CHAPTER 5

Sample Analysis

Specimen Collection

1.3.2 Tiriami ėminiai: veninis kraujas, kapiliarinis kraujas

Whole Blood

Collect whole blood in EDTA according to tube manufacturer's instructions and procedures in:[5,6,7]

- CLSI publication H4-A5 (for capillary)[8]
- CLSI publication H3-A6 (for venipuncture)[9]

Beckman Coulter recommends using K_2 or K_3 EDTA.

Body Fluids

To reduce body fluid sample viscosity, use hyaluronidase to treat synovial fluids prior to analysis according to your laboratory standards. Add in the ratio of 1 mL of synovial fluid to 5 mg of hyaluronidase. Mix for 5 minutes.

⚠ CAUTION

If capillary tubes are used, they must be analyzed uncapped as open-vial samples.

⚠ CAUTION

Misleading results could occur if you fail to leave space at the top of the tube between the sample and the stopper. Ensure you leave space at the top of the tube between the sample and the stopper to facilitate automatic mixing. Follow manufacturer's recommendations for use of microcollection and venipuncture devices.

⚠ CAUTION

For cassette presentation, you need at least 1.0 mL of sample for a 13 x 75 mm tube, with proper proportion of blood to anticoagulant. Volumes may vary depending on tube height and width.

⚠ CAUTION

Refer to your laboratory's safety procedure for cleaning broken glass.

Specimen Preparation (Pre-dilute)

You can use the **Dispense Diluent** function on the Single-tube Presentation dialog box to acquire diluent for use in your pre-dilute preparation.

1 Select the **Single-tube Presentation** icon at the top of any screen to display the Single-tube Presentation Dialog Box.

2 Select the **Dispense Diluent** button and follow the prompts on the screen to acquire the diluent.

3 Follow your laboratory procedures for preparing your pre-dilute specimen.

Placing the Bar-code Label on the Tube

⚠ CAUTION

Risk of misidentification. Use of poor quality, dirty, improperly placed or damaged bar-code labels could keep the SPM from reading the bar-code labels. Ensure the bar-code labels are not damaged. Ensure the bar-code labels conform to the specifications provided in the Bar-Code Label Specifications section of APPENDIX A.

IMPORTANT When placing a label on a tube:

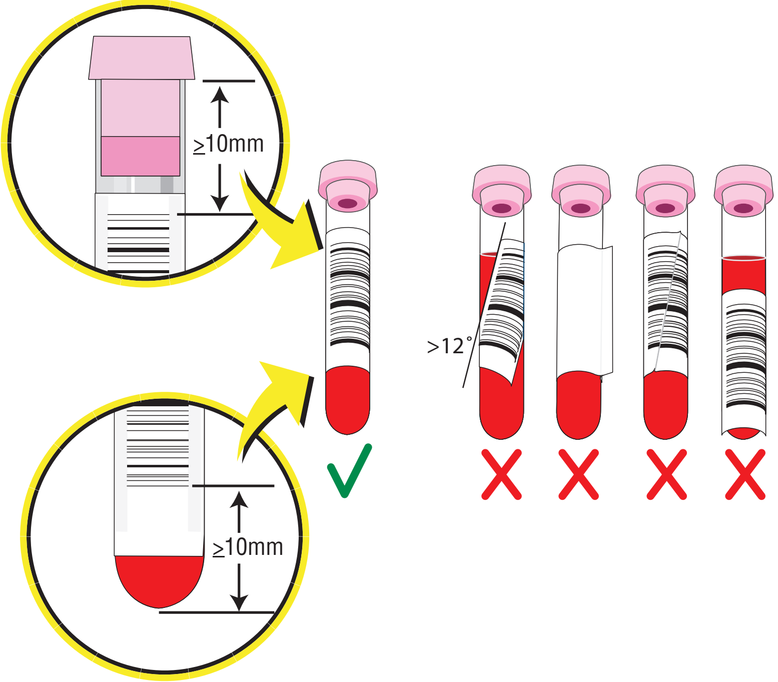
- Ensure the label is flattened smooth against the tube.
- Press the label down securely, including all the edges and the corners.
- Ensure that no part of the label is loose.

NOTE Do not place more than three labels on a tube.

Place the labels so that they are in the viewable area of the tube through the cassette window, as shown in Figure 5.1. Do not place the label on the bottom 10 mm of the tube or the top 10 mm of the tube or skew the label more than 12 degrees. These areas are not viewable due to the curvature of the tube and the cassette window.

NOTE The top 10 mm dimension is measured from the bottom edge of the cap.

Figure 5.1 Placing a Label on a Tube



Load Cassettes

Cassette Handling

The cassette is the carrier for the sample tubes (patient control, or special test) used in cassette presentation where automatic loading, mixing, and aspiration occurs.

Tubes should be pushed into the cassette with the tube bar-code labels facing up.

Always hold the cassette firmly by its edges. Do not try to hold or lift a cassette by grabbing a tube. The weight of the remaining tubes could cause the cassette to fall.

Cleaning the Cassette

Refer to Clean the Cassettes in the Cleaning Procedures chapter of this manual.

Load the Cassette

⚠ **WARNING**

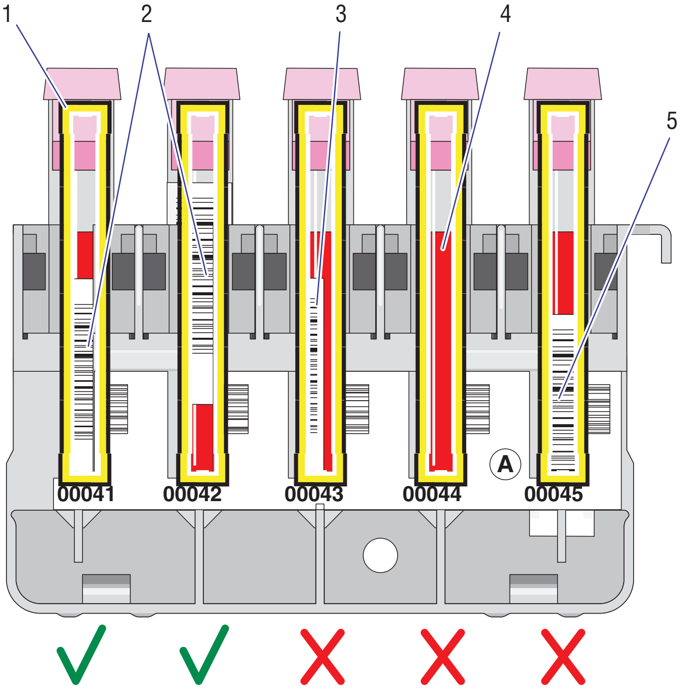
Risk of personal injury. Forcing a tube into the cassette improperly could cause it to break. If a tube should break, use your laboratory's safety procedure for cleaning the broken glass.

⚠ **CAUTION**

Sample misidentification could occur if the appropriate bar-code labels are not placed on the sample tubes. If not using bar-code labels, ensure you place the tubes in the proper cassette positions.

1. Slide each sample firmly into the cassette.
2. Ensure the bar-codes are facing up within the cassette window.

Figure 5.2 Example of Cassette with Tubes Loaded Correctly and Incorrectly



In the figure above, 1 and 2 are examples of good placement, while examples 3 - 5 are examples of incorrect placement.

Add a Test Order

You can add a test order by automatically downloading the order from the LIS or by manual entry.

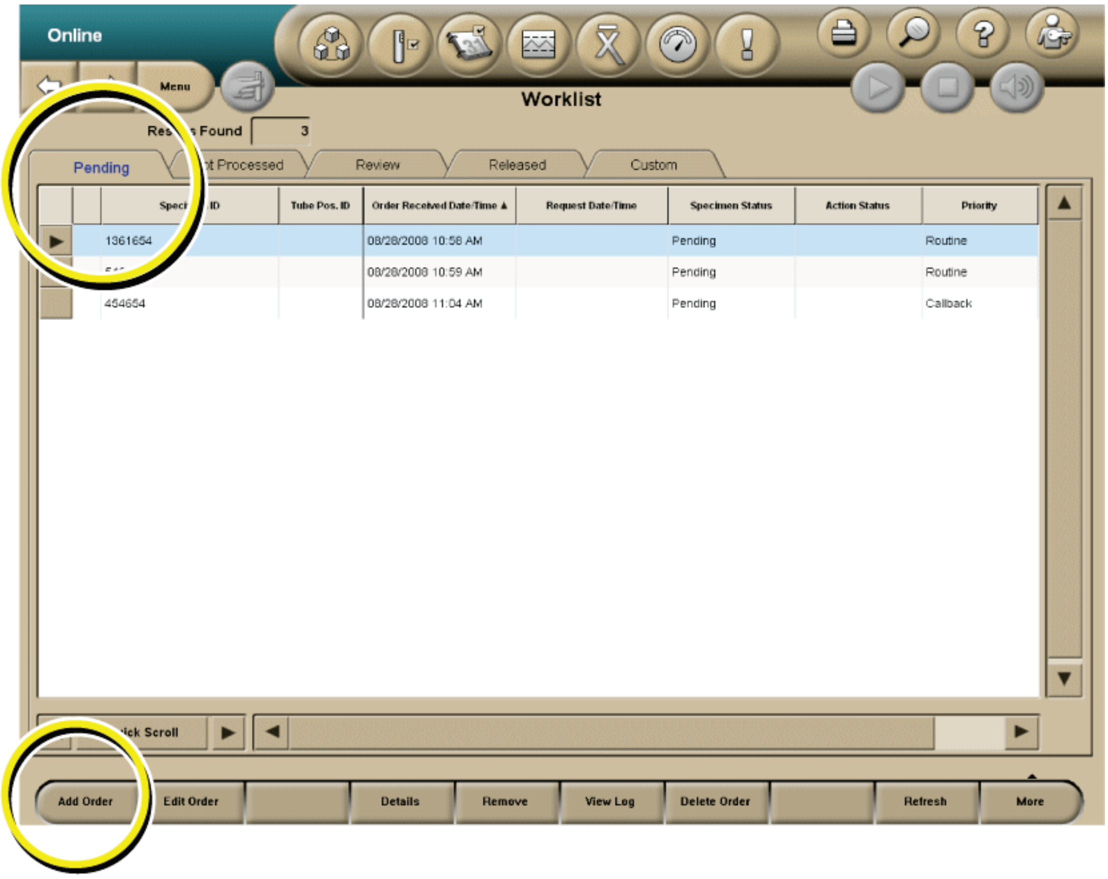
Automatic Download from LIS

Refer to the Host Transmission Manual that came with your DxH 800 System as well as the Setup chapter of this manual for information on configuring download from the LIS.

Manual Entry (Menu > Worklist > Pending Tab)

From the Worklist - Pending Tab screen, select the **Add Order** button to display the Add Order screen.

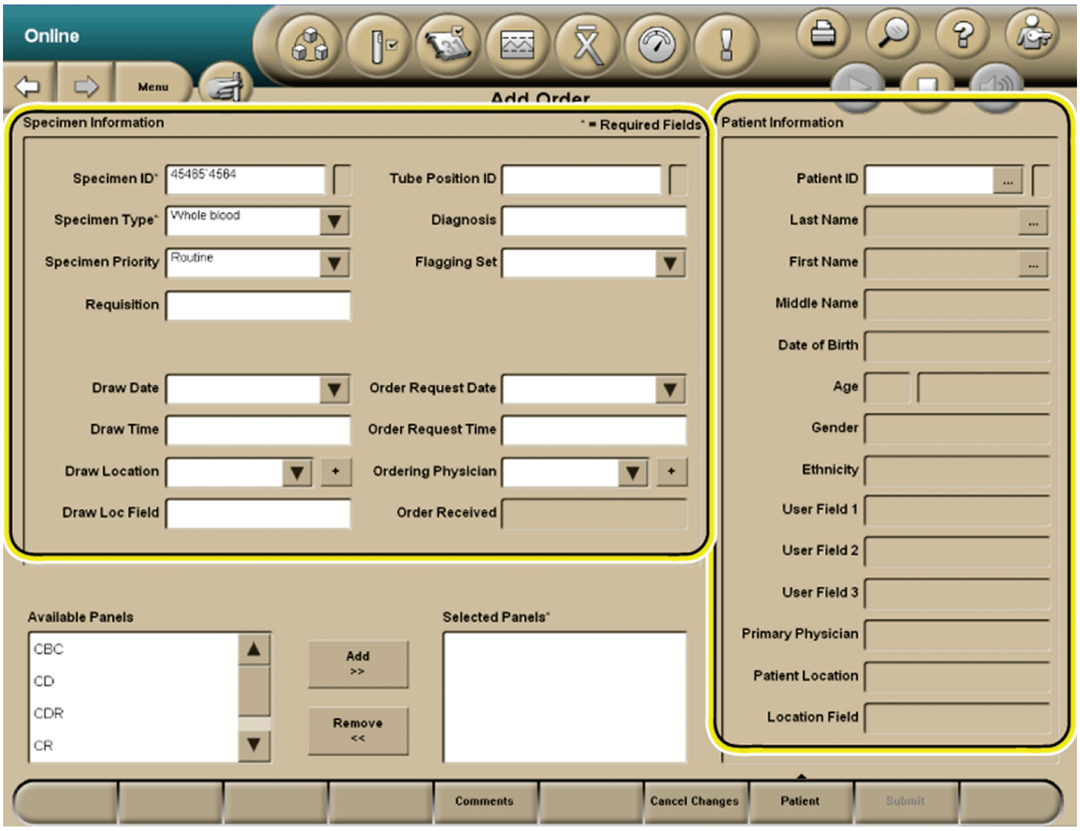
Figure 5.3 Worklist Screen



	Speci[illegible] ID	Tube Pos. ID	Order Received Date/Time ▲	Request Date/Time	Specimen Status	Action Status	Priority
▶	1361654		08/28/2008 10:58 AM		Pending		Routine
	[illegible]		08/28/2008 10:59 AM		Pending		Routine
	454654		08/28/2008 11:04 AM		Pending		Callback

NOTE Batching must be disabled (off) in order to manually add a test order. If the **Add Order** button is disabled, batching is enabled. Uncheck the **Batching Enabled** check box on the System Status screen. Refer to Batching Enabled in the Setup chapter for additional instructions.

Figure 5.4 Add Order Screen



Specimen ID* 45465'4564
Specimen Type* Whole blood
Specimen Priority Routine

NOTE Use the tab button to move through the fields on the Add Order screen.

Specimen Information Panel

⚠ CAUTION

Risk of misidentification. Do not use the characters # @ [\ ] ` { | } ~ ? " or * in demographics, including Specimen or Patient ID. Do not use spaces in the leading or trailing position of a Specimen or Patient ID.

1 If the Primary Identifier is Specimen ID, type a **Specimen ID** and press Tab.
or
If the Primary Identifier is Tube Position ID, type a **Tube Position ID** and press Tab.

2 Select a **Specimen Type** from the drop-down list.

3 Complete the remaining optional fields as desired:

- **Specimen Priority**
- **Requisition**
- **Diagnosis**
- **Flagging set**
- **Draw Date**
- **Draw location**
- **Order Request Date**
- **Order Request Time**
- **Ordering Physician**

Available Panels

1 Verify the selected panel, or select a new **Available Panel** and select **ADD** to include it in the **Selected Panels** list. Available panels vary depending on the Specimen Type selected. Refer to Table 5.1 for a list of available panels.

2 Select **Submit**.

NOTE Orders that are added to the system, but have not yet been analyzed can be viewed on the Worklist - Pending screen.

Table 5.1 Available Panels

Whole Blood	**CSF, Synovial, Pleural, Peritoneal, Pericardial**
CBC	BFC
CD	
CDR	
CR	
H&H	
PLT	
PREDI x5 (Predilute Whole Blood)	
RETIC	
WBC	
WBC-NE#	
WHP	

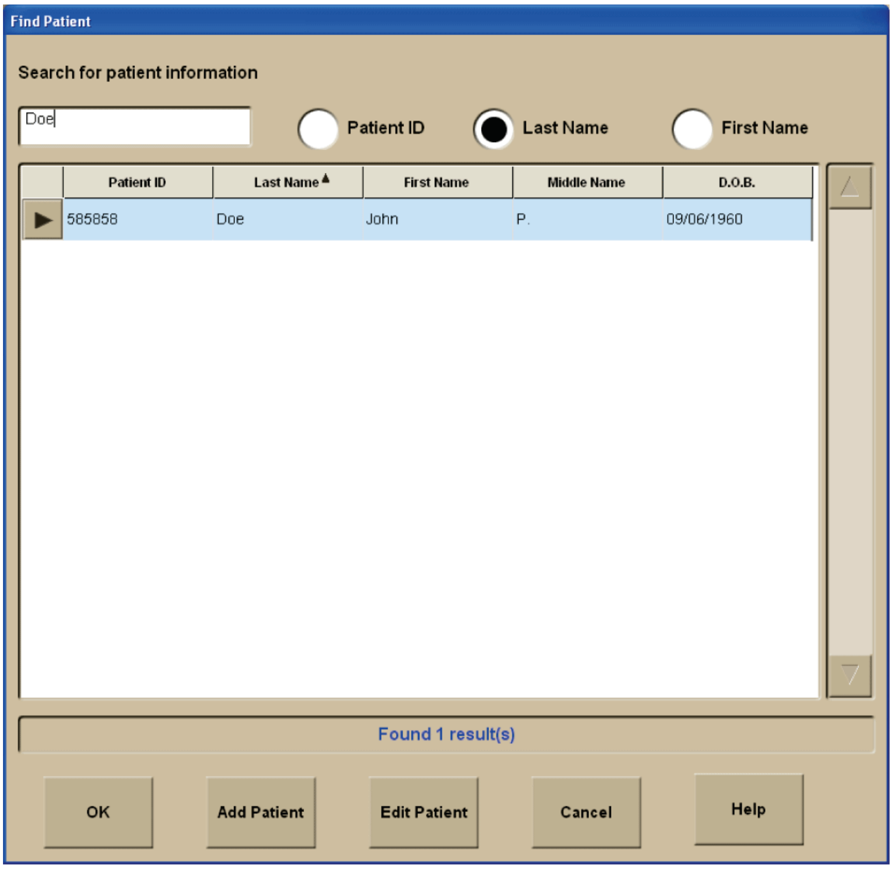
Default Panel

Once you've selected a Panel, it comes up as the Default Panel the next time you add an order.

Patient Information Panel

1 To add Patient demographics to an order, type the **Patient ID** in the **Patient Information** panel and press (Tab) to display the Find Patient dialog box.

Figure 5.5 Find Patient Dialog Box



Doe

○ Patient ID ● Last Name ○ First Name

Patient ID	Last Name ▲	First Name	Middle Name	D.O.B.
585858	Doe	John	P.	09/06/1960

Found 1 result(s)

2 Select **OK** to add the patient’s demographics to the order.

NOTE To edit the Patient’s demographics, select **Edit Patient**. To add a Patient select the **Add Patient** button. Refer to Demographics (Menu > Setup > Demographics) in the Setup chapter for additional instructions.

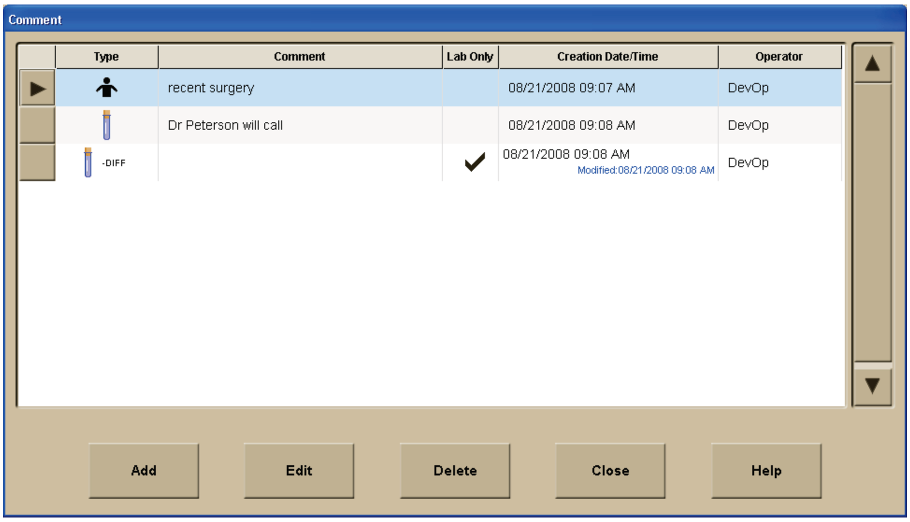
When a Patient is associated with the test order, a **Patient** button is enabled on the Local Navigation bar of the Add Order and Edit Order screens which allows you to select from the following options:

- **Clear Patient:** Allows you to "disassociate" the currently selected Patient from the Test Order. In other words, it clears the patient panel and allows another patient to be selected.
- **Edit Patient:** Pops up the Edit Patient Demographics Dialog. Allows you to edit all of the patient demographics with the exception of the Patient ID.

- **Rectify Patient ID:** Allows you to enter the correct Patient ID (in case the Patient ID is wrong). Refer to Rectify Patient ID in the Setup chapter for additional information.

Add Order Comments (Pending Tab > Add Order > Comments)

Figure 5.6 Comment Dialog Box



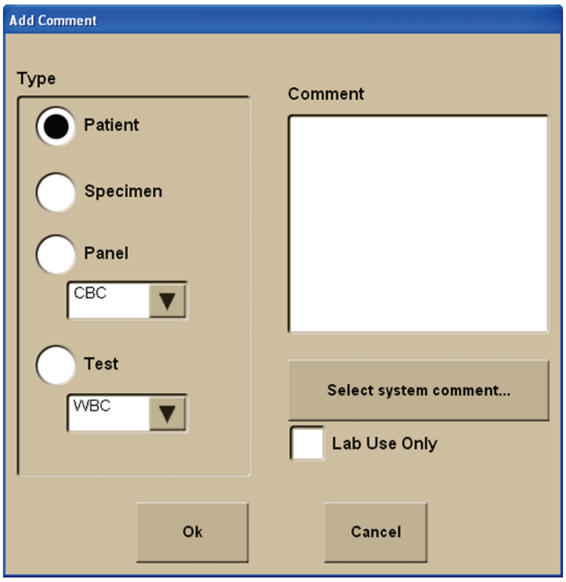
Comment

Type	Comment	Lab Only	Creation Date/Time	Operator
	recent surgery		08/21/2008 09:07 AM	DevOp
	Dr Peterson will call		08/21/2008 09:08 AM	DevOp
-DIFF		✓	08/21/2008 09:08 AM Modified:08/21/2008 09:08 AM	DevOp

---

1 Select the **Add** button.

Figure 5.7 Add Comment Dialog Box



Add Comment

Type

● Patient

○ Specimen

○ Panel CBC

○ Test WBC

Comment

☐ Lab Use Only

---

2 Select the **Type** of comment.

3 Type a **Comment** in the text box or select the **System Comment** button to add a System Comment.

NOTE If you type a comment here, that comment will be available for future selection in the list of System Comments.

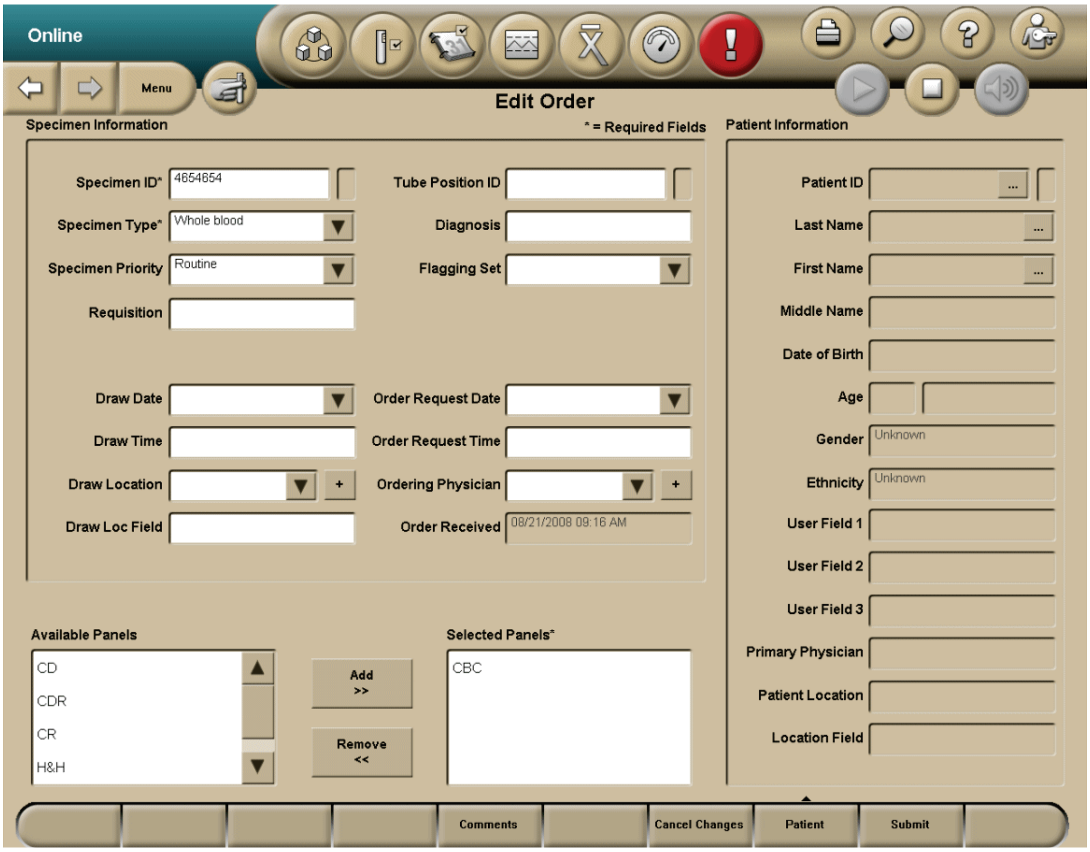
4 Select the **Lab Use Only** check box if this comment is for lab use only.

5 Select **OK**.

Edit a Test Order (Worklist > Pending Tab > Edit Order)

1 From the Pending tab, highlight the Order you want to edit and select the **Edit** button on the local navigation bar.

Figure 5.8 Edit Order Screen



Specimen ID* 4654654

Specimen Type* Whole blood

Specimen Priority Routine

Order Received 08/21/2008 09:16 AM

Gender Unknown

Ethnicity Unknown

Available Panels: CD, CDR, CR, H&H

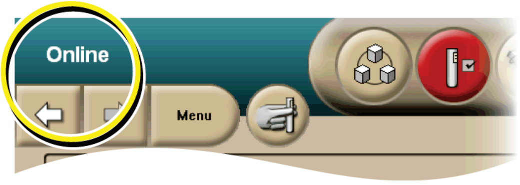
Selected Panels* CBC

2 Edit the information on the screen and select **Submit**.

Run Samples

Status

The SPM must be online to run samples. You can view the status of the SPM in the Status Mode area at the upper left hand corner of any screen.



Cassette Presentation

⚠ WARNING

Risk of personal injury. Attempting to correct an SPM problem while the SPM continues to process samples could injure you.

⚠ CAUTION

To avoid erroneous results, do not use Cassette Presentation for Body Fluid or Predilute samples.

1 Ensure the SPM is set up for the appropriate test for your workflow. For additional information on adding a test order to the worklist, refer to Add a Test Order in this chapter.

2 Ensure your specimens have been collected and stored properly.

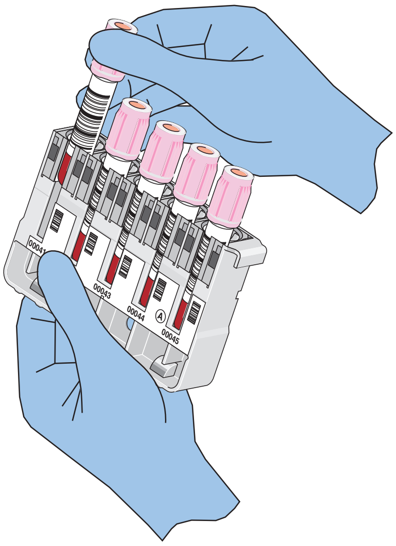
⚠ CAUTION

Misleading results can occur if specimens contain clots. Inspect specimens for clots and use good laboratory practices for verifying results to ensure you do not receive misleading results.

3 Load the specimens into the cassettes.

⚠ CAUTION

Narrow tubes with small internal diameters will require manual premixing prior to analysis to ensure proper cell and plasma distribution and to avoid possible erroneous results. Premix these tubes before placing them in the cassette and then analyze the cassette by pacing it in the Stat position of the Input Buffer. Refer to the tube list at www.beckmancoulter.com for additional information.

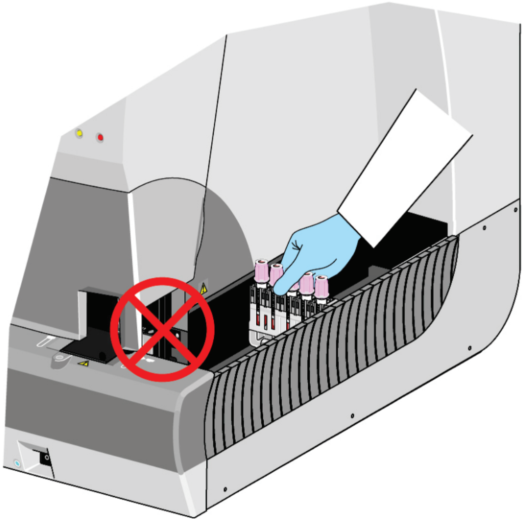


---

4 Place the cassettes into the input buffer to the right of the SPM. The SPM automatically begins cycling the cassettes.

⚠ WARNING

To avoid serious injury, do not place your hand through the cassette presentation opening on the SPM.



5 After the SPM cycles the samples, review the sample results at the System Manager. Refer to the Data Review chapter for information on reviewing sample results.

Single-tube Presentation

⚠ WARNING

Risk of personal injury. Attempting to correct an SPM problem while the SPM continues to process samples could injure you.

⚠ CAUTION

To avoid erroneous results, do not run a Body Fluid sample in the whole blood analyzing mode and do not run a whole blood sample in any body fluid analyzing mode.

IMPORTANT Beckman Coulter recommends that a diluent be run as a Body Fluid sample prior to analysis of Body Fluid specimens to verify acceptable backgrounds.

Show me this procedure.

1 Ensure your specimens have been collected and stored properly.

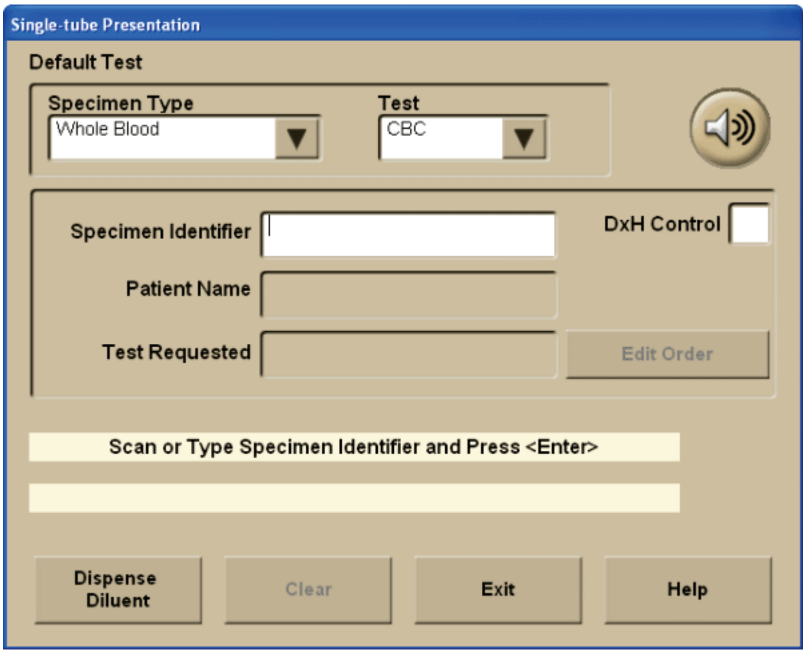
⚠ CAUTION

Misleading results can occur if specimens contain clots. Inspect specimens for clots and use good laboratory practices for verifying results to ensure you do not receive misleading results.

---

2 Select the **Single-tube Presentation** icon at the top of any screen to display the Single-tube Presentation dialog box.

Figure 5.9 Single-tube Presentation Dialog Box



Single-tube Presentation

Default Test

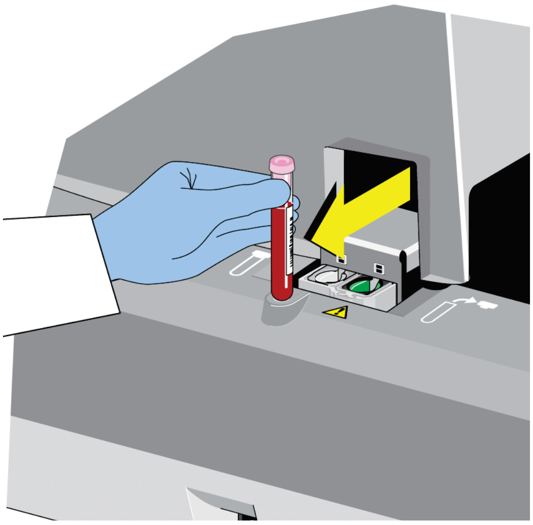
Specimen Type: Whole Blood

Test: CBC

Scan or Type Specimen Identifier and Press <Enter>

---

3 Place the specimen on the bar-code reader platform of the Single-tube Presentation Station with the bar code facing the SPM to allow the Single-Tube Presentation Bar-code Reader to scan the specimen label. Show me.



or

Type the **Specimen Identifier** and press ENTER.

or

⚠ CAUTION

Risk of misidentification. Do not use the characters # @ [\ ] ` { | } ~ ? " or * in demographics, including Specimen or Patient ID. Do not use spaces in the leading or trailing position of a Specimen or Patient ID.

Scan the bar code with the handheld scanner. Move the cursor to the end of the ID field by touching the end of the ID or using the mouse to click at the at the end of the ID. Then, press ENTER. Refer to Using the Handheld Scanner for additional instructions.

---

4 Verify the **Specimen Identifier** and **Test** request. Acknowledging the ID that displays on the System Manager screen indicates that you accept the bar-code label read or manual entry.

---

5 Mix the specimen according to your laboratory standards.

⚠ CAUTION

Sample must be properly mixed before analysis. To avoid improperly mixed sample, do not overfill sample tube.

⚠ CAUTION

Narrow tubes with small internal diameters will require manual premixing prior to analysis to ensure proper cell and plasma distribution and avoid possible erroneous results. Premix these tubes immediately before placing them in the Single-tube Station cradle. Refer to the tube list at www.beckmancoulter.com for additional information.

---

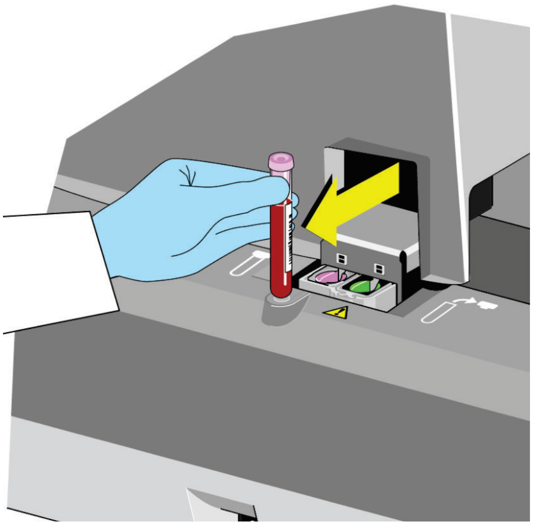
6 Place the specimen into the correct Single-tube position.

⚠ WARNING

To avoid serious injury, do not place your hands through the manual station opening when the SPM is powered on.

⚠ CAUTION

Do not place a closed tube or a 16 mm diameter tube in the right position of the Single-tube Presentation Station. Doing so could result in an incomplete aspiration and an erroneous result.



Using the Handheld Scanner

Your DxH 800 handheld scanner is a camera that takes a picture of the bar code.

---

1 Aim the scanner at the bar code as if you were taking a picture.

2 Slowly move the scanner closer to the bar code (allowing the camera to focus) until you hear a beep. If you do not hear a beep, ensure that the scanner is:

- correctly connected to your System Manager
- correctly configured for your labels.

⚠ **CAUTION**

Risk of sample misidentification. When using the handheld scanner, occasional misread errors can occur as a result of partial label scans and damaged or misapplied labels. Beckman Coulter recommends that you verify each bar-code reading to ensure correct patient identification.

Studies

Studies allows you to run samples without test orders multiple times without using Rerun or Reflex analysis. In order to run Studies, Batching must be enabled. Studies results can be viewed on the Worklist - Custom screen by using the Studies filter. The first three characters of the Specimen ID or Tube Position ID for Studies results is always “XS-”.

Batching

Batching allows you to run samples without test orders; however, you cannot run a sample multiple times unless you use the Rerun or Reflex options. A Default Test Order (Menu > System Status) must be defined for Batched samples. Refer to Batching Enabled in the Setup chapter for additional instructions.

Handling Alarms

An audible or visible alarm on the DxH 800 System should be addressed by reviewing the Event Logs on the History Log screen. Refer to APPENDIX C for additional information on History Logs. To configure audible alarms, refer to Audible Alarms (Menu > Setup > System > Audible Alarms) in the Setup chapter.

CHAPTER 6

Data Review

Worklist Screen

The Worklist screen manages test orders and results within the database. The Worklist screen allows you to:

- Use predefined filters for display and monitoring of patient test orders and results
- Specify sort/filter criteria for display and monitoring of patient test orders and results
- Add, delete and modify patient test orders
- Print, transmit, and export patient results
- Clear notification for specimens that were not processed.

To access the Worklist screen:

> Select the **Worklist** Icon from the top of any screen.
>
> or
>
> Select **Menu** > **Worklist**.

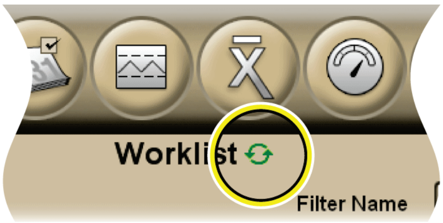
Worklist Screen Layout

The five tabs on the Worklist screen are:

- Pending
- Not Processed
- Review
- Released
- Custom

Each tab displays a particular filter view of the database. The Review, Released, and Custom tabs organize information according to the currently selected filter. Only one tab can be viewed at a time.

IMPORTANT The green **Refresh** icon at the top of the screen, shown in the figure below, indicates that you need to select the **Refresh** button on the Local Navigation bar at the bottom of the screen.

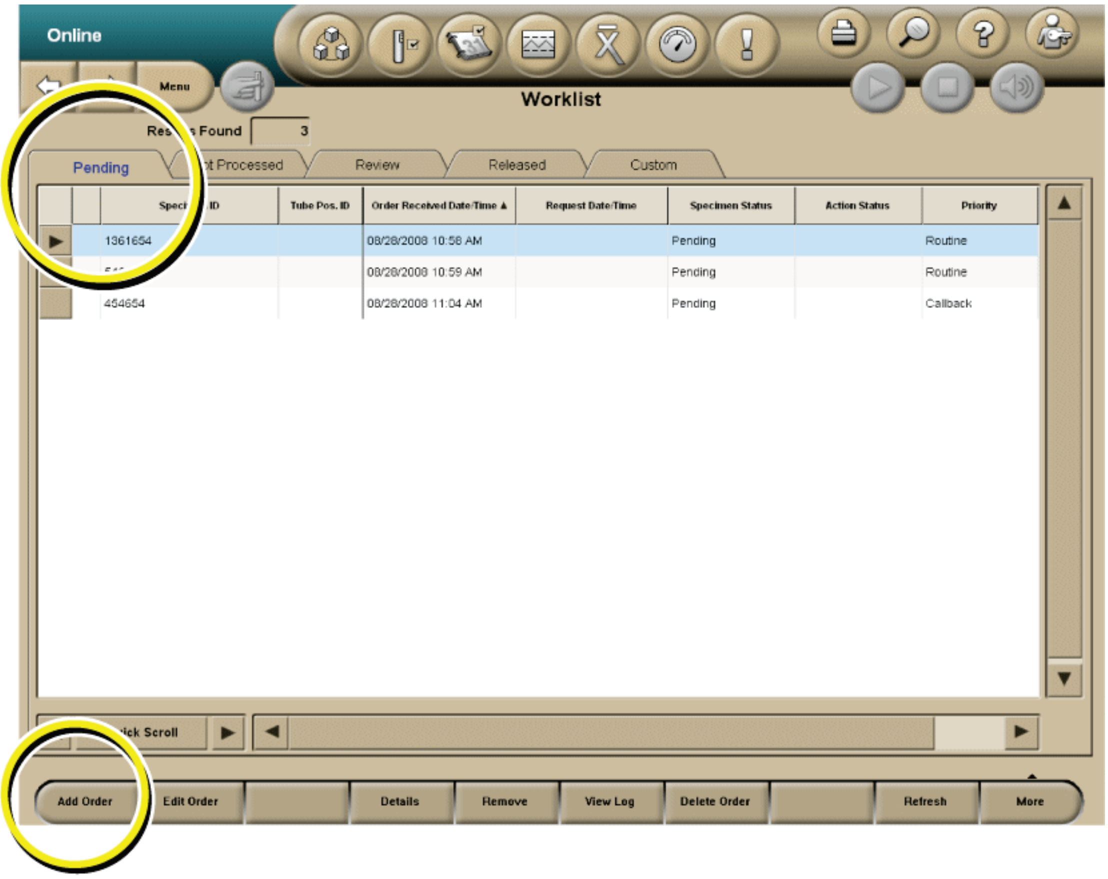


For each tab:

- Disabled parameters (via **Setup** > **System** > **Analysis**) are disabled (grayed out) on any tab.
- Disabled parameters (via **Setup** > **Reporting** > **Tests**) are not displayed on any tab.
- For unreleased results with multiple runs, the last run (most recent) displays.
- Rejected results display with ##### signs.
- Unreleased values display in brackets.
- Unordered but received parameters display in a grayed out color.
- A “lock” icon 🔒 displays in the first column for any result that is saved, meaning it cannot be removed, pruned, or deleted.
- Data that does not match the filter criteria is not displayed.
- If a row no longer matches the filter criteria (for example, Pending Tab is selected and all tests are now completed), all fields display in a disabled color.

Pending Tab(Menu > Worklist > Pending Tab)

Figure 6.1 Worklist -Pending Tab



Results Found 3

Speci ID	Tube Pos. ID	Order Received Date/Time ▲	Request Date/Time	Specimen Status	Action Status	Priority
1361654		08/28/2008 10:58 AM		Pending		Routine
[illegible]		08/28/2008 10:59 AM		Pending		Routine
454654		08/28/2008 11:04 AM		Pending		Callback

The Pending tab displays all patient test orders with a pending or partially complete result status (any result status that is not complete).

The default sort order on the Pending tab for a new use session is listed below. The default sort order within same user session is the last selected sort order.

Primary	Order Received Date/Time, oldest to newest
Secondary	Primary Identifier (Specimen ID or Tube Position ID) in ascending order.

The Components on the Worklist- Pending screen are outlined below:

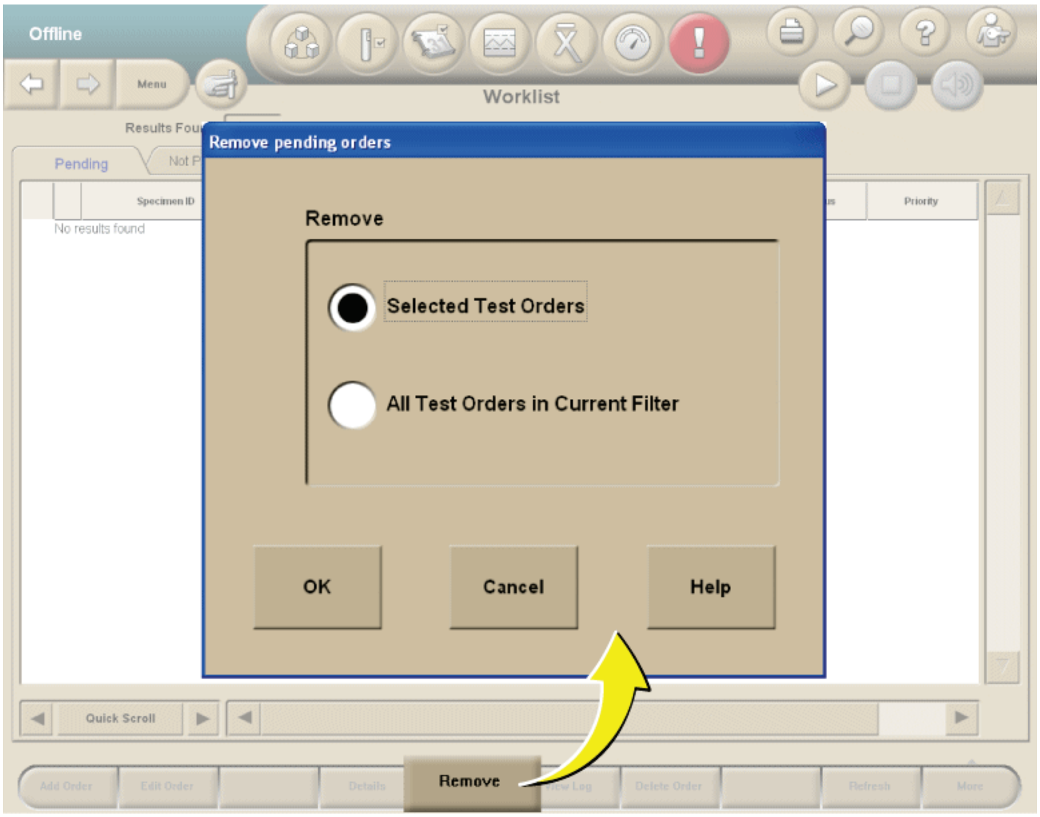
Component	Description
Results Found	Read-only field that displays the total number of results found for the tab. If no entries are found, this field displays 0 (zero).
Specimen ID	If Specimen ID is the selected primary identifier, then this is the specimen’s unique identifier.

Component	Description
Tube Pos. ID	If Tube Position ID is the selected primary identifier, then this is the specimen's unique identifier.
Order Received Date/Time	The date and time that the order was received.
Request Date Time	The date and time that the order was requested.
Specimen Status	The status of the specimen.
Action Status	Displays the follow-up work to be performed on a specimen, such as Rerun or Reflex, or both.
Priority	The priority of the specimen.
Add Order	Selecting this button allows you to add a test order. For instructions on adding and order, refer to Add a Test Order in the Sample Analysis chapter.
Edit Order	Selecting this button allows you to edit a test order. For instructions on editing an order, refer to Edit a Test Order (Worklist > Pending Tab > Edit Order) in the Sample Analysis chapter.
Details	Displays the details of the pending order on the Patient Results screen.
Remove	Allows you to remove all selected test orders or all test orders in current filter.
View Log	Displays the History Log screen.
Delete	Allows you to delete all selected test orders or all test orders in current filter.
Refresh	Refreshes the screen so that it reflects the most recent changes.
More	Allows you to Save (prevent deletion) or Unsave (allow deletion) of a Test Order.

Remove Pending Orders

Remove hides a pending order from view on the worklist tab, although it remains pending. You can view Removed orders from the Custom tab by selecting the **Removed** filter.

Figure 6.2 Remove Pending Orders Dialog Box



Remove pending orders

Remove

● Selected Test Orders

○ All Test Orders in Current Filter

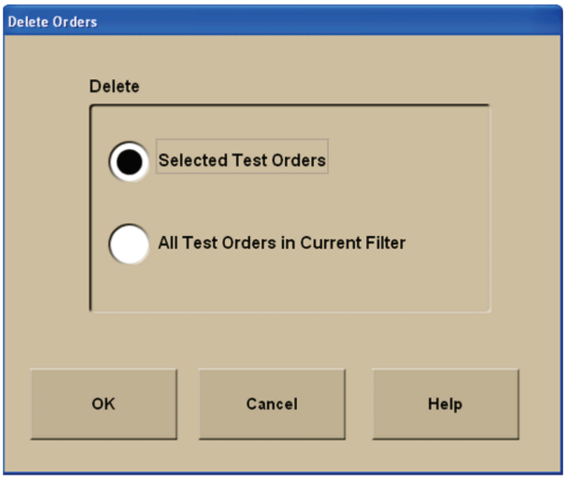
Select the orders that you want to remove on the Remove pending orders dialog box and select **OK**.

Delete Pending Orders

You can delete pending orders automatically or manually. Refer to Database Cleanup (Menu > Setup > System > Database Cleanup) in the Setup chapter for additional information on automatic deletion.

To manually delete pending orders, select the **Delete Order** button on the Navigation bar at the bottom of the Worklist-Pending screen to delete selected orders from the database. Deleted orders are no longer viewable or accessible once deleted from any tab.

Figure 6.3 Delete Orders Dialog Box



Delete

● Selected Test Orders

○ All Test Orders in Current Filter

Save Orders

Select **More** > **Save** on the Navigation bar at the bottom of the Worklist-Pending screen to prevent an order from being manually or automatically deleted by any automated database maintenance routines that you may have configured to periodically open up space on your system.

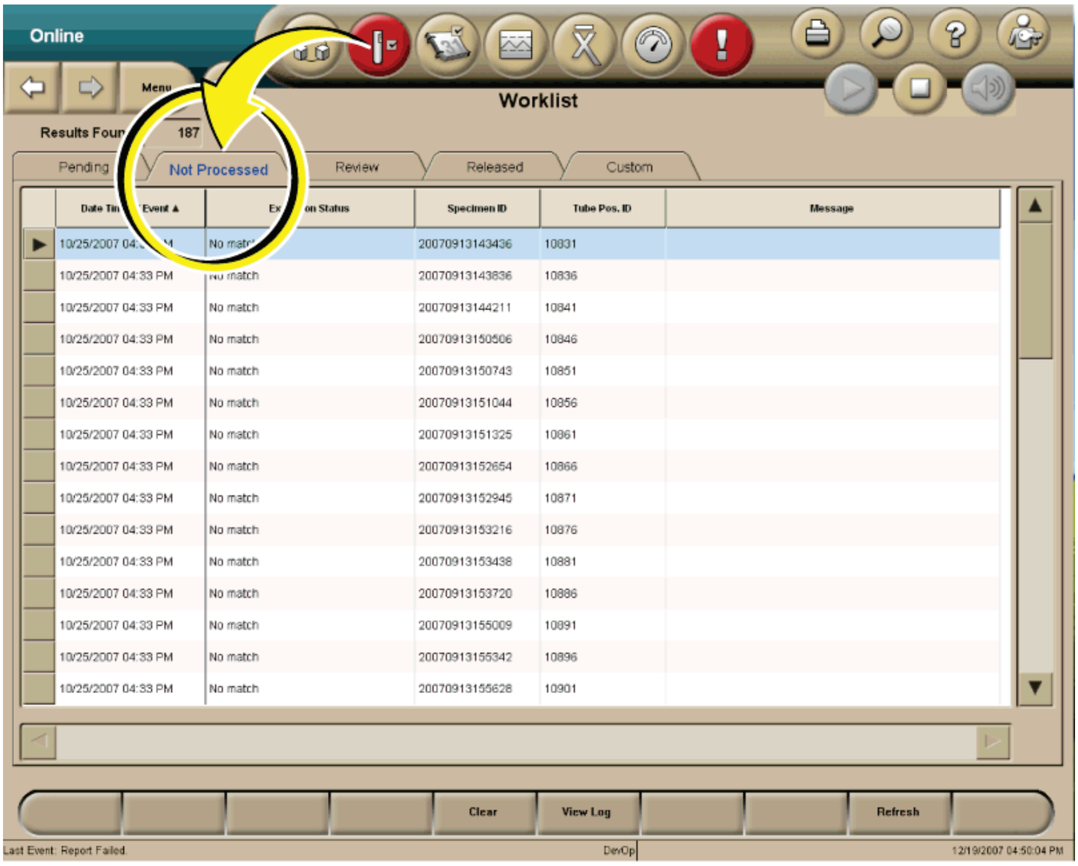
Unsave Orders

Select **More** > **Unsave** on the Navigation bar at the bottom of the Worklist- Pending screen. Unsaving an order allows it to be deleted manually or by any automated database maintenance routines that you have configured to periodically open up space on your system.

Not Processed Tab(Menu > Worklist > Not Processed Tab)

The Worklist - Not Processed tab displays exceptions for specimens that have been skipped. You need to address the problem and reload the skipped specimens for processing. If exceptions are posted to the Not Processed tab, the **Worklist** alert status icon is red. This tab (view) automatically displays when you click the red **Worklist** icon.

Figure 6.4 Worklist - Not Processed Tab



Results Foun 187

	Date Tin Event ▲	Ex on Status	Specimen ID	Tube Pos. ID	Message
▶	10/25/2007 04: M	No matc	20070913143436	10831	
	10/25/2007 04:33 PM	No match	20070913143836	10836	
	10/25/2007 04:33 PM	No match	20070913144211	10841	
	10/25/2007 04:33 PM	No match	20070913150506	10846	
	10/25/2007 04:33 PM	No match	20070913150743	10851	
	10/25/2007 04:33 PM	No match	20070913151044	10856	
	10/25/2007 04:33 PM	No match	20070913151325	10861	
	10/25/2007 04:33 PM	No match	20070913152654	10866	
	10/25/2007 04:33 PM	No match	20070913152945	10871	
	10/25/2007 04:33 PM	No match	20070913153216	10876	
	10/25/2007 04:33 PM	No match	20070913153438	10881	
	10/25/2007 04:33 PM	No match	20070913153720	10886	
	10/25/2007 04:33 PM	No match	20070913155009	10891	
	10/25/2007 04:33 PM	No match	20070913155342	10896	
	10/25/2007 04:33 PM	No match	20070913155628	10901	

Last Event: Report Failed. DevOp 12/19/2007 04:50:04 PM

Specimens skipped because of a **No Read** or a **No Match** are posted to the Not Processed Tab. A corresponding Event is posted in the Event Log for each. Refer to APPENDIX C for information on working with logs.

The components on the Worklist - Not Processed screen are outlined below:

Component	Description
Results Found	Read-only field that displays the total number of results found for the tab.
Date Time of Event	The date and time of the event that placed the skipped specimen into the Not Processed group.
Exception Status	The Exception Status, such as No Read.
Specimen ID	The specimen's unique identifier.
Tube Pos. ID	The tube position ID.
Message	A message associated with the Exception that caused the specimen to be skipped.
Clear	Select this button to clear exceptions on skipped specimens.

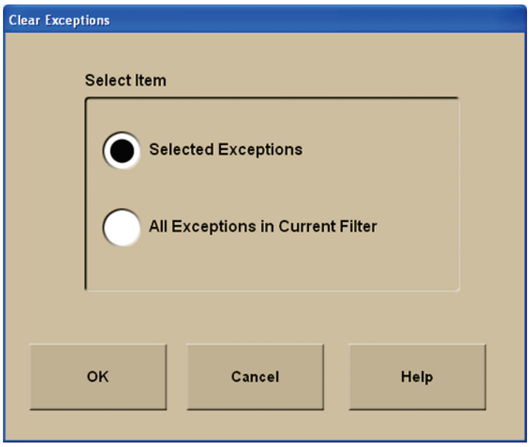
Component	Description
View Log	Select this button to display the History Logs screen.
Refresh	Select this button to refresh the screen.

Clearing an Exception from the Not Processed Tab

1 From the Worklist - Not Processed tab, select or the Exceptions you want to clear.

2 Select the **Clear** button to display the Clear Exceptions dialog box.

Figure 6.5 Clear Exceptions Dialog Box



3 Select from the following options:

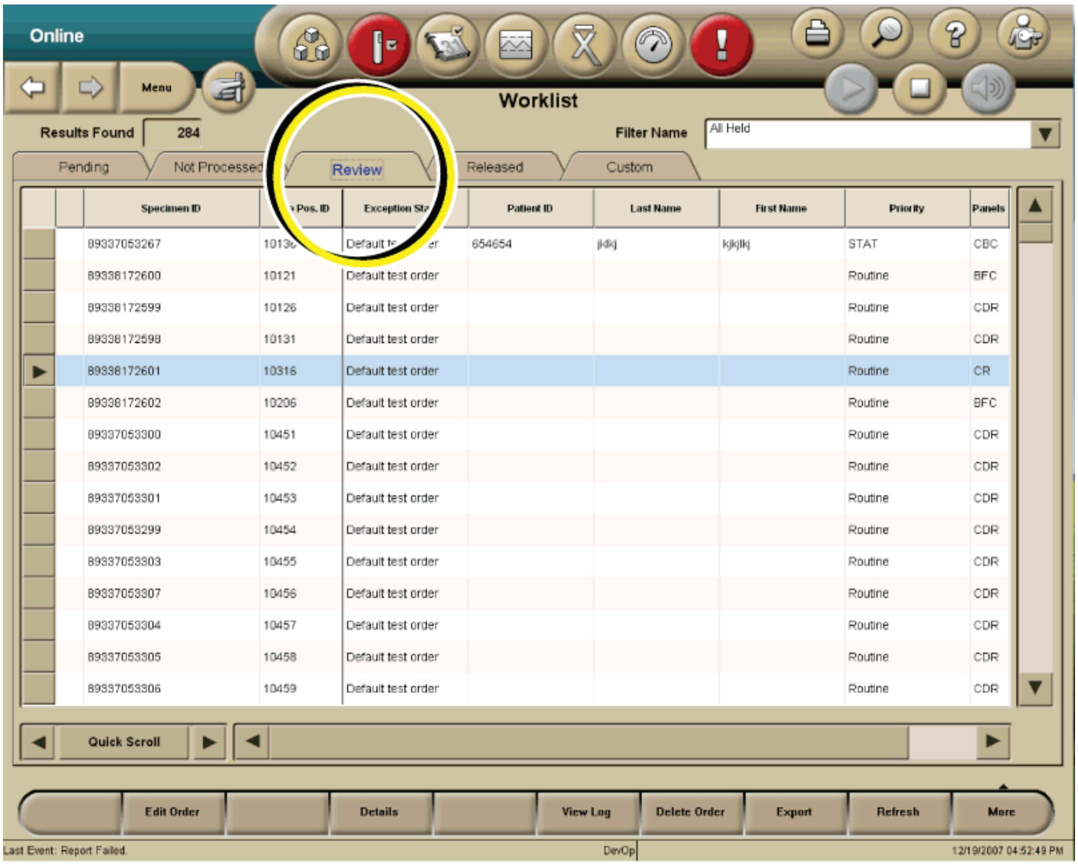
- **Selected Exceptions**
- **All Exceptions in Current Filter**

4 Select **OK** to clear the selected exceptions.

Review Tab(Menu > Worklist > Review Tab)

The Worklist -Review tab displays specimens that have been held (not released) and require attention.

Figure 6.6 Worklist - Review Tab



Results Found 284

Filter Name All Held

	Specimen ID	Pos. ID	Exception Sta	Patient ID	Last Name	First Name	Priority	Panels
	89337053267	1013	Default t er	654654	jkdkj	kjkjlkj	STAT	CBC
	89338172600	10121	Default test order				Routine	BFC
	89338172599	10126	Default test order				Routine	CDR
	89338172598	10131	Default test order				Routine	CDR
▶	89338172601	10316	Default test order				Routine	CR
	89338172602	10206	Default test order				Routine	BFC
	89337053300	10451	Default test order				Routine	CDR
	89337053302	10452	Default test order				Routine	CDR
	89337053301	10453	Default test order				Routine	CDR
	89337053299	10454	Default test order				Routine	CDR
	89337053303	10455	Default test order				Routine	CDR
	89337053307	10456	Default test order				Routine	CDR
	89337053304	10457	Default test order				Routine	CDR
	89337053305	10458	Default test order				Routine	CDR
	89337053306	10459	Default test order				Routine	CDR

Last Event: Report Failed. DevOp 12/19/2007 04:52:49 PM

Use the scroll bar to view all the components and data on this screen. The Filter at top right allows you to search by the following:

- All Held
- Held with Exception Status
- Held with Slide Review Action

To release a result, you must be at the Patient Results screen. Double click or double tap a result to display the Patient Results screen and follow the instructions in the Release/Reject Results section of this chapter.

The options on the Worklist-Review tab are outlined below:

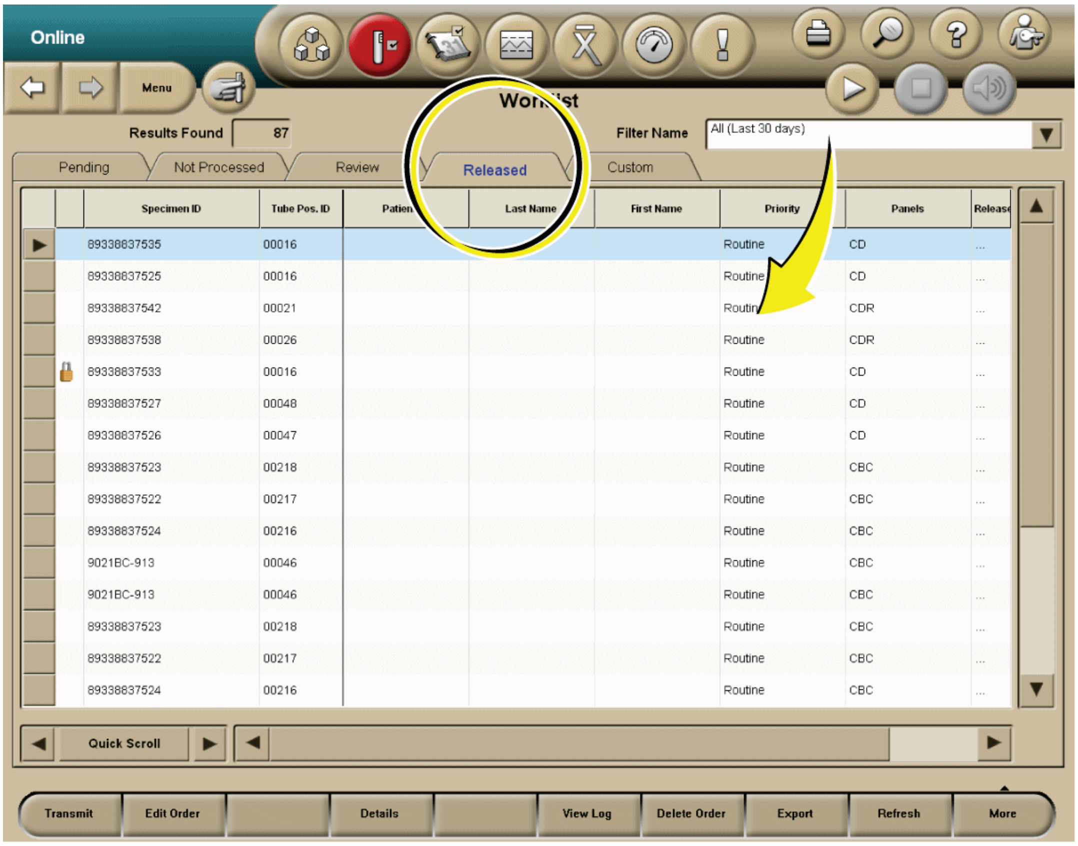
Component	Function
Specimen ID	If Specimen ID is the selected primary identifier, then this is the specimen’s unique identifier.
Tube Pos. ID	If Tube Position ID is the selected primary identifier, then this is the specimen’s unique identifier.
Exception Status	The Exception Status, such as Default Test Order or Inconsistent Demographics.

Component	Function
Patient ID	The patient’s unique identifier.
Last Name	The patient’s last name.
First Name	The patient’s first name.
Priority	The test order priority.
Panels	The test panels that were run.
Action Status	Displays the follow-up work to be performed on a specimen, such as Rerun or Reflex, or both.
Analysis Date/Time	The analysis date and time.
Patient Location	The patient location.
Physician	The ordering physician.
CBC	Results for CBC Parameters.
Diff	Results for Diff Parameters.
Retic	Results for Retic Parameters.
BFC	Results for Body Fluid Count.
Edit Order	Selecting this button allows you to edit a test order. For instructions on editing an order, refer to Edit a Test Order (Worklist > Pending Tab > Edit Order) in the Sample Analysis chapter.
Details	Displays the details of the pending order on the Patient Results screen.
View Log	Displays the History Log screen.
Delete Orders	Allows you to delete all selected test orders or all test orders in current filter.
Export	Allows you to export data.
Refresh	Refreshes the screen so that it reflects the most recent changes.
More	Allows you to Save (prevent deletion) or Unsave (allow deletion) of a Test Order.

Released Tab(Menu > Worklist > Released Tab)

The Worklist - Released tab displays the released results according to the filter that you select.

Figure 6.7 Worklist - Released Tab



Results Found 87

Filter Name All (Last 30 days)

Specimen ID	Tube Pos. ID	Patien	Last Name	First Name	Priority	Panels	Releas
89338837535	00016				Routine	CD	...
89338837525	00016				Routine	CD	...
89338837542	00021				Routin	CDR	...
89338837538	00026				Routine	CDR	...
89338837533	00016				Routine	CD	...
89338837527	00048				Routine	CD	...
89338837526	00047				Routine	CD	...
89338837523	00218				Routine	CBC	...
89338837522	00217				Routine	CBC	...
89338837524	00216				Routine	CBC	...
9021BC-913	00046				Routine	CBC	...
9021BC-913	00046				Routine	CBC	...
89338837523	00218				Routine	CBC	...
89338837522	00217				Routine	CBC	...
89338837524	00216				Routine	CBC	...

The Filter Name drop-down list at the top right of the Released Tab allows you to filter by the following:

- All
- All (Last 30 Days)

The components on the Released tab are described below.

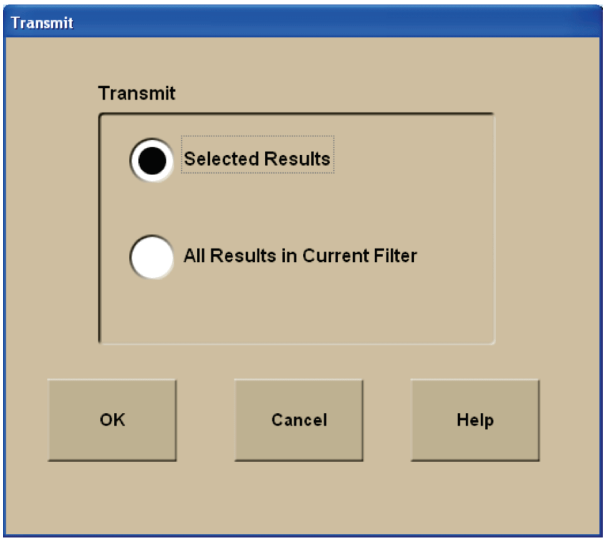
Component	Function
Specimen ID	If Specimen ID is the selected primary identifier, then this is the specimen's unique identifier.
Tube Pos. ID	If Tube Position ID is the selected primary identifier, then this is the specimen's unique identifier.
Patient ID	The patient's unique identifier.
Last Name	The patient's last name.
First Name	The patient's first name.
Priority	The test order priority.
Panels	The test panels that were run.
Release	

Component	Function
Analysis Date/Time	The analysis date and time.
Patient Location	The patient location.
Physician	The ordering physician.
CBC	Results for CBC Parameters.
Diff	Results for Diff Parameters.
Retic	Results for Retic Parameters.
BFC	Results for Body Fluid Count.
Transmit	Allows you to transmit Released Results to an LIS.
Edit Order	Selecting this button allows you to edit a test order. For instructions on editing an order, refer to Edit a Test Order (Worklist > Pending Tab > Edit Order) in the Sample Analysis chapter.
Details	Displays the details of the pending order on the Patient Results screen.
View Log	Displays the History Log screen.
Delete Orders	Allows you to delete all selected test orders or all test orders in current filter.
Export	Allows you to export data.
Refresh	Refreshes the screen so that it reflects the most recent changes.
More	Allows you to Save (prevent deletion) or Unsave (allow deletion) of a Test Order.

Transmit Released Results to the LIS

1 From the Worklist - Release Results screen, select the **Transmit** button to display the Transmit dialog box.

Figure 6.8 Transmit Dialog Box



2 Select from the following options in the Transmit option box:

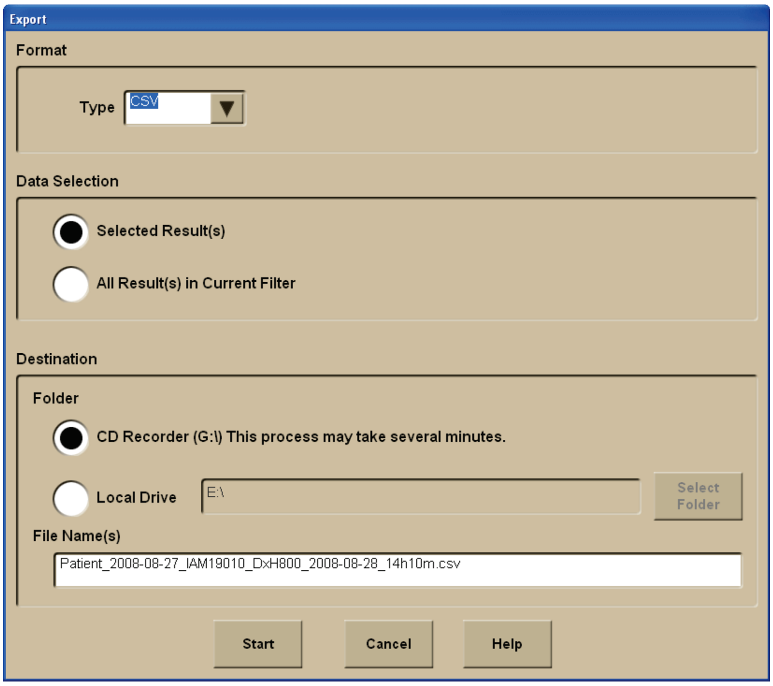
- **Selected Results**
- **All Results in Current Filter**

3 Select **OK** to transmit the results.

Export Released Results (Released Tab > Export)

Preparing .CSV creates two line items files available for import to a spreadsheet program (such as Microsoft Excel). Preparing INF/DAT files saves raw data offline.

Figure 6.9 Export Dialog Box



Export

Format

Type: CSV

Data Selection

● Selected Result(s)
○ All Result(s) in Current Filter

Destination

Folder

● CD Recorder (G:\) This process may take several minutes.
○ Local Drive E:\

File Name(s): Patient_2008-08-27_IAM19010_DxH800_2008-08-28_14h10m.csv

1 Select a type of file to export to:

- .CSV
- INF/DAT (raw data)

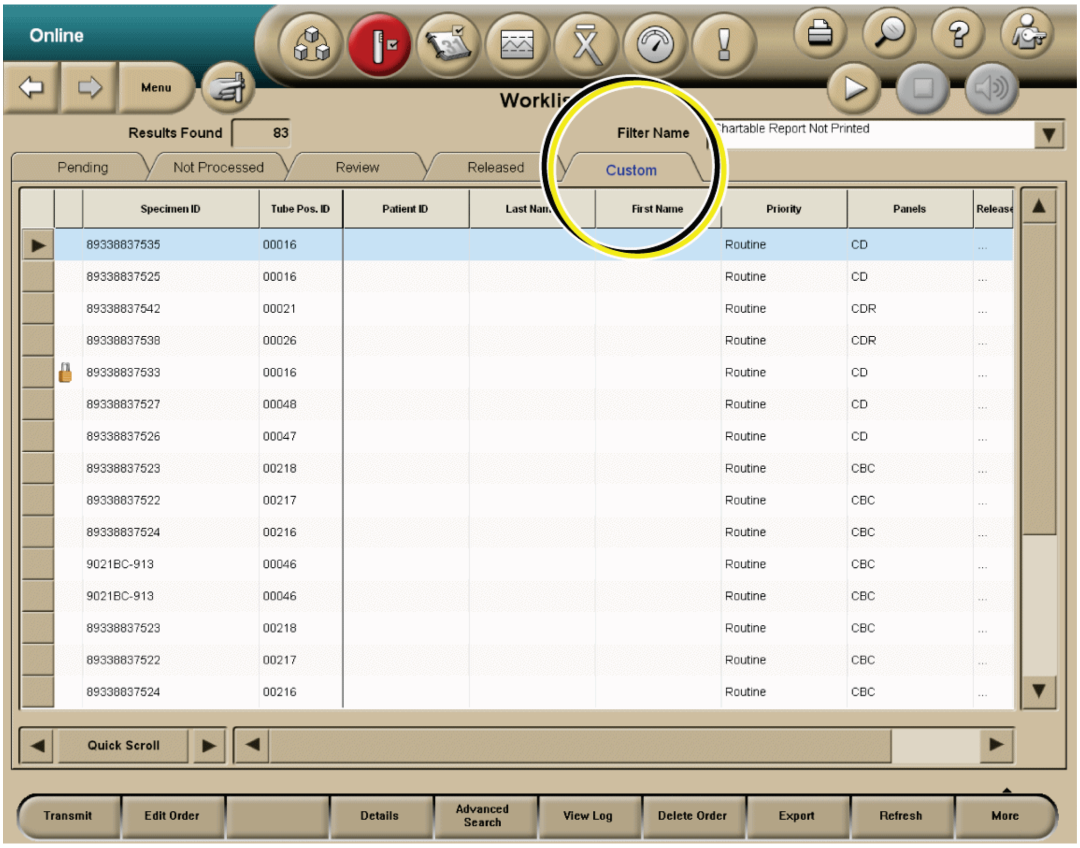
2 Select the data to export from the **Data Selection** option box.

3 Select a **Destination** and select **Start.**

Custom Tab(Menu > Worklist > Custom Tab)

The Worklist - Custom tab allows you to select from predefined or user-defined filters.

Figure 6.10 Worklist - Custom Tab



Results Found 83

Filter Name hartable Report Not Printed

		Specimen ID	Tube Pos. ID	Patient ID	Last Nam	First Name	Priority	Panels	Release
▶		89338837535	00016				Routine	CD	...
		89338837525	00016				Routine	CD	...
		89338837542	00021				Routine	CDR	...
		89338837538	00026				Routine	CDR	...
	🔒	89338837533	00016				Routine	CD	...
		89338837527	00048				Routine	CD	...
		89338837526	00047				Routine	CD	...
		89338837523	00218				Routine	CBC	...
		89338837522	00217				Routine	CBC	...
		89338837524	00216				Routine	CBC	...
		9021BC-913	00046				Routine	CBC	...
		9021BC-913	00046				Routine	CBC	...
		89338837523	00218				Routine	CBC	...
		89338837522	00217				Routine	CBC	...
		89338837524	00216				Routine	CBC	...

Custom Tab Filter

Select from the following options in the Filter Name drop-down list:

- Chartable Report Not Printed
- Lab Report Not Printed
- Not Transmitted
- Rejected
- Removed
- Studies
- Your Custom Filters (Refer to the Custom Worklist Filter Configuration (Menu > Worklist > Custom Tab > Advanced Search) section in the Setup chapter for instructions on configuring your custom filter.)

The components on the Custom tab are described below,

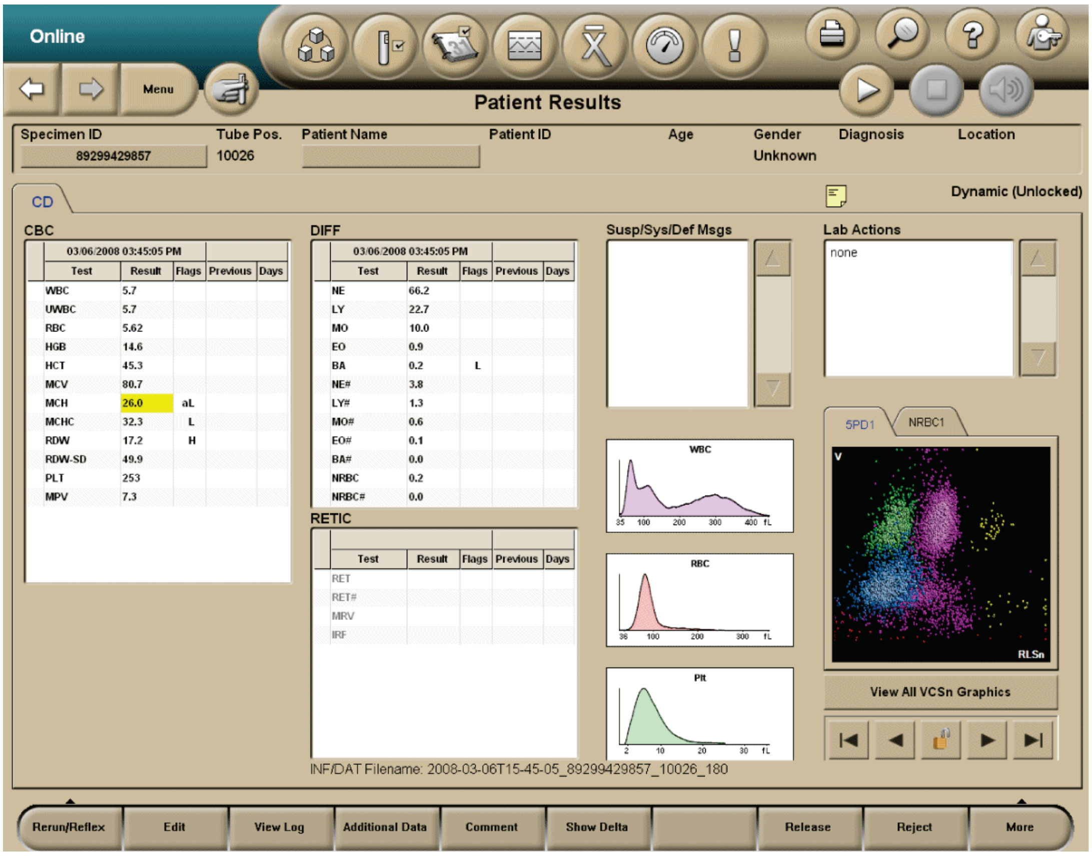
Component	Function
Specimen ID	If Specimen ID is the selected primary identifier, then this is the specimen's unique identifier.
Tube Pos. ID	If Tube Position ID is the selected primary identifier, then this is the specimen's unique identifier.
Patient ID	The patient's unique identifier.
Last Name	The patient's last name.
First Name	The patient's first name.
Priority	The test order priority.
Panels	The test panels that were run.
Release	
Analysis Date/Time	The analysis date and time.
Patient Location	The patient location.
Physician	The ordering physician.
CBC	Results for CBC Parameters.
Diff	Results for Diff Parameters.
Retic	Results for Retic Parameters.
BFC	Results for Body Fluid Count.
Transmit	Allows you to transmit Released Results to an LIS.
Edit Order	Selecting this button allows you to edit a test order. For instructions on editing an order, refer to Edit a Test Order (Worklist > Pending Tab > Edit Order) in the Sample Analysis chapter.
Details	Displays the details of the pending order on the Patient Results screen.
Advanced Search	Allows you to configure a custom filter.
View Log	Displays the History Log screen.
Delete Orders	Allows you to delete all selected test orders or all test orders in current filter.
Export	Allows you to export data.
Refresh	Refreshes the screen so that it reflects the most recent changes.
More	Allows you to Save (prevent deletion) or Unsave (allow deletion) of a Test Order.

How to Review Patient Results

To access the Patient Results screen, do one of the following:

- Select **Menu** > **Patient Results**.
- Select a result, then select the **Details** button on the Worklist screen.
- **Tap** a result twice on the Worklist screen.

Figure 6.11 Patient Results Screen



Specimen ID	Tube Pos.	Patient Name	Patient ID	Age	Gender	Diagnosis	Location
89299429857	10026				Unknown		

Dynamic (Unlocked)

CBC

03/06/2008 03:45:05 PM				
Test	Result	Flags	Previous	Days
WBC	5.7			
UWBC	5.7			
RBC	5.62			
HGB	14.6			
HCT	45.3			
MCV	80.7			
MCH	26.0	aL		
MCHC	32.3	L		
RDW	17.2	H		
RDW-SD	49.9			
PLT	253			
MPV	7.3			

DIFF

03/06/2008 03:45:05 PM				
Test	Result	Flags	Previous	Days
NE	66.2			
LY	22.7			
MO	10.0			
EO	0.9			
BA	0.2	L		
NE#	3.8			
LY#	1.3			
MO#	0.6			
EO#	0.1			
BA#	0.0			
NRBC	0.2			
NRBC#	0.0			

RETIC

Test	Result	Flags	Previous	Days
RET				
RET#				
MRV				
IRF				

Susp/Sys/Def Msgs

Lab Actions
none

INF/DAT Filename: 2008-03-06T15-45-05_89299429857_10026_180

On the Patient Results screen:

- Results are highlighted with a yellow background if action limits are exceeded and results are highlighted with a red background if critical limits are exceeded.
- Flags are contained in a column next to results.
- Non-numeric codes replace results.

  Refer to Processing Results in this chapter for additional information on codes and flagging.
- The Panels Tab is the default tab when there is only one Run Order for a patient's results.
- A History tab will be available on the Patient Results screen if there is one or more released specimens associated with the patient.
- A Rerun tab will display if a Rerun has been done.
- The area immediately to the right of the Tabs displays System Statuses, such as the Comment icon and “Specimen Deleted.” Also in this area, all the way to the right is the Patient Results Display Mode, which is either Dynamic or Filter.

The components on the Patient Results screen are described below.

Component	Description
Specimen ID	A demographic field displays the Specimen ID for a patient specimen. This field also acts as a button that, when selected, takes you to the Edit Order -Specimen window.
Tube Pos. ID	A demographic field displays the Tube Position ID.
Patient Name	A demographic field displays the patient's name, last name first. This field also acts as a button that, when selected, takes you to the Patient ID search dialog box.
Patient ID	A demographic field displays the unique identifier for the patient whose specimen is associated with a given test order. The Patient ID takes you to the Edit Test Order dialog box. With the Patient Tab selected, if the "..." button is selected, then the Find Patient Dialog is displayed.
Age	A demographic field displays the patient's age with the corresponding units.
Gender	A demographic field displays the patient's gender.
Diagnosis	A demographic field displays the patient's diagnosis.
Location	A demographic field displays the location where the specimen was collected.
Tabs	Tabs display when different views are available, such as Panel Name (for example, CDR), History and Rerun. The History and Rerun tabs do not display if a history or rerun does not exist.
Susp/Sys/Def Msgs	Displays the messages in three categories: Suspect (in red), System (in green), Definitive (in blue). Messages within each subset of messages display in alphabetical order. Use the scroll bar to view all messages in the list box.
Lab Actions Box	Displays the rule message for Lab Actions. Use the scroll bar to view all messages in the list box.
Rerun\Reflex	Selecting this button displays the option buttons for Reflex and Rerun.
Edit	Displays the Edit Patient Results window.
View Log	Displays the History Logs window.
Additional Data	Displays the Additional Data window.
Comment	Allows you to add a comment.
Show Delta	Shows the difference between the results when Delta Checks are enabled. Results are displayed in Show Delta and Show Previous when a previously released sample with the same Patient ID is available. Show Delta shows the delta values according to the settings you programmed in Rules > Delta. Show Previous shows the actual former values. You can toggle between **Show Delta** and **Show Previous**.
Release	Selecting this button releases the patient result.

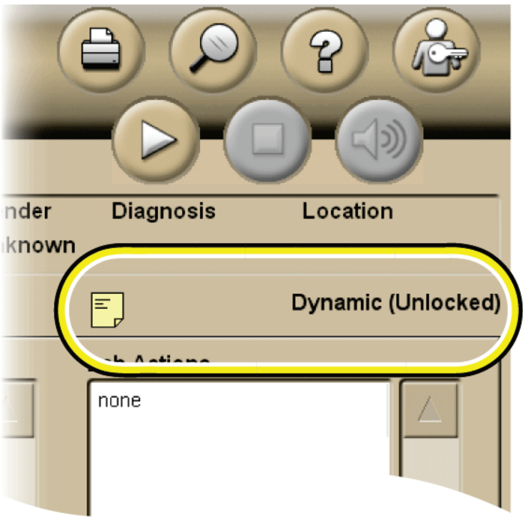
Component	Description
Reject	Selecting this button rejects the patient result.
More	Selecting this button displays the **Rules Triggered** button. If the specimen is collated, the **View Source** button displays. If the specimen is the source for a collated specimen, the **View Collation** button displays.

Dynamic Mode

When the Patient Results screen is accessed via the Patient Results button on the Main Menu or the Single-tube Presentation icon, the screen will display in Dynamic Mode. In Dynamic Mode, all results processed since the Data Manager was started will be available, with the most recent currently visible. When a new specimen is analyzed, its results appear on the screen, replacing the currently displayed specimen's results. When the screen is in Dynamic Mode, you can lock it so that it does not update dynamically when reviewing results. As soon as it is unlocked, the result of the last specimen analyzed displays.

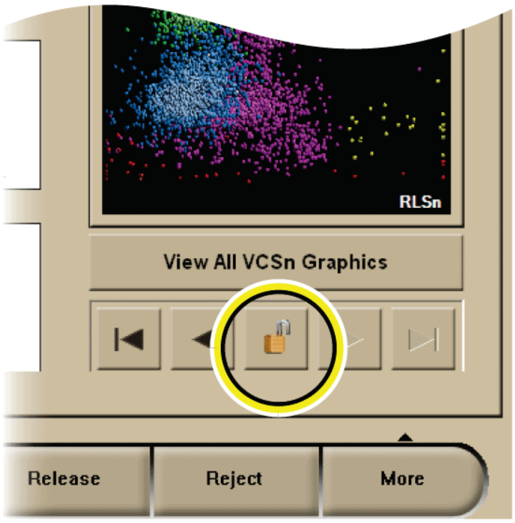
Lock Status

The Patient Results screen displays Dynamic (Unlocked) or Dynamic (Locked) in the upper right hand corner to indicate the lock status.



Lock/Unlock the Screen

To lock the screen, select the “unlocked” icon, as shown below, in the navigation panel on the Patient Results screen. To unlock the screen, select the “locked” icon.



Static Mode

The Patient Results screen is in Static Mode when the screen is accessed via the Details button on the Worklist screen.

From the Worklist Tab

The name of the Worklist tab from which you accessed the Patient Results screen displays in the Filter field on the Patient Results screen. Using the arrow keys on the keyboard, you can navigate through a fixed set of results filtered by the current Worklist tab.

Auto-Refresh

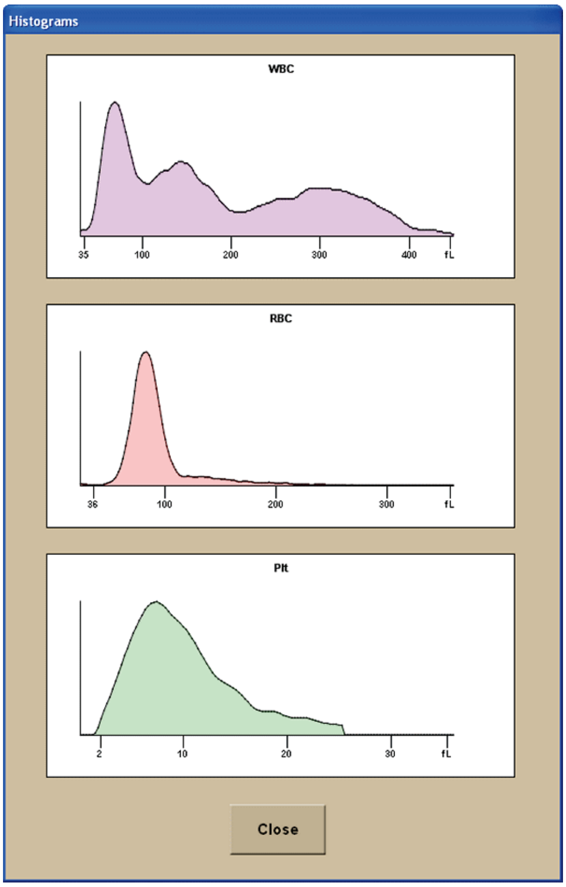
If you access the Patient Results screen from the Reviewed Tab of the Worklist screen, when the last item in the list is addressed, Final Released or Rejected, the system will automatically refresh to display any new results. If any results have not been addressed, these will display as well.

Quick Search Mode

The Patient Results screen will be in static mode when accessed via the Specimen Search function. The Status Indicator field displays Specimen Search. In this mode, you can only review the one result selected from the Specimen Search.

Description of Histogram/Dataplot Content on the Patient Results Screen

Histograms The main Patient Results screen displays WBC, RBC, and PLT histograms. For BFC panels, a TNC and RBC histogram are available.Double clicking or tapping a histogram pops up a larger view of the histograms.



Histograms show relative cell frequency versus size. They provide information about ertythrocyte, leukocyte, and thrombocyte frequency. Histograms provide a means of comparing the sizes of a patient's cells with normal populations.

IMPORTANT Histograms show only the relative, not actual, number of cells in each size range. Do not estimate the number of cells from the distribution curves.

When reviewing histograms, inspect:

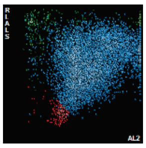
- Position of individual populations as compared to normal/typical positions.
- Amount of separation between populations as compared to normal/typical separation.
- Relative concentration of each population as compared to normal/typical concentrations.
- Presence of unexpected or non-typical populations.

Dataplots

A maximum of three tabs display dataplots, depending on the test order, according to the following rules:

- If Diff was ordered, 5PD1 and NRBC1 tabs and dataplots display.
- If Retic was ordered, a RETIC1 tab and dataplot displays.
- If a module is disabled, the corresponding dataplot does not display.

Figure 6.12 NRBC1

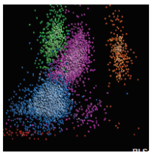


For each type of graph and tabbed dataplot, the colors correlate to populations with the light, bright colors representing a dense or greater number of cells and dark colors representing the least dense or least number of cells.

Population colors for the NRBC Dataplot are:

- NRBC - Light to dark, true red
- Other - Light, fluorescent green to dark green.
- WBC - Light, bright blue to dark blue.

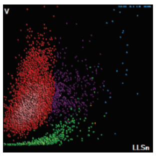
Figure 6.13 5PD1



Populations colors for the WBC Differential Dataplot are:

- Lymphocytes - Light, bright blue to dark blue.
- Neutrophils - Light, bright pink/purple to dark purplish red.
- Eosinophils - Light, bright orange to dark reddish orange.
- Monocytes - Light, fluorescent green to dark green.
- Basophils - White to bright yellow.
- Non-whites - Light to dark, true red.

Figure 6.14 RETIC1



Population colors for the Reticulocyte Dataplot are:

- RBCs - Light to dark, true red.
- Reticulocytes - Light to dark purple.
- Other - Light fluorescent green to dark green.
- White Blood Cells - Light, bright blue to dark blue.

Additional Data

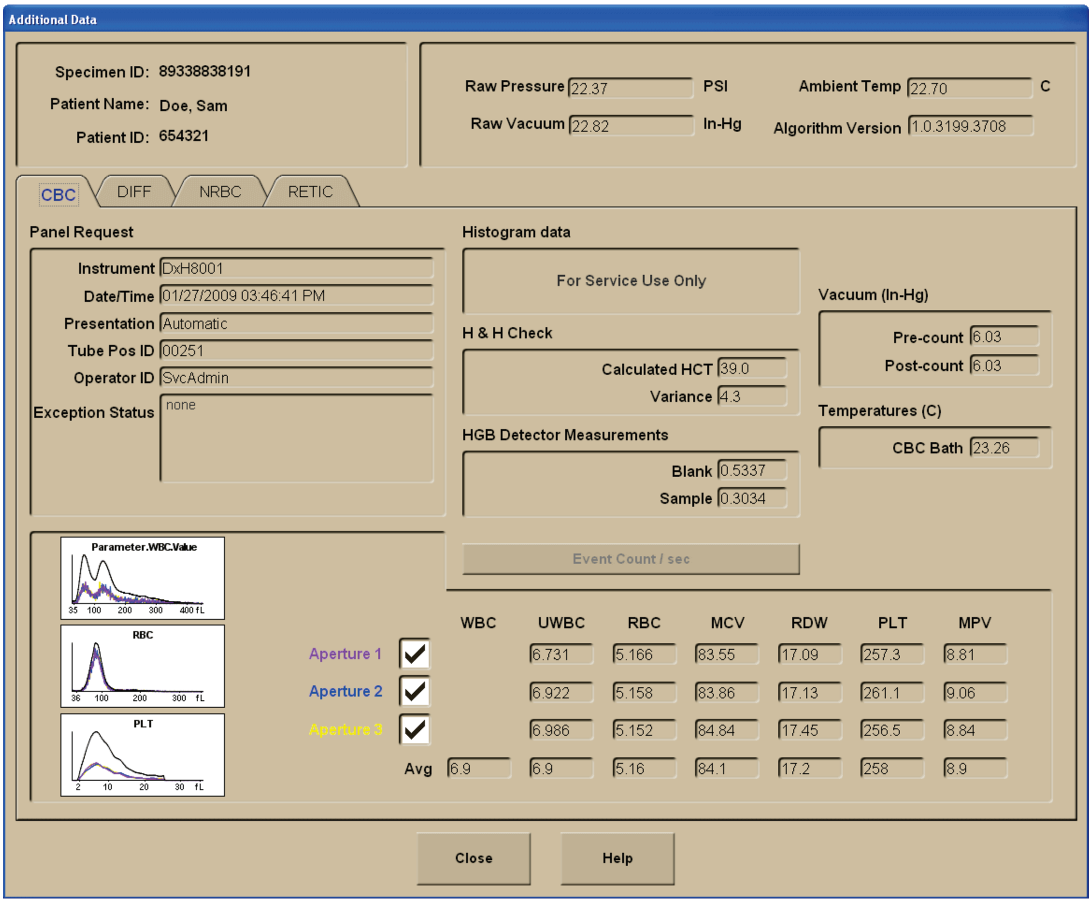
From the Patient Results screen, select the **Additional Data** button to display the Additional Data screen.

The Additional Data Screen provides you with a view of additional data for four run modes: CBC, Diff, NRBC, and Retic. For BFC panels, a BFC Tab displays TNC and RBC test results, and corresponding histograms.

Additional Data CBC Tab

Select the CBC tab on the Additional Data screen to display additional CBC data.

Figure 6.15 Additional Data - CBC Screen



Specimen ID: 89338838191
Patient Name: Doe, Sam
Patient ID: 654321

Raw Pressure 22.37 PSI
Raw Vacuum 22.82 In-Hg
Ambient Temp 22.70 C
Algorithm Version 1.0.3199.3708

Panel Request
Instrument DxH8001
Date/Time 01/27/2009 03:46:41 PM
Presentation Automatic
Tube Pos ID 00251
Operator ID SvcAdmin
Exception Status none

Histogram data
For Service Use Only

H & H Check
Calculated HCT 39.0
Variance 4.3

HGB Detector Measurements
Blank 0.5337
Sample 0.3034

Vacuum (In-Hg)
Pre-count 6.03
Post-count 6.03

Temperatures (C)
CBC Bath 23.26

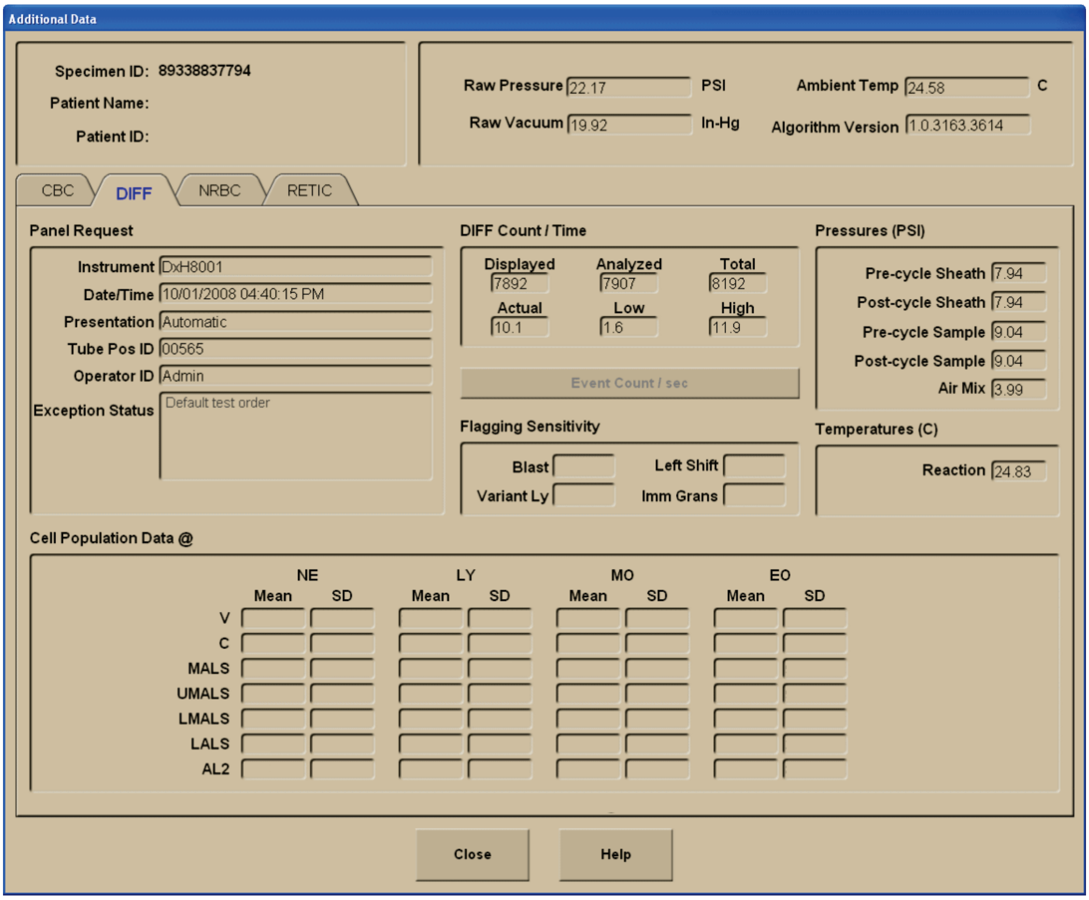
		WBC	UWBC	RBC	MCV	RDW	PLT	MPV
Aperture 1	☑		6.731	5.166	83.55	17.09	257.3	8.81
Aperture 2	☑		6.922	5.158	83.86	17.13	261.1	9.06
Aperture 3	☑		6.986	5.152	84.84	17.45	256.5	8.84
Avg		6.9	6.9	5.16	84.1	17.2	258	8.9

You can toggle the check box next to each Aperture to alternately display or remove the histogram data displayed for that Aperture. The Histograms, to the left of the aperture data, display the histogram data for WBC, RBC, and PLT. The lines are color coded to correspond to the apertures. Aperture 1 is purple; Aperture 2 is blue; and Aperture 3 is yellow; the average histogram is black. If partial vote out has occurred, the field in Aperture group box will be highlighted in yellow.

Additional Data DIFF Tab

Select the DIFF tab on the Additional Data screen to display additional DIFF data.

Figure 6.16 Additional Data -DIFF Tab



Specimen ID: 89338837794
Patient Name:
Patient ID:

Raw Pressure 22.17 PSI
Raw Vacuum 19.92 In-Hg
Ambient Temp 24.58 C
Algorithm Version 1.0.3163.3614

Instrument DxH8001
Date/Time 10/01/2008 04:40:15 PM
Presentation Automatic
Tube Pos ID 00565
Operator ID Admin
Exception Status Default test order

Displayed	Analyzed	Total
7892	7907	8192
Actual	**Low**	**High**
10.1	1.6	11.9

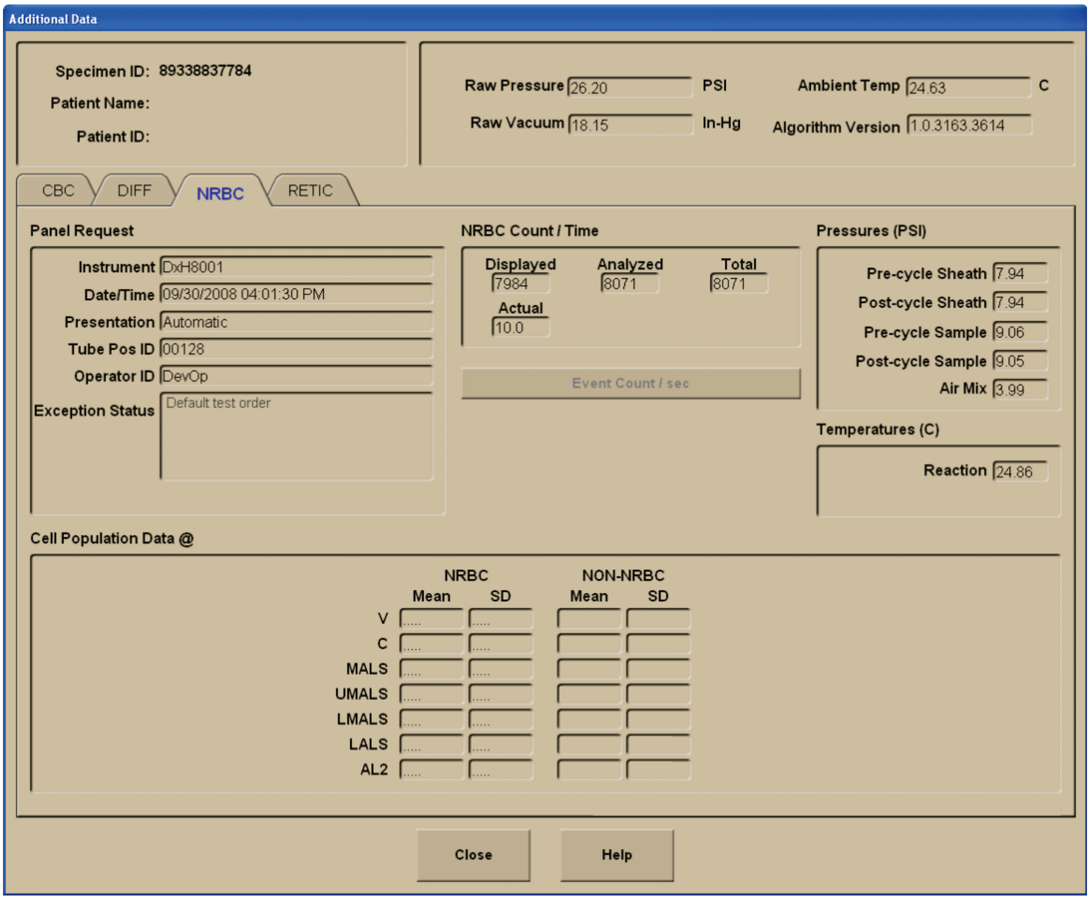
Pre-cycle Sheath 7.94
Post-cycle Sheath 7.94
Pre-cycle Sample 9.04
Post-cycle Sample 9.04
Air Mix 3.99

Reaction 24.83

Additional Data NRBC Tab

Select the **NRBC** tab on the Additional Data screen to display additional NRBC data.

Figure 6.17 Additional Data - NRBC Screen



Specimen ID: 89338837784
Patient Name:
Patient ID:

Raw Pressure 26.20 PSI
Raw Vacuum 18.15 In-Hg
Ambient Temp 24.63 C
Algorithm Version 1.0.3163.3614

Panel Request
Instrument DxH8001
Date/Time 09/30/2008 04:01:30 PM
Presentation Automatic
Tube Pos ID 00128
Operator ID DevOp
Exception Status Default test order

NRBC Count / Time
Displayed 7984
Analyzed 8071
Total 8071
Actual 10.0

Pressures (PSI)
Pre-cycle Sheath 7.94
Post-cycle Sheath 7.94
Pre-cycle Sample 9.06
Post-cycle Sample 9.05
Air Mix 3.99

Temperatures (C)
Reaction 24.86

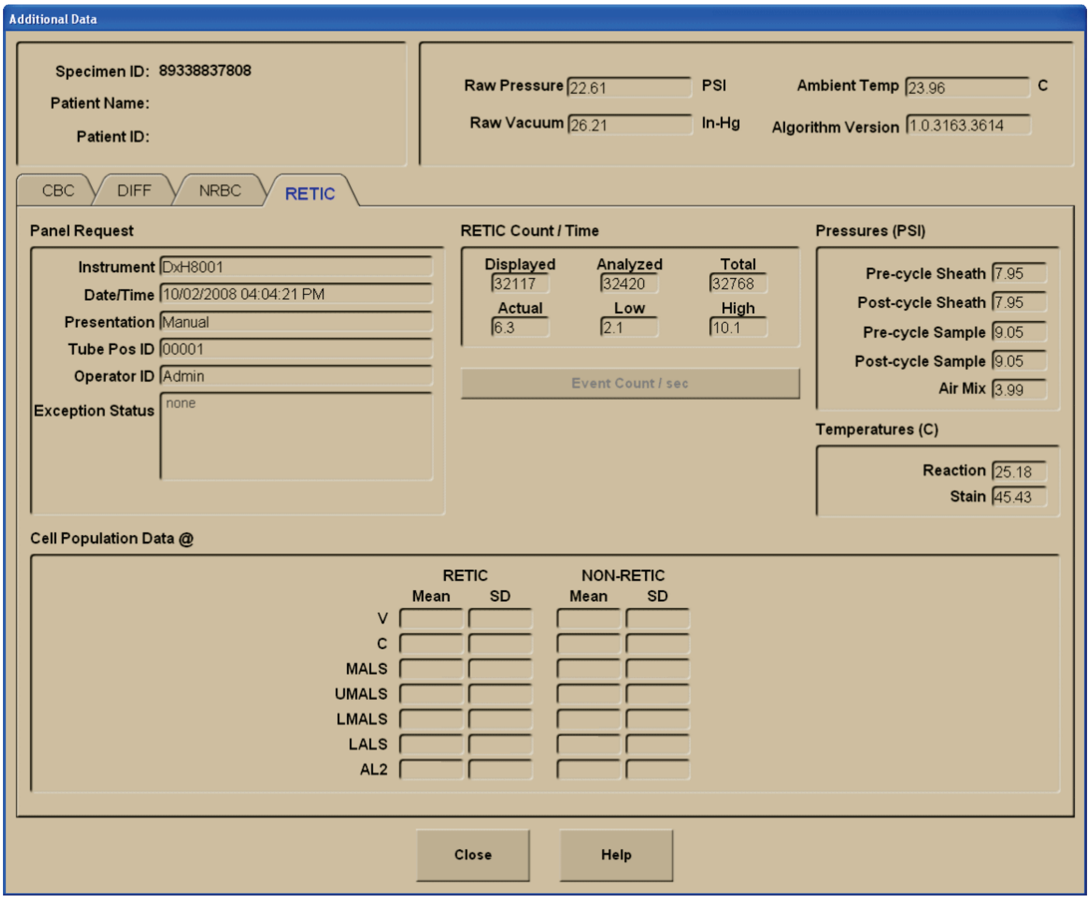
Cell Population Data @

	NRBC		NON-NRBC	
	Mean	SD	Mean	SD
V	.....	.....		
C	.....	.....		
MALS	.....	.....		
UMALS	.....	.....		
LMALS	.....	.....		
LALS	.....	.....		
AL2	.....	.....		

Additional Data RETIC Tab

Select the **Retic** tab on the Additional Data screen to display additional Retic data.

Figure 6.18 Additional Data - Retic Screen



Additional Data

Specimen ID: 89338837808
Patient Name:
Patient ID:

Raw Pressure 22.61 PSI
Raw Vacuum 26.21 In-Hg
Ambient Temp 23.96 C
Algorithm Version 1.0.3163.3614

Panel Request

Instrument DxH8001
Date/Time 10/02/2008 04:04:21 PM
Presentation Manual
Tube Pos ID 00001
Operator ID Admin
Exception Status none

RETIC Count / Time

Displayed	Analyzed	Total
32117	32420	32768
Actual	**Low**	**High**
6.3	2.1	10.1

Pressures (PSI)

Pre-cycle Sheath 7.95
Post-cycle Sheath 7.95
Pre-cycle Sample 9.05
Post-cycle Sample 9.05
Air Mix 3.99

Temperatures (C)

Reaction 25.18
Stain 45.43

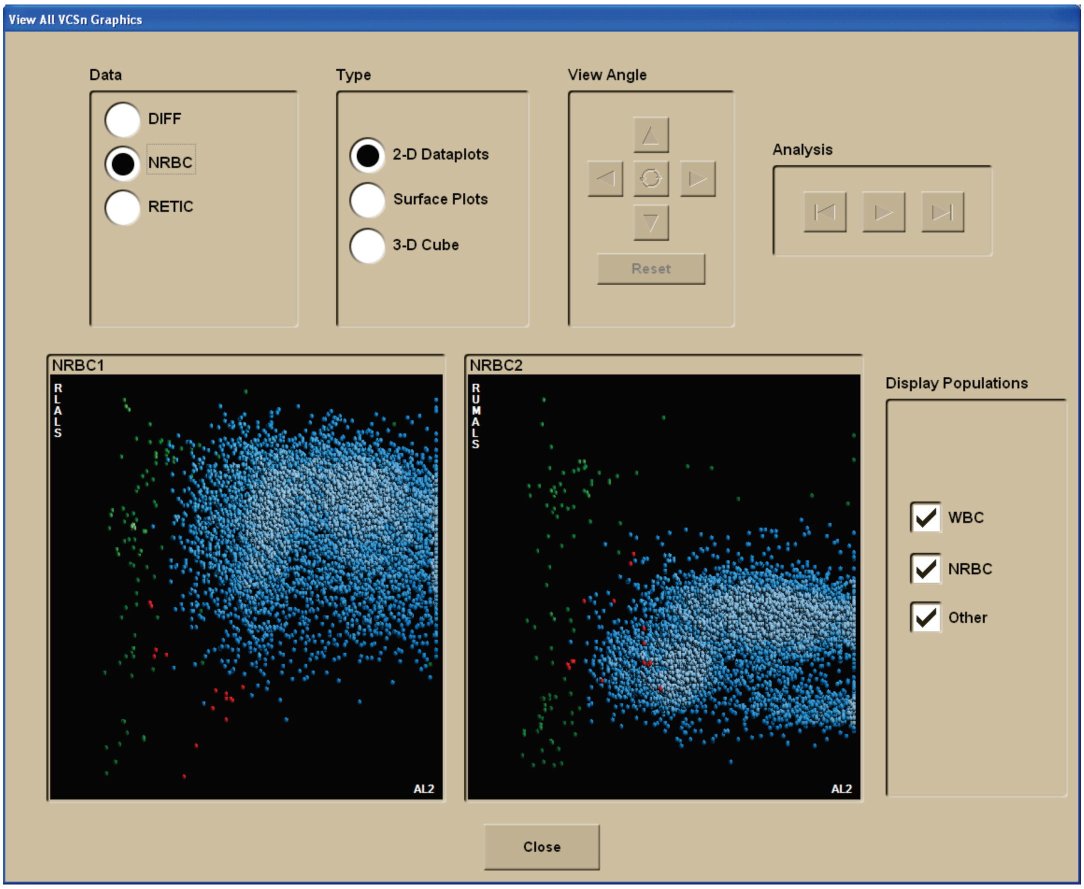
Cell Population Data @

	RETIC		NON-RETIC	
	Mean	SD	Mean	SD
V				
C				
MALS				
UMALS				
LMALS				
LALS				
AL2				

View All VCSn Graphics

Histograms and 2-D Dataplots of the patient results display on the Patient Results screen. To view specific population and test panels as well as 3-D dataplots, select the **View All VCSn Graphics button** on the Patient Results screen. The View All VCSn Graphics screen displays.

Figure 6.19 View All VCSn Graphics Screen



The components on the View All VCSn Graphics dialog box are described below.

Component	Function
Data Group Box	Three radio buttons allow you to select data to view: DIFF, NRBC, or RETIC.
Type Group Box	Three radio buttons allow you to select which graphics to view: 2D dataplots, Surface Plots, or a 3-D Cube.
Analysis Group Box	This group box applies to Surface Plots and 3-D Cube. It is disabled for 2D dataplots.Three buttons allow you to Rewind, Play, and Fast Forward. **Rewind**: Resets the graphic to the beginning of data collection (time = 0). No data displays. **Play**: Graph updates with incoming data in an animated fashion. Starting at time=0 and proceeding until time=end, the data displays in the order that it was collected.

Component	Function
	Fast Forward: Resets the graphic to the end of data collection. All data displays.
View Angle Group Box (disabled for 2-D Surface Plots)	Six buttons allow you to select the angle of Surface plots and 3D Cubes. You can also use the mouse to click and drag over the graphic to change the view angle. **Reset**: Resets the view back to the default angle. **Auto Rotate**: Selecting this button sets the graphic into rotational motion and selecting it again stops the motion.
Display Populations	Enabled for all display types. Allows you to select populations to include in or remove from the graphic.

View VCSn Graphics

1 Select a test panel from the **Data** panel option buttons:

- **Diff**
- **NRBC**
- **Retic**

2 Select a type of graphic from the **Type** panel option buttons:

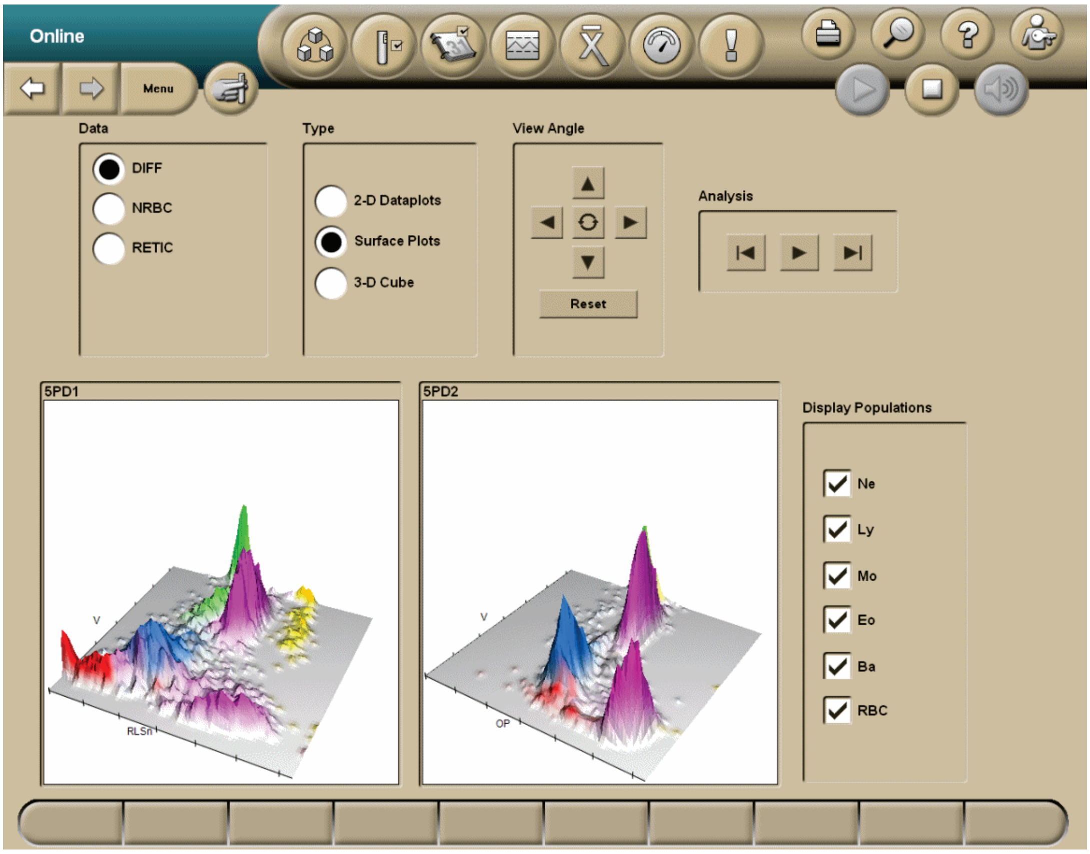
- **2-D Dataplots**
- **Surface Plots**
- **3-D Cube**

3 In the **Display Populations** panel, uncheck populations that you do not want to display. (These check boxes are automatically checked by default.)

4 If you selected **Surface Plot** or **3-D Cube**, use the **View Angle** and **Analysis** navigation buttons to change your view of the graphic.

NOTE Select the **Circular Arrow** button to rotate the graphic in a continuous circle. To stop the rotating graphic, select the Circular Arrow button again. The **Analysis** buttons allow you to view the accumulation of populations.

Figure 6.20 Surface Plots

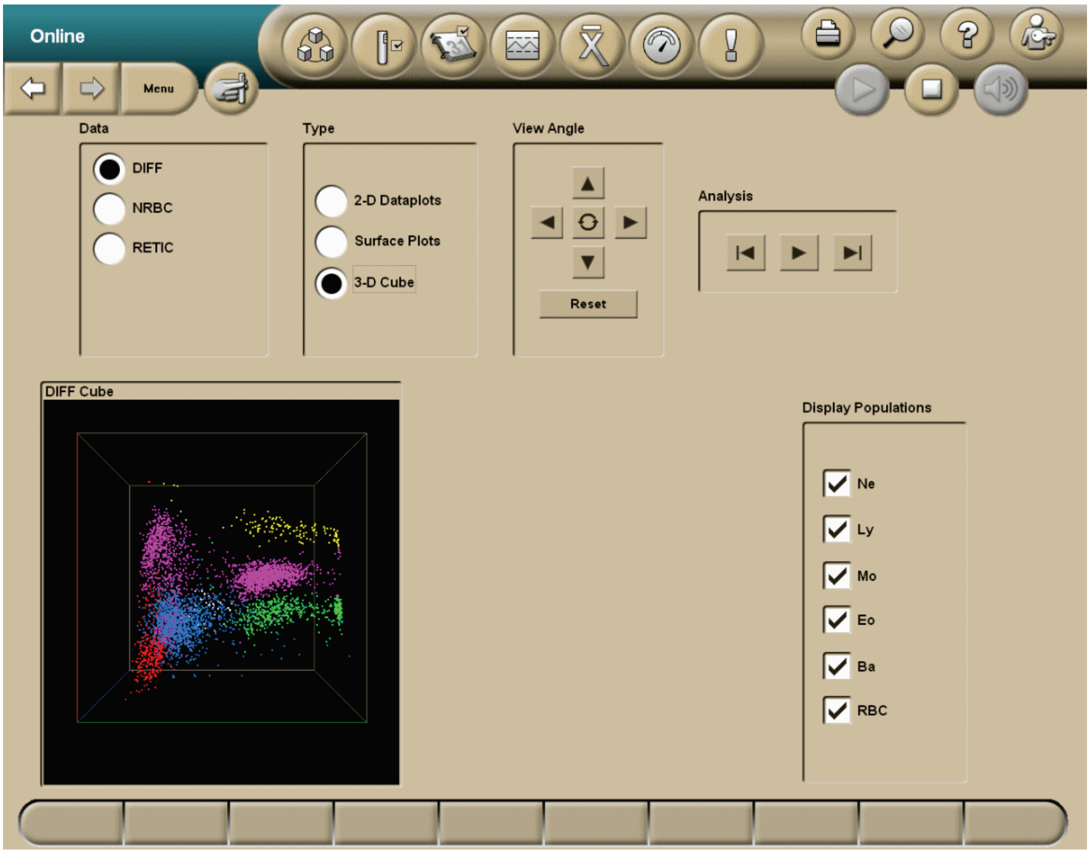


Data
● DIFF
○ NRBC
○ RETIC

Type
○ 2-D Dataplots
● Surface Plots
○ 3-D Cube

Display Populations
☑ Ne
☑ Ly
☑ Mo
☑ Eo
☑ Ba
☑ RBC

Figure 6.21 3-D Cube



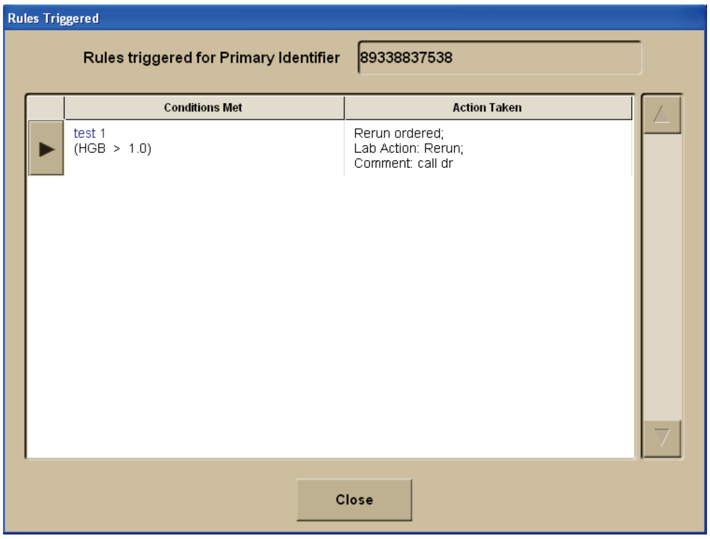
Data: ● DIFF ○ NRBC ○ RETIC

Type: ○ 2-D Dataplots ○ Surface Plots ● 3-D Cube

Display Populations: ☑ Ne ☑ Ly ☑ Mo ☑ Eo ☑ Ba ☑ RBC

View Rules Triggered (Patient Results > More > Rules Triggered)

Figure 6.22 Rules Triggered Dialog Box



Rules triggered for Primary Identifier: 89338837538

Conditions Met	Action Taken
test 1 (HGB > 1.0)	Rerun ordered; Lab Action: Rerun; Comment: call dr

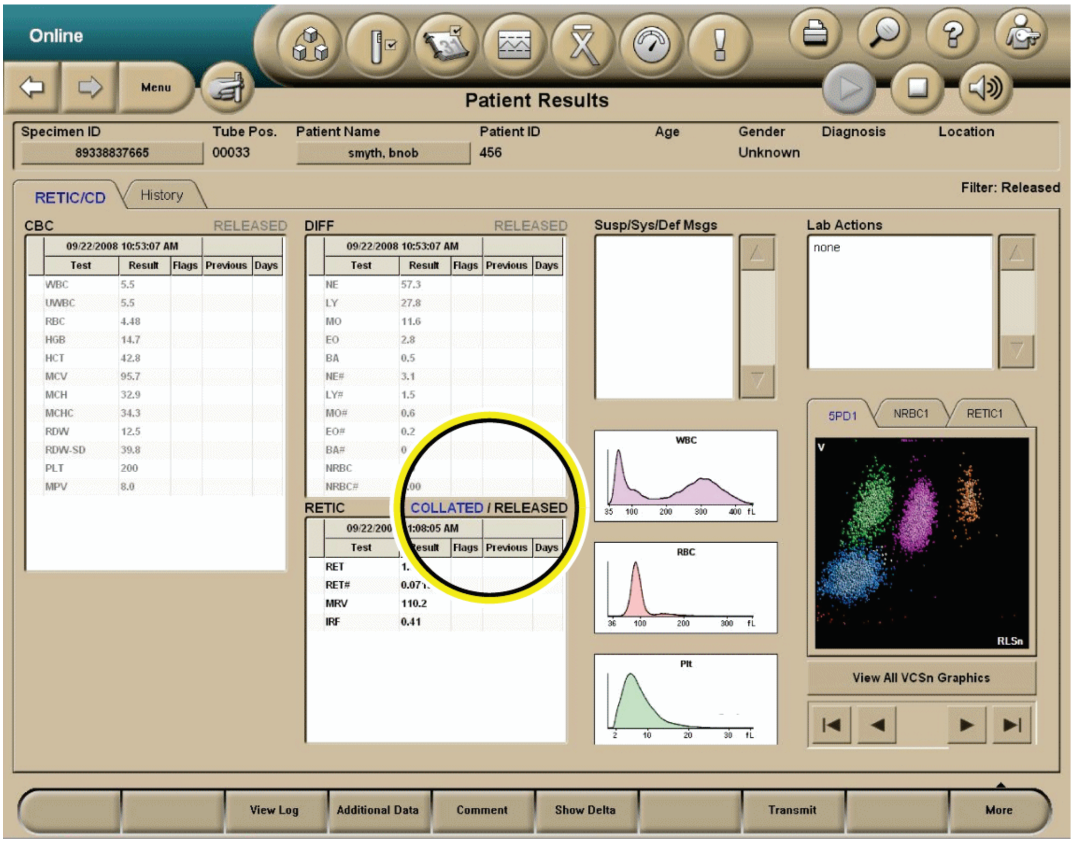
View Collation(Patient Results > More > View Collation)

Collation enables the addition of a Retic panel to a previously analyzed and released C or CD panel for a specific patient. The Retic panel order that is added must have the same Specimen ID and Patient ID of the specimen (C or CD) released.

After analysis of the added Retic panel the Patient Results screen will display the C or CD results with the added Retic results. The display will state that the results were collated.

Refer to Collation (Menu > Setup > Flagging/Rules > Collation) in the Setup chapter for instructions on enabling Auto Collation. From the Collated view, select **More** > **View Source** to display the source on the Patient Results screen.

Figure 6.23 Collated Patient Results Example



Specimen ID	Tube Pos.	Patient Name	Patient ID	Age	Gender	Diagnosis	Location
89338837665	00033	smyth, bnob	456		Unknown		

Filter: Released

CBC RELEASED

Test	Result	Flags	Previous	Days
09/22/2008 10:53:07 AM				
WBC	5.5			
UWBC	5.5			
RBC	4.48			
HGB	14.7			
HCT	42.8			
MCV	95.7			
MCH	32.9			
MCHC	34.3			
RDW	12.5			
RDW-SD	39.8			
PLT	200			
MPV	8.0			

DIFF RELEASED

Test	Result	Flags	Previous	Days
09/22/2008 10:53:07 AM				
NE	57.3			
LY	27.8			
MO	11.6			
EO	2.8			
BA	0.5			
NE#	3.1			
LY#	1.5			
MO#	0.6			
EO#	0.2			
BA#	0			
NRBC				
NRBC#	00			

RETIC COLLATED / RELEASED

Test	Result	Flags	Previous	Days
09/22/200 1:08:05 AM				
RET	1.			
RET#	0.07			
MRV	110.2			
IRF	0.41			

Susp/Sys/Def Msgs

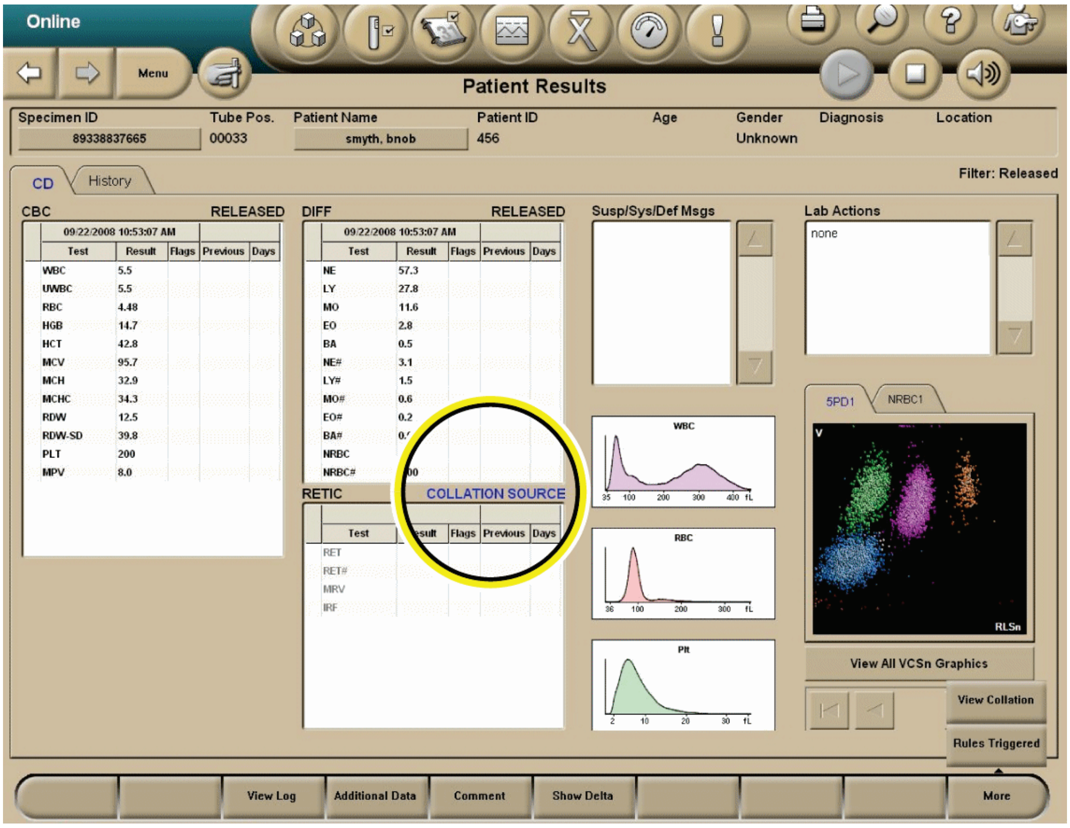
Lab Actions
none

View Source (Patient Results > More > View Source)

If the current specimen is collated, select View Source to shift the current specimen being viewed to the specimen used as the source of the collation. From the collation source view of the Patient Results screen, select **More** > **View Collation** to return to the original collated specimen.

NOTE If the screen is in dynamic mode, the screen will be locked. The screen will remain locked when the screen returns to the original collated specimen, until unlocked by the operator.

Figure 6.24 Collation Source on the Patient Results Screen



Specimen ID	Tube Pos.	Patient Name	Patient ID	Age	Gender	Diagnosis	Location
89338837665	00033	smyth, bnob	456		Unknown		

Filter: Released

CBC RELEASED

09/22/2008 10:53:07 AM

Test	Result	Flags	Previous	Days
WBC	5.5			
UWBC	5.5			
RBC	4.48			
HGB	14.7			
HCT	42.8			
MCV	95.7			
MCH	32.9			
MCHC	34.3			
RDW	12.5			
RDW-SD	39.8			
PLT	200			
MPV	8.0			

DIFF RELEASED

09/22/2008 10:53:07 AM

Test	Result	Flags	Previous	Days
NE	57.3			
LY	27.8			
MO	11.6			
EO	2.8			
BA	0.5			
NE#	3.1			
LY#	1.5			
MO#	0.6			
EO#	0.2			
BA#	0.			
NRBC				
NRBC#	00			

RETIC COLLATION SOURCE

Test	esult	Flags	Previous	Days
RET				
RET#				
MRV				
IRF				

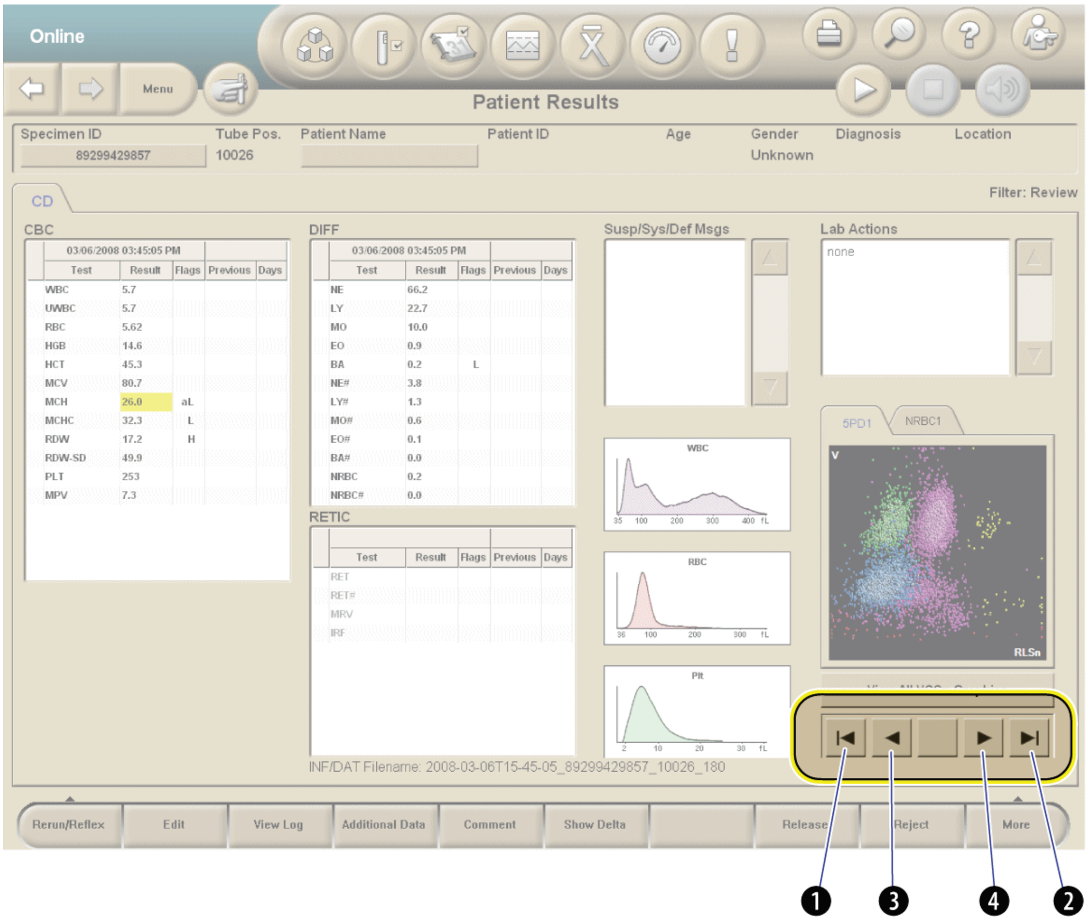
Lab Actions

none

View Previous or Next Patient Results

You can view previous or next patient results from the Patient Results screen using the navigation buttons at the bottom right hand corner of the screen.

Figure 6.25 Navigation Buttons on the Patient Results Screen



Specimen ID	Tube Pos.	Patient Name	Patient ID	Age	Gender	Diagnosis	Location
89299429857	10026				Unknown		

CBC

03/06/2008 03:45:05 PM				
Test	Result	Flags	Previous	Days
WBC	5.7			
UWBC	5.7			
RBC	5.62			
HGB	14.6			
HCT	45.3			
MCV	80.7			
MCH	26.0	aL		
MCHC	32.3	L		
RDW	17.2	H		
RDW-SD	49.9			
PLT	253			
MPV	7.3			

DIFF

03/06/2008 03:45:05 PM				
Test	Result	Flags	Previous	Days
NE	66.2			
LY	22.7			
MO	10.0			
EO	0.9			
BA	0.2	L		
NE#	3.8			
LY#	1.3			
MO#	0.6			
EO#	0.1			
BA#	0.0			
NRBC	0.2			
NRBC#	0.0			

RETIC

Test	Result	Flags	Previous	Days
RET				
RET#				
MRV				
IRF				

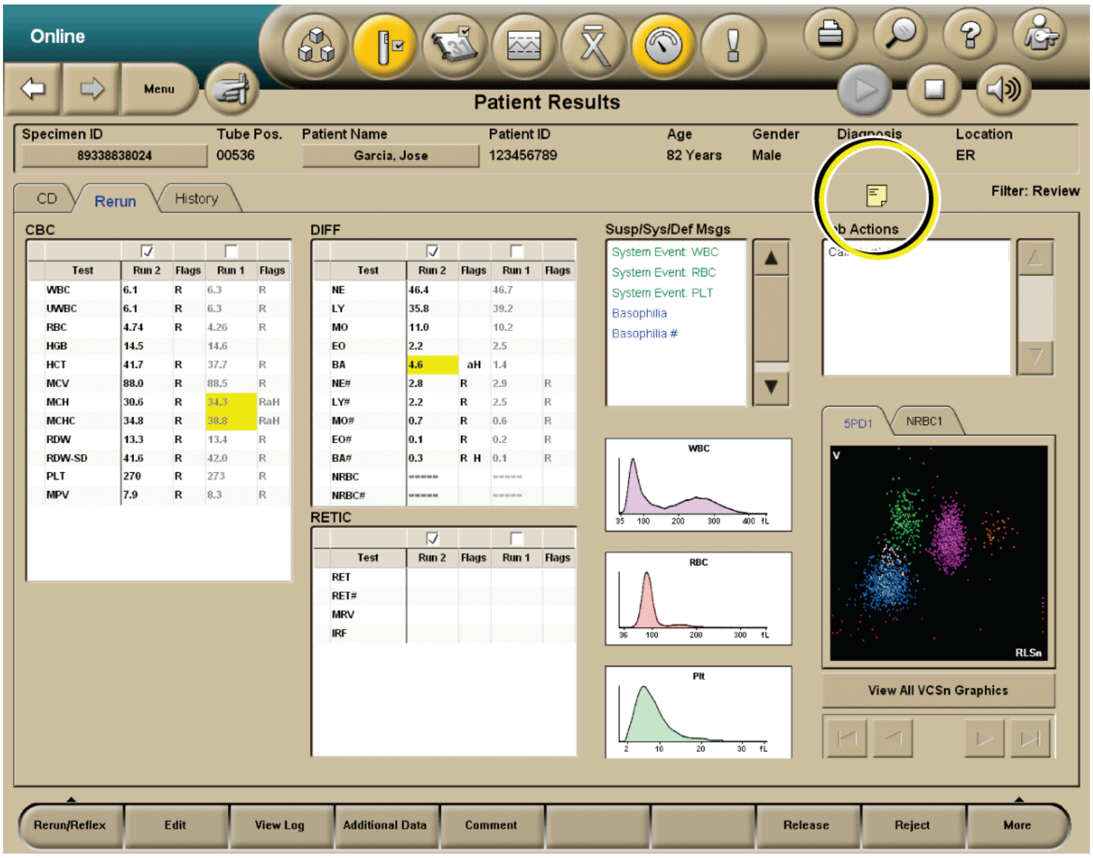
INF/DAT Filename: 2008-03-06T15-45-05_89299429857_10026_180

1. First result in the database.
2. Last result in the database.
3. Previous
4. Next

View Rerun Tab

A Rerun tab displays on the Patient Results screen if a Rerun has occurred.

Figure 6.26 Patient Results - Rerun Tab



Specimen ID: 89338838024
Tube Pos.: 00536
Patient Name: Garcia, Jose
Patient ID: 123456789
Age: 82 Years
Gender: Male
Diagnosis:
Location: ER

CBC

	☑		☐	
Test	Run 2	Flags	Run 1	Flags
WBC	6.1	R	6.3	R
UWBC	6.1	R	6.3	R
RBC	4.74	R	4.26	R
HGB	14.5		14.6	
HCT	41.7	R	37.7	R
MCV	88.0	R	88.5	R
MCH	30.6	R	34.3	RaH
MCHC	34.8	R	38.8	RaH
RDW	13.3	R	13.4	R
RDW-SD	41.6	R	42.0	R
PLT	270	R	273	R
MPV	7.9	R	8.3	R

DIFF

	☑		☐	
Test	Run 2	Flags	Run 1	Flags
NE	46.4		46.7	
LY	35.8		39.2	
MO	11.0		10.2	
EO	2.2		2.5	
BA	4.6	aH	1.4	
NE#	2.8	R	2.9	R
LY#	2.2	R	2.5	R
MO#	0.7	R	0.6	R
EO#	0.1	R	0.2	R
BA#	0.3	R H	0.1	R
NRBC	-----		-----	
NRBC#	-----		-----	

RETIC

	☑		☐	
Test	Run 2	Flags	Run 1	Flags
RET				
RET#				
MRV				
IRF				

System Event: WBC
System Event: RBC
System Event: PLT
Basophilia
Basophilia #

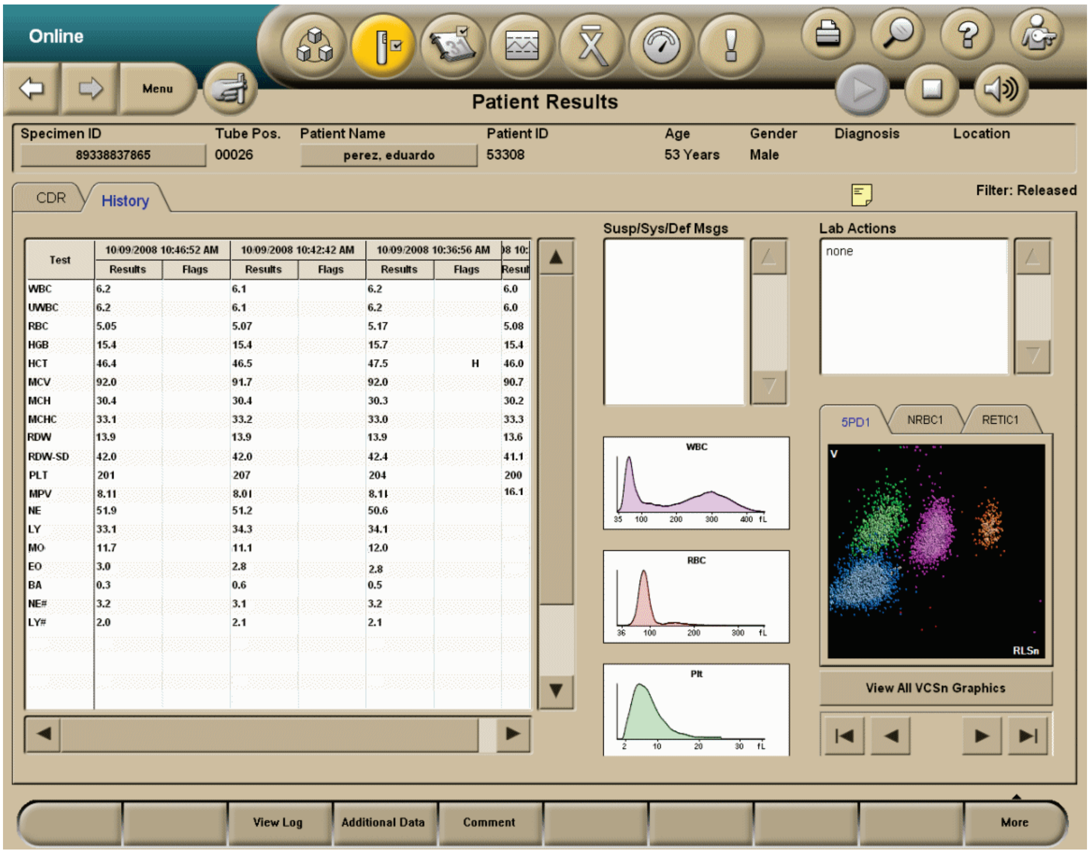
On the Rerun tab:

- Comments are indicated by the Comment icon at the top right of the Patient Results screen.
- Rerun results are associated with the primary specimen identifier.
- The most recent run is on the left.
- You can view up to three reruns.
- The graphics, comment, lab actions and messages are displayed for the checked run. Use the check box to toggle between runs.
- Local navigation buttons function for the checked results.

View History Tab

A History tab displays on the Patient Results screen if one or more released specimens are associated with a patient.

Figure 6.27 Patient Results - History Tab



Specimen ID	Tube Pos.	Patient Name	Patient ID	Age	Gender	Diagnosis	Location
89338837865	00026	perez, eduardo	53308	53 Years	Male		

Test	10/09/2008 10:46:52 AM		10/09/2008 10:42:42 AM		10/09/2008 10:36:56 AM		08 10:
	Results	Flags	Results	Flags	Results	Flags	Resul
WBC	6.2		6.1		6.2		6.0
UWBC	6.2		6.1		6.2		6.0
RBC	5.05		5.07		5.17		5.08
HGB	15.4		15.4		15.7		15.4
HCT	46.4		46.5		47.5	H	46.0
MCV	92.0		91.7		92.0		90.7
MCH	30.4		30.4		30.3		30.2
MCHC	33.1		33.2		33.0		33.3
RDW	13.9		13.9		13.9		13.6
RDW-SD	42.0		42.0		42.4		41.1
PLT	201		207		204		200
MPV	8.11		8.01		8.11		16.1
NE	51.9		51.2		50.6		
LY	33.1		34.3		34.1		
MO	11.7		11.1		12.0		
EO	3.0		2.8		2.8		
BA	0.3		0.6		0.5		
NE#	3.2		3.1		3.2		
LY#	2.0		2.1		2.1		

On the History tab:

- History is based on Patient ID.
- You can view up to three analyses from the same Patient ID. The three analysis are the three most recently released results.
- You can see the current run (the selected run for the most current results if more than one run is available).
- Graphics, comments, lab actions and messages are shown for the result set highlighted in blue

Reflex

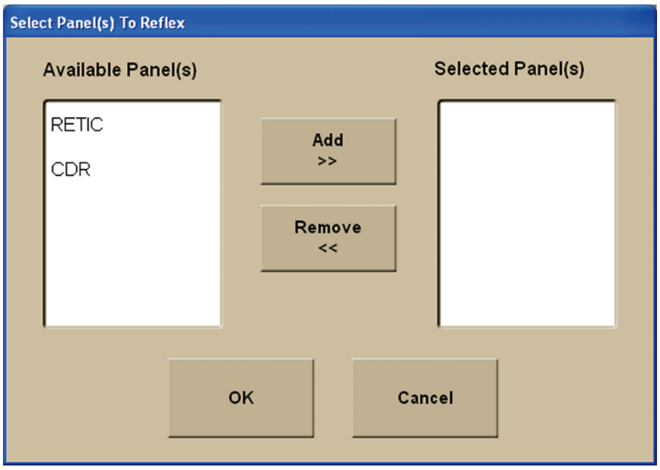
After reviewing patient results, you can run a test that you did not already order for a specimen, but would like to run based on the results, doctor's orders, or decision rules. Running a test that has not already been ordered is called running a Reflex analysis.

The instructions that follow are for ordering a Reflex manually. Reflex tests can also be ordered through Decision Rules and in downloads from a host.

1 Select **Reflex**/**Rerun** > **Reflex** on the Patient Results screen to display the Select Panels to Reflex pop-up window.

NOTE You can only reflex a panel that has not already been run on a test order.

Figure 6.28 Select Panel(s) to Reflex Dialog Box



2 Select from the list of available panels and then select the **Add** button.

3 Select **OK** to run the reflex. If the specimen is still "active" in the system, the Reflex will run automatically. If the specimen is in the output buffer, you need to retrieve it and place the specimen in the input buffer.

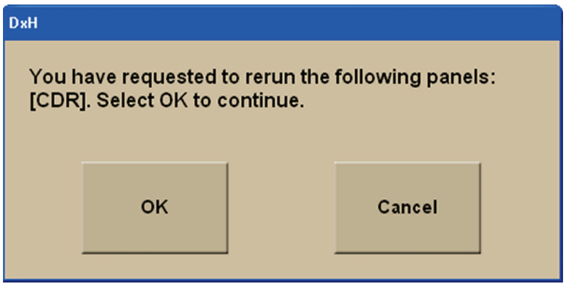
Rerun

After reviewing patient results, you can rerun a patient sample with the same ordered tests that were originally ordered. This type of analysis is called a Rerun. The Patient Results screen will display a **Rerun** tab when a Rerun is presented on the SPM.

The instructions that follow give details for ordering a Rerun manually. Reruns can also be initiated through Decision Rules and downloads from a host.The Rerun/Reflex button also allows you the option to Cancel any Rerun or Reflex panels that pending. Reruns cannot be ordered from an LIS.

1 Select **Reflex**/**Rerun** > **Rerun** to rerun the sample.

Figure 6.29 Rerun Dialog Box



You have requested to rerun the following panels: [CDR]. Select OK to continue.

2 Select **OK** to rerun the panels or **Cancel** to exit the dialog box without running the panels. If you select OK and the specimen is still "active" in the system, the Rerun will run automatically. If the specimen is in the output buffer, you need to retrieve it and place the specimen in the input buffer.

View Log

Refer to APPENDIX C for information on viewing History Logs.

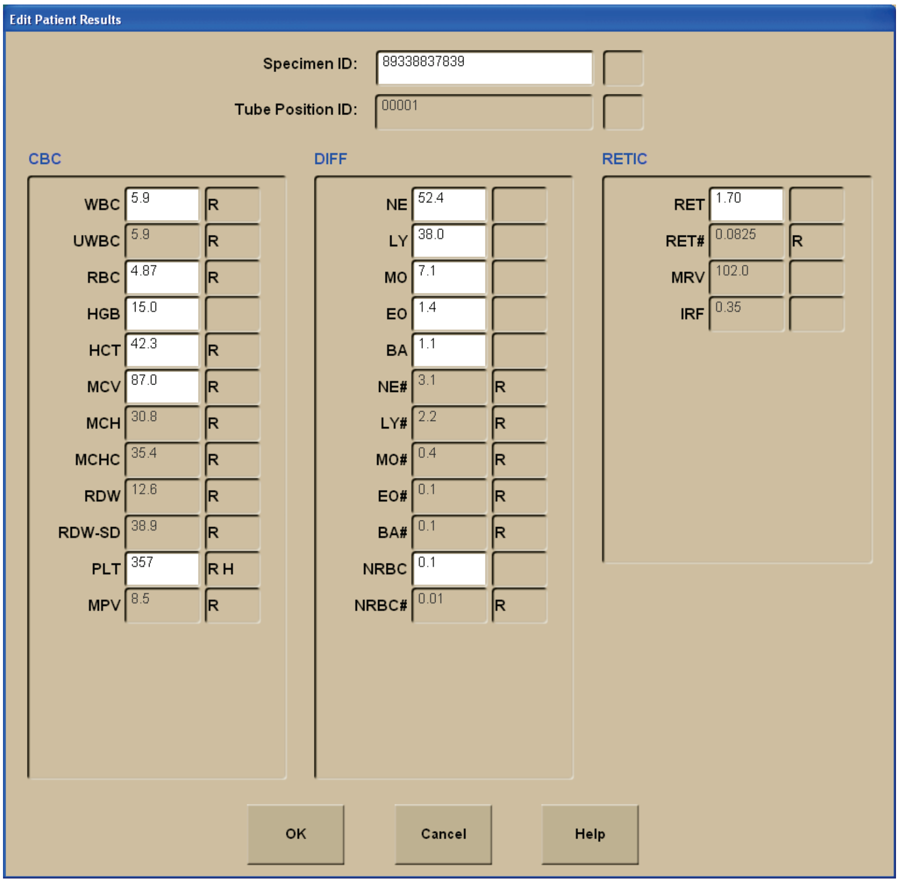
Edit Patient Results

NOTE The option to Edit is not available for Released Results.

Results that cannot be edited on the Edit Patient Results dialog box are grayed out. Edited results are flagged with 'E'. Results calculated from edited results are flagged 'e'.

1 From the Patient Results screen, select the **Edit** button to display the Edit Patient Results dialog box.

Figure 6.30 Edit Patient Results Dialog Box



Specimen ID: 89338837839

Tube Position ID: 00001

CBC		
WBC	5.9	R
UWBC	5.9	R
RBC	4.87	R
HGB	15.0	
HCT	42.3	R
MCV	87.0	R
MCH	30.8	R
MCHC	35.4	R
RDW	12.6	R
RDW-SD	38.9	R
PLT	357	R H
MPV	8.5	R

DIFF		
NE	52.4	
LY	38.0	
MO	7.1	
EO	1.4	
BA	1.1	
NE#	3.1	R
LY#	2.2	R
MO#	0.4	R
EO#	0.1	R
BA#	0.1	R
NRBC	0.1	
NRBC#	0.01	R

RETIC		
RET	1.70	
RET#	0.0825	R
MRV	102.0	
IRF	0.35	

CAUTION

Risk of misidentification. Do not use the characters # @ [\ ] ` { | } ~ ? " or * in demographics, including Specimen or Patient ID. Do not use spaces in the leading or trailing position of a Specimen or Patient ID.

2 Type in the available text boxes to edit data and select **OK**.

If the Patient ID or Specimen ID is edited, an **E** displays in the first position after the result. If the Patient ID was edited after the result was released, a **C** displays in the first position.

Processing Results

Overview

The DxH 800 System Manager includes Flags, Codes and Messages to alert you to issues with patient or control results. You can also customize the flagging of results and define rules for flagging sample results.

For instructions on setting up Flagging Limits, refer to Flagging Limits (Menu > Setup > Flagging/ Rules > Flags > Flagging Limits Tab) in the Setup chapter.

⚠ CAUTION

Flags, Codes and Messages are evaluated when the sample is analyzed. Flags are reevaluated when results are manually edited, or when new results are received for a pending sample. Flags (including Delta Checks) and Decision Rules are not reevaluated upon a change of flagging limits for results already in the database.

Beckman Coulter Inc. does not claim to identify every abnormality in all samples. Beckman Coulter suggests using all available options to optimize the sensitivity of instrument results. All options include:

- **Codes**
- **Flags**
- **Reference range limits**
- **Action limits**
- **Critical limits**
- **Delta checks**
- **Definitive messages**
- **System messages**
- **Suspect messages**
- **Status and exception messages**
- **Decision rules**

Beckman Coulter recommends avoiding the use of one type of message or output to summarize results or patient conditions. There may be situations where the presence of a rare event may fail to trigger a suspect message.

Look for data patterns when examining Flags, Codes and Messages. For example, determine if some, all or related sets of results (for example, WBC and differential results) exhibit Flags, Codes and

Messages. For some parameters, flagging occurs as a result of the flagging or editing of other parameters. In all cases, follow your laboratory's policy for reviewing the sample.

⚠ CAUTION

Refer to the Limitations section of the System Overview chapter for the interfering substances that might effect each parameter. Beckman Coulter recommends a slide review per your laboratory protocol. It is possible that the presence of a rare event cell can fail to trigger a suspect message.

Customization

You can customize Flags, Codes and Messages to suit the needs of your laboratory. You can define:

- Default reference ranges (high/low limits based on gender, age, location and specimen type)
- Action limits that exceed default reference ranges, or define an action limit alone
- Critical limits that exceed the action limits, or define a critical limit alone
- Definitive messages based on reference ranges, or values manually entered by the lab
- Delta checks

You do not need to define these all at once. You can use the default sets and gradually edit or add additional limits based on your laboratory's assessment.

You can also define Decision Rules to identify sample results that meet a set of criteria. For example, you can automatically generate a Lab Action and/or Comment message such as "Perform Retic Count" when the System Manager receives a sample result with a HGB < 10.5 and an MCV < 65.

Results can be configured to be held at the Review tab of the Worklist or transmitted to a host, as well as be selectively printed.

Flags

Flags appear to the right of the result. For some parameters, flagging occurs as a result of the flagging or editing of other parameters.

Flags in the following table are shown in order of placement on screens and printouts, with the highest priority flags at the top within each space.

A yellow background on the screen indicates results were above or below a reference range.

A red background on the screen indicates results exceeded an action or critical limit, or another flag was present.

Flags appear in one of four positions to the right of the result (as shown in Table 6.1). The flags are listed in order of priority within each space. It is possible to have flags in each of the four positions. For some parameters, flagging occurs as a result of the flagging or editing of other parameters.

Table 6.1 Flags

Flag & Position				Description
1	2	3	4	
E				Manual edit of a primary parameter.
e				Automatic edit of a calculated parameter.
+				Result above the measuring range.
-				Result below the measuring range.
R				Review the result. Special handling is required for editing a result flagged with R. Any parameter derived from an R-flagged parameter cannot be recalculated until the R-flagged parameter is edited. R flags may also indicate a System Message has occurred. Check the *message area on the patient result screen* and the History Log > General tab for details.
	c	L		Low critical limit exceeded.
	c	H		High critical limit exceeded.
	a	L		Low action limit exceeded.
	a	H		High action limit exceeded.
		H		High reference range limit exceeded.
		L		Low reference range limit exceeded.
			P	Partial aspiration detected during sample analysis. *
			N	Non-blood sample detected.*
			D	Delta check triggered.

* These flags are also associated with System Messages. See the section on System Messages in this chapter.

Codes

Codes appear in place of results when the system cannot generate results. Codes are also called non-numeric results.

Codes in the following table are shown in order of placement on screens and printouts, with the highest priority flags at the top within each space.

Table 6.2 Codes

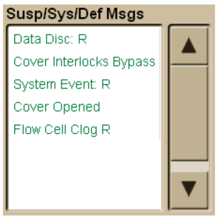
=====	Analysis was disabled at the configuration level of the System Manager (Menu > Setup > System> Analysis). For example: If NRBC is temporarily disabled, any results with an NRBC enumeration in the panel will display ===== in place of the NRBC values. The ===== persists in the database after the analysis has been re-enabled.*
xxxxx	Although available on a panel, this parameter was not enabled as a Test (Menu > Setup> Reporting> Tests) at the time of analysis; however, after this analysis, the parameter was enabled as a Test. For example: Sample *A* was analyzed for a CR panel, but the IRF and MRV were not enabled as Tests. Later, IRF and MRV were enabled as Tests; therefore, the system will not display the IRF and MRV parameters for CR panel results, but, for Sample *A*, xxxxx displays in place of a value for those parameters.
:::::	Flow cell clog was detected.*
-----	Total voteout occurred. No average histogram will appear for the affected parameter.
.....	Incomplete computation. May occur in place of calculated parameters because a voteout or overrange occurred for a primary parameter used in the calculation. Occurs when the instrument cover is opened.*
+++++	Result exceeds the operating range.
?????	Result is outside of the range of values that can be formatted for display.
#####	Results were rejected.

*These Codes are also associated with System or System Status Messages. See the sections on System Message and/or System Status Messages.

Messages that Appear with Results

Several types of messages are generated on the UniCel DxH 800 along with specimen results: Suspect, System, Status, Definitive and Exception.

The Suspect, System and Definitive messages display in the **Susp/Sys/Def Msgs** box just below the patient demographics at the top of the screen. Suspect messages are red; System Messages are green; and Definitive messages are blue. Messages are listed alphabetically within their type.



Data Disc: R
Cover Interlocks Bypass
System Event: R
Cover Opened
Flow Cell Clog R

The System Status Messages display below the patient demographics, and to the right of the tabs. Also displayed in this area are the Exceptions Message, (indicating that an exception has occurred for this specimen) and the Comment Icon (indicating that there are comments for this specimen). Exceptions are also displayed on the Additional Data screen.

Suspect

Suspect messages are generated by internal algorithms to convey that a clinical condition may exist with a specimen based on an abnormal cell distribution or population. Beckman Coulter recommends the review of results displaying a suspect message appropriate to your patient population and laboratory practice.

1.3.6. Įspėjamieji pranešimai - visi nurodyti (arba lygiaverčiai įspėjamieji pranešimai (flags)).

Laboratories may differ in their desired sensitivity to abnormal cell types or patterns. The DxH 800 provides the laboratory with the ability to adjust the sensitivity of several of the Suspect messages, to meet individual lab requirements. The sensitivity of the following suspect messages can be adjusted: Variant Lymphs, Left Shift and Immature Granulocytes. Left Shift can also be disabled. In order to optimize efficiency, Beckman Coulter, Inc. recommends completion of sensitivity and specificity studies using your sample population prior to adjusting Suspect message flagging sensitivity.

Suspect Message	Description
Abnormal Hemoglobin	Pattern characteristic of specimen with abnormal hemoglobin clearing observed during retic analysis
Cellular Inter	Pattern consistent with NRBC detection during a CBC only cycle. This Cellular Interference Suspect message is not associated with a Review (R) flag.
Dimorphic Reds	Evidence of the presence of at least two populations of red cells
Giant Platelets	Patterns characteristic of specimen containing Giant Platelets
Imm Grans	Pattern characteristic of specimen containing: a) metamyelocytes and myelocytes and/or promyelocytes, or b) myelocytes and/or promyelocytes without metamyelocytes.
Left Shift	Pattern is characteristic of specimen containing metamyelocytes, but without myelocytes, promyelocytes, or blasts.
LY Blast	Blasts in the Lymphocyte region of the dataplot
MO Blast	Blasts in the Monocyte region of the dataplot
NE Blast	Blasts in the Neutrophil region of the dataplot
NRBC	CBC and Diff pattern is characteristic of specimen with NRBCs. This Suspect message applies when the NRBC analysis is disabled but a CD or CDR cycle is run.
RBC Frag/ Microcytes	The specimen may contain red cell fragments and/or some microcytic red cells
Red Cell Agglut	Red cells may be clumped or display rouleaux on peripheral smear
Sickled Cells	Pattern characteristic of specimen containing irreversibly sickled cells
Variant LY	Pattern characteristic of specimen with variant lymphs, including mature lymphocytes such as those observed viral infections, as well as immature and/or abnormal lymphocytes.

System

All System messages are accompanied by R (Review) flags. Exceptions are the System messages associated with an Aspiration Error (P flag) and the Non-Blood Specimen message (N Flag).

1.3.6. Įspėjamieji pranešimai - visi nurodyti (arba lygiaverčiai įspėjamieji pranešimai (flags)).

A system message indicates an event occurrence that may affect the operation of the system, requires operator notification, or entry into a History Log.

System Message	Description
Abn Diff Pattern	Undefined abnormal Diff pattern observed during Diff analysis.
Abn NRBC Pattern	Undefined abnormal NRBC pattern observed during Diff analysis.
Abn RBC Pattern	Undefined abnormal RBC pattern observed during CBC analysis.
Abn Retic Pattern	Undefined abnormal Retic pattern observed during Diff analysis.
Abn TNC Pattern	Undefined abnormal TNC pattern observed during Body Fluid analysis.
Abn WBC Pattern	Undefined abnormal WBC pattern observed during any CBC analysis.
Aged Sample	Aged sample detected during Diff analysis.
AL2 Blank Voltage: N	AL2 blank voltages out of range during NRBC analysis.
AL2 Blank Voltage: R	AL2 blank voltages out of range during Retic analysis.
Bubbles	A specific Aspiration Error; P Flag.
Carryover	A specific Aspiration Error; P Flag.
Cellular Inter	Poor separation between a WBC population and interference. WBC correction was performed as a best estimation, and the WBC was flagged with R.
Cover Opened	The instrument cover was opened while the specimen was being analyzed. When the “Cover Opened” event occurs, the SPM immediately stops operation. The SPM is taken offline. If there was a sample in progress at the time of the event, the results for that sample sill report as incomplete.
Data Disc: D	Flow cell temporarily blocked during Diff data acquisition.
Data Disc: N	Flow cell temporarily blocked during NRBC data acquisition.
Data Disc: R	Flow cell temporarily blocked during Retic data acquisition.
Excessive Debris	The number of debris events too high compared to white events during Diff analysis.
Excessive Low DC Events	Too many low DC events during NRBC analysis.
Flow Cell Clog: D	Hardware detected a flow cell was clogged during Diff analysis.
Flow Cell Clog: N	Hardware detected a flow cell was clogged during NRBC analysis.
Flow Cell Clog: R	Hardware detected a flow cell was clogged during Retic analysis.
HGB Blank Shift	Hgb blank reading was inconsistent with previous values.
High Event Rate: D	High data event acquisition rate during Diff analysis.
High Event Rate: N	High data event acquisition rate during NRBC analysis.
High Event Rate: R	High data event acquisition rate during Retic analysis.
High OP Events: D	Too many high OP events during Diff analysis.
High RF Events	Too many events with maximum RF during Retic analysis.

1.3.6. Įspėjamieji pranešimai - visi nurodyti (arba lygiaverčiai įspėjamieji pranešimai (flags)).

System Message	**Description**
Low AL2 Events	Too many low AL2 events during NRBC analysis.
Low Event Rate: D	Low data acquisition rate during Diff analysis. †
Low Event Rate: N	Low data acquisition rate during NRBC analysis. †
Low Event Rate: R	Low data acquisition rate during Retic analysis .†
Low Events: D	Not enough good Diff events.
Low Events: N	Not enough good NRBC events.
Low Events: R	Not enough good Retic events.
Low Events: PLT	Low confidence in MPV, PDW, and PCT due to Low PLT count.
Low OP Events	Opacity mode location too low during Retic analysis.
Low RMALS Events	RMALS mode location too low during Diff analysis.
MCV Inter: PLT	Interference with MCV, RBC, and RDW and RDW-SD due to PLT.
MCV Inter: WBC	Low confidence in MCV due to interference from high WBC level.
MO-NE Overlap	Population labeled as neutrophils appeared in the monocyte region during Diff analysis.
NE-EO Overlap	Neutrophil and eosinophil populations were shifted or overlapped during Diff analysis.
No Aspiration	A specific Aspiration Error; P Flag.
Non-blood Specimen	The blood detector detected that a non-blood specimen was correctly aspirated. N Flag.
NRBC Interference	Interference in NRBC region can't be separated from NRBC during NRBC analysis.
NRBC-LY Overlap	Algorithm could not separate the NRBC and LY populations during NRBC analysis.
Nucleated Cells	Small WBC or NRBC interfered with the Retic analysis (observable on dataplot).
Partial Aspiration	A specific Aspiration Error; P Flag.
Platelet Clumps	Pattern is characteristic of specimen containing platelet clumps.
PLT Carryover	The estimated PLT carryover, based on the PLT from the preceding sample and the expected PLT carryover percent, was high enough to significantly affect the PLT results for the current specimen.
PLT Inter: Debris	Interference with smaller platelets.
RBC-PLT Overlap	Interference with larger platelets; may occur with the Giant Platelet Suspect message.
Range Error	Blood detector hardware error. Check the History Log.
Retic Inter: Debris	The debris population interfered with the Retic measurement.
Retic Inter: PLT	The platelet population interfered with the Retic measurement.
RET-RBC Overlap	The reticulocytes could not be clearly separated from the mature red cells.
System Event: D	Hardware parameters out of limit for some item that could affect Diff analysis (e.g. voltage, temperature, pressure)
System Event: HGB	Hardware parameters out of limit for some item that could affect HGB analysis (e.g. voltage, temperature, pressure).

1.3.6. Įspėjamieji pranešimai - visi nurodyti (arba lygiaverčiai įspėjamieji pranešimai (flags)).

System Message	**Description**
System Event: N	Hardware parameters out of limit for some item that could affect NRBC analysis (e.g. voltage, temperature, pressure).
System Event: PLT	Hardware parameters out of limit for some item that could affect PLT analysis (e.g. voltage, temperature, pressure).
System Event: R	Hardware parameters out of limit for some item that could affect Retic analysis (e.g. voltage, temperature, pressure).
System Event: RBC	Hardware parameters out of limit for some item that could affect RBC analysis (e.g. voltage, temperature, pressure).
System Event: TNC	Hardware parameters out of limit for some item that could affect WBC analysis (e.g. voltage, temperature, pressure).
System Event: WBC	Hardware parameters are out of limit for some item that could affect WBC analysis (e.g., a voltage, temperature, pressure), but results can still be generated.
TNC Carryover	The estimated TNC carryover, based on the uncorrected WBC or TNC from the preceding sample and the expected TNC carryover percent, was high enough to significantly affect the TNC results for the current specimen.
Undefined Population	A single population was found in the granulocyte region(s) of the dataplot.
Unidentified Events	Too many unclassified events were observed during Retic analysis.
Unknown Error	A specific Aspiration Error.
WBC Carryover	The estimated WBC carryover, based on the uncorrected WBC or TNC from the preceding sample and the expected WBC carryover percent, was high enough to significantly affect the WBC results for the current specimen.
WBC Inter: HGB	WBC too high for good HGB correction.
WBC Inter: MCV	WBC too high for good MCV correction.

† If the acquisition rate is severely affected, the test reports a FULL CLOG (:::::).

Definitive

Definitive messages appear for results based on exceeded limits configured as part of an individual flagging set. Definitive messages can be created by copying reference ranges, or by manual entry of your own message definition. Refer to Definitive Messages (Advanced Search Filter Configuration> Insert> Result> Definitive Messages) in the Setup chapter for instructions.

Some definitive limits can be reported with gradient ranges (1+, 2+, 3+). Limits for definitive messages with gradients that are defined only at Level 1 (1+) will print without the gradient message (that is, Microcytosis as opposed to Microcytosis 1+).

HGB/HCT Check

The H&H Check Failed is a Definitive Message that can be enabled using the H&H Check button on the Flagging Limits tab of the Flags Setup screen. Refer to the H&H Check (Menu > Setup > Flagging/ Rules > Flags > Flagging Limits > H&H Check) section of the Setup chapter for instructions.

The values for agreement are defaulted to 3.0. Any value between 2.0 and 4.0 can be entered.

1.3.6. Įspėjamieji pranešimai - visi nurodyti (arba lygiaverčiai įspėjamieji pranešimai (flags)).

Definitive Message	**Description**
Anemia	Low RBC or Low HGB
Basophilia	High BA (percentage)
Basophilia#	High BA #
Eosinophilia	High EO (percentage)
Eosinophilia#	High EO #
Erythrocytosis	High RBC
Hypochromia (1+, 2+, 3+)	Low MCHC
Leukocytosis	High WBC
Leukopenia	Low WBC
Lymphocytosis#	High LY#
Lymphopenia	Low LY (percentage)
Monocytosis	High MO (percentage)
Monocytosis#	High MO#
Neutropenia	Low NE (percentage)
Neutrophilia#	High NE#
Anisocytosis (1+, 2+, 3+)	High RDW
Large Platelets	High MPV
Small Platelets	Low MPV
Thrombocytopenia	Low PLT
Thrombocytosis	High PLT
Lymphocytosis	High LY (percentage)
Lymphopenia#	Low LY#
Macrocytosis (1+, 2+, 3+)	High MCV
Microcytosis (1+, 2+, 3+)	Low MCV
Neutrophilia	High NE (percentage)
Neutropenia#	Low NE#
Reticulocytosis	High RET
Reticulocytosis#	High RET#
NRBCs Present	Exceeds defined NRBC

System Status Messages

System status messages indicate that the instrument was operating in some non-standard state when a specimen was analyzed. These states are usually the result of some user action (e.g., operating with the cover opened). They do not indicate that any problem was seen when the specimen was analyzed; instead, they indicate that the system was being operated in a manner in which some problems might not be detected.