CERNER TRAINING MANUALS

ACCESSION RESULT ENTRY

Seton Healthcare Family

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Introduction

Accession Result Entry (ARE) is the Cerner application used to enter results. It has several modes which allow for manual result entry, resulting from instruments, or performing differentials.

ARE can also show previous results, reference ranges, linearities, and critical ranges.

About this Procedure

Since resulting is the same in most of the ARE modes,[1] chapter Interpreting Results *pg.*13 will cover resulting orders using Accession Result Entry.

The chapters for each mode will simply walk you through the differences.

[1] Differential Mode is the one exception.

Accession Result Entry Modes

Depending on which tests are going to be resulted, ARE has different modes to make resulting easier.

Accession Mode: can be used to enter results manually, or verify results performed by instruments.

Differential Mode: is used to perform Differentials using Cerner. Mostly, it will be used for Body Fluids.

It can be used during Wam Downtimes to perform CBC differentials.

Instrument Mode: is used to review results which cannot be Auto-Verified by the instruments.

Correction Mode: is used to correct results which have already been Verified.

Customizing Accession Result Entry

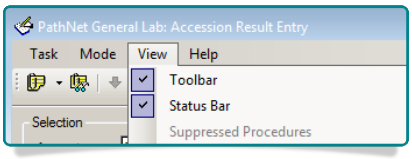
Setup Result View

The Results Spreadsheet of ARE can be modified to display additional information. Specifically, the Reference Range column[2] should be added.

[2] It's really handy.

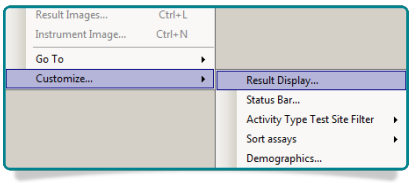
Open ARE by clicking the  icon from the App-Bar.

Click **View** from the menu bar.



Click **Customize...**

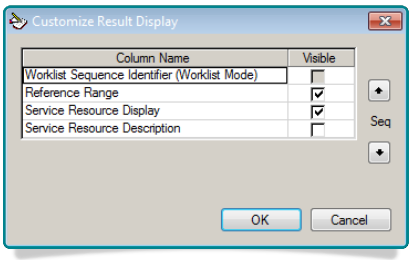
Click **Result Display...**



Check ☑ Reference Range.

Check ☑ Service Resource Display.[3]

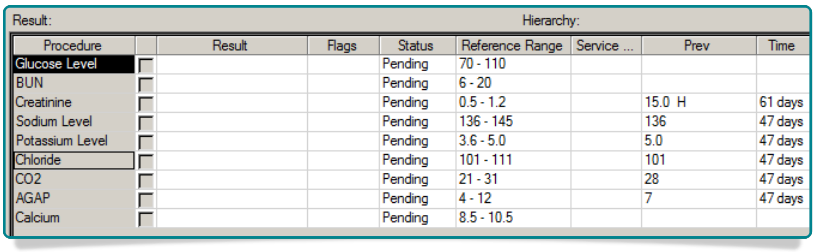
[3] This option will add a column to ARE. When instruments perform results, the Instrument ID will be present in this column.



Un-Check ☐ the other options.[4]

[4] Or leave them Un-checked. They really don't add much.

Now, next to the sample status is a column which lists the reference ranges for each assay.

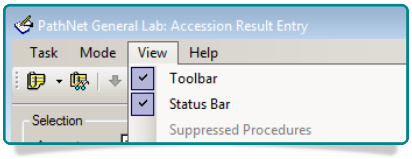


Assay Sorting

By default, the assays are sorted by Orderable. This sorting method is very inconvenient if the assays are performed in multiple departments.

Sorting by Service Resource will group assays based on where they're performed.

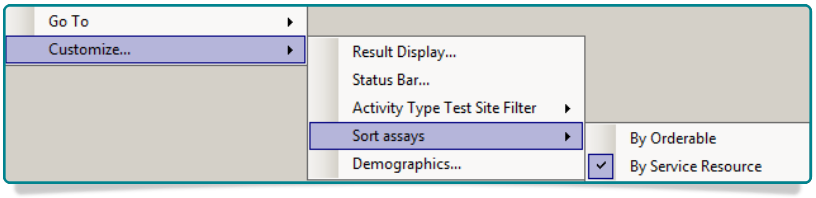
Click **View** from the menu bar.



Click **Customize...**

Click **Sort assays.**

Click **By Service Resource.**



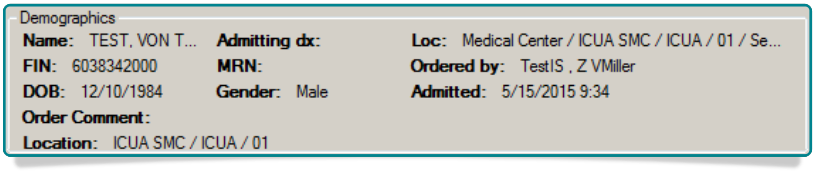
Now, assays are will be sorted by Bench, or testing location, making ARE much easier to use.

Customizing Demographics

There are a few applications within Cerner[5] which display demographic information.

The information displayed can be modified to display any necessary information. This can be very useful if you find yourself searching for specific patient information.

[5] ARE and Department Order Entry (DOE) are the two most common applications with this feature.



Helpful Tips

Before you begin, here are a few tips you should keep in mind if you decide to create your own demographics setup.

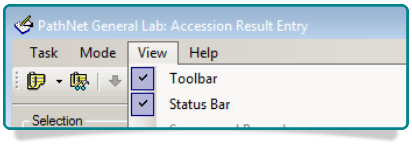
Follow these tips for the best results.

- **Number of Columns:** The fewer the columns the better.[6]
- **Avoid TMI:** Only include fields you *know* you'll need.
- **Split Locations:** Separate the patients floor from the room number.

[6] Fewer columns means information will not be cutoff.

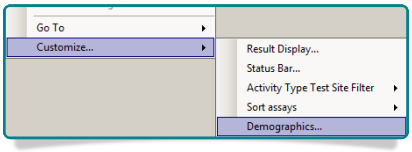
Changing Demographics

Click **View** from the menu bar.

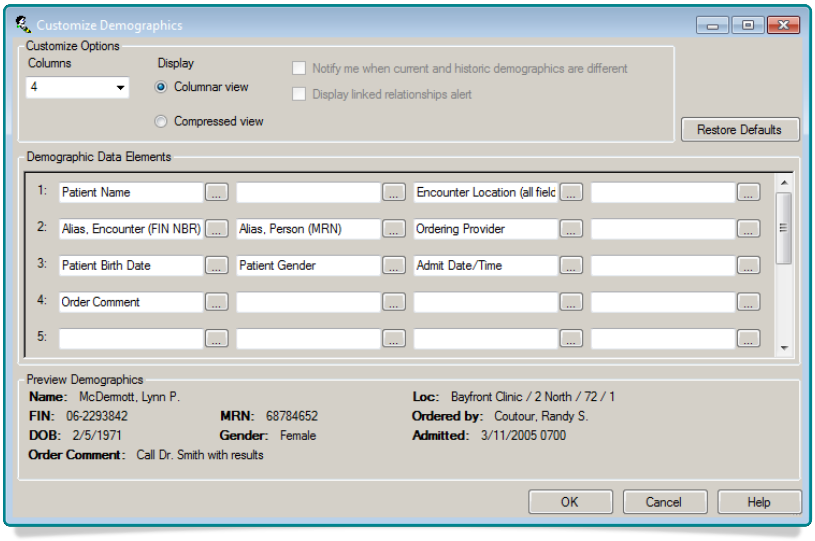


Click **Customize...**

Click **Demographics...**

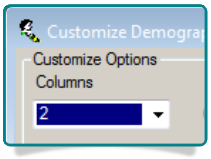


This window displays the Values currently set in each of the demographics Fields.

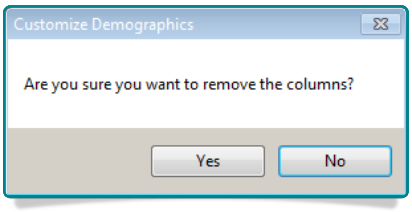


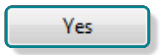
Set the columns count to **2**.[7]

[7] It's located on the top left corner of the window.



Cerner will ask if you're sure.



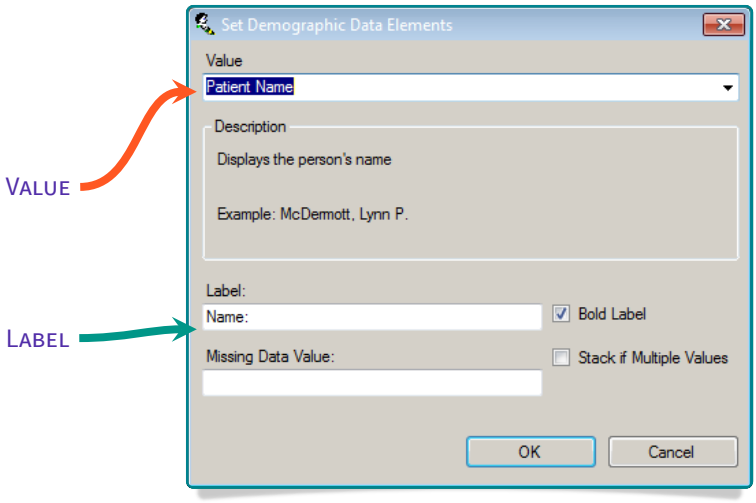
Click 

NEXT TO EACH FIELD in the DEMOGRAPHICS DATA ELEMENTS box is an ellipses button. Clicking it will open the SET DEMOGRAPHIC DATA ELEMENTS WINDOW.

The two important fields are VALUE[8] and LABEL.[9]

[8] VALUE is what information will be displayed.

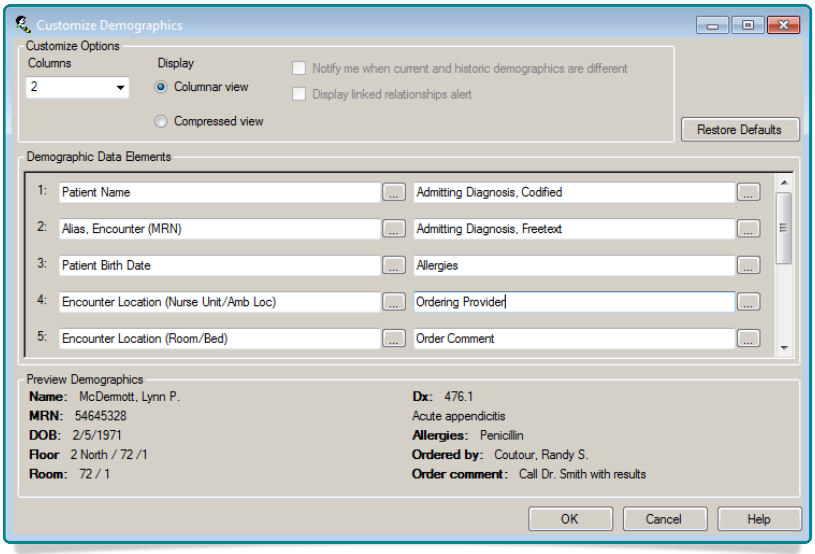
[9] LABEL is the name it is given. This can be customized.

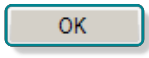


FOR EACH OF THE 10 fields listed:

- *Click* the ... button.
- *Set* the VALUES to match the image below.
- *Modify* the LABEL, if needed.[10]

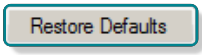
[10] Sometimes it's helpful to make it shorter.



Click  when finished.

Restore to Defaults

At any the values can be restored to their original settings.

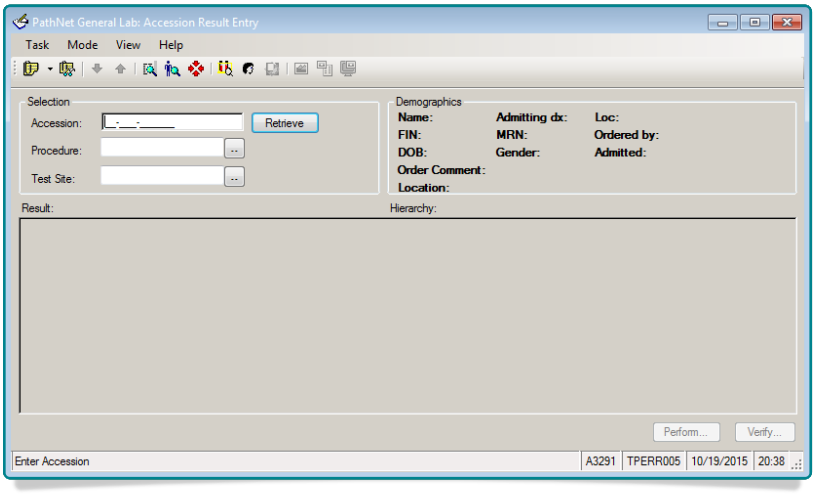
Click the  button.

Entering Results

This section will describe the process of Manual Result Entry, Performing Results, and Verifying Results.

In addition, it describes Result Flags, Reference Ranges, Critical Ranges, Linearities,

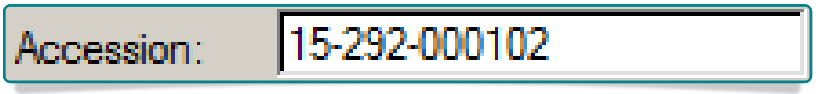
Accession Mode is the default resulting mode for ARE. It can be used to enter results manually, or verify results performed by instruments.

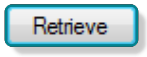


Manual Result Entry

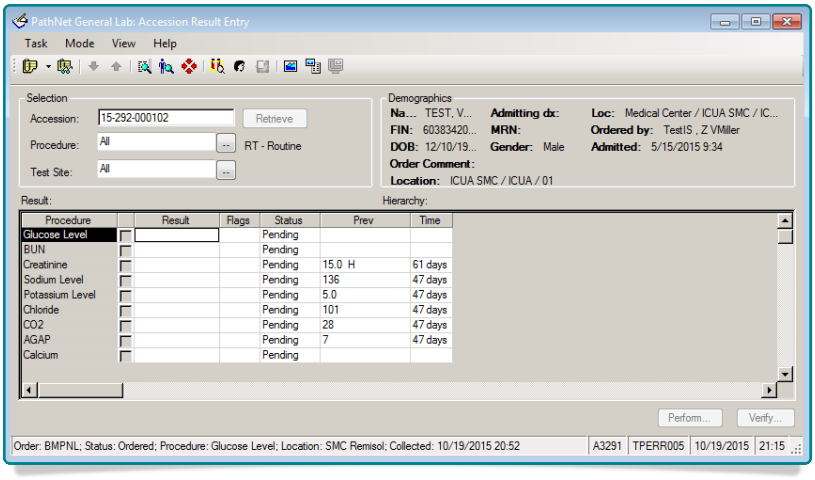
Open ARE by clicking the  from the App-Bar.

Enter the accession number.[11]

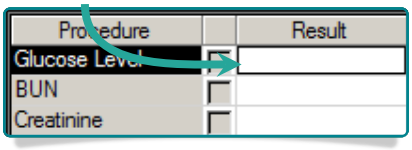


Click 

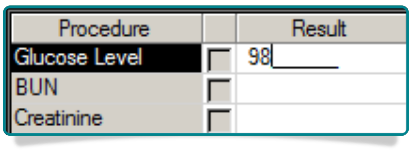
[11] See the **Accession Numbers** procedure for tips on entering Accession Numbers.



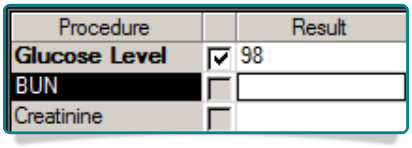
Click on the RESULT CELL to enter a result.



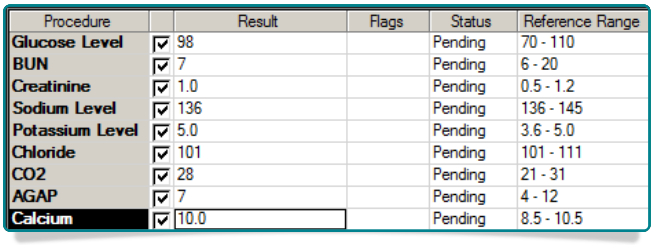
Enter the result.[12]



Hit ENTER on the keyboard to move to the next result.



Continue entering results.



Procedure	Result	Flags	Status	Reference Range
Glucose Level	98		Pending	70 - 110
BUN	7		Pending	6 - 20
Creatinine	1.0		Pending	0.5 - 1.2
Sodium Level	136		Pending	136 - 145
Potassium Level	5.0		Pending	3.6 - 5.0
Chloride	101		Pending	101 - 111
CO2	28		Pending	21 - 31
AGAP	7		Pending	4 - 12
Calcium	10.0		Pending	8.5 - 10.5

[12] Cerner will fill any missing decimal points with ZEROS.

Result Types

Every assay has a default Result Type. This is the result type which will be used most often to result the assay.

In situations where it's not possible to use the default,[13] the Result Type will need to be converted to an appropriate alternative.

[13] *e. g. Unable to perform calculations.*

Result Types

There are several ways results can be entered using ARE:

Type	Meaning	How it's Entered
Alpha	Pre-composed results.	Select via Drop down
Calculation	Calculated values.	Automatically Entered.
Freetext	Short text result.	Type result.
Numeric	Measured values.	Type result.
Text	Long text results.	Word Processor.

Table 1: Result Types

Changing Result Types

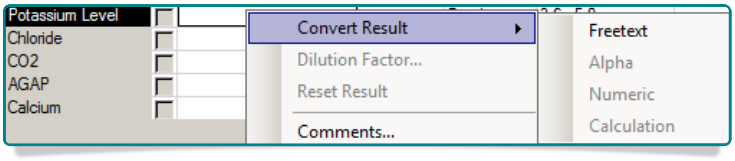
There are situations where it may be necessary to change a result type. For instance: If a Teg doesn't split, the result needs to be changed to an **Alpha Response**.

🖳 *Right Click* on the result cell.

🖳 *Select* **Convert Result**.

🖳 *Select* the appropriate Result Type.[14]

[14] If a Result Type for that assay is unavailable it will be disabled in this menu.



Entering Comments

Additional information can be attached to individual results or entire orders by adding Comments and/or notes.

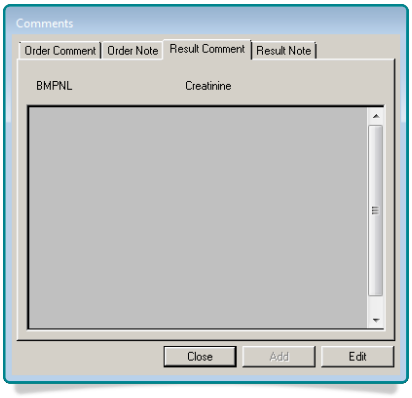
info: For a detailed description on comments: Refer to the **Comments** documentation.

Select an assay which needs a comment.[15]

[15] If the comment or note will be attached to the entire order, then simply select any result.

Click  from the TOOLBAR

THE COMMENTS WINDOW will open.



ORDER COMMENT: A comment applied to the entire order.[16]

[16] In this example it is applied to the whole Basic Metabolic Panel.

ORDER NOTE: An internal note applied to the entire order.

RESULT COMMENT: A comment attached to a specific result.[17]

[17] In this example it is applied to just the Creatinine result.

RESULT NOTE: An internal note applied to a specific result.

Interpreting Results

Flags

Any result which *may* require special attention will be flagged. These flags appear as letters in the Flags Column of ARE.

Type	Symb.	Meaning
Review	R	The results needs to be reviewed before verifying.
Delta	D	The result is has changed significantly.
High	H	The result is above the Normal Range.
Low	L	The result is below the Normal Range.
Critical	C	The result is Critical.
Linearity	N	The result is outside of the defined Linearity.
Notify	@	The result needs to be called to the floor.
Interpretation	(t)	The result is an an interpretation.
Comment	*f*	The result contains a Comment or Note.

Table 2: Result Flags

The example below shows multiple flags[18] for the result.

Procedure		Result	Flags	Status	Reference Range
Glucose Level	☑	> 2400	HCRNf	Pending	70 - 110

[18] Specifically:

- High
- Critical
- Review
- Linearity
- Comment

Review Range

The Review Range is used to prevent results from auto-verifying, and to alert the user that action might need to be taken.

Critical Results

ARE will emphasize critical results by changing the color to Red and adding the Critical Flag (C).

Sodium Level	☑	190	HCR	Pending	136
Potassium Level	☑	2.0	LCR	Pending	5.0

Linearities

The Linearities have been defined as the minimum and maximum reportable values **after** dilution.

Any result that does not fall within the Linear Range will automatically be converted to its inequality,[19] and the Linearity Flag (N)[20] will be added.

info: The best way to manually enter results which are out of linearity is to enter a result which is outside of the linearity.[21]

When the instrument sends over results which are outside of the Linear Range, it will automatically be converted to its inequality.

Linearities and Calculations

When a component of a calculation falls outside of its Linear Range, Cerner will perform the calculation using the linear limit of the assay.[22]

Finally, the appropriate inequality will be attached to the calculated result.

The following two examples show what happens if a component is above, and below linearity.

Below Linearity:

Procedure		Result	Flags
Hours Collected	☑	24	
Total Volume	☑	3265	
U Timed Protein	☑	< 6	N
U24 Protein	☑	< 196	H

In this case, we can accurately say the U24 Protein is <196mg/day.

Above Linearity:

Procedure		Result	Flags	Status
Hours Collected	☑	24		Pending
Total Volume	☑	3265		Pending
U Timed Protein	☑	> 1500	N	Pending
U24 Protein	☑	> 48975	H	Pending

In this case, we can accurately say the U24 Protein is >48,975mg/day.

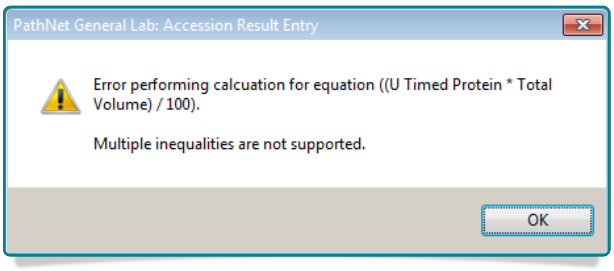
[19] *e.g. A glucose of 2,401mg/dL will convert to >2,400mg/dL.*

[20] **N** is used because **L** was taken by the **Low** flag.

[21] Protip brought to you by Cpt. Obvious.

[22] *e.g. If the* U Timed Protein is <6mg/dL, Cerner will perform the calculation using a value of 6mg/dL.

If multiple components of the calculation are outside of Linearity, Cerner will not be able to perform the calculation. Instead, a message will appear stating it's unable to perform the calculation.



In this situation the calculated result needs to be manually entered as Unable to Calculate.[23]

[23] For more information Refer to: Result Types *pg. 11*.

Convert The result to an Alpha Response.

Select Unable to Calculate.

info: If you're unable to convert it to an Alpha Response, convert it to a Freetext and manually type: *"Unable to Calculate."*

Linearities and Delta Checks

Cerner will **not** be able to perform Delta Checking if any of the two values are outside of linearity.

Reference Ranges

Results which are lower than the defined Reference Range will be flagged as Low (L), results which are higher will flag as High (H.)[24]

[24] What else can I say?

Verifying Results

If you'd like to save the results, but **Not** release them:

Click Perform... to Perform[25] the results.

[25] This will save the results; they can be modified or verified at a later time.

If the results are good to be released:

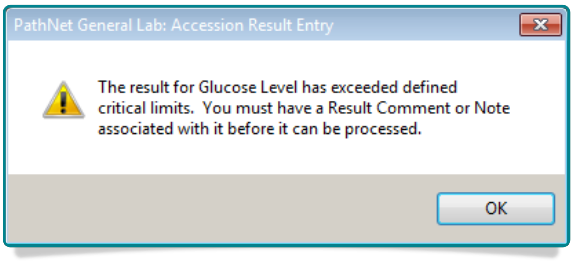
Click Verify... to Finalize[26] the results.

[26] This will post the results to the patient's chart, they cannot be modified without Corrections.

Verifying Critical Results

ARE will do it's best to make sure that a comment has been placed on the result before allowing the result to be verified.

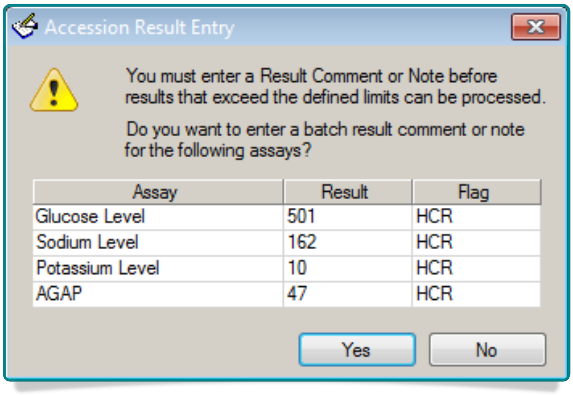
When the Perform... or Verify... button is pressed **and** there is no Comment Flag ARE will display one of the following alerts.



This is displayed if there is only one critical value.

Clicking the OK button will open a Comments Window.[27]

[27] **info:** The comment entered into this window will be applied to the Critical Result.

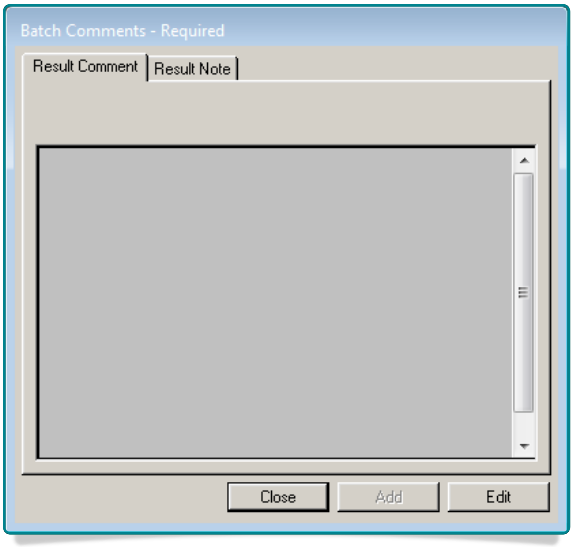


This is displayed if there are multiple critical values.

CLICKING THE Yes button will open a BATCH COMMENTS WINDOW.[28]

[28] **info:** The comment entered into this window will be applied to every CRITICAL RESULT.

⚠ ***WARNING:*** *ARE will only check for the presence of a comment, it has no way of knowing if the comment is a* ***Critical Call*** *comment.*



Quick Reminder:

- *Type* **CALRED**
- *hit* **F9** to expand.
- *hit* **F3** to move.
- *hit* **F5** for date.

info: The great thing about this feature is that it's a quick way to apply the CRITICAL CALL COMMENT to every critical result.

For more information on adding comments refer to the **COMMENTS** documentation.

Differential Mode

Resulting differentials in Cerner is much different than resulting anything else. For that reason, Accession Result Entry has a mode specifically for performing them.

Differential mode will perform the normalization calculations and with CBC's it will calculate the absolute values.

IMPORTANT: All manual differentials should be entered using differential mode!!![29]

[29] If I could make this statement flash I would.

Orders with Differentials

CBCs: Manual differentials will be performed using WAM.[30]

Body Fluids: Differentials will be reflexed, as needed, after the body fluid counts have been Verified.

[30] If WAM is down: Refer to the **Downtime Procedure** for information on adding Manual Differentials.

Here is a list of possible differential types:

Fluid	Differential Name	Code
Body Fluid	Body Fluid Differential	FLDIF
BAL Fluid	BAL Differential	BALDIF
CBC	Manual Differential	MDIFF
CSF	CSF Differential	CSFDIF
Joint Fluid	Joint Fluid Differential	JNTDIF
Pericardial Fluid	Pericardial Differential	PCFDIF
Peritoneal Fluid	Peritoneal Differential	PERDIF
Pleural Fluid	Pleural Fluid Differential	PLFDIF

Table 3: Manual Differentials and Codes

How Cerner determines if a Manual Differential is needed:

Body Fluids: The result of the **WBC Count** is >5/µL.

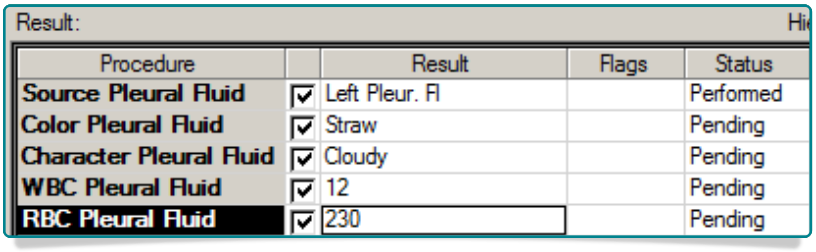
CBC: The result of the **Differential** assay.

Body Fluid Differentials

In order for a manual differential reflex on a body fluid, the Count needs to be entered and Verified. This is done using ARE in Accession Mode.

Reflexing Manual Differentials

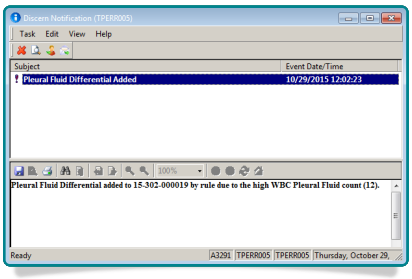
Enter the results for the body fluid count.



Click Verify... when finished.[31]

[31] The Differential will not reflex until the results are Verified.

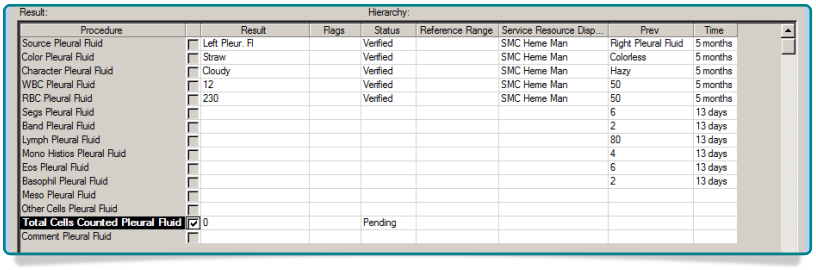
If a Manual Differential is added, Cerner will present a **Discern Notification**.



Changing to Differential Mode

Open the Accession Number in ARE.[32]

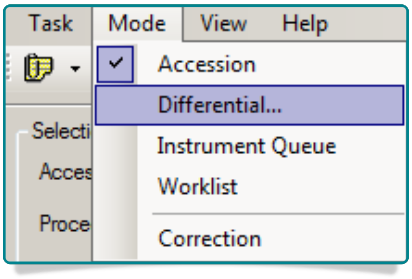
[32] The differential components should now appear in the ARE window.



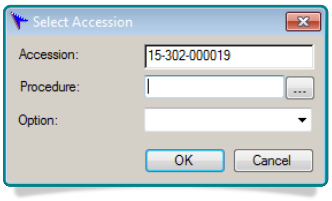
IMPORTANT: Do NOT enter the results here!

Click **Mode** from the menu bar.

Click **DIFFERENTIAL...**



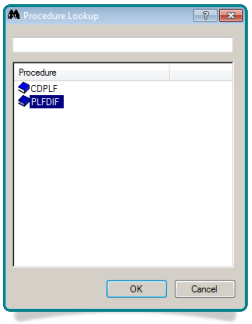
THE SELECT ACCESSION box will display:



Click the ... button.

Select the DIFFERENTIAL PROCEDURE from the list.[33]

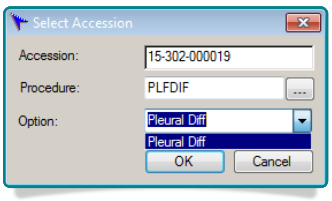
[33] If a differential is not there, it means the count has not been VERIFIED



Click OK

Select the **OPTION** using the dropdown menu.[34]

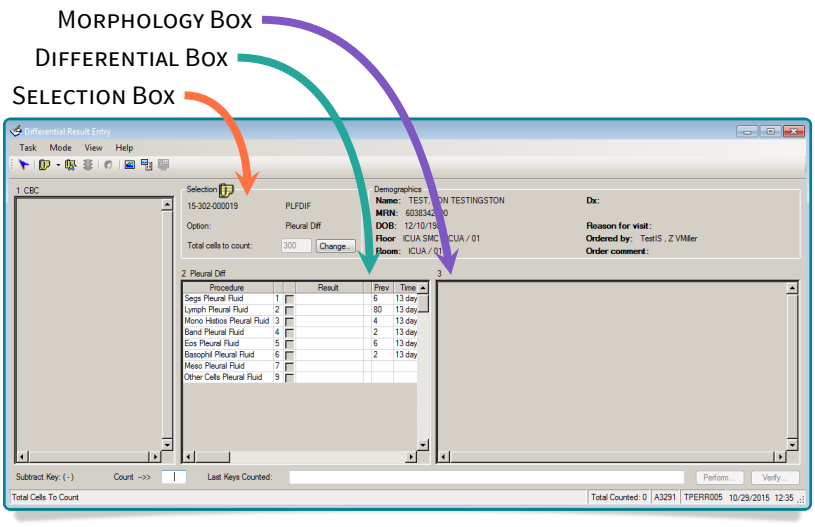
[34] There should only be one option here.



Click OK

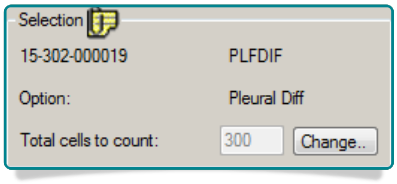
The Differential mode will open.

About Differential Mode

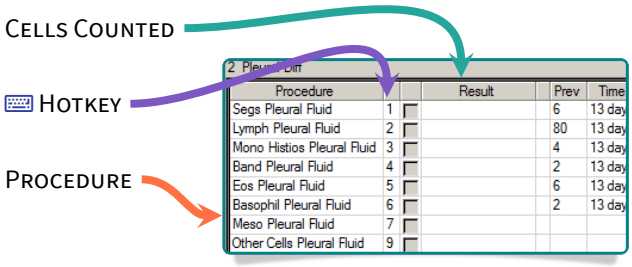


Selection Box: Allows you to change the number of counting Cells.[35]

[35] For body fluids this will default to 300 Cells.



Differential Box: This displays the cells counted.



Cells Counted: Displays the number of Cells counted. When finished, it will normalize the count to a percentage.

Hotkey: The Key used to add the cell type.

Procedure: A list of available cell types for the differential.

PERFORMING THE DIFFERENTIAL

The DIFFERENTIALS are performed using the 10-key pad.[36]

[36] The ⌨ keys for each cell can be found immediately to the right of its name *e.g. Segs are 1.*

Count the cells until you're finished.

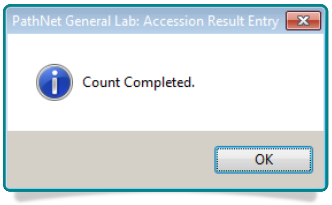
Procedure			Result
Segs Pleural Fluid	1	☑	196
Lymph Pleural Fluid	2	☑	14
Mono Histios Pleural Fluid	3	☑	90
Band Pleural Fluid	4	☐	
Eos Pleural Fluid	5	☐	
Basophil Pleural Fluid	6	☐	
Meso Pleural Fluid	7	☐	
Other Cells Pleural Fluid	9	☐	

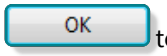
info: If you've run out of cells to count:

Click the STOP COUNTING icon  on the TOOL BAR

WHEN THE TOTAL CELLS counted reaches the set value,[37] an alert will appear.

[37] In this case, it's 300.



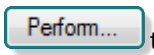
Click  to acknowledge.[38]

[38] This will normalize the differential.

NOTICE THAT THE CELLS have been normalized.

Procedure			Result
Segs Pleural Fluid	1	☑	65
Lymph Pleural Fluid	2	☑	5
Mono Histios Pleural Fluid	3	☑	30
Band Pleural Fluid	4	☐	
Eos Pleural Fluid	5	☐	
Basophil Pleural Fluid	6	☐	
Meso Pleural Fluid	7	☐	
Other Cells Pleural Fluid	9	☐	

OPTIONAL:

Click  to save the results.

Finishing Up

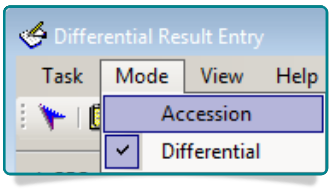
Before the results can be verified, the total number of cells counted needs to be entered.

> **info:** Unfortunately, Cerner is unable to keep track of this information.

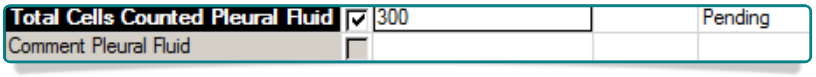
To do this, ARE needs to be in Accession Mode

Click **Mode** from the menu bar.

Click **Accession**.



Enter the Number of Cells Counted in the Total Cells Counted result cell.



Click Verify... to verify the results

CBC Differentials

> ⚠ **IMPORTANT:** CBC Differentials should be performed in WAM. The one exception is during **WAM Downtimes**.

How CBCs Work

In Cerner, the components of a CBC are treated as separate orders. Cerner and WAM will do all the magic required to switch between Manual and Automated Differentials.[39]

[39] **info:** The Adiff won't be added until the CBC is Logged-in to the laboratory.

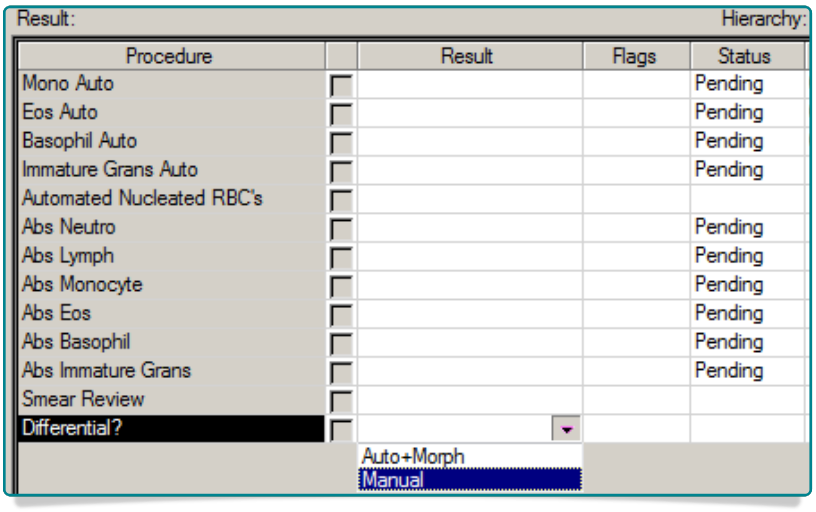
Table 4: CBC Orders

Order	Description
Hemgrm	Hemogram
CBC	Hemogram portion of CBC
Adiff	Automated Differential
Morphology	Slide Morphology
Mdiff	Manual Differential and Morphology

MANUALLY REFLEXING

IMPORTANT: Again, this only needs to be done if WAM is down.

CBCs have a result called **DIFFERENTIAL?**. This is used to trigger the reflexing of MORPHOLOGY or a MANUAL DIFFERENTIAL WITH MORPHOLOGY.



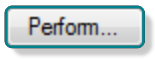
This table describes what happens with each of the **DIFFERENTIAL?** options.

SELECTION	CANCELED	ADDED	FINAL ORDER
(BLANK)	-	-	CBC, ADIFF
AUTO+MORPH	-	MORPHOLOGY	CBC, ADIFF, Morphology
MANUAL	ADIFF	MDIFF	CBC, MDIFF

Table 5: CBC Reflexing Rules

Select the appropriate option.[40]

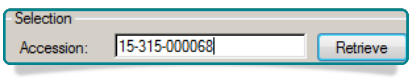
[40] Leave Blank if it's an AUTO DIFFERENTIAL without morphology.

Click 

THIS WILL TRIGGER the reflexing rules. However, we won't see the changes until ARE is refreshed.

Click the ACCESSION FIELD.[41]

[41] ARE will clear.



Click Retrieve

The results should now reflect the changes.[42]

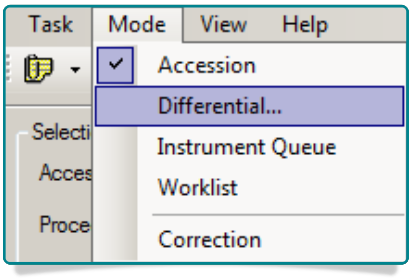
If an Automated Differential + Morphology was selected, the Morphology assays should appear.

[42] If they don't, try again. Sometimes it takes a few seconds for the changes to be made.

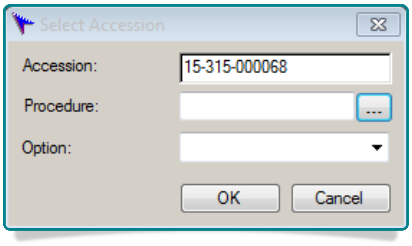
Performing Manual Differentials

Click **Mode** from the menu bar.

Click **Differential...**

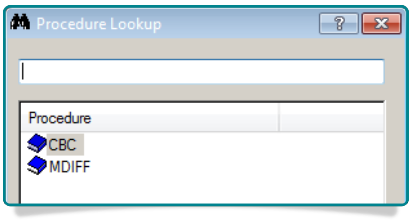


The Select Accession box will display:



Click the ...

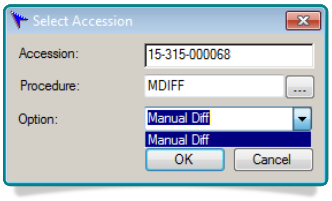
Select **MDIFF**

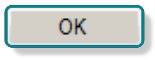


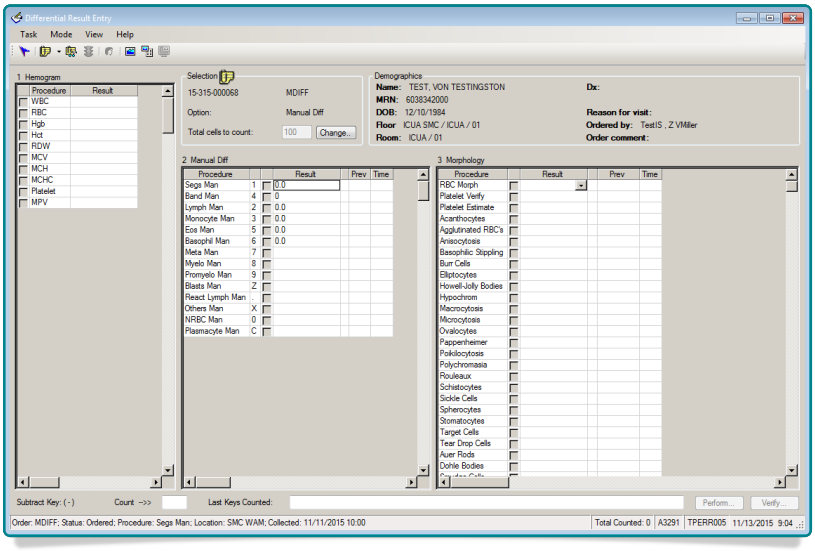
Click OK

Select the **OPTION** using the drop down menu.[43]

[43] There should only be one option here.



Click 



CBC MANUAL DIFFERENTIALS are performed similarly to Body fluid Differentials. The keys are set up to match WAM.

The right hand side has a list of morphology options; they can be entered using the DROP DOWN lists.

Correction Mode

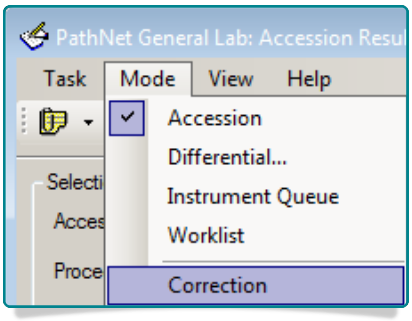
Correction Mode is used to modify results, or result comments of assays which have already been Verified.

When results are corrected their flags will be re-evaluated, and calculations[44] which use this value will be recalculated.

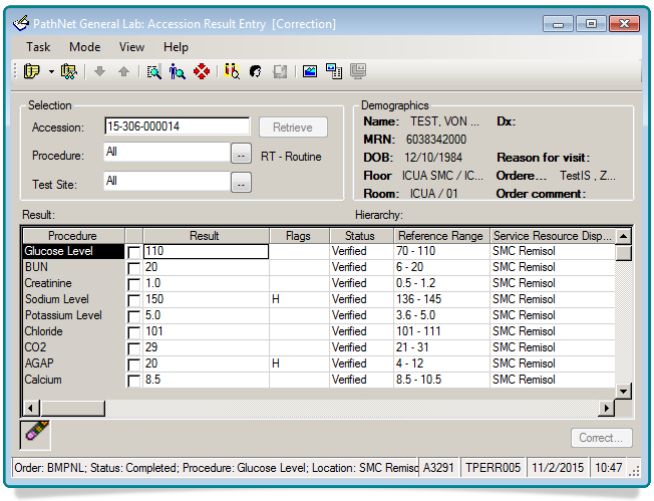
[44] Some calculations are more complicated and may need to be corrected manually. Examples are **Platelet Mapping, and lipids.**

Click **Mode** from the menu bar.

Click **Correction.**



The Correction Mode Icon will indicate that ARE is in Correction Mode.



Correcting Results

Select the result which needs to be modified.

Procedure		Result	Flags	Status	Reference Range
Glucose Level	☐	110		Verified	70 - 110
BUN	☐	20		Verified	6 - 20
Creatinine	☐	1.0		Verified	0.5 - 1.2
Sodium Level	☐	150	H	Verified	136 - 145
Potassium Level	☐	5.0		Verified	3.6 - 5.0
Chloride	☐	101		Verified	101 - 111
CO2	☐	29		Verified	21 - 31
AGAP	☐	20	H	Verified	4 - 12
Calcium	☐	8.5		Verified	8.5 - 10.5

Enter the new result.

Hit **Enter** on the keyboard.

Procedure		Result	Flags	Status	Reference Range
Glucose Level	☐	110		Verified	70 - 110
BUN	☐	20		Verified	6 - 20
Creatinine	☐	1.0		Verified	0.5 - 1.2
Sodium Level	☑	140			136 - 145
Potassium Level	☐	5.0		Verified	3.6 - 5.0
Chloride	☐	101		Verified	101 - 111
CO2	☐	29		Verified	21 - 31
AGAP	☑	10			4 - 12
Calcium	☐	8.5		Verified	8.5 - 10.5

info: Notice that the **AGAP** has been recalculated and the flags have been updated.

Hit Ctrl+A to add a call comment[45] to the modified results.[46]

⚠ ***WARNING:*** *The Correction comment must be entered **before** proceeding with the next step. Otherwise, the result will need to be Corrected again to add the comment.*

Click Correct... when finished.

Procedure		Result	Flags	Status	Reference Ran...
Glucose Level	☐	110		Verified	70 - 110
BUN	☐	20		Verified	6 - 20
Creatinine	☐	1.0		Verified	0.5 - 1.2
Sodium Level	☐	140		Corrected	136 - 145
Potassium Level	☐	5.0		Verified	3.6 - 5.0
Chloride	☐	101		Verified	101 - 111
CO2	☐	29		Verified	21 - 31
AGAP	☐	10		Corrected	4 - 12
Calcium	☐	8.5		Verified	8.5 - 10.5

info: Notice that the Status has been changed to Corrected.

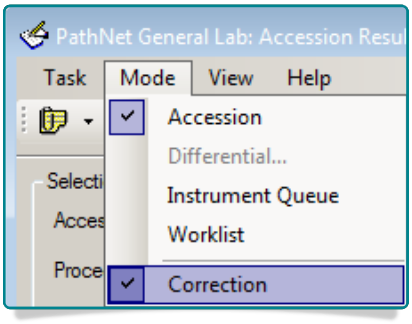
Finally, leave Correction Mode. This step is very important; it will cause frustration if you don't.

[45] This is simply to document the call.

[46] For more information: Refer to the Comments Documentation.

Click **MODE** from the menu bar.

Click **CORRECTION**.



THE CORRECTION MODE ICON should no longer be visible in the lower left corner of ARE.

IMPORTANT: Don't forget this step. It will prevent you from entering new results.

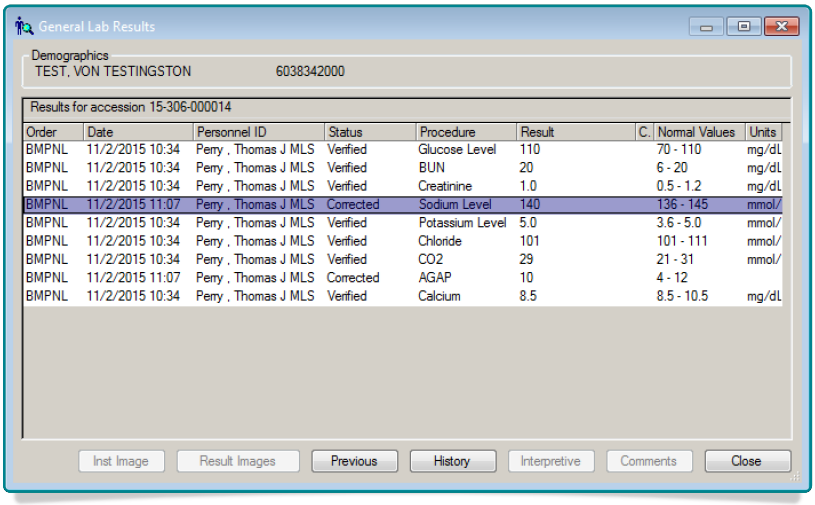
VIEWING ORIGINAL RESULTS

When results are modified in Cerner, all of the original information is saved.

Open the accession number in Order Result Viewer (ORV).[47]

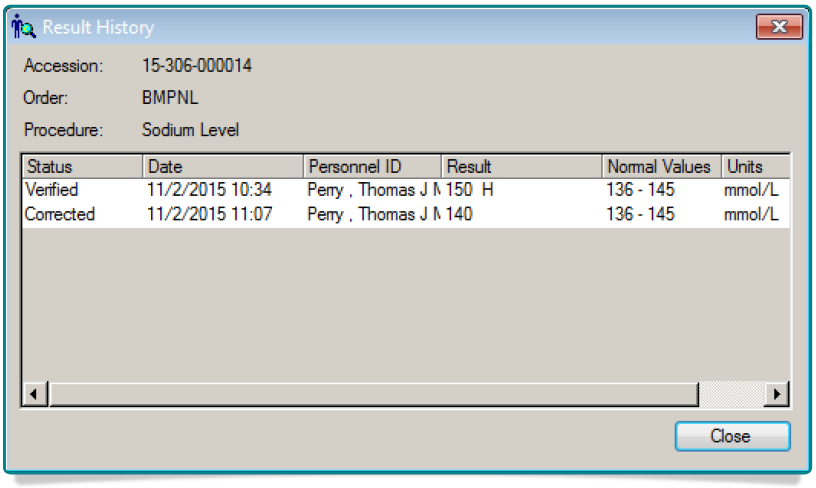
[47] Refer to the **ORDER RESULT VIEWER** Documentation.

Double-Click on the order.



Select the CORRECTED result.

Click History



THIS WINDOW WILL show all the modifications which have been made to the result.

IMPORTANT: The current result will appear at the bottom of this list. It is sorted from oldest to newest.

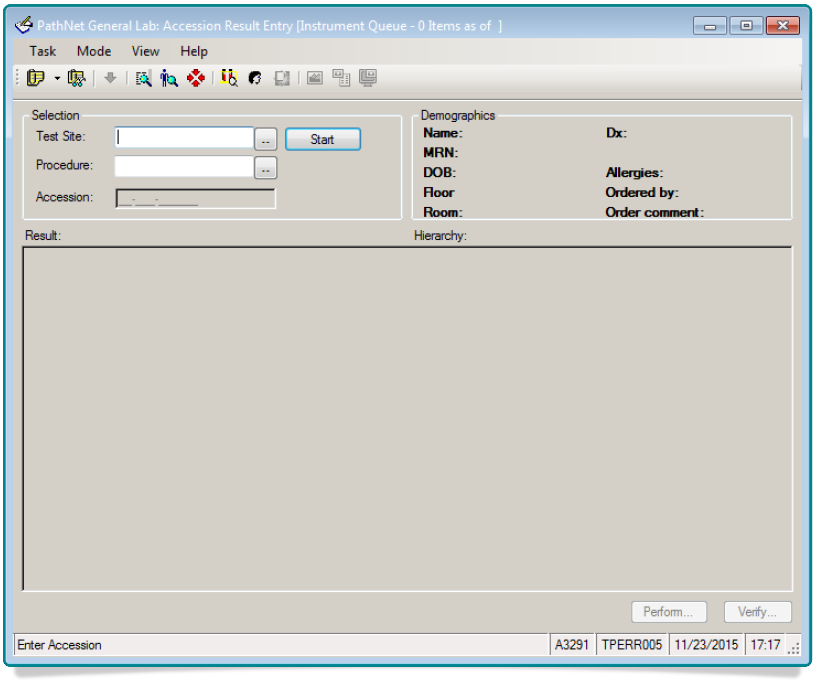
Instrument Queue Mode

When Cerner gets results from the instruments that cannot be Auto-verified it will send them to the Instrument Queue.

The Instrument Queue mode is used to review questionable results before Verifying them.

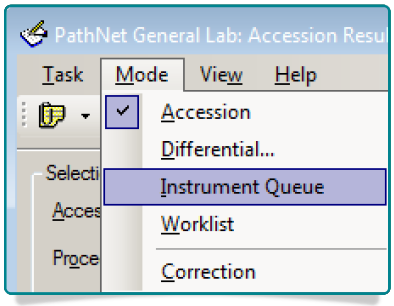
This mode will be useful in departments where many results are sent from the analyzers.[48]

[48] Chemistry, Coagulation, and possibly Urinalysis.



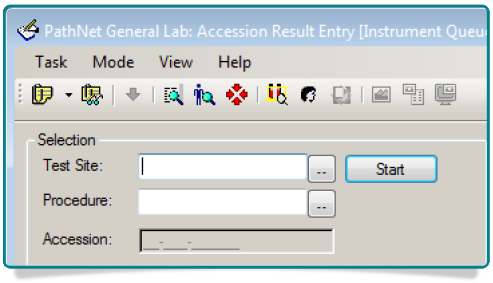
Opening Instrument Queue

- *Open* ARE.
- *Click* **Mode** from the menu bar.
- *Select* **Instrument Queue Mode**.



Cosmetic Differences

The difference between Instrument Queue and Accession Mode is the selection box.



Test Site: The Instrument Queue you'd like to view.

Procedure: This field is used to limit the results to a specific test.[49]

Accession: This field shows the accession number you're viewing.[50]

[49] This is an optional field.

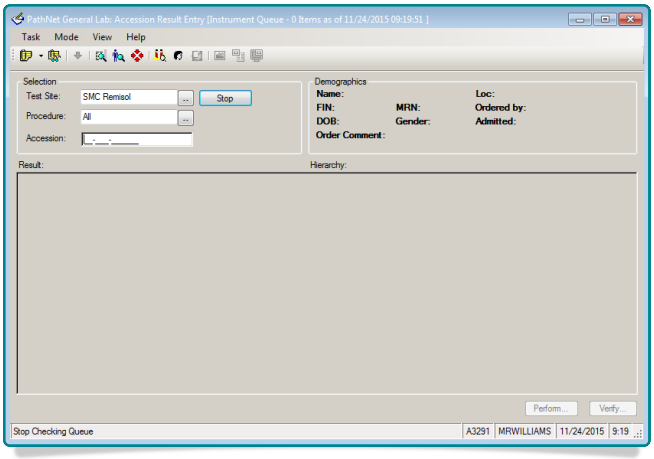
[50] If it's available.

Using Instrument Queue

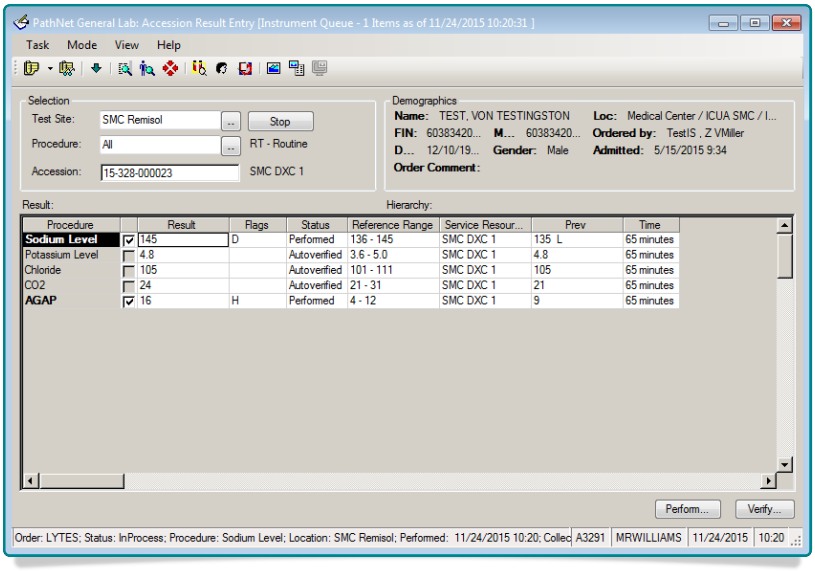
Enter the Instrument, Bench, Sectionor Subsection.[51]

[51] For more information: Refer to: **Routing** *pg. 45*

Click Start



The queue will remain here until results are sent over which needs to be viewed.



Note: *This Screenshot was taken before Autoverify rules were updated.*

- *Review* the results.
- *Enter* any appropriate comments.
- *Click* Verify...

Moving To the Next Result

If you're not ready to Verify the result you can move to the next item in the queue.

- *Click* the button on the tool bar.

Go To the Start of the Queue

When you reach the end of the list, the queue will be blank.

- *Click* Stop then,
- *Click* Start

This will bring you back to the start of the queue.

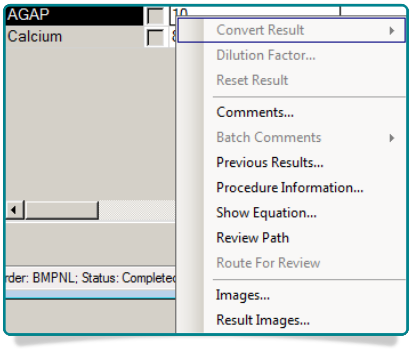
Canceling Orders

If the results are questionable, we can cancel the orders using ORV or Pending Inquiry.

Additional Information

Getting Assay Information

Additional information for each assay can be found by **Right-clicking** on the Result Cell and selecting the appropriate option from the menu.



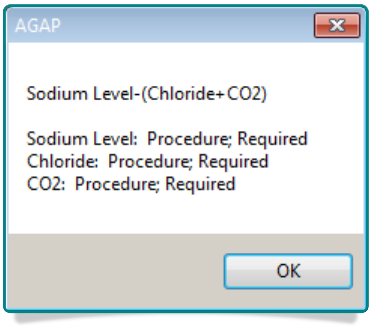
Calculation Equations

To view the equation used in calculated values:[52]

[52] This will not work for calculations that are performed by rules *e.g. Teg Platelet mapping.*

Select **Show Equation...**

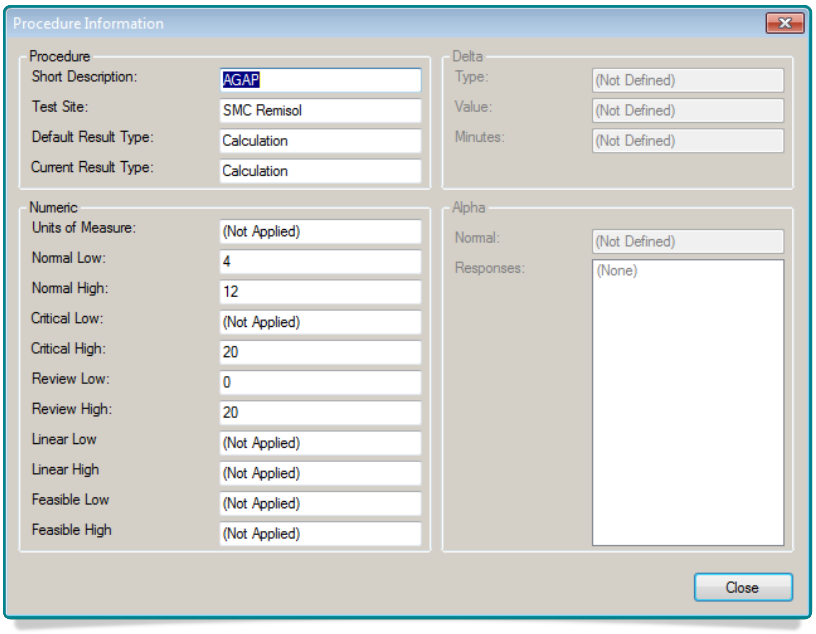
A Pop-up window will appear with the equation and a list of the equation's components.



Procedure Information

To view the various ranges, delta calculations, units of measure and more:

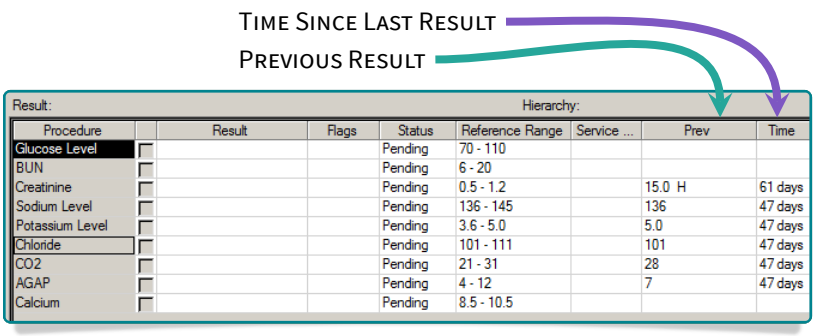
Select **Procedure Information...**



IMPORTANT: Since many of the ranges can changes based on **SEX** and **AGE**, the information displayed is specific to the current patient. The ranges may not apply to other patients.

Previous Results

The most recent previous results will appear to right of the result.

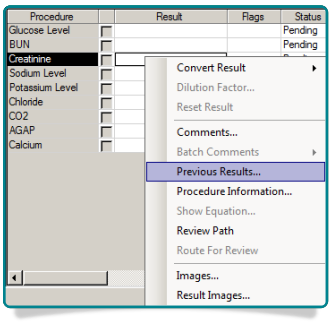


Notice that the Time column has two different values. This means that the previous results are mostly likely separate orders.

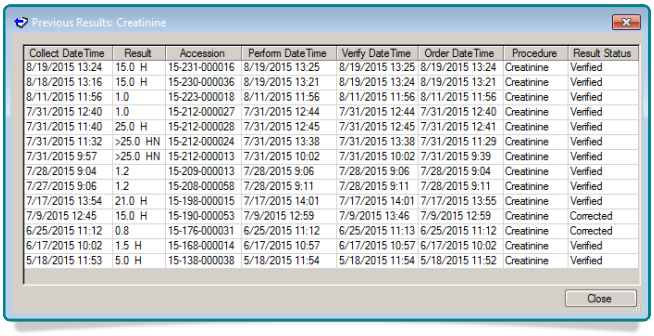
Multiple Previous

To view all the previous results for an assay:

- *Right Click* on the result cell.
- *Click* **Previous Results...**



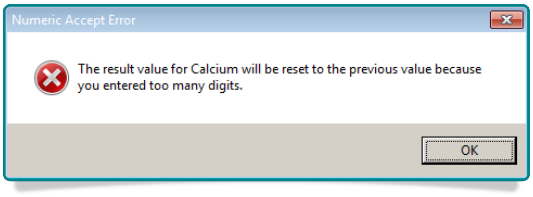
This will open the Previous Results window for that assay.



Troubleshooting

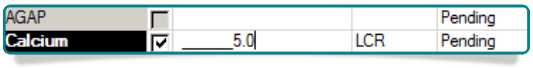
Too Many Digits

When trying to modify a result, you may get an alert stating that "Too many Digits were entered."



This often happens when changing a result value. When you Double Click on a result cell the cursor is placed to the far right.[53]

[53] In the example, it's to the right of ____5.0|



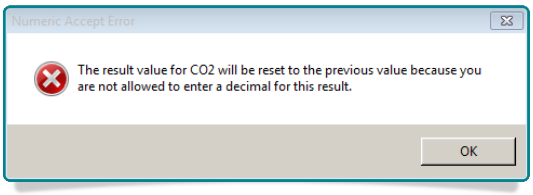
Cerner treats the leading underscores as zeros.

The easiest fix is to hit ⌨ **Backspace** to clear the results.

Decimals Not Allowed

The number of places after the decimal point is defined for each assay.

If no decimals have been defined, Cerner will prevent them from being entered.



Unable to Enter Results

There are two reasons why ARE won't let you enter results.

- The sample isn't In-lab
- ARE is in Correction Mode.

The Sample Isn't In-Lab

Results can only be entered if status is Pending. This means that the sample has been Logged-in to the proper location.[54]

[54] For additional help with this issue: Refer to the **Container Inquiry:** Using Container Inquiry for Troubleshooting Documentation.

In this example the Ser hCG Ql cannot be resulted.

Procedure		Result	Flags	Status	Reference Range
Sodium Level	☑	140		Pending	136 - 145
Potassium Level	☑	4.0		Pending	3.6 - 5.0
Chloride	☑	108		Pending	101 - 111
CO2	☑	22		Pending	21 - 31
AGAP	☑	10		Pending	4 - 12
Ser hCG Ql	☐			Not In-Lab	

Lytes Panel: Has a status of Pending. This **can** be resulted.

Ser hCG Ql: Has a status of Not In-Lab. This **cannot** be resulted.

To fix this the sample must be Logged-in. If you currently have the container, this can be done from within ARE.

Click  from the Tool Bar.

Log-in the sample.[55]

[55] For more information: Refer to the **Specimen Log-in Procedure**.

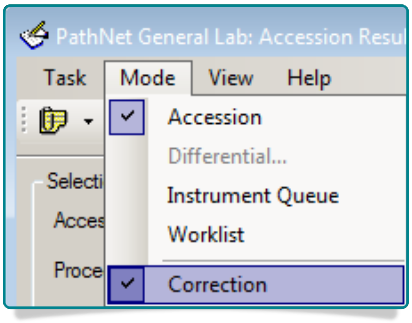
You're Still in Correction Mode

If you can see the  in the bottom left corner of ARE, then you're currently in Correction Mode. New results cannot be entered if ARE is in Correction Mode.

To Fix this disable Correction Mode.

Click **Mode** from the menu bar.

Click **CORRECTION.**



THE CORRECTION MODE ICON should no longer be visible in the lower left corner of ARE.

Routing

What is Routing?

When Accession Numbers are assigned, Cerner will determine a Service Resource[56] for the containers. The Service Resource is based on the Procedure,[57] and Collection Location of the container.

[56] Testing location.

[57] *e. g. CBC, Basic Panel, HbA$_1$c, etc…*

This gives Cerner the ability to update the status of a sample automatically based on the last place it was Logged-in.

For example: Let's say a CBC and a HbA$_1$c are sent to SMCA Laboratory.

When they're Logged-in to SMC Login, the CBC have an In-Lab status,[58] while the HbA$_1$c will have Pending status.[59]

[58] Meaning, it's available to be tested.

[59] Meaning, it's been collected but hasn't been sent yet.

In addition to tracking, the Service Resources is used in Pending Inquiry as the Test Site.

How Does It Work?

Instruments and Benches and Sections oh my!

Every test is **Routed** to either an Instrument or Bench.

Instruments are interfaced instruments.[60]
Benches are where manual tests are performed.
Since there are so many instruments[61] and benches we need a way to organize them. To do this we have Sections and Subsections.

[60] They can send the results to Cerner.

[61] We should start a band!

Sections are departments in the lab.[62]
Subsections are areas of the sections.[63]

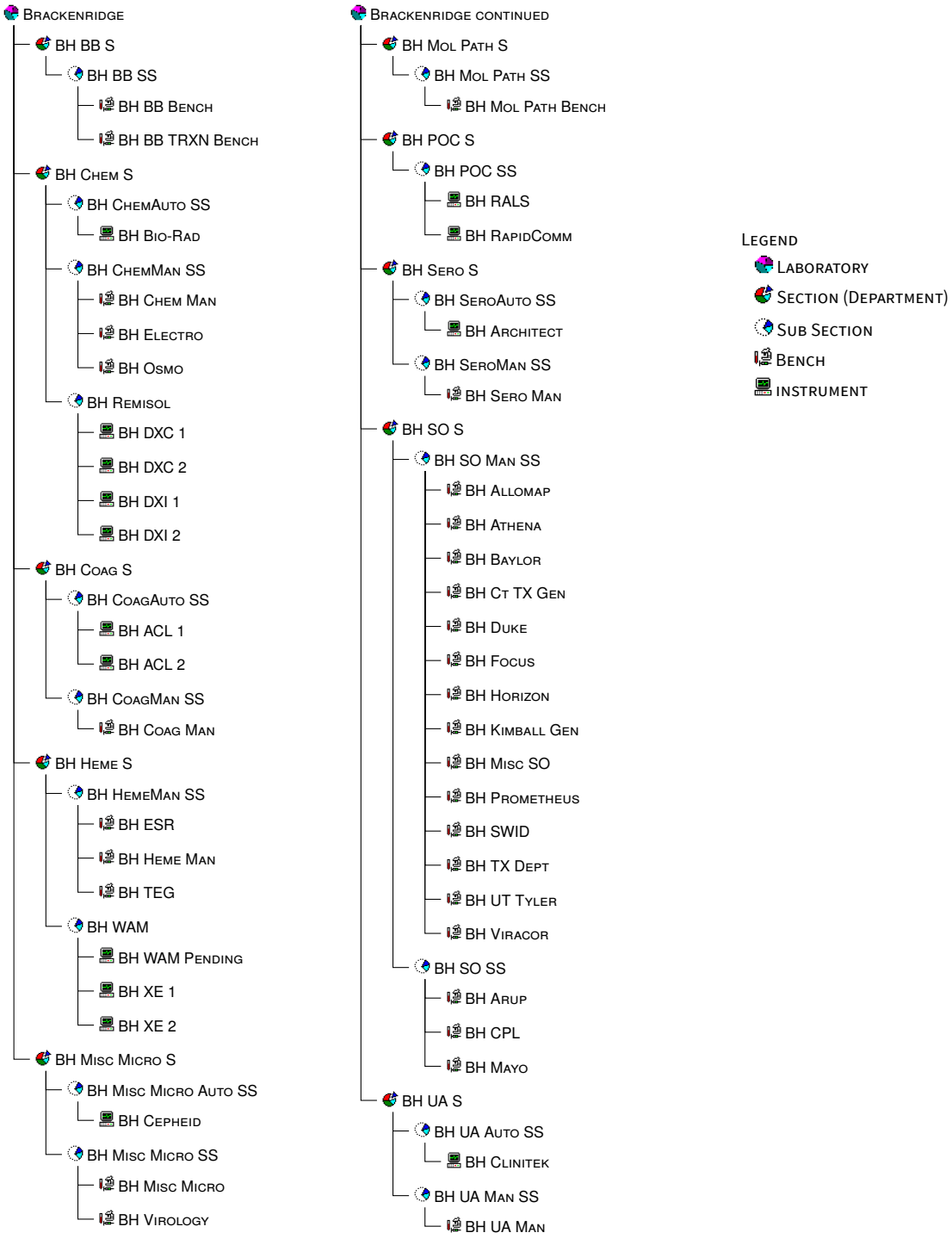
[62] Heme, Chem, UA, *etc…*

[63] Manual Chemistry, Tegs, Miscellaneous Micro, *etc…*

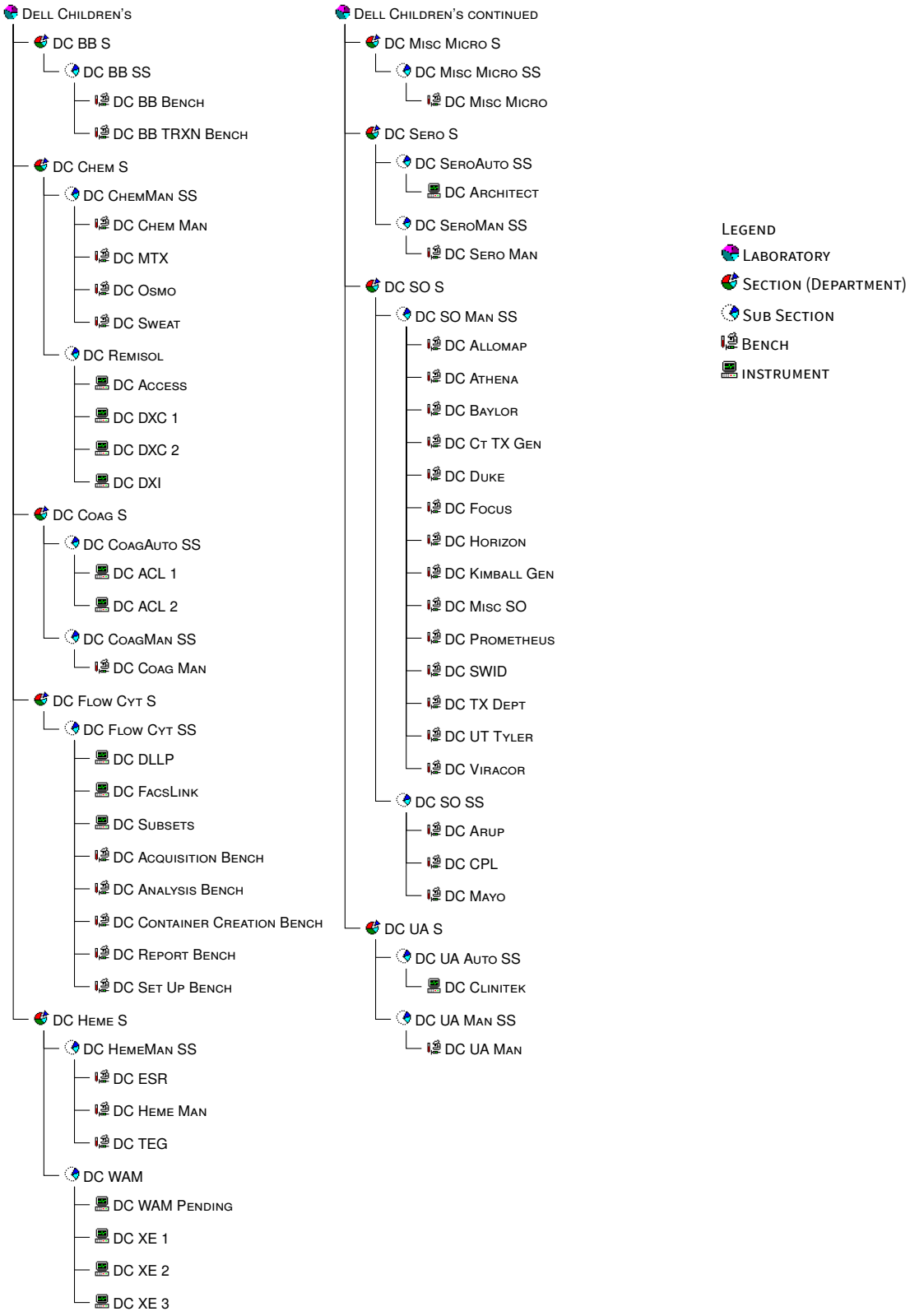
All That To Say:

Tests are routed to a Bench or Instrument.
Benches and Instruments belong to a Subsection.
Subsections belongs to a Section.

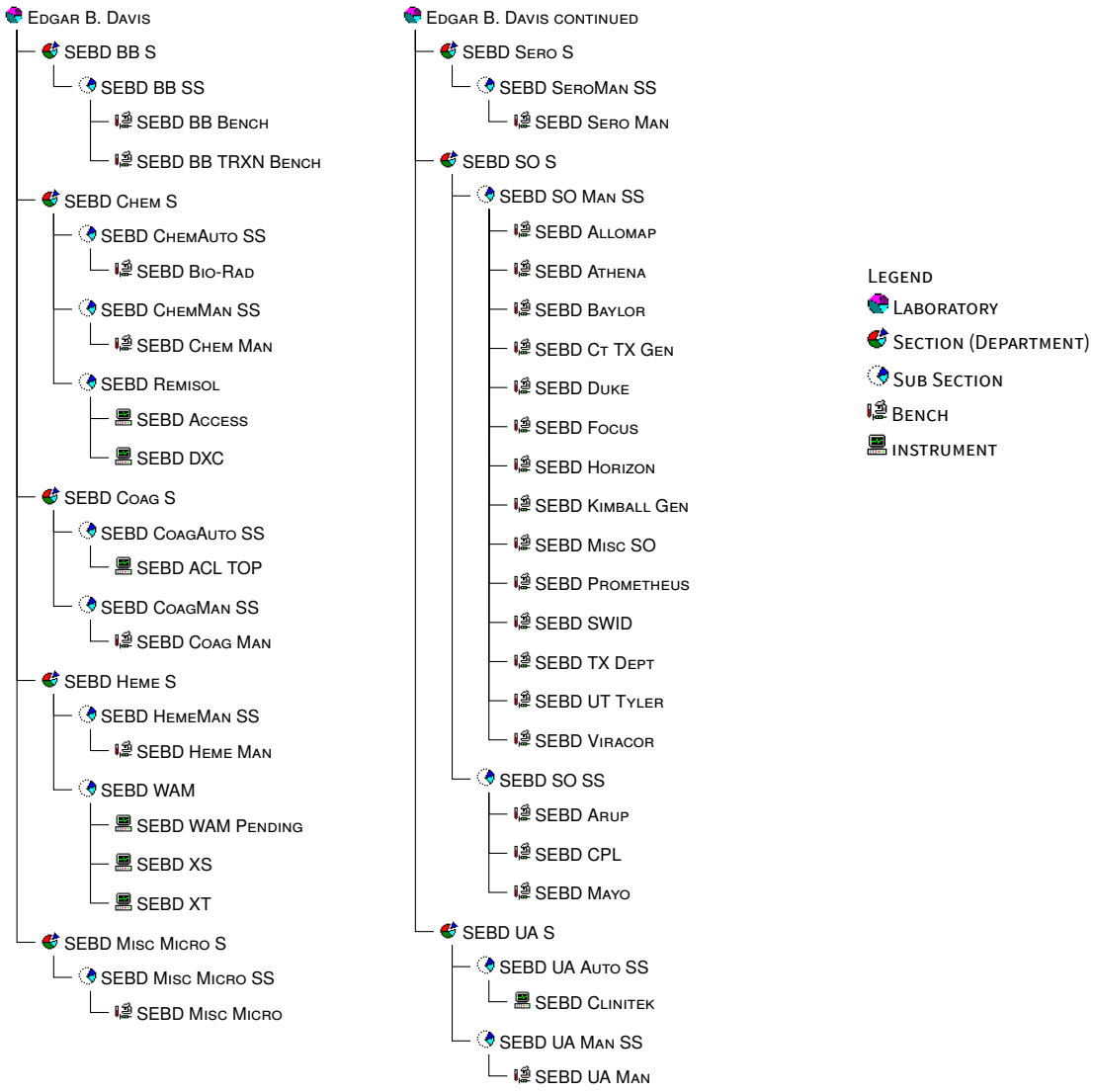
Brackenridge



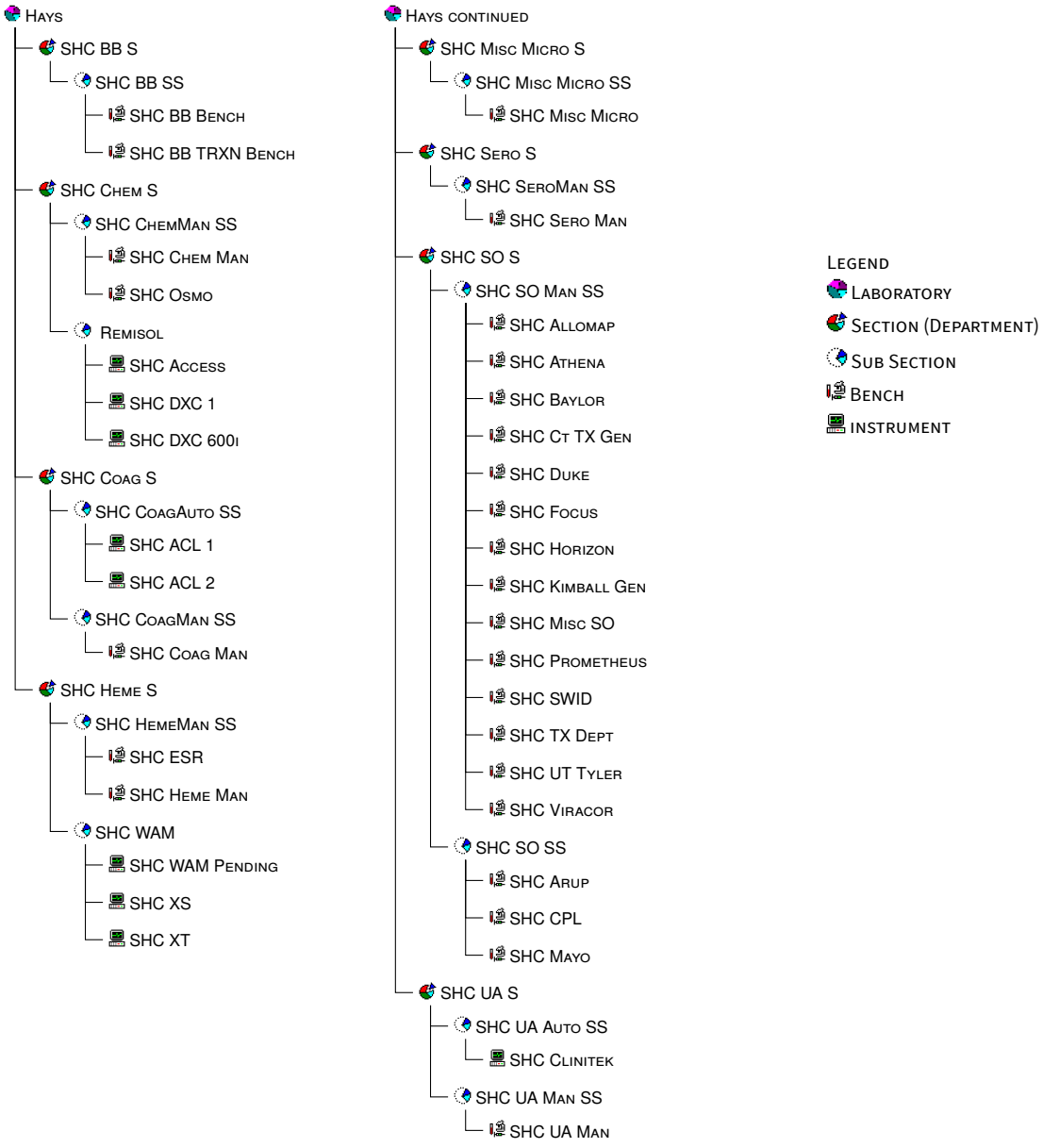
Dell Children's



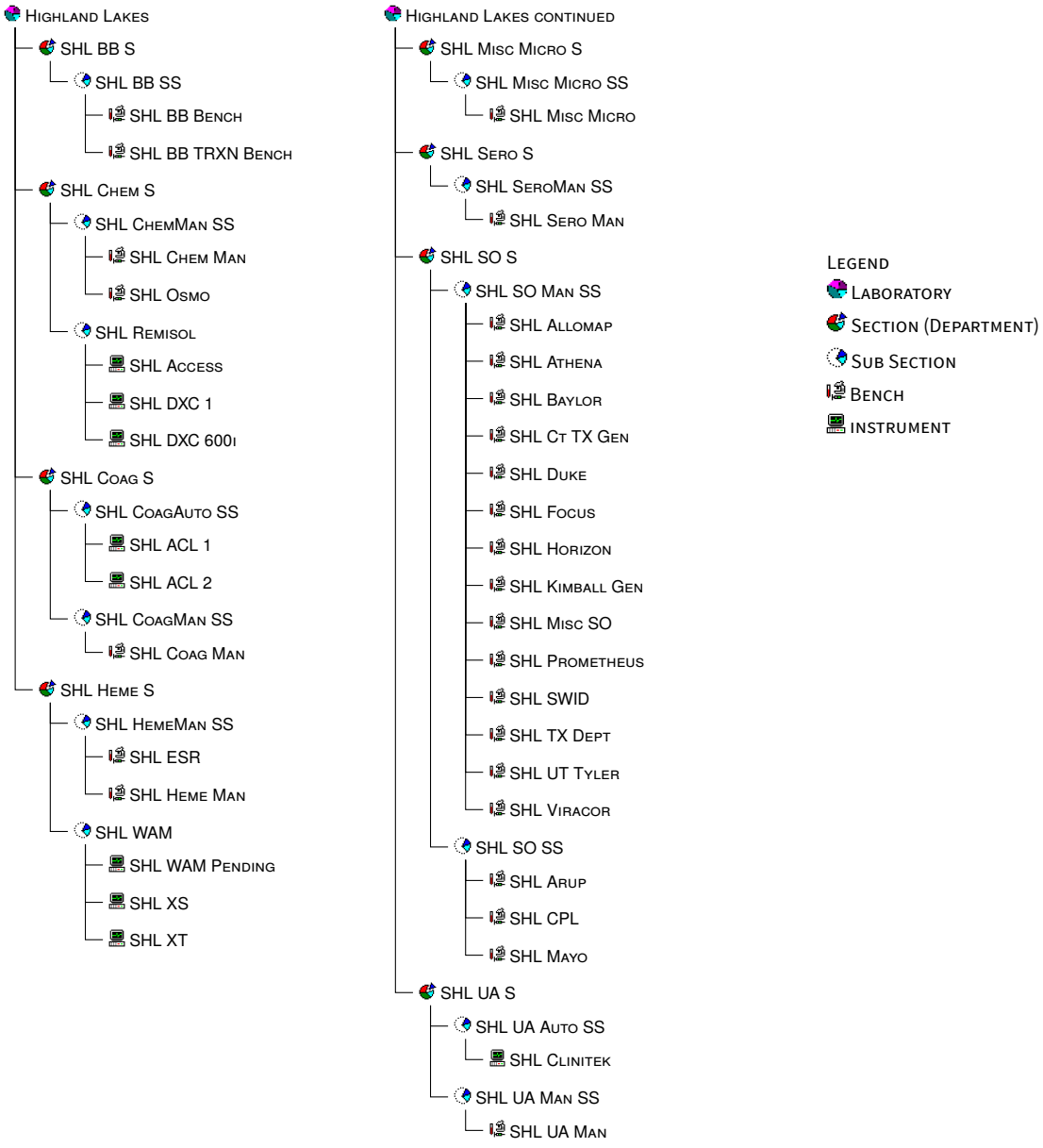
Edgar B. Davis



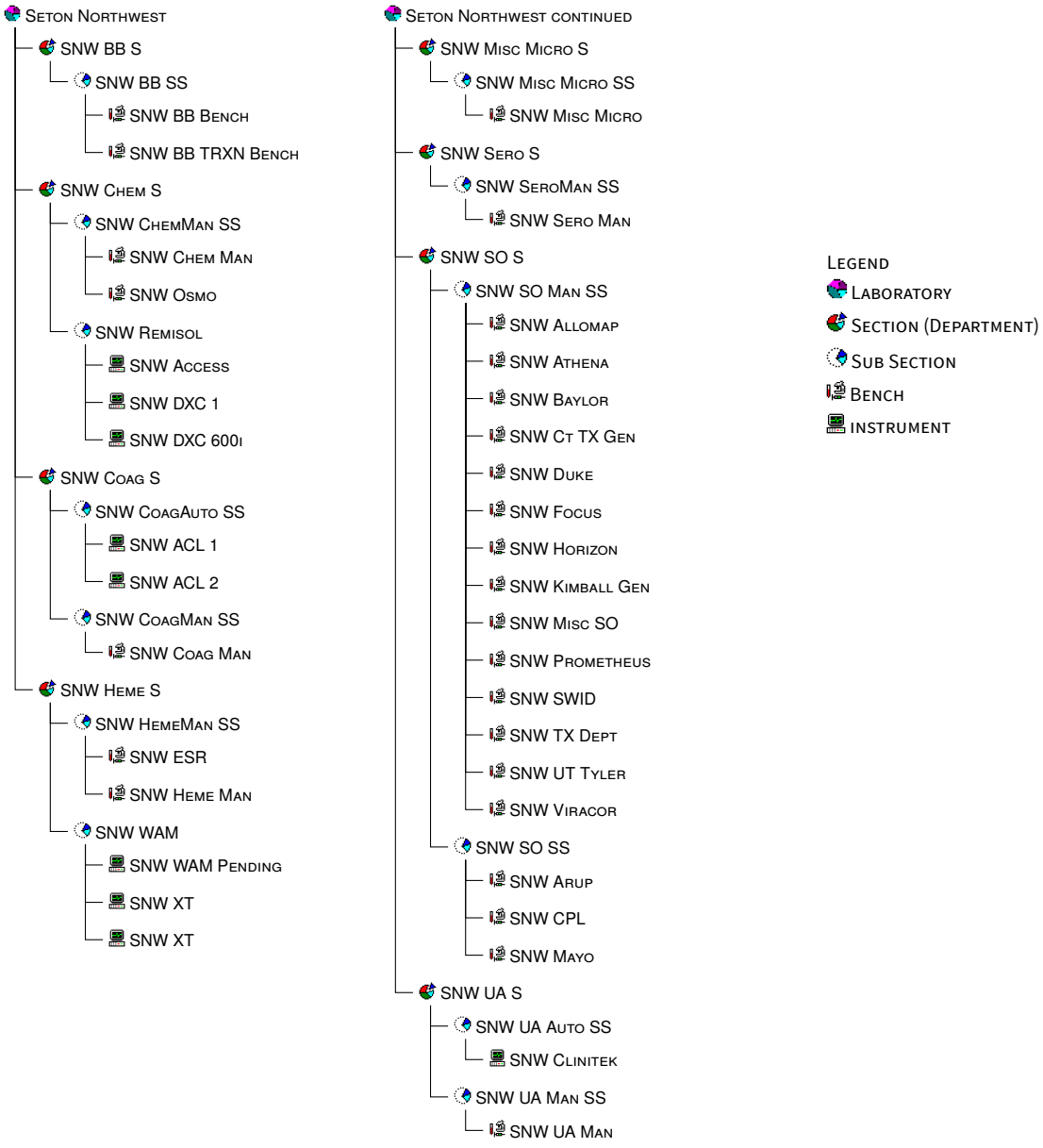
HAYS


HAYS
SHC BB S
SHC BB SS
SHC BB BENCH
SHC BB TRXN BENCH
SHC CHEM S
SHC CHEMMAN SS
SHC CHEM MAN
SHC OSMO
REMISOL
SHC ACCESS
SHC DXC 1
SHC DXC 600I
SHC COAG S
SHC COAGAUTO SS
SHC ACL 1
SHC ACL 2
SHC COAGMAN SS
SHC COAG MAN
SHC HEME S
SHC HEMEMAN SS
SHC ESR
SHC HEME MAN
SHC WAM
SHC WAM PENDING
SHC XS
SHC XT
HAYS CONTINUED
SHC MISC MICRO S
SHC MISC MICRO SS
SHC MISC MICRO
SHC SERO S
SHC SEROMAN SS
SHC SERO MAN
SHC SO S
SHC SO MAN SS
SHC ALLOMAP
SHC ATHENA
SHC BAYLOR
SHC CT TX GEN
SHC DUKE
SHC FOCUS
SHC HORIZON
SHC KIMBALL GEN
SHC MISC SO
SHC PROMETHEUS
SHC SWID
SHC TX DEPT
SHC UT TYLER
SHC VIRACOR
SHC SO SS
SHC ARUP
SHC CPL
SHC MAYO
SHC UA S
SHC UA AUTO SS
SHC CLINITEK
SHC UA MAN SS
SHC UA MAN
LEGEND
LABORATORY
SECTION (DEPARTMENT)
SUB SECTION
BENCH
INSTRUMENT

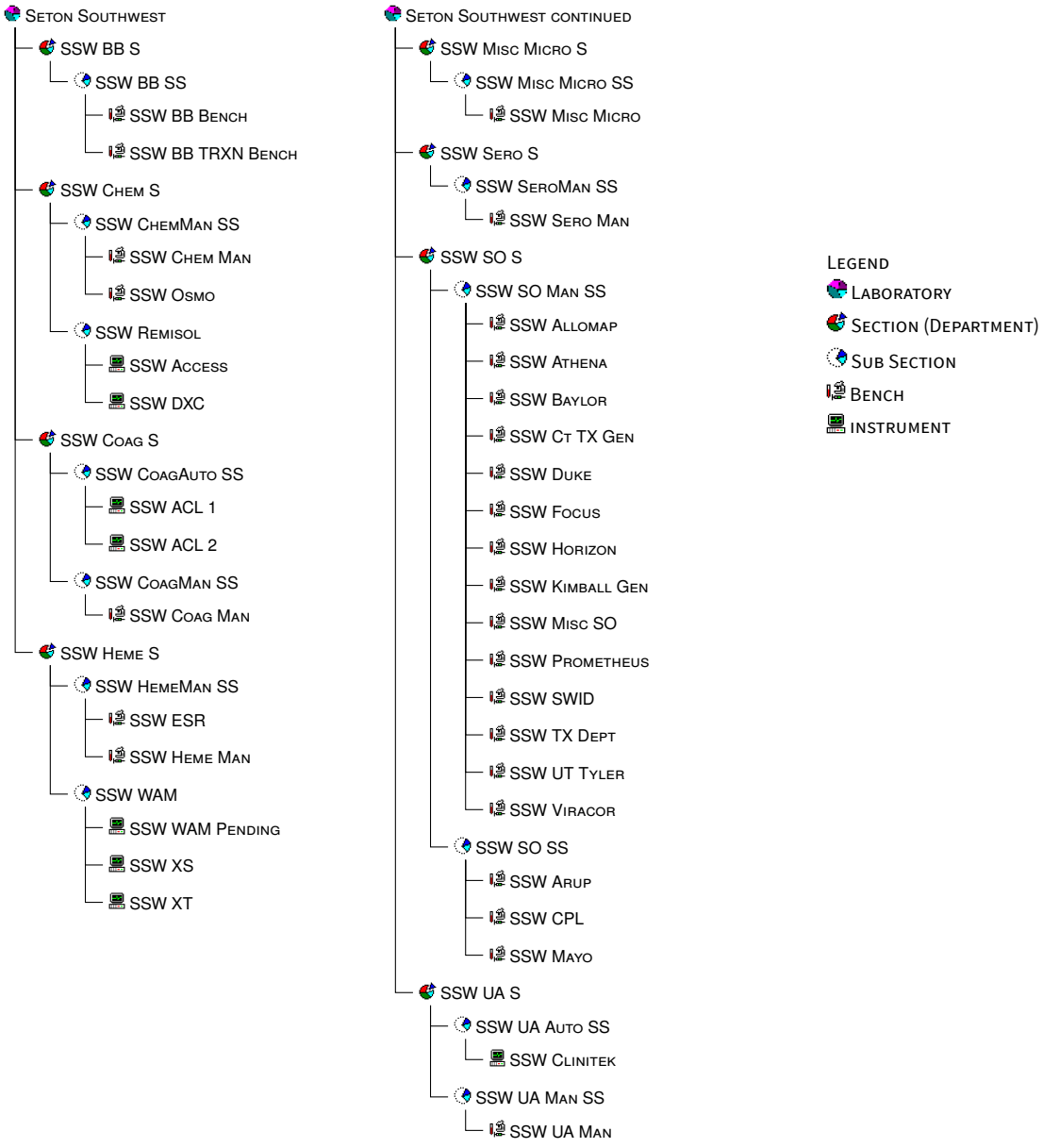
Highland Lakes



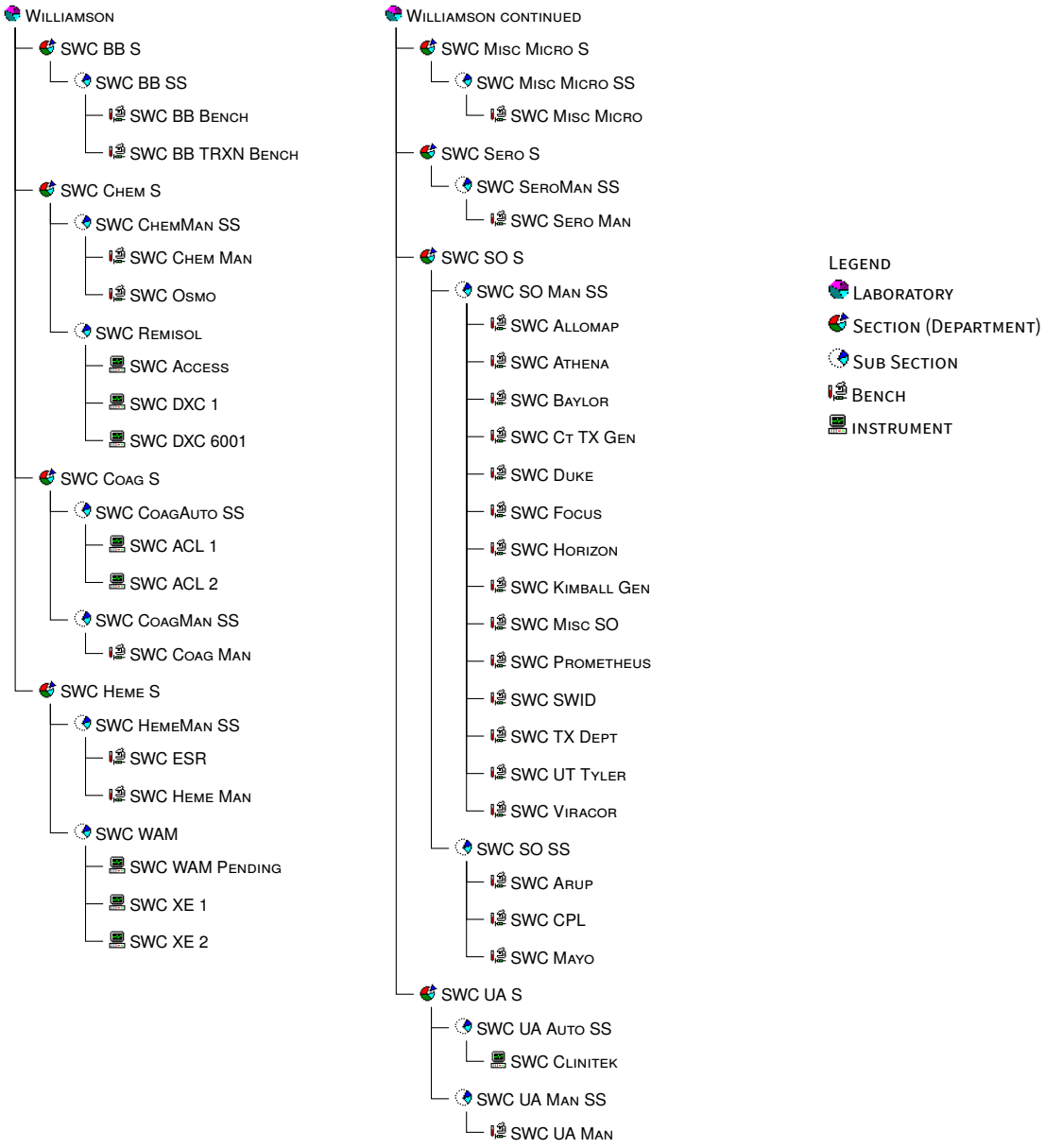
Northwest


Seton Northwest
SNW BB S
SNW BB SS
SNW BB Bench
SNW BB TRXN Bench
SNW Chem S
SNW ChemMan SS
SNW Chem Man
SNW Osmo
SNW Remisol
SNW Access
SNW DXC 1
SNW DXC 600i
SNW Coag S
SNW CoagAuto SS
SNW ACL 1
SNW ACL 2
SNW CoagMan SS
SNW Coag Man
SNW Heme S
SNW HemeMan SS
SNW ESR
SNW Heme Man
SNW WAM
SNW WAM Pending
SNW XT
SNW XT
Seton Northwest continued
SNW Misc Micro S
SNW Misc Micro SS
SNW Misc Micro
SNW Sero S
SNW SeroMan SS
SNW Sero Man
SNW SO S
SNW SO Man SS
SNW Allomap
SNW Athena
SNW Baylor
SNW Ct TX Gen
SNW Duke
SNW Focus
SNW Horizon
SNW Kimball Gen
SNW Misc SO
SNW Prometheus
SNW SWID
SNW TX Dept
SNW UT Tyler
SNW Viracor
SNW SO SS
SNW Arup
SNW CPL
SNW Mayo
SNW UA S
SNW UA Auto SS
SNW Clinitek
SNW UA Man SS
SNW UA Man
Legend
Laboratory
Section (Department)
Sub Section
Bench
Instrument

Southwest


Seton Southwest
SSW BB S
SSW BB SS
SSW BB Bench
SSW BB TRXN Bench
SSW Chem S
SSW ChemMan SS
SSW Chem Man
SSW Osmo
SSW Remisol
SSW Access
SSW DXC
SSW Coag S
SSW CoagAuto SS
SSW ACL 1
SSW ACL 2
SSW CoagMan SS
SSW Coag Man
SSW Heme S
SSW HemeMan SS
SSW ESR
SSW Heme Man
SSW WAM
SSW WAM Pending
SSW XS
SSW XT
Seton Southwest continued
SSW Misc Micro S
SSW Misc Micro SS
SSW Misc Micro
SSW Sero S
SSW SeroMan SS
SSW Sero Man
SSW SO S
SSW SO Man SS
SSW Allomap
SSW Athena
SSW Baylor
SSW Ct TX Gen
SSW Duke
SSW Focus
SSW Horizon
SSW Kimball Gen
SSW Misc SO
SSW Prometheus
SSW SWID
SSW TX Dept
SSW UT Tyler
SSW Viracor
SSW SO SS
SSW Arup
SSW CPL
SSW Mayo
SSW UA S
SSW UA Auto SS
SSW Clinitek
SSW UA Man SS
SSW UA Man
Legend
Laboratory
Section (Department)
Sub Section
Bench
Instrument

WILLIAMSON


WILLIAMSON
SWC BB S
SWC BB SS
SWC BB BENCH
SWC BB TRXN BENCH
SWC CHEM S
SWC CHEMMAN SS
SWC CHEM MAN
SWC OSMO
SWC REMISOL
SWC ACCESS
SWC DXC 1
SWC DXC 6001
SWC COAG S
SWC COAGAUTO SS
SWC ACL 1
SWC ACL 2
SWC COAGMAN SS
SWC COAG MAN
SWC HEME S
SWC HEMEMAN SS
SWC ESR
SWC HEME MAN
SWC WAM
SWC WAM PENDING
SWC XE 1
SWC XE 2
WILLIAMSON CONTINUED
SWC MISC MICRO S
SWC MISC MICRO SS
SWC MISC MICRO
SWC SERO S
SWC SEROMAN SS
SWC SERO MAN
SWC SO S
SWC SO MAN SS
SWC ALLOMAP
SWC ATHENA
SWC BAYLOR
SWC CT TX GEN
SWC DUKE
SWC FOCUS
SWC HORIZON
SWC KIMBALL GEN
SWC MISC SO
SWC PROMETHEUS
SWC SWID
SWC TX DEPT
SWC UT TYLER
SWC VIRACOR
SWC SO SS
SWC ARUP
SWC CPL
SWC MAYO
SWC UA S
SWC UA AUTO SS
SWC CLINITEK
SWC UA MAN SS
SWC UA MAN
LEGEND
LABORATORY
SECTION (DEPARTMENT)
SUB SECTION
BENCH
INSTRUMENT

Seton Medical Center