off
T2	Required	Off
Y1	Required	Off
+P order_file_search_products	Required	On
+T order_file_search_tests	Required	On
+C comment_sent_back_test	Required	On
+S comment_sent_back_product	Required	On
Interface Accession Handler		
+Test_code	Required	Off
+Product_code	Required	Off
+Doctor_code	Recommended	Off

All Hemocare interface parameter settings not listed above are optional for STAR Laboratory and should be set according to user needs and/or Mediware requirements and recommendations.

BILLING FILES

The Hemocare ABB interface uses the Miscellaneous Charge processor on STAR to capture and process Blood Bank charges. Charges and credits captured on Hemocare are transmitted to STAR in a batch mode when a billing report is generated on Hemocare.

To take advantage of billing across the ABB interface, the Billing Code Number and Description on Hemocare must be defined with the same miscellaneous charge SIM item codes on STAR.

For more information on Miscellaneous Charge processing and setup, refer to the chapter on workload/billing in Mediware Informations Systems' *Hemocare User Manual* © and the appropriate chapters on miscellaneous charges in the *STAR Laboratory Reference Guide*.

Appendix B - Interface Flow and Processing

INTRODUCTION

Messages that pass back and forth between STAR Laboratory and the Hemocare blood bank system are defined according to Hemocare's standard interface specifications. Hemocare message layouts and other communication parameters are thoroughly documented in Mediware Information Systems' *Hemocare Standard Interface Specifications Manual* ©. Supplemental notes that are specific to the Hemocare interface as they apply to STAR Laboratory are included in this section.

ADT MESSAGES

As patients are admitted or registered on STAR, no ADT messages are passed to the Hemocare system. An admit (A1) message is sent to Hemocare only when an ABB test is accessioned on STAR Laboratory. The ADT (A1) message precedes the order request (O1) message across the interface.

An A1 message is sent with each blood bank order. This ensures that the patient record on Hemocare always includes the most current demographic information. ADT update messages (A2-A7) are only sent on patients with blood bank orders.

The Location field includes the nursing station code for all Inpatients. The patient type is sent in this field for all Outpatients.

The Age field is not used.

The Admitting Physician Code and Name fields include the *attending* physician's code and name.

The Diagnosis Code is not passed to Hemocare because it is generally the ICD code which is greater than four characters in length. The descriptive text for the patient's *working* diagnosis is sent in the Diagnosis field.

The Century Indicator field is not used.

Any ADT field that is sent as blanks (ASCII 32) is ignored by Hemocare. This allows Hemocare entered data to remain on file even though it is missing on STAR. Otherwise, all fields with data will update the ADT information on Hemocare.

In the case of an A6 (MRN Change) message Type, the Admission Number field contains the previous (old) Medical Record Number while the Medical Record Number field contains the current (new) Medical Record Number.

The following items are printed on the Hemocare interface printer for ADT messages and no automatic changes are made to the patient's demographics:

- Medical Record Number Changes
- Patient Name Changes
- Birthdate differences (optional)

TEST/PRODUCT REQUEST MESSAGES

Only one test (T) or product (P) is allowed per request message. An ABB order that includes multiple procedures (according to the Blood Bank Procedures Per Test setup) will be processed as follows:

1. Each test request procedure defined for the ABB test generates a test (T) request type message to Hemocare; the STAR Lab procedure code is written to the Request Code field and mapped to an identical Hemocare Common Test code.

2. Any product request procedure included in the ABB test generates a product (P) request type message to Hemocare; the STAR Lab Blood Product code is written to the Request Code field and mapped to an identical Blood Product code on Hemocare.

3. The ABB test code is written to the first eight characters of the Comments/ Special Instructions field for both request type messages.

The first eight characters of the Comments/Special Instructions field contain the ABB test code for both test (T) and product (P) requests. The remainder of this field is used for the Order Comments from STAR Lab or STAR Patient Care.

If the Patient's Last Name field is not blank, the five characters sent are checked against the Hemocare database to validate the medical record number. If any discrepancy is found, an appropriate message is generated on the Hemocare interface error printer. If the field is blank, then this check is not performed. The use of this name check is an optional user-defined parameter.

An order/request is followed by a Specimen Collection (S1) message to pass the order's collection date/time. This information updates the Specimen Indate and Intime fields on Hemocare's Patient Registry screen. Hemocare stores this information as the Last Specimen Collection Date/Time for the patient. Only one S1 message is sent per ABB test ordered.

Hemocare Test/Product Request/Order Message types 2 and 3 are not supported.

Cancel request messages for ABB tests are processed the same as orders. For any ABB test canceled on STAR, the appropriate Cancel Request (C1) message(s) is sent and printed to the Hemocare interface printer. You must then manually cancel all test and product requests for the ABB test in the Hemocare application.

Miscellaneous Charges Error Message

The STAR Laboratory Advanced Blood Bank Hemocare Interface does not stop when a miscellaneous-charge-only SIM item is sent from the blood bank system on an outpatient with a CMS-compliant insurance plan.

An error message prints to the blood bank error log printer to notify you of the charge. An example of the error message is:

****
ABB interface incoming ERROR for Laboratory on an outpatient with
a CMS compliant insurance plan - 02/04/00 1113

The Billing Code SIM Item 3050 - CROSSMATCH, IMMED SPIN - CHRG ONLY
for ordered test code 3040 - BLOOD PRODUCT REQUEST
on the patient COMPLIANCE,MCARE;LAB Unit# A0001234567 Location - O/P
for Accession# 1234567 on Account# A00031234567 is missing the
ordering diagnosis to comply with Medicare regulations!!
****

RESULTS REPORTING MESSAGES

Message type T2 is not supported.

Product information is transmitted to STAR using a P1 message each time a product status change occurs on Hemocare. STAR Laboratory uses this message to maintain Blood Product Availability for the patient.

The P2 Product Status Summary message type is not supported.

The Y1 message for Test/Product Cancellation is not supported because Hemocare cancels requests at the procedure and product levels while STAR cancels only at the ABB test level.

Hemocare sends its user ID in the Results Tech Initials field. STAR Lab stores this as the Reporting Tech ID. Since this is not a recognized code within STAR Laboratory, only these initials are displayed where the resulting tech name usually appears in Patient Inquiry.

The Request Code field includes the following:

1. the BB Procedure code (Hemocare Common Test code) for message types T0 through T5

2. the Blood Product code for message type P1

The Remote Request Code field includes the ABB test code for all result messages.

Appendix C - Testing Guidelines

INTRODUCTION

This appendix provides general guidelines for testing the Hemocare ABB interface. Specific steps to validate the integrity of your interface must be based on your particular set up and operational procedures. Testing may be performed in stages during the original build, but must be thoroughly completed and documented prior to Live.

Additional testing of the Hemocare ABB interface is also indicated whenever changes to the ABB maintenance processors are made and whenever new ABB software is loaded. Document all testing steps and outcomes.

When devising a detailed test plan, these guidelines should be used in conjunction with those provided by Mediware. For more information, refer to the chapter on standard integration testing in Mediware Information Systems' *Hemocare Integration Module User Manual* ©.

TRANSACTION PROCESSING - STAR LAB TO HEMOCARE

ADT Messages

ADT messages include the following:

- Admission
- Discharge
- Transfer
- Revision
- Cancel Admission
- MRN Change
- Patient Deceased

An admission message is not sent to Hemocare until a test/product request is ordered and accessioned on STAR Laboratory. Subsequent ADT messages (patient updates) are sent only if an admission and order was previously sent to Hemocare. Specific ADT messages only print to the Hemocare interface printer and do not update the patient record on Hemocare.

Testing should validate all seven ADT message types and include all data items within the message layout specifications. This should include as many scenarios as possible (for example, patient type, location, physician, race).

All ADT messages should be validated by reviewing the Lab --> Hemocare audit file and the Patient Registry information logged and/or updated on the Hemocare system. Message types that only print to the Hemocare interface printer should not update the patient record. Refer to Mediware's *Hemocare Integration Module User Manual* © for specific information on how each ADT message is processed by the Hemocare system.

NOTE: ADT update messages (A2 to A7) to Hemocare are based on changes made to the patient's record on STAR Patient Care. Specific changes to a patient's record will automatically trigger update messages from STAR Patient Care to STAR Laboratory in a network environment. These then trigger ADT update messages to Hemocare for those patients with blood bank orders. Certain record changes made on STAR Patient Care trigger multiple network messages to STAR Laboratory and result in more than one update message to Hemocare. These duplicate messages are a normal part of STAR integration and should not be considered an anomaly of the Hemocare ABB interface.

Test/Product Requests

Ordered ABB tests may include requests for tests, products, or both. All test/product request messages are processed on Hemocare and print on the interface printer as well. Testing should include ABB tests with multiple result components. Ordered tests should include all Hemocare record types and results used in your blood bank. Testing should include the patient name check option if activated.

All test/product request messages should be validated by reviewing the Lab --> Hemocare audit file and all order information that is logged for the patient on the Hemocare system.

Collection Information

Each ABB test/product request is followed by a specimen collection message that includes the collection date/time. This information will update the Specimen Indate and Intime fields on Hemocare's Patient Registry screen. Hemocare stores this information as the Last Specimen Collection Date/Time for the patient.

All specimen collection messages should be validated by reviewing the Lab --> Hemocare audit file and the Patient Registry information that is logged on the Hemocare system.

Order Cancellation

Order cancellation on STAR Laboratory generates test/product cancellation message(s) to Hemocare only if the order is in a Specimen Received or higher status. These messages only print to the Hemocare interface printer.

All test/product cancellation messages will be validated by reviewing the Lab --> Hemocare audit file.

Message to Hemocare

A message to Hemocare transaction only prints to the Hemocare interface printer.

TRANSACTION PROCESSING - HEMOCARE TO STAR LAB

Test Results

Result reporting message types T0 through T5 correspond to the Hemocare record type/result specifications outlined earlier in this document. Testing should include all Hemocare record type and result formats used in your blood bank.

NOTE: Group & Rh interpretations are automatically combined to one result component. All other result message subrecord fields should be tested as unique result components.

All result messages should be validated by reviewing the Hemocare --> Lab audit file and results posted to the accession in Patient Inquiry.

Product Status Updates

Product processing on Hemocare includes crossmatch and non-crossmatch blood products, pooled products, and aliquots. As products are assigned to patients and compatibility testing is performed, blood product information is uploaded to STAR Laboratory. Blood product information includes the product code, description, unit number, unit type, compatibility results, and status information.

As products that are assigned to a patient undergo multiple status updates on Hemocare (for example, crossmatched, issued, transfused), a product status change message is sent to STAR Laboratory for each status update episode. Product status information maps to the *No. of Units* result component and is used to maintain Product Availability information in Patient Inquiry. Only the most recent status update information on a unit is maintained on STAR Laboratory.

Testing should include a wide range of patient-product processing scenarios on Hemocare to thoroughly test status update messages, blood component results processing, and product availability processing on STAR Laboratory.

All product status messages should be validated by reviewing the Hemocare --> Lab audit file and the results posted to the accession in Patient Inquiry including the Product Availability option.

Billing

Billing messages are transmitted from Hemocare to STAR Laboratory in a batch mode whenever the billing report is initiated on the Hemocare system. All billing messages are processed as miscellaneous charges and then networked to Patient Care.

Billing messages should be validated by reviewing the Hemocare --> Lab audit file and the Miscellaneous Charge Report.

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Topic	Poor	Fair	Good	Excellent
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