KAISER PERMANENTE®

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DATA INNOVATION INSTRUMENT MANAGER TRAINING GUIDE

1. SYSTEM OVERVIEW

- Data Innovation Instrument Manager (IM) is in Citrix National Application Portal.

From the desktop, locate the Regional Application Portal icon and double-click it. Alternatively, click the start menu and select the Regional Applications Portal.	
Click on the National Applications Portal link.	National Applications Portal
Double-click on the Instrument Manager SCAL DR (1) icon.	 Validation (1)
Double-click on the Instrument Manager SCAL icon.	 Instrument Manager_SCAL
Log in using your NUID for your User ID and your Windows password for the password. Click the "Accept and Login" button.	

DATA INNOVATION INSTRUMENT MANAGER TRAINING GUIDE

2. STARTING AND EXITING INSTRUMENT MANAGER

- Instrument Manager is the flagship connectivity from Data Innovation (Middleware)
- MAIN MENU (The menu displayed might be different depending on user access)

1. System
2. Configuration
3. Diagnostics
4. Security
5. Specimen Management
6. Reports
7. Window
8. Help
9. Launch DI Gateway

- **SYSTEM**

Logon	It takes you back to the Login window
Logoff	Logoff user from the Instrument Manager
Change Language Locale	Change the IM Locale to other departments if applicable (**Keep at Kaiser Southern California Hematology**)
Status	Opens a status screen showing interfaces/instrument statuses
Shutdown	Shutdown the interface of IM (**Do not Shutdown**)
Status of Instrument Manager Session	Show the status of the IM session that is currently running.
Triggered Notifier Events	
Exit	Exit the IM window.

- **CONFIGURATION**
  Changes the configuration, setting, and rules of the IM (Super Users & DI operators ONLY)

- **DIAGNOSTICS**

Communication Trace	Comm Trace troubleshoots the system and monitors the devices' external communication.
List Communications Trace Status for all Connection	
Loopback Test	

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Specimen Event Log	Specimen Event Logs hold all the information regarding that specimen.
System Log	IM's diagnostic feature can examine the system's configuration changes. The system log records these changes and information about them and who made them.

- **SECURITY**

System Setup	
Users and Group	
Reset all form layouts.	

- **SPECIMEN MANAGEMENT**

SM Workspace	
Patient and Order Management	
Rapid Order Entry	
Manual Result Entry	

- **REPORTS**
  Reports are accessible by Superuser with Admin Access and DI operators only.

- **WINDOW**
  All the options contained in this menu correspond to customizing how your window will look.

- **HELP**
  This menu contains Help resources such as the user guide and information about the instrument manager.

- **LAUNCH GATEWAY**

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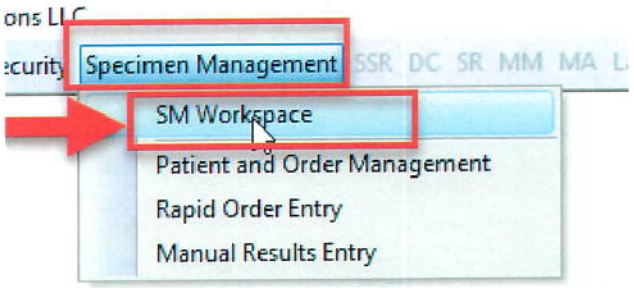
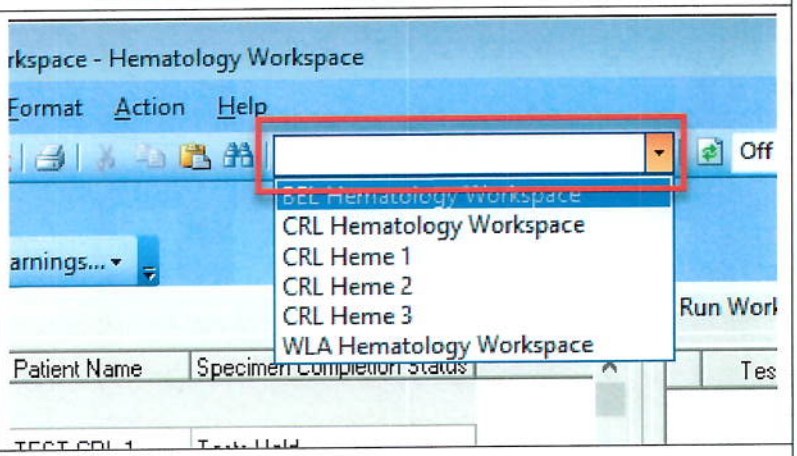
3. SPECIMEN MANAGEMENT WORKSPACE

- **Workspace**
  Specimen management has access to all the workspaces available in the SCAL region. Please make sure to select the appropriate workspace for your site.

From the main menu, click on Specimen Management and select the SM Workspace.	
Click on the drop-down menu once the workspace window opens.	
Select the instrument workspace corresponding to your site from the drop-down menu.	

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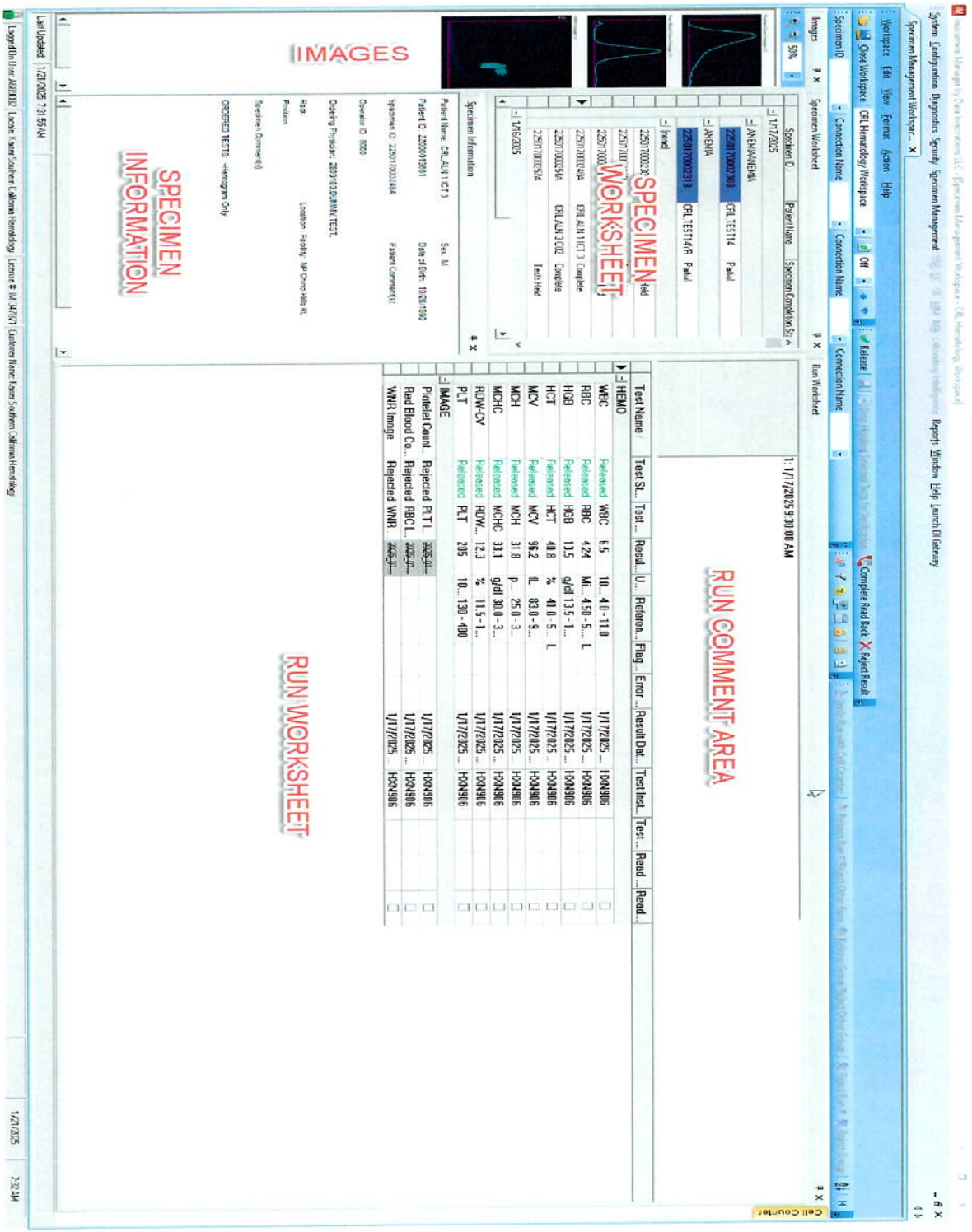
SM Workspace



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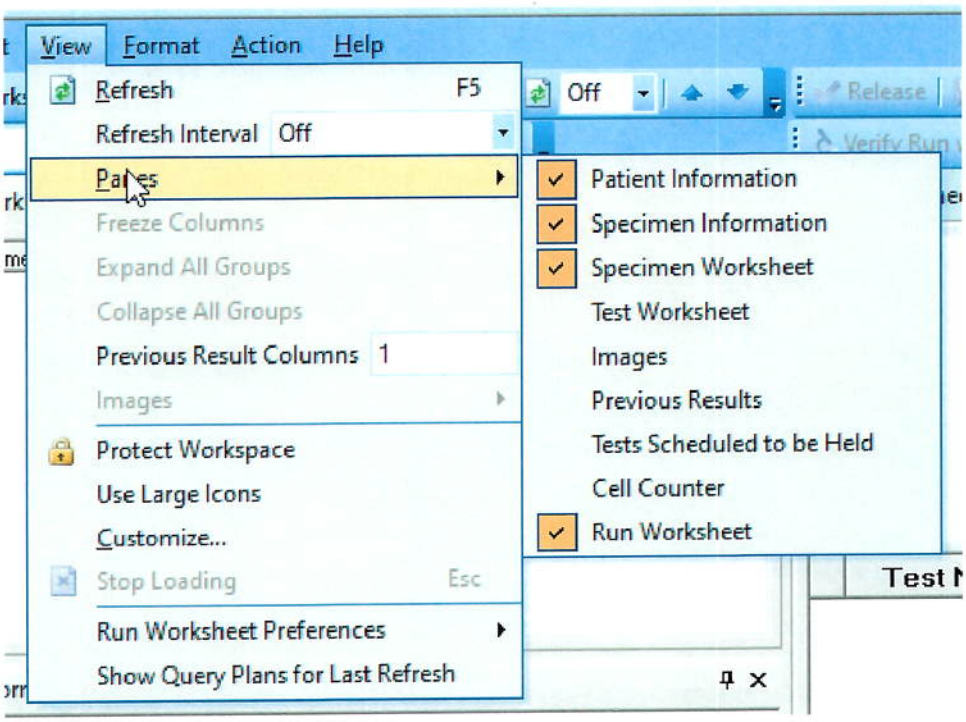
- **VIEW > PANES**
  The View > Pane's menu opens the different windows available in the SM Workspace



1. **IMAGES**
   This PANE shows the histogram associated with the sample ID selected

2. **SPECIMEN WORKSHEET**
   This PANE will display all the sample IDs based on the specimen status (Test Held, Partial, or Completed). It also shows the Order priority (STAT, Routine), Specimen ID, Patient Name, and date.

3. **SPECIMEN INFORMATION**
   This PANE will display the selected patient's demographic information. This information includes the Patient's Name, Patient ID (MRN), Specimen ID, Operator ID, Sex, Date of Birth, Patient Comments, Ordering Physician, Rack, and Position.

4. **CELL COUNTER**

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This PANE will display the Cell Counter window. The cell counter window is used for CBC Differential, Morphology, and platelet estimate. It can also perform body fluid differential, fluid assessment, and manual cell count.

5. **PREVIOUS RESULTS**
   This PANE will display the last result for the past thirty (30) days of patient run.

6. **RUN WORKSHEET**
   This PANE will display the test results, different runs, release or rejected results, appropriate flags, operator instructions, and information on troubleshooting the specimen.

- **COLOR-CODED**
  IM will highlight sample IDs and results with a different color to assist users in identifying varying statuses.

No Color		Routine
Gray		Cancelled Test
Purple		Critical Result
Pink		Anemia Panel
Red		STAT Order
Green		Delta Checks
Orange		Held For Verification

- Sample Location
- Specimen Worksheet
- Run Worksheet
- Run Comment
- Test Instrument Field
- Result and Result Status Codes

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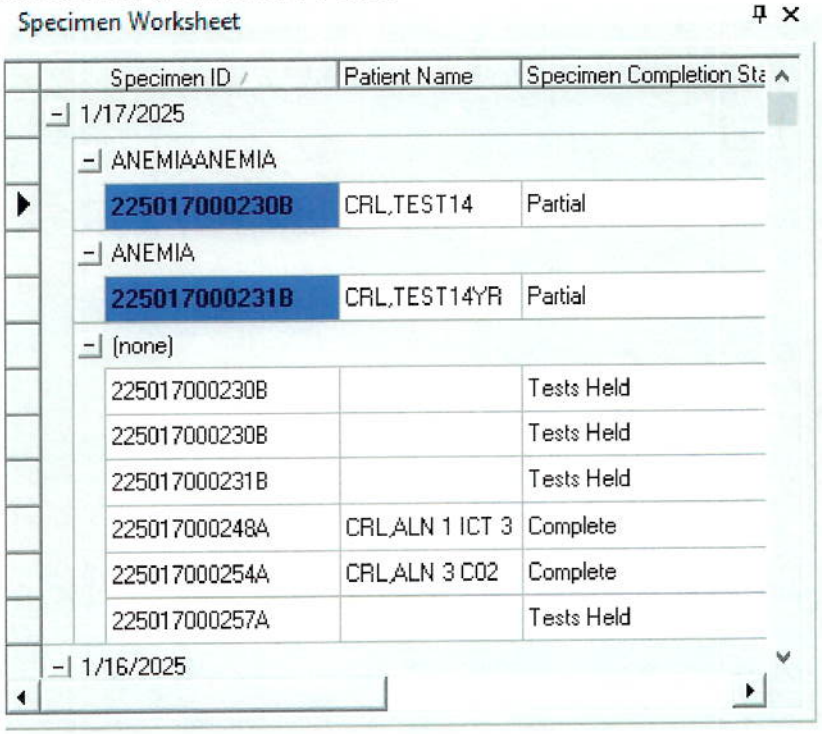
4. RESULT VALIDATION

- When running samples on the XN analyzers, the analyzer queues DI for any discrete test for the specimen ID being run. Results are sent back to the instrument manager, and based on the onboard rules, the specimen IDs are either completed, held, or partially released.
- A list of the Specimen IDs being held or partially released can be found on the SPECIMEN WORKSHEET Pane.



- Click on the Specimen ID to retrieve the results, which will be displayed on the RUN WORKSHEET Pane

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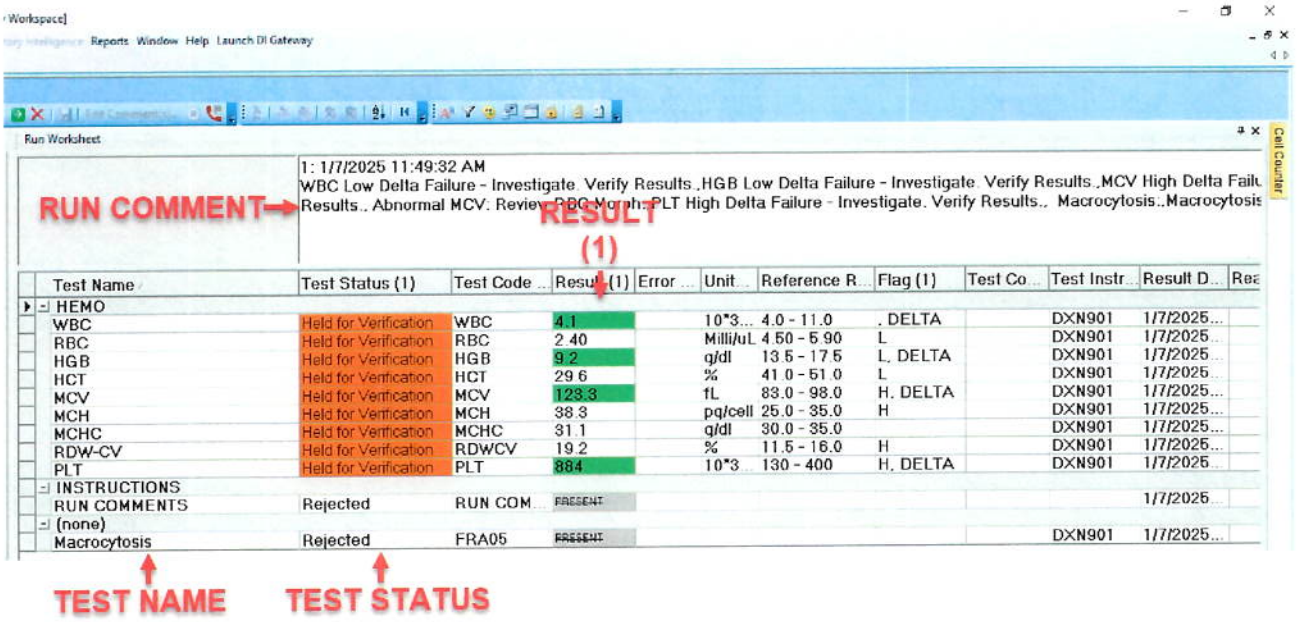

- **RUN COMMENT**
  The Run Comment area of the Run Worksheet will display flags and rule comments for the displayed specimen. Like WAM's OPAlert
- **TEST NAME**
- **TEST STATUS**
  The Test status will display the status of each test or test group.
  1. **Held for Verification**
  2. **Rejected**
  3. **Released**
- **RESULT**
  The result field is also denoted with a number corresponding to the run number. Subsequent numbers will denote multiple runs or repeats.
- **UNIT**
- **REFERENCE RANGE**

When validating results in the workspace, deciding what needs to be rejected versus released before results are released to Cerner is vital. **Once you have done so, rejecting results you do not want is preferred before releasing any that you do. This is most important in the following scenarios.**

- **Multiple runs from the instrument.**
  Example: An individual CBC parameter reflexed a run based on individual rules. You would need first to reject the run that you do not want to be released before you release all other results.

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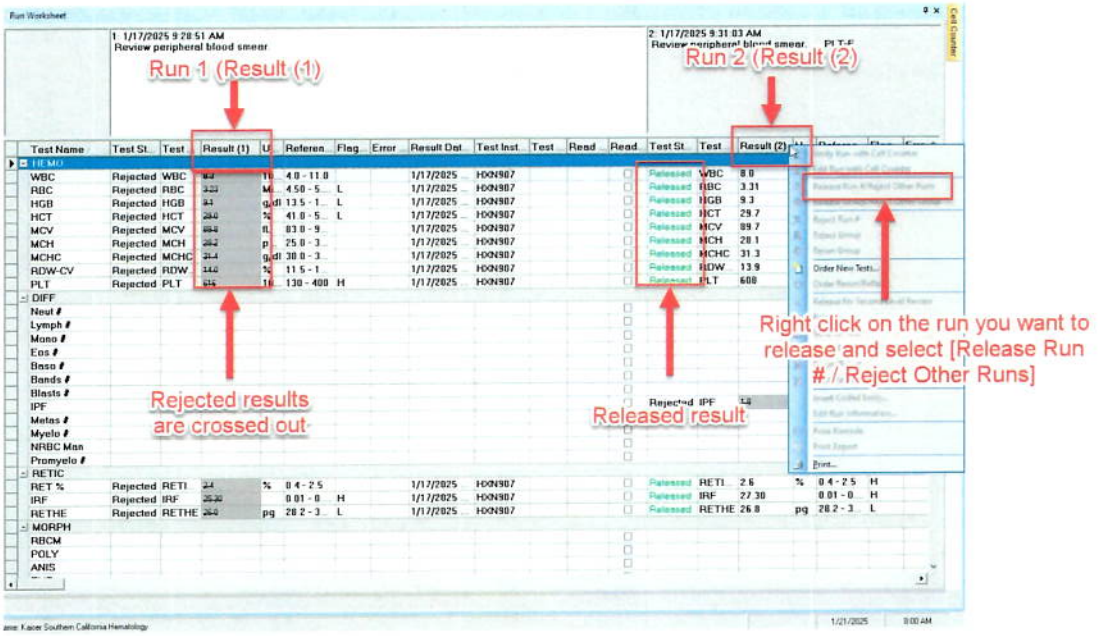
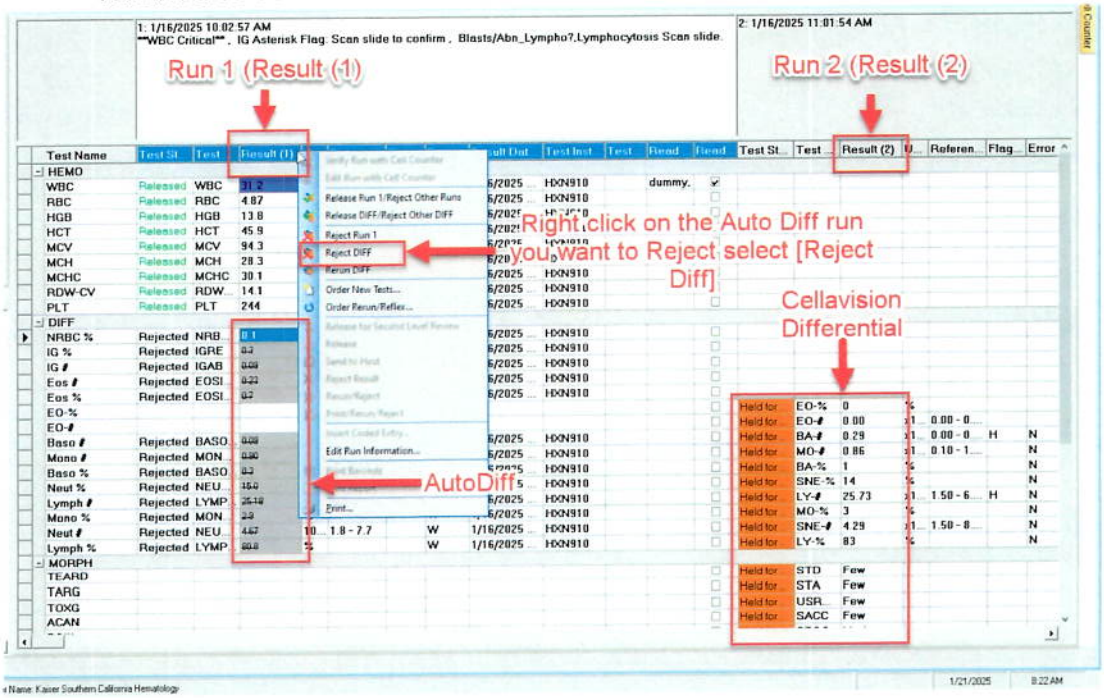


- Any peripheral smear sent to Cellavision will show as a separate run. If a manual differential were performed in Cellavision, you would want to reject the auto diff from the CBC run that you want to release so that the manual differential is released to Cerner.



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- Using the IM Cell Counter to perform a manual differential. If a manual differential were performed in the IM Cell Counter, you would want to reject the auto diff from the CBC run that you want to release so that the manual differential is released to Cerner.

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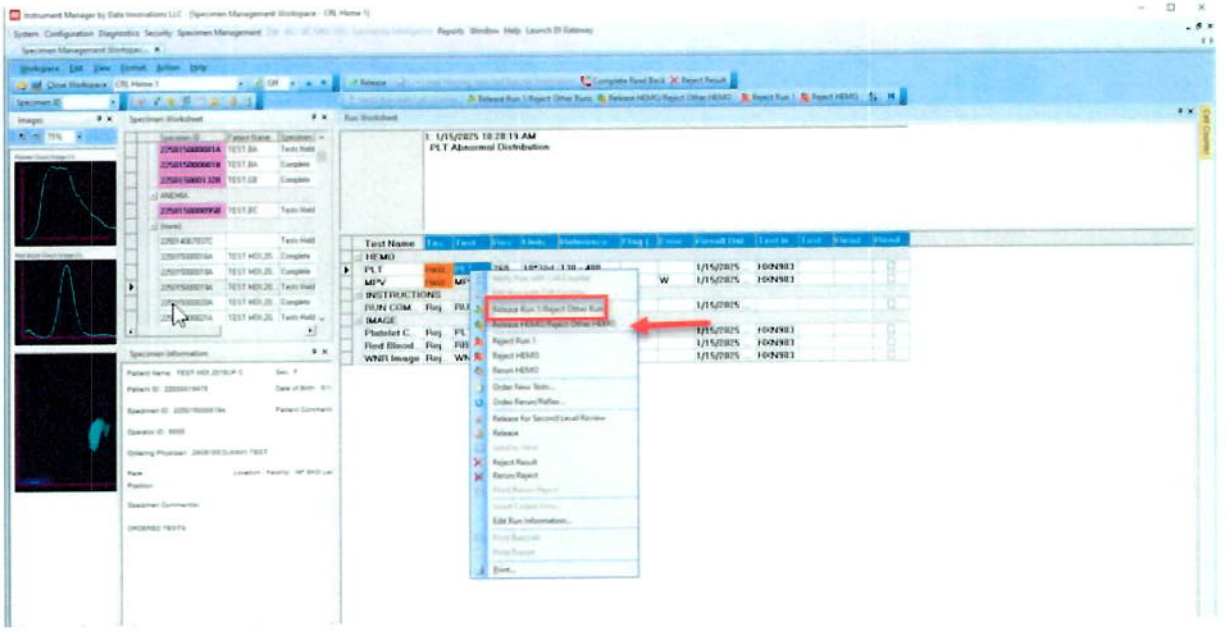
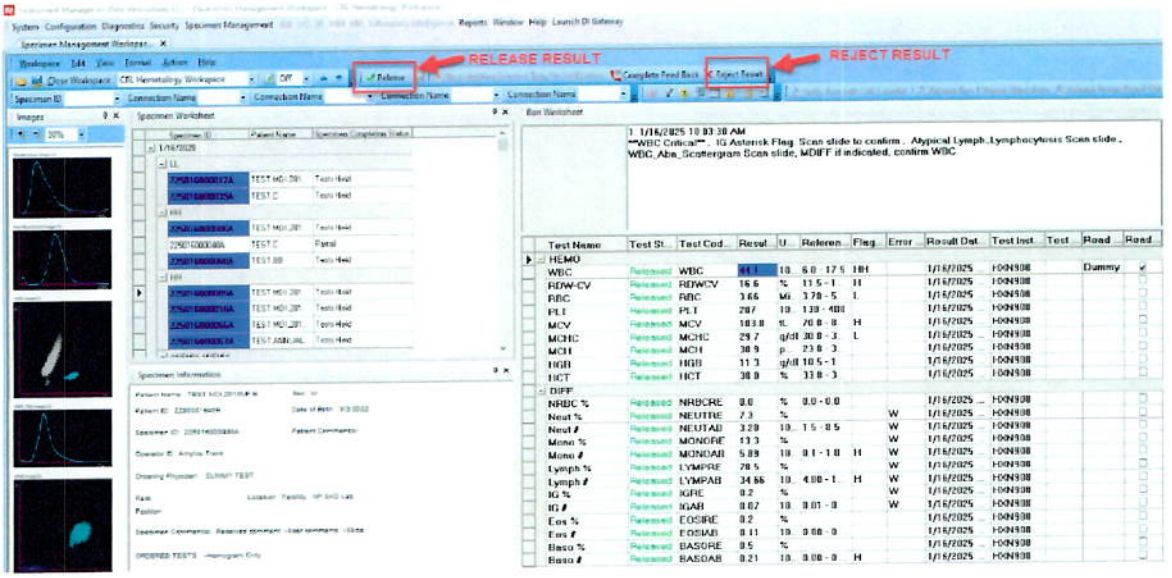
5. REJECTING AND RELEASING RESULTS

There are different ways to reject or release results in the Specimen Workspace.

- You can right-click on an individual result or test group and select reject or release from the menu.



- You can select an individual result or test group and select the icons in the toolbar to reject or release.



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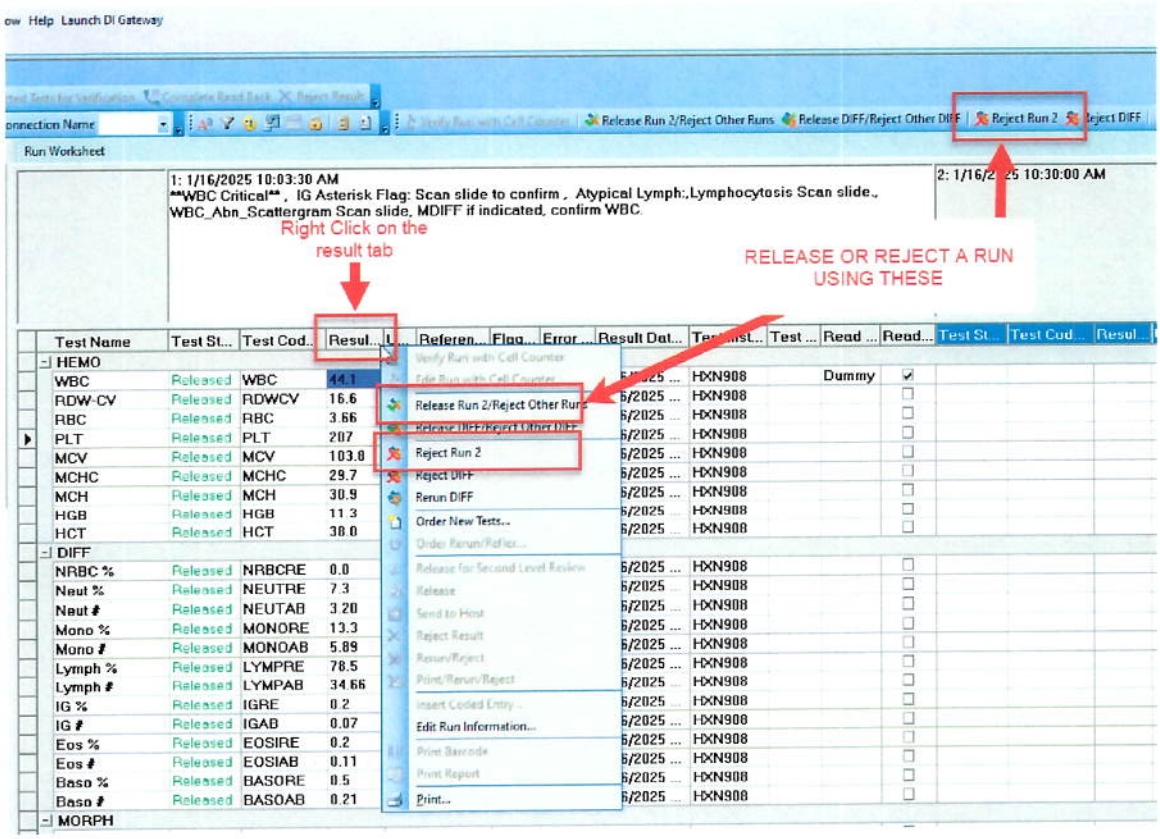
- You can release or reject an entire run using the icons in the toolbar or by right-clicking on the run and selecting Release Run #/Reject Other Runs or Reject Run #



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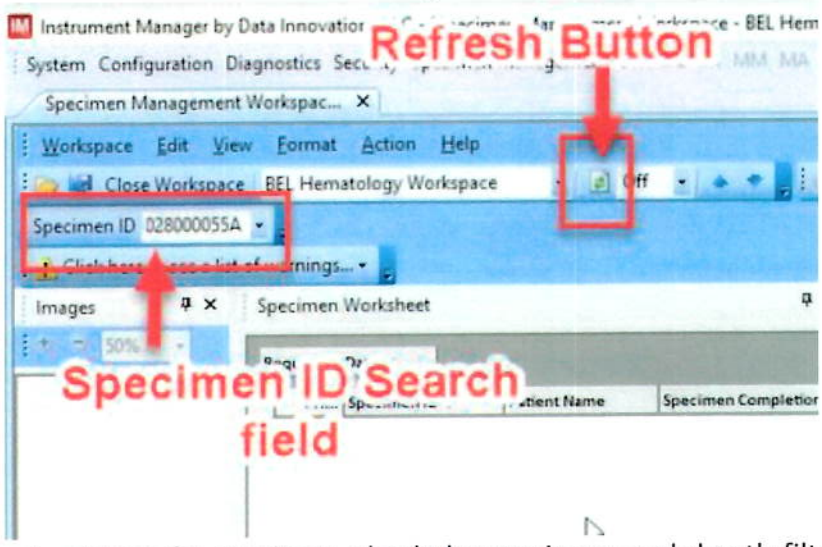
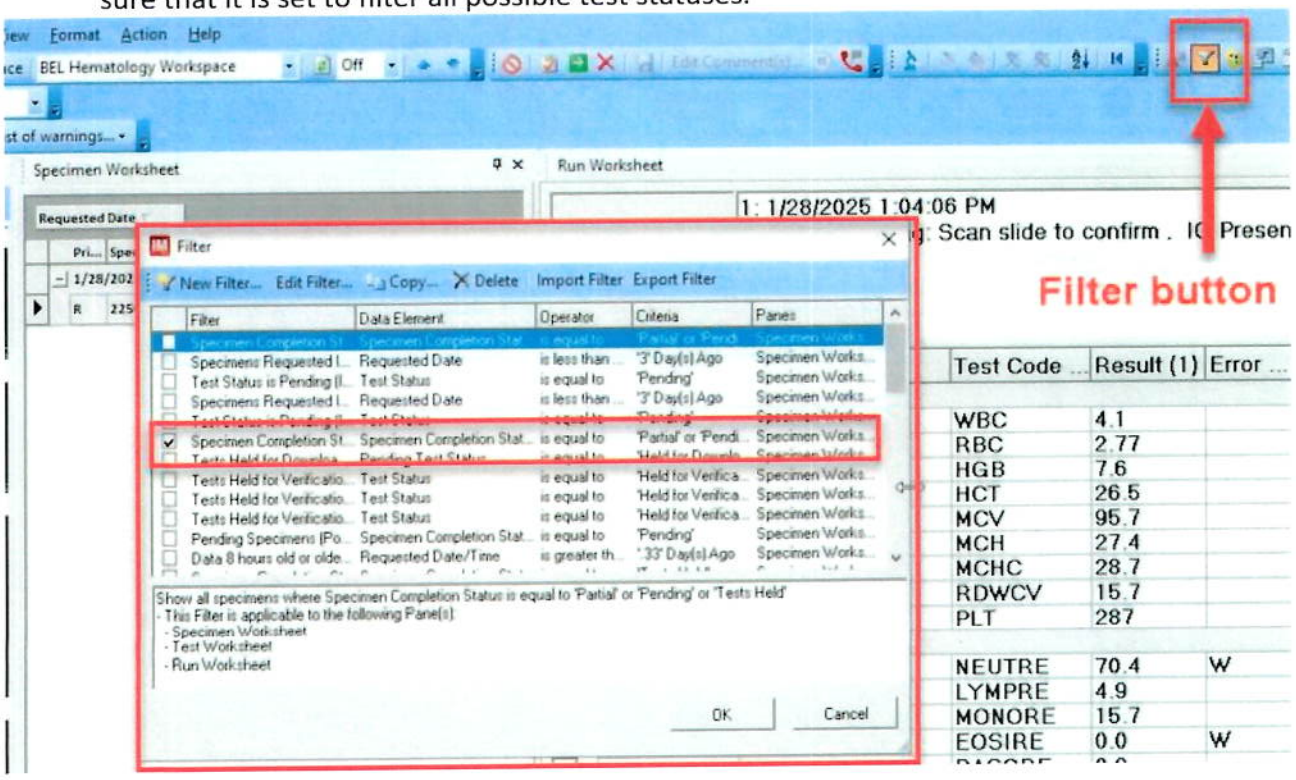
6. SEARCHING A SPECIMEN ID

- From the specimen Workspace, type the accession number in the Specimen ID search bar.
- Click on the refresh button to retrieve the specific specimen ID



- If IM does not retrieve the specimen, check the specimen worksheet's filter to make sure that it is set to filter all possible test statuses.



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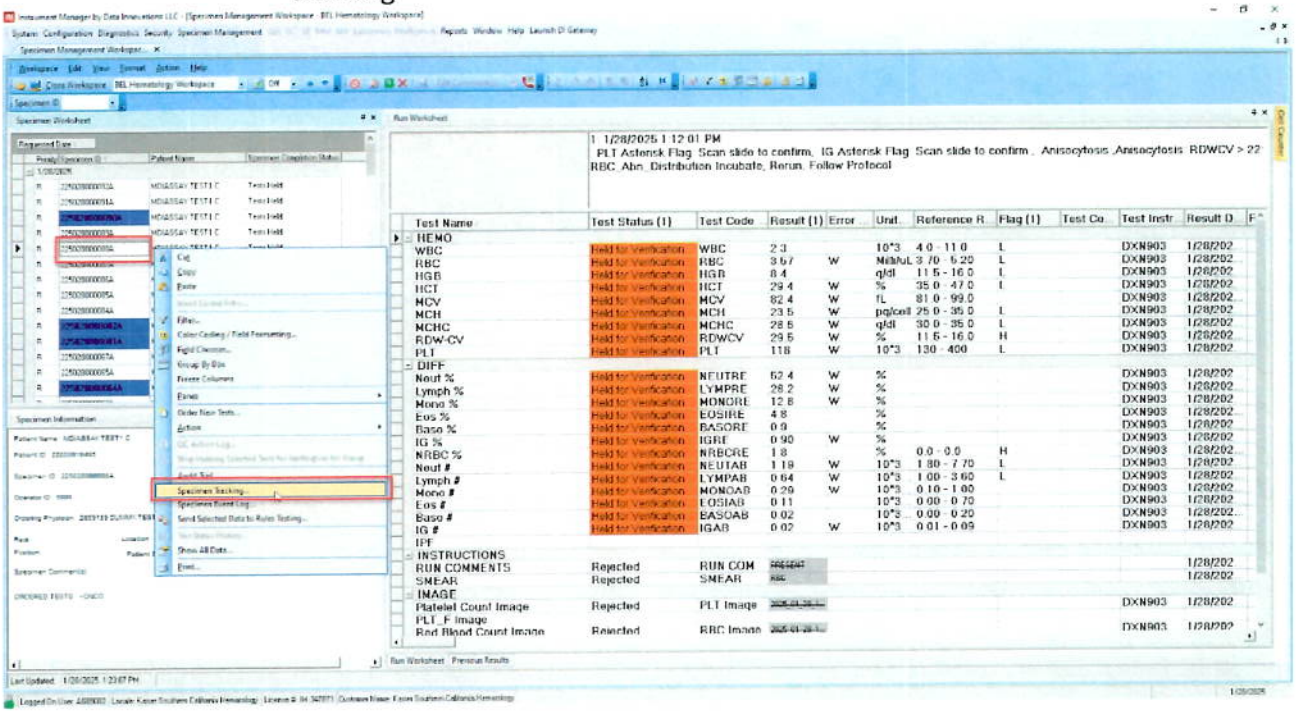
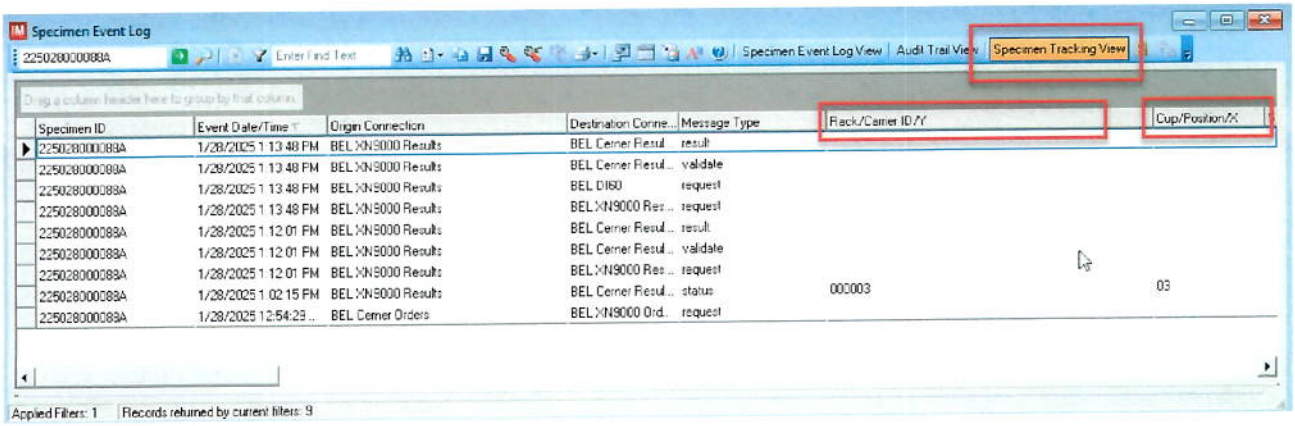
7. RERUN/REPEATING WORKFLOW

- **REPEATING A RUN**

1. To retrieve the sample, identify the rack and location of the specimen to be repeated in the IM workspace, right-click on the acc#, and click on specimen tracking



2. It will take you to the Specimen Event log window, highlighting the specimen Tracking View.



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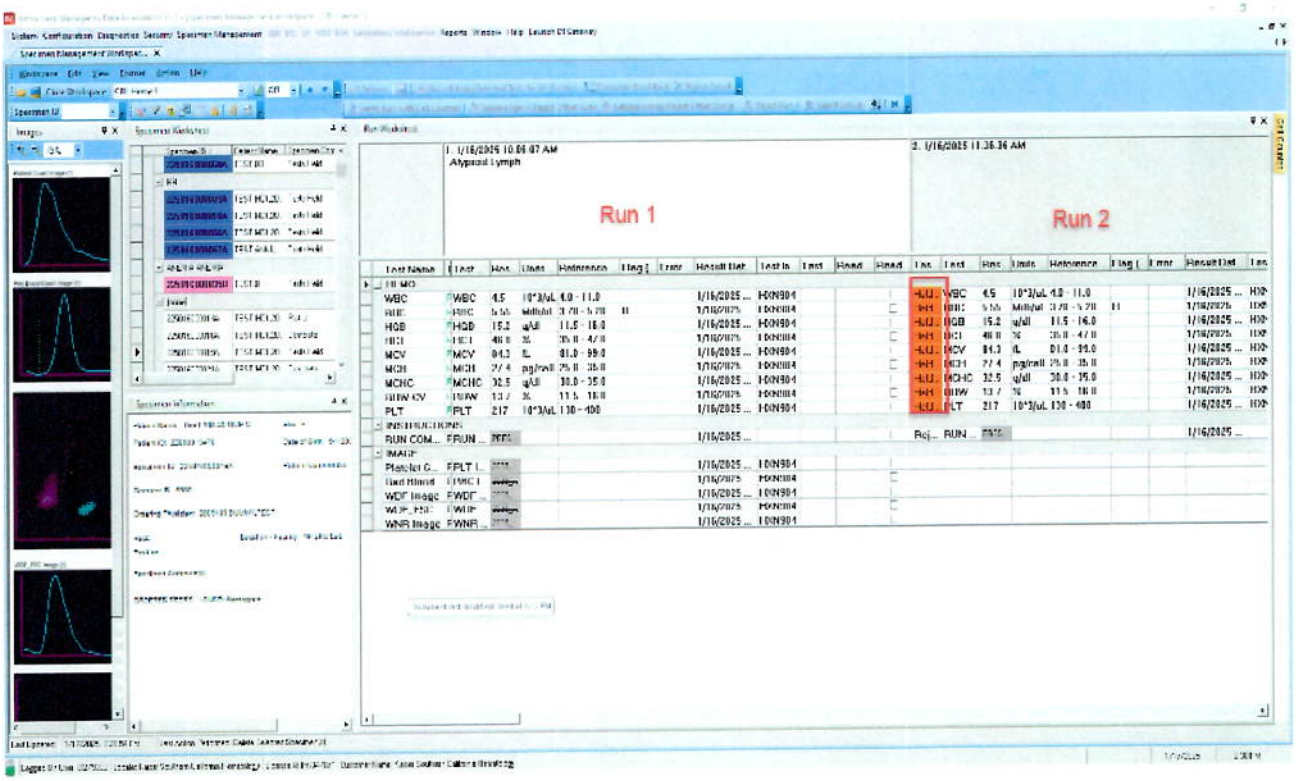
3. Rerun the sample using the manual mode ONLY. Make sure the read ID button is unchecked. The accession number must be scanned or entered manually to be processed. IM will not queue for a test order.

   NOTE: Rerunning samples by loading them on the Sysmex racks (RACK MODE) will not run the desired discrete test.

4. Select the discrete test needed for the rerun. CBC is automatically selected (Default)

5. Reruns will show in IM Workspace as separate runs with separate "Run Comments" and will be held.



6. Choose the appropriate comment under the Test Comment column using the drop-down before releasing the run.

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- **REPEATING WITH DILUTION**

- **REPEATING WITH SALINE REPLACEMENT**

- **REPEATING WITH INCUBATION**

1. Repeating a sample with a dilution, Saline replacement, or Incubation is like repeating a run workflow
2. After retrieving the sample and performing any offline manipulation (e.g., dilution, saline replacement, or incubation), rerun the sample using manual mode ONLY.
3. Make sure the read ID button is unchecked. The accession is entered manually in a specific way, depending on whether the repeat is to be appropriately processed by IM. IM will not queue for a test order.
    - Dilution – Enter the sample accession followed by "x" and the dilution factor
    - Saline replacement – Enter the sample accession followed by "-SAL"
    - Incubation – Enter the sample accession followed by "-INC."
4. Select the appropriate run you want to reject and release.

NOTE: The WBC and Platelet result for Saline Replacement is automatically rejected. Select and release the original WBC and Platelet results.

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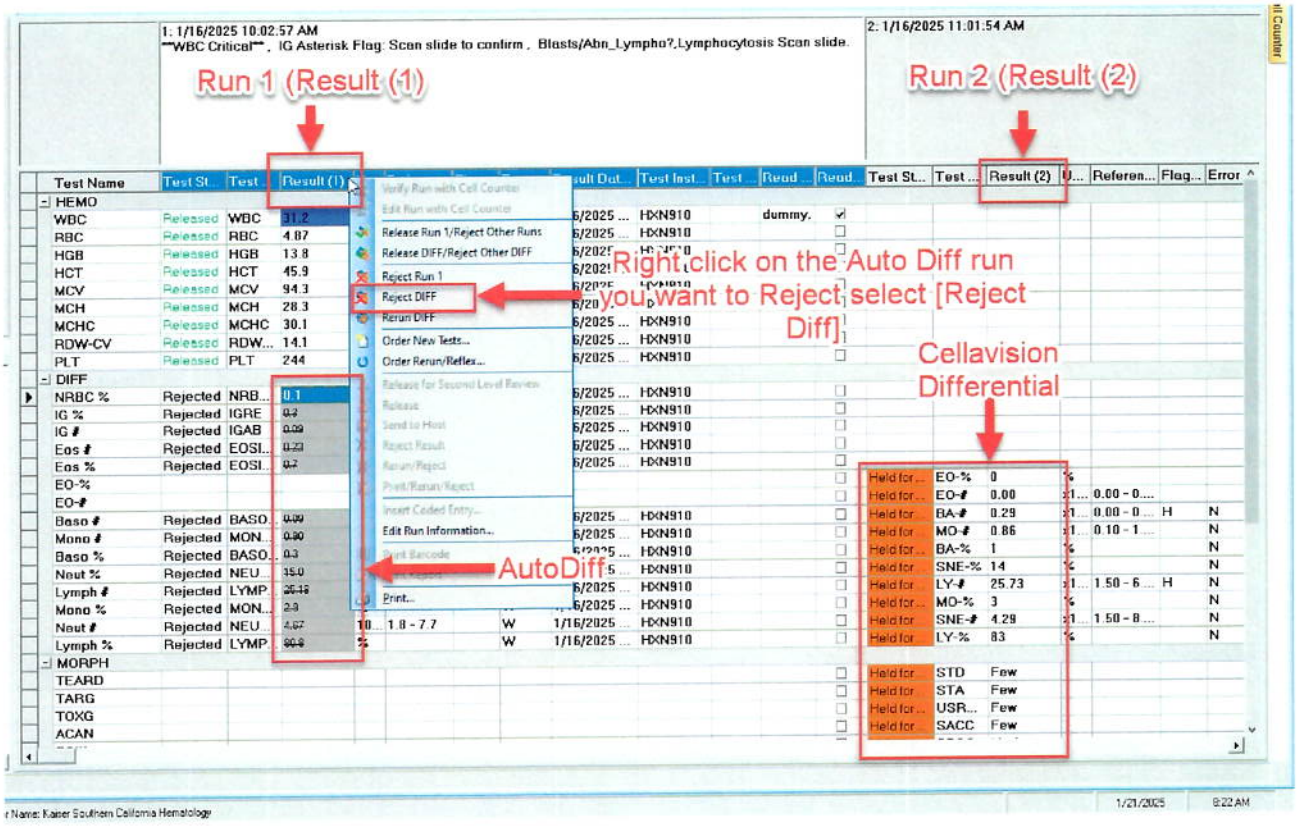
8. WBC DIFFERENTIAL

WBC Differential can be performed using the Cellavision or the IM Cell Counter.
The Cell Counter window counts the manual differential on the 10-key numeric keypad and a microscope.

USING THE CELLAVISION



USING THE IM CELL COUNTER

1. To activate and populate the WBC and patient demographics on the cell counter, you must first click on the WBC value in the Run Worksheet to highlight it.
2. Right-click and select the Verify Run with Cell Counter button on the toolbar. This brings the specimen to the cell counter.

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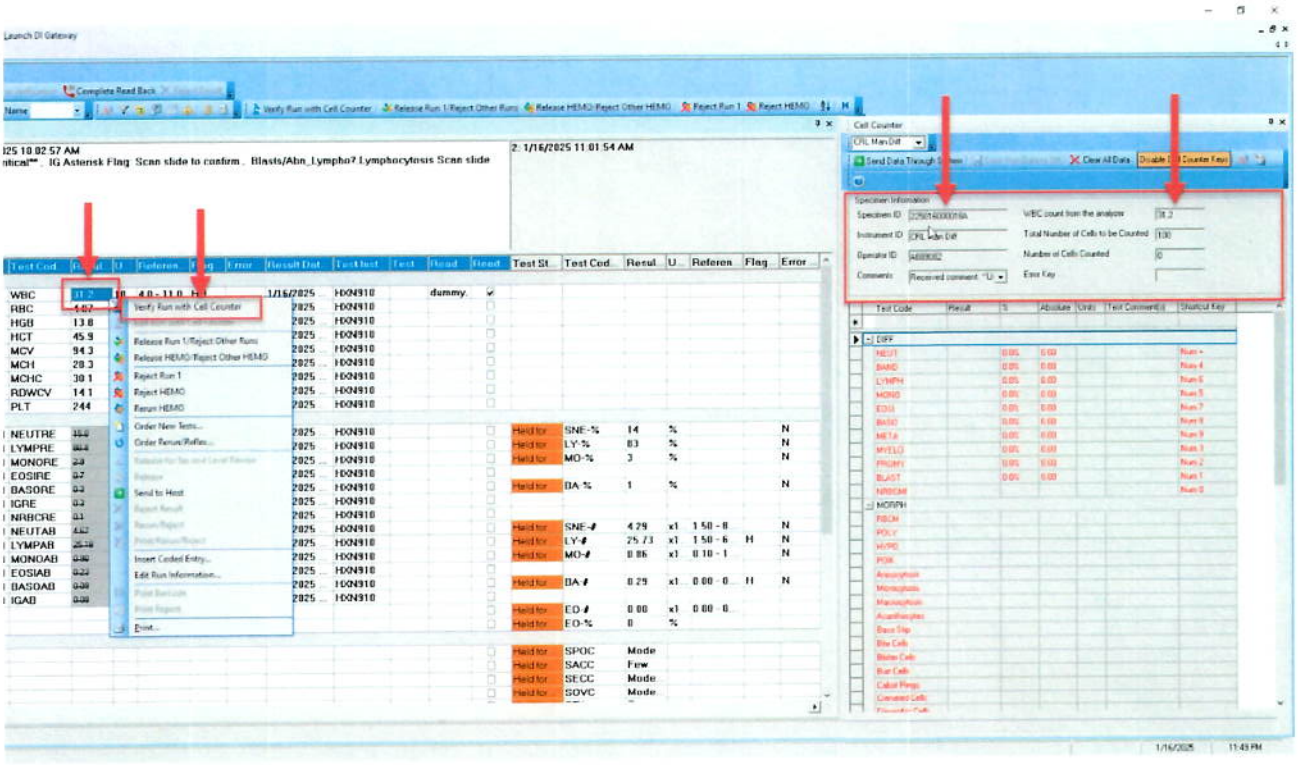

3. The accession number is in the Specimen ID field, and the total WBC value is in the Total Absolute count field. Cells and counting keys are denoted in the first column
4. **WBC Differential**
   Cell Counter Keys

   - If not enabled, click the Cell Counter Keys from the menu to use the Cell Counter keys. Using the number keys associated with each cell type, perform the manual differential until the number of cells counted equals the number of cells to be counted.

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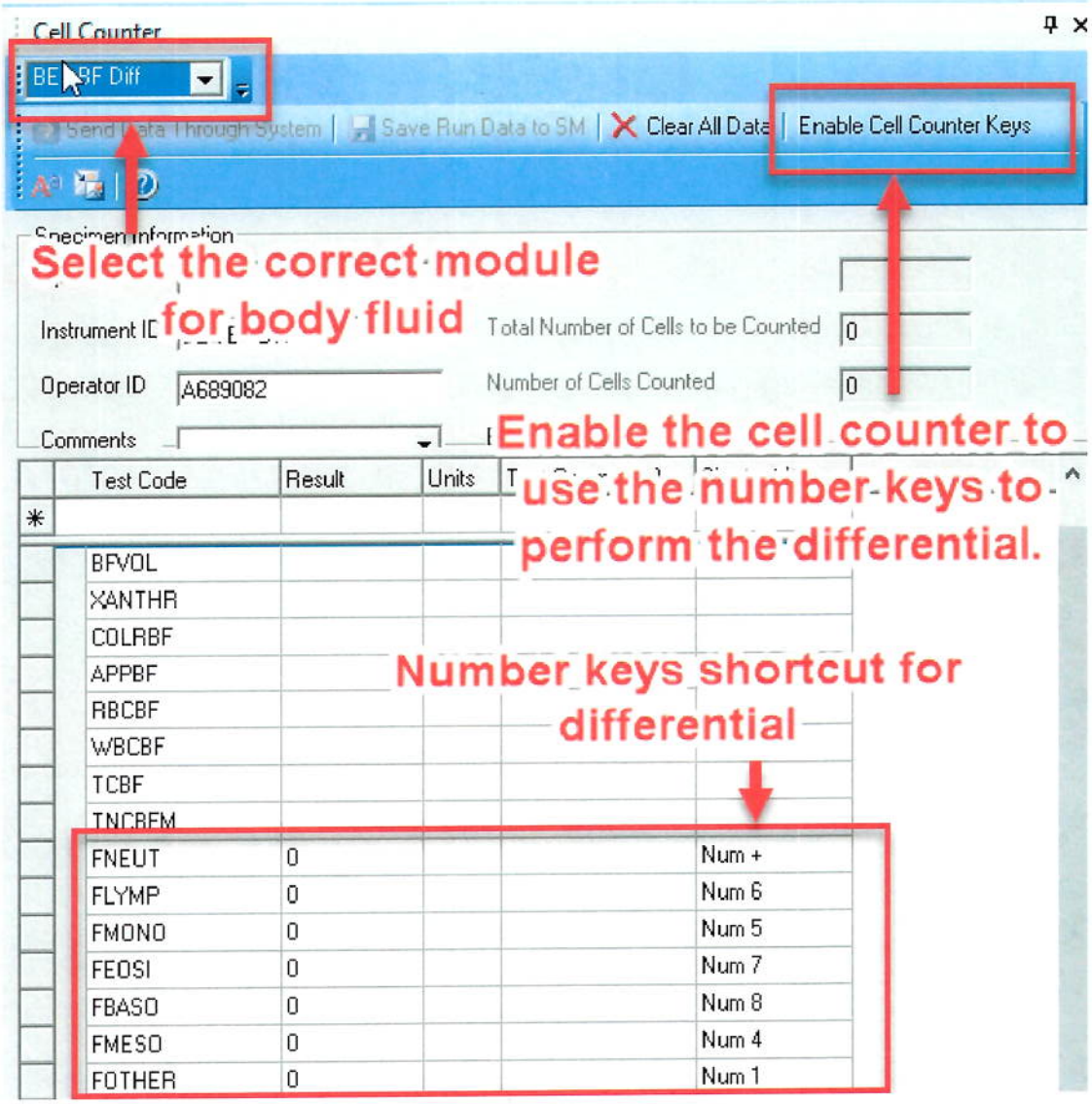

5. **Manual Entry**
   - For the manual of the differential count, click on the cell type and manually type in the value for each cell type.

NOTE: The Total Number of Cell to be Counted can be changed for differential with very low White Blood Cell Count (WBC)

Morphology:

This is where morphology and any appropriate comments are entered. Select the associated coded comment in the result field.

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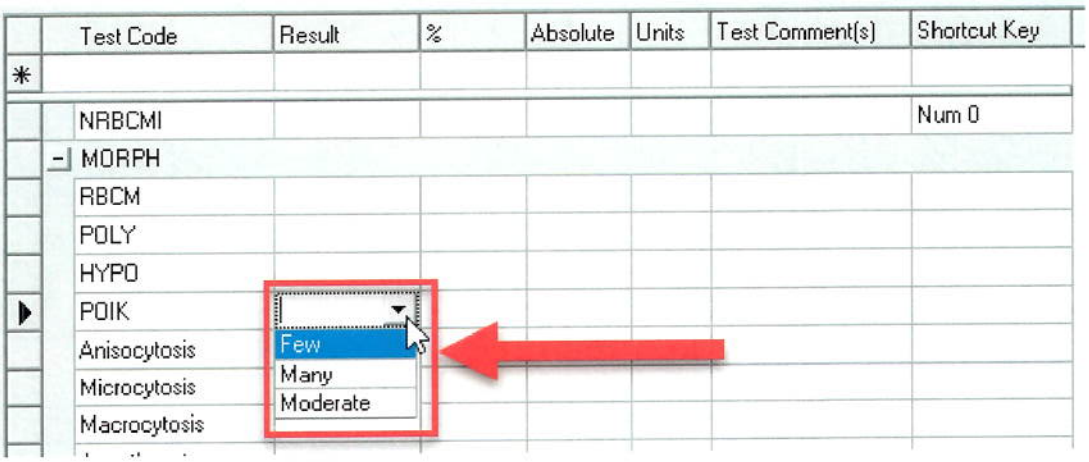
6. RBCM is a required test field: Select (Reviewed) if RBC morphology is reported. Select (Normal) if the RBC morphology is normal.

7. PLTE is a required test field. Select the appropriate result from the coded results dropdown (Adequate, Decreased, Increased, Significantly Increased).

NOTE: Failure to result in either RBCM and/or PLTE will cause the sample and the LIS to remain pending.



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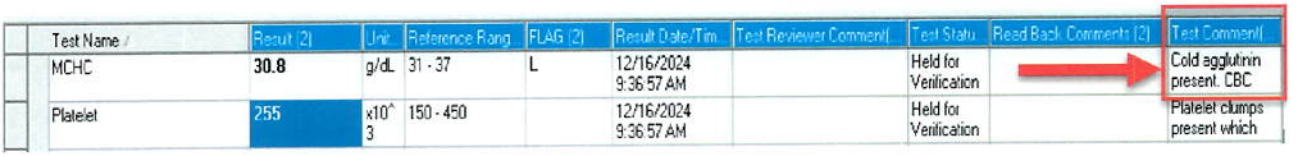
9. COMMENTS

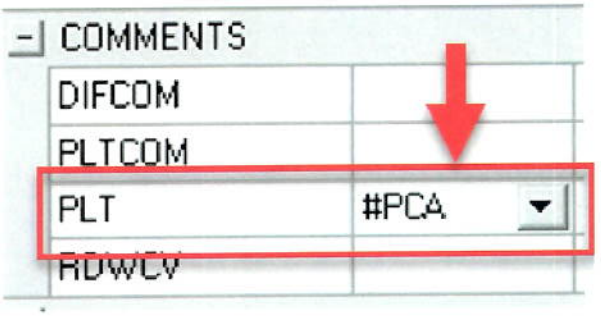
Specimen comments can be added to the Test Comments section of the Run Worksheet OR the Cell Counter

- **Run Worksheet**



Test Name	Result (2)	Unit	Reference Rang	FLAG (2)	Result Date/Tim	Test Reviewer Comment	Test Statu	Read Back Comments (2)	Test Comment
MCHC	30.8	g/dL	31 - 37	L	12/16/2024 9:36:57 AM		Held for Verification		Cold agglutinin present. CBC
Platelet	255	x10^3	150 - 450		12/16/2024 9:36:57 AM		Held for Verification		Platelet clumps present which

- **Cell Counter**



If you have replaced a numeric result with a comment, you must go to the Cerner and verify the results.

- **Example**: PLT comments in the PLT test field of the Cell Counter or a dimorphic red blood cell population comment in the RDWCV test field of the Cell Counter.

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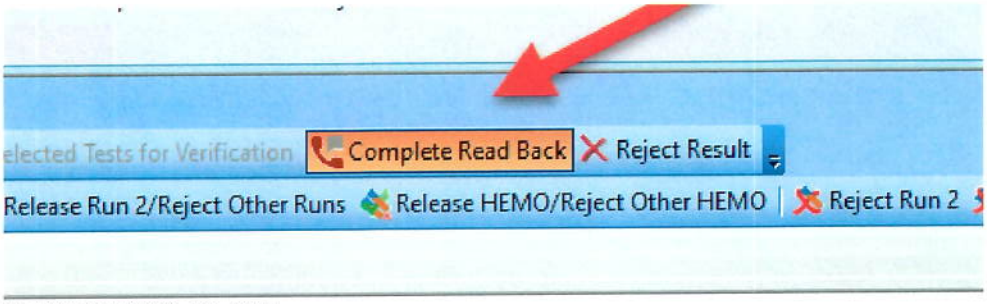
10.CRITICAL DOCUMENTATION

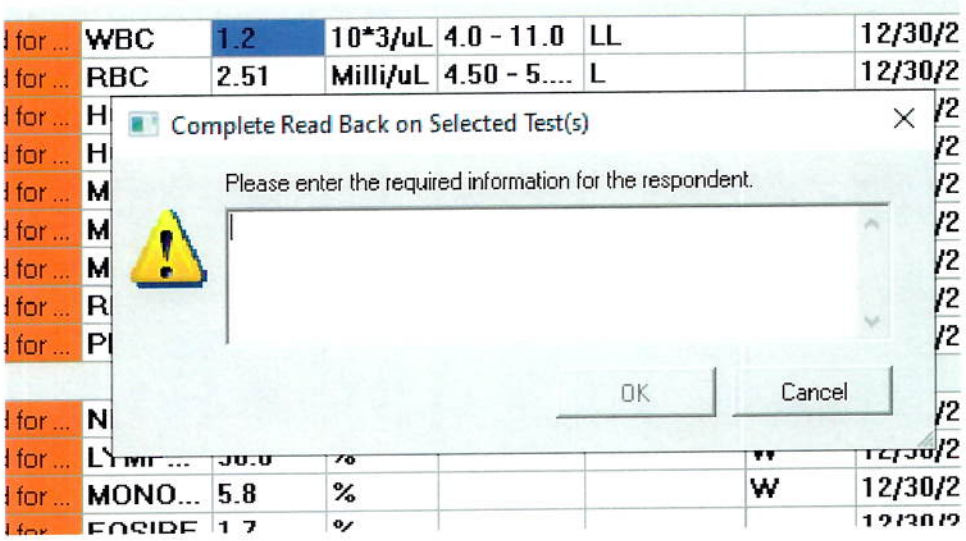
All critical results will be highlighted in Purple and grouped according to whether Critical Low (LL) or Critical High.

- Highlight the Critical Result to be called
- Click on the "Complete Read Back Icon."



30/2024 12:31:31 PM
Critical** , IG Asterisk Flag: Scan slide to confirm , Anisocytosis:,Anis
RERUN

-
- Enter the NUID or Recipient's full name called on the box and click [OK]



- Once documentation is completed, the NUID of the person called should show on your Run worksheet, and **√** the read-back status

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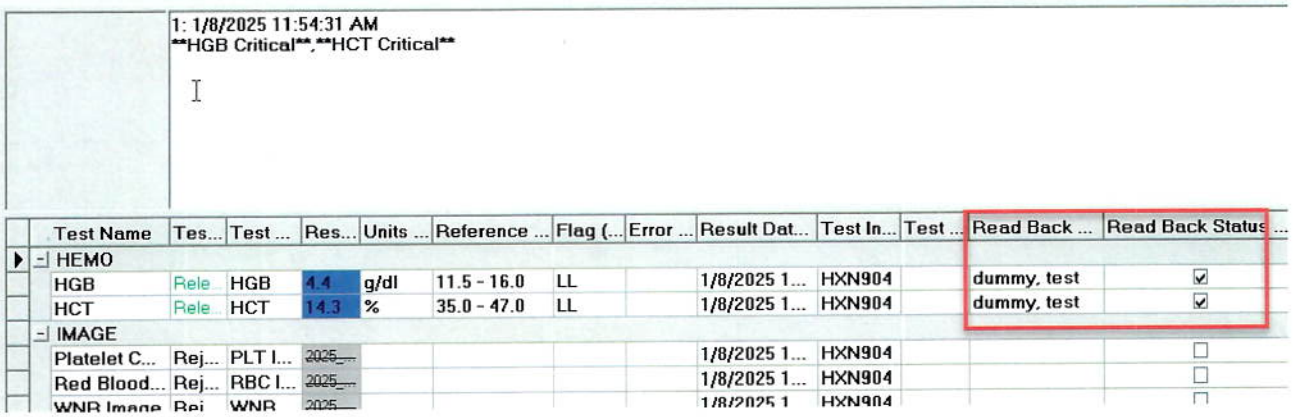

Test Name	Tes...	Test ...	Res...	Units ...	Reference ...	Flag (...	Error ...	Result Dat...	Test In...	Test ...	Read Back ...	Read Back Status ...
HEMO												
HGB	Rele...	HGB	4.4	g/dl	11.5 - 16.0	LL		1/8/2025 1...	HXN904		dummy, test	☑
HCT	Rele...	HCT	14.3	%	35.0 - 47.0	LL		1/8/2025 1...	HXN904		dummy, test	☑
IMAGE												
Platelet C...	Rej...	PLT I...	2025_...					1/8/2025 1...	HXN904			☐
Red Blood...	Rej...	RBC I...	2025_...					1/8/2025 1...	HXN904			☐
WNR Image	Rej...	WNR	2025_...					1/8/2025 1...	HXN904			☐

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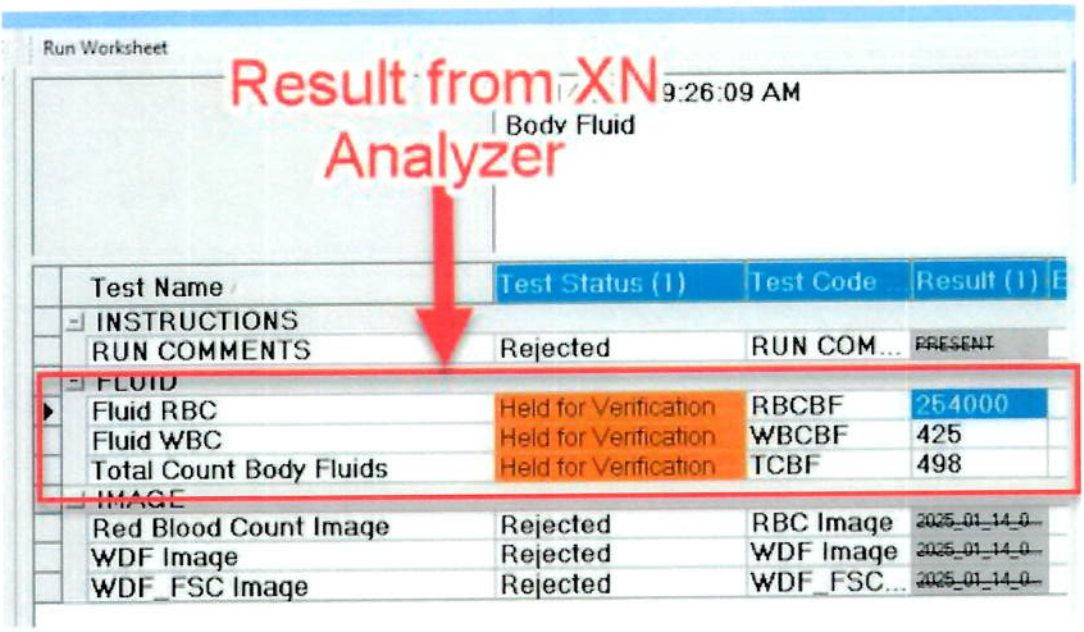
11.BODY FLUID ANALYSIS

- When the approved body fluids are run through the XN Analyzer, the result should be transferred to the DI Instrument Manager.



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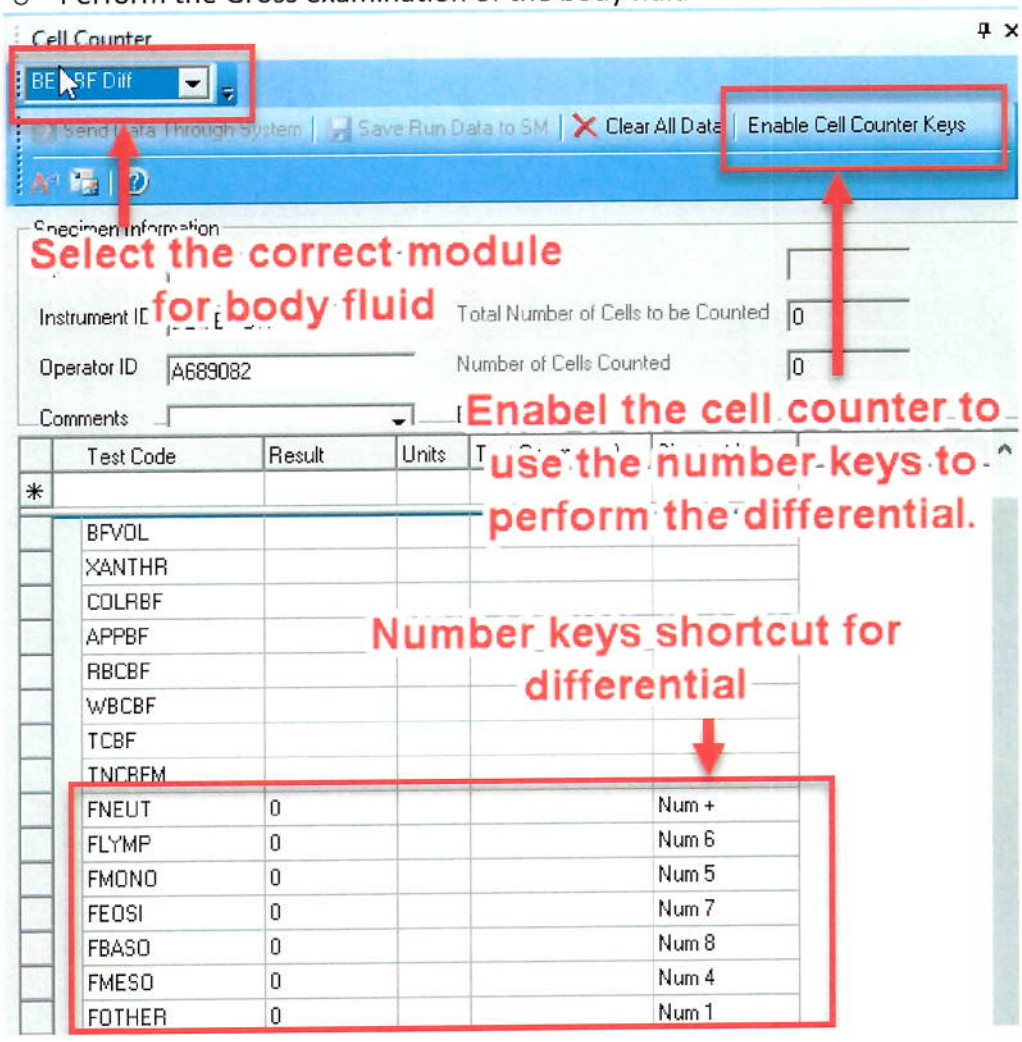
12.BODY FLUID DIFFERENTIAL/MANUAL CELL COUNT

- Body Fluid Differential and Manual Cell Count (if applicable) are performed through the Cell Counter.
- Right-click on the TCBF results and select the Verify Run with Cell Counter button on the toolbar. This brings the specimen to the cell counter.
- Select the appropriate site and module (i.e., site + BF Diff). If not enabled, click the "Enable Cell Counter Key" and perform the differentials.
- Perform the Gross examination of the body fluid



- When done, click "Send Data Through System" to complete the test OR "Save Run Data to SM" to send the result to Specimen Management instead of Cerner.

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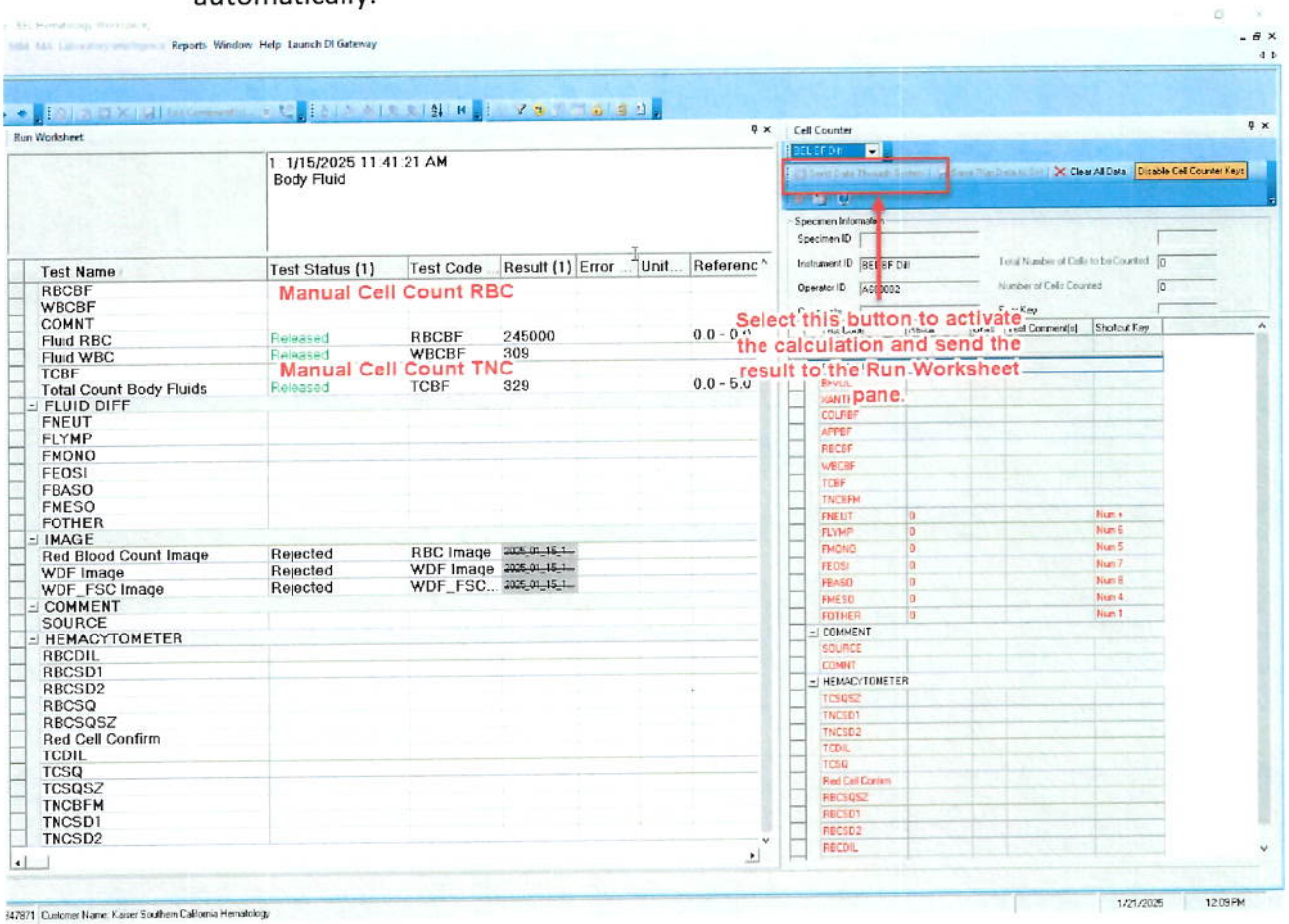
13.MANUAL CELL COUNT

- Perform cell count using the hemocytometer.
- The raw data are inputted on the cell counter under the hemacytometer group, and the Instrument Manager will calculate the values automatically.
- When done, click "Save Run Data to SM" to send the result to Specimen Management instead of Cerner. The Instrument Manager will calculate the values automatically.



- The table below contains the test codes and definitions of the Body Fluid Cell Counter.

Test Code	Definition
BFVOL	Body Fluid Volume (Numeric)
XANTHR	Xanthochromia (if Applicable) Yes/No
COLRBF	Body Fluid Color (Dropdown choices)

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APPBF	Body Fluid Appearance (Dropdown choices)
RBCBF	RBC Auto results from the XN analyzer
WBCBF	
TCBF	TNC Auto results from the XN analyzer
TNCBFM	TNC Cell Count Manual Calculation from the values below
COMMENT	
SOURCE	
COMNT	Free text Comments
HEMOCYTOMETER	
TCSQSZ	Size of the square of the hemacytometer used to count the TNC (small/large)
TNCSD1	Type in the raw count for the TNC value on one side of the hemocytometer
TNCSD2	Type in the raw count for the TNC value on one side of the hemocytometer
TCDIL	Type in the offline dilution factor. If no dilution was made, type in one (1)
TCSQ	The number of squares counted for the TNC cell count. (numeric 1-9)
Red Cell Confirm	Drop-down (Smear review / Acid Treatment)
RBCSQSZ	Size of the square of the hemacytometer used to count the RBC (small/large)
RBCSD1	Type in the raw count for the RBC value on one side of the hemocytometer
RBCSD2	Type in the raw count for the RBC value on one side of the hemocytometer
RBCDIL	Type in the offline dilution factor. If no dilution was made, type in one (1)
RBCSQ	The number of squares counted for the RBC cell count. (numeric 1-9)

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14.UNREGISTERED SAMPLE

- Unregistered samples will show in the Specimen Worksheet without patient demographics. XN will run these samples using the selected default test.
- Log in samples first. From the XN analyzer, select the patient in the Sample Explorer and send the sample to IM by going to Output and selecting Host Communication.

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SCENARIO 1

In this scenario, run a CBC sample. Find the patient demographic of the sample. Locate the patient's location. Locate the flags and troubleshooting (if applicable) on the Run Comments. Release the sample, accepting the hemogram and auto-differential.

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SCENARIO 2

In this scenario, run a CBC sample. Perform a manual differential using the Cellavision. Place a comment on the Platelet Count. If not available, pretend that the WBC is critical and add a critical comment. Release the results.

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SCENARIO 3

In this scenario, run a CBC sample. Rerun the sample using the incubation workflow. Perform a differential using the cell counter. Release the results.

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SCENARIO 4

In this scenario, run a CBC sample. Rerun the sample. Select the rerun sample. Release the results.

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Operations Director Approval

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Medical Director Approval

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