nucleoLIS Ē.finity

Molecular Information Management System

User Guide

January 2021

Medical Laboratory Software

v 2.1.15

Contents

Chapter 1
Introduction

The **NucleoLIS Ē.finity** MIMS (Molecular Information Management System) is a very flexible and powerful system where all aspects of case, specimen and test processing can be done. Cases are accessioned with the ease of bar code scanning and all levels of result entry can be predefined or customized as you go. User-defined labels can be printed at any time or in batch.

Behind all the functions that make up NucleoLIS is a powerful database library that is completely user-customizable so that the system can easily meet your facility's needs. This library is described in Chapter 8.

About this manual

This manual is divided into 13 chapters, each describing one of the operations available in NucleoLIS plus this introduction chapter.

- Chapter 1 - Introduction

This chapter describes the basic work flow of case, specimen and test processing as well as some of the NucleoLIS features that are seen throughout the system.

- Chapter 2 - Accession

Chapter 2 describes how to accession cases and specimens, including adding patients and visits into the system.

- Chapter 3 - Result Manager

Chapter 3 describes how to process case, specimens, and test results in the system.

- Chapter 4 - Batch Result

Chapter 4 describes how to enter batched results using the Batch Result Entry window.

- Chapter 5- Delivery Monitor

Chapter 5 describes the Delivery Monitor window where you can check the status of report distribution.

- Chapter 6 - Batch Steps

Chapter 6 describes how to enter and batch specimens to the next predefined process step.

- Chapter 7- Batch Label

Chapter 7 gives instructions on printing a batch of labels for cases and specimen.

- Chapter 8 - Library

Chapter 8 describes all the tables that make up the system library and how to configure and build the library.

- Chapter 9 - Label Designer

Chapter 9 describes how to create labels for cases, specimens, and profiles.

- Chapter 10 - Result Report Designer

Chapter 10 describes how to create report formats and layouts.

- Chapter 11 - Human Resources

Chapter 11 describes the physician and user tables and how to add both to the system.

- Chapter 12 – Storage Manager

Chapter 12 describes how to use the Storage Manager, which allows you to assign the exact locations where your individual specimens are stored.

- Chapter 13 - Configuration

Chapter 13 describes the system preferences available that allow the system manager to configure NucleoLIS to suit the laboratory.

- Chapter 14 - Run Management Reports

Chapter 14 describes how to run, print, save and view management reports.

- Chapter 15 - Design Management Reports

Chapter 15 describes the e.Query ancillary module, which allows you to create your own management reports at any time.

NucleoLIS Window Structure

The main windows in NucleoLIS basically consist of two types, although every window varies with buttons and fields appropriate to the operation being performed in that window.

The *simple list type* windows, which are used to display the library tables and other data, have a list on the left and a detail grid on the right that shows all the information pertaining to the selected item in the list on the left. Figure 1-1 is an example of a simple list type window, the *Physician* window.

Figure 1-1 - Example of a Simple List Type Window

Another type of window in NucleoLIS is more complex. This *complex multi-grid type* of window displays a great deal of information in one place and is used in the *Result Manager* and *Accession* operations. These windows may have a *search list grid* at the top of the window as well. Figure 1-2 shows an example of the Result *Manager* window, a very complex multi-grid type window.

Complex multi-grid type windows contain a **main data grid**, which consists of the left **directory tree** structure and the right **details grid.** Depending on what is selected in the directory tree, the entries on the right change to reflect the appropriate selection.

As data grows in the directory tree, there will be a small square with a plus sign **(+)** in front of a record indicating that there are other records under that one. Click **(+)** to open and display the *child* records. Click minus sign **(-)** to collapse the tree from that point.

NOTE: *Other types of windows are found throughout NucleoLIS that do not follow either of these types. They are laid out in a specific way appropriate for the purpose of the window.*
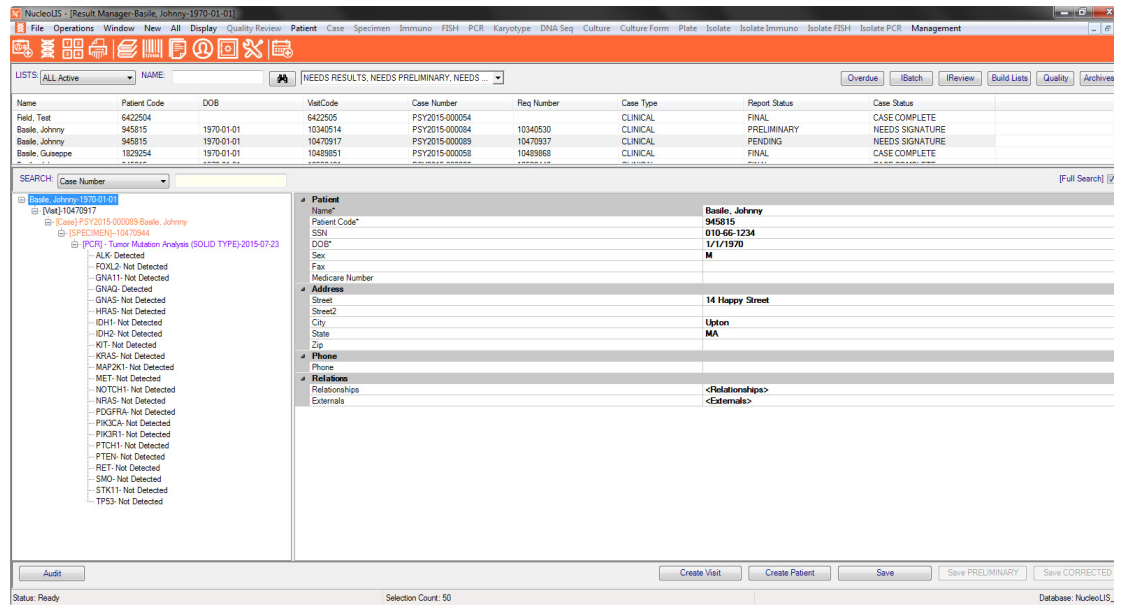
Figure 1-2 - Example of a Complex Multi-grid Type Window

NucleoLIS Data Flow

There is a definite relationship and dependency between types of records in NucleoLIS. For example, before a visit can be added, a patient record must first be created for that patient. Similarly, before a culture can be added, a *Case* must be added to the patient's visit. This diagram shows the basic relationship in the database, which is reflected in directory tree.

Figure 1-3 - NucleoLIS Data Flow

Usability Features in NucleoLIS

A number of features that help with the usability of NucleoLIS are found throughout the system. These standard conventions are described in this section.

Searching for records

In most windows you need to search for some piece of information. In most windows there are some search criteria fields specific to the current window and a button that shows a picture of a pair of binoculars.

Clicking the binocular button performs the search.

Starting a search also has a shortcut keystroke of **Ctrl+R**.

The Ellipsis button (...)

Often during data entry throughout NucleoLIS, you may see a button at the end of the current field that displays three periods, also called an **ellipsis (...)**. This tells you that if you click on it a window will open that gives you choices that are specific for that field. These choices are usually defined in one of the tables in the Library.

Comment# fields

One of the many tables in the Library is the *Comment Definition* table. In this table all system comments are defined. Whenever you see a field label followed by the pound sign **(#)**, entering a # in that field opens a list of available comments for that field. Depending on the definitions in the *Link Comments* window, the options in the list may be the complete Comment Definition table or a subset.

How to link comments to a specific field is described in the Library chapter.

Required (*) fields

Fields that have as asterisk **(*)** following the label are required fields. These fields may be auto-generated when the record is saved depending on your system configuration.

Save vs Save+

In most windows there is a **Save** button, which as you would expect saves the current record with whatever changes have just been made. In some windows there is also a **Save**+ button. This button usually saves the record and opens a new blank window for a new record, such as in the Library windows.

The **Save**+ button may also open the next logical window in a normal work-flow. For example, clicking **Save**+ after adding a new patient to the system opens the Visit window so that a visit can be created on that patient.

Ctrl+S is the keyboard shortcut for **Save**.

Ctrl+Shift+A is the keyboard shortcut for **Save**+.

External File Storage

Most data in NucleoLIS is stored in multiple tables in the NucleoLIS database, but external data, such as images you might add to a case or reports that you save for a special purpose, are retrieved from or stored outside the database.

If there is no defined isolated area for this storage, the location NucleoLIS will use is the user's workstation and opened to whatever folders they normal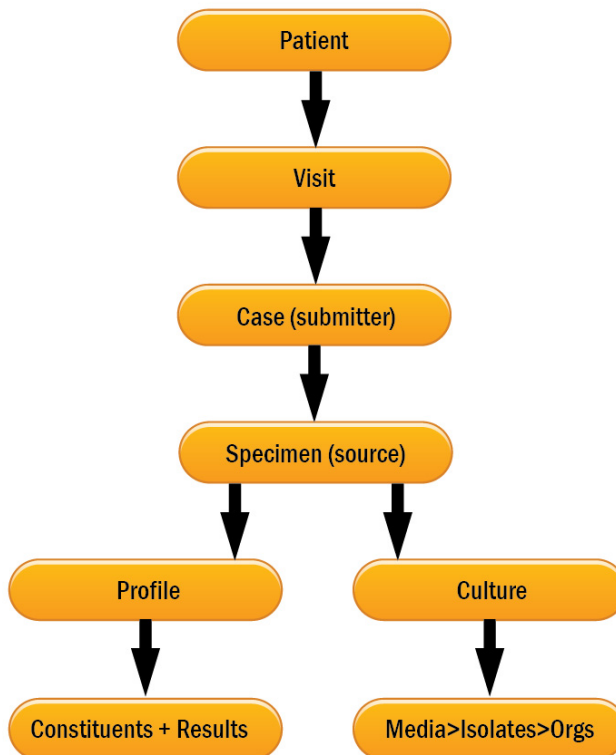ly have access to. This may or may not be preferable and in some laboratories, prohibited. For hosted clients, Psyche sets the path for you and is typically a sub folder of where your NucleoLIS program resides.

In NucleoLIS E.finity, you may also set user-specific, or *private*, folders to be used when opening or saving files. When the private folders preference is set to true, the Open and Save dialog boxes appear different to the user, as shown below.

Opening files dialog box

- List of available files in either IsolatedStorageArea or Private folder are displayed in main box.
- **Filter:** Enter partial file name to filter for matching files.
- **Type:** Drop-down list to filter by file type, such as PDF or JPG.
- **Private checkbox:** Check to view files in Private folder. Uncheck to view files in main IsolatedStorageArea folder.

Click **OK** to continue or **Cancel** to exit.

Open dialog box that uses the IsolatedStorageArea folder are in the following NucleoLIS fields and menu items:

- **Accession** and **Result Manager:** Case - Documents field
- **Accession** and **Result Manager:** Profile - Images field
- **Consolidated Result Entry Window (CREW):** Profile - Images field
- **Library:** Transfer - Import Library Item

Saving files dialog box
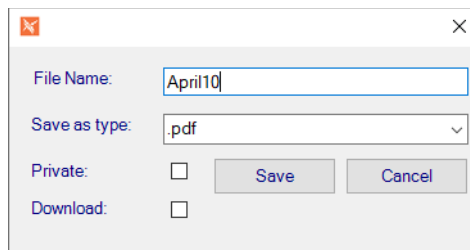
- **Filename:** Enter partial file name to filter for matching files.
- **Save as type:** Drop-down list to select file type, such as PDF or XML.
- **Private checkbox:** Check to save file in Private folder, named for the user. Uncheck to save file in main IsolatedStorageArea folder. e.g. *IsolatedStorage\username*.
- **Download checkbox:** Check to save file in Download subfolder of the defined Isolated Storage folder. If Private is also checked, the file is stored in a subfolder of "Download" named for the user. e.g. *IsolatedStorage\Download\username*.

Click **OK** to continue or **Cancel** to exit.

Save dialog box that uses the IsolatedStorageArea folder are in the following NucleoLIS options:

- **Run Management Reports:** Save option
- **Report Preview**, **Report Review**, and **CREW Summary:** Save Copy option
- **Library:** Transfer - Export Library Item

There are three preferences related to the Isolated Storage Folder, set by Psyche:

- **IsolatedStorageArea:** Sets a directory path to restrict file system interactions to a single directory. If no path is defined, the user accesses their own workstation file structure.
- **IsolatedStorageDownload:** Enables reading and writing to a "Download" sub directory of IsolatedStorage. Set True/False.
- **IsolatedStoragePrivate:** Enables reading and writing to a user specific sub directory of IsolatedStorage. Set True/False.

Audit table

Many of the windows have an Audit button. Clicking these buttons opens a window that displays a detailed audit trail of anything that has happened to the *current* record.

Ctrl+T is the keyboard shortcut for the *Audit window*.

Context sensitive menus

Context sensitive menus are menus that are specific to the current record. When a record is selected in the Directory Tree, and you right-click with the mouse, a menu will pop up giving you options that are appropriate for the record you have selected.

These menu options are also available in the windows menu or often an action button at the bottom of the window, but some users find the context sensitive menus easier to use.

Shortcuts

Many of the operation performed in NucleoLIS have a keyboard shortcut to accompany the menu selection or button that performs that action. Some of these shortcuts are listed in this section, but they are also listed along with the command in the appropriate menus. Whether you use the shortcut or select from a menu is up to the user.

User defined tables and display fields

NucleoLIS is a very flexible system that allows you to customize it to best suit the facility needs. Field labels can be changed to a label that is more familiar. Most tables have optional user fields that you can use to specify additional data to be stored on the record, and many default entries can be predefined.

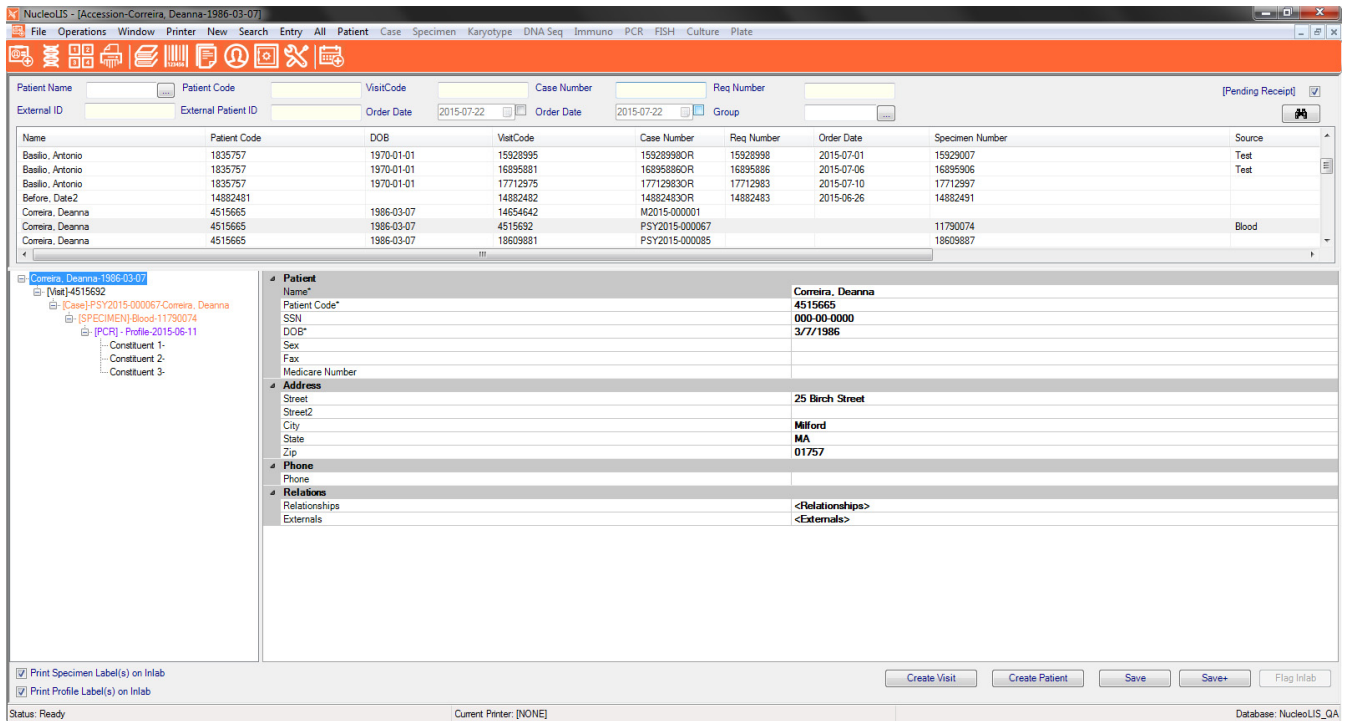All of these parameters are defined through the *Configuration* window.

Chapter 2
Accession

The *Accession window* is where users add new patients, visits, cases and specimens to NucleoLIS. Users access the Accession window either through the Accession button on the left or from the Operations Menu.

Before any test results can be processed, they must be created (or logged in) in the Accession window. Depending on the configuration of the system and what kind of interfaces are running, users may or may not need to add a patient to the system or create a visit.

If included in your NucleoLIS system, an alternate window may be used for rapid entry of admissions and orders that are similar in values. See the *Consolidated Accession Entry Window* section later in this chapter.

NOTE: *If users have an orders interface, users may not need to add patients, visits, cases, specimens or profiles.*

This chapter will show users how to use the Accession window to do the following:

- Add a new patient to the system
- Look up a patient that is already in the system
- Add a new visit to an existing patient
- Add a case to an existing visit
- Add a specimen to an existing case
- Order Profiles to an existing specimen
- Flag specimens as being in the laboratory

The Accession Window

When users open the Accession window by clicking the Accession button or selecting Accession from the Operations Menu, a blank Accession window is displayed similar to the one shown in Figure 2-1. There are 5 sections that make up the Accession window.

- The **search fields** where criteria may be entered to search for patients and cases
- The **list grid** where any found records from a search are listed
- The **main data grid**, which consists of the left **data tree** structure and the right **data details grid.** Depending on what is selected in the data tree, the entries on the right change to reflect the appropriate selection.
- **Action buttons and check boxes** on the bottom, which change depending on the current process

Figure 2-1 - Accession Window

Add a new patient to the system

In the Accession window, select **New > Patient** from the Windows menu or press **<Ctrl+N>**. The Patient demographic list is displayed in the data details grid, which typically includes the following:

- Name - patient name
- MedRec - patient medical record number
- SSN - patient social security number
- DOB - patient date of birth
- Sex - patient sex
- Phone - patient phone number
- Fax - patient fax
- MedicareNumber - patient Medicare number
- Street - patient street address
- Street2 - second patient street address
- Zip - patient zip code; accesses the Zip Code table and fills in the city and state if any
- City - patient city
- State - patient state
- Relationships - click ellipsis to open the Relationships window and manage pertinent familial and personal relationships
- Externals - manage pertinent documents generated externally to the NucleoLIS system

NOTE: *The demographics available in your system may be configured differently. Remember - All required demographics have an asterisk (*) following the item.*

Enter the appropriate information for each demographic, pressing return after each entry to go to the next.

Patient names should be entered as `last name, first name`.

Demographics that are set to be calculated will be dithered and the entry will be assigned when the patient is saved.

Some demographics may have a drop-down box for ease of selection, such as dates will open a selection calendar, or a list of standard entries stored in the library may be available. These demographics will be flagged with an ellipsis (...), the 3 periods, at the end of the field when the cursor is at that field.

Discrete Name Entry

If your system is configured for discrete names, you may specify entry of names that have one or more first or middle names and/or suffix. This functionality is most useful when interfaces have specific requirements. To specify a patient's discrete name, click the name field, then the ellipsis in that field. The following window opens, where parts of the name may be entered. Click OK to store the discrete name.

The default storage of names whether manually entered or through an ADT interface are such that anything before the comma is considered the last name. Following the comma, if there's more than one name/word, the last is considered the middle name and the rest is considered the first.
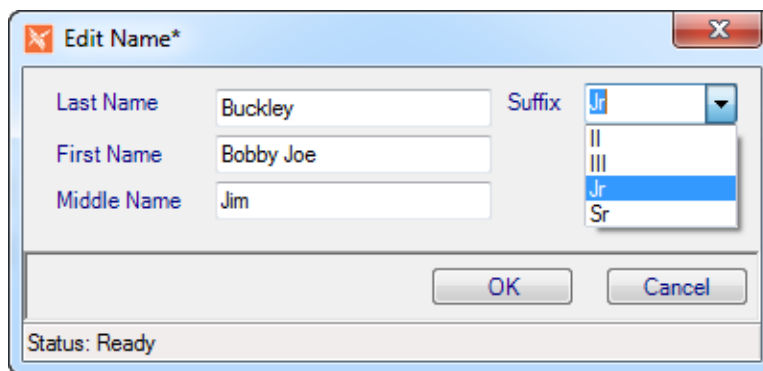

Figure 2-2 - Edit Name Window

Saving the patient

Click **Save** to save the patient record and leave the screen as is to add another patient or click **Save+** to save the patient and display the Visit demographics for the next step in the process. See *Add a new visit to an existing patient* below.

Look up an existing patient

To look up a patient, enter any information in the top search fields and click the Search icon. If there's match, a list of patient is displayed in the grid list below the search fields. Double-clicking any of the listed patients and visits displays all related information in the bottom data tree and grid.

NOTE: *If a patient has been entered into the system, but has no test work yet or tests have been received and are completed, users must un-check the **Pending Receipt** check box in order to have them displayed.*

Once a patient has been accessed, users may create a visit on them. See *Add a new visit to an existing patient* below.

Search Patients Window

An alternative way to search for patients is by using the *Search Patients* window, shown in Figure 2-3. You can access this window by any of the following methods and with patient data in the Accession search fields or not.

- Clicking the *ellipsis* (...) after the Patient Name search field
- Selecting Patient Search from the Search Menu
- Pressing **<Ctrl+M>**

If no patient data was entered in the Accession window before accessing Search Patients, the Search Patient window would be empty and a search could be performed at that point.

If patient data has already been entered in Accessions Patient Name field before accessing Search Patients, the Search Patients window attempts to find a match. the more data you put in the Patient Name field, the more exact the search results will be.

In the example below, the name "Smith" was entered in the Patient Name field and the Search Patients window found all patients with the last name of "Smith". The **Use Like** checkbox (checked by default) allows that to happen. If **Use Like** was unchecked, the entered data would have to be an exact match to any search results, and searching for "Smith" alone would have produced no results.
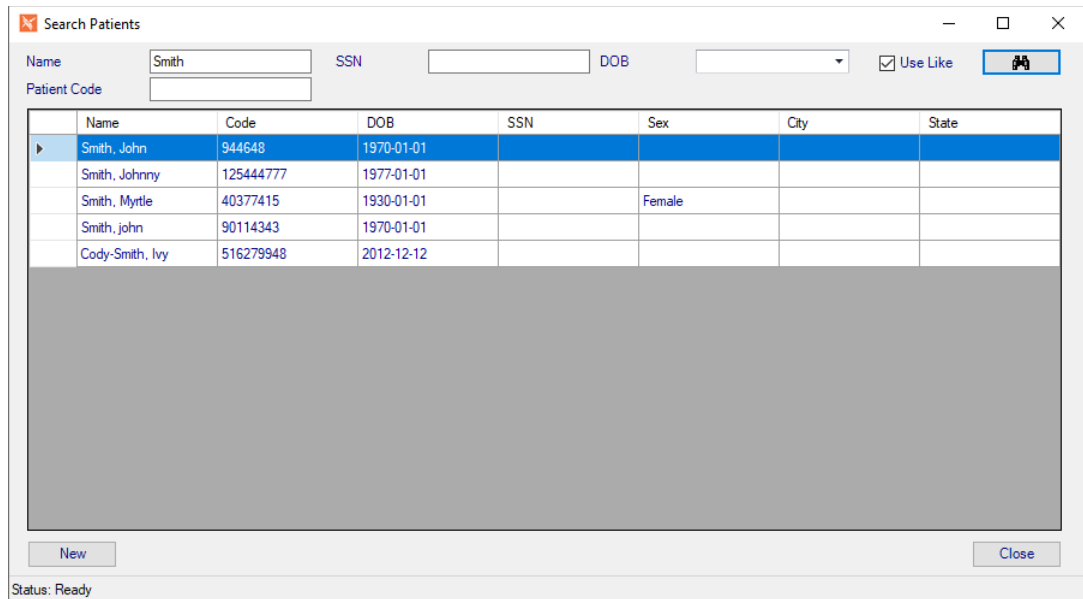
Figure 2-3 - Search Patients Window

The Search Patient window was designed to eliminate the need to use the mouse. Patients can be searched by either Name, SSN, or DOB. The following keystrokes function in the Search Patients window:

- **<Enter>** on a search field executes a search using available data.
- **<Tab>** moves cursor to next search field.
- **<F3>** returns cursor to Name field.
- **<Up>** and **<Down>** arrows move through rows in the grid of patients.
- If the cursor is in the grid, with a row selected, **<Enter>** will select the row and close the window, making that patient the current patient in the Accession window.
- **<Alt+C>** closes the window.

Add a new visit to an existing patient

Once a patient has been accessed, either by search or by having just been added, a visit can then be created for the patient. A patient must have a visit in order to have a case and subsequent specimen created on them.

In the data tree of the Accession window, highlight the patient name, which is followed by an identification number (usually MedRec), and select **New > Visit** from the Windows menu or press **<Ctrl+N>**. The Visit demographic list is displayed in the data details grid, which typically includes the following in 3 sections:

Visit

- Visit Code- identification # for the visit; may be auto-generated
- VisitDate - date the visit was added to the system
- DischargeDate - date the patient was discharged
- Type - patient type (e.g. IN, OP)
- Location - current patient location

- Comment# - enter the pound sign (#) to open the comment selection box allowing users to pick a defined comment from the library (CommentDefinition), or enter free text. A subset of comments in the table may be linked to this particular field.
- Guarantor - displays the last name of the person responsible for the bill; the visit must be saved first before a guarantor can be added; click ...and a new window opens where users can enter information on the Guarantor, Employer, and or Insurance.

NOTE: *The optional preference 'AutoCopyBilling' allows billing / insurance data from the last visit to be automatically copied to the new visits upon saving.*

Physician/Client

- AdmitterFax - clicking ... opens AdmitterFax search window to select Admitting physician
- Admitter - filled in from selected AdmitterFax
- AdmitterGroup - filled in from selected AdmitterFax
- ConsultorFax - clicking ... opens ConsultorFax search window to select consultor
- Consultor - filled in from selected ConsultorFax
- ConsultorGroup - filled in from selected ConsultorFax

Parent

- Patient - displays the patient name

NOTE: *The visit demographics available may be configured differently.*

Enter the appropriate information for each visit demographic, pressing enter after each entry to go to the next. Demographics that are set to be calculated will be dithered and the entry will be assigned when the patient is saved. (e.g. Visit Code)

Saving the visit

Click **Save** to save the visit record and leave the screen as is to add another visit on the patient or click **Save+** to save the visit and display the Case fields for the next step in the process. See *Add a case to an existing visit* below.

Add a case to an existing visit

Once a visit has been accessed, either by search or by having just been added, a case can then be created.

In the data tree of the Accession window, highlight the patient visit, which is followed by an identification number (usually account), and select **New>Case** from the Windows menu or press **<Ctrl+E>**. The Case fields is displayed in the data details grid, which typically includes the following in 7 sections:

Case

- CaseType - select from library defined case types
- CaseNumber - system generated unique number (driven by case type)
- Assigned To - (optional) user name of case assignment
- Order Date - date case was ordered
- Order Time - time case was ordered
- ReqNumber - optional free text requisition number for internal use, implementation dependent

Result

- ReportStatus -The current report status, PENDING, PRELIMINARY, FINAL, or CORRECTED
- ReportedBy -The last user to initiate an report

- Signer -The signer of the case
- Signer Date -The date the case was signed out

Physician/Submitter

- ExternalID -The ID of the case in an external system. This is used for interfacing.
- ExternalPatientID - The ID of the patient in an external system. This is used for interfacing.
- SubmitterLocation -clicking ... opens the Edit Submitter Location window to select.

NOTE: *The Edit Submitter Location window, by default, allows searching by physician. The Site Wide Reserved preference - Physician Accession by Group can be set to True, which then allows searches by Group instead. If Physician Accession By Group is set to False, no groups are displayed in top of Edit Submitter Location window.*

- Submitter: filled in from selected SubmitterLocation
- SubmitterGroup: filled in from selected SubmitterLocation
- OtherPhysician: Define an unlimited number of Copy To physicians
- Communications: track client communication and notes that occur during case processing.

NOTE: *Once cases are signed out, the other physicians window is viewable and changes cannot be made. Submitter location is always read only once the case is signed out.*

Communications

- ICDs-ICD information pertinent to the case
- ClinicalInformation - Clinical information pertinent to the case

Documents

- Documents# -Attach pertinent documents or images to the case. PDF documents can be configured to append to the case report (maximum 6). Case must be saved before documents can be added to it. Sample document window is shown in Figure 2-4.
- Outreach Documents (optional) - if NucleoLIS is integrated with Outreach, the presence of any documents from Outreach may be accessed from this field.
- e.Docs Documents (optional) - if enabled, clicking the ellipsis opens the e.Docs module window where any available scanned e.Docs documents may be accessed, or new scans may be created. *(See separate e.Docs document)*
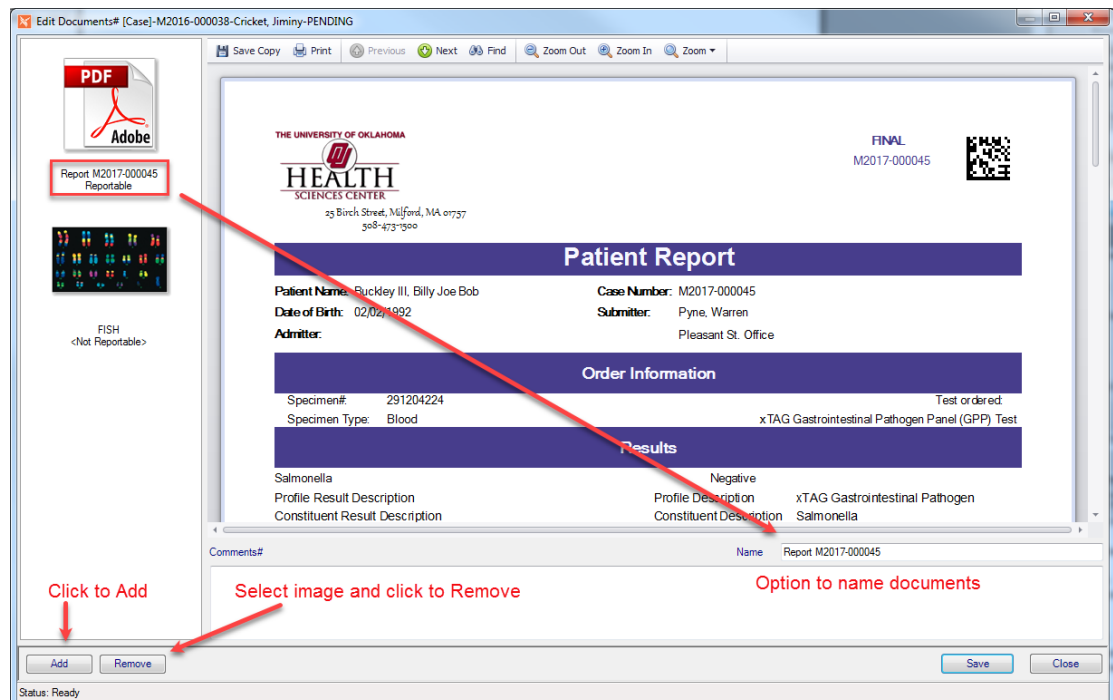

Figure 2-4 - Edit Documents Window

Patient

- Relationships - Link to patient relationships
- Externals - Link to patients external documents
- Patient - Link to the patient record

Parent

- Visit - Link to the visit

NOTE: *The case fields available may be configured differently.*

Saving the Case

Click **Save** to save the case and leave the screen as is to add another case on the visit or click **Save+** to save the case and display the Specimen fields for the next step in the process. See *Add a specimen to an existing case* below.

Add a Specimen to an existing case

Once a case has been accessed, either by search or by having just been added, a Specimen can then be created.

In the data tree of the Accession window, highlight the Case, which is followed by an identification number, and select **New>Specimen** from the Windows menu.

The *Specimen* fields are displayed in the data details grid, which typically includes the following 5 sections:

Specimen

- SpecimenNumber - unique specimen number; auto-generated
- SourceDefinition - clicking ... opens a window to select the Source Definition from the library (e.g. 0082-Blood)

Collection

- CollectionDate - date the specimen was collected in mm/dd/yyyy format or select the date from the calendar popup
- CollectionTime - time the specimen was collected in hh:mm format

Result

- Interpretation# - if applicable, defined text based (# sign indicates that this field may be linked to the CommentDefinition Library)
- Description# - if applicable, optional text based specimen result description (# sign indicates that this field may be linked to the CommentDefinition Library)

Inlab

- ReceivedDate - date the specimen was flagged inlab in mm/dd/yyyy format
- ReceivedTime - time the specimen was flagged inlab in hh:mm:ss format
- Receiver - user name of the person who flagged the specimen inlab
- External Orders - if order is received from an external source, such as e.Outreach or another interface, this field is displayed along with the link <externally placed orders>. Click the link to open a window displaying the tests/profiles orders that have been received outside of NucleoLIS.

Parent

- Case - link to the case record

NOTE: *The specimen fields available may be configured differently. The default entry field that is initially accessed when accessing a specimen is configurable as well.*

Flag a Specimen as being in the laboratory

To flag individual specimens as being in the lab, you highlight the specimen in the Accession window and do one of the following:

1 **Click the Flag inlab button**

2 **Right click on the specimen and select flag inlab from the context sensitive menu**

3 **Press <Ctrl+F>**

- The inlab related information described above is entered and the labels print to the current printer.
- The default source definition will be added if defined. Profiles and tests will be ordered if defined as such.

Batch Inlabbing

If preference is enabled, you may inlab a batch of specimens at one time.

1 **Access specimens you want to inlab in the Accession window grid.**

2 **To select specific specimens, highlight specimens in the search grid you wish to inlab.**

   If no cases are selected, Batch Inlab will flag all specimens in the grid as inlab, if they have not already been inlabbed.

3 **Select the Batch Inlab menu item.**

4 **If specimens are highlighted, you are prompted:**

   `Batch Flag Inlab All Selected Items?`

5 **Click Yes to inlab selected specimens or No to quit Batch Inlab.**

After clicking Yes, all specimens highlighted are flagged with the current date, time and user name. Outreach specimens or those from another source are inlabbed, Case Number created, Req Number entered, and flagged as *External Orders: <externally placed orders>*.

Label Printing while flagging inlab

Labels can be printed when a specimen is flagged inlab. Label printing options include:

- Check the Print Specimen Label check box - this will print the specimen label upon flagging inlab
- Check the Print Profile Label check box - this will print the profile label(s) upon flagging the specimen inlab

NOTE: *Batch Label printing is also available and described in chapter 4.*

Resetting your Label Printer

Your current default printer is always displayed at the bottom of the Accession window. To change the default printer to a different printer, select Printer>Reset Current Printer from the window menu. This removes the default printer so that the next time you flag a specimen inlab, users will be prompted for a new default printer.

Labels for successive specimens inlabbed will then print to the new printer.

Ad Hoc label printing

Users may also order a profile of plates by right-clicking on the culture to access the context sensitive menu and select **Order Plates**. This opens the Order PlateProfile window where all defined plate profiles in the library are displayed. Selecting a profile orders all the defined plates that are in that panel.

Ad hoc label printing while accessioning

Users may also print either case, specimen or profile labels at any time during or after accessioning.

- With the case, specimen or profile selected, right-click to access the context sensitive menu and select **Print Label** or press **<Ctrl+H>** to print a label.
- The Windows printer selection window opens for users to select the label

Auto Flag

The Auto flag feature allows users to scan a visit number in the Accession window visit field and automatically locate the specimen(s) and flag them inlab. The bar codes can be on a label or a requisition, which may be customized to select specific specimens on multiple specimen visits.

If enabled, the [Auto Flag] checkbox is found on the upper corner of the Accession window, near the Search binoculars. The Site Wide Preference that enables it can also be used to automatically check the Auto Flag checkbox by default. See below.
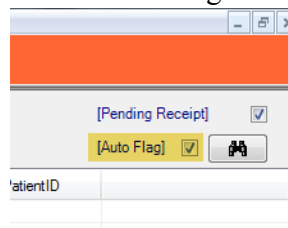

Figure 2-5 - Auto Flag check box on the Accession Window

Ordering Profiles

Given the diverse testing options available, NucleoLIS provides multiple ways in which profiles can be ordered.

To order Profiles of any type:

1 **Right-click the specimen to access the context sensitive menu or with the specimen selected, click Specimen from the window menu. The following options are available:**

- **Order (Ctrl-O)** - Displays a window containing the full test menu with all profiles configured within NucleoLIS.
- **Order Super Panel** - Displays a window containing a selection list of all Super Panels configured within NucleoLIS.
- **Order Karyotype Profile** - Displays a window containing a selection list of all Karyotype profiles configured.
- **Order PCR Profile** - Displays a window containing a selection list of all PCR profiles configured.

- **Order FISH Profile** - Displays a window containing a selection list of all FISH profiles configured.
- **Order Immuno Profile** - Displays a window containing a selection list of all Immunology profiles configured.
- **Order DNA Sequencing Profile** - Displays a window containing a selection list of all DNA Sequencing profiles configured.

If any of the ordered profile constituents are set to OnDemand, the user can pick which constituents to order. Constituents set to OnDemand Default are automatically checked.

Profiles with one OnDemand constituent are displayed with a Quantity field where the user can optionally add multiple orders of the constituent.

NOTE: *Source Definitions can be configured to automatically order profiles upon the specimen inlab action.*

2   **Flag the specimen Inlab. If multiple profiles are requested, repeat from Step 1.**

Patient History Window

The *Patient History* window allows you to access results for all cases, completed or in progress, on a given patient, giving you a full history of that patient and the work that has been done. Patient History can show you both completed reports or individual constituent results, depending on which tab you select. Cases that have had not received results yet and are in a PENDING state, will not appear in the Patient History window.

Once you have a patient accessed in either the Accession or Result Manager windows, and the patient is selected in the *data tree*, you can open the Patient History window by selecting the menu option from the Patient menu or by pressing **<Ctrl+P>.**

Figure 2-6 - Patient History Window showing list of reports on current patient

If there are more than one matching patient record, they will be listed in the *Matching Patients* section. Double-click to select the correct one.

Report History

The *Report History* tab on the bottom lists all reports that have been saved on the patient. To review the report on any case. Double-click the first cell in the grid on the report row you wish to open. A window opens so the report can be viewed.

Your Patient History may look differently than these examples, if you have results from another system available.

Result History

To view a result history on the patient, select the *Result History* tab and the Patient History window changes as shown below.
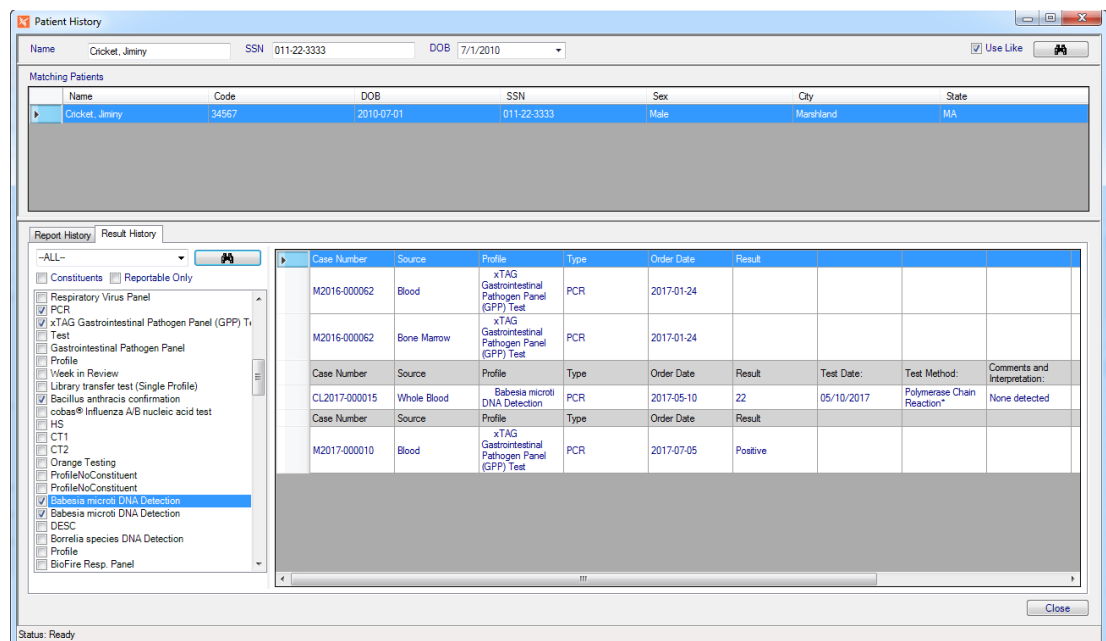
Figure 2-7 - Patient History Window Result History Tab

In the Result History tab, use the following to select the results you want to view:

1 From the Profile drop-down list, either limit to a profile type or select --ALL-- to view all results.

2 Check the Constituents checkbox if you want to see all constituents broken down for each profile.

3 Check the Reportable Only checkbox to only view results that were set as reportable.

4 In the List of profiles and tests, either check the ones you want to see or right-click to get the option to *Select All* or *Deselect All*.

5 Click the binoculars button to start the result search.

6 Click the Close button to close the Patient History window.

NOTE: *Pressing <Ctrl+P> while on an **active** case opens the Patient History window.*

Once the Patient History is opened, other patients may be accessed by entering data in the patient search fields: Name (required), SSN, and DOB.

Accession Menu

Menu Option	Description
File	**Show User** - shows current user code, user name, log in date and time **User** - Set font and font preferences. *Note*: if too large a font is used, window display may be affected. **Version** - Displays current application version, with install date **Exit** - exits NucleoLIS
Operations	**Accession** - opens the Accession window **Result Manager** - opens the Result Manager **Run Tracking** - opens the Run Tracking window **Batch Result** - opens the Batch Result window; see Batch Result chapter **Worksheet Manager** - opens the Worksheet Manager; see Result Manager chapter **Storage Find** - allows you to find the location of a specimen **Batch Steps** - opens the Batch Steps window **Batch Label** - opens the Batch Label window **Library** - opens the Library window **Label Designer** - opens the Label Designer **Result Report Designer** - opens the Result Report Designer **Distribution Designer** - opens the Distribution Designer, for fax cover sheets **Analyzation Map Designer** - opens the Analyzation Map Designer window **Human Resources** - opens the Human Resources window **Storage Manager** - opens the Storage Manager window **Configuration** - opens the Configuration window **e.Query (Design Management Reports)** - opens the e.Query Management Report designer; see e.Query chapter **e.Query (Data Analysis)** - optional tool to create adhoc queries on the database using e.Query functionality **Run e.Query (Run Management Reports)** - opens the Management Report window **e.Dashboard** - if purchased, opens the e.Dashboard window – see separate documentation **e.Monitor** - if purchased, opens the e.Monitor window; see e.Monitor chapter **e.Docs** - if purchased, opens the e.Docs window; see e.Docs chapter **e.Outreach - Sync** - Synchronizes Outreach and NucleoLIS test definitions **Delivery Monitor** - opens the report delivery monitoring window *Menu options may be present depending on which modules have been purchased and enabled.*
Window	Shows currently opened windows to select

Menu Option	Description
Printer	**Reset Current Printer** - allows you to reset the current default printer
New	**Patient (Ctrl+N)** - opens the patient window to add a new patient **Visit (Ctrl+V)** - opens the visit window to add a new visit **Case (Ctrl+E)** - opens the case window to add a new case **Specimen (Ctrl+Shift+S)** - opens the specimen window to add a new specimen
Search	**Patient Search (Ctrl+M)** - searches using current criteria **Run List (Ctrl+R)** - searches using current criteria **Clear Criteria** - clears current criteria for new search
Entry	**New Entry (Ctrl+W)** - opens the patient window to add a new patient **Next Entry (Ctrl/Q)** - opens the Order Entry window
Accession Entry	Opens the Consolidated Accession Entry window for multiple quick accessioning; Advanced Entry configurations must have been previously defined. See Library chapter for Advanced Entry configuration. Examples of the Consolidated Accession Entry window is later in this chapter.
Batch Inlab	If enabled, automatically inlabs all selected cases in the Accession search grid, using the current date, time and user.
Scan	If enabled, open the e.Docs module for document scanning, automatically assigning/naming the scanned document to the accessed case.
All	**Save (Ctrl+S)** - save current record **Save+ (Ctrl+Shift+A)** - save current record and open new window **Audit (Ctrl+T)** - shows audit table of current record **Delete (Ctrl+Shift+D)** - delete the current record
Patient	**Patient History (Ctrl+P)** - opens the Patient History window when Patient is selected

Menu Option	Description
Case *WindoPath Integration Note*	**Patient History (Ctrl+P)** - opens the Patient History window when Case is selected **Document System (Ctrl+D) -** If configured, opens system for managing images **Charges -** opens the Charges window for the selected case **Print Label** - prints the case label **Cancel** - cancels the case record **WP Sync Case** - for systems with a *WindoPath/NucleoLIS Integration*, the WP Sync Case menu option becomes available when a case is accessed in NucleoLIS that is also a WindoPath case, the Case Number in WindoPath has been modified or deleted after being received in NucleoLIS. Selecting **WP Sync Case** updates the case number in NucleoLIS, if it was modified in WindoPath, or appends a unique value to the NucleoLIS case number if the case was deleted. If the specimen had not been flagged inlab in NucleoLIS, the above actions happen automatically. *WP Sync Case also synchronizes case type, submitter and group.*
Specimen	**Order** - select a profile to order from the full test menu **Order Super Panel** - select a super panel to order **Order Karyotype** - select a karyotype to order **Order PCR Profile** - select a PCR profile to order **Order FISH Profile** - select a FISH profile to order **Order Immuno Profile** - select an Immunology profile to order **Order DNA Sequencing Profile** - select an DNA Sequencing profile to order **Flag Inlab** - flags the specimen inlab; adds received date/time to specimen **Uninlab** - removes the received date/time **Print Label** - print a specimen label **Sub Specimen** - allows adding specimen to the current specimen (optional) **Create Multiples/Create Multiples (with labels)** - allows creating multiple specimens of same source, automatically and manually, with or without labels (optional) **Merge Specimen** - allows merging specimens of same source (optional) **Charges** - view and apply charges and credits
Profile types... Karyotype, PCR, FISH, Immuno, DNA Seq	**Order Constituent** - order on demand constituents of a profile **Print Label** - prints a profile label **Cancel** - cancel the profile **Charges -** opens the Charges window for the current specimen
Culture	**Order Plates** - orders plates on culture **Plate Description (Ctrl+L)** - add plate description **Print Label (Ctrl+H)** - prints a culture label **Order Culture Form** - orders a culture form **Cancel** - cancels culture
Plate	**Print Label (Ctrl+H)** - prints a plate label

Consolidated Accession Entry Window

The *Consolidated Accession Entry Window* allows a pre-configured list of fields and default values specific to patient, visit, case, specimen and orderables to be entered easily through a single data entry window.

If this functionality is enabled, the lab has the capability to build one of more data entry configurations, which will define fields to use and default values specific to varying data entry requirements. When at least one active configuration exists, a new menu item appears on the Accession Manager Window – **Accession Entry**.

Clicking the menu opens the *Consolidated Accession Entry Window*, shown in Figure 2-7.

Figure 2-8 - Consolidated Accession Entry Window

How to use the Consolidated Accession Entry Window

In this window, the user first selects an Advanced Entry Configuration. The window defaults to the first entry in the Advanced Entry library, sorted by description of the library entry.

After selection, the configuration loads all default values, default behaviors, data entry fields and profile options defined in the Advanced Entry Configuration.

NOTE: *Default Values and Behaviors may be modified during accessioning without modifying the library entry permanently. The entry fields and profile pick lists may not be modified during accessioning and are only modified through the library manager.*

- The entry grid is laid out in conjunction with the data hierarchy: Patient, Visit, Case, Specimen.
- The core processing of the window occurs as the users presses the **<Enter>** key through the entry fields. The records in the hierarchy are automatically saved as the records are completed. This occurs simply by entering through the records.

- Upon completion of the patient, visit, case, and specimen records, the cursor is placed in the *Accession Order Profiles* text box. In this text box profile codes are entered. The enter key orders the profile. If the code typed is not in the pick list, a label displaying **NOT FOUND** appears. The profile **must** be in the selection list in order to be ordered.

- Alternately, the user can navigate the profile list box and place an order either by double clicking or selecting and pressing enter.

- As records are completed, the Accession Summary list is populated with a list of the records created.

- As specimen are completed, the counter/navigator is incremented and can be used to go back and check previous accessions.

- For configurations with multiple Sources defined, subsequent specimens on the same case receive the second and third Source.

Notes

- Windows **<ALT>** keyboard shortcuts are available for all operations in this window.
- On Demand constituents prompt just as they do from the standard accession window.
- A preference may be set that specifies Full Patient Like searches, so that a search for ABC matches any name that contains ABC, as opposed to only those beginning with ABC.

Consolidated Accession Entry Menu

Menu Option	Description
File	Select Close to close the window
Search Patients	**(Ctrl+M)** Select to open the Search Patients window
New	Select New Visit, Case, or Specimen once you have at least a patient accessed
Save	Alternate save options for Patient, Visit, Case, Specimen
Save All	Alternate method to save all newly created records
Print	Allows you to Print Case Label, Print Specimen Label, and Reset the Current Printer
Patient Links	When the red **"Potential Patient Links Found'** note appears the selected patient has potential links. Click Patient Links to view and/or modify. Otherwise the Patient Links menu item is disabled.

Notes

Chapter 3
Result Manager

The *Result Manager* is where all test results and qualitative information for a case is performed. Users can access the Result Manager either through the Result Manager button in the upper left or from the Operations Menu.

Before any case can be processed and perform result entry, Cases must be created in the Accession window and flagged inlab. Depending on the configuration of the system and what kind of interfaces are running, users may or may not need to add a patient to the system or create a visit.

The Result Manager Window

When users first run the NucleoLIS application, the user sees the buttons in the upper left hand corner and will be able to choose which window to open.

Although you can add patients, visits, cases, and specimens in the Result Manager window, usually these are created in the Accession window and flagged *inlab* there.

Cases must be flagged inlab in order to be called up in the Result Manager.

NOTE: *To see which cases are pending receipt, use the Accession window, make sure the Pending Receipt check box is checked and click the Search (binocular) button.*

Until a user calls up a case in the Result Manager, the window is basically blank. Once a case has been accessed, all information that has been entered on that case will be available in the Result Manager.

The multi-grid type Result Manager window is made up of four areas:

- The **search fields** at the top used to search for the individual case
- The **search list grid** displays the filter results from the search fields (may be disabled)

NOTE: *The Specimen Number column in the search grid is hidden by default, but may be opened by dragging the column dividers. Specimen Number is located between the Source and Profiles columns.*

Additional columns/data may be displayed on your Result Manager search grid depending on the configuration of your system, including inlab date in the source column and order date in the profile column.

Case Type	Source	Specimen Nu...	Profiles	Report Status
Flow Cytometry ...	PB (2018-10-09)	228808814	RPR (2018-10-09), RPP (2018-10-09)	PENDING
Pap with Molec...	PB (2018-03-15)	315241858	Gate C- Plasma cell gate (2018-06-01), URO (2018-03-15), Karyo (2018-06-01)	PRELIMINARY
Clinical	Maternal Serum (2019-10-30)	503802197	ALLFish (2019-09-12), BAESO (2019-09-12), LAA (2019-09-20), Camelid Abortion Screening (Maternal) (2019-10-30),...	PENDING
Clinical	LAV (2019-09-04)	503782907	CBCS (2019-09-04)	PENDING
Clinical	LAV (2019-09-03)	503782444		PENDING
Veterinary Analy...	Fetal Thymus (2017-08-09), Fetal ...	288364252, 2...	Genoptix_FISH_old (2017-10-02), Bladder PCR (2017-10-02), Tissue (2017-12-18), HH (2019-12-09)	PRELIMINARY
Veterinary Analy...	Fetal Lung (2016-12-21), Fetal Pla...	179613161, 1...	Camelid Abortion Screening (Fetal) (2016-12-21), Camelid Abortion Screening (Fetal) (2016-12-21), Camelid Abortion ...	FINAL

- The **main data grid**, which consists of the left **directory tree** structure and the right **details grid.** Depending on what is selected in the directory tree, the entries on the right change to reflect the appropriate selection.
- Multiple **operation buttons** at the bottom that change to reflect what operations are available depending on what is selected in the directory tree. For example you can only create a case when either a case or visit is selected.

Figure 3-1 shows a culture in the Culture Manager as you would typically first see it. The culture information is entered and then it has been flagged inlab. No results have been entered yet.
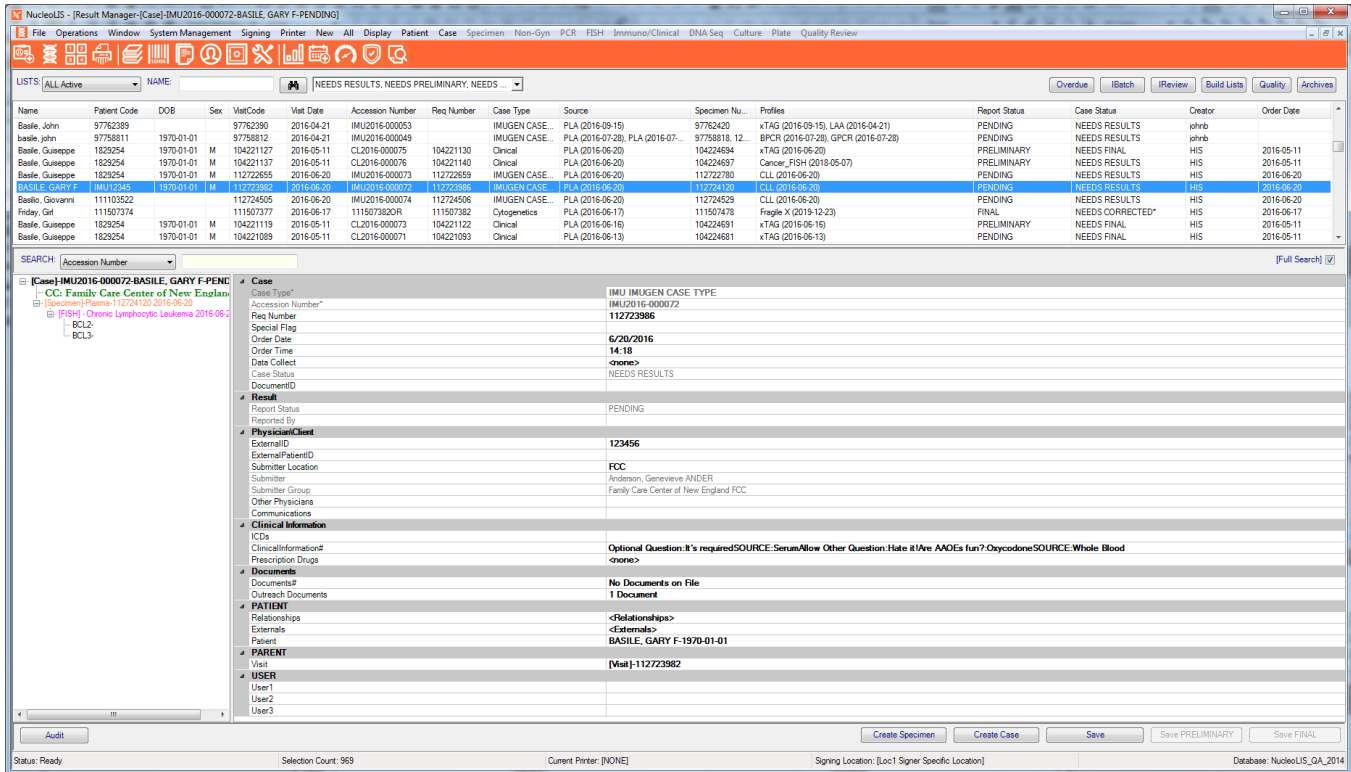
Figure 3-1 - Result Manager with new case

Accessing Cases

You can access cases in the Result Manager window by any of six different parameters. Select the search parameter in the **Search** drop-down box and enter or scan the barcode for the respective number in the shaded field.

Search parameter options include the following: (default search parameters can be modified)

- Case Number
- Visit Code
- Patient Code (Medical Record Number)
- Req Number (performs a "LIKE" search)
- External ID (performs an exact match)
- Specimen Number

Searches for a parameter that is not necessarily unique, such as Req Number and External ID, generates a selection list when multiple matches are found.

When a number that relates to a case that is flagged inlab is entered, then the case and all related records are displayed in the Result Manager window, with Case displayed at the top of the main grid hierarchy.

Advanced Case Scan

If enabled on your system, partial case numbers entered in the Search field can locate a matching case number. If more than one case is found that matches the entry, a window is presented that allows the user to select the appropriate case. Types of partial case numbers include:

Search Type	Search Example
Full Case Number (standard)	M2019-000044
Standard Condensed	M19-244
Super Condensed	M244
Numeric Condensed	244

NOTE: *All of the above examples will locate the same case number - M2019-000244. Some may be presented in a selection list.*

Full Search

Clicking the Full Search check box enables an expanded range of search options. Searches can be performed using patient name, overdue status, batch review, instrument review status, quality control, archived records or a custom defined list. Upon execution of one of the search options, the grid will display all qualifying records. Double-click a row in the grid to display all related records in the Result Manager window.
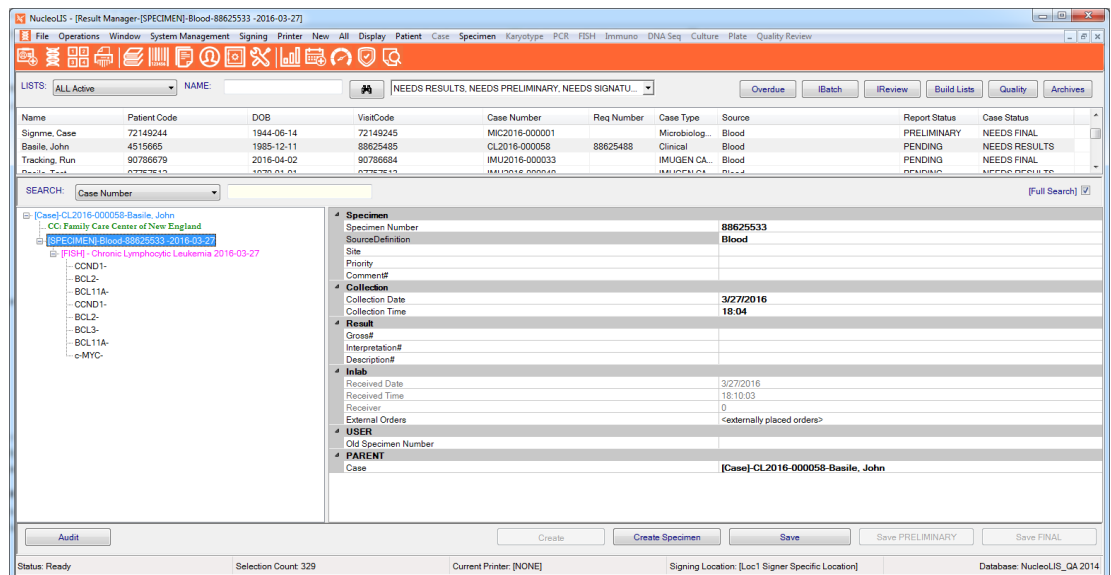
Figure 3-2 - Full Search showing Specimen

- In the text box labeled **NAME**, enter the name or partial name in which to search
- To query all cases deemed overdue, click the **Overdue** button.

Criteria for determining Overdue cases is defined in the Case Type Definition, Culture Definition, and Source Definition tables. Also a combination of Culture and Source may be specified for determining overdues. See the Library Chapter for more information.

- To verify batch run data from the instruments, click the **IBatch** button
- To query all results returned from an instrument that have not yet been finalized, click the **IReview** button. The *IReview* window is described later in this chapter
- To query all cases flagged for quality control review, click the **Quality** button. The *Quality Review* window is described later in this chapter
- To query archived cases (completed and deactivated records), click the **Archives** button. The *Archives* window is described later in this chapter.
- Click the **Build Lists** button to display a window that enables building user defined custom queries.

Search list options

Once a search list has been generated by any method, the list may be printed by right clicking and selecting **Print**. Any column widths modified by the user are automatically saved when exiting NucleoLIS

- Selecting **Print** opens a dialog box to select the output printer. *(Build List specialized management report format needs to be defined in system.)*
- **NOTE:** *The Build Lists that are available to the user may be limited by the User Role assigned to that user, if the role has Build Lists limits defined.*
- Added to NucleoLIS 2.1.3 is a column to display the Specimen Source. It is a hidden column right after the Case Type column and just needs to be expanded.

Build Lists

Users can build predefined queries for common requests using the window below. Build Lists are also used to select cases for Scheduled Reports. See later in this chapter.
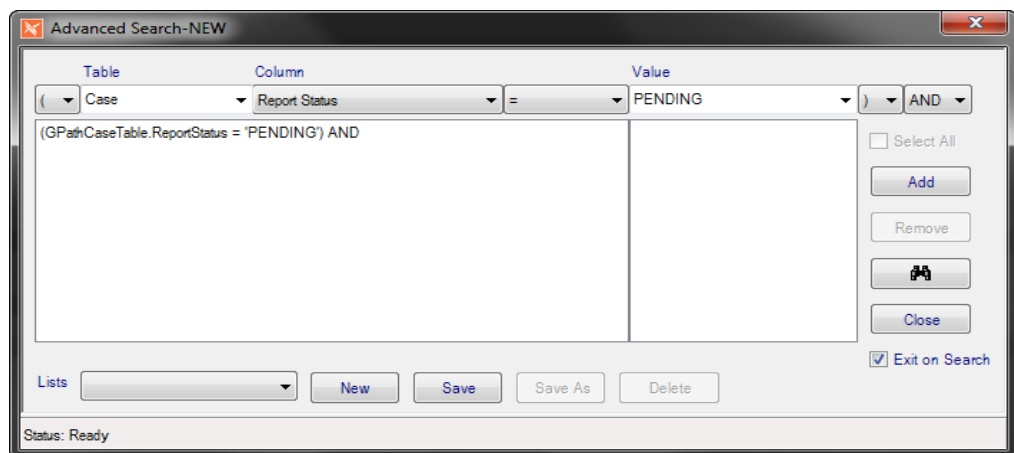

Figure 3-3 - Advanced Search Build List window

- Table - options include querying any of the following tables: patient, visit, case, specimen, profiles
- Columns - options include any columns from the selected table

1 **Standard operators**

- equal (=)
- not equal (<>)
- greater than (>)
- greater than or equal to (>=)
- less than (<)
- less than or equal to (<=)

2 **Additional operators**

- IN - build a comma separated list
- NOT - excludes match records
- LIKE - match on similar values
- Brackets (,) and AND\OR operator options provide additional logical capabilities.

Click the Add button to add criteria to your list. Clicking **Remove** removes the selected item.

Click the **Binoculars** to execute your query.

Click the **Save** button to name and save your query.

NOTE: *When entering Values, the Value pick list contains the option "BLANK" so you can search for fields that have no entry. This feature works with date and time fields.*

When editing existing Build Lists, the Delete button remains unavailable if that Build List has been associated with a User Role, until it has been removed from that role.

Variable Build Lists

NucleoLIS E.finity offers the option to create Build Lists that prompt the user for specific criteria to use in creating the list. Any field can be used for variable information by first adding the field to the Build List, select it, then right-click, which opens the following menu.

- **Set Variable:** Enables the field as variable, allowing user to input variable data.
- **Set Variable Display:** Enter user-defined descriptive prompt text for end user.

When the Build List is run, a dialog box opens for the user to enter variable data.

Entering Results

Entering results on cases can be accomplished in 3 different ways. Consolidated Result Entry Window-accessed at the Case and Specimen level, Result individual profiles or Result the Constituents individually.

While gathering diagnosis or results, follow these steps to enter the results and interpretations:

1 **Access the case by one of the search parameters described in Accessing Cases.**

2 **Make sure the case is selected in the directory tree.**

3 **Right click on the case or the specimen level to access the Result Entry Window (or right click on the profile to Result Constituents or click on the constituents to enter information in the grid)**

4 **Enter the result in the corresponding fields and Complete the Profile.**

5 **Click Save Preliminary, Sign It, and Save Final (this is workflow dependent)**

6 **A preview of the results that will be reported is displayed and the report status is changed appropriately.**

Entering Results In the Consolidated Result Entry Window

Entering results in the Consolidated Result Entry Window-(CREW) accessed at the Case and Specimen level allows the user to see the results for other profiles to make the best interpretation of all the profiles for that case.
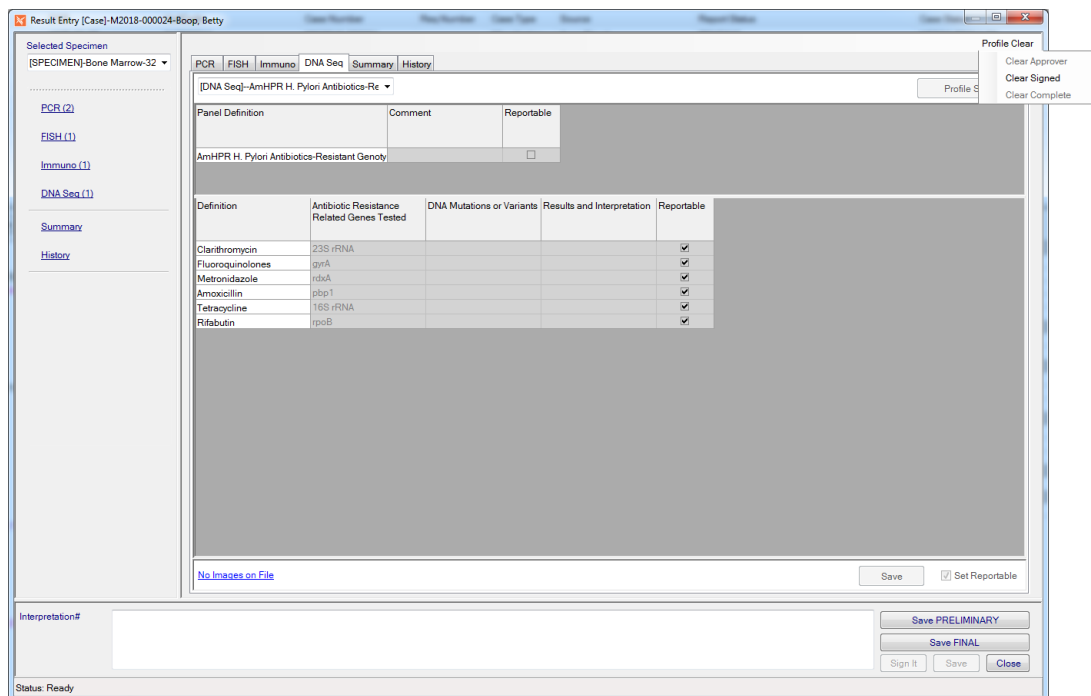
Figure 3-4 - Consolidated Result Entry Window (CREW)

Result Entry Navigation

Field	Description
Selected Specimen	Consists of a drop-down menu of specimens associated with the case
Ordered Profiles	A list of the profiles that have been ordered on that case (seen on the left side of the window and in the tabs

Field	Description
Summary	Listed under the profiles and as a tab. This generates a preview of the report.
History	Listed under Summary, if enabled; displays tab of historical reports and results on patient. See Accession chapter for more information on the Patient History window.
Drop-down menu listing profiles	If there is more than one of that profile type ordered, users can use this to select the profile to result
Profile and Constituent Fields	Enter the information needed, built in the Data Entry Definition in the library for each profile
Profile Clear	The Profile Clear link in the upper right corner of the window opens a menu that allows the user to clear the Approver, Signer or case completion, based on the profile requirements. See Figure 3-4.
Images	Images can be applied in this window for the profile or individual constituents. Images link will either note how many images have been saved or that there are none on this specimen. Clicking the Images link opens the Edit Images window, similar to the Edit Documents window shown in Figure 2-4. Once an image has been added, it can be made reportable and/or applied to a specific constituent by right clicking the image and selecting the appropriate menu option. When Applying an Image to a constituent, you are presented with a menu to select the appropriate constituent. Two options are available per constituent for the two constituent image limit.
Reportable and Save	Save the results entered and decide whether to report any information (Check the boxes)
Profile Complete	Completing the profile activates the Report Status

Ordering Reflex Profiles

In the library, the configuration allows users to create rules for reflex testing and be ordered based on that specific rule:

1 **Enter the results, comments, interpretations.**
2 **Save the Results**
3 **Reflex Profiles will be ordered-See note in Red.**
4 **Reflexed Profiles can be accessed in the same window without closing the Consolidated Result Entry Window by using the drop-down below the tabs.**
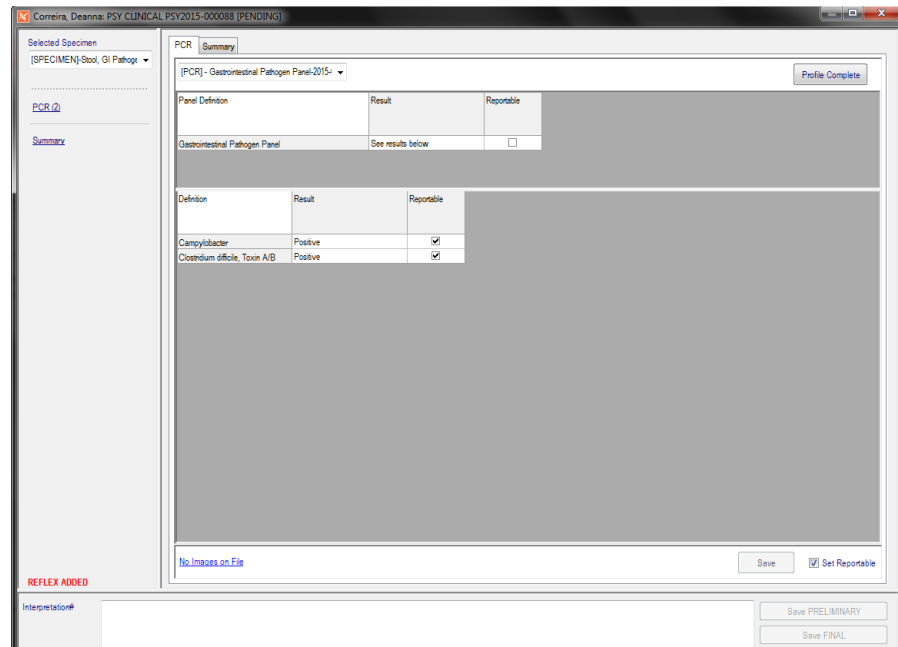
Figure 3-5 - Reflex Ordered

Previewing the Report

Saving a report status will allow the user to preview the report. Preliminary Reports and Signing Out the case is optional and configurable to the lab.
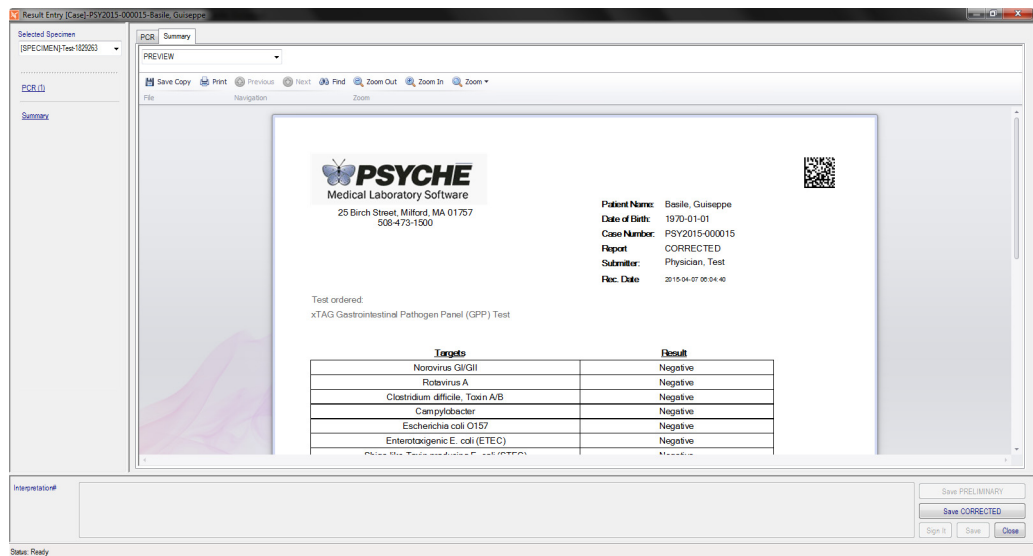

Figure 3-6 - Previewing the Report

Saving as Preliminary or Final

Once all results for all Profiles are entered on a case, the case may be saved as preliminary, signed out, or final, depending on its status and your local workflow.

To save a case report as preliminary or final:

1 **Result the profiles and set to complete**

2 **Click the Save Preliminary button to save a preliminary report**

3 **Click Sign It if the workflow requires a signature on the case**

 Click the Save Final button to save a final report

 Depending on your system configuration, you may be presented with a formatted representation of all results that were entered and that will make up the specific report

 When saving final reports, the Charges window may open where you can select the charges to apply.

4 **Click Save**

 The Report Status will change from PENDING to PRELIMINARY or FINAL if Save Final was clicked

 NOTE: *If the Sign It functionality is utilized. the Save Final button will not become active until the case has been signed.*

Profiles Requiring Signatures

Specific profiles may be defined to require Signatures and optionally Approval Signatures in order to be considered complete. See the Library chapter under the specific profiles for how to set up these profiles. User accounts can then be set up so that a user may be able to Approve only or Approve and Sign Out these profiles.

In Result Manager, Profiles that have signature requirements appear and behave differently depending on the user's privileges.

• On the profile level, the fields *Signer*, *Signer Date* and *Signer Time* are displayed.

• *Set Complete* options are replaced with *Set Signed* in Result Menu items, Result Constituents window, and the Consolidated Result Entry window and enabled if user has privilege.

• The act of Signing makes the profile and constituents read-only, as well as update the profile record to include *Signer* and *Signed Date*.

• The Status field on the profile, when signed, reflects "COMPLETE\SIGNED", as opposed to "COMPLETE" for profiles that do not require a signature.

• Unsigning a profile is allowed by any user that has access to sign the profile. Unsigning is not allowed if the **Case** is signed out.

For profiles that require approval, the following changes occur:

• The fields *Approver*, *Approve Date*, and *Approve Time* are displayed.

• New menu items are added for the Profile: **Set Profile Approval Signature** and **Clear Profile approval Signature**.

• Profiles with Approver requirements display status as "PENDING\APPROVED" if the approval signature is present, but the standard signature is not.

• On the Consolidated Result Entry Window, the *Set Complete* will display *Set Approved* when appropriate.

Ancillary Profiles on Culture Isolates

If NucleoLIS is being used to process cultures, the Consolidated Result Entry Window (CREW) may also be used to enter culture results. Ancillary tests/profiles added to culture isolates are displayed in CREW, as shown in Figure 3-5. Select the Culture Tab to display the culture results.

The capability to *complete*, *sign*, *approve*, *clear complete*, *clear approve*, and *clear sign* from Micro related ancillary profiles may also be performed in CREW.

With a culture displayed in CREW that has an ancillary test/profile ordered, a menu item appears when right clicking the selected profile/test from the *Other Tests* list box. The pop up menu varies for each depending on the status and definition of the ancillary profile/test, but includes:

- Complete
- Sign
- Approve
- Clear Complete
- Clear Approve
- Clear Sign
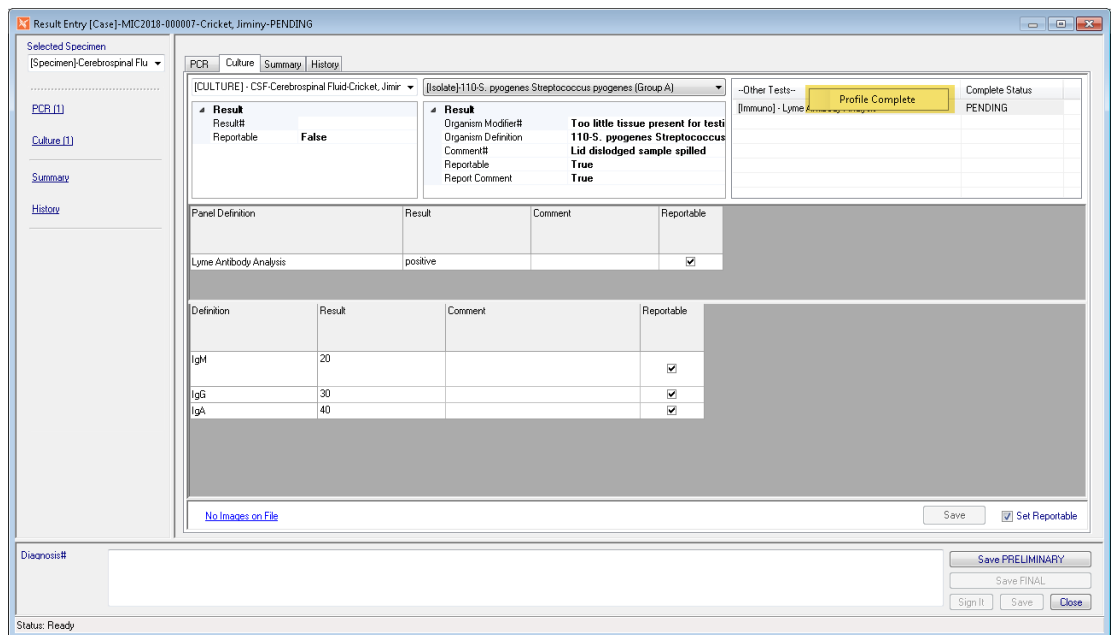
Figure 3-7 - Consolidated Result Entry Window (CREW) Culture Display with Ancillary Profile

Canceling Cases and Ordered Profiles

Users can Cancel Cases and/or Profiles when needed. The record is saved with a reason and the original record displays the cancellation. Notes: This action can only be performed if the Case is in an active state with a Pending Report Status.

How to Cancel Cases and Ordered Profiles:

1 **Select the Case or Profile to Cancel**

2 **Right click on the item and select Cancel**

3   **Fill in the reason: User will be asked to fill this in**

4   **Press OK**

   NOTE: *If Cancellation occurs in error, users can Un-Cancel as well by right clicking on what was originally canceled. Results cannot be entered on canceled items.*

Previewing and Reviewing Reports

At any time in Result Manager, a report may be reviewed by using the context sensitive Case menu options:

Preview (Ctrl+W) - Preview the Result Report, in the next available report status
Preview Draft - Preview a draft copy of the Report, allowing you to select the profile you wish to preview
Report Review - View the result report in the current state (the last saved report)
View Corrected - View consolidated list of comments entered for corrected report reasons

Report Summary Window

Whether previewing a report that has not been saved or previewing a draft report or reviewing a report that has been saved.with *Report Review*, the window that opens to display the report is the *Report Summary Window*, shown in Figure 3-8.

Figure 3-8 - Report Summary Window

If there have been multiple instances of the report save, such as preliminary, final, etc., each saved report can be viewed by selecting it at the top of the window. Above the report body are standard Windows document viewing commands to Print, Save to a file, Zoom in or out, etc. Among those commands is the NucleoLIS **Quick Print** link, which allows you to set up a ready available printer.

Quick Print

In the Report Summary Window, the **Quick_Print** link opens the standard windows printer dialog box, where you can select an available printer to which you print the report. Once a printer has been selected, the **Quick_Print** link changes to the name of the printer you selected, similar to the following example:

`HP 132CE3 (HP Envy 5660 Series)`

From then on until you log out of the NucleoLIS session, any Report Summary windows display your printer as the **Quick_Print** printer, which you can then click and directly print the report to that printer without selecting from the Windows printer dialog box.

If you need to change your *Quick Printer* during your current NucleoLIS session, there is also a **Reset** link to reset the links back to **Quick_Print** for a printer to be selected.

NOTE: *The standard Print link is always available as standard Windows functionality and opens the Windows printer dialog box for printer selection. Quick _Print bypasses that step and allows printing more quickly.*

Resend Latest

Clicking the **Resend Latest** button resends the result report to any installed result interface recipients. When you click Resend Latest, the following prompt displays:
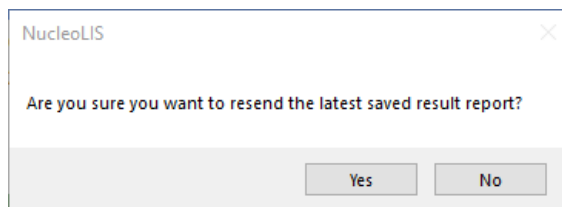
Click **Yes** to send the results or **No** to return to the Report Summary.

Multiple Result Interfaces

If your system has multiple Result Interfaces installed, NucleoLIS may be configured with identification names for each of the interfaces (*SWR preference ResultInterfaceID*). If configured, you can choose which result interface to send your results to by right-clicking **Resend Latest** and selecting the interface ID from the displayed menu.
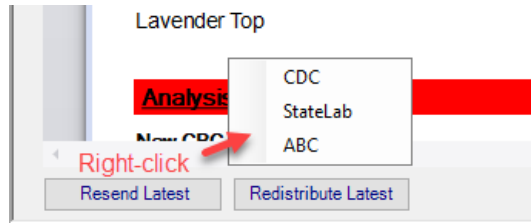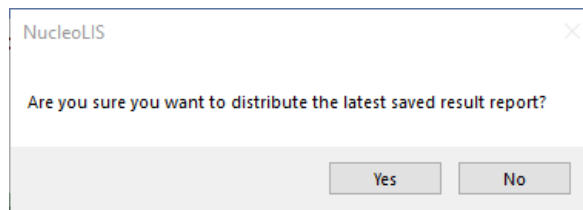
Figure 3-9 - Selecting Interface to Resend Latest

Once selected, you are prompted as above.

Redistribute Latest

Clicking the **Redistribute Latest** button resends the report using the current distribution rules for printing, faxing and secure email distribution for that case. When you click Redistribute Latest, the following prompt displays:

Click **Yes** to distribute the results or **No** to return to the Report Summary.

On Demand Distribution

If your system is configured *(SWR preference ReportDistribution)*, the Report Summary window allows you to distribute reports manually whenever you wish. Right-click on the **Redistribute Latest** button and select one of the distribution options shown below.

Figure 3-10 - Selecting an On Demand Distribution Option

Each of the distribution options opens the *On Demand Distribution* window, with the selected distribution method enabled and checked. Figure 3-11 shows the On Demand Distribution window after selecting the Print distribution option.

For printing, it's best to choose an available printer on your network from the drop-down list. Once selected, click **Add** to add it to the destination printers. More than one printer may be added to which to send the report.

For Fax or Email, enter the fax number or email address in the appropriate field and click **Add** to add it to the distribution. Multiple fax numbers or email addresses may be added to the distribution.

You may also add an optional greeting to emails in the *Greeting* field.
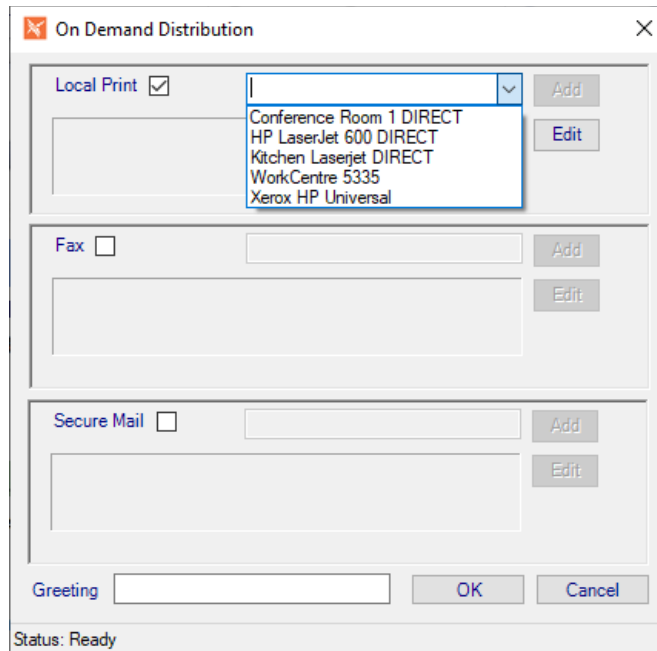
Figure 3-11 - On Demand Distribution

Correcting a Final report

Once a case has been made final, any additional results must be added as a corrected report.

To make a corrected report:

1   **Access the case by one of the search parameters described in the section above.**

2   **Open the Consolidated Result Entry Window. (Users may need to "Re-open" the case if using the Sign It functionality in order to Correct the report, depending on the workflow.)**

3   **Enter additional information needed. Click Save Corrected.**

4   **Click Save Corrected. The report preview window is displayed for review.**

5   **View the corrected report, enter the required corrected comment and click Save.**

Unless the corrected comment is entered and Save is clicked, the corrected result will not be available for reporting.

IReview - Instrument Result Processing

The *IReview Window* is where you review results as they are received from an interfaced instrument, verify that they are accurate, and then release them to the case for reporting, if satisfactory.

In order to use *IReview*, you must have at least one interfaced instrument and have configured that instrument in the *Instrument Definition Library* to use IReview. See the Library chapter for a description of the Instrument Definition Library.

If configured, IReview is accessed from the Result Manager window by clicking the **IReview** button in the upper left corner of Result Manager. The IReview window is shown in both Figures 3-12 and 3-13, since it is a large window with many columns. A scroll bar is available to scan the full window.

Initially, IReview displays no records (or rows). The window is populated with specific instrument data by using the *IReview Filters* and clicking the Search button.

Figure 3-12 - IReview Window - Left display

Figure 3-13 - IReview Window - Right display

IReview Filters

Multiple Filter options in the IReview window allow you to select the specific instrument results to review based on your laboratory's workflow.

- **Instrument:** Drop-down list of all the instrument codes that have been configured in your LIS for IReview review. Select one defined instrument or ALL interfaced instruments.

- **Batch ID:** Not currently implemented.

- **Pending Only:** The Pending Only checkbox is checked by default. Unchecking it will retrieve results that have already been released. (Not currently implemented.)

- **Profile:** Drop-down list of all the profiles that have been configured for instrument IReview. Select one or ALL profiles.

- **Constituent:** Drop-down list of all the constituents that are contained in profiles that have been configured for instrument IReview. Select one or ALL constituents.

- **Filter (1 & 2):** The two filter drop-down lists allow you to further filter the results to process with IReview. Select one of the following data types, then enter the desired value in the subsequent field.

  Profile Type
  Patient Name
  Case Number
  Specimen Number
  Instrument
  Status
  Batch ID (not currently implemented)

Once all the above filters have been set, click the binoculars to search for instrument results that meet all the specified filter criteria.

IReview Columns

Following are the data columns displayed in the IReview window. Each row in the grid represents one result. Column sort order, by default, is by Constituent, but the record order in the grid can be resorted by any column by clicking the column header. A second click sorts the rows in the opposite direction.

- **Image Files:** If the instrument has sent an image as part of the result, the column displays the word **View**.

- **Profile:** Profile Code as defined in the specific profile library

- **Constituent:** Constituent Code as defined in the specific constituent library

- **Patient Name:** Name of patient

- **Case Number:** Case number for order

- **Specimen Number:** Specimen number for order

- **Result Date / Time:** The date and time the result was entered, if viewing completed results. If running IReview to locate pending results in preparation for releasing new results, the date and time will be current.

- **Instrument:** Instrument Code as defined in the Instrument Definition library

- **IResult, IResult1 - IResult6:** If IReviewMode for the instrument is set to **Execute**, instrument results are processed through the rules and logic settings defined in the Data Entry Definition (DED) for the profile before being sent to IReview. In this case, the IResult columns will contain appropriate R1-R6, range, range comment, abnormal flag, and reportable status, based on the DED settings for the test.

  The column names for R1 through R6 display correctly according to the DED, if there is consist definition among the profiles selected.

  If IReviewMode for the instrument is set to Accept, the instrument results are sent to IReview without the DED logic processing.

- **Abnormal checkbox:** Checked if result is defined as abnormal in Data Entry Definition for the profile constituent.

- **Reportable checkbox:** Checked if result is defined as reportable in Data Entry Definition for the profile constituent.

- **IRange:** Range for the test

- **IRange Comment:** Range comment for the test, if defined

- **Status:** At this time, since IReview is only processing results that are pending, the Status field displays "In Process-*username*". When Pending Only flexibility is implemented, other Status messages will be displayed.

- **Batch ID:** Not currently implemented.

- **Batch Status:** Not currently implemented.

- **Signed checkbox:** Checked if profile is defined to be signed and has already been signed prior to review.

- **Process Comment:** When either a Repeat or Reject action (see below) has been performed on a result record, the user is automatically prompted for a reason for the action. These comments are shown in the IReview *Process Comment* column and stored in the *InstrumentReviewTable*. Multiple comments are appended, as opposed to overwritten.
  In Result Manager, the InstrumentResults section of the Profile and Constituent records display the Process Comment and Creation Date.

Action Buttons and Links

- **Select Release:** Selects all rows for release

- **Select Reject:** Selects all rows for rejection

- **Clear Selection:** Clears any currently highlighted rows

- **Release:** Releases and removes all selected/highlighted rows from IReview window

- **Reject:** Rejects and removes all selected/highlighted rows from IReview window

- **Repeat:** For Instruments that are set to IReviewAllowRepeat, the Repeat button is enabled in IReview. Selecting one or more records and clicking the **Repeat** button resends the order to the instrument.

- **Close:** Closes the IReview window.

NOTE: *Releasing or rejecting result rows does not automatically refresh the display. You must click the binocular button to perform another search to refresh the window.*
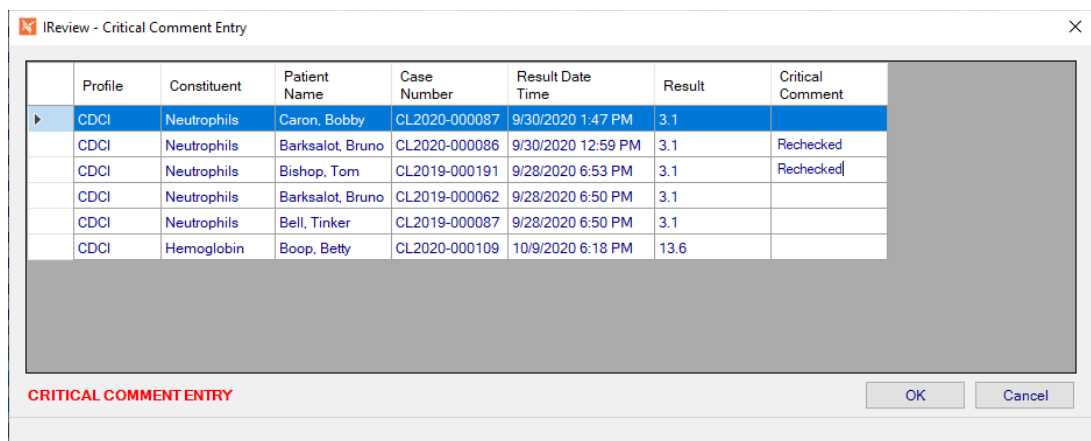
Releasing Critical Clinical Results

If using the Clinical functionality in NucleoLIS, and the critical result prompt requirement preference is enabled, releasing critical results opens the Critical Comment Entry window displaying the critical results with a blank field to enter the appropriate comment. See below.

If **Cancel** is clicked, no results are released.

If **OK** is clicked without a user comment being entered, the result is saved with the standard **CRITICAL_COMMENT_REQUIRED** as the comment and the profile cannot be completed or the case finalized.

If **OK** is clicked and user comments have been entered, they are saved with the user's comment, along with date, time and user name, and can be finalized.

	Profile	Constituent	Patient Name	Case Number	Result Date Time	Result	Critical Comment
▶	CDCI	Neutrophils	Caron, Bobby	CL2020-000087	9/30/2020 1:47 PM	3.1	
	CDCI	Neutrophils	Barksalot, Bruno	CL2020-000086	9/30/2020 12:59 PM	3.1	Rechecked
	CDCI	Neutrophils	Bishop, Tom	CL2019-000191	9/28/2020 6:53 PM	3.1	Rechecked
	CDCI	Neutrophils	Barksalot, Bruno	CL2019-000062	9/28/2020 6:50 PM	3.1	
	CDCI	Neutrophils	Bell, Tinker	CL2019-000087	9/28/2020 6:50 PM	3.1	
	CDCI	Hemoglobin	Boop, Betty	CL2020-000109	10/9/2020 6:18 PM	13.6	

CRITICAL COMMENT ENTRY

Figure 3-14 - Critical Comment Entry Window

Quality Review

In order to use the Quality Review functionality built into NucleoLIS, you must enable the SiteWide preference *EnableQualityReview* and then add the settings that are appropriate for your laboratory. Refer to the Configuration Chapter for more information on Quality Review settings.

Depending on your settings, random and/or abnormal cases are flagged for review. A message is displayed as users finalize cases indicating that the case is being flagged.

Users with the *CanQualityReview* privilege can review cases that have been flagged by clicking the **Quality** button in the Result Manager window. The *Quality Review Search* window, shown below, opens.
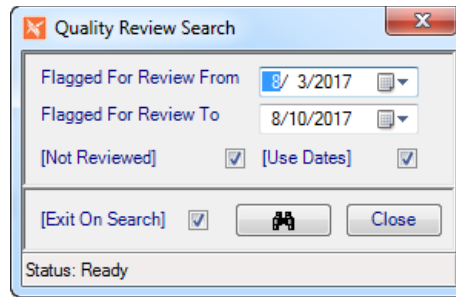
Figure 3-15 - Quality Review Search Window

In the Quality Review Search window, use the following criteria to create your review list. Once the search has been initiated, those cases selected are displayed in the *list grid* at the top of Result Manager.

- **Flagged For Review From:** Select or enter starting date to select cases for review.
- **Flagged For Review To:** Select or enter ending date to select cases for review.
- **[Not Reviewed]:** Checkbox is checked by default to only list those cases not reviewed. Uncheck if you want to list reviewed cases too.
- **[Use Dates]:** Checkbox is checked by default to only list that were flagged for review within the specified date ramge.
- **[Exit On Search]:** Checkbox is checked by default to automatically close the Quality Review Search window after initiating search by clicking the binoculars.
- Click **Close** button to close window without initiating a search.

Reviewing Flagged Cases

Once a list of cases to review has been generated through the Quality Review Search window, the columns on the list grid change to reflect data that is relative to reviewing cases. The following columns are added to the list grid:

- Review Flag
- Reviewed By
- Reviewed Date
- Reviewed Comment

Follow these steps to review each case on the list.

1 **Select a case to review by double-clicking it in the list grid.**
2 **Review the results displayed.**
3 **When completed, with the case highlighted, select Flag Reviewed from the Quality Review menu. A dialog box verifying the case number prompts for a comment.**
4 **Enter a comment and click YES, or click NO to exit without flagging as reviewed.**
5 **Continue from Step 1.**

Reviewing previously reviewed cases

The Quality Review Search window can also be used to lookup previously reviewed cases by entering the appropriate date range and unchecking the **[Not Reviewed]** check box.

The review specific columns will be populated. You may also select a case in the list grid and then choose **Review Details** from the Quality Review menu to see review data, including the time of review.

Archives Search

NucleoLIS may be configured to archive cases after a defined number of days following the final report. This keeps the number of easily accessible cases at a manageable level. Archived cases are still accessible in NucleoLIS, but they must be located through the **Archives** button in Result Manager, which opens the *Archives Search Window* below.
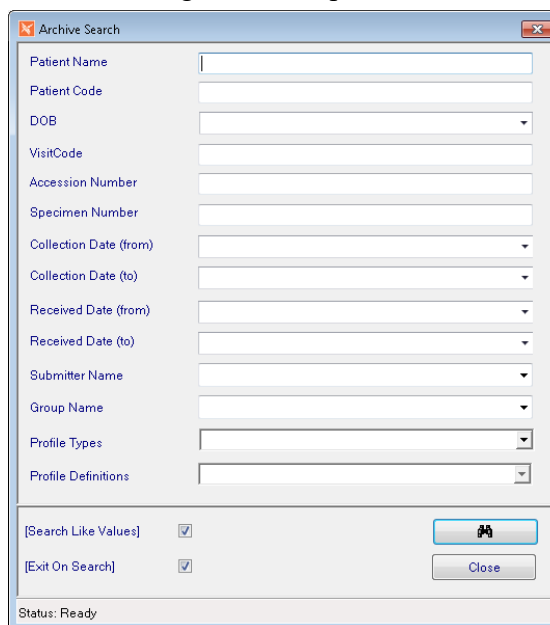
Figure 3-16 - Archives Search Window

You can search for archived cases by any or combinations of the following criteria:

- **Patient Name:** Name of patient (last, first)
- **Patient Code:** Patient identification number
- **DOB:** Patient date of birth
- **Visit Code:** Patient Visit number
- **Case Number:** Case number, if known
- **Specimen Number:** Specimen number, if known
- **Collection Date (from):** Earliest collection date for specimen
- **Collection Date (to):** Latest collection date for specimen
- **Received Date (from):** Earliest date specimen was received in the lab
- **Received Date (to):** Latest date specimen was received in the lab
- **Submitter Name:** Drop-down list to search by Submitter Name
- **Group Name:** Drop-down list to search by Submitter Group Name

- **Profile Types:** Drop-down list to select one to All profile type categories
- **Profile Definitions:** Drop-down list to select one to All profile definitions of the type selected in the previous field
- **[Search Like Values]:** Checkbox is checked by default to find cases based on similar matches to search criteria
- **[Exit On Search]:** Checkbox is checked by default to automatically close the Archive Search window after initiating search by clicking the binoculars.

Press **Enter** or click binoculars to initiate the search. The list returned may contain active and archived cases matching the entered criteria.

NOTE: *Psyche configures the Deactivation process to run automatically when users log in or it can run in the background. The SiteWide preference DaysToMaintainFinals controls how many days a case remains active after it is finalized.*

Worksheet Manager - Integrated Worksheets (IWS)

The worksheet functionality built into NucleoLIS leverages Excel like features to model the extreme use of spreadsheets for tracking specimen preparation data. If the *Integrated Worksheet* preference is enabled and at least one Worksheet Template has been added to the library, you may use the *Worksheet Manager* to create new or modify working worksheets. The Worksheet Manager with the template selection window is shown in Figure 3-17.
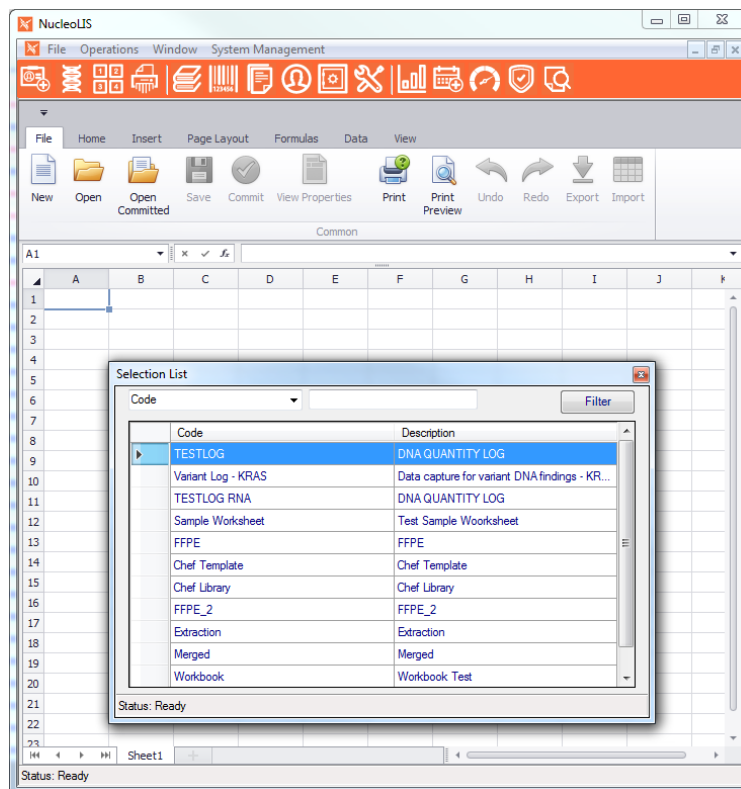
Figure 3-17 - Worksheet Manager with Template Selection (New)

Benefits of Integrated Worksheets over Excel

- Templates stored in the database, this allows for easier administration
- Users work within the context of NucleoLIS, improving ease of use objectives
- Data is saved discretely for analysis
- Opens the door for data communication/transfer with NucleoLIS

Using Worksheets

Users who have the privilege *CanWorksheet*, may interact with Worksheets through the Result Manager - Operations Menu by selection the Worksheet Manager menu item. The following options are available in the Worksheet Manager Window:

Toolbar Option	Description
New	Select to create a new worksheet; opens the template selection window shown above to select a template to use
Open	Opens an in progress worksheet; prompts the user to select from worksheets in progress; locked worksheets are displayed as *read only*
Open Committed	Opens the *Query Committed Worksheets* window to search for an already committed (completed) worksheet. Search filters include: date range, valid templates, worksheet names, and any value that may be present in an existing worksheet, such as case number, specimen number, or name. A bold red READONLY message is displayed on the tool bar.
Save	Saves the worksheet If the worksheet is being saved for the first time, the user is prompted to enter a name for the worksheet. Default is "Template Name - username - yyyy-mm-dd". Subsequent saves prompts the user to enter a note.
Commit	Clicking Commit commits the worksheet indicating to the system that the worksheet is complete. It is at this time that discrete data associated with the spread sheet is saved.
View Properties	View Properties displays meta data associated with the worksheet such as Locked State, Committed State, Worksheet name and Notes. View Properties also exposes a mechanism for Clearing Locked and Committed States, which may be necessary under some circumstances.
Print	Opens window to select printer to print the worksheet
Print Preview	Allows you to preview and print the current worksheet
Undo / Redo	Reverts last step performed / performs last edit again
Import	Opens a window to import a worksheet in a number of file formats, including XLSX, CSV, and TXT
Export	Opens a window to export the worksheet to a number of file formats, including XLSX, CSV, and TXT
Integrated Fill	If an Integrated Configuration exists for the selected worksheet tab, the **Integrated Fill** button is enabled.
Integrated Action	If an Integrated Configuration exists for the selected worksheet tab, the **Integrated Action** button is enabled. The **Integrated Action** button is not enabled until the worksheet has been *Saved*.

Integrated Fill

Using a Worksheet that has an *Integrated Configuration* defined in the Library, clicking the **Integrated Fill** button opens the *Fill Integrated Worksheet* window, shown below.

Figure 3-18 - Fill Integrated Worksheet Window

The filters are populated based on the worksheet's configuration and may be edited, but not cleared.

Clicking the **Binoculars** loads the grid with eligible records in which to *"Fill"* the worksheet. Case and/or Specimen Numbers may also be entered/scanned in the *Scan Search* field.

Eligible records are determined as:

- Meeting the filter requirements
- Case must be active
- Specimen must be received
- Specimen must have a source definition defined
- Profile cannot be complete
- The record cannot exist in another instance of the selected worksheet\tab

NOTE: *The extra field may be used to load specific case or specimen numbers, either entered manually or scanned with a bar code reader.*

Once the eligible records are loaded, this list can be refined to determine which records to "Fill" into the spreadsheet.

- Columns allows sorting
- Up\Down arrows buttons allow moving rows up and down. Hold the arrow button down continues to move the selected record in the selected direction.
- Worksheet Row Start and Row End can be configured to set the rows in which to populate.
- Clicking the "Fill" button maps the records to the spreadsheet. See Figure 3-19 for an example of a "filled" worksheet.
- Click the **Remove** button to remove the selected record.

NOTE: *The spreadsheet must be saved after the fill operation.*
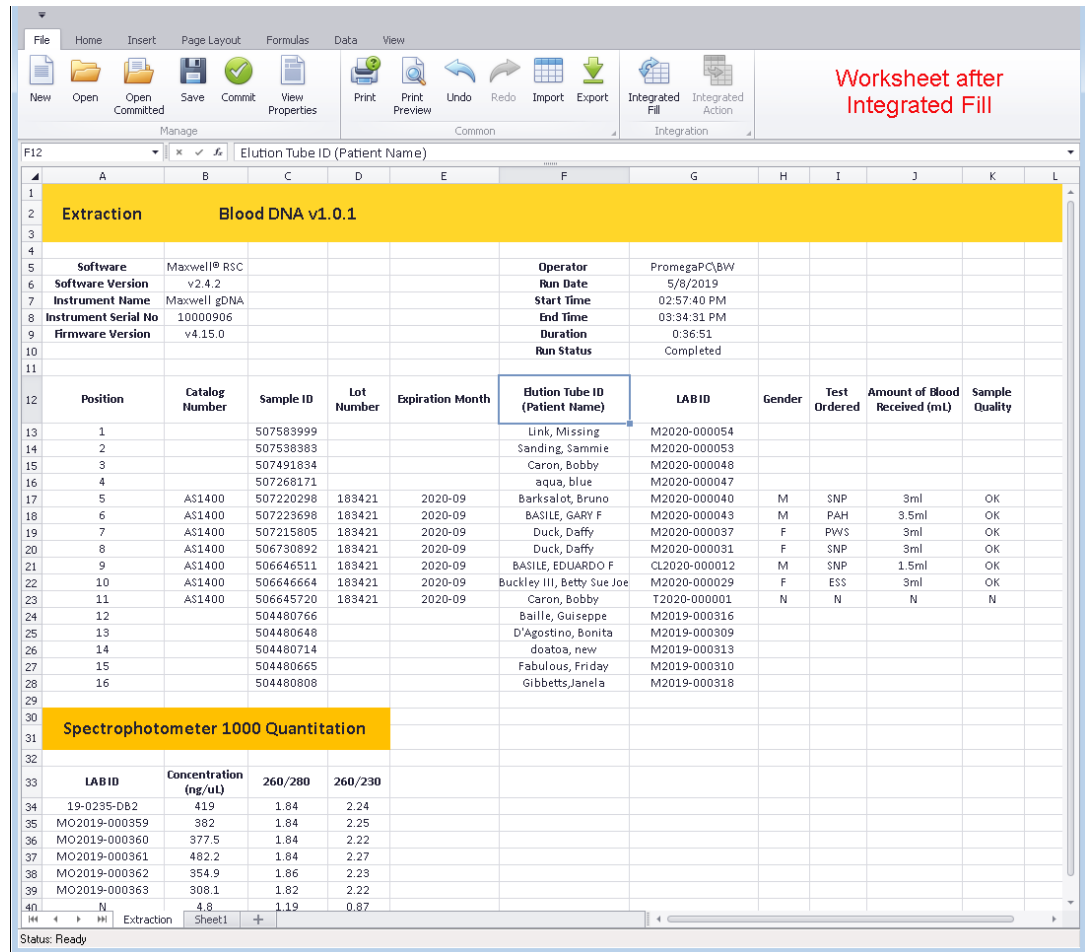
Figure 3-19 - Worksheet after being "filled ' in Integrated Fill Window

Integrated Action

Using a Worksheet that has an *Integrated Configuration* defined in the Library, clicking the **Integrated Action** button opens the *Execute Action* window, shown in Figure 3-20. The **Integrated Action** button is not enabled until the worksheet has been Saved.

The filters are populated based on the worksheet's configuration and may be edited, but not cleared.

Clicking the **Binoculars** loads the grid with eligible records in which to *Execute Actions*.

The configured actions appear as check box columns. Individual items can be checked and unchecked accordingly.

By right clicking on the **Action** button, you can select or deselect an action on all eligible records: Set Step, Order Super Panel, Add Charges.

Important

As NucleoLIS technically loses track of the records once they are loaded into a worksheet, an end user verification of records is required before actions are committed.

This verification is performed via the **Linked** column check box. Any records in which **Linked** is not checked will not be included in the execution of actions.

If multiple candidate records exist for a given row, the linked check box will default to not checked. Double clicking on the row will allow the user to pick the row in which to execute actions from the determined candidates.
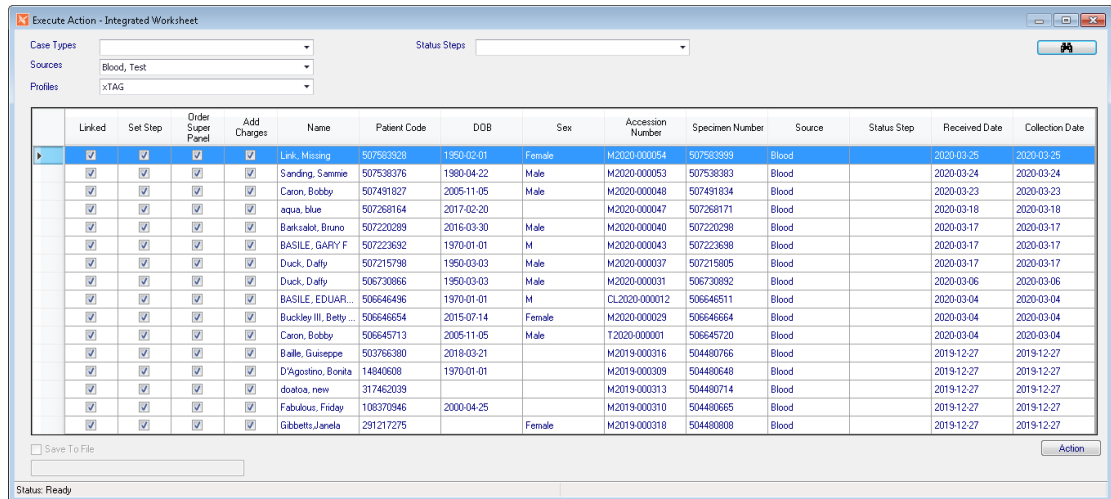
Figure 3-20 - Execute Action Window from worksheet Integrated Action

Steps to creating a Worksheet

1 Open 'Worksheet Manager' from the 'Operations' menu.

2 Click 'New' and select a worksheet.

3 Enter case numbers and any appropriate data in the respective column, or if using an Integrated Worksheet, click Integrated Fill.

4 Organize the the records to fill in the Fill Integrated Worksheet window. Click Fill.

5 Click on Save and accept the default name 'Worksheet Name' – Username – yyyy-mm-dd'

6 If there are any actions to perform on the worksheet, click Integrated Action button and open the Execute Action wIndow.

7 Select and review actions. Click Action.

8 Click Commit – The worksheet now changes to 'Read Only' indicated at the top of the window

To view Committed Worksheets

1 In Result Manager select a case that has been entered in a worksheet.

2 Right click on the case number to open the context-sensitive menu and select 'Query Worksheets'

3 In the Query Worksheets window, click the binoculars to search for any associated worksheets.

4 Choose the worksheet you want to work on and the worksheet opens.

Locking Concept

- Locking Applies to both Templates and in use spreadsheets. The concept is necessary to prevent users from overwriting each others spreadsheet data.
- As a template or worksheets becomes in use, NucleoLIS Locks the record. The users code, the date and time are set on the record for informational purposes.
- As a user closes the window or moves on to another record, the worksheet or template is unlocked and made available for use.
- To unlock a template, from the Worksheet Template library, select the ellipsis associated with the Clear Locked State field and answer the prompt.
- To unlock a worksheet, from the Worksheet Manager, click View Properties, and select the ellipsis associated with the Clear Locked State field and answer the prompt.
- Only users defined as *CanManageLibrary* are allowed to clear a lock.

Committing a Worksheet

- Committing applies to Worksheets (not templates) and is effectively the act of completing the worksheet.
- The record is tagged as committed with the user that committed, the date and time.
- It is at this time that discrete data is stored associated with the worksheet and the worksheet becomes read only.
- Users with the *CanManageLibrary* privilege may clear the committed state from a worksheet, by accessing the worksheet in the Worksheet Manager, then click View Properties, and select the ellipsis associated with the Clear Committed State field and answer the prompt.
- Clearing a committed state leave the discrete values in the database, but marks them as "InUse = false" (This is a slightly different auditing mechanism).

Structured Variant Handling

This feature leverages Integrated Worksheets to allow for structure handling of variant data.

When IsVariant is true on the Worksheet Template, the handling of the Worksheet Commit feature is altered.

Variant data is stored within it's own table in a structured way to which enables optimized storage and querying.

The VariantMap setting relates the spreadsheet columns to the database columns defined on the template as described in the Library chapter.

Merge Specimens

NucleoLIS has the *optional* functionality built in to allow the merging of existing specimens on the same case that are from the same source.

When a Specimen is highlighted, the Specimen menu or the Specimen context menu (right-click) contains the option **Merge Specimen**.

Select Merge Specimen and the Merge Specimen window, shown in Figure 3-21, opens.
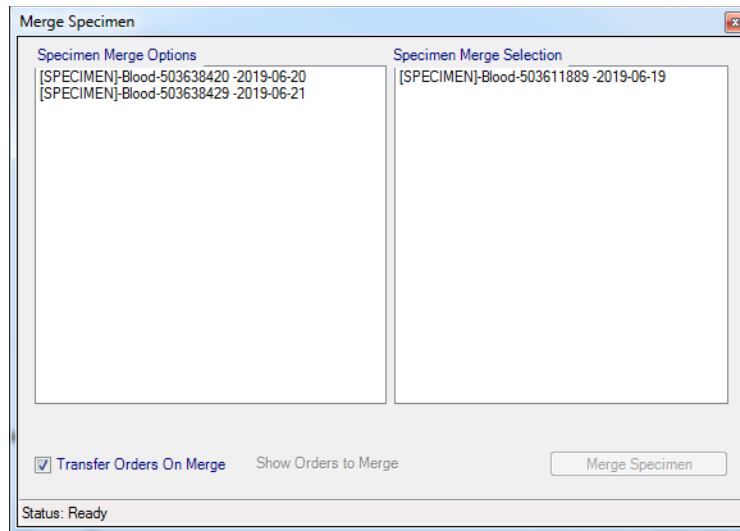
Figure 3-21 - Merge Specimen Window

Using the Merge Specimen window:

1 **The window displays two pick lists. Items are moved between the lists by double-clicking.**

- Left is a list of eligible specimen(s) to merge. Eligible specimens include those on the case that have the same source as the parent specimen and are not already the recipient of a merge.
- The list on the right contains the specimen that has been selected to be merged.

NOTE: *If the specimen selected for the merge operation is NOT already the recipient of a merge (denoted as a sub specimen in the Tree view), the specimen is automatically added to the selection list (on the right). Also, it cannot be removed. It is part of the merge.*

If the specimen selected for the merge operation is already the recipient of a merge (denoted as a sub specimen in the Tree view), the specimen does not appear in the selection list (on the right).

2 **Once you have selected the eligible specimen to be included in the merge you may perform the merge. The Merge Specimen button is not enabled unless the selection list justifies it.**

3 **Merge Specimen also provides the option of transferring all orders on all specimen to the merge specimen record. The check box Transfer Orders On Merge controls whether to transfer or not. You can click the link Show Orders to Merge to see, based on the currently selected specimen, which orders will be transferred.**

NOTE: *Orders that have already been completed (or signed) are NOT eligible for transfer to the recipient specimen of a merge.*

4 **Click Merge Specimen and accept the prompt to initiate the merge. The window automatically closes upon completion of the operation.**

5 **After the merge, the tree view is updated to display the changes and the recipient of a merge is automatically selected.**

A new category section has been created on the specimen record *Specimen Additional Details*.

- **MergeComments** - Populated from the preference node MergedComment on specimen that have been merged. (visible only if the field has a value)
- **MergeIntoComments** - Populated from the preference node MergedIntoComment on specimen that have been the recipient of merged. (visible only if the field has a value)
- **MergedSpecimen** - Available on merge recipients, provides a link to see the details of the specimen that were merge (currently there is no means to remove a specimen from a merge)

Merge Specimen Example

Case: 123
   Specimen A
      Profile A
   Specimen B
      Profile B
   Specimen C
      Profile C

Case: 123
   Specimen A
     Sub-Specimen D
      Profile A
      Profile B
   Specimen B
   Specimen C
      Profile C

- Select Specimen A
- Right-click -> Merge Specimen
- Add Specimen B to pick list on right.
- Check Transfer Orders on Merge
- Click Merge Specimen
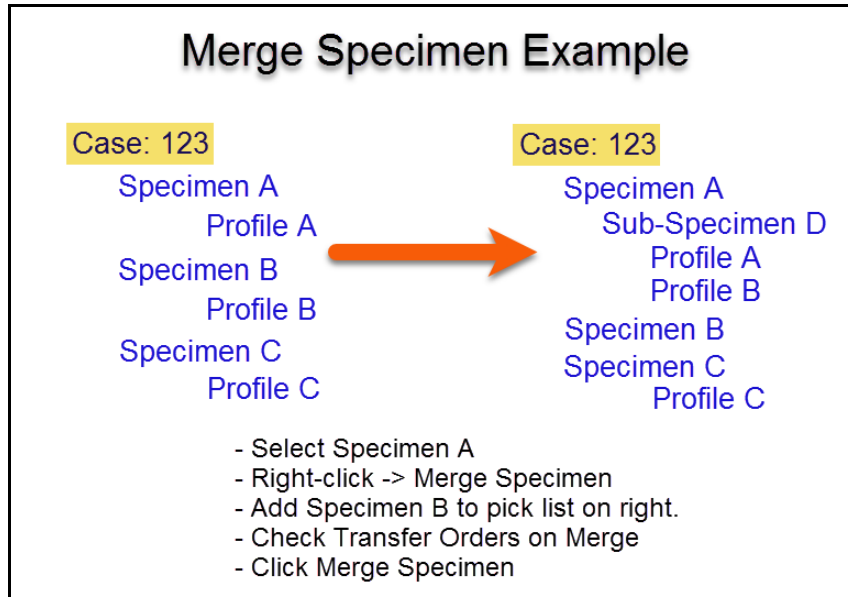
Result Manager Menu

Menu Option	Description
File	**Show User** - shows current user **User** - Set Font and Reset Font **Version** - Displays current application version, with install date **Exit** - exits NucleoLIS
Operations	**Accession** - opens the Accession window **Result Manager** - opens the Result Manager **Run Tracking** - opens the Run Tracking window **Batch Result** - opens the Batch Result window; see Batch Result chapter **Worksheet Manager** - opens the Worksheet Manager; see Result Manager chapter **Storage Find** - allows you to find the location of a specimen **Batch Steps** - opens the Batch Steps window **Batch Label** - opens the Batch Label window **Library** - opens the Library window **Label Designer** - opens the Label Designer **Result Report Designer** - opens the Result Report Designer **Distribution Designer** - opens the Distribution Designer, for fax cover sheets **Analyzation Map Designer** - opens the Analyzation Map Designer window **Human Resources** - opens the Human Resources window **Storage Manager** - opens the Storage Manager window **Configuration** - opens the Configuration window **e.Query (Design Management Reports)** - opens the e.Query Management Report designer; see e.Query chapter **e.Query (Data Analysis)** - optional tool to create adhoc queries on the database using e.Query functionality **Run e.Query (Run Management Reports)** - opens the Management Report window **e.Dashboard** - if purchased, opens the e.Dashboard window – see separate documentation **e.Monitor** - if purchased, opens the e.Monitor window; see e.Monitor chapter **e.Docs** - if purchased, opens the e.Docs window; see e.Docs chapter **e.Outreach - Sync** - Synchronizes Outreach and NucleoLIS test definitions **Delivery Monitor** - opens the report delivery monitoring window *Menu options may be present depending on which modules have been purchased and enabled.*
Window	Shows currently opened windows to select
Signing	Optional selection of signing location, if preference is enabled
Printer	**Reset Current Printer** - allows you to reset the current default printer

Menu Option	Description
New	**Patient (Ctrl+N)** - creates a new patient **Visit (Ctrl+V)** - creates a new visit on the current patient **Case (Ctrl+E)** - creates a new case on the current visit **Specimen** - creates a new specimen on the current case
All	**Save (Ctrl+S)** - save current record **Audit (Ctrl+T)** - shows audit table of current record **Delete (Ctrl+Shift+D)** - deletes the current record (if allowed)
Display	Determines which level in the hierarchy to initially view the data in the directory tree: Patient, Visit, Case, Specimen, when selecting from the *search list grid*.
Patient	**Patient History (Ctrl+P)** - opens the Patient History window
Case	**Preview (Ctrl+W)** - Preview the Result Report, in the next available report status **Preview Draft** - Preview a draft copy of the Result Report, allowing you to select the profile you wish to preview **Report Review** - View the result report in the current state **View Corrected** - View consolidated comments for all corrected report reasons **Sign It (Ctrl+G)** - Signs the case **Unsign It (Ctrl+G)** - Allows the user to unsign a case as long as the report status is still Pending or Preliminary **Save Amended** - Save a report that has been amended **Save 'Other'** - Other report types may also be configured (optional) **Reopen It** - Reopen a case for editing and corrected report creation **Save Preliminary** - Saves the case as preliminary **Save Final** - Saves the case as final **Document System (Ctrl+D)** - View scanned documents from 3rd party tools **Print Label (Ctrl+H)** - Print the case label **Charges (Ctrl+G)** - Open charges list to add/remove charges to specimen **Charge Audit** - Opens an audit window of all charges applied to case **Patient History (Ctrl+P)** - View patient history **Query Worksheets** - If enabled, opens the *Query Committed Worksheets* window enabling users to easily access applicable worksheets while reviewing cases in the result manager. Only committed worksheets are available in the Query Worksheets window. Search values default to the current case and may be modified. After initiating the search, all matching worksheets are displayed. **Result Entry (Ctrl+R)** - Opens the Consolidated Result Entry Window **Clear Needs Corrected** - Available for Admin users to set cases with Case Status of NEEDS CORRECTED, which no longer have pending work, to CASE COMPLETE. Will not be available for cases with status of NEEDS CORRECTED*, as those have pending tests.

Menu Option	Description
Specimen	**Order (Ctrl+O)** - Order any profile type (shows full list from the library) **Order Super Panel** - Order a Super Panel **Order -** Karyotype, PCR, FISH, Immuno, DNA Sequence Profiles; order any of the profiles in their categories **Flag Inlab (Ctrl+F)** - Flags specimen inlab **Print Label (Ctrl+H)** - Prints specimen label **Load Add ons** - If interface is in place, loads new orders added via an EMR interface after the specimen has been inlabbed; Creates new specimen if the AddOns are not part of an existing specimen. Alert Rule can be created with expression as '@GPathSpecimenTable.AddOn@' = 'true' **Sub Specimen** - allows adding specimen to the current specimen (optional) **Create Multiples** - allows creating multiple specimens of same source, automatically and manually (optional) **Merge Specimen** - allows merging specimens of same source (optional) **Charges (Ctrl+G)** - Open Charges list to add/remove charges to specimen **Result Entry (Ctrl+R)** - Opens the Consolidated Result Entry Window **Reactivate** - used by administrators if specimen happens to need reactivation; usually handled automatically by program
Karyotype	**Send to Instrument** - Send instrument order **Order Constituents (Ctrl+O)** - Order additional constituents associated with the profile (as On Demand) **Result Constituents (Ctrl+R)** - Results constituents only **Print Label (Ctrl+H)** - Prints a DNA Sequence label **Set Profile Approved (Ctrl+A)** - Sets profile as approved, so it can then be signed **Clear Profile Approved** - Clears profile approval **Set Profile Signed (Ctrl+G)** - Sets profile as signed **Clear Profile Signed** - Clears profile signed status **Set Profile Complete (Ctrl+G)** - Complete the profile and save a report status **Clear Profile Complete** - Clears profile complete status **Cancel / Un-cancel** - Cancels/un-cancels the profile **Charges** - Opens the Charges window and allows adding charges to selected profile

Menu Option	Description
PCR	**Send to Instrument** - Send instrument order **Order Constituents (Ctrl+O)** - Order additional constituents associated with the profile (as On Demand) **Result Constituents (Ctrl+R)** - Results constituents only **Print Label (Ctrl+H)** - Prints a DNA Sequence label **Set Profile Approved (Ctrl+A)** - Sets profile as approved, so it can then be signed **Clear Profile Approved** - Clears profile approval **Set Profile Signed (Ctrl+G)** - Sets profile as signed **Clear Profile Signed** - Clears profile signed status **Set Profile Complete (Ctrl+G)** - Complete the profile and save a report status **Clear Profile Complete** - Clears profiel complete status **Cancel / Un-cancel** - Cancels/un-cancels the profile **Charges** - Opens the Charges window and allows adding charges to selected profile
FISH	**Send to Instrument** - Send instrument order **Order Constituents (Ctrl+O)** - Order additional constituents associated with the profile (as On Demand) **Result Constituents (Ctrl+R)** - Results constituents only **Print Label (Ctrl+H)** - Prints a DNA Sequence label **Set Profile Approved (Ctrl+A)** - Sets profile as approved, so it can then be signed **Clear Profile Approved** - Clears profile approval **Set Profile Signed (Ctrl+G)** - Sets profile as signed **Clear Profile Signed** - Clears profile signed status **Set Profile Complete (Ctrl+G)** - Complete the profile and save a report status **Clear Profile Complete** - Clears profiel complete status **Cancel / Un-cancel** - Cancels/un-cancels the profile **Charges** - Opens the Charges window and allows adding charges to selected profile
Immuno	**Send to Instrument** - Send instrument order **Order Constituents (Ctrl+O)** - Order additional constituents associated with the profile (as On Demand) **Result Constituents (Ctrl+R)** - Results constituents only **Print Label (Ctrl+H)** - Prints a DNA Sequence label **Set Profile Approved (Ctrl+A)** - Sets profile as approved, so it can then be signed **Clear Profile Approved** - Clears profile approval **Set Profile Signed (Ctrl+G)** - Sets profile as signed **Clear Profile Signed** - Clears profile signed status **Set Profile Complete (Ctrl+G)** - Complete the profile and save a report status **Clear Profile Complete** - Clears profiel complete status **Cancel / Un-cancel** - Cancels/un-cancels the profile **Charges** - Opens the Charges window and allows adding charges to selected profile

Menu Option	Description
DNA Sequence	**Send to Instrument** - Send instrument order **Order Constituents (Ctrl+O)** - Order additional constituents associated with the profile (as On Demand) **Result Constituents (Ctrl+R)** - Results constituents only **Print Label (Ctrl+H)** - Prints a DNA Sequence label **Set Profile Approved (Ctrl+A)** - Sets profile as approved, so it can then be signed **Clear Profile Approved** - Clears profile approval **Set Profile Signed (Ctrl+G)** - Sets profile as signed **Clear Profile Signed** - Clears profile signed status **Set Profile Complete (Ctrl+G)** - Complete the profile and save a report status **Clear Profile Complete** - Clears profiel complete status **Cancel / Un-cancel** - Cancels/un-cancels the profile **Charges** - Opens the Charges window and allows adding charges to selected profile. If
Culture	**Order Plates** - Order plates on the culture-Orders a plate panel **Plate Description (Ctrl+L)** - Opens a window to enter a description for each plate **Print Label (Ctrl+H)** - Prints a Culture label **Order Culture Form** - Order a culture form to keep track of culture growth **Cancel** - Cancel the profile
Plate	**Sub Plate (Ctrl+Shift+P) - Orders a sub plate on the current plate with a description of SUB.** **Sub Plate Panel - Opens a window to select a defined sub plate to be ordered on the current plate. Each constituent is created with a Description of** SUB**.** **New Isolate [Quick] (Ctrl+Q)** - Create a new isolate **Print Label (Ctrl+H)** - Print plate labels
Quality Review	**Flag Reviewed** - Flags specimen as having been reviewed **Review Details** - Allows detailed entry of review

Context Sensitive Menus

While using the Result Manager Window, many context sensitive actions may be accessed by right-clicking on one of the items in the *result tree*. The following table lists the actions menus that may be accessed by right-clicking that item in the tree. A menu specific to that tree item is displayed, where you can select the action you want to perform.

These actions may also be invoked by pressing the shortcut key for that action.

Context Sensitive menus are also available from the Accession window tree, but they are more extensive and used more frequently in the Result Manager.

Menu Option	Description	Accessed From	Shortcut
Save	Saves Case	Case	Ctrl+S
Audit	Displays audit trail for the case	Case	Ctrl+T
Delete	Deletes case (if privilege allows)	Case	Ctrl+Shift+D
Preview	Shows preview of case report	Case	Ctrl+W
Preview Draft	Shows preview of final draft (optional)	Case	
Report Review	Displays and allows resending completed report. *See Report Review section.*	Case	
Sign It	Marks case as Signed	Case	Ctrl+G
UnSign It	Unsigns case	Case	
Save Preliminary	Saves case as preliminary	Case	
Save Final	Saves case as final	Case	
Save Amended	Saves a case that has been amended after final; other Save "reports" may be configured	Case	
Document System	If configured, opens system for managing images	Case	Ctrl+D
Print Label	Prints label for case, if format available	Case	Ctrl+H
Charges	Open Charges window for case	Case	
Charge Audit	Opens audit window of all charges on the case	Case	
Patient history	Opens Patient History window	Case	Ctrl+P
Query Worksheets	Opens the Query Committed Worksheets window to search for any possible worksheets that have been attached to the case.	Case	
Result Entry	Opens Result Entry window for case	Case	Ctrl+R

Menu Option	Description	Accessed From	Shortcut
Clear Needs Corrected	Available for Admin users to set cases with Case Status of NEEDS CORRECTED, which no longer have pending work, to CASE COMPLETE.	Case	
Save	Saves specimen	Specimen	Ctrl+S
Audit	Displays audit trail for the specimen	Specimen	Ctrl+T
Delete	Deletes specimen (if privilege allows)	Specimen	Ctrl+Shift+D
Order	Opens window to order any profile or culture	Specimen	Ctrl+O
Order Super Panel	Opens window to order Super Panels, which may contain multiple of other profiles and/or cultures	Specimen	
Order Karyotype Profile	Opens window to order Karyotype profiles	Specimen	
Order PCR Profile	Opens window to order PCR profiles	Specimen	
Order FISH Profile	Opens window to order FISH profiles	Specimen	
Order Immuno Profile	Opens window to order Immuno profiles	Specimen	
Order DNA Sequencing Profile	Opens window to order DNA Sequencing profiles	Specimen	
Flag Inlab	Flags specimen as being *in-the-lab*	Specimen	Ctrl+F
Print Label	Prints label for specimen, if format available	Specimen	Ctrl+H
Load Add on	Loads new orders added via an EMR interface after the specimen has been inlabbed; Creates new specimen if the AddOns are not part of an existing specimen. Alert Rule can be created with expression as '@GPathSpecimenTable.AddOn@' = 'true'	Specimen	
Sub Specimen	Allows adding specimen to the current specimen (optional)	Specimen	
Create Multiples	Allows creating multiple specimens of same source, automatically and manually (optional)	Specimen	
Merge Specimen	Opens window allowing the merge of specimens of same source (optional)	Specimen	
Charges	Open Charges window for case	Specimen	
Result Entry	Opens the Result Entry window for the complete case	Specimen	Ctrl+R
Save	Saves profile	Profile	Ctrl+S

Menu Option	Description	Accessed From	Shortcut
Audit	Displays audit trail for the profile	Profile	Ctrl+T
Delete	Deletes profile (if privilege allows)	Profile	Ctrl+Shift+D
Send to Instrument	Sends whatever tests that have been ordered on the profile to the defined instrument for processing	Profile	
Order Constituents	Allows you to select and add on profile constituents, if profile is defined with on demand constituents	Profile	Ctrl+O
Result Constituents	Opens window to enter results for that profile	Profile	Ctrl+R
Print Label	Prints label for profile, if format available	Profile	Ctrl+H
Set/Clear Profile Approved	Set profile as approved	Profile	Ctrl+A
Set/Clear Profile Signed Set/Clear Profile Complete	Set profile as signed or completed	Profile	Ctrl+G
Cancel	Allows privileged users to cancel profile, prompts for reason	Profile	
Charges	Opens the Charges window and allows adding charges to selected profile	Profile	
Save	Saves result	Constituents	Ctrl+S
Audit	Displays audit trail for the result	Constituents	Ctrl+T
Delete	Deletes result (if privilege allows)	Constituents	Ctrl+Shift+D
Print Label	Prints label for test, if format available for result type	Constituents	
Save	Saves result	Culture	Ctrl+S
Audit	Displays audit trail for the result	Culture	Ctrl+T
Delete	Deletes result (if privilege allows)	Culture	Ctrl+Shift+D
Order Plates	Opens window to order plates on culture	Culture	
Plate Description	Opens a window where you can modify descriptions on all plates and sub plates present	Culture	Ctrl+L
Print Label	Prints a label for that culture, if available	Culture	Ctrl+H
Order Culture Form	Opens window to select and add defined culture form on culture	Culture	
Cancel	Cancel action on culture	Culture	
Save	Saves result	Plate	Ctrl+S
Audit	Displays audit trail for the result	Plate	Ctrl+T

Menu Option	Description	Accessed From	Shortcut
Delete	Deletes result (if privilege allows)	Plate	Ctrl+Shift+D
Sub Plate	**Orders a sub plate on the current plate with a description of SUB.**	Plate	Ctrl+Shift+P
Sub Plate Panel	**Opens a window to select a defined sub plate to be ordered on the current plate. Each constituent is created with a Description of** SUB.	Plate	
New Isolate [Quick]	Creates a new isolate on that plate	Plate	Ctrl+Q
Print Label	Prints a label for that plate, if available	Plate	Ctrl+H
Save	Saves result	Isolate	Ctrl+S
Audit	Displays audit trail for the result	Isolate	Ctrl+T
Delete	Deletes result (if privilege allows)	Isolate	Ctrl+Shift+D
Order PCR Profile	Opens window to order PCR profiles	Isolate	
Order FISH Profile	Opens window to order FISH profiles	Isolate	
Order Immuno Profile	Opens window to order Immuno profiles	Isolate	
Order BioChemical Profile	Opens window to select and add defined Biochemical Profiles on the Isolate	Isolate	
Order Antibiotic Panel	Opens window to select and add defined Antibiotic Panels on the isolate	Isolate	
Result Sensitivities	Opens window allowing result entry of antibiotics ordered; Organism Definition must have been saved.	Isolate	Ctrl+S
Result BioChemicals	Opens window allowing result entry of biochemicals ordered	Isolate	Ctrl+B

Notes

Chapter 4
Batch Result

The *Batch Result* window is where the same result may be entered on profiles or their constituents on multiple specimens at the same time, saving you many keystrokes. Profiles that have been defined for batch result entry are automatically available in the Batch Result window.

You access Batch Result from the NucleoLIS Operations Menu.

Before any test can receive a result through Batch Result, they must be logged in through Accession window and flagged Inlab.

In order to be able to perform Batch Result on a given profile or its constituents, the profile must be defined as *"Allow Batch Result = True"* in the respective profile library. See the Library section of this manual.

The Batch Result Window

When you first open the Batch Result window, shown in Figure 4-1, the window is blank. The top of the window has fields and buttons used in profile and test selection to create the batch. The bottom of the window has drop-down lists to select results and other buttons that are used to define and process the batch.

- The display of the grid is highly contingent on the data entry definition. Therefore, if for a given selection, profiles or constituents are associated with multiple data entry definitions, a drop-down list appears in the center top of the window. The drop-down list is labeled "Multiple Entry Definitions Found". Selecting an item from the drop-down list allows resulting the found records of differing data entry definitions.

- All of the column in the display are "fixed", with the exception of those defined in the Data Entry Definition. There is no capability to modify these columns.

- The column widths should be retained if changed on a per data entry definition basis.

- Double-clicking the fixed column headers allows the batch list to be sorted.
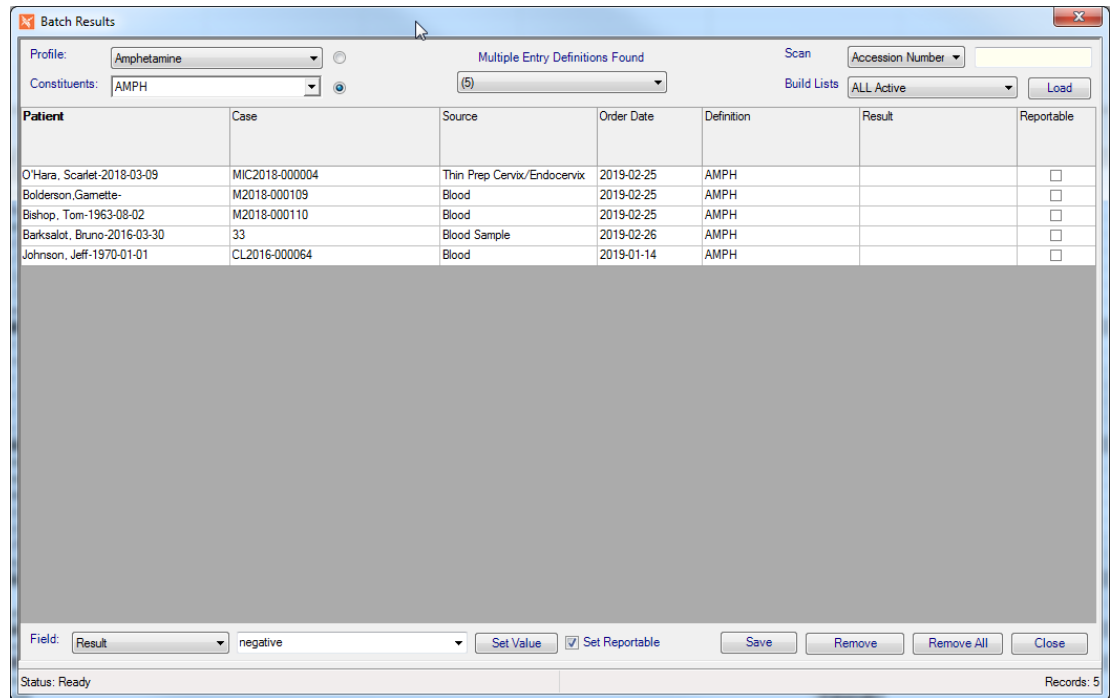
Figure 4-1 - Batch Result Window

Creating a batch to Batch Result

Before you can use Batch Result, profiles must be defined for Batch Result within the respective Profile Definition table in the Library. *See Chapter 8.*

To define a profile for Batch Result, set the field *Allow Batch Result = True* for that profile in the Library.

Figure 4-2 shows the Batch Result Window with the corresponding batch creation and result steps noted.

Create a result batch using the following steps:

1 **From the Profile pick list, select the profile you want to result. If you want to enter results on individual constituents, click the radio button for constituents, and select one or more or Select All constituents from the pick list.**

2 **For the Scan field, select the data field number you are using to load the specimens. Batch Result allows scanning Case/Accession, Specimen, or Profile Number. If scanning, follow by scanning the case, specimen, or profile numbers to result.**

  Alternatively, you can predefine Build Lists that filter orders by profile, order date and completion status.

3 **When test and specimen parameters are entered, click Load. All specimens matching the entered criteria are filled into the Batch Result grid, one per row.**

  NOTE: *Depending on the filter parameters you set, the list of matching tests can be quite large and may take some time. Although you can Load specimens without them, Psyche recommends using Build Lists or scanning specimen bar codes in practice.*
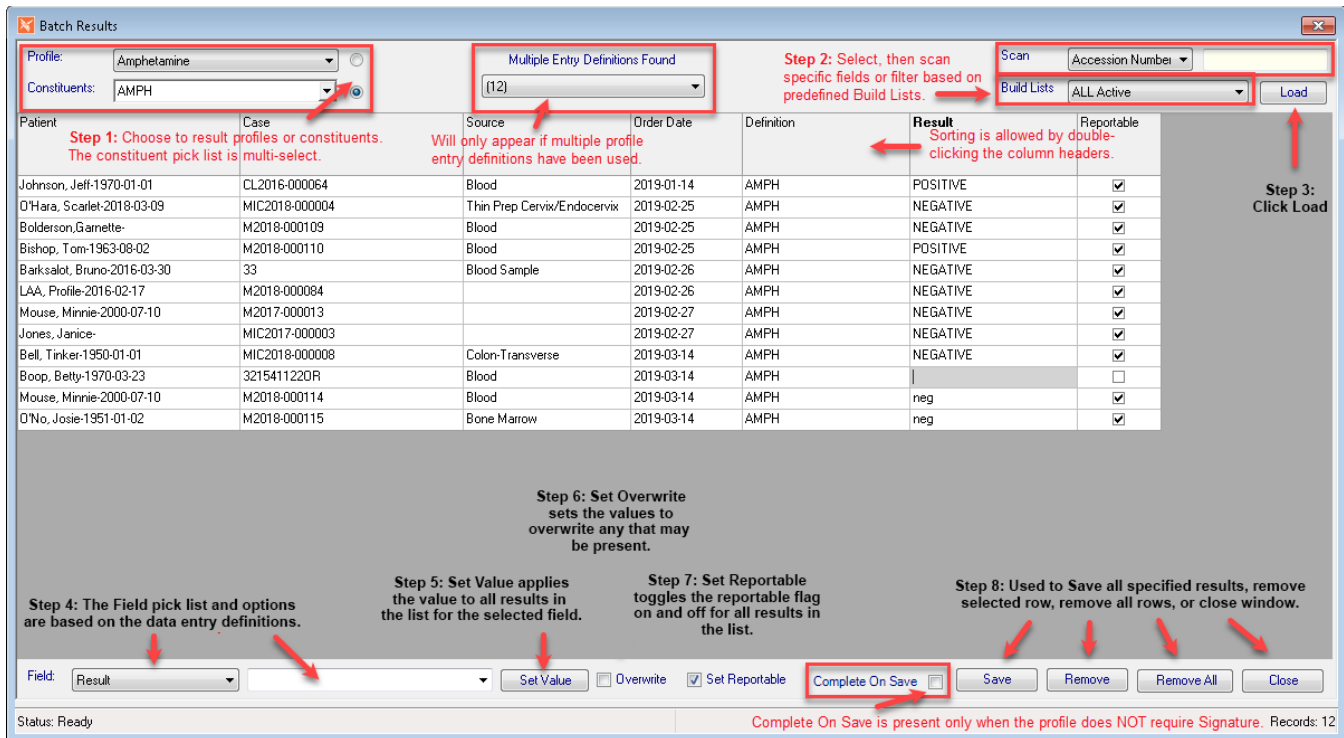
Figure 4-2 - Batch Result Window showing steps required to create and result a batch

Continue entering results using the following steps:

4   **The Field pick list and Values at the bottom are determined by the profile's specific Data Entry Definition. Select the field, then either select or enter the value you want to enter in the batch.**

5   **Set Value applies the value to all results in the list for the field selected.**

6   **Check Overwrite to have the result in the batch replace any result that may have been entered for the test(s).**

7   **Set Reportable to toggle the reportable flag on and off for all tests in the batch.**

8   **The four Action Buttons are used as follows:**

- **Save:** Saves all results with the set parameters as displayed in the Batch Result grid
- **Remove:** Removes the selected row from the Batch Result grid
- **Remove All:** Removes all rows from the Batch Result grid
- **Close:** Closes the Batch Result Window

TIP: *To enter result values and selected options that are varied, you would set the most common options first, and then modify the outliers before saving. e.g. Enter all your Negatives with Set Value, then update the Positive results before clicking Save.*

Reminders:

- As noted above, since the columns and options in the Batch Result window are determined by the Data Entry Definition for the profile receiving batch results, if the profile has had multiple definitions defined, a drop-down pick list will appear in the top center of the window indicating the multiple definitions to choose from.

- The Complete On Save checkbox is only available when entering profile results and the profile has been defined to NOT require a Signature. Checking this box will Complete all profiles in the batch list.

Batch Result Processing Buttons

Drop-down or Button	Description
Load	Loads all specimens matching the entered criteria into the Batch Result grid, one per row.
Set Value	Set Value applies the value to all results in the grid for the field selected.
Save	Saves the new status step for all profiles/cases in the batch
Remove	Removes the selected profile/case from the batch list, selected by highlighting any cell in the row
Remove All	Removes all the profiles/cases from the Batch Result window
Close	Closes the Batch Result window; prompts for verification if specified results were not saved

Chapter 5
Delivery Monitor

The *Delivery Monitor* window is where you can review reports or notifications that have been distributed and resend them, if needed. These reports or notifications may originate from multiple Psyche products, depending on what you have installed. You access the Delivery Monitor from the Operations Menu.

NuceoLIS reports are distributed whenever they are saved as preliminary or final in the Result Manager window or when set to be sent or distributed after reviewing them. Reports are distributed to the submitter physician or group and any other physician or group that may have been added to the case.

Delivery Monitor Window

When you open the Delivery Monitor window, example shown in Figure 5-1, you are presented with a list of reports that have been distributed along with date/time stamps, success status, and other columns of information related to the distribution. The information in this window is managed by a *distribution process* program running behind the scenes.

Figure 5-1 - Delivery Monitor Window

Delivery Monitor Window Columns

Field or Button	Description
Delivery Requested	Date/Time the process received the distribution request
Delivery Attempted	Date/Time the process attempted to distribute the request
Delivery Message	Varying messages, such as Sent, Successful, Canceled by x, or failure error message
Application	Depends on what applications you have installed: NucleoLIS, EMR II, Outreach, etc.
Delivery Type	One of the following delivery methods: Email, Fax, Print, RFAX (RightFax)
Destination	Email, printer, or Fax number
Remark	Report messages include the case number, destination, report status; other messages may include process name

With the fields at the top of the Delivery Monitor window, you can filter the display by any or a combination of the following:

- **Start Date / End Date:** Used to limit the display to a specified date range.
- **Delivery:** Click drop-down box to select one of the four available delivery methods: Email, Fax, Print, RFAX (RightFax).
- **Application:** Click drop-down box to select one of the possible applications installed, such as NucleoLIS, EMR II.
- **Remarks:** Text can be entered to filter specific messages, such as doctor or group name.
- **Pending Only:** Click checkbox to filter pending distributions only.
- **Binoculars:** Start search, as in throughout the NucleoLIS program.
- **Clear Filter:** Clears any selected filters applied and refreshes display.

Resend

- The **Resend** button is used to resend a report or notification, if it wasn't received for some reason. Highlight the specific report and click Resend to submit it again.

Cancel

- The **Cancel** button is used to stop a report that was just resent. If a report has been queued and is in the process of being resent, Cancel will stop the process.

Report Distribution Summary

- Submitter Location based distributions overrides the Physician based distributions, if defined.
- If a submitter is part of a group and the group has Report Distributions defined, reports will also go to that defined location/destination.
- Case *Other Physician* similarly receive reports, according to the *Other Physician* Report Distribution settings.
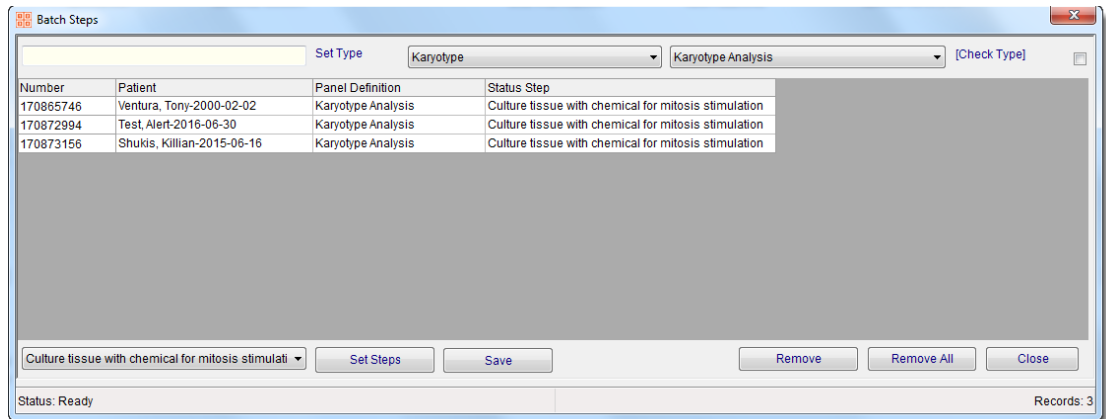
Chapter 6
Batch Steps

The *Batch Steps* window is where profiles and cases that have predefined batching steps assigned to them can be moved to the next process step in one window. You access Batch Steps either through the Batch Steps button on the left or from the Operations Menu.

Batch Steps resulting is used to enter the same result for many tests at one time, such as `INCUBATE or Add chemical to stop mitosis`. Before any test can receive a step status change, they must be created (or logged in) in the Accession window and flagged Inlab.

The Batch Steps Window

When you first open the Batch Steps window, shown in Figure 6-1, the window is blank. The top of the window has fields and buttons used in culture and case selection. The bottom of the window has a batch step drop-down list and buttons that are used to specify and process the batch.

Figure 6-1 - Batch Steps Window

Before you can use Batch Steps

- Definitions for Batch Status Steps must be defined in the Status Step Definition table in the Library. *See Chapter 8.*

- The types of profiles and/or cases that you want to set status steps in Batch Steps must have a Status Step associated with them in the Profiles Definition or Case Type Definition tables in the Library.

Processing specimens using Batch Steps

In the following example, we have a Status Step Definition of **Karyotype** that includes the typical steps for processing karyotypes, such as:

- Culture tissue with chemical for mitosis stimulation
- Incubate
- Add chemical to stop mitosis
- Transfer cells to tube, centrifuge to concentrate the layers
- Transfer cells to fixative tube
- Transfer cells to a slide and add chromosome stain
- Analyze/Arrange chromosomes
- Ready for reporting

The Karyotype Profile Definition for karyotypes (KARYO) has the Step Definition of **Karyotype workflow** assigned to it.

To create a batch using Batch Steps:

1 Open the Batch Steps window by clicking the icon or selecting it from the Operations Menu.

2 Select the batch type from the Set Type drop-down list - either Case or one of the profile types.

3 If using profiles, select the profile type you want to use from the next drop-down list. (In this example Karyotype Analysis (KARYO) was selected)

4 Click the [Check Type] checkbox to check for profile type before adding to the list.

5 In the first field, either scan or enter the profile/panel number you want to process, depending on your laboratory.

   If using case numbers, enter or scan the case number. The profile/case is added to the list.

6 Continue Step 5 until all profiles/cases you want to process are in the Batch Steps window. See Figure 6-2

Figure 6-2 - Batch Steps Window loaded with selected tests to process

To set the batch to the next status step:

1 Select the next status step from the Status Step drop-down list. In this case we are moving them from the current status of *Culture tissue with chemical for mitosis stimulation* to *incubate*.

2 Click the Set Steps button to set the step to Incubate for all the profiles. All profiles will show the new Status Step as shown in Figure 6-3.

3 If there are some profiles on the list you want to skip, you can modify individual steps in the row(s) by selecting that test's Status Step drop-down list and choosing another.

4 Click the Save button to save your changes.

5 Use the Remove or Remove All buttons to remove selected or all profiles/cases from the list.

6 Click Close to exit the Batch Steps window.
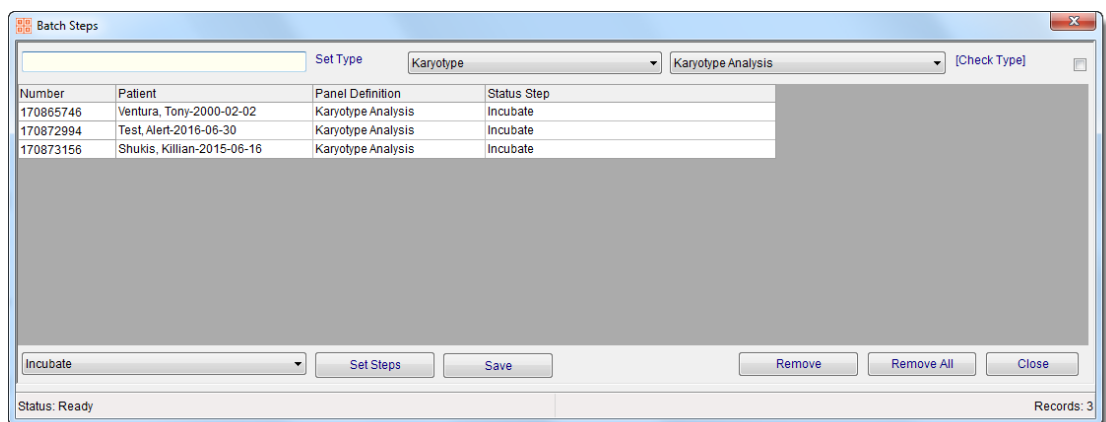
Figure 6-3 - Batch Steps Window after setting step to 'Incubate'

Status Step Processing Buttons

Drop-down or Button	Description
Status Step drop-down list	Click the drop-down arrow to select a status step from the available list; this list is generated from the defined list of possible status steps for the Status Step Definition assigned to the profile or case.
Set Steps	After selecting a Status Step from the drop-down list, sets the selected status for all profiles/cases in the batch
Save	Saves the new status step for all profiles/cases in the batch
Remove	Removes the selected profile/case from the batch list, selected by highlighting the row field other than profile number
Remove All	Removes all the profiles/cases from the Batch Steps window
Close	Closes the Batch Steps window; prompts for verification if specified status steps were not saved

Chapter 7
Batch Label

The *Batch Label* window is used for batch printing labels. NucleoLIS provides the option of printing specimen labels as they are being accessioned and flagged inlab, or by using Batch Label. Batch Label is accessed either through the Batch Label button (shown at left) or from the Operations Menu.

Batch label printing is useful if specimens are accessioned in bulk and then labeled in a large batch instead of individually as each specimen is accessioned.

Batch Label window

The **Batch Label** window is displayed in Figure 7-1. The top of the window has fields and buttons used to scan or type case or specimen numbers to add to the batch. The bottom of the window has fields and buttons used to select printing options.

Figure 7-1 - Batch Label Window

Case or specimen selection

Field or Button	Description
Number	Individual case or specimen numbers are entered or scanned here
Case radio button	Click to print case labels
Specimen radio button	Click to print specimen labels
Close	Closes the Batch Result window

When **Specimen** is selected above, the following is displayed in the list:

- Specimen Number
- Name (patient name)
- Source Definition
- Received Date (date specimen was flagged as in the lab)
-

When **Case** is selected above, the following is displayed in the list:

- Case Number
- Name (patient name)
- Case Type
- Report status

Label Printing options

Field or Button	Description
Print on Scan	Prints labels as each bar code is scanned
Use Quantity	Determines the amount of labels that will be printed
Print	prints the specified labels
Remove All	Removes all list entries
Remove	Removes selected list entry

Printing labels

To print case labels

1 **Make sure the Case radio button is checked.**
2 **Enter or scan the case number into the Number field.**
3 **Repeat Step 2 until all cases are in the list.**
4 **If Print On Scan is not selected, click Print to print the labels.**
5 **A standard printer selection box is displayed. Select the printer and the labels immediately print.**

To print specimen labels

1   **Make sure the Specimen radio button is checked.**

2   **Enter or scan the specimen number into the Number field.**

3   **Repeat Step 2 until all specimens are in the list.**

4   **If Print On Scan is not selected, click Print to print the labels.**

5   **A standard printer selection box is displayed. Select the printer and the labels immediately print.**

Notes

Chapter 8
Library

The *Library* is where all data definitions are made for all parameters in the NucleoLIS system. The Library is accessed either through the Library button on the left or from the Operations Menu. Users are required to have the Admin privilege in order to access the Library.

Each definition type is stored in a separate table that has its own fields specific to the parameter that is stored. Usually there is at least a code and a description associated with each parameter.

The library definition tables include the following:

- Advanced Entry (optional)
- Alert Rule
- Analyzation Map
- Antibiotic Definition
- Antibiotic Panel
- Ask At Order Entry Set (optional)
- Ask At Order Questions (optional)
- Ask At Order Responses (optional)
- Automated Task Definition (optional)
- Biochemical Definition
- Biochemical Profile
- Case Type Definition
- Charge Definition
- Comment Definition
- Communication Item Definition
- Culture Definition
- Culture Form Definition
- Culture Form Profile
- DB CanvasDefinition (optional)
- DB Definition (optional)
- DB ItemDefinition (optional)
- DB MetricDefinition (optional)
- DNA Sequencing Definition
- DNA Sequencing Profile
- Drug Definition
- e.Query Data Models (optional)
- FISH Definition
- FISH Profile
- ICD Definition
- Immuno Definition
- Immuno Profile
- Instrument Definition
- Insurance Definition

- Interface Map
- Karyotype Definition
- Karyotype Profile
- MTranslation (optional)
- Organism Definition
- Organism Family Definition
- PCR Definition
- PCR Profile
- Plate Definition
- Plate Profile
- QC Item Definition (optional)
- Reagent Definition (optional)
- Secure Mail Definition
- Source Definition
- Special Charge Definition
- Special Flag Definition
- Status Step Definition
- Storage Rack Definition
- Super Panel
- User Role
- Worksheet Template (optional)
- Zip Code

NOTE: *Modifications to the library code and descriptions will affect all cases: past, present and future. If changes to a library code or description are necessary, it is best to 'Retire' the old code and create a new one for the present and future cases. Retiring a code sets that code to be unavailable for selection, but if the retired code was linked or has a relationship to another library item, that relationship must be manually removed.*
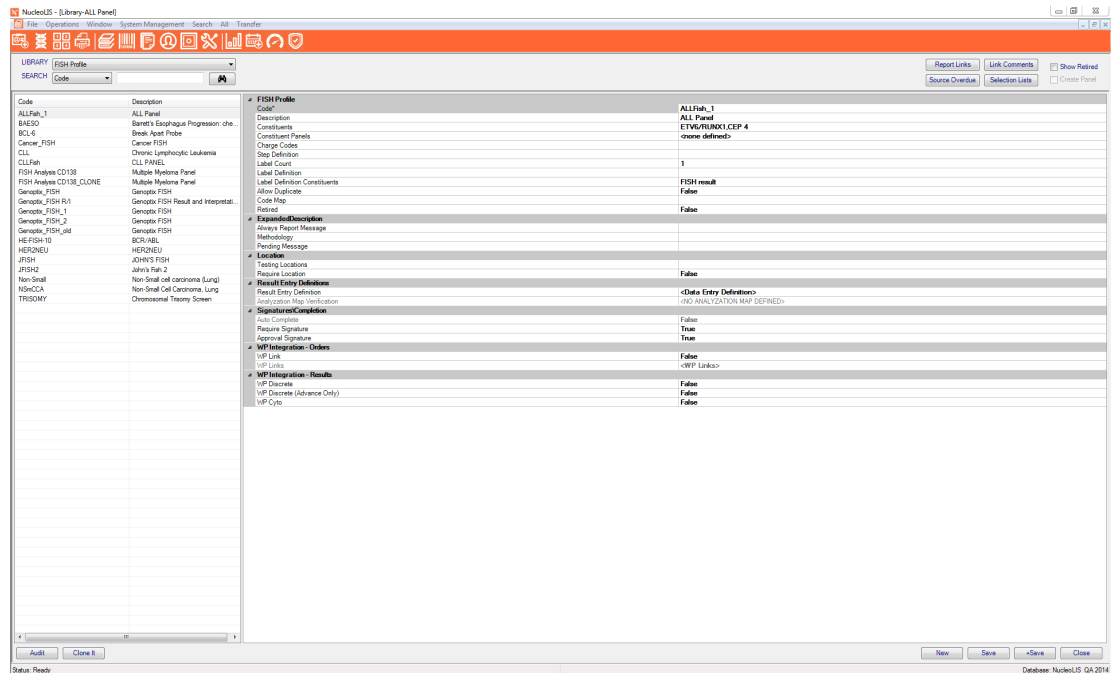
Figure 8-1 - FISH Definition Library window

Library Basics

When a library is first selected from the *Library Selection* drop-down menu, the window is blank. Figure 8-1 shows the FISH Definition Library window. To view, modify or add entries to the library, first click the binoculars. The left half of the window displays a list of the existing library items (if applicable) and the right displays the fields available for entry in the current table. The fields available for entry are library specific.

At the top of the library window are the following options:

Report Link is used to link specific report formats to submitters, if they request something beyond the standard set by the lab.

Link Comments is used to create subsets of the total comments in the library and specify what fields from which they will be available. Link Comments is displayed later in the chapter with the Comment Definition table.

Source Overdue button displays a grid of all source and profile combinations and any overdue values that have been entered in the Source Definition table. **Source Overdue** allows the system manager to modify individual source/profile combination overdue numeric values and therefore override the default overdue entries defined for the individual source. Entering zero results in resetting the default Overdue Default.

Selection Lists is used to create subsets of the total comments in the library and specify what fields from which they will be available. Link Comments is displayed later in the chapter with the Comment Definition table.

Creating Selections Lists for Result Report Comments

In NucleoLIS E.finity, you may create selection lists of comments to be used when sending corrected or other post-final reports.

In the Selection Lists window shown below in Figure 8-2, locate the Table *Result Report* and Column *Report Comment*. In the *New Item* field, enter a comment and click **Add**. The comment is added to the *Coded Phrase* list. To specify the comment to be available for corrected reports or other post-final reports, right-click the comment and choose **Corrected** or **Other**, then click **OK**.

When corrected or other reports are created, the user is prompted for a reason with a pick list of the defined comments.
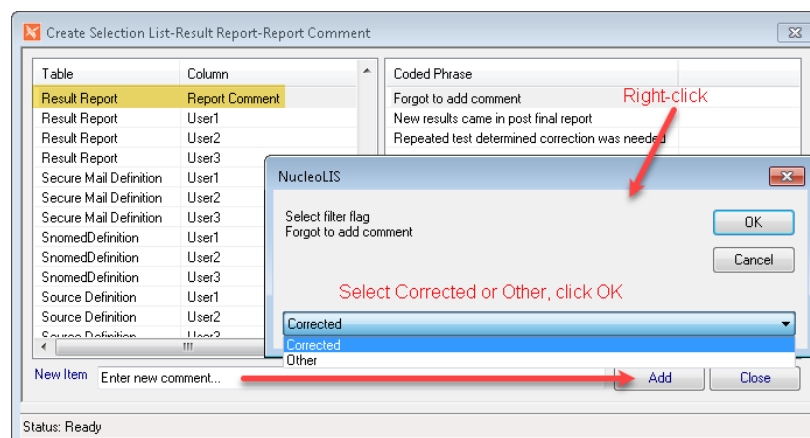
Figure 8-2 - Using Selection Lists for post-final reports comments

Show Retired checkbox is used to display retired library items when viewing tables

Create Panel check box is used to create a panel at the same time as the current entry is being created. This functionality is necessary since all tests must be ordered as part of a panel.

Sequence is available in some libraries when a library definition that supports sequencing is selected. (i.e. Antibiotics Definition, Antibiotic Panels, Biochemical Profiles - See Library tables section for details).

Superscript and **Subscript** may be defined for data elements by entering the text with rich text formatting (RTF) characters in the data text. This will enable the super/subscript format to print on reports that have that field set to RTF=True in the report designer. For example, to make the following text appears as this "Latex[nb 1]", enter Latex{\super\[nb 1]} in the text description. The same format is used for numeric superscript, such as Latex{\super\2}, but when super or subscripting alpha beginning characters, a space is needed after the second "\". For example, use IgE{\sub\ xy} to print IgE$_{xy}$.

At the bottom of the library window are the following options:

- **Audit** is used to view a simple audit log of any changes made to the current record.
- **Clone It** is used to create an exact duplicate of an existing library entry. A unique code is generated for the clone by taking the code from the clones source and appending an incrementing number.
- **Save** saves the current entry.
- **Save+** button saves the current entry and then displays a blank entry.
- **Close** closes the library.

Searching the library

In every table, searching can be performed based on either code or description.

To search by Code, select **Code** from the Search selection drop-down, enter the code in the criteria field and click the binoculars button.

To search by Description, select **Description** from the Search selection drop-down, enter the description in the criteria field and click the binoculars button.

With either method, if the second field is left blank, a complete list of the table contents is displayed. Select an entry in the list to display its details.

NOTE: *Use <Ctrl+R> to search.*

Library Tables

Advanced Entry

If *enabled* in your system, multiple user-definable configurations that help streamline rapid accessioning may be defined in NucleoLIS. Using the Advanced Entry library, default entry values and field displays may be configured that appropriately filter what is typical for any given type of accession. The Advanced Entry configurations are then selected while accessioning in the *Consolidated Accession Entry Window*. The *Consolidated Accession Entry Window is* described in the Accession chapter.

Multiple Advanced Entry configurations may be defined and made available to be used during the Accession process.

Table Field	Description
Code*	User defined up to 50 characters in length; must be unique.
Description*	Full description for the Advanced Entry configuration and is used to identify the configuration for selection n the Consolodated Accession Entry Window.
Entry Configuration	Opens a window where all the Advanced Entry settings may be defined. Click in the Entry Configuration field, then click the ellipsis (...) that appears to open the Edit Entry Configuration window for that Advanced Entry. An example of this window is shown in Figure 8-2.
Retired	True/False

Edit Entry Configuration Window

The *Edit Entry Configuration Window* is where the details of the accession entry configuration are defined. Available options fall into one of the following categories:

Default Values

- Submitter: select default submitter from list
- Submitter Group: select default group from list
- Case type: select default case type from list
- Source Definition: select up to three default sources (cases with multiple specimens) from list

Display Fields

- Patient Fields: select patient related fields to make available during Advanced Entry
- Visit Fields: select visit related fields to make available during Advanced Entry
- Case Fields: select case related fields to make available during Advanced Entry
- Specimen Fields: select specimen related fields to make available during Advanced Entry

Other Operations

- Search On Next: automatically opens the patient search window when proceeding to the Next Accession
- Flag Inlab: automatically flags Inlab when specimen is saved
- Print Case/Specimen/Profile Label: automatically prints appropriate labels

Profile Pick List

- Profile Selection: Select profiles to make available in a pick list during the Advanced Entry process. No other profiles will be available using the entry.
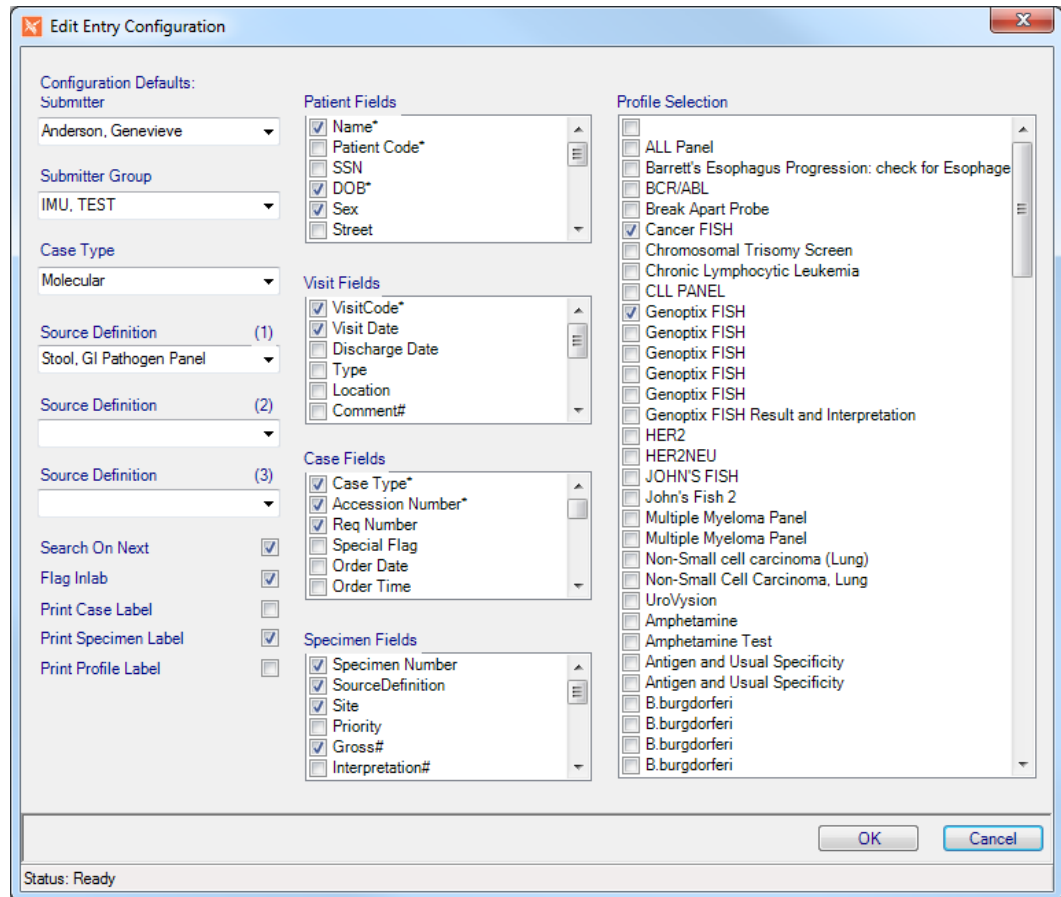
Figure 8-3 - Edit Entry Configuration Window

AlertRule

Table Field	Description
Code*	User defined up to 50 characters in length; must be unique.
Description*	Full description for the rule
AlertType	Click the ellipsis to select from one of the following list of Alert Types: Patient Visit Case Culture Specimen Test Media Isolate
Expression	Click ellipsis to open the Edit Expression window where you select the table too use and create the query to apply. Note: values entered in alert rules must match the case of the data exactly to activate the rule.

Table Field	Description
CustomRule	Optional rule created by Psyche to apply instead of defined Expression
AlertDisplay	Text to display when rule is met
Retired	True/False

Analyzation Map

Used in conjunction with the Run Tracking operation where you can quickly map specimens to the instrument plate based on the defined Analyzation Map.

Table Field	Description
Code*	User defined up to 50 characters in length.
Description*	Full description for the rule
Retired	True/False
Configuration	
Linked Profile*	Applicable ordering profile for the map
Layout Settings	Clicking the ellipsis opens the Edit Layout Settings window, shown in Figure 8-2, which is used to create new or edit mapping layouts.
Layout	
Columns	Display only field showing the number of columns defined in Layout Settings
Rows	Display only field showing the number of rows defined in Layout Settings
Column Headers	Display only field showing the column headers defined in Layout Settings
Row Headers	Display only field showing the row headers defined in Layout Settings
Layout Control	
Multiples Factor	Displays the number assigned for allowed duplicates per row for each specimen when processing titers, etc.
Negative Controls	Displays the row and column defined as the negative control location (e.g. 1,2)
Positive Controls	Displays the row and column defined as the positive control location (e.g. 1,1)
Unusable	Displays the mapped location that has been defined as unusable and will not be mapped to a sample in Run Tracking
Instrument Order Handling	
Instrument	Select the instrument on which this map will be used

Table Field	Description
Instrument Verification	Display only messages regarding whether the Instrument and profile match. e.g. <WARNING: INSTRUMENT PROFILE MISMATCH DETECTED> (if panel is associated with a different instrument) <VALID: AUTO ORDER WILL BE IGNORED> (if panel is set to this instrument, but automatically sent to instrument)
Print Handling	
Label Definition	Select the LabelDefinition for this map.
Print Map Definition	Enter the pre-designed map created with the Analyzation Map Designer.
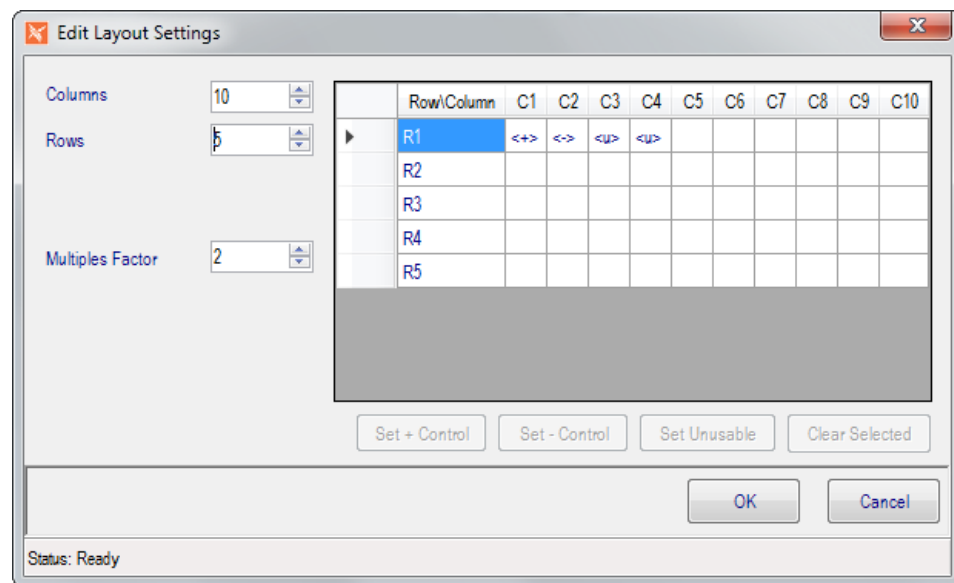
Figure 8-4 - Edit Analyzation Map Settings Window

To define an analysis map for a well plate:

1. **Use the Column, Rows, and Multiples Factor drop-down lists to define the grid size.**
2. **Click on the start of each row or column to enter a more specific header.**
3. **Once grid is defined, select a cell and click the buttons to Set + Control or Set - Control to specify the control locations.**
4. **Select cell and click Set Unusable to omit a cell from mapping.**
5. **To clear a cell previously marked as a control or unused, select it and click Clear Selected.**

Antibiotic Definition

Table Field	Description
Code*	User defined up to 50 characters in length.
Description	Full description of the library item

Table Field	Description
SequenceNumber	Defines the order in which the item will appear on formatted reports
Retired	True/False
Code Map	The antibiotic code used in the instrument, if interfaced
Never Report	True - Will suppress the item from result output False - Will not suppress the item from result output
Result Library	Defines applicable results for the antibiotic (S, I, R if none are defined)

Antibiotic Panel

Table Field	Description
Code*	User defined up to 50 characters in length.
Description	Full description of the library item
Constituents	What is contained in the panel. Pick from list or add new.
Charge Codes	Pick from list or add new.
Retired	True/False
Code Map	The antibiotic code used in the instrument, if interfaced
Sequence Number	Defines the order in which the item will is displayed when ordering
Step Definition	Define the Status Step Definition to use, if needed

Ask At Order Entry Set

Ask at Order Entry Sets of questions are defined in this library, then the AAOE Set is entered on the profile definition in the AAOE Set field. When the profile is ordered, the Questions field is added to the profile and user must open the Edit Questions window to answer questions or case cannot be completed. There is also a *Questions Complete* field that is set to False until questions are answered. A rule can be created to flag cases with missing responses (i.e. Questions Complete = False).

Table Field	Description
Code	User defined code
Description	Full description of the Entry Set
Constituents	Select from pick list Ask At Order Questions to be included in the AAOE Set.
Retired	True/False; whether or not the set is in use

Ask At Order Questions

The Ask At Order Questions library is where you define and configure questions for specific orders.

Table Field	Description
Ask At Order Questions	
Code	Unique code to identify the question, up to 50 characters. If nothing is entered, NucleoLIS will automatically generate a numeric code.
Description	Description of the question, up to 255 characters, including spaces. This is the question that is displayed in the Edit Questions window.
Required	True/False; if False, the question may be skipped
Retired	True/False; whether or not the question is in use
Response	
Responses	Pick from a list of available responses from the Ask At Order Responses library.
Response Query	If response options are defined tables entries, the table name and field may be entered here. e.g. the Response Query for drugs taken would be: GPathDrugDefinitionTable.Description
Default Response	Optional default response to the question; will be entered if user does not select another
Allow Other	True allows free text outside of available responses
Single Select	True limits selection to one item; False allows multiple response selections

Ask At Order Responses

The Ask At Order Responses library is where the responses to the questions are defined. Typically, you would add the library items this order: responses, questions, then entry sets.

Table Field	Description
Code	Unique code to identify the response, up to 50 characters. If nothing is entered, NucleoLIS will automatically generate a numeric code.
Description	Description of the response
Code Map	Code Map for the response, if used
Retired	True/False; whether or not the response is in use

Automated Task Definition

The Automated Task Definition library stores parameters needed by NucleoLIS' automated tasks to run. Entries in this table are added by Psyche Systems, but some tasks may require user configuration as well.

Tasks that require user configuration, such as *Scheduled Reporting*, will have a record in Automated Task Definition, *if* the program is installed, and which is used to configure the scheduled report jobs. Configuring jobs for Scheduled Reporting is described in Chapter 10 - *Design Result Reports* in this manual.

The first four fields are accessed by Psyche only.

Table Field	Description
Task ID	Task ID (name) of the task as defined by Psyche
Code	Code of the task as defined by Psyche
Description	Description of the task as defined by Psyche
Task Application	The application that is related to the task. e.g. NucleoLIS.
Retired	True/False; whether or not the task is in use
Automation	*(May vary based on task)*
Jobs	Jobs that have been defined for task; click ellipsis (...) to open window specific for that task's jobs. *See Chapter 10.*

BioChemical Definition

Table Field	Description
Code*	User defined up to 50 characters in length.
Description*	Full description of the library item
Result Library	Creates a pick list of appropriate result responses. When the Result library window is displayed, possible choices will be in the Tree of the window and the results that have been selected will be in the Property Grid. Users can pick from list or add new. This list is generated from [update this please]
Restrictive List	True/False; whether to restrict result entry to only those results specified in the above list from the Result Library
Retired	True/False
Code Map	The biochemical code used in the instrument, if interfaced

BioChemical Profile

Table Field	Description
Code*	User defined up to 50 characters in length.
Description	Full description of the library item
Constituents	What is contained in the profile. Pick from list or add new.
Charge Codes	Pick from list or add new.
Retired	True/False
Code Map	The biochemical profile code used in the instrument, if interfaced
Sequence Number	Defines the order in which the item will is displayed when ordering
Step Definition	Define the Status Step Definition to use, if needed

Case Type Definition

Table Field	Description
Code*	User defined up to 50 characters in length.
Description	Full description of the library item
Accession Letter	Prefix for the Case Type
Default Assign To (optional)	Select from pick list of users that have privilege CanAssignCases = 'True'
Step Definition	Define the Status Step Definition to use, if needed
Label Definition	Allows defining a specific label type for the Case Type. If blank, the first case label created for will be used for this case.
Source List	Define a limited list of Sources that are linked to this Case Type
Overdue Days	Set a maximum number of days for this case type to be considered overdue to result/review
Is Default	Set the case type as default during accessioning
Retired	True/False
Reporting	
Report Definition	Assign which Report Format is designated for this Case Type
Prelim Report Definition	Assign which Report Format is designated for this Case Type
Require Preliminary	True/False; preliminary report required to process; Save Final dithered until Preliminary saved in Result Manager. When 'Never Preliminary' is True, 'Require Preliminary' will automatically be false and dithered in Library.

Table Field	Description
Never Preliminary	True/False; True dithers Save Preliminary on Case Type in Result Manager; False allows Save Preliminary. When 'Require Preliminary' is True, 'Never Preliminary' will automatically be false and dithered in Library.
Require Signature	True/False; signature required before case type can be finalized
Use Profile Reports	True/False;
WP Integration - Orders	**(Interface Dependent)**
WP Link	True/False; allows linking of NucleoLIS to WindoPath.
WP Links	Allows you to map WindoPath to NucleoLIS Case Types
WP Auto Order	Allows you to add an automatic order to the Case Type
WP Integration - Results	**(Interface Dependent)**
WP Load Report	True/False
WP Sign On Report	True/False
WP Allow Supplemental	True/False
Foreign System Integration	**(Interface Dependent)**
Foreign Auto Order	Allows you to map Case Types to orders from foreign location

Charge Definition

Available to be added to various profiles, super panels, etc, however charges can also be added manually as needed. (Credits can be applied by checking the Credit box and re-adding the charge. Once the charge is added, the Credit field will populate and show True.) Use with either a billing interface or Management Reports.

Table Field	Description
Code*	User defined up to 50 characters in length.
Description	Full description of the library item
Charge Type	Additional charge type may be added to use in sorting charges in Charges window when finalizing case.
Retired	True/False

CommentDefinition

The Comment Definition table stores the comment codes and expansions to be used for all the Comment fields in NucleoLIS. The presence of the pound **(#)** character after the field label (e.g. VisitComment#) indicates that an entry field accesses the Comment Definition table.

To use a comment code in a comment field, type the # symbol in the field for a full list of available comments.

Table Field	Description
Code*	User defined up to 50 characters in length.
Description	Full description of the library item
Abnormal	True/False
Retired	True/False

Link Comments

Because this table holds all comments and information used in a variety of field entries, it is best to try to categorize the comments so users will see only the comments that apply to the type of data that needs to be entered. This is done with the **Link Comments** button, which opens the *Edit Coded Comments Links* window shown in Figure 8-5.

This window allows the user to create field specific lists of coded comments available for result entry. Users can even specify that a group of comments are only available for a particular culture/test type.

The left side shows the list of all coded comments in the system. The right displays the *Entry Field*, *Limit Type* and *Limit Selection* drop-down fields.

Figure 8-5 - Edit Coded Comments Link Window

Follow these steps to create a list of available comments for a given field:

1 Select the comment field desired from the Entry field drop-down list.

2 In the Limit Type field select Specimen-Interpretation# to limit the list based on the Specimen. Set the Limit Type to <General> to apply the list to all Specimen-Interpretations.

3 If this is a new list, the comment list box on the right contains all comments in the table and is shaded indicating that all comments are currently available for that field.

4 To start creating the list of comments linked to the field, double-click on a comment on the left side. A prompt is displayed asking to override the default list and replace with the selection.

5 Click Yes.

6 Continue selecting (double-clicking) comments from the left to add them to the right.

7 When done click Close to save the linked list and close the window.

NOTE: *To delete a comment from a linked list, just double-click on that comment on the right to remove it.*

Communication Item Definition

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Internal	True/False
Retired	True/False

Culture Definition

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Charge Codes	Pick from list or add new charge codes that will be automatically billed upon selection of the culture
Overdue Days	Set a maximum number of days for this culture to be considered overdue to result/review
Label Count	Numerical setting for label quantity to print
Is Urine	True/False. Tag as urine culture for instrument interface communication
Retired	True/False; sets the culture definition to be no longer used in NucleoLIS
Code Map	The culture code used in the instrument, if interfaced
Step Definition	Define the Status Step Definition to use, if needed
Source Definition Default (hidden by default)	Defines the source definition to set during creation of super panel generated specimen records.
Additional Testing	
Order Gram Stain	True/False
Plates	
Plate Panel	Assign a panel of plates for this culture
Plate Labels to Suppress	Suppress quantity of plate labels
Resulting	
AlwaysReportMessage	A standard comment that will appear on every report that is generated that contains this particular culture.
Result Default	Default Result for the culture
SuppressComment	True/False. Suppress culture comments from appearing on the formatted report.
Maintain Result	True/False

Culture Form Definition

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Code Map	The culture form definition code used in the instrument, if interfaced
Retired	True\False
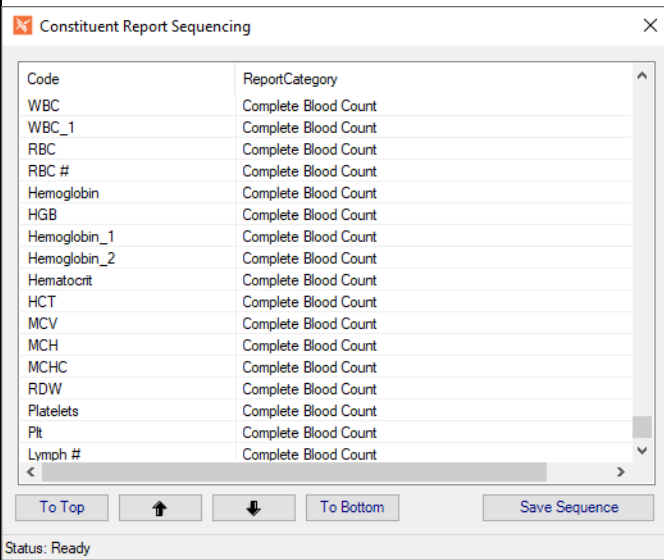
Culture Form Profile (FISH use only)

Table Field	Description
Code	User defined up to 50 characters in length
Description	Full description of the item
Constituents	What is contained in the profile. Pick from list or add new.
Step Definition	Define the Status Step Definition to use, if needed
Auto Complete	True/False; True eliminates need to set complete for Final report; forced to False if *Require Signature* is True; profiles assigned as Auto Complete need to be ordered after the specimen is inlabbed in order to be automatically completed.
Code Map	The culture form profile code used in the instrument, if interfaced
Retired	True/False
Allow Duplicate	True/False; allows more than one profile per specimen
Label Count	Numerical setting for label quantity to print
Result Entry Definitions	
Result Entry Definition	Set structure for the user to result, highly configurable

DNA Sequencing Definition

This is the full constituent library for all DNA sequencing profiles.

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Charge Codes	Pick from list or add new charge codes that will be automatically billed upon creation of the constituent order; the Charges window displays the constituent definition generating the charge in the description column.

Table Field	Description
Code Map	The DNA sequencing definition code used in the instrument, if interfaced
Retired	True/False
Expanded Description	
Always Report Message	Additional information to always report about the test
Report Category	Optional report category that may be defined and used for sorting on reports
Report Category Sequence	Report Category Sequencing is enabled by *Original Reports: UseConstituentSequencing*. If True, the **Sequence** button is available at top of all constituent definition library windows and opens the *Constituent Report Sequencing* window, shown below. Constituents may be sorted in this window and the sequence saved for use in *Result Reports*. **Save Sequence** saves for all definitions in the table and takes a few seconds. The sequence number in the Report Category Sequence field is then updated. It is recommended that Report Categories are populated when using sequencing.
WP Integration - Orders	**(Interface Dependent)**
WP Links	Allows you to map WindoPath to NucleoLIS DNA Sequencing Definition

DNA Sequencing Profile

The DNA Sequencing Profile table works with the DNA Sequencing Definition table.

Table Field	Description
Code*	User defined up to 50 characters in length

Table Field	Description
Description	Full description of the item
Constituents	What is contained in the profile. Pick from list of available *DNA Sequencing Definitions*, or add new.
Constituent Panels	Pick from list; available if Site Wide Reserved preference set to True and panels have been defined in Result Entry Definitions. Panels may be defined if any constituents are set OnDemand.
Suppress Overlap	True/False; set True for constituents of profile being ordered to be compared to constituents already ordered on specimen and prevent duplicate constituent orders.
Charge Codes	Define charge codes that will be automatically billed upon selection of the profile.
Step Definition	Define the Status Step Definition to use, if needed
Label Count	Number of labels to print for automatic printing (Inlab); minimum of 1 is required.
Label Definition	Define Label Type definition for profile; the default Label Definition may be cleared by right-clicking and selecting Clear.
Label Definition Constituents	Define Label Type definition for constituents
Allow Duplicate	True/False; allows more than one profile added per specimen
Code Map	The DNA Sequencing profile code used in the instrument, if interfaced
AAOE Set	If Ask At Order Entry is enabled, the AAOE Set is where you define the collection of AAO questions to ask on order
Source Default (hidden by default)	Defines the source definition to set during creation of super panel generated specimen records.
Retired	True/False; sets the DNA Sequencing profile to be no longer used in NucleoLIS
Defined Reagents	List of reagents required to process this profile that are defined in the Reagent Definition library
Expanded Description	
Always Report Message	Additional information to always report about the profile
Methodology	Description of how the profile results are obtained
Pending Message	User-defined message to be displayed while profile is pending
Location	
Testing Locations	Select from pick list of valid testing locations for profile. If only one is defined for profile, it is automatically entered when ordering. If, more than one, the user is prompted for location.
Required Location	True/False; if true, Testing Location must be defined above and will be required on the profile before it can be completed.

Table Field	Description
Result Entry Definitions	
Result Entry Definition	Set structure for the user to result, highly configurable; described in separate Result Entry Definition section later in this chapter
Analyzation Map Verification	Display only; whether a valid map is defined or not
Allow Batch Result	True/False; determines whether profile results may be entered through the Batch Result window
Report Category	May be used to group profiles on Result Reports by using ProfileReportCategory field.
Signatures\Completion	
Auto Complete	True/False; True eliminates need to set complete for Final report; forced to False if *Require Signature* is True; profiles assigned as Auto Complete need to be ordered after the specimen is inlabbed in order to be automatically completed.
Require Signature	True/False; if true, profile will not be completed unless profile is signed, case will not be completed until all profiles are signed.
Approval Signature	True/False; if true, profile will not be completed unless profile is approved *prior* to being signed; both signatures will be required before profile is considered complete; case will not be completed until all profiles are approved.
Toxicology	
Is Toxicology	True/False; if preference is enabled, true sets up profile for toxicology testing
Clinical	
Is Clinical	True/False; if preference is enabled, true sets up profile for clinical testing
WP Integration - Orders	**(Interface Dependent)**
WP Link	True/False; allows linking of WindoPath orders to NucleoLIS DNA Sequencing profiles
WP Links	Allows you to map WindoPath to NucleoLIS DNA Sequencing Profiles
WP Integration - Results	**(Interface Dependent)**
WP Discrete	True/False
WP Discrete (Advance Only)	True/False
WP Cyto	True/False
Outreach Integration - Orders	
Outreach Code	If Outreach has been purchased and integrated, allows you to customize the code that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.

Table Field	Description
Outreach Description	If Outreach has been purchased and integrated, allows you to customize the description that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Reference Lab Integration	
Allow Reference Lab	True/False; if enabled, defines profile as reference lab test
Sorting - Advanced	
Use Data Sort *(Optional)*	True/False; this field is activated through Field Definitions. True overrides the reporting order of the profile constituents as defined in the Edit Constituents window allowing constituents to be reported in the same order they are added to the specimen and listed in the Result Manager grid. False leaves the reporting order as defined in the Edit Constituents window.

Drug Definition

The Drug Definition library may be configured as automatic response options, if using the Ask At Order functionality built into NucleoLIS.

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Retired	True/False

e.Query Data Models

The e.Query Data Models library is used to create additional *views* to be used with the e.Query Management Report Designer. NucleoLIS comes with a standard number of views to use with the e.Query Designer, but if your specific data is not included in any of the supplied views, you may need to create a special view for your purposes. Creating views requires a good understanding of your database.
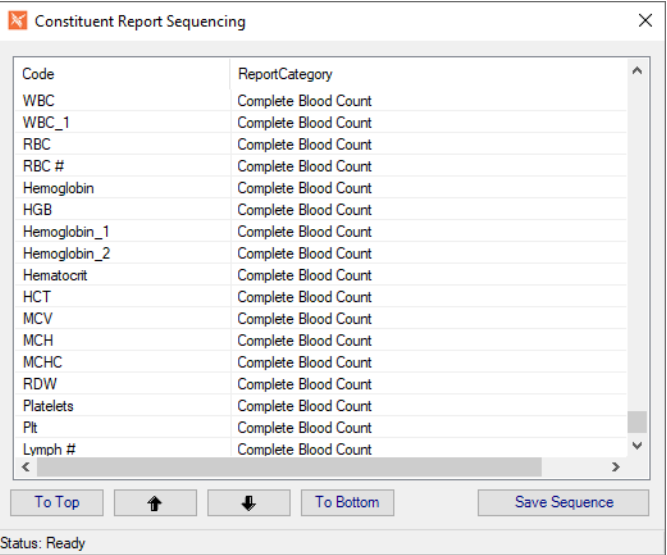
Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Description of the view; displayed in e.Query Query Designer window.
Full Description	Optional lengthy description of view; displayed in the e.Query Query Designer window by right-clicking selected view name.
View Definition	Clicking the ellipsis opens the *Edit View Definition* window where tables are selected to add to the view.
View Name *(read only)*	Name of the view as stored in the database and created with the Edit View Definition window
Retired	True/False

Table Field	Description
ADMIN	
Is Standard *(read only)*	True/False; whether the view was created as a Psyche standard
Is Static *(read only)*	True/False

FISH Definition

This is the full constituent library for all FISH profiles.

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Charge Codes	Pick from list or add new charge codes that will be automatically billed upon creation of the constituent order; the Charges window displays the constituent definition generating the charge in the description column.
Code Map	The FISH definition code used in the instrument, if interfaced
Retired	True/False
Expanded Description	
Always Report Message	Additional information to always report about the test
Report Category	Optional report category that may be defined and used for sorting on reports

Table Field	Description
Report Category Sequence (read only in field)	Report Category Sequencing is enabled by *Original Reports: UseConstituentSequencing*. If True, the **Sequence** button is available at top of all constituent definition library windows and opens the *Constituent Report Sequencing* window, shown below. Constituents may be sorted in this window and the sequence saved for use in *Result Reports*. **Save Sequence** saves for all definitions in the table and takes a few seconds. The sequence number in the Report Category Sequence field is then updated. It is recommended that Report Categories are populated when using sequencing.

WP Integration - Orders	(Interface Dependent)
WP Links	Allows you to map WindoPath to NucleoLIS FISH Definition

FISH Profile

The FISH Profile table works with the FISH Definition table.

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Constituents	What is contained in the profile. Pick from list of available *FISH Definitions*, or add new.
Constituent Panels	Pick from list; available if Site Wide Reserved preference set to True and panels have been defined in Result Entry Definitions. Panels may be defined if any constituents are set OnDemand.
Suppress Overlap	True/False; set True for constituents of profile being ordered to be compared to constituents already ordered on specimen and prevent duplicate constituent orders.

Table Field	Description
Charge Codes	Define charge codes that will be automatically billed upon selection of the profile.
Step Definition	Define the Status Step Definition to use, if needed
Label Count	Number of labels to print for automatic printing (Inlab); minimum of 1 is required.
Label Definition	Define Label Type definition for profile; the default Label Definition may be cleared by right-clicking and selecting Clear.
Label Definition Constituents	Define Label Type definition for constituents
Allow Duplicate	True/False; allows more than one profile added per specimen
Code Map	The FISH profile code used in the instrument, if interfaced
AAOE Set	If Ask At Order Entry is enabled, the AAOE Set is where you define the collection of AAO questions to ask
Source Default (hidden by default)	Defines the source definition to set during creation of super panel generated specimen records.
Retired	True/False
Defined Reagents	List of reagents required to process this profile that are defined in the Reagent Definition library
Expanded Description	
Always Report Message	Additional information to always report about the profile
Methodology	Description of how the profile results are obtained
Pending Message	User-defined message to be displayed while profile is pending
Location	
Testing Locations	Select from pick list of valid testing locations for profile. If only one is defined for profile, it is automatically entered when ordering. If, more than one, the user is prompted for location.
Required Location	True/False; if true, Testing Location must be defined above and will be required on the profile before it can be completed.
Result Entry Definitions	
Result Entry Definition	Set structure for the user to result, highly configurable; described in separate Result Entry Definition section later in this chapter
Analyzation Map Verification	Display only; whether a valid map is defined or not
Allow Batch Result	True/False; determines whether profile results may be entered through the Batch Result window
Report Category	May be used to group profiles on Result Reports by using ProfileReportCategory field.
Signatures\Completion	

Table Field	Description
Auto Complete	True/False; True eliminates need to set complete for Final report; forced to False if *Require Signature* is True; profiles assigned as Auto Complete need to be ordered after the specimen is inlabbed in order to be automatically completed.
Require Signature	True/False; if true, profile will not be completed unless profile is signed, case will not be completed until all profiles are signed.
Approval Signature	True/False; if true, profile will not be completed unless profile is approved *prior* to being signed; both signatures will be required before profile is considered complete; case will not be completed until all profiles are approved.
Toxicology	
Is Toxicology	True/False; if preference is enabled, true sets up profile for toxicology testing
Clinical	
Is Clinical	True/False; if preference is enabled, true sets up profile for clinical testing
WP Integration - Orders	**(Interface Dependent)**
WP Link	True/False; allows linking of WindoPath orders to NucleoLIS FISH profiles
WP Links	Allows you to map WindoPath to NucleoLIS FISH Profiles
WP Integration - Results	**(Interface Dependent)**
WP Discrete	True/False
WP Discrete (Advance Only)	True/False
WP Cyto	True/False
Outreach Integration - Orders	
Outreach Code	If Outreach has been purchased and integrated, allows you to customize the code that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Outreach Description	If Outreach has been purchased and integrated, allows you to customize the description that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Reference Lab Integration	
Allow Reference Lab	True/False; if enabled, defines profile as reference lab test
Sorting - Advanced	
Use Data Sort *(Optional)*	True/False; this field is activated through Field Definitions. True overrides the reporting order of the profile constituents as defined in the Edit Constituents window allowing constituents to be reported in the same order they are added to the specimen and listed in the Result Manager grid. False leaves the reporting order as defined in the Edit Constituents window.

ICD Definition

ICD Definitions are assigned and displayed at the case level. Once a case has been signed out, the ICDs on that case cannot be changed.

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Retired	True/False

Immuno Definition

This is the full constituent library for all Immuno profiles.

Table Field	Description
Code*	User defined up to 50 characters in length.
Description*	Full description of the item
Charge Codes	Pick from list or add new charge codes that will be automatically billed upon creation of the constituent order; the Charges window displays the constituent definition generating the charge in the description column.
Code Map	The Immuno definition code used in the instrument, if interfaced
Retired	True/False
Expanded Description	
Always Report Message	Additional information to always report about the test
Report Category	Optional report category that may be defined and used for sorting on reports

Table Field	Description
Report Category Sequence	Report Category Sequencing is enabled by *Original Reports: UseConstituentSequencing*. If True, the **Sequence** button is available at top of all constituent definition library windows and opens the *Constituent Report Sequencing* window, shown below. Constituents may be sorted in this window and the sequence saved for use in *Result Reports*. **Save Sequence** saves for all definitions in the table and takes a few seconds. The sequence number in the Report Category Sequence field is then updated. It is recommended that Report Categories are populated when using sequencing.

WP Integration - Orders	(Interface Dependent)
WP Links	Allows you to map WindoPath to NucleoLIS Immuno Definition

Immuno Profile

The Immuno Profile table works with the Immuno Definition table.

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Constituents	What is contained in the profile. Pick from list of available *Immuno Definitions*, or add new.
Constituent Panels	Pick from list; available if Site Wide Reserved preference set to True and panels have been defined in Result Entry Definitions. Panels may be defined if any constituents are set OnDemand.
Suppress Overlap	True/False; set True for constituents of profile being ordered to be compared to constituents already ordered on specimen and prevent duplicate constituent orders.

Table Field	Description
Charge Codes	Define charge codes that will be automatically billed upon selection of the profile.
Step Definition	Define the Status Step Definition to use, if needed
Label Count	Number of labels to print for automatic printing (Inlab); minimum of 1 is required.
Label Definition	Define Label Type definition for profile; the default Label Definition may be cleared by right-clicking and selecting Clear.
Label Definition Constituents	Define Label Type definition for constituents
Allow Duplicate	True/False; allows more than one profile added per specimen
Code Map	The immuno profile code used in the instrument, if interfaced
AAOE Set	If Ask At Order Entry is enabled, the AAOE Set is where you define the collection of AAO questions to ask
Source Default (hidden by default)	Defines the source definition to set during creation of super panel generated specimen records.
Retired	True/False
Defined Reagents	List of reagents required to process this profile that are defined in the Reagent Definition library
Expanded Description	
Always Report Message	Additional information to always report about the profile
Methodology	Description of how the profile results are obtained
Pending Message	User-defined message to be displayed while profile is pending
Location	
Testing Locations	Select from pick list of valid testing locations for profile. If only one is defined for profile, it is automatically entered when ordering. If, more than one, the user is prompted for testing location.
Required Location	True/False; if true, Testing Location must be defined above and will be required on the profile before it can be completed.
Result Entry Definitions	
Result Entry Definition	Set structure for the user to result, highly configurable; described in separate Result Entry Definition section later in this chapter
Analyzation Map Verification	Display only; whether a valid map is defined or not
Allow Batch Result	True/False; determines whether profile results may be entered through the Batch Result window
Report Category	May be used to group profiles on Result Reports by using ProfileReportCategory field.

Table Field	Description
Signatures\Completion	
Auto Complete	True/False; True eliminates need to set complete for Final report; forced to False if *Require Signature* is True; profiles assigned as Auto Complete need to be ordered after the specimen is inlabbed in order to be automatically completed.
Require Signature	True/False; if true, profile will not be completed unless profile is signed, case will not be completed until all profiles are signed.
Approval Signature	True/False; if true, profile will not be completed unless profile is approved *prior* to being signed; both signatures will be required before profile is considered complete; case will not be completed until all profiles are approved.
Toxicology	
Is Toxicology	True/False; if preference is enabled, true sets up profile for toxicology testing
Clinical	
Is Clinical	True/False; if preference is enabled, true sets up profile for clinical testing
WP Integration - Orders	**(Interface Dependent)**
WP Link	True/False; allows linking of WindoPath orders to NucleoLIS Immuno profiles
WP Links	Allows you to map WindoPath to NucleoLIS Immuno Profiles
WP Integration - Results	**(Interface Dependent)**
WP Discrete	True/False
WP Discrete (Advance Only)	True/False
WP Cyto	True/False
Outreach Integration - Orders	
Outreach Code	If Outreach has been purchased and integrated, allows you to customize the code that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Outreach Description	If Outreach has been purchased and integrated, allows you to customize the description that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Reference Lab Integration	
Allow Reference Lab	True/False; if enabled, defines profile as reference lab test
Sorting - Advanced	

Table Field	Description
Use Data Sort *(Optional)*	True/False; this field is activated through Field Definitions. True overrides the reporting order of the profile constituents as defined in the Edit Constituents window allowing constituents to be reported in the same order they are added to the specimen and listed in the Result Manager grid. False leaves the reporting order as defined in the Edit Constituents window.

Instrument Definition

Table Field	Description
Code*	User defined up to 50 characters in length. This value is displayed in IReview.
Description	Full description of the instrument
Retired	True/False
Result Handling Management	
IReview Handling	**IReviewALL:** All interface results are sent to IReview for review. **IReviewAbnormal:** Only abnormal interface results are sent to IReview for review. Normal results bypass IReview and are stored as reported by the instrument **IReviewNone:** All Interfaced results bypass IReview and are stored as reported by the instrument
IReview Mode	**Accept:** Instrument results bypass Data Entry Definition logic and rules, presenting results in IReview as they come from the instrument. **Execute:** Execute passes results though Data Entry Definition logic and rules before IReview display. **None:** Instrument results are not processed or sent to IReview; automatically set to **None** when IReview Handling: IReviewNone is selected.
IReviewAllowRepeat	True/False; when true, IReview records associated with Instruments that *AllowRepeat* enable executing a *Repeat* action in IReview and resends the test order to the instrument. **NOTE:** *Setting an instrument to AllowRepeat should be restricted to Instruments that are integrated with an Orders interface.*
IBatch Status	*Not currently implemented.*
IQC Item	*Not currently implemented.*
IReportable	True/False; whether result is set as reportable
IComplete	True/False; whether profile is set as complete

Table Field	Description
IReview Description *(read only)*	*Description of IReview Handling selection from above.* **IReviewALL:** All Interfaced results are sent to IReview and stored directly as reported by the instrument. Batch records are not saved **IReviewAbnormal:** Abnormal results are sent to IReview and stored directly as reported by the instrument. Batch records are not saved **IReviewNone:** All Interfaced results bypass IReview and are stored as reported by the instrument. Batch records are not saved

Insurance Definition

NOTE: *Duplicate codes are not permitted.*

Table Field	Description
Code*	User defined up to 50 characters in length
Name	Carrier Name
Description	Full description of the item
Retired	True/False
Type	Free text
Address	
Street	Free text
Street2	Free text
Street3	Free text
City	Free text
State	Information comes from a selection list, which allows a pick list without any validation of the fields. See zip below.
Zip	If a zip code is entered the city and state populate automatically.
Contact	
Phone	Free text
Fax	Free Text
Customer Service Phone Number	Free text
Provider Relations Phone Number	Free text
Provider Relations Contact Name	Free text

Interface Map

Used to map codes from different sources for interface and other purposes.

Table Field	Description
Mapping Type*	Free text describing type of mapping
Mapped Values	
Internal Code*	Lab Code
External Code*	Vendor Code
Additional	
Description	Full description of the item
Retired	True/False

Karyotype Definition

This is the full constituent library for all Karyotype profiles.

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Charge Codes	Pick from list or add new charge codes that will be automatically billed upon creation of the constituent order; the Charges window displays the constituent definition generating the charge in the description column.
Code Map	The karyotype definition code used in the instrument, if interfaced
Retired	True/False
Expanded Description	
Always Report Message	Additional information to always report about the test
Report Category	Optional report category that may be defined and used for sorting on reports

Table Field	Description
Report Category Sequence	Report Category Sequencing is enabled by *Original Reports: UseConstituentSequencing*. If True, the **Sequence** button is available at top of all constituent definition library windows and opens the *Constituent Report Sequencing* window, shown below. Constituents may be sorted in this window and the sequence saved for use in *Result Reports*. **Save Sequence** saves for all definitions in the table and takes a few seconds. The sequence number in the Report Category Sequence field is then updated. It is recommended that Report Categories are populated when using sequencing.
WP Integration - Orders	**(Interface Dependent)**
WP Links	Allows you to map WindoPath to NucleoLIS Karyotype Definition

Karyotype Profile

The Karyotype table works with the Karyotype Definition table.

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Constituents	What is contained in the profile. Pick from list of available *Karyotype Definitions*, or add new.
Constituent Panels	Pick from list; available if Site Wide Reserved preference set to True and panels have been defined in Result Entry Definitions. Panels may be defined if any constituents are set OnDemand.
Suppress Overlap	True/False; set True for constituents of profile being ordered to be compared to constituents already ordered on specimen and prevent duplicate constituent orders.

Table Field	Description
Charge Codes	Define charge codes that will be automatically billed upon selection of the profile.
Step Definition	Define the Status Step Definition to use, if needed
Label Count	Number of labels to print for automatic printing (Inlab); minimum of 1 is required.
Label Definition	Define Label Type definition for profile; the default Label Definition may be cleared by right-clicking and selecting Clear.
Label Definition Constituents	Define Label Type definition for constituents
Allow Duplicate	True/False; allows more than one profile added per specimen
Code Map	The immuno profile code used in the instrument, if interfaced
AAOE Set	If Ask At Order Entry is enabled, the AAOE Set is where you define the collection of AAO questions to ask
Source Default (hidden by default)	Defines the source definition to set during creation of super panel generated specimen records.
Retired	True/False
Defined Reagents	List of reagents required to process this profile that are defined in the Reagent Definition library
Expanded Description	
Always Report Message	Additional information to always report about the profile
Methodology	Description of how the profile results are obtained
Pending Message	User-defined message to be displayed while profile is pending
Location	
Testing Locations	Select from pick list of valid testing locations for profile. If only one is defined for profile, it is automatically entered when ordering. If, more than one, the user is prompted for location.
Required Location	True/False; if true, Testing Location must be defined above and will be required on the profile before it can be completed.
Result Entry Definitions	
Result Entry Definition	Set structure for the user to result, highly configurable; described in separate Result Entry Definition section later in this chapter
Analyzation Map Verification	Display only; whether a valid map is defined or not
Allow Batch Result	True/False; determines whether profile results may be entered through the Batch Result window
Report Category	May be used to group profiles on Result Reports by using ProfileReportCategory field.

Table Field	Description
Signatures\Completion	
Auto Complete	True/False; True eliminates need to set complete for Final report; forced to False if *Require Signature* is True; profiles assigned as Auto Complete need to be ordered after the specimen is inlabbed in order to be automatically completed.
Require Signature	True/False; if true, profile will not be completed unless profile is signed, case will not be completed until all profiles are signed.
Approval Signature	True/False; if true, profile will not be completed unless profile is approved *prior* to being signed; both signatures will be required before profile is considered complete; case will not be completed until all profiles are approved.
Toxicology	
Is Toxicology	True/False; if preference is enabled, true sets up profile for toxicology testing
Clinical	
Is Clinical	True/False; if preference is enabled, true sets up profile for clinical testing
WP Integration - Orders	**(Interface Dependent)**
WP Link	True/False; allows linking of WindoPath orders to NucleoLIS Karyotype profiles
WP Links	Allows you to map WindoPath to NucleoLIS Karyotype Profiles
WP Integration - Results	**(Interface Dependent)**
WP Discrete	True/False
WP Discrete (Advance Only)	True/False
WP Cyto	True/False
Outreach Integration - Orders	
Outreach Code	If Outreach has been purchased and integrated, allows you to customize the code that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Outreach Description	If Outreach has been purchased and integrated, allows you to customize the description that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Reference Lab Integration	
Allow Reference Lab	True/False; if enabled, defines profile as reference lab test

Table Field	Description
Sorting - Advanced	
Use Data Sort *(Optional)*	True/False; this field is activated through Field Definitions. True overrides the reporting order of the profile constituents as defined in the Edit Constituents window allowing constituents to be reported in the same order they are added to the specimen and listed in the Result Manager grid. False leaves the reporting order as defined in the Edit Constituents window.

Location Designation

If using either the signing or testing location features, the locations are defined in this table and are then assigned to users for signing or profiles for testing

Table Field	Description
Location Designation	
Code	User defined up to 50 characters in length
Name	Name of the Location
Description	Full description of the Location
Contact	Contact person at the location
Phone	Phone #
Additional	Additional information
Is Signing Default	Set to True to make this location the default for signing
Retired	True/False
Address	
Address	Location address
Address2	Additional Location address
City	Location city
State	Location state
Zip	Location Zip code

Organism Definition

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
SnoMed	Code associated with the organism
ShowAlert	Set to true to alert when this organism is selected

Table Field	Description
ChargeCodes	Define charge codes that will be automatically billed upon selection of this organism
Retired	True/False
Class	
Family	Classify the organism family
Critical	
Critical	True/False
Critical Input Required	True/False
Critical Prompt	If critical, this free text prompt will appear
Instrument	
Code Map	The organism code used in the instrument, if interfaced
Reporting	
Always Report Message	A standard comment that will appear on every report that is generated that contains this particular organism
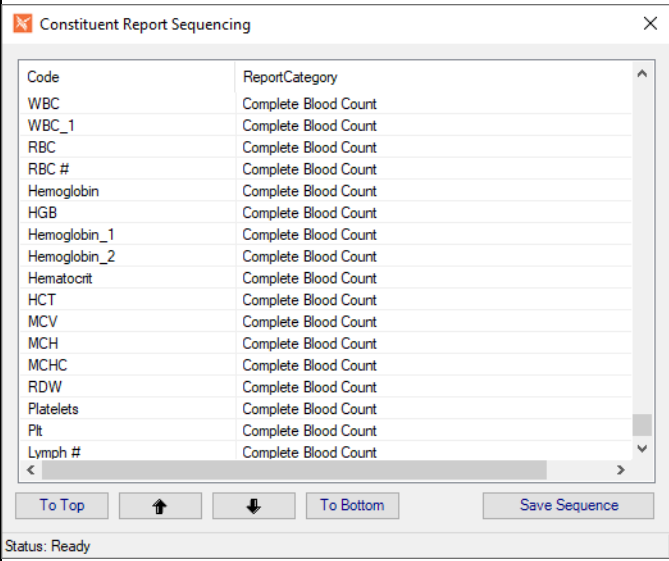
Organism Family Definition

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Retired	True/False
Code Map	The organism family code used in the instrument, if interfaced

PCR Definition

This is the full constituent library for all PCR profiles.

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Charge Codes	Pick from list or add new charge codes that will be automatically billed upon creation of the constituent order; the Charges window displays the constituent definition generating the charge in the description column.
Code Map	The PCR definition code used in the instrument, if interfaced
Retired	True/False
Expanded Description	

Table Field	Description
Always Report Message	Additional information to always report about the test
Report Category	Optional report category that may be defined and used for sorting on reports
Report Category Sequence	Report Category Sequencing is enabled by *Original Reports: UseConstituentSequencing*. If True, the **Sequence** button is available at top of all constituent definition library windows and opens the *Constituent Report Sequencing* window, shown below. Constituents may be sorted in this window and the sequence saved for use in *Result Reports*. **Save Sequence** saves for all definitions in the table and takes a few seconds. The sequence number in the Report Category Sequence field is then updated. It is recommended that Report Categories are populated when using sequencing.
WP Integration - Orders	**(Interface Dependent)**
WP Links	Allows you to map WindoPath to NucleoLIS PCR Definition

PCR Profile

The PCR Profile table works with the tests in the PCR Definition table.

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Constituents	What is contained in the profile. Pick from list of available *PCR Definitions*, or add new.
Constituent Panels	Pick from list; available if Site Wide Reserved preference set to True and panels have been defined in Result Entry Definitions. Panels may be defined if any constituents are set OnDemand.

Table Field	Description
Suppress Overlap	True/False; set True for constituents of profile being ordered to be compared to constituents already ordered on specimen and prevent duplicate constituent orders.
Charge Codes	Define charge codes that will be automatically billed upon selection of the profile.
Step Definition	Define the Status Step Definition to use, if needed
Label Count	Number of labels to print for automatic printing (Inlab); minimum of 1 is required.
Label Definition	Define Label Type definition for profile; the default Label Definition may be cleared by right-clicking and selecting Clear.
Label Definition Constituents	Define Label Type definition for constituents
Allow Duplicate	True/False; allows more than one profile added per specimen
Code Map	The PCR profile code used in the instrument, if interfaced
AAOE Set	If Ask At Order Entry is enabled, the AAOE Set is where you define the collection of AAO questions to ask
Source Default (hidden by default)	Defines the source definition to set during creation of super panel generated specimen records.
Retired	True/False
Defined Reagents	List of reagents required to process this profile that are defined in the Reagent Definition library
Expanded Description	
Always Report Message	Additional information to always report about the profile
Methodology	Description of how the profile results are obtained
Pending Message	User-defined message to be displayed while profile is pending
Location	
Testing Locations	Select from pick list of valid testing locations for profile. If only one is defined for profile, it is automatically entered when ordering. If, more than one, the user is prompted for location.
Required Location	True/False; if true, Testing Location must be defined above and will be required on the profile before it can be completed.
Result Entry Definitions	
Result Entry Definition	Set structure for the user to result, highly configurable; described in separate Result Entry Definition section later in this chapter
Analyzation Map Verification	Display only; whether a valid map is defined or not
Allow Batch Result	True/False; determines whether profile results may be entered through the Batch Result window
Report Category	May be used to group profiles on Result Reports by using ProfileReportCategory field.

Table Field	Description
Signatures\Completion	
Auto Complete	True/False; True eliminates need to set complete for Final report; forced to False if *Require Signature* is True; profiles assigned as Auto Complete need to be ordered after the specimen is inlabbed in order to be automatically completed.
Require Signature	True/False; if true, profile will not be completed unless profile is signed, case will not be completed until all profiles are signed.
Approval Signature	True/False; if true, profile will not be completed unless profile is approved *prior* to being signed; both signatures will be required before profile is considered complete; case will not be completed until all profiles are approved.
Toxicology	
Is Toxicology	True/False; if preference is enabled, true sets up profile for toxicology testing
Clinical	
Is Clinical	True/False; if preference is enabled, true sets up profile for clinical testing
WP Integration - Orders	**(Interface Dependent)**
WP Link	True/False; allows linking of WindoPath orders to NucleoLIS PCR profiles
WP Links	Allows you to map WindoPath to NucleoLIS PCR Profiles
WP Integration - Results	**(Interface Dependent)**
WP Discrete	True/False
WP Discrete (Advance Only)	True/False
WP Cyto	True/False
Outreach Integration - Orders	
Outreach Code	If Outreach has been purchased and integrated, allows you to customize the code that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Outreach Description	If Outreach has been purchased and integrated, allows you to customize the description that is seen in Outreach Orders. Modifications must be followed by an e.Outreach - Sync.
Reference Lab Integration	
Allow Reference Lab	True/False; if enabled, defines profile as reference lab test

Table Field	Description
Sorting - Advanced	
Use Data Sort *(Optional)*	True/False; this field is activated through Field Definitions. True overrides the reporting order of the profile constituents as defined in the Edit Constituents window allowing constituents to be reported in the same order they are added to the specimen and listed in the Result Manager grid. False leaves the reporting order as defined in the Edit Constituents window.

Plate Definition

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Label Count	Numerical setting for label quantity to print
Retired	True/False

Plate Profile

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Constituents	What is contained in the profile. Pick from list or add new.
Retired	True/False

QC Item Definition (optional)

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item
Retired	True/False

Reagent Definition (optional, must be enabled)

Table Field	Description
Code*	User defined up to 50 characters in length
Description	Full description of the item

Table Field	Description
Comments	Optional additional comments
Retired	True/False
Manufacturer	
Manufacturer	Name of Manufacturer
Manufacturer Contact	Contact person at Manufacturer
Manufacturer City	Manufacturer city
Manufacturer State	Manufacturer state
Manufacturer Zip	Manufacturer zip code
Distributor	
Distributor	Name Of Distributor
Distributor Contact	Contact person at Distributor
Distributor City	Distributor city
Distributor State	Distributor state
Distributor Zip	Distributor zip code
Stock Management	
Manage Stock	From the *Manage Stock* field, click the field and ellipsis at the end of the field to open the *Manage Reagent Stock* window described later in this chapter.
Stock Status	Stock Status indicates the reagent status and displays as one of the following: **READY - VALID**: when only one Lot is currently defined as "In Use" **WARNING - MULTIPLE LOTS DEFINED IN USE**: when more than one lot is defined as "In Use" ****NO LOT DEFINED IN USE****: when no lots have been defined as "In Use"

Secure Mail Definition

Table Field	Description
Email*	User email address
Password	User email password; shows encrypted as ****; opens dialog box to enter/change password when clicking ellipsis.
Retired	True/False

Source Definition

Table Field	Description
Code*	User defined up to 50 characters in length.
Description*	Full description for the sensitivity group
Charge Codes	Pick from list or add new charge codes that will be automatically billed upon inlab of a specimen with this source; the Charges window displays the specimen source generating the charge in the description column.
Sites	Allows building list of sites that are applicable to the source, which can be added to the specimen
Label Count	Number of labels to print for automatic printing (Inlab)
Label Definition	Allows defining a specific label type for the Source. If blank, the first case label created will be used for this source.
Step Definition	Define the Status Step Definition to use, if needed
Gross Received	True/False; True enables Gross# field entry on the specimen before the specimen is flagged inlab
Overdue Default (Hours)	Default number of hours for processing for that source until considered overdue; use the Source Overdue button to view grid of all overdue entries and modify individual Source/Profile overdue values accordingly; overdue values are used by Turn Around Time reports for processing overdue calculations.
Retired	True/False
Create Multiples	**(Optional)**
Multiples	Default is one (1); setting this field to a value greater than 1 enables multiple specimens of the defined source to be created when flagged inlab.
Auto Multiples	True/False; True creates the defined number of multiples specified above on inlab. False allows manual creation of multiple specimens in the Accession and Result Manager windows by right-clicking the Specimen and selecting Create Multiples. Additional specimens of the same source are created until the number in the Multiples fields has been met.
Order - Auto Super Panel	
Super Panel	Grouping of Profile(s) that will be automatically ordered
Order - Prompt	
Cultures	Orderable Profile that can be chosen at the time of accessioning-linking here provides a list of acceptable profiles to order with the source
DNASeqProfiles	Orderable Profile that can be chosen at the time of accessioning-linking here provides a list of acceptable profiles to order with the source

Table Field	Description
FISH Profiles	Orderable Profile that can be chosen at the time of accessioning-linking here provides a list of acceptable profiles to order with the source
Immuno Profiles	Orderable Profile that can be chosen at the time of accessioning-linking here provides a list of acceptable profiles to order with the source
Karyotype Profiles	Orderable Profile that can be chosen at the time of accessioning-linking here provides a list of acceptable profiles to order with the source
PCR Profiles	Orderable Profile that can be chosen at the time of accessioning-linking here provides a list of acceptable profiles to order with the source
WP Integration - Orders	**(Interface Dependent)**
WP Link	True/False; allows linking of NucleoLIS to WindoPath.
WP Links	Allows you to map WindoPath to NucleoLIS Source
WP Require Profiles	True/False
WP Allow NucleoLIS Ordering	True/False
WP Integration - Results	**(Interface Dependent)**
WP Add Diagnosis	True/False
Foreign System Integration	**(Interface Dependent)**
Foreign Allow NucleoLIS Ordering	True/False

Special Charge Definition

Table Field	Description
Code*	User defined up to 50 characters in length.
Description*	Full description for the item
Retired	True/False
Order	
Cultures	Define override charge rule
DNASeqProfiles	Define override charge rule
FISH Profiles	Define override charge rule
Immuno Profiles	Define override charge rule
Karyotype Profiles	Define override charge rule
PCR Profiles	Define override charge rule

Special Flag Definition

Table Field	Description
Code*	User defined up to 50 characters in length.
Description*	Full description for the item
Retired	True/False

Status Step Definition

Table Field	Description
Code*	User defined up to 50 characters in length.
Description*	Full description for the item
Step Items*	Actions required to process the case, specimen, or profile.
Retired	True/False

Storage Rack Definition

Table Field	Description
Code*	User defined up to 50 characters in length.
Description*	Full description for the item
Columns	Number of columns on the rack
Rows	Number of rows on the rack
Retired	True/False

Super Panel

Table Field	Description
Code*	User defined up to 50 characters in length
Description*	Full description of the item
Retired	True/False
Order	
Cultures	Link orderable profiles to create the super panel
DNASeqProfiles	Link orderable profiles to create the super panel
FISH Profiles	Link orderable profiles to create the super panel
Immuno Profiles	Link orderable profiles to create the super panel
Karyotype Profiles	Link orderable profiles to create the super panel

Table Field	Description
PCR Profiles	Link orderable profiles to create the super panel
Order-Advanced	**(Optional - hidden by default)**
Create Specimen	True/False; if true, the super panel creates new specimen records during the ordering process.
Keep Alone	True/False; if true, all components of the super panel are ordered on individual specimen records.
Charges	
Charge Codes	Define charge codes that will be automatically billed upon selection of the super panel.
Charge on Reflex	True/False
Charge Prompt	True/False

User Role

Table Field	Description
Code*	User defined up to 50 characters in length to define the user role
Description	Full description for the user role
Retired	True/False
Role - User Operations	
Can Accession	True/False
Can Result	True/False; determines whether user can enter results; if true, BuildLists field is open to optionally limit the available build lists for the user role.
Can Batch Result	True/False; determines whether user can run Batch Result; opens Batch Build Lists field in Additional Operations.
Can Storage Find	True/False; determines whether user can run Storage Find
Can Status Step	True/False; determines whether user can run Status Step
Can Batch Label	True/False; determines whether user can run Batch Label
Can Run Track	True/False; determines whether user can run Run Tracking
Can Worksheet	True/False; determines whether user can run Worksheet Manager
Role - System Manager Operations	
Can Manage Library	True/False; determines whether user can run Library
Can Design Labels	True/False; determines whether user can design Labels
Can Design Result Reports	True/False; determines whether user can design Result Reports

Table Field	Description
Can Design Distribution	True/False; determines whether user can run Distribution Designer
Can Design Analyzation Print Map	True/False; determines whether user can Design Analyzation Print Map
Can Manage Users	True/False; determines whether user can run Human Resources
Can Storage	True/False; determines whether user can run Storage Manager
Can Configure System	True/False; determines whether user can run Configuration
Can e.Query (Design Management Reports)	True/False; determines whether user can design management reports, if module purchased
Role - Additional Operations	
Can Run e.Query (Run Management Reports)	True/False; determines whether user run Management Reports; if true, opens ManagementReports field to optionally limit the reports user can run.
Management Reports	List of Management reports the user can run; only available if user role CanRunManagementReports is True. If left blank, user role can run all management reports.
Can Delivery Review	True/False; determines whether role can run Delivery monitor
BuildLists	List of Build Lists role can run; only available if user role CanResult is True. If blank, user role can run all Build Lists.
BatchBuildLists	List of Build Lists role can run in Batch Result; only available if user role CanBatchResult is True. If blank, user role can run all Build Lists in Batch Result.
CanReferenceLabViewer	True/False; determines whether user can open the Reference Lab Viewer window, if Reference Lab Module is configured.
CanReferenceLabRequisition Designer	True/False; determines whether user can open the Reference Lab Requisition Designer and Reference Lab Label Designer windows, if Reference Lab Module is configured.
Role - User Privs	
Can Quality Review	True/False; determines whether user can run Quality Review
Can Single Delete	True/False; determines whether user can delete single item (only available if AdminDeletesOnly preference is False)
Can Cascade Delete	True/False; determines whether user can delete cascade of items (only available if AllowCascadeDeletes preference is True and AdminDeletesOnly is False)
Can Delete Charges	True/False; determines whether user can delete charges or credit charges already billed

Table Field	Description
Can Deactivate Records	True/False; determines whether user can deactivate records
Can Data Entry Definition	True/False; determines whether user can modify data entry definitions
Can Override Received Date	True/False; determines whether user can delete modify protected received date
Role - Dashboards	
Can e.Dashboard	True/False; whether user can run e.Dashboard, if purchased. True opens up the following four fields.
Dashboards	Select from a pick list the available Dashboards to allow the user to access. If none are selected, user can access all available Dashboards.
CanDashboardCreate	True/False; whether user can create new Dashboards
CanDashboardEdit	True/False; whether user can edit existing Dashboards
CanDashboardRetire	True/False; whether user can retire existing Dashboards
Role - Modules	
Can e.Docs	True/False; whether user can run e.Docs, if purchased
Can e.Monitor	True/False; determines whether user can run e.Monitor, if purchased
Can Winput	True/False; determines whether user can run Winput Processing (Provation 2D Barcode Scanning Custom), if purchased.

Worksheet Template

If enabled in your system, the Integrated Worksheet functionality leverages *Microsoft Excel* like features to model extreme use of spreadsheets for tracking specimen preparation data (e.g. Wet Lab). NucleoLIS Worksheets allow interactive ability to process specimens with manipulation of data. Some of the areas worksheets can be helpful in include:

- Specimen preparation and tracking
- QC analysis
- Result analysis and genetic variance findings
- Database for QC, reagents, defined result values

This design allows for high-level flexibility as it is an open canvas to handle potentially unlimited scenarios and worksheets for tracking specimen preparation data.

Benefits over Excel

- Templates are stored in the database, allowing for easier administration
- Users work within the context of NucleoLIS, improving ease of use objectives
- Data is saved discretely for analysis
- Opens the door for data communication / transfer with NucleoLIS

Table Field	Description
Code*	Unique user defined up to 50 characters in length
Description	Full description for the Worksheet Template
Retired	True/False
Is Variant	Allows for structured handling of variant data. When IsVariant is true, the Variant data is then stored within it's own table in a structured way to which enables optimized storage and querying.
Variant Map	Only available if Is Variant = True (above). The Variant Map setting relates the spreadsheet columns to database columns. **Format:** databasecolumnName|spreadsheetcolumnreference^databasecolumnName|spreadsheetcolumnreference **Example:** CHROM|A^POS|B **In the example:** The CHROM column in the database if filled with the content of Column A in the spreadsheet. The POS column in the database if filled with the content of Column B in the spreadsheet. **The possible list of database columns are:** Chrom, Pos, ID, Ref, Alt, Qual, Filter, Info, Format, User1 through User8.
Current Version	If multiple versions of template have been created, shows the current version, though changes to Templates overwrite previous versions.
Template Definition	Opens the Excel-like window, *Edit Template Definition*, where the Worksheet Template may be defined. Click in the Template Definition field, then click the ellipsis (...) that appears to open the Edit Template Definition window for that Worksheet. An example of this window is shown in Figure 8-6. Multiple options are available to import and modify Worksheet Templates.
Locked State	
Locked	True/False; shows True when template is being edited
Locked Date	If template is locked, shows date when locked
Locked Time	If template is locked, shows time when locked
Locked By	If template is locked, shows user name of who has it locked

Table Field	Description
Clear Locked State	To unlock a template, from the Worksheet Template library, select the ellipse associated with the Clear Locked State field and answer the prompt. **Note:** To unlock a worksheet, from the Worksheet Manager, click View Properties, and select the ellipse associated with the Clear Locked State field and answer the prompt.
Actions	
Actions	Configured integrated actions of a Worksheet Template may be accessed here, but is not the recommended place to configure them.

- Templates created in the Worksheet Library are "locked" while in use so that other users do not overwrite each others work.
- Templates that are locked are not accessible.
- The templates can be built from scratch or by importing from excel.
- Several advanced options exist in the Worksheet designer.
- Each time a template is changed, a version stamp is incremented. Tracking the version is important for analyzing discrete data.

Full Worksheet Integration

This functionality may be referred to as the *Wet Lab & Pre-analytic Module*, but the features are far more generalized as it is provides a mechanism to share *various* types of NucleoLIS data with Worksheets. This is performed through two new buttons on the *Worksheet Manager* window:

- Integration Fill
- Integration Action

The **Integration Fill** button in *Worksheet Manager* loads a spreadsheet with NucleoLIS records. This process is described in more detail in the *Result Manager* chapter.

The **Integration Action** button in *Worksheet Manager* executes actions, such as advancing status steps or ordering on instruments, for the NucleoLIS records contained in the spreadsheet. This process is described in more detail in the *Result Manager* chapter.

The behavior of both **Integration Fill** and **Integration Action** commands are highly contingent on configuration settings. This configuration process is described in more detail below.

Edit Template Definition Window - Action Configuration

First open the Template Definition Window for the template you want to integrate by clicking the ellipsis in the Template Definition **<TEMPLATE>** field.
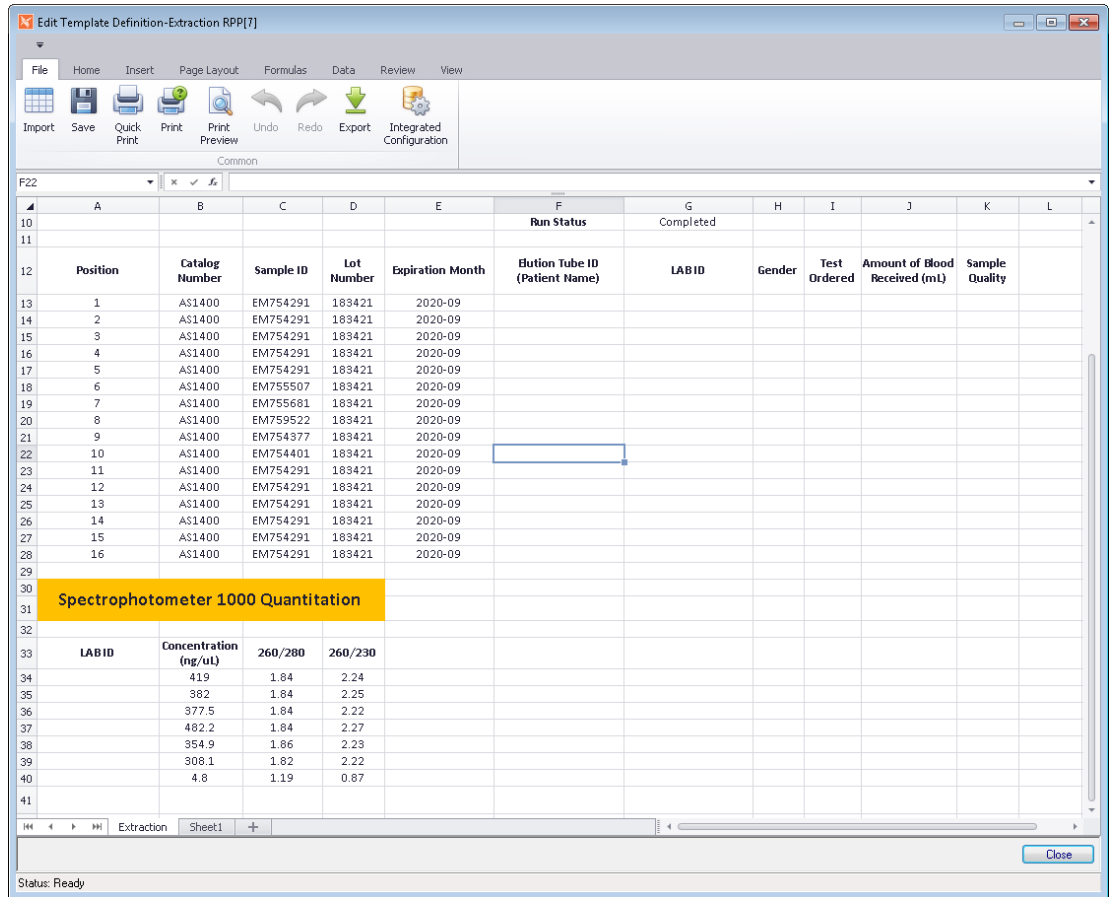
Figure 8-6 - Edit Template Definition Window for 'Extraction RPP' Template

The Edit Template Definition window contains the following tool bar buttons:

Toolbar Option	Description
Import	Select to import an existing worksheet template to add to library
Save	Saves the worksheet template
Quick Print	Prints the current to your default printer
Print	Opens window to select printer to print the worksheet template
Print Preview	Allows you to preview and print the current worksheet template
Undo / Redo	Reverts last step performed / performs last edit again
Export	Opens a window to export the worksheet to a number of file formats, including XLSX, CSV, and TXT
Integrated Configuration	Opens the Integrated Configuration window for that template

Integrated Configuration Window

From the Edit Template Definition window, Click the **Integrated Configuration** button to load the *Integrated Configuration* window, shown in Figure 8-7.
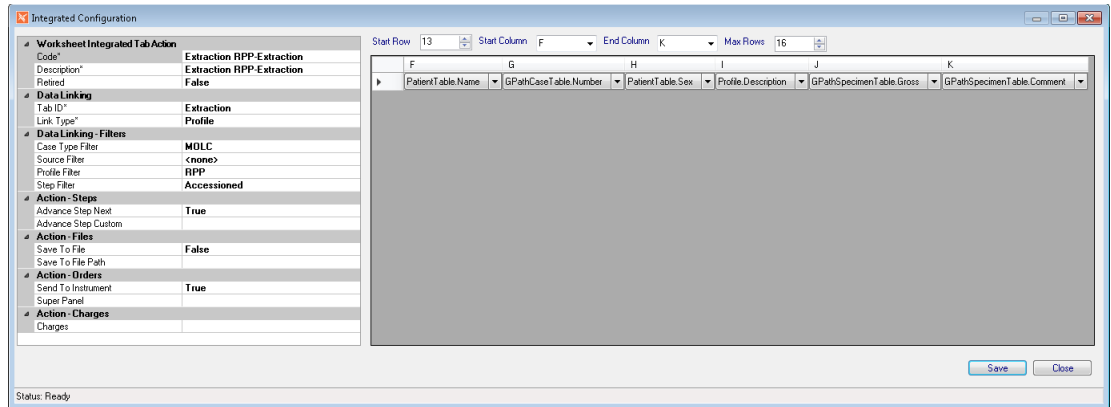
Figure 8-7 - Integrated Configuration Window

The window is comprised of 2 sections. The *left* side is our standard entry grid in which the following properties can be applied:

Property Field	Description
Worksheet Integrated Tab Action	
Code*	Standard, but automatically populated with the name of the parent template followed by a "-" and the tab name.
Description	Automatically populated with same value as the code
Retired	True/False
Data Linking	
Tab ID*	Automatically populated with the name of the tab associated in which the action settings are linked. This field is the **CRITICAL LINK** Between the template and the action definition.
Link Type*	Case, Specimen, or Profile; specifies the type of data on which to operate; also controls which Action properties are allowed
Data Linking - Filters	*(Filters applied when Integrated Fill and Integrated Action are used in Worksheet Manager)*
Case Type Filter	Filters records by case types
Source Filter	Filters records by specimen source
Profile Filter	Filters records by specific profiles
Step Filter	Filters records by specific status steps
Action - Steps	*(Defines actions executed during Integrated Action operation)*
Advance Step Next	True/False; True advances profile to next status step
Advance Step Custom	Set to define a custom step
Action - Files	*(Defines actions executed during Integrated Action operation)*
Save To File	True/False; True sends data to a file

Property Field	Description
Save To File Path	File path to save on Integrated Action; enter file path and file name in this field. A file name of *[UNIQUE]* will output a unique file name.
Action - Orders	*(Defines actions executed during Integrated Action operation)*
Send To Instrument	True/False; True sends order to interfaced instrument
Super Panel	Select Super Panel to order
Action - Charges	*(Defines actions executed during Integrated Action operation)*
Charges	Select charge codes to add

The *right* side of the window is used to map database fields to worksheet columns and rows. There are five entry controls present on the right side:

- **Start Row:** sets the row id in which to start mapping.

- **Start Column:** sets the column id in which to start mapping

- **End Column:** sets the column id in which to end mapping.

- **Max Rows:** sets the max number of rows that a spreadsheet can take.

- **Field Grid:** defines the NucleoLIS fields to map to each worksheet column. For example, in Figure 8-7 Column F is populated with the PatientTable.name value. Use the drop-down arrows to select the appropriate fields.

At least one "key" field must be selected and include the following:
- PatientTable.objectID
- PatientTable.code
- VisitTable.objectID
- VisitTable.code
- GPathCaseTable.ObjectID
- GPathCaseTable.Number
- GPathSpecimenTable.ObjectID
- GPathSpecimenTable.Number
- Profile.ObjectID
- Profile.Number

Additional Notes

- The "Link Type" field controls the field picklist options.

- Patient, Visit, Case fields are always available

- Specimen fields are available only when Link Type = Specimen or Profile

- Profile fields are available only when Link Type = Profile

- Profile fields include all types (FISH, PCR, etc)

Figure 8-8 - Sample Integrated Worksheet Template
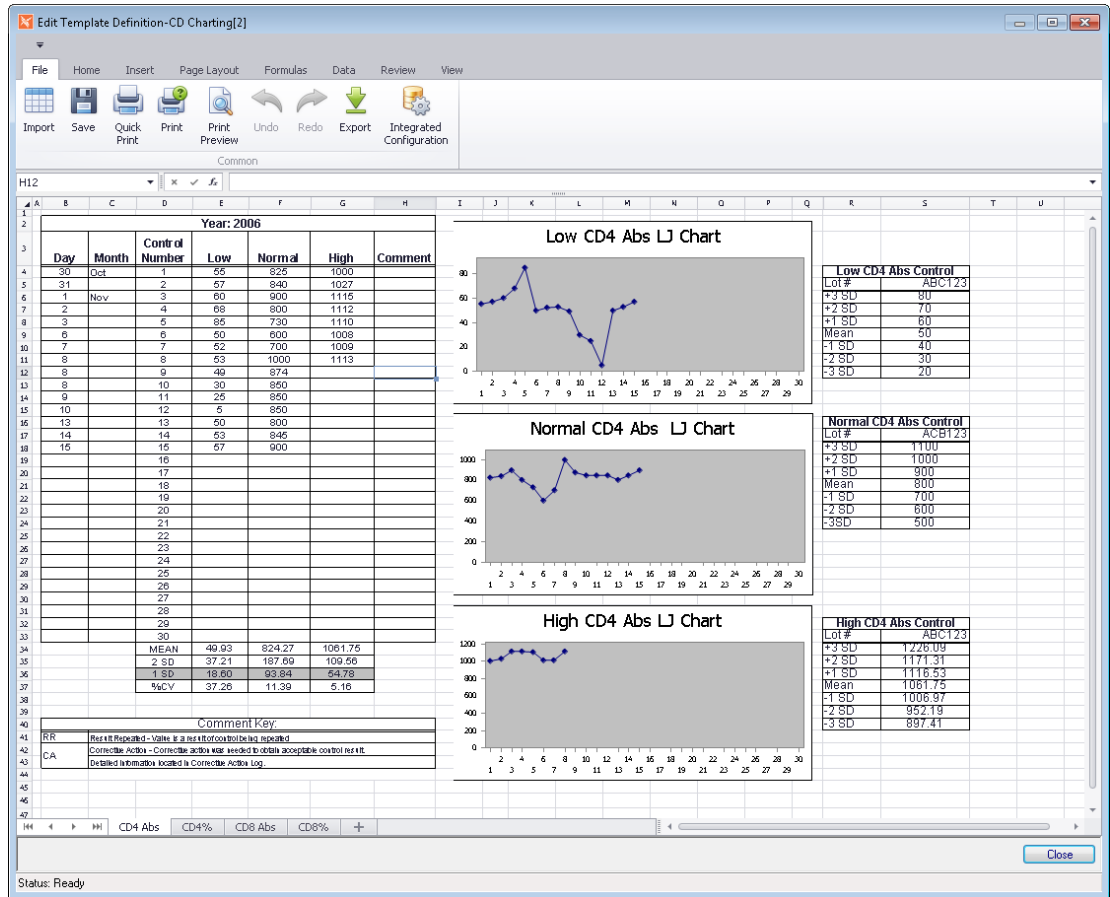
Figure 8-9 - Sample Integrated Worksheet Template

ZipCode

Table Field	Description
Code*	US Zip code
Description	Full description for the Zip code location
City	City related to Zip code
State	State related to Zip code
Retired	True/False

Result Entry Definition

If *enabled* in your system, highly configurable result entry definitions that affect ordering, resulting and reporting, may be defined for the following profiles:

- DNA Sequencing
- FISH
- Immuno
- Karyotype
- PCR

Each of these profiles have the field *Result Entry Definition*. When you click **<Data Entry Definition>** in the Result Entry Definition field, the ellipsis (...) appears, which when clicked, opens the *Edit Result Entry Definition* window for that profile. An example of this window for FISH Profiles is shown in Figure 8-4.

NOTE: *Changes or modifications to any parameter in the Edit Result Entry Definition window take affect for profiles that are ordered after the modification has been made.*

Figure 8-10 - Edit Result Entry Definition Window

The top grid lists any information that has been defined for the profile itself, while the bottom grid lists all the constituents that have been defined for the profile in the respective profile's *Constituents* field along with any result entry definitions for the constituents.

Set Columns / Set Constituent Columns

The *Set Columns* link opens a window to define what fields are to be displayed in the profile's window of Result Manager. See sample Set Columns window in Figure 8-5.

Figure 8-5 Set Columns for Profiles Window

Additional information to add to the profile result is defined in this window.

Adding a label in the **Label** field for R1-R6 (Row 1-Row 6) turns on that field and allows you to define the following for each:

- **Visible**: sets the row visible or not
- **Read Only**: sets the row to be read only or can be edited
- **Required**: set the row to require a response for profile completion

- **Range** and **Range Comments** can be defined here, but they are usually defined on the constituent level.
- Select an **Instrument** from the drop-down list if this profile is performed on an interfaced instrument and click the **Auto Order** checkbox to automatically send the order to the instrument when the profile is ordered.
- **Display Definitions** may also be used to alter the screen display of certain labels.
- Click **OK** to save changes or **Cancel** to exit without saving.

To remove a column on an existing profile, clear out the label for that column and the column will no longer be visible. New orderables will reflect the change.

The *Set Constituent Columns* link opens a similar window to define the columns to be displayed during result entry of the FISH profile, in this example, and is shown in the constituent section of the window. The definitions in this window determine what users will see when they result the constituents for the profile.

Figure 8-6 shows both the Set Constituent Columns window and the resulting Constituent Result Entry window it defined, when entering results in Result Manager. Although this profile has many constituents, when the profile was ordered, only the six constituents in the second Figure were selected.

NOTE: *The Set Constituent Columns window does not have any field to attach instruments to the constituents. That is done on the profile level.*

Figure 8-11 - Set Constituent Columns Window with resulting Constituent Result Window it defined

Set Valid Entry Definitions

Once a profile's constituent columns/fields have been defined in the Set Constituent Columns window, valid entry definitions may be entered for each constituent column defined for the constituent.

While viewing a profile's constituent grid in the Edit Result Entry Definition window, double-click the cell (column field) for the values you want to add or modify. Figure 8-7, for example, shows the Genoptic FISH profile Edit Result Entry Definition window, double-clicking the **Result** column for constituent **5q_EGR1** opens the Result Entry Definition window for that field, where valid entries for the **5q_EGR1 Result** can be defined.

The Test Code field does not open a Result Entry Definition window.

Using placeholders in valid entry definitions

When defining Valid Entry Definitions, canned valid results can include a placeholder to be filled in by the user when entering actual results by using the underscore character "_" within the valid entry. When that entry is selected during result entry, the user replaces the "_" with valid data.

This allows valid entries to be defined, but gives the user a chance to append to the result. e.g. A valid entry may be **Test Not Performed:_** and the "_" is replaced with the reason. The "_" keeps the test pending and prevents profile completion until it is replaced, **if** the test is defined as "Required" and "Reportable".

If entry definitions contain multiple underscores, pressing **<F1>** while entering the result moves the cursor to the next underscore placeholder.

NOTE: *When using the placeholder "_", the test should not be set as a Restrictive test (see below), as that option prevents the user from entering free text.*

Dynamic Lookup

The *Dynamic Lookup* feature added to NucleoLIS E.finity allows result entries specified in the Result Entry Definition window to directly access definitions in known libraries. Instead of adding individual results in the Result Entry Definition window, you can specify a Dynamic Lookup into a table.

For example, entering the following text as a result option will use the Organism Definition Table to create the result pick list when results are entered. This example displays the Organism Definition *Description* in the pick list, eliminates the retired organisms, and arranges them in ascending order **(ASC)**.

```
LOOKUP::Description|GPathOrganismDefinitionTable|Retired =
'false'|Description ASC
```

Dynamic Lookup may be used for **Result** and **R*** definitions. When used, the following DED features are not available, though Range Rules may be created to make use of the Dynamic Lookup values. In the example above, a Range Rule may be created to apply to a specific organism description.

- Use of Codes
- Use of Defaults
- Use of Abnormal
- Use of UseWhen
- Use of ReportableAs

Figure 8-12 - Result Entry Definition Window for constituent [5q_EGR1 Result]

Result Entry Definition Window Parameters

In any Result Entry Definition Window, valid entries are entered by typing in the text in the Options box at the top and clicking the Add button. Each entered definition is added to the defined list below with the **Default** and **Abnormal** set *False*, **Use When** as *Always*.

Each result option added in the Result Entry Definition window must be unique and not blank or an error is displayed.

Once added, you can change the parameters for each definition by right-clicking on the row and selecting one of the following from the context-sensitive menu:

- **Set As Default:** Makes this entry the default entry for the field. There can only be one default.

- **Edit:** Opens a window where you can edit the definition and then save it.

- **Set Code:** If SiteWide Reserved preference *DEDConfiguration-UseCodes=True*, codes may be defined for result entry definitions. Result Entry Definition window for result displays *Set Code* field and context sensitive menu on result will have option to *Set Code*. Either can be used to define a code for result entry of that result.

Entering results with codes

- Result Code can be entered directly in Result field in CREW or Result Manager by entering **Code#**.
- Clicking ellipsis in Result Manager result field or pressing Alt in CREW opens Selection window, which lists all defined valid entries for that Result/R1, etc. value.
- Once in Selection window, if cursor is positioned to text entry box, entering Code# fills in that code's description or you may double-click any result code needed. If canned result contains any fill-in placeholder characters (default is _), they may then be filled in before saving complete result.

Result Entry parameters continued...

- **Remove:** Deletes the selected definition.

- **Toggle Abnormal:** Sets the Abnormal flag to True or False, depending on current state. The Abnormal flag is stored in the database and can be used for querying.

- **Set Use When:** Opens a separate window where complex rules may be created. See Figure 8-9. In this example, we are creating a rule for R1 to allow selection of "Repeated without error" for test "IgG Comment" / R1 when the result is "Positive".
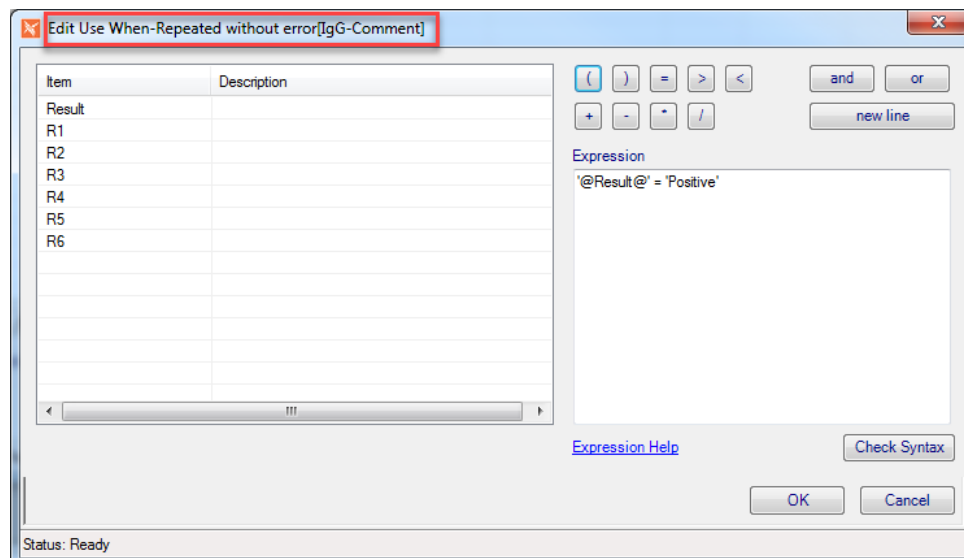
Figure 8-13 - Set Use When Window for R1

- **Set Reportable True:** Sets the reportable flag for result to True. *(see below)*
- **Set Reportable False:** Sets the reportable flag for result to False.
- **Clear Reportable Action:** Clears the reportable flag for result setting it to NONE.

Dynamic Lookup

The *Dynamic Lookup* feature added to NucleoLIS E.finity allows result entries specified in the Result Entry Definition window to directly access definitions in known libraries. Instead of adding individual results in the Result Entry Definition window, you can specify a Dynamic Lookup into a table.

For example, entering the following text as a result option will use the Organism Definition Table to create the result pick list when results are entered. This example displays the Organism Definition *Description* in the pick list, eliminates the retired organisms, and arranges them in ascending order **(ASC)**.

```
LOOKUP::Description|GPathOrganismDefinitionTable|Retired =
'false'|Description ASC
```

Dynamic Lookup may be used for **Result** and **R*** definitions. When used, the following DED features are not available, though Range Rules may be created to make use of the Dynamic Lookup values. In the example above, a Range Rule may be created to apply to a specific organism description.

- Use of Codes
- Use of Defaults
- Use of Abnormal
- Use of UseWhen
- Use of ReportableAs

Additional Result Entry Definition Window fields

Below the list of definitions in the Result Entry Definition Window, the following buttons or fields can be used to:

- **Up / Down Arrows:** Moves the highlighted definition up or down in the list for organizational purposes.
- **Restrictive:** Prohibits free text from being entered in that field during result entry.
- **Calculation:** Enables a value to be calculated from other values in profile. Entry fields in the calculation need to be surrounded by "[ ]". e.g. If this is an R1 field, entering a calculation of **[Result]*3** will take the Result value, multiply it by 3 and insert that value into R1.
- **Units:** Units in this field will automatically be appended to the result during result entry.
- **Numeric Only:** Check this field to suppress the units when the result entered is non numeric. This is useful for results that are usually numeric, but text, such as "Undetected" may be entered at times.

NOTE: *When entering Valid Entry Definitions for profile constituents, any set of definitions can be easily copied and pasted into another constituent right on the Edit Result Entry Grid. Select the entry cell you want to copy, right-click and select **Copy**. Then select the grid cell where you want to paste the definition, right-click and select **Paste**.*

Define Reportable Flag Based on Result Values

If SiteWide Reserved preference *DEDConfiguration-UseConditionalReportable=True*, the result reportable flag may be conditionally set based on the actual result selected. In the DataEntryDefinition (DED) Result Entry Definition window, a *Reportable As* column is displayed that can be set to one of the following:

- **True:** when selected always sets the reportable flag to true during result entry
- **False:** when selected always sets the reportable flag to false during result entry
- **NONE:** the result entry option has no effect on the reportable flag (current behavior)

To change the *Reportable As* setting for the result, right-click in the Reportable As column for that result. Using this feature, you can automatically set one result as reportable, while leaving others to be manually marked reportable. See example Entry Definition window in Figure 8-10 below.
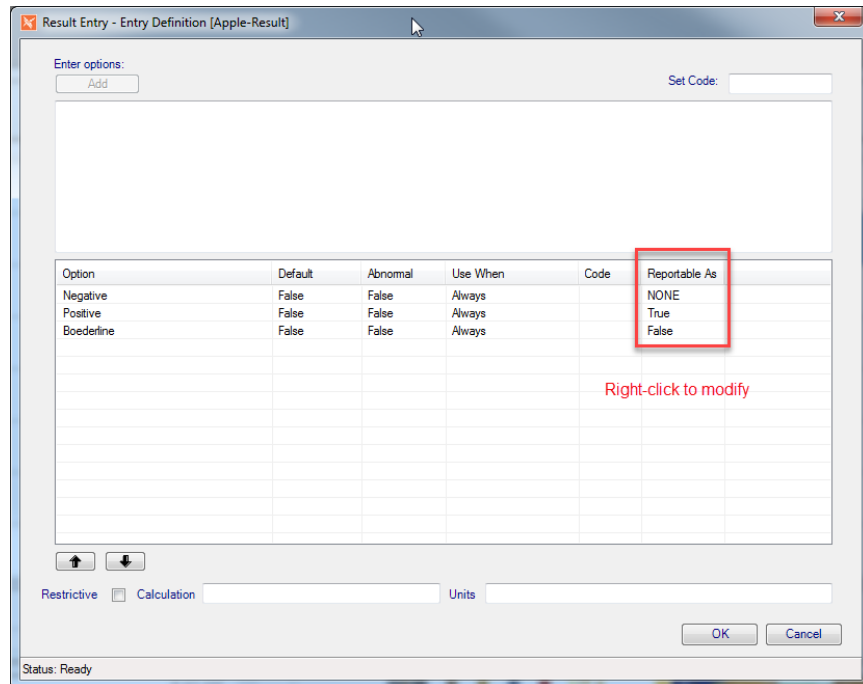
Figure 8-14 - (DED) Result Entry Definition window showing "Reportable As" column

Set (Constituent) Ranges/Range Rules

The *Set Ranges* link opens a window to define additional range rules to be applied when the profile is resulted.

The *Set Constituent Ranges* link opens a similar window to define the range rules to be applied when the constituents are resulted. See Figure 8-11 below which displays the list of rules that have already been created for this profile.
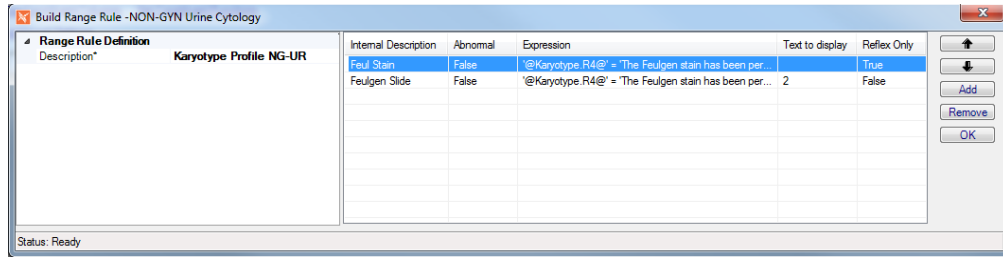
Figure 8-15 - Set Constituent Ranges

- **Up** and **Down** arrows are used to sort the range rules. Rules are processed in order and the ones at the top take priority.
- Click the **Add** button to add a new range rule, which opens the *Range Rule Item Definition* window.
- Click **Remove** to delete the selected range rule.
- Click **OK** to save changes and close the window.

When editing or adding a new range rule, the *Range Rule Item Definition* window opens, shown in Figure 8-12. Here rules can be modified or created new.
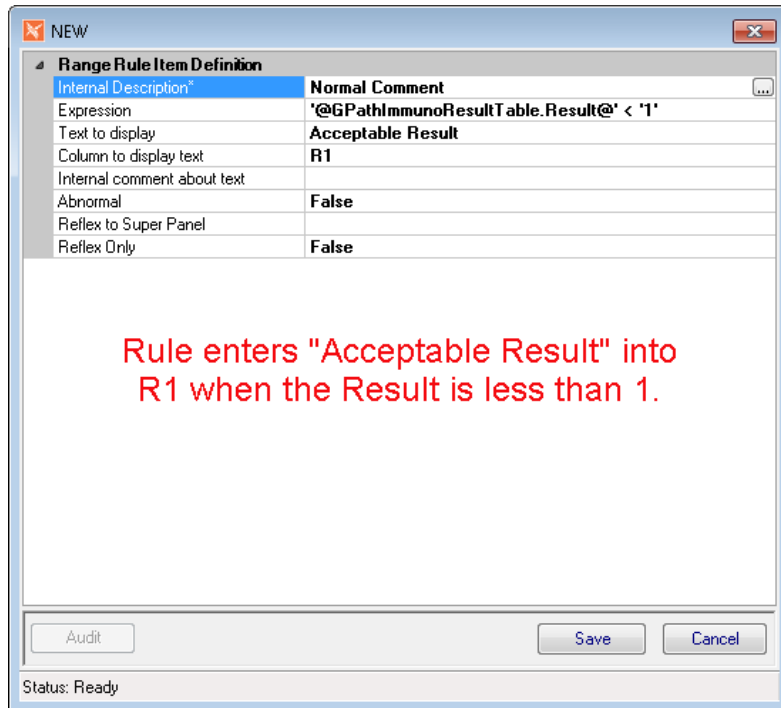
Figure 8-16 - Range Rule Item Definition Window

Range Rule Item Definition Fields

Field Label	Description
Description	User-defined descriptive text
Expression	Click ellipsis to open the Edit Expression window, where the rule is created.
	You may access a consolidated pick list of all entry fields from the current profile by entering "#"in the Expression field. It will then be added to the Expression you build in the Edit Expression window.
	If currently working with constituent ranges, the list will be a consolidation of all pick lists defined for constituents.
	If working at the profile level, this pick list will be restricted to those items defined at the profile level.
Text to display	The value you want to be displayed, if the above expression is met
Column to display text	Click ellipsis to select one of the profile's field columns, which will display the Match Value to be displayed: R1-R6, Range, or Result.
Match Value Note (Internal comment about text)	Internal comment about the added text value
Abnormal	True/False; True flags the result as abnormal, if rule is met
Reflex to Super Panel	To initiate a Super Panel order when the rule is met, click the ellipsis and select the Super Panel code from the list.
Reflex Only	True/False; True evaluates the expression and performs the reflex order when rule is met, but does not display additional text. False performs both displays and reflex order, if present.

Editing and Creating Expressions

To create the *Expression* for the Range Rule to use, click the ellipsis on the Expression field. The window shown in Figure 8-13 opens where the expression can be built by selecting fields and applying operators to those fields.

For example, if you wanted the rule to be activated by a result value greater than 2, you might select the field '@GPathImmunoResultTable.Result@', then add > 2 to the expression.

Editing a new range rule in the Edit Expression window

1　Double -click to select the result item on which you want to apply the rule. It moves to the Expression building box.

2　Click the combination of operators you want to apply, clicking New Line if needed.

3　The built Expression is displayed in the Expression box.

4　When done, click the Check Syntax to make sure there are no errors.

5　Click OK when done, or Cancel to exit without saving.
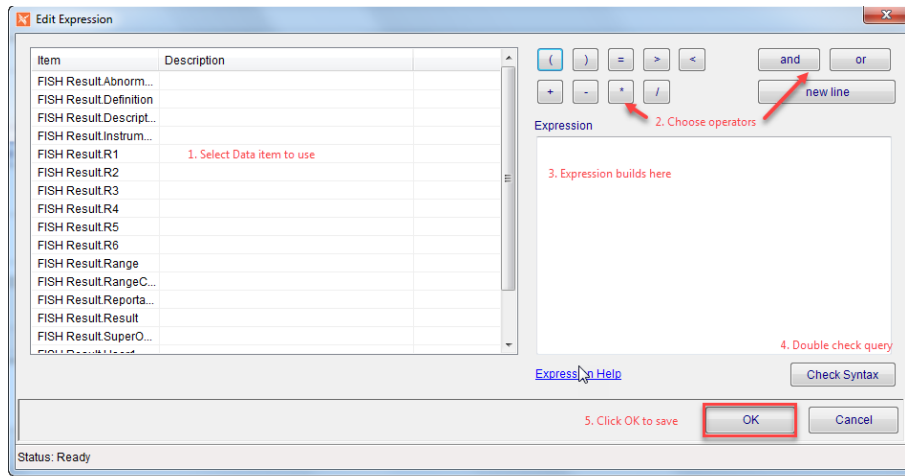
Figure 8-17 - Edit Expression Window

NOTE: *When creating the expression, you must use single quotes around the item definition and also value for alpha matches, but not numeric. e.g. '@FISH Result.Result@' = 'normal' versus @FISH Result.Result@ = 100.*

With results that have units appended to them in the Entry Definition window, use the StripAlpha check box before creating the rule. The **^STRIPALPHA^** tag tells NucleoLIS to remove all alpha characters from the value before rule evaluation, leaving just the numeric value to evaluate.

For these tests, check the Strip Alpha box, then create the rule. See example in Figure 8-14.
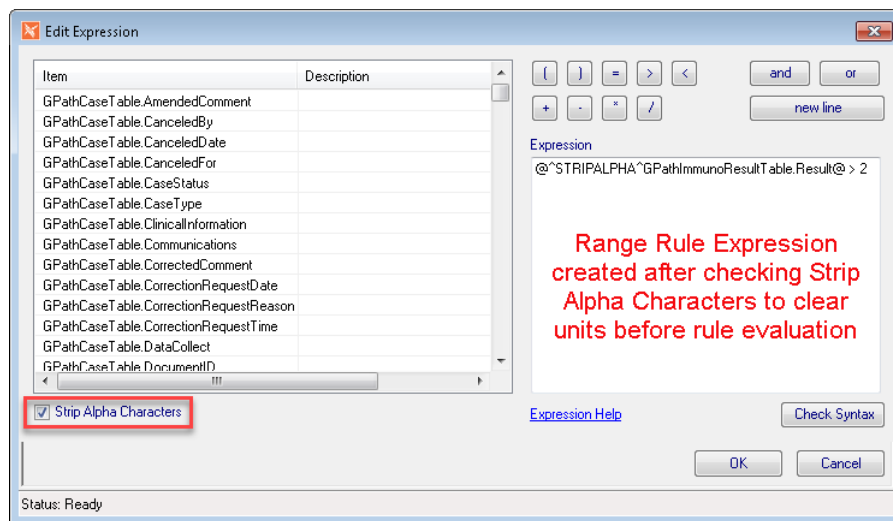
Figure 8-18 - Range Rule Expression with StripAlpha tag.

Use of Wildcards Option

As of NucleoLIS E.finity, *wildcards (%)* may be used in creating expression with = that are evaluating text. This is an optional feature and must be enabled by preference.

Search text could then be entered in the rule as %ACK to locate any entries ending in ACK. ACK% and %ACK% matches entries beginning or including ACK, respectively.

Additional Settings

The Additional Settings link on the Edit Result Entry Definition window opens the Additional Settings window, shown in Figure 8-15, where ordering and reporting parameters are controlled.
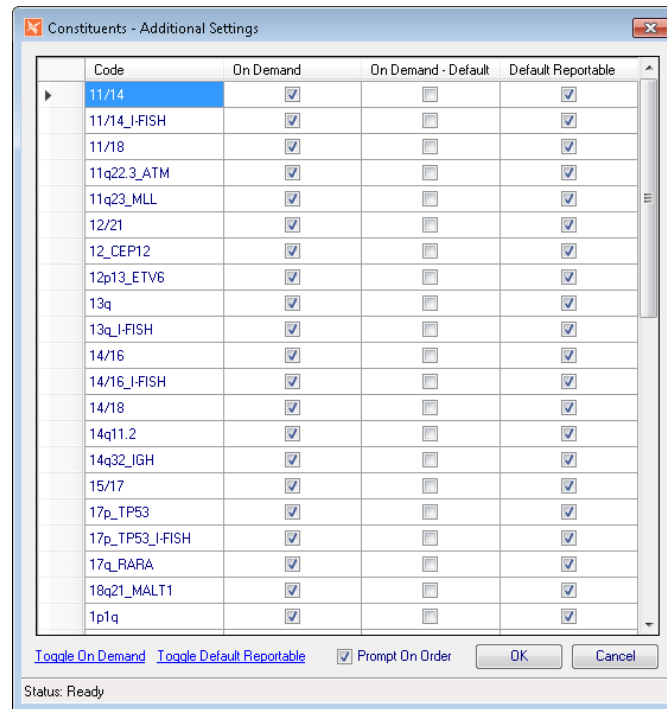
Figure 8-19 - Constituents - Additional Settings

Column Header	Description
Code	Constituent code within the selected profile
On Demand	Sets the constituent to be available for user to pick and choose when profile is ordered.
	Note: In NucleoLIS E.finity, when only one constituent is set as *On Demand*, the constituent ordering window also displays a *Quantity* field, where the user can specify the multiple orders of that constituent.
On Demand - Default	Sets the constituent to be automatically ordered (checked) when profile is ordered
Default Reportable	Sets the constituent to be automatically reportable when complete

Link or Button	Description
Toggle On Demand	Checks all constituents as On Demand or removes checks, depending on current state
Toggle Default Reportable	Checks all constituents as reportable or not, depending on current state
Prompt On Order check box	Default is checked; Uncheck to disable On Demand constituent prompt when profile is ordered.
OK	Saves and closes Additional Settings window
Cancel	Closes Additional settings window without saving changes

Manage Reagent Stock Window

Clicking the ellipsis in the *Manage Stock* field of the Reagent Definition library opens the *Manage Reagent Stock* window, shown in Figure 8-16, where the multiple lots of a reagent type are managed. In this window lots can be added, deleted, and marked as *In Use*.

Initially, the window opens for a fresh, new entry. Fill in the fields on the left and click **Add** to add a lot. To review previously entered reagent lots, use the filter fields at the top to generate a list of available lots. Double-click the lot on the right you wish to view or modify and the fields on the left are filled in. Click **New** to clear fields allowing for a New entry. Click **OK** to close the window.
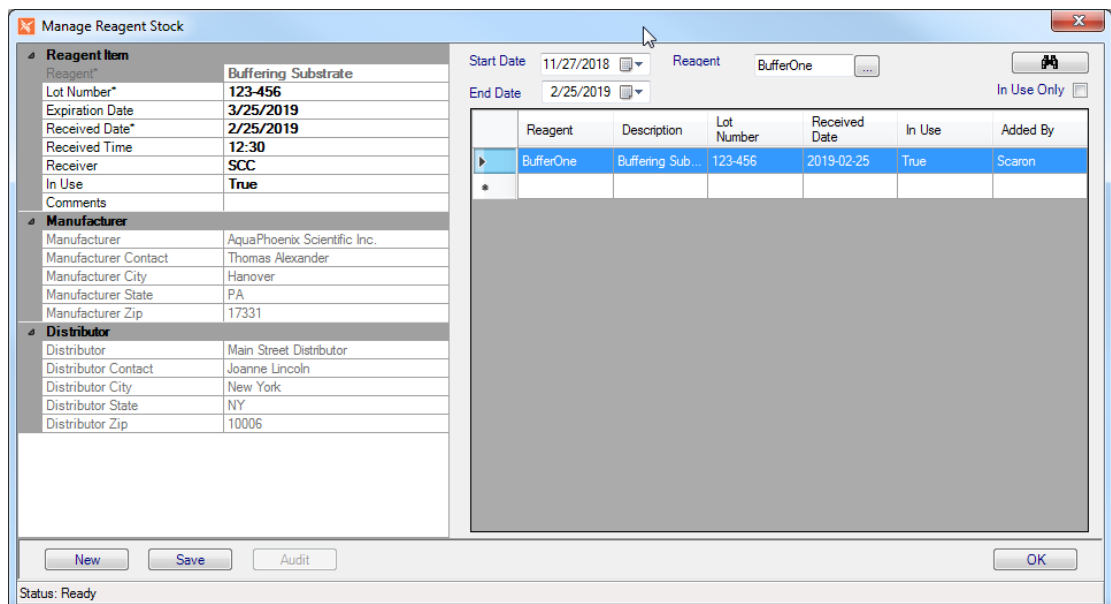
Figure 8-20 - Manage Reagent Stock Window

In Use Flag

When adding or modifying an existing lot, set the *In Use* flag to True for the lot that is currently being used. A reagent should have at least one lot defined as "In Use" and typically only one. Whether there is one *In Use* lot defined, or none, or more than one, the *Stock Status* field reflects the status as described in the Reagent Definition library section. When a lot has expired, or is no longer available, another lot is set to "In Use".

Once Reagents are defined, they can then be assigned to profile definitions. The standard core orderables (PCR, FISH, Immuno, DNA Seq, and Karyotype) may have reagents defined. Other orderables type, (Cultures, Culture Forms, Antibiotics, Biochemicals) may not.

Reagents are added to a profile in the standard way via the "Defined Reagents" field which is present for all of the applicable profile libraries.

The "In Use" lot of the defined reagents for a given profile definition are automatically assigned to profiles as they are ordered, if the specimen is Inlab. For orders that are placed prior to the Inlab of a specimen, the reagent processing occurs on Inlab.

Reagent processing during orders

1 If the Profile reagent(s) are found to have only one lot *In Use,* that Lot will be assigned to the profile, automatically associating a lot of reagent with the NucleoLIS order.

2 If there is zero or more than one lot defined as *In Use,* a record will still be created as a place holder and flagged that the Reagent\Lot information is incomplete.

3 In the scenario where lot information is incomplete, a profile level field PendingReagent will be set to true. (This can be used for alert rules)

4 When the outstanding information is completed, the pending reagent flag is cleared.

Edit Reagent Tracking Items

In the Result or Accession Manager windows, on the Profile Order record a new field is present when the associated profile has reagents defined. "Reagent Tracking Items".

In this field you will see reagents automatically assigned, as well as access assigned reagents to add, edit or delete reagent information. If a reagent status is incomplete, you will see a message following the number of reagents assigned.
Example: `<2 present - ATTENTION REQUIRED>`

Click the ellipsis to open the *Edit Reagent Tracking Items* window, shown in Figure 8-17.

• The left side of the window displays the assigned reagents. Highlight to select.

• To update reagent information, select reagent on the left, and then double click the desired record in the reagent inventory in the grid on the right.

• To add a reagent, check the check box labeled "Add Selected", and then double click the desired record in the grid on the right.

• To delete a reagent, right click and select delete.

- Once the pending reagent flag is set on a given profile, it needs to be cleared manually once the proper attention is given by clicking the "Clear Pending Link \ Set Pending Link". This link toggles depending on the current state.

NOTE: *Incomplete reagent information does NOT prevent a profile from being completed, at this time.*
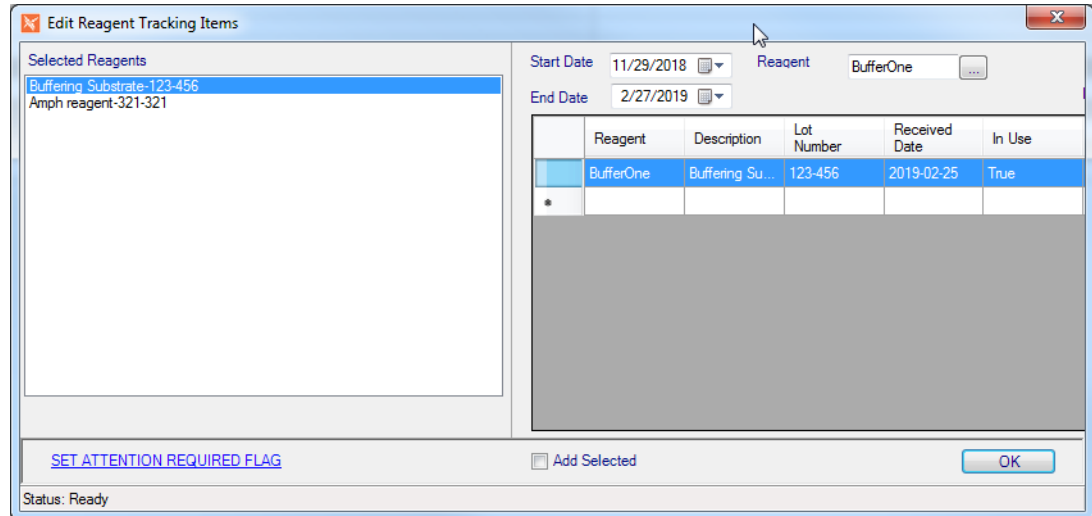
Figure 8-21 - Edit Reagent Tracking Items Window

Library Menu

Menu Option	Description
File	**Show User** - shows current user **User** - Set Font/Reset Font **Version** - Displays NucleoLIS current version **Exit** - exits NucleoLIS
Operations	**Accession** - opens the Accession window **Result Manager** - opens the Result Manager **Run Tracking** - opens the Run Tracking window **Storage Find** - allows you to find the location of a specimen **Batch Steps** - opens the Batch Steps window **Batch Label** - opens the Batch Label window **Library** - opens the Library window **Label Designer** - opens the Label Designer **Result Report Designer** - opens the Result Report Designer **Distribution Designer** - opens the Distribution Designer, for fax cover sheets **Analyzation Map Designer** - opens the Analyzation Map Designer window **Human Resources** - opens the Human Resources window **Storage Manager** - opens the Storage Manager window **Configuration** - opens the Configuration window **Run Management Reports** - opens the Management Report window **Delivery Monitor** - opens the report delivery monitoring window **e.Dashboard** - if purchased, opens the e.Dashboard window – see separate documentation **e.Monitor** - if purchased, opens the e.Monitor window – see separate documentation
Window	Shows currently opened windows to select
Search	**Run (Ctrl+R)** - searches using current criteria
All	**New (Ctrl+N)** - new record for current table **Save (Ctrl+S)** - save current record **Save+ (Ctrl+Shift+A)** - save current record and open new window **Audit (Ctrl+T)** - shows audit table of current record
Transfer	**Export Library Item** - Used to export library entities **Import Library item** - Used to import library entities

Chapter 9
Label Designer

The *Label Designer* is used to create templates for labels used in NucleoLIS. A label template must be created and saved in the Label Designer window before labels can be generated in NucleoLIS. The Label Designer is accessed either through the Label Designer icon shown at left or from the Operations Menu.

The NucleoLIS application is installed with a basic label which can be configured to meet the needs of the laboratory.

The Label Designer Window

The Label Designer window (see below) consists of *label/field specifications* on the left, a *label detail (workspace)* on the right and several *operation buttons* at the bottom.
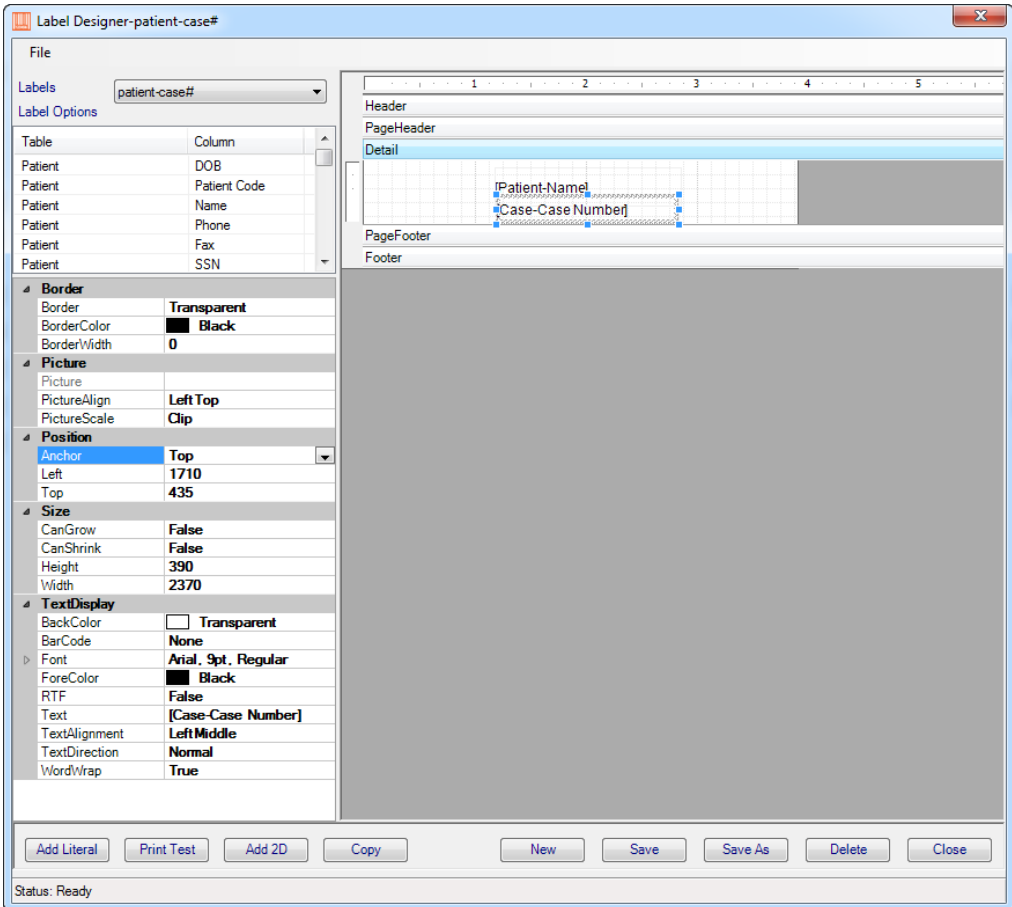
Figure 9-1 - Label Designer Window with field selected

When the Label Designer is opened, the *label specifications* are displayed. Once a field on the label workspace is selected, the specifications change to *field specifications*.

Label specifications

Label specification	Description
Labels	Drop-down menu to select a saved label filename
Label Options	Scrolling list of possible data fields that may be added to the label, organized by type of data; double-click to add one to the label detail section.
	Special 'child' label fields may be added to Case and Specimen labels
	Case label field selection list: **LIST - Specimen** - lists all specimens on the case **LIST - Specimen\Profiles** - lists all specimens on the case, plus following each specimen is a list of all profiles on that specimen. **LIST - Profiles** - lists all profiles and cultures associated with the case
	Specimen label field selection list: **LIST - Profiles** - lists all profiles and cultures associated with the specimen
	The format of the data fields is controlled by SWR preference "LabelExtensions".
	The default format for each type is that which is defined for display in the tree.
	Besides the standard fields available, a special field, *CaseNumberNumeric*, has been added to allow you to print the case number without the accession letter and year on the label. For example, '123456', instead of 'M2019-123456'.
Name	Filename of displayed label
Label Type	Used to select a label type; see list of choices below; if only one format per label type is set, that is the default. If more than one label type formats are built the subsequent label will need to be applied to the sources that are applicable.
Default Printer	Selected default test printer from those available on PC
Barcode DPI y	Used to resize the bar code
Barcode DPI x	Used to resize the bar code
Paper Size	If necessary, alternate paper size can be selected from drop-down list. Default is letter. Select *Custom* to enter height and width in following fields.
Custom Height	Enter height in inches; used with Custom paper size
Custom Width	Enter width in inches; used with Custom paper size

Field specifications (displayed when field is selected)

Field specification	Description
Border	
Border	Sets a border for the field; select style from drop-down list
BorderColor	Sets a color for the border; select from drop-down list
BorderWidth	Sets the thickness of the border
Picture	
Picture	*Currently not used*
PictureAlign	Sets the position of the 2D bar code image within the field; select from drop-down list; center-middle will ensure that the bar code is centered and less likely to be truncated
PictureScale	Sets the scaling of the image; select from drop-down list; **Scale** will maintain image appearance and should be used for 2D bar codes.
Position	
Anchor	Sets the position of the data within the field; select from drop-down list; useful to keep Anchor consistent for all fields
Left	Field position from left edge of report; measurement is in *twips*. *(Twips are screen-independent units to ensure that the proportion of screen elements are the same on all display systems. A twip is defined as being 1/1440 of an inch.)*
Top	Field position from top edge of report; measurement is in *twips*
Size	
CanGrow	True/False; allows data to expand as needed, if data exceeds field width
CanShrink	True/False; allows field size to shrink as needed
Height	Field height; measurement is in *twips*
Width	Field width; measurement is in *twips*
TextDisplay	
BackColor	Allows you to set the background color for the section
BarCode	Select from a list of supported bar code formats to be used to format a numeric field (Code39, Code93, or Code128)
Font	Opens standard font selection box to select font, style and size
ForeColor	Sets the foreground color or text of the field; select from drop-down list
MarginLeft	The distance the contents will print from left edge of field; measured in *twips*
MarginRight	The distance the contents will print from right edge of field; measured in *twips*

Field specification	Description
RTF	When using *Rich Text Format* sequences in Library elements, True will print the RTF format appropriately for field
Text	The actual text that will print for Literal fields such as labels
Text Alignment	Positions the text within the text box; good for aligning fields
Text Direction	Sets the rotation of the text; either horizontal (normal, vertical from bottom to top (up), or vertical from top to bottom (down)
WordWrap	True/False; True allows the data in the field to continue on multiple lines within the field, if needed.

Label Detail Section

The *label detail* section is the workspace where the layout of the label is established. Fields are be added to the workspace by double-clicking them from the label options. All selected fields are placed in the upper left corner of the label grid. Fields added can be resized and repositioned as needed.

To resize a field, click and drag the *handles* (black squares) on the edges of the field. To reposition a field, click in the center of a field and drag it to a new position. Once a field is selected, use the field specifications described below to format it.

To resize the actual size of the label, click and drag the edges of the label grid and resize.

Label Operation Buttons

Button	Description
Add Literal	Adds a generic text box to label that can be changed to any text
Print Test	Prints a test label of the displayed type to the default printer
Add 2D	Allows for the creation of a 2D bar code. The user is prompted for data fields to include in the 2D bar code. Double-clicking an existing 2D barcode reveals the field specified within it.
Copy	Highlighted field can be copied and placed elsewhere
New	Clears all fields to create a new label
Save	Saves the current label detail as using the label specifications on the left
Save As	Prompts for a filename to save the displayed label with a new name; if the label type already exists, you are prompted whether you want to overwrite it as the default label for that type
Delete	Deletes the currently displayed label
Close	Closes the label designer

Creating a new label

1   **Click the New button. A blank workspace is displayed on the right.**

2   **Select the default test printer from the Default Printer drop-down list.**

3   **Double-click the data fields (on left) to be added to the label. Note: All fields will be placed in the upper left corner of the workspace. If you add multiple fields at once, they will overlay each other and will need to be repositioned.**

4   **Change the font and make any appropriate fields bar coded as needed.**

5   **Click either the Save or Save As button at the bottom of the page. A box opens to specify the label name.**

6   **Enter the label name and click OK.**

7   **If the name entered has already been used, a message is displayed:**

```
Label name already exists. [The user will be forced to enter a
different file name in order to save the label]
```

All labels must be thoroughly tested after being created.

NOTE: *Keep in mind that some printers have a print area that limit how close to the edge of the label you can print to and data too close to the edge will be cut off.*

Available Label Types

- Analyzer Map Batch
- Case
- Culture
- DNA Seq
- DNA Seq Result
- FISH
- FISH Result
- Immuno
- Immuno Result
- Isolate FISH
- Isolate FISH Result
- Isolate Immuno
- Isolate Immuno Result
- Isolate PCR
- Isolate PCR Result
- Karyotype
- Karyotype Result
- PCR
- PCR Result
- Plate
- Specimen

Notes

Chapter 10
Result Report Designer

NucleoLIS has the ability to design user-defined Result Reports which are used to deliver results to clients who utilize your lab. There is a great amount of flexibility built into the Result Report Designer allowing complex reports to be created. You may need assistance from Psyche to get your reports just right.

Result Report Designer Window

You access Report Designer Window by clicking the Design Result Reports icon from the operations tool bar or menu.
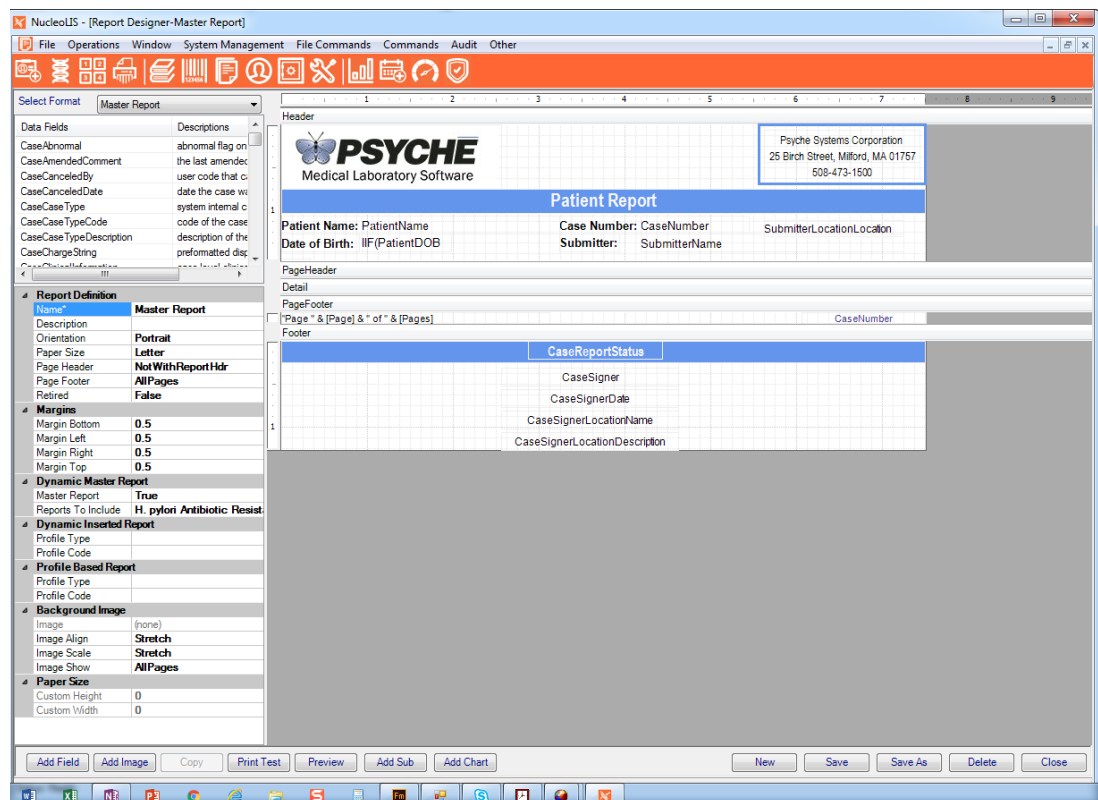
Figure 10-1 - Report Designer Window

Available Fields are displayed on the left hand side of the designer and can be double clicked to add to the report. Each field can be set with certain parameters (ie. height, width, font type, etc).

There are different report sections that can be added to the report along with signatures for users, logos and defining information about the laboratory.

NOTE: *Location and size of elements on the report is set in a unit of measeure called twips. Twips are screen-independent units to ensure that the proportion of screen elements are the same on all display systems. A twip is defined as being 1/1440 of an inch.*

How to Create a Report

NucleoLIS offers different ways to create a Result Report:

1 Standard Reports, with use of sub-reports

2 Dynamic Reports - compilation of all profiles regardless of the profile types and variations possible

Standard Reports and Sub-reports

- Link to a case type
- ProfileReports is set to False (typically false, this can be set to true to get a combination of Standard Reports with Profile Based)
- Assumes that all possible profiles for inclusion are referenced in a sub-report

Figure 10-2 - Standard Reports
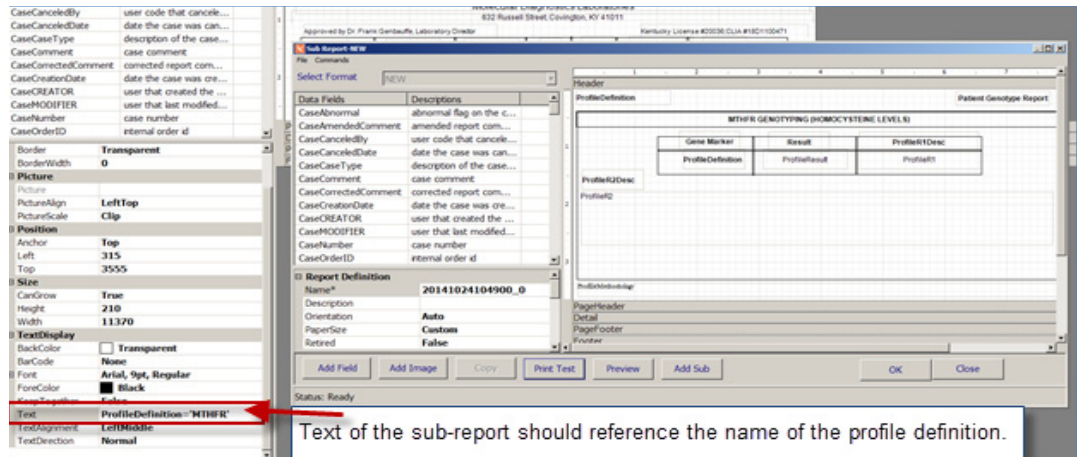
Figure 10-3 - Sub report Setup

Dynamic Reporting

- Link to a case type
- ProfileReports = false (typically false, this can be set to true to get a combination of Dynamic with Profile Based.)
- Assumes that all possible profiles for inclusion are referenced in its own report format.
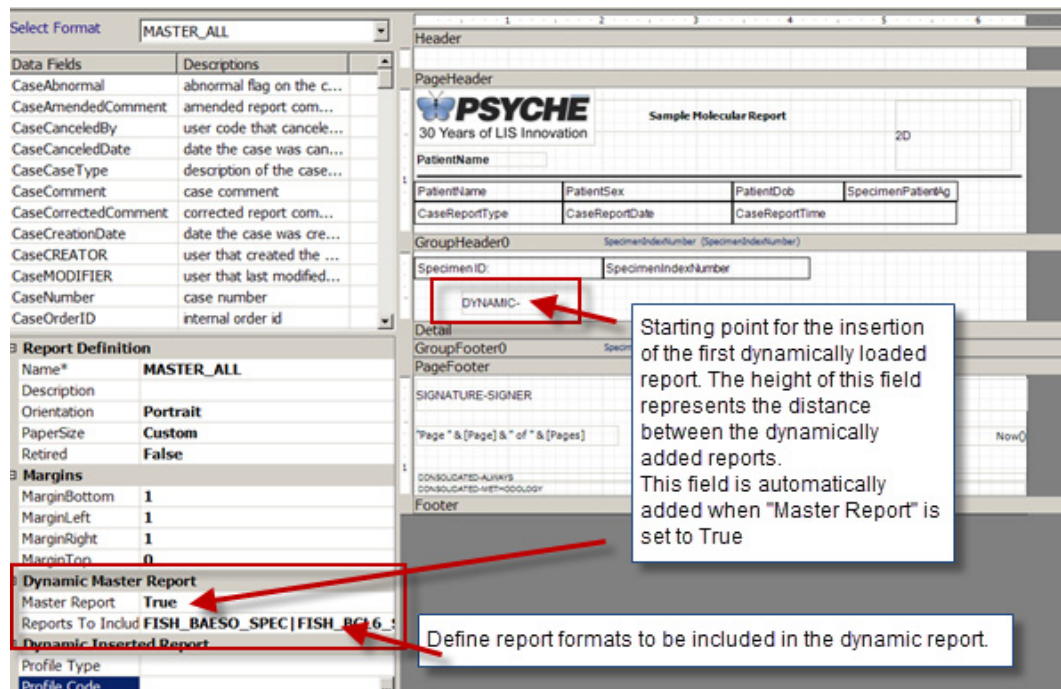
Figure 10-4 - Dynamic Report set up

Dynamically Inserted Reports
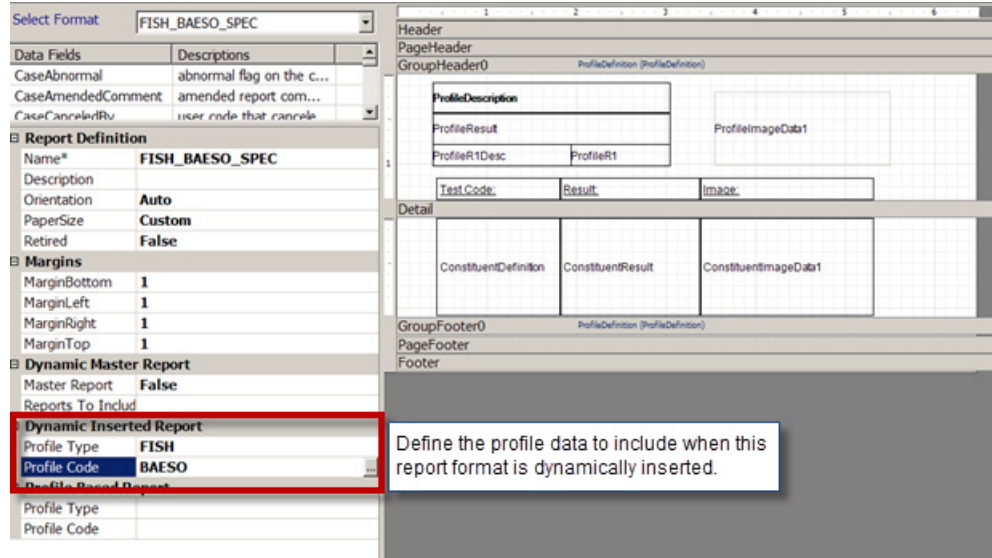
Figure 10-5 - Report format to insert into the dynamic report

Special Sizing Parameters

With a data field selected, the size of the field that will contain the data can be configured in Height and Width (in *twips*) and also two special sizing controls - *CanGrow* and *CanShrink*. In order to use CanShrink on a Data Field, the Report Section must also be set to CanShrink.

In NucleoLIS 2.1.8, the field *Report Page Breaks* has been added, which automatically inserts a page break between all profiles on dynamically inserted reports.
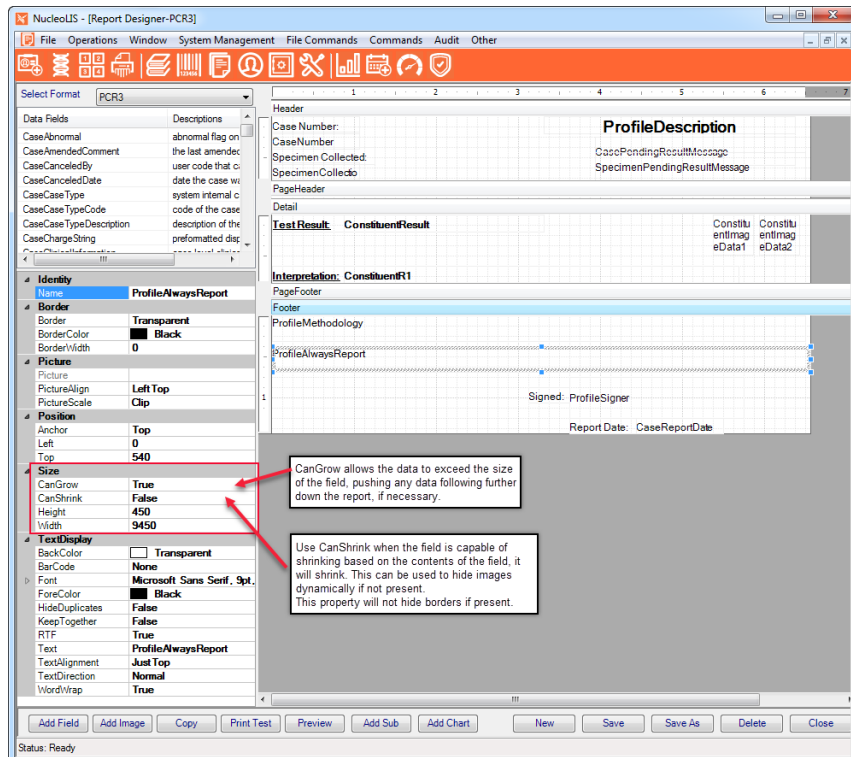
Figure 10-6 - Special Sizing Parameters

Advanced Reporting Features

Character Translation: for characters that cannot be typed into NucleoLIS libraries or results, but are required on the report, such as ≥ or ≤, translations may be set up in the *Original Reports* SiteWide Reserved preference by Psyche.

Addendum and Other Final Reports Options: The ability to define any number of additional final report options, in which they each can include their own report message, is an option within NucleoLIS E.finity.

This functionality must be enabled and configured by Psyche in the Site Wide Reserved preference - AmendedReports. Examples of optional reports may include:

- Addendum - ADDENDUM REPORT
- Additional - ADDITIONAL FINAL REPORT
- Research Only - FOR RESEARCH ONLY

When defined as such, three additional menu items become present in the result manager:

- Save Addendum - saves report with the report title modifier of ADDENDUM REPORT
- Save Additional - saves report with the report title modifier of ADDITIONAL FINAL REPORT
- Save Research Only - saves report with the report title modifier of FOR RESEARCH ONLY

The *CaseReportTitleModifier* field on the case report format is used to display the value on a report and a new field has been added to the GPathResultReportTable named ReportTitleModifier, which also stores that value. This field may be useful on Management Reports.

Sort Clause Field (Data-PreApply Processing section): This field allows setting a report level sorting of data prior to report generation.

- Any field available in the designer can be used as part of the Sort Clause. e.g. ConstituentReportCategorySequence ASC
- The Sort Clause field is not available on dynamically inserted sub reports, but the sort operation defined on the master will propagate to dynamically inserted sub reports.
- The Sort Clause field overrides *Use Data Sort* set on profiles, but Group sort takes priority over Sort Clause.

Historical Results

If enabled in your NucleoLIS system, historical results may be added to any report format by adding a specialized Historical Results subreport to the report format. Each NucleoLIS report may have one or more history sub reports. A History report may be included on a master report OR a subreport (manually, or dynamic subreport).

To add historical results, from the Other menu, select **Historical Results Section** and place the subreport outside of the detail section, typically at the top of the footer.

After selecting **Historical Results Section**, a new report format window similar to the main one, opens for you to set parameters for the historical results subreport. The Data Fields available for a historical section is a subset of those available for a full report, but the fields are added and formatted in the same manner. Field names added to the history report should match those in the standard report.

Once a historical subreport has been saved, you see the gray bar showing it's placement and also a report level parameter, Report History is added. See below.
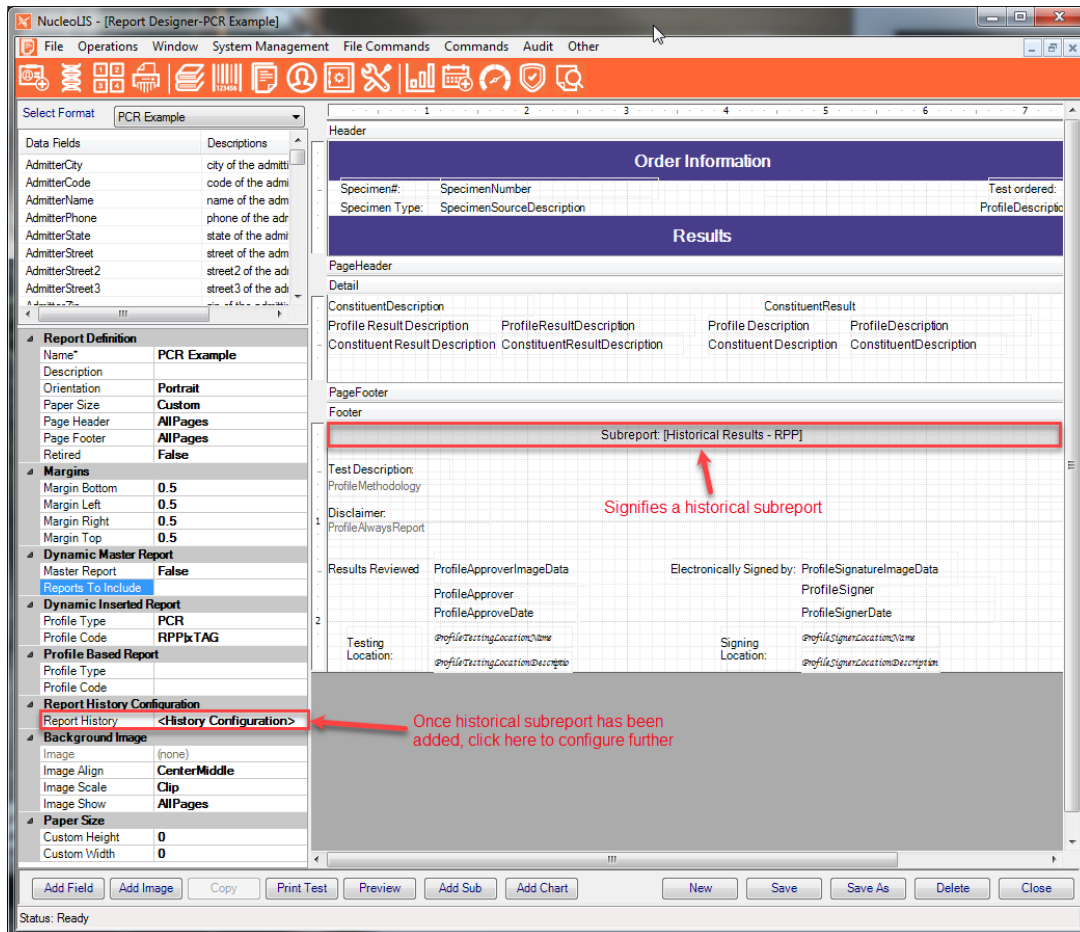
Figure 10-7 - Example of Historical Section added

Each history sub report is built the same way as standard reports, except that *History Filtering Parameters* need to be defined.

To define History Filtering Parameters

Click **<History Configuration>**, then click the ellipsis that appears, and the Edit Report History Window shown below opens.
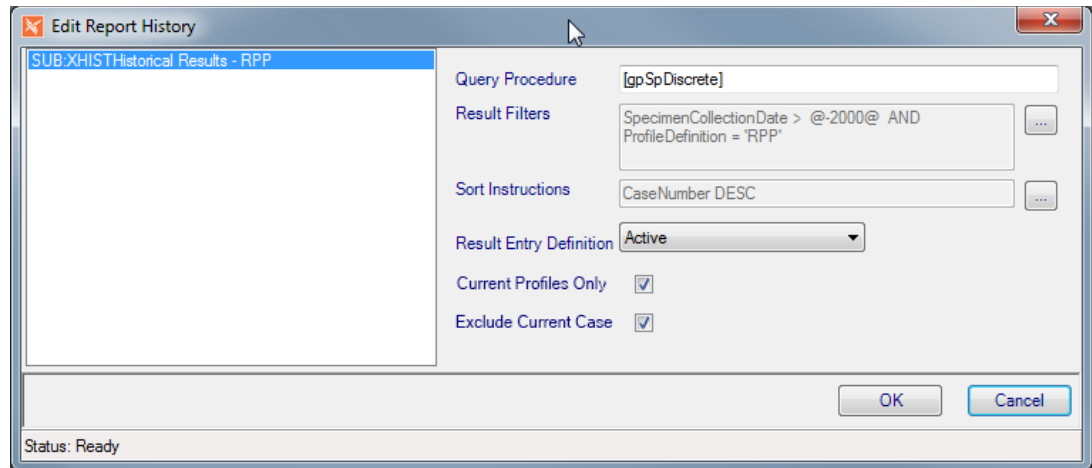
Figure 10-8 - Edit Report History Window

The box on the left lists all the Historical Sections that have been added. Highlight the one you want to configure and enter data in the following fields.

- **Query Procedure:** This procedure name is created automatically and can only be modified by Psyche.

- **Result Filters:** Click the ellipsis button to open a dialog box that allows you to create a filter for the historical section. Your filter can include selected profiles, abnormals only, or any data element available for filtering.

  You may also want to add a date limit, so that you don't include historical results from an excessive amount of years back. Relative date filters may be used. For example, the above expression is limiting the historical cases by Specimen Collection Dates within the last 2000 days. You may need assistance from your application specialist to create your filters.

- **Sort Instructions:** Click the ellipsis button to the right of the field and a dialog box opens allowing you to select a field by which to sort. Select the field and in the drop -down box, select **ASC** for 'ascending order' or **DESC** for 'descending order'. In the example above, this historical section is sorting by CaseNumber in descending order.

- **Result Entry Definition:** The drop-down list allows you to select the *Active* or currently defined Result Entry Definition for the profile in the section to be used on the report or *All* definitions, if the profile's Result Entry Definition has changed.

NOTE: *Psyche Systems does not recommend altering your profile result entry definitions significantly after you go live. Unless the change is something minimal, such as a minor textual change, a new profile should be created.*

- **Current Profiles Only:** Check to only include profiles selected in the report format in the historical section. Uncheck and all profiles results will be included.

- **Exclude Current Case:** Check to exclude the current case from the historical section.

NOTE: *A History report cannot contain another history report and will ONLY contain completed and reportable profiles\constituents.*

Previous Results for Corrected Results

If enabled in your NucleoLIS system, several *Prior* fields are added to the Result Report Designer. This allows the NucleoLIS case report to include data values from the prior (most recent only) completed case report.

With these fields and some Conditional Formatting, data from results that have been corrected may appear on the same report as the current values. An Psyche Application Specialist will need to assist with Conditional Formatting.

The following 23 fields are available to be selected from the report designer.

Case Level Fields:

- PriorReportDate
- PriorReportTime
- PriorReportType

Profile Level Fields

- PriorResult
- PriorR1
- PriorR2
- PriorR3
- PriorR4
- PriorR5
- PriorR6
- PriorRange
- PriorRangeComment
- PriorAbnormal

Constituent Level Fields

- PriorResult
- PriorR1
- PriorR2
- PriorR3
- PriorR4
- PriorR5
- PriorR6
- PriorRange
- PriorRangeComment
- PriorAbnormal

Scheduled Reporting

NucleoLIS e.Finity offers built in automated reporting functionality, called *Scheduled Reports*. Scheduled Reports eliminate the need for users to Save Preliminary or Save Final reports when results have been partially entered or completed. In order to utilize the Scheduled Reports functionality, the following three steps must first be taken:

- A standalone *Scheduled Report Service* must be installed by Psyche Systems.

- The Site Wide Reserved preference, *ScheduledReporting*, must be enabled by Psyche.
- *Scheduled Reporting Jobs* must be created by either the System Manager or Psyche. Scheduled Reporting Jobs are created from the Automated Task Definition library, noted in the Library chapter, but described in greater detail in this section.

NOTE: *The Scheduled Reporting Jobs may be created prior to or after the installation of the service.*

Creating Jobs for Scheduled Reporting

1 **Open the Library Manager and access the Automated Task Definition library.**

2 **In the Automated Task Definition library, select the entry with a Task ID of NUC SCHEDULED REPORTING.**

Once entry is selected, the Jobs field with an ellipsis is enabled for job configuration.

3 **Click the ellipsis to open the Edit Jobs Window, shown in Figure 10-9.**

4 **Click New, enter parameters, as described below, then click Save.**
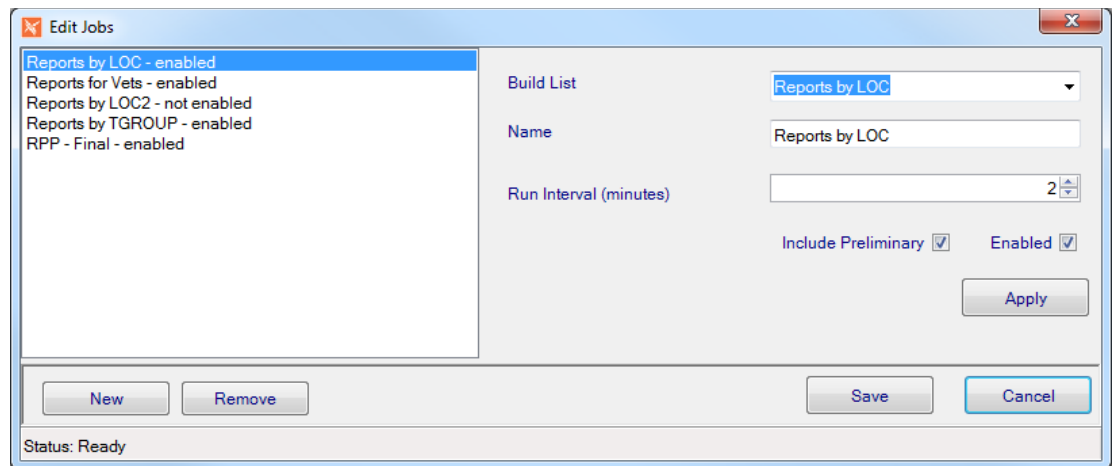
Figure 10-9 - Edit Jobs Window for Scheduled Reports

Edit Jobs Window

The Edit Jobs Window allows the creation of the jobs, with parameters, that runs within the context of the standalone scheduled reporting service. The window displays a list of already created jobs on the left, Action buttons below and Fields on the right to enter parameters.

Jobs are added, modified, and removed using the following fields and buttons.

- **Build List:** The selected build list defines the criteria of reports to consider for automated reporting.
- **Name:** A name to associated with your job. As you select a build list, the name populates with the name of the build list as a default.
- **With Preliminary:** Preliminary reports are generated (when applicable) as part of the job. By default, only *Needs Final* reports are included. *Needs Corrected* are never included.
- **Enabled:** When true, the job is processed. If not, the job is skipped.

- **Interval:** The run interval in which to execute the job (in seconds)

Buttons	Description
New	Adds a new job
Remove	Removes the selected job
Apply	Once your job has been configured, you must click Apply. After clicking, you will see the list box refresh with the details of the job. **Note:** Apply does NOT save
Save	Saves ALL jobs; when closing the window and returning to the library manager, an additional save operation is not required
Cancel	Disregards all pending changes since the last Save

Once your standalone service is install and running, and at least one job is configured and enabled, Scheduled Reporting will occur.

Scheduled Reporting functions in general as noted below:

- At run time, each record found in the configured build list is evaluated to determine if a final report or preliminary report is needed.
- **Final Report** evaluation is solely based on the *Needs Final* status. If the case is determined to be in the *Needs Final* status, a final report is generated and distributed automatically.
- **Preliminary Report** evaluation, if configured, is based not only on *Needs Preliminary*, but also requires that a profile has been completed AFTER the most recent result report has been generated. In other words, if there is no new data to report, no report is generated. Demographic and other data related changes are NOT considered.

Activity for the Scheduled Reporting process, as well as each jobs, can be viewed in *e.Monitor*.

The output **and** distribution of reports created with this feature will mirror that of manual report generation.

Microbiology Notes:

Completion of Isolate level profiles initiates a scheduled report in the same manner that non isolate level profiles do.

Results specific to cultures, organism, antibiotic and biochemicals can be reported via the NucleoLIS report formatter, however such results **do not** trigger scheduled reports to run. It is only the completion of profiles that trigger scheduled reports.

Program Menus
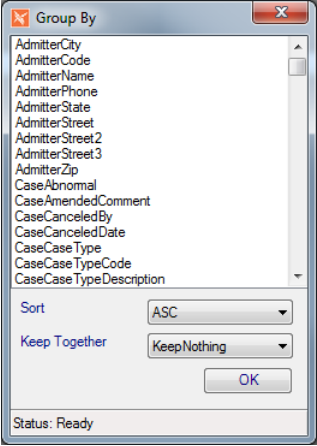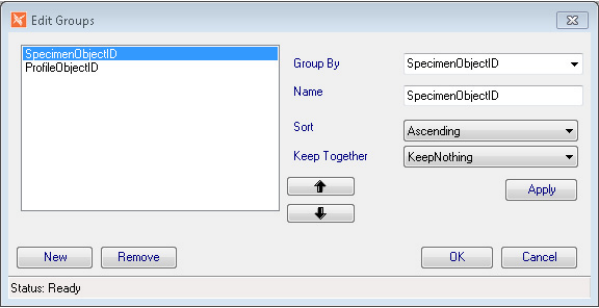
The Report Designer has a number of specialized menus that contain useful commands you will need. File Commands allows import and export of report formats. Commands Menu offers many specialized options to help with formatting the report, and the Other Menu allows the addition of specialized report sections and signatures.

File Commands Menu

Menu Option	Description
Import Format	Imports a exported report format
Export Format	Exports the current report format
Transfer	**Import Library Item:** Imports a library of all report formats **Export Library Item:** Exports a library of all report formats

Commands Menu

Menu Option	Description
Date [long]	Inserts date in format: *Day, Month date, Year* (e.g. Tuesday, August 15, 2017)
Date [short]	Inserts date in format: *mm/dd/yyyy* (e.g. 8/15/2017)
Time [long]	Inserts time in format: *hh:mm:ss AM/PM* (e.g. 3:24:46 PM)
Time [short]	Inserts time in format: *hh:mm AM/PM* (e.g. 3:24 PM)
Page	Adds page number
Page w\Count	Adds page number of total. (e.g. Page 1 of 4)
Select All	Selects every element that has already been placed on the report
Add Computed \ Inline	Opens a window where you can add calculations to the report. Optionally, your system may be configured to allow inline Rich Text Formatting configuration through this window as well. *See below for more details.*
Add Template	Templates can be used to create a series of fields that have the same properties. You add the template, format it to what you want...bold, larger font, etc. Then each time you add a template, it will look like the one you just formatted.
Add Page Break	Adds a page break at that point of the report, causing report to feed to next page when printing.
Add 2D Barcode	Opens a dialog box to select the Data Field you want to configure the barcode as.
Add Combo Field	Allows you to add a field that contains multiple data fields and optionally literal text. In the Combo Field dialog box, select the Data Fields and enter and add literal text. Use arrows to rearrange. Once added, Combo Fields can be opened by double-clicking them.
Add Background Image	Allows you to select an image file that will be used as a background for the report, such as a light colored watermark image. You will not be able to see the image until you print a test page. Only one image can be added to the master report. No sub-report or dynamic inserted report will display a background image.
Clear Background Image	Clears any background image that has been added.
Formatting >	Opens a submenu of formatting and alignment options when multiple fields are selected

Menu Option	Description
Add Group	Adding a Group inserts a sorting sub-section into the report using a Data Field selected in the *Group By* window. A sub-header and footer are created for the Group, if needed. Selecting **Add group** opens this Group By window where Sort order and Keep Together are also available. **Sort:** ASC = Ascending; DESC = Descending. **Keep Together:** **KeepNothing:** Do not try to keep the group together. **KeepWholeGroup:** Keep the group header, detail, and footer together on a page. **KeepFirstDetail:** Keep the group header and first detail section together on a page.
Edit Groups *(replaces Add Group and Remove Group)*	In *Edit Groups* all defined groups are displayed in the list box on the hand side. Selecting a group from the list box displays it's properties on the right hand side. The properties (such as Sort, KeepTogether) can be edited as desired. The Apply button confirms the edits and refreshes the display in the list box **New:** Adds a new group. (initiates an "Apply" operation on the currently selected record first) **Remove:** Removes the selected group **OK:** Accepts the changes and passes them to the designer. **Cancel:** Cancels the changes. The **Name** entry field is informational (previously hidden). **Note:** The Group By field can contain a computed item utilizing VBScript.

Menu Option	Description
Remove Group	Removes any Group that has been inserted into the report, allowing you to select the Data Field used in the group to remove.
Bring To Front	Brings the selected element to the top layer of the report placing it on top of other elements.
Send To Back	Moves the selected element to the bottom layer of the report placing it under other elements.
Toggle Retired	Toggles the Report's Retired field to True/False; required for client to retire standard reports they don't have the privilege to retire through the field.
Show Retired	Displays any reports that may have been created and retired in the Select Format drop-down report list.
Snap To Grid On	Turns on invisible grid that elements will position to making alignment of elements easier
Snap To Grid Off	Turns off invisible grid for alignment of elements
Conditional Formatting	If enabled, opens a window where you can build formatting statements for data that appears on the report. *See below for more details.*

Add Computed \ Inline Window

The *Add Computed \ Inline Command* allows you to create calculations and data manipulations to fields that appear on the report. In this window you are building a query to perform these actions and the process can be simple or very complicated.

Query functions are made available along with choices for fields and specific formatting settings. NucleoLIS database structure is very helpful, but you may need to work with your application specialist to achieve your final result.

The Add Computed \ Inline window contains *2 tabs*: one for **computed functions** and one for **inline data changes and RTF formatting**. In the Add Computed tab you have the following fields:

- **Common Functions** and then a drop-down field to select the report field on which to apply the common function. If the Common Functions list does not contain what you need, use the Function Categories to select a specific function. The **Add** button adds the common function to the query building box at the bottom.

- **Function Categories** for more complicated functions and then a drop-down list to select the specific function within that category. Once a function is selected, click the **ellipsis** (...) to open a second window where parameters (*or arguments*) are entered specific to that function. Usually a report field is selected here. The **Add** button adds the advanced function to the query building box at the bottom.

The bottom of the Add Computed \ Inline window shows available *fields* from the report, a list of *query syntax commands* that *advanced* users may click to create complicated computations, and a *building box* showing the actual query being built.
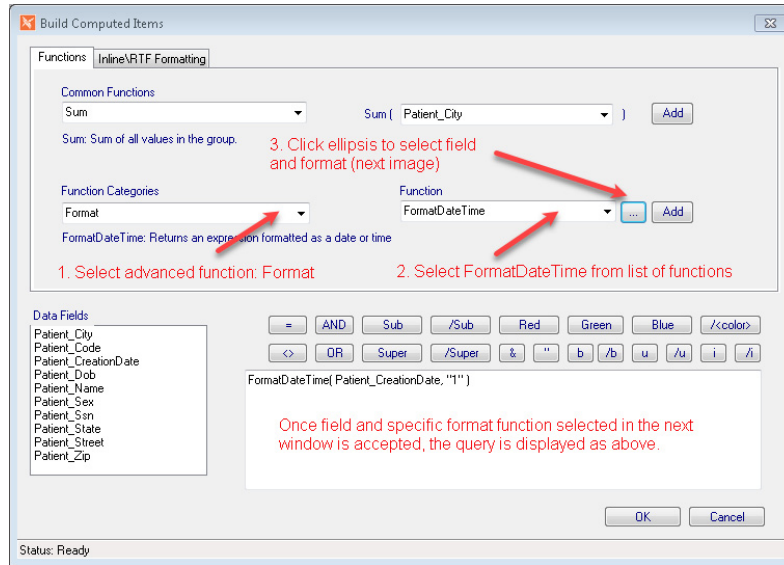
Figure 10-10 - Build Computed Items - Functions Tab

Computed Example

In the example above, we are formatting a date field to use a particular date format. Select the date field you want to format and select Add Computed \ Inline from the Commands menu. If you don't select a field beforehand, one will be added after the query is built.

Following the steps shown in Figure 10-10:

1 **Select Format from the Function Categories.**

2 **Select FormatDateTime from the list of functions.**

3 **Click the ellipsis to open the following window:**

4 **Select the Patient_CreationDate field for Argument 1.**

NOTE: *Make sure the data you are applying the function to is compatible with the function. e.g using the FormatDateTime will not work on a field that contains only a date.*

5 **For Argument 2, select a date format. 1- weekday monthname year was chosen. Friday, May 01, 2020, which displays dates in the format: *Friday, June 12, 2020*.**

6 **Click OK from both windows to exit Function Builder, then save the report.**
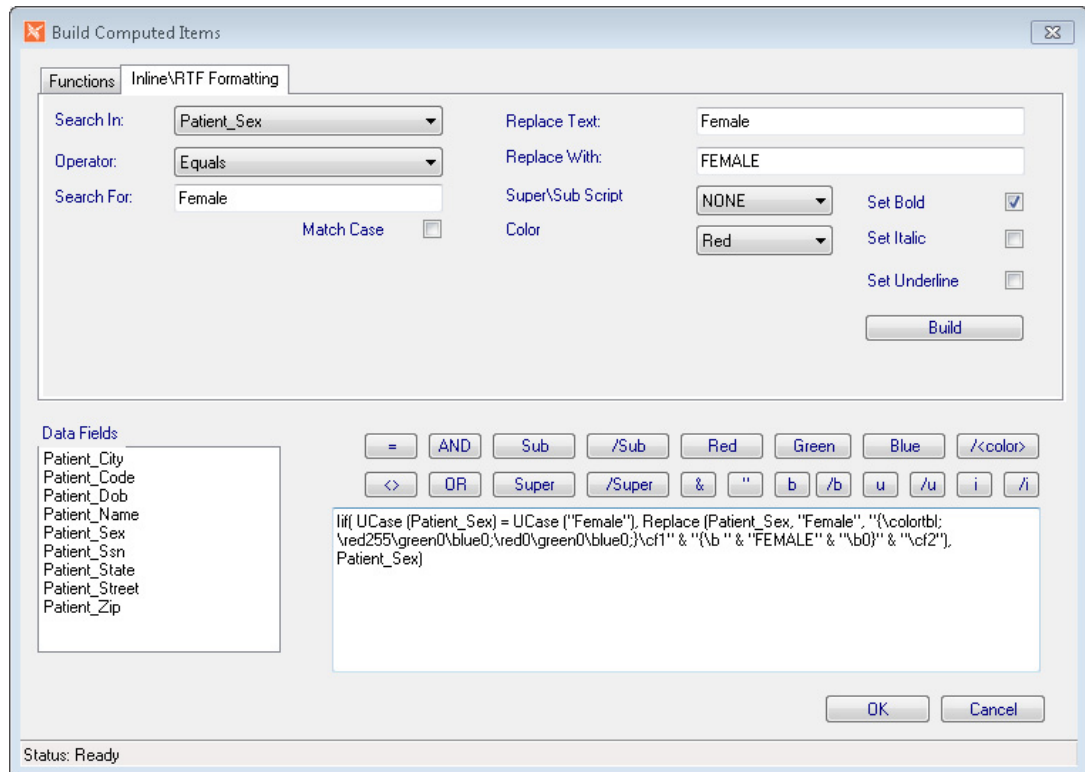
Figure 10-11 - Build Computed Items - Inline\RTF Formatting Tab

Inline \ RTF Formatting Example

In the example shown in Figure 10-11 we are searching in the *Patient_Sex* field for the text of "Female" and replacing "Female" with upper-case "FEMALE", while bolding and making the text red.

With these formatting changes the report displays any patient sex not in the database as "Female" as the field parameters dictate, but "Female" will display as **FEMALE**.

The formatting parameters you may set using the Inline\RTF Formatting tab include:

- Super\Subscript
- Color of text
- Bolding text
- Italic text
- Underlined text

To create an Inline\RTF Format modification:

1 **In the Inline\RTF Formatting tab, select the field that contains the text you want to modify.**

2 **Enter the text to match and what to replace it with.**

3 **Select the formatting parameters you want to set.**

4 **Once all are specified, click Build. The query displays in the building box.**

5 **Click OK and save the report.**

NOTE: *When setting Inline\RTF formatting to a field, the RTF Text Display field must be set to* ***True***.

Conditional Formatting Window

The Conditional Formatting window allows you to add a considerable amount of Structured Query Language (SQL) to your report to modify any of the report fields. The window offers you a list of fields available on the report, a list of valid arguments that may be used, and buttons to help you enter proper syntax. As fields, functions and arguments are selected, the SQL function is built in the building box. A good understanding of SQL is recommended, but basic formatting can be easily achieved.

The example in Figure 10-12 shows a formatting function that is set to COUNT the number of values in the ConstituentResult column that equal "DETECTED". If that count is zero (0), then in the field named "NOPATH", display the text *"No Pathogens Identified"* and give NOPATH a height of 225. If that statement is not true, such as the count is greater than zero, display nothing in NOPATH field and drop the field height to zero.

The ConstituentObjectID is included with the ConstituentResult since the object ID would always be unique and therefore the tally of DETECTED is for unique profile constituents.
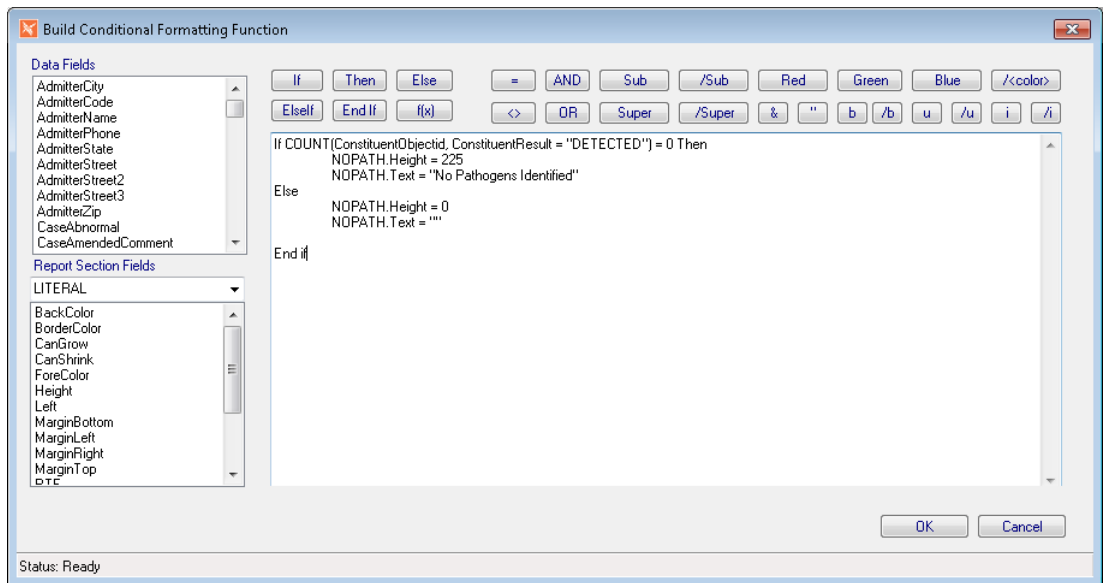
Figure 10-12 - Conditional Formatting Functions Example

NOTE: *You must first select a data field before the Conditional Formatting menu option is enabled on the Commands Menu.*

Audit Menu

Menu Option	Description
Show Audit	Opens a window listing all changes that have been made to the current report

Other Menu

Menu Option	Description
User Signature	Adds a User Signature field
Signer Signature	Adds a Signer Signature field
Combined Always Report	Creates a field that combines all profile level 'always report' messages into one area on the master report.
Combined Methodology	Creates a field that combines all profile level 'methodology' messages into one area on the master report
Microbiology Sensitivity Matrix Section	Allows you to add a Microbiology Sensitivity sub report
Historical Result Section	Allows you to add a sub report for Historical results.
WindoPath Case Section	If integrated, allows adding a subreport specific for WindoPath results.
Case Reported Section	Allows the addition of all Case Reported related fields from previously issued reports in a separate section.
Case Report Other Profiles	Allows the addition of a sub report where unique specimen and profile related fields may be added, such as ProfileCancelDate and ProfileState, which will always contain either CANCELED or PENDING.
Insurance Section (optional)	Sub report is to enable adding Billing and Insurance related data to NucleoLIS case reports. The section exposes all available database columns from the Billing, Insurance, and Hospital tables.
Constituent Image Sizing	Allows you to set the maximum height and width for images

Operation Buttons

Button	Operation
Add Field	Adds a generic text field that can be changed to any text
Add Image	Opens a search window to locate and find an image to add to the report
Copy	Makes a copy of the currently selected field
Print Test	Opens windows print dialog box so you can print a test of the report
Preview	Previews the current report design to the screen
Add Sub	Opens another Report Designer window within that section, so a separate report style can be inserted for specialized results
New	Clears all fields to create a new label
Save	Saves the current label detail as using the label specifications on the left

Button	Operation
Save As	Prompts for a filename to save the displayed label with a new name; if the label type already exists, you are prompted whether you want to overwrite it as the default label for that type
Delete	Deletes the currently displayed report
Close	Closes the report designer

Notes

Chapter 11
Human Resources

Human Resources is where the users and physicians library information is stored in the system. It is used to add new, modify existing, and retire both user and physician accounts for system access.

In order for anyone to use NucleoLIS, they must have a user account. Physician accounts are need in order to enter a physician in any of the physician related fields in the Accession window.

Human Resources is accessed either through the Human Resources icon on the left or from the Operations Menu. Users are required to have the Admin privilege in order to access Human Resources.

Physicians Table

The *Physician table*, shown in Figure 11-1, is where all physicians and also physician groups are stored. The Physician table is accessed by selecting **Physician** from the *Library* drop-down menu. Once a physician is selected, all related fields are displayed in the detail grid.

The data tree on the left side of the window displays the following parameters by which you may search:

- Code
- Group
- Name

Searching for Existing Physicians

To search by Code, select **Code** from the Search selection drop-down, enter the code in the second criteria field and click the binoculars button.

To search by Group, select **Group** from the Search selection drop-down, enter the group in the second criteria field and click the binoculars button.

To search by Name, select **Name** from the Search selection drop-down, enter the name (last, first) in the second criteria field and click the binoculars button.

With any method, if the search criteria field is left blank, a complete list of the table contents is displayed. Highlight the specific record in the data tree and the details are displayed on the right.

NOTE: *Searches can also be performed by pressing <Ctrl+R>*
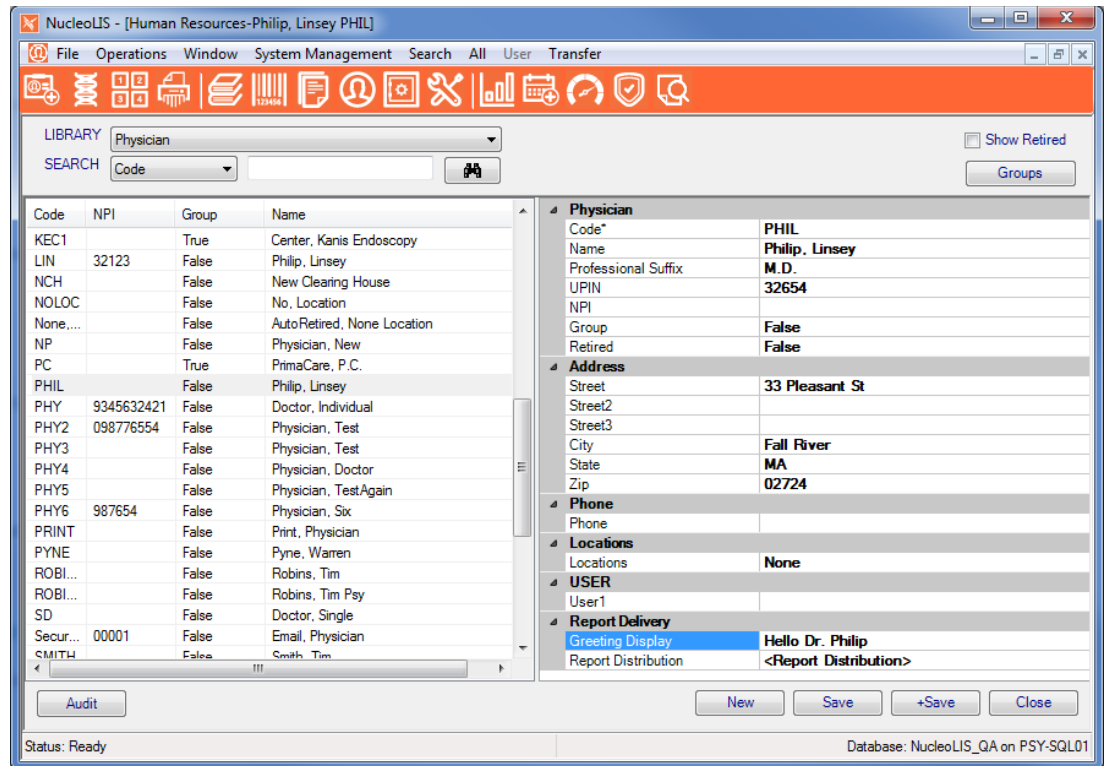
Figure 11-1 - Physician Table

Physician table field descriptions

Table Field	Description
Code	Unique physician identifier; required field; used in pull down list when accessioning
Name	Physician's full name in the format (last, [space] first)
Professional Suffix	Suffix for physician; e.g. M.D., PhD, DC
UPIN	Universal Physician Identification Number
NPI	National Provider Identifier
Group	True/False; used to specify whether a physician is part of a physician group
Retired	True/False; whether the physician is active/inactive
Address	
Street	Physician's street address
Street2	Second physician's street address
Street3	Third physician's street address
City	Physician's city
State	Physician's state

Table Field	Description
Zip	Physician's zip code; accesses the Zip Code table (when available) and automatically populates the city and state
Phone	
Phone	Physician's phone number
Locations	
Locations	Automatically populated with the a location called None (which is an individual physician location. Click the elipsis (...) to open the Locations window where locations can be added, modified, or retired. (May be set by preference to not display for Physician *Group* records.)
Report Delivery	
Greeting Display	Physician's textual greeting that may be added to the headers on Fax covers or main reports with the Distribution Designer
Report Distribution	Determines the method(s) by which the physician will receive reports - print, fax, email. Clicking the **<Report Distribution>** ellipsis opens the Edit Report Distribution window allowing you to configure the report distribution method for each physician or group. Selected Secure Email prompts for a password after entering email, if that email has not already been stored in database

Edit Report Distribution Window

The *Edit Report Distribution* window shows the distribution methods configured for your system. To add a method for a physician or client, check the method check box and fill in the destination Fax number, email address, or select an available network printer from the drop-down list to determine how they, as submitters, will receive reports.

Other physician tab is used to define report distributions for when the physician is associated with a case as a "copy to" or *Other Physician*.
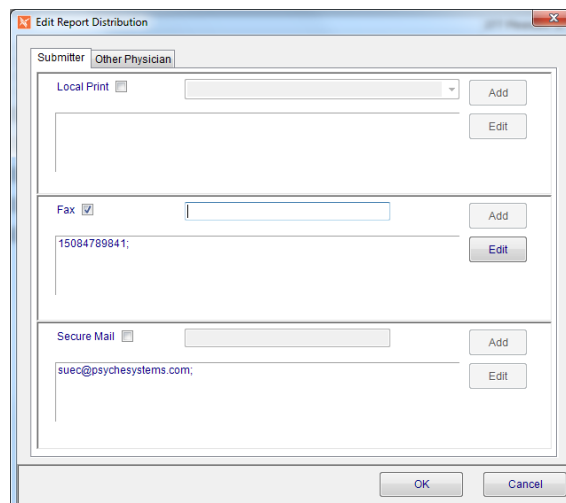
Figure 11-2 - Edit Report Distribution Window

Physician Locations

To add, modify or retire a location attached to a physician, click on locations in the data grid. The *Edit Locations* window is displayed showing the following fields.

Table Field	Description
Location	The location code of the physician/group
Phone	Physician's phone number
Fax	Physician's fax number
Email	Physician's email address; if entering an email for someone who is not in the User Table, you are prompted for a password, which then automatically creates a record in the User Table; secure email report recipients are prompted for their password when opening reports.
Retired	True/False
Address (optional)	
Street	Submitter Location Street
Street2	Submitter Location Street 2
Street3	Submitter Location Street 3
City	Submitter Location City
State	Submitter Location State
Zip	Submitter Location Zip
Outreach	
Withhold Group Results	True/False; used if client has purchased e.Outreach
Physician\Client	
Group*	Displays the associated physician's group name (leave blank if not associated with a group).
Report Delivery	
Report Distribution	Determines the method(s) by which the physician location will receive reports.
Preliminary Report Distribution	Determines the method(s) by which the physician location will receive preliminary reports; only available if following field is True.
Use Preliminary Distribution	If enabled, can set to True to specify distribution locations for Physician's preliminary reports; previous field becomes available.
User	
User1	user defined field 1
User2	user defined field 2
User3	user defined field 3

NOTE: *In the Edit Location window Group field, group choices are limited to those entries that are designated as a group (group=true).*

To add a new physician:

1   **From the physician library, click New. A blank detail grid is displayed.**

2   **Fill in the appropriate fields.**

3   **Click Save.**

To modify an existing physician:

1   **Locate the physician by one of the search methods.**

2   **Change the field data to the new information.**

3   **Click Save.**

User Table

The *User Table*, shown in Figure 11-2, stores all the information on NucleoLIS application users. Every person who needs to use the NucleoLIS system must have a user account.

To open the User table, select **User** from the *Library* drop-down menu. Once a user is selected, all related fields are displayed in the detail grid.

The data tree on the left side of the window displays the following:

- Code
- User name

Searching for Existing Users

Searches can be performed by either code or user name.

To search by Code, select **Code** from the Search selection drop-down, enter the code in the second criteria field and click the binoculars button.

To search by User name, select **Username** from the Search selection drop-down, enter the username in the second criteria field and click the binoculars button.

With any method, if the search criteria field is left blank, a complete list of the table contents is displayed. Highlight the specific record in the data tree and the details are displayed on the right.

NOTE: *Searches can also be performed by pressing <Ctrl+R>*
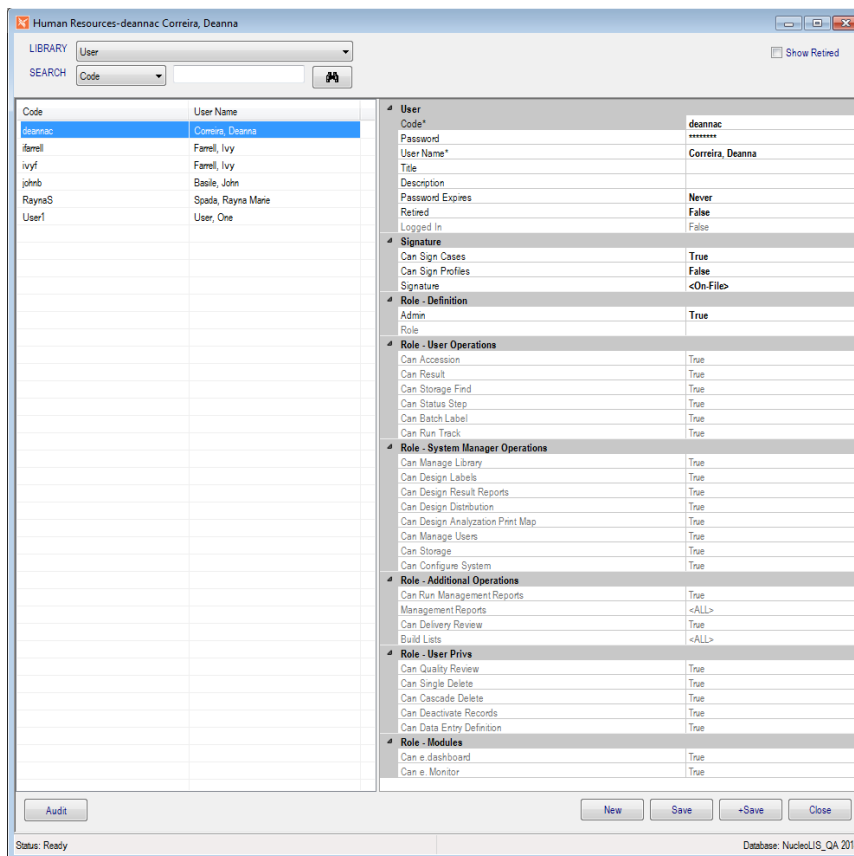
Figure 11-3 - User Table

User Table field descriptions

Table Field	Description
Code	Required field; used as user code at login; not case sensitive.
Password	User passwords must be a minimum of 6 characters. Passwords are not required to be alphanumeric although it is recommended. Note: The System Manager can assign a default password for use at initial login. When the user logs on for the first time, they will be forced to change their password.
Username	User's name in the format "last,[space]first"
Title	User-defined title of user
Description	Free text. Anything for informational purposes is entered here.
Password Expires	Indicates how long until the current password will expire. There are three options: Never - never expires, Default - expires in the number of days set in the configuration and Expired - used to force the user to change their password at initial login.
Retired	True/False; whether the user is active/inactive in the system
Logged In	True/False; dithered however will display whether or not a user is logged into the system

Table Field	Description
Assignment	
Can Assign Cases	True/False; allows case assignment to that user
Signature	
Signature	Displays "None" if no signature file is linked to the user or <On-File> if there is a signature file linked to the user. Transparent PNG format is recommended.
CanSignCases	True/False. Indicates if user can sign out cases.
CanApproveProfiles	True/False. Indicates if user can approve profiles; not available unless signature stored for user
CanSignProfiles	True*/False. Indicates if user can sign out profiles; not available unless signature stored for user; True* indicates user can sign out at least one profile type that requires signature. To modify profiles user can sign out, click the CanSignProfiles ellipsis to open *Edit Can sign Profiles* dialog box. Select Profile Type from drop-down list, then check the available profiles allowed or check ALL. Click OK to save.
Signing Locations	If CanSignProfiles is True, select from pick list of Location Designations from where user may sign cases. If none is selected, the default location is used. If no default is defined, <None> will be displayed on case or profile. If user has multiple signing locations, they can select the current one from the Signing menu in Result Manager. The first location added for the user becomes the default for that user.
Can Reopen Cases *(Optional)*	Admin can reopen cases without Can Sign Cases privilege.
Role	
Admin	True/False; whether or not the user should have rights to administrative functions (which are: Human Resources, Configuration, Label Designer, Library) on the system
Role	Choose from the roles defined in the User Role library
User Role Settings Display	
Role - User Operations **Role - System Manager Operations** **Role - Additional Operations** **Role - User Privs** **Role - Modules**	The rest of the fields are display only and show the settings for the specific role entered in the Role field above. Refer to the Library Chapter for more information on User Role settings.

To add a new user:

1 **Click New. A blank detail grid is displayed.**
2 **Fill in the appropriate fields.**
3 **Click Save.**

To modify an existing user:

1 Locate the user by one of the search methods.

2 Change the field data to the new information.

3 Click Save.

Human Resources Menu

Menu Option	Description
File	**Show User** - shows current user information **User** - Set Font/Reset Font **Version** - Displays the current NucleoLIS version number **Exit** - exits NucleoLIS
Operations	**Accession** - opens the Accession window **Result Manager** - opens the Result Manager **Run Tracking** - opens the Run Tracking window **Storage Find** - allows you to find the location of a specimen **Batch Steps** - opens the Batch Steps window **Batch Label** - opens the Batch Label window **Library** - opens the Library window **Label Designer** - opens the Label Designer **Result Report Designer** - opens the Result Report Designer **Distribution Designer** - opens the Distribution Designer, for fax cover sheets **Analyzation Map Designer** - opens the Analyzation Map Designer window **Human Resources** - opens the Human Resources window **Storage Manager** - opens the Storage Manager window **Configuration** - opens the Configuration window **Run Management Reports** - opens the Management Report window **Delivery Monitor** - opens the report delivery monitoring window **e.Dashboard** - if purchased, opens the e.Dashboard window – see separate documentation **e.Monitor** - if purchased, opens the e.Monitor window – see separate documentation
Window	Shows currently opened windows to select
System Manager (Admin Users)	**Deactivation** - executes the deactivation process **WP Distribution Mapper** - (optional) opens the WindoPath Distribution Map Utility window
Search	**Run (Ctrl+R)** - searches using current criteria
All	**New (Ctrl+N)** - new record for current table **Save (Ctrl+S)** - save current record **Save+ (Ctrl+Shift+A)** - save current record and open new window **Audit (Ctrl+T)** - shows audit table of current record

Menu Option	Description
User	Allows Admin users to reset a logged user status by selecting the user account in list and clicking Reset Logged.
Transfer	**Export** - Used to export libraries **Import** - Used to import libraries
Other	**EMR Client Set Up** - opens the EMR Client Configuration window for client set up, if available.

Notes

Chapter 12
Storage Manager / Storage Find

The *Storage Manager* window is where you define where your specimens are stored. You access the Storage Manager either through the Storage Manager button on the left or from the Operations Menu.

Storage Find is where you look to locate a specimen that has had it's storage defined through Storage Manager. Access Storage Find through the Operations Menu.

Storage Manager Window

When you open the Storage Manager window, shown in Figure 12-1, you are presented with a grid based on the definition of the rack selected in the Select Rack drop-down list. Multiple configurations for storage racks may be defined in the *Storage Rack Definition* table of the Library. In the Storage Rack Definition table, you define the rack with the appropriate number of columns and rows and give it a recognizable name.

In the Storage Manager grid specimen numbers (or culture numbers) are entered by scanning specimen bar codes, or may be entered manually.
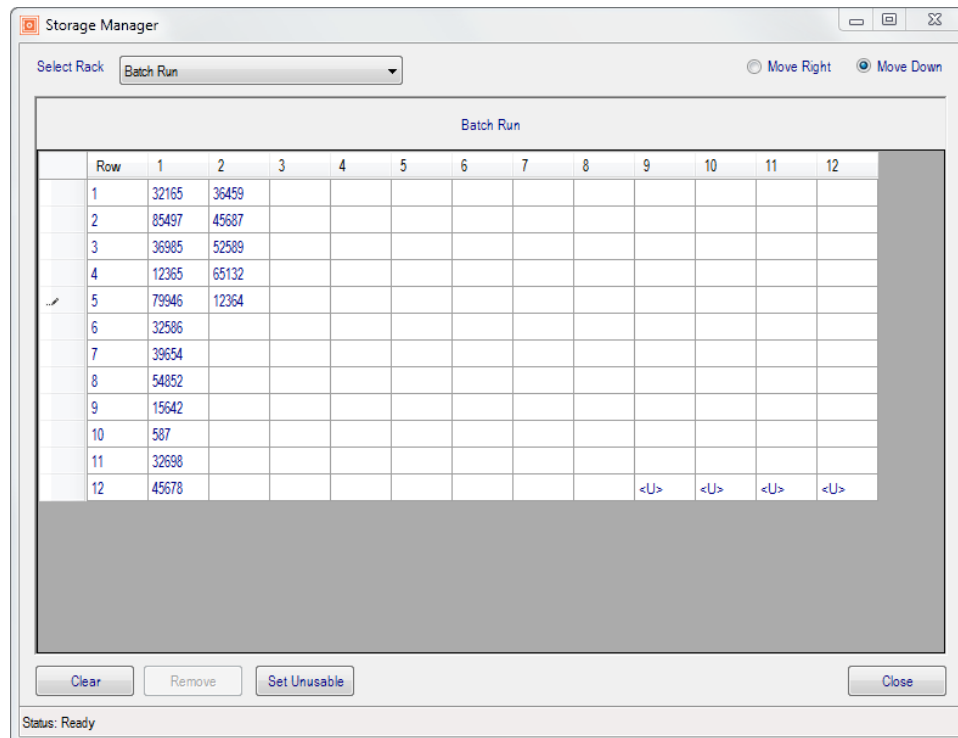
Figure 12-1 - Storage Manager Window

Storage Manager Actions

Field or Button	Description
Move Right	Selecting this radio button at the top right of the window sets the cursor to move right after each number is entered.
Move Down	Selecting this radio button at the top right of the window sets the cursor to move down after each number is entered.
Clear	Clears all culture numbers from the rack grid
Remove	Removes the selected culture number from the rack grid
Set Unusable	Marks the selected empty cell as unusable by inserting <U> in that cell
Close	Closes the Storage Manager window

NOTE: *The default direction of cursor movement (right or down) is defined by the EnableStorageManager SiteWide Preference.*

To create and update a storage rack

1   Select a storage rack from the drop-down list.
2   If there are specimens already stored on the rack, you can start a new one by clicking the Clear button.
3   Select Move Right or Move Down from the radio button choices at the top left of the window.
4   Select the first empty cell, scan the specimen number, and the next field is selected based on the direction you chose in Step 3.
5   Continue until all specimens are entered for that rack.
6   Click the Remove or Set Unusable buttons on the bottom as needed.
7   Click Close to close the Storage Manager window and save your changes.

Storage Find

Once specimens are entered on a rack through the Storage Manager, you can easily locate any specimen through the Storage Find window, shown in Figure 12-2.
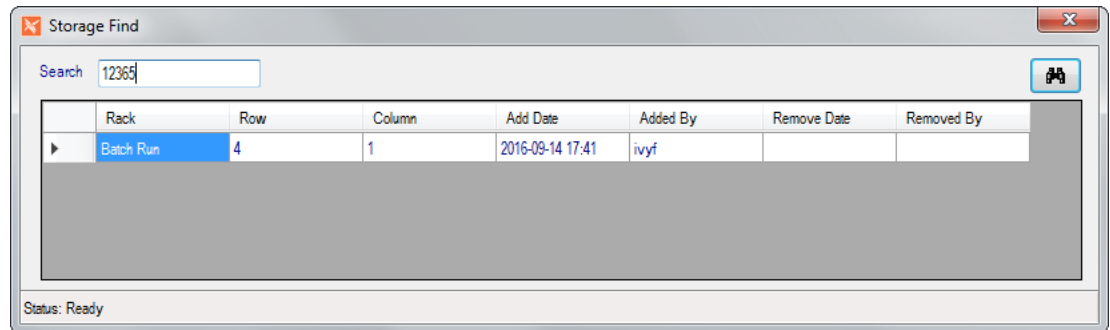
Figure 12-2 - Storage Find Window

Scan the barcode or enter the specimen number in the Search field and click the binoculars button. Storage Find will display the following location for that specimen:

- Rack
- Row
- Column
- The date/time the specimen was added to the rack
- The username of the person who added the specimen
- The date/time the specimen was removed from the rack, if it has been removed
- The username of the person who removed the specimen

Close Storage Find by clicking the windows [X] in the upper right corner of the window.

Notes

Chapter 13
Configuration

Configuration allows system managers to define the settings for use with NucleoLIS. These settings determine how the system functions. NucleoLIS is installed with a standard set of preferences and settings that may be changed at any time. Users without the Administration privilege will not be able to access the Preferences window.

The Preferences Window

The Preference window is accessed by clicking the icon (at left) or selecting Configuration from the Operations Menu. At first, the window is blank to allow searching in one of two ways.

- Click the drop-down arrow in the Search field box to display a list of preferences, then click the Search icon to find that preference.

- Leave the Search field blank and click the Search icon to get a list of all preferences.

NOTE: *The Scope selection should be left at All or Site Wide to see all preferences.*

When all preferences are listed, the Preferences window will look similar to the image displayed in Figure 13-1.
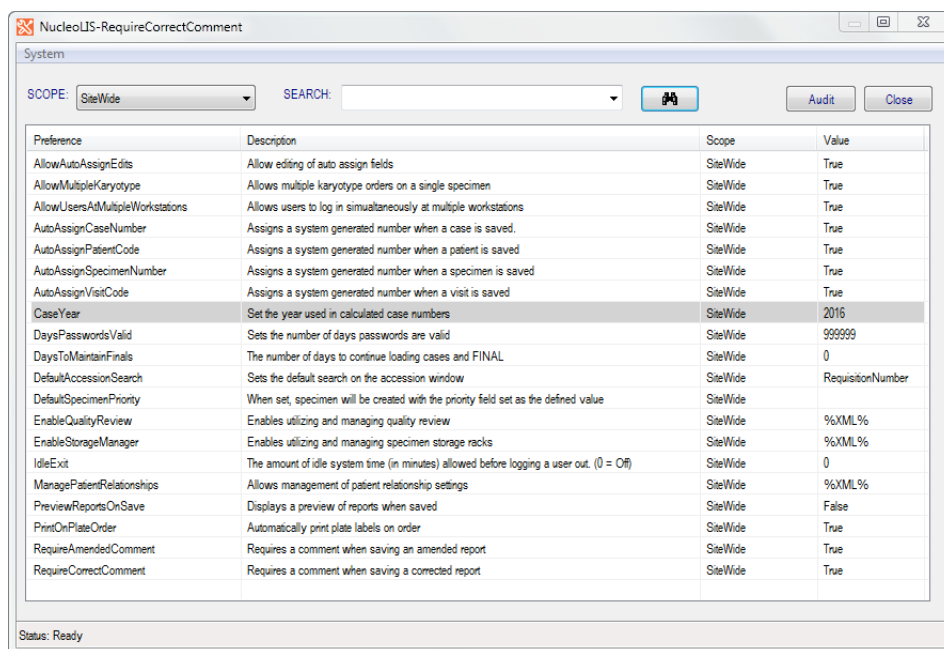
Figure 13-1 - Preferences Window

The Preference window displays the following columns of information:
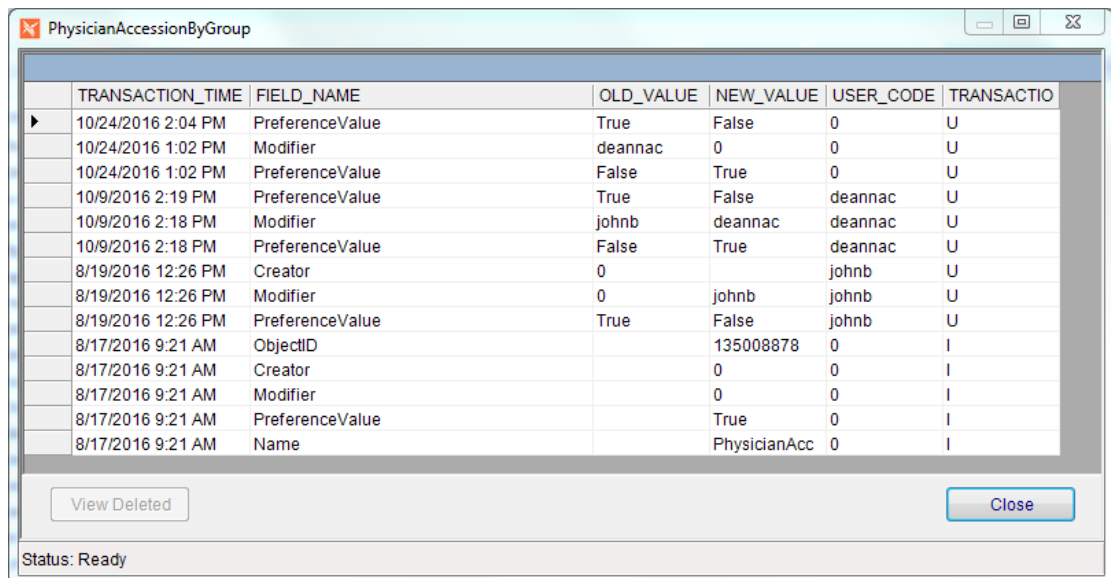
- Preference (name)
- Description
- Scope (All, SiteWide, User)
- Value (most are either True or False)

Changing Preferences

To modify a preference value, double-click the row in the Configuration window. If the item has a True/False value, a prompt is displayed confirming the change. For those preferences that require a numeric or other value, a dialog box to enter the value.

Audit Button

Once a preference is highlighted, the Audit button in the upper right becomes available. Clicking Audit opens the audit trail of all changes made to that preference, similar to the window below in Figure 13-2.

TRANSACTION_TIME	FIELD_NAME	OLD_VALUE	NEW_VALUE	USER_CODE	TRANSACTIO
10/24/2016 2:04 PM	PreferenceValue	True	False	0	U
10/24/2016 1:02 PM	Modifier	deannac	0	0	U
10/24/2016 1:02 PM	PreferenceValue	False	True	0	U
10/9/2016 2:19 PM	PreferenceValue	True	False	deannac	U
10/9/2016 2:18 PM	Modifier	johnb	deannac	deannac	U
10/9/2016 2:18 PM	PreferenceValue	False	True	deannac	U
8/19/2016 12:26 PM	Creator	0		johnb	U
8/19/2016 12:26 PM	Modifier	0	johnb	johnb	U
8/19/2016 12:26 PM	PreferenceValue	True	False	johnb	U
8/17/2016 9:21 AM	ObjectID		135008878	0	I
8/17/2016 9:21 AM	Creator		0	0	I
8/17/2016 9:21 AM	Modifier		0	0	I
8/17/2016 9:21 AM	PreferenceValue		True	0	I
8/17/2016 9:21 AM	Name		PhysicianAcc	0	I

Figure 13-2 - Preference Audit Window

System Menu

The Preference System Menu gives you access to the following definitions:

- *Display Definitions* allows users to choose the information that will be displayed on the screen and will also allow the selection of colors for tree items. Note: The colors are only displayed in the tree view on the screen.
- *Field Definitions* is where the system manager can show/hide data entry fields for use throughout NucleloLIS. In addition, each table typically has three user-defined fields which can be used to specify certain lab-specific information that must be captured.

The following table lists all the site wide preferences.

SiteWide Preferences

Additional information on shaded preferences can be viewed by right-clicking on preference.

Preference	Description	Scope	Value
AllowAdminReopen	When true, Admin users are allowed to reopen cases	SiteWide	**True/False**
AllowAutoAssignEdits	Allow editing of auto assign fields	SiteWide	True/False
AllowMultipleKaryotype	Allows multiple karyotype orders on a single specimen	SiteWide	True/False
AllowUsersAtMultiple Workstations	Allows users to log in simultaneously at multiple workstations	SiteWide	True/False
AutoAssignCaseNumber	True assigns a system generated number when a case is saved; False allows user entry for Case#	SiteWide	True/False
AutoAssignPatientCode	Assigns a system generated number when a patient is saved	SiteWide	True/False
AutoAssignSpecimenNumber	Assigns a system generated number when a specimen is saved	SiteWide	True/False
AutoAssignVisitCode	Assigns a system generated number when a visit is saved	SiteWide	True/False
CaseYear	Set the year used in calculated case numbers *(Right-click for Additional Information)*	SiteWide	Year (yyyy)
CollectionDateDefault	Default collection date of specimen and culture records	SiteWide	None, Yesterday, Today
DaysPasswordsValid	Sets the number of days passwords are valid	SiteWide	Days
DaysToMaintainFinals	The number of days to continue loading cases and FINAL; after the specified # days, cases are archived	SiteWide	Days
DefaultAccessionSearch	Sets the default search on the accession window	SiteWide	Search Value
DefaultSpecimenPriority	When set, specimen will be created with the priority field set as the defined value (e.g.Routine; can add to reports and define in Selection Lists)	SiteWide	Value

Preference	Description	Scope	Value
EnableQualityReview	Enables utilizing and managing quality review Users are notified when finalizing cases that a case has been flagged to be reviewed.	SiteWide	**EnableQualityReview** **Enabled:** True/False **EnableQualityReview - Settings** **Abnormal Flag:** True/False; true flags only abnormals **Adhoc:** True/False; True allows defined users manually assign cases for Quality Review **Percentage:** #; enter percentage for number of cases to be flagged for review
EnableStorageManager	Enables utilizing and managing specimen storage racks	SiteWide	Storage Manager Details
IdleExit	The amount of idle system time (in minutes) allowed before logging a user out	SiteWide	Minutes
ManagePatientRelationships	Allows management of patient relationship settings **Relationships examples:** Sibling Child Parent Self Spouse **Relationships Flip examples:** Sibling Parent Child Self Spouse	SiteWide	**Relationships:** opens a dialog box to enter valid relationships. **Relationships Flip:** opens a dialog box to enter valid opposite relationships to above.
PreviewReportsOnSave	Displays a preview of reports when saved	SiteWide	True/False
PrintOnPlateOrder	Automatically print plate labels on order	SiteWide	True/False
TreeItemHeight	Enables defining the height of nodes in the Tree (requires application restart)	Sitewide	-1 is default; 5-30 valid, but lower numbers overlap depending on set font.

Creating FAX Cover Page for Interfax Reports

If your system is configured for reporting through Interfax, you will have the option to use the Distribution Designer to create and/or customize your Fax coversheet. You access the Distribution Designer from the Operations Menu, which opens the Distribution Designer window shown below.
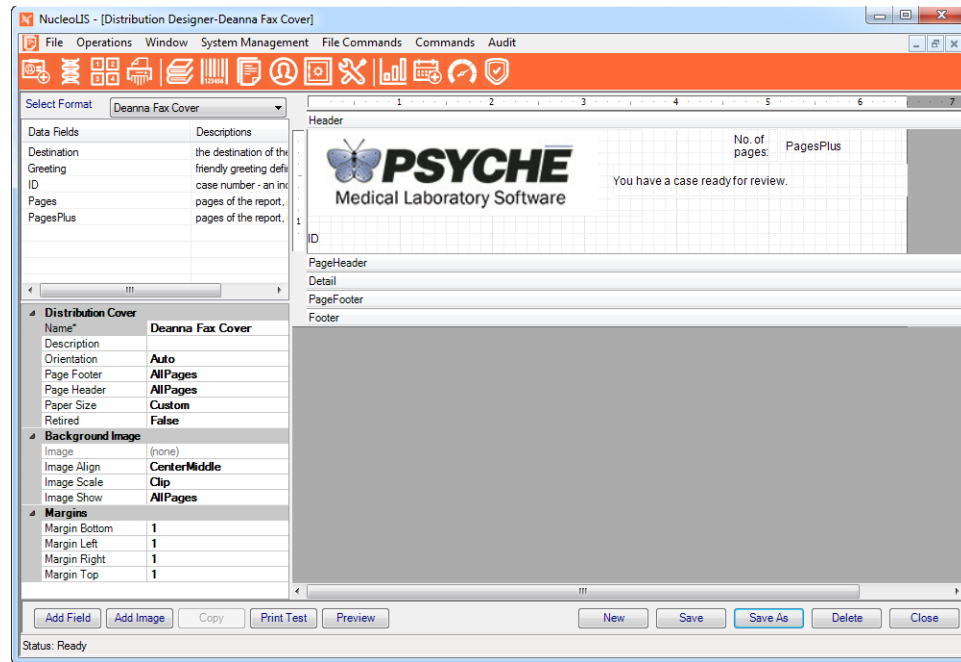
Figure 13-3 - Distribution Designer Window

Available Data Fields for Cover Page

The following Data Fields are available to be added to the Interfax cover page. The standard image and literal text may be added as well.

- **Destination:** the destination of the delivery, such as the Fax number
- **Greeting:** the greeting defined for the recipient
- **ID:** case number for identification
- **Pages:** the number of pages in the report, not including the cover page
- **PagesPlus:** the number of pages in the report, including the cover page, assumed to be one.

Once a custom cover page has been created, Psyche will configure it for Interfax.

Notes

Chapter 14
ē.Query - Management Report Designer

NucleoLIS has the ability to design user-defined Management Reports, which are used for tracking and many other management statistics you need for your lab. These reports are stored and then may be run by designated NucleoLIS users. There is a great amount of flexibility built into the *e.Query Management Report Designer* allowing simple or complex reports to be created as needed. You may require assistance from Psyche to get your reports just right.

This chapter also describes the *e.Query Data Analysis Window*, which allows e.Query users to run *adhoc* queries on the database using e.Query functionality.

e.Query Management Report Designer Window

You access the e.Query Management Report Designer Window by clicking the e.Query icon, shown on the left or from the Operations tool bar menu.
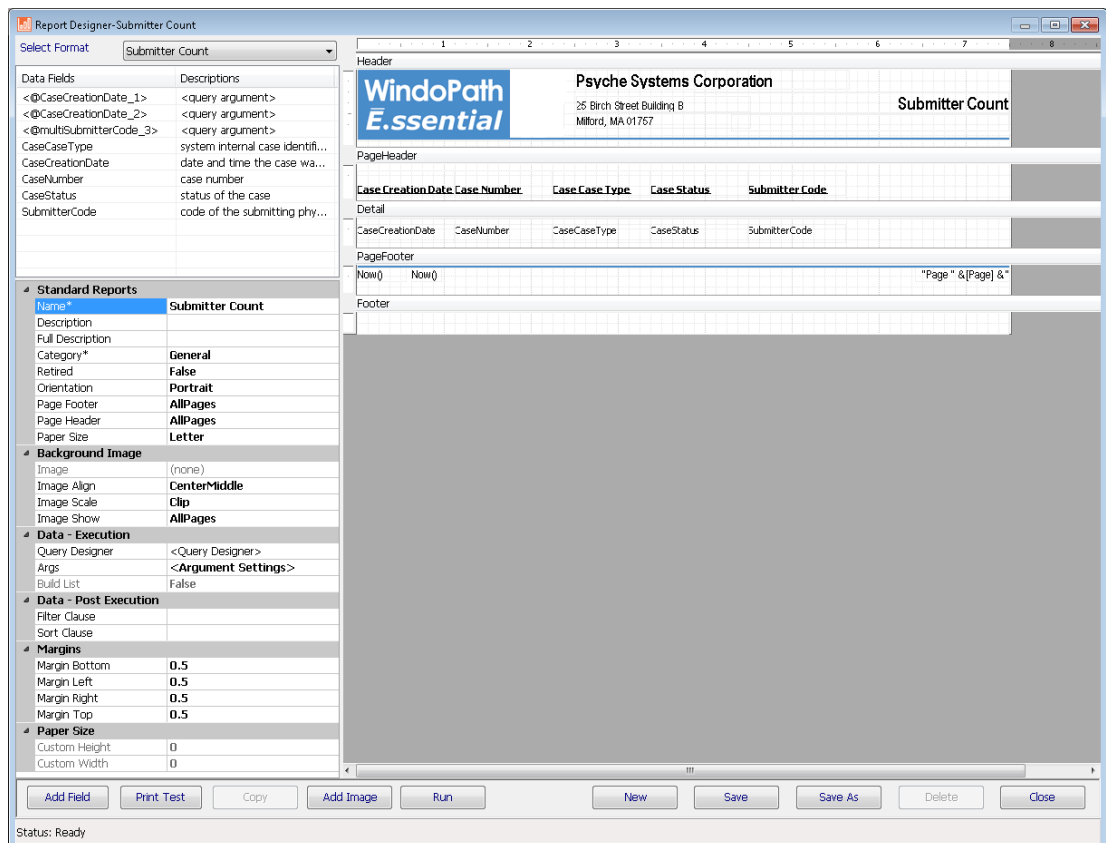
Figure 14-1 - e.Query Management Report Designer Window

The **Select Format** drop-down list allows you to select one of the existing report formats to review or modify.

Available **Data Fields** are displayed on the upper-left corner of the designer and added to the report by double-clicking the field. Each field can be set with certain parameters (e.g. height, width, font type, etc). Different report sections can be added to the report along with signatures for users, logos and defining information about the laboratory.

With the *e.Query Management Report Designer*, Data Fields can be easily added as you design your report in the Query Designer Window.

Report Format Editing Notes

- NucleoLIS is installed with a set of standard management reports. As you use your system, additional management reports may have been added as requested.

- Report formats considered *Psyche Standard* may only be modified by Psyche. If you would like to use a standard report, but with a small modification, you will need to make a copy of it (Save As), modify as you wish, and use the copy in production.

- *Non-standard* report formats created prior to the availability of e.Query Management Report Designer may be modified by the System Admin or anyone who has been granted the *Can Design Management Reports* privilege through their *User Role*. These reports may be edited within the e.Query Management Report Designer main window.

- Only new reports created with the e.Query Management Report Designer can be modified through the **Query Designer Window,** described later in this chapter.

To distinguish between a management report format that was created prior to the e.Query Management Report Designer and one that was created using the Query Designer, refer to the **Data - Execution** parameter section of the report:

For report formats created...	Field	Value
Prior to e.Query Management Report Designer	Query Name	Stored procedure name
With the e.Query Management Report Designer, using the Query Designer	Query Designer	**<Query Designer>** Click to open Query Designer window

Report parameters

Different *parameters* are available depending on whether you have selected the main report (click gray area), a section separator, or a field.

Parameter	Description
Standard Reports	
Name	The name of the report seen in the Run Management Reports Report drop-down menu; entered in the Query Designer if using the enhanced version; name must be unique.

Parameter	Description
Description	Short description of the report that appears on the Management Report named "Management Reports"; will also automatically display in report header field named REPORT_DESC.
Full Description	Full description of the report that will appear on the Management Report named "Management Reports".
Category	Select from list of available categories or enter new category name; categories are used to sort types of reports when selecting them in Run Management Reports.
IsStandard	True/False; indicates Psyche standard reports; only available for Psyche users.
Retired	True/False; True removes reports from the Management Report Designer list, unless the **Show Retired** command has been executed and also removes them from the Run Management Reports list. Psyche Standard Reports must be set to retired using the **Toggle Retired** command from the Commands Menu, since Psyche Standard Reports cannot be altered.
Orientation	Auto is default and usually works best, or can set to Portrait or Landscape, if using non-standard paper size.
PageFooter	Defines when the PageFooter should print: AllPages, NotWithReportHdr, NotWithReportFtr, NotWithReportHdrFtr. Report formats can have separate footers for pages versus the report itself.
PageHeader	Defines when the PageHeadeer should print: AllPages, NotWithReportHdr, NotWithReportFtr, NotWithReportHdrFtr. Report formats can have separate headers for pages versus the report itself.
Paper Size	Select from a list of standard paper sizes; default is Letter.
Background Image	
Image	Location and name of the image used as a background
Image Align	Multiple choices for alignment; Center Middle is common choice
Image Scale	Clip, Stretch, Scale, Tile, Hide
Image Show	NoPages, AllPages, FirstPage, AllButFirstPage
Data – Execution	
Query Name Query Designer	**Stored procedure name** - For report formats created prior to the Enhanced Designer. **<Query Designer>** - For report formats created with the e.Query Designer. Click the ellipsis to open the Query Designer window.

Parameter	Description
Args	Whether the report was created with the Query Designer Window or prior to its development, clicking the Args ellipsis opens the Argument Editor Window to make specific argument modifications.
Build List	True/False; Used for Build List printing; Read-only here.
Data – Post Execution	
Filter Clause	Additional filter may be added through Edit Filter Clause window.
Sort Clause	Sorting may be added through Edit Sort Clause window.
Margins	
MarginBottom	Distance report will print from bottom in inches
MarginLeft	Distance report will print from left in inches
MarginTop	Distance report will print from top in inches
MarginRight	Distance report will print from right in inches
Paper Size	
Custom Height	If Custom is selected as paper size, enter paper height in inches
Custom Width	If Custom is selected as paper size, enter paper width in inches

Section parameters

These parameters become available when a section is selected.

Parameter	Description
Section Display	
KeepTogether	True/False; if a section is long enough that it will wrap onto another page the report will move that section to the next page in an attempt to keep the entire section on one page. In the event that a section is longer than a page in length the section will continue onto a second page regardless.
BackColor	Defines the background color of the report section
CanGrow	True/False; allows section to expand as needed
CanShrink	True/False; allows section to shrink as needed
ForcePageBreak	Causes a page break where positioned
Repeat	True/False; if true this section will repeat on every page.
Visible	True/False; if true this section will be visible on the report

Field Parameters

These parameters become available when a field is selected.

Parameter	Description
Identity	
Name	Name to identify the field
Border	
Border	Transparent, Solid, Dash, DashDot, DashDotDot
BorderColor	Specifies border color
BorderWidth	Specifies border width with 0 equaling none
Picture	
Picture	Location of image if auto-loaded, such as a logo
PictureAlign	Specifies the alignment of the image withing the image box; LeftTop (default), CenterTop, RightTop, etc.
PictureScale	Clip, Stretch, Scale, Tile, Hide; Scale maintains image proportions
Position	
Anchor	Orientation for field position; Top, Bottom, TopAndBottom
Left	Distance from the left margin in *twips. (Twips are screen-independent units to ensure that the proportion of screen elements are the same on all display systems. A twip is defined as being 1/1440 of an inch.)*
Top	Distance from the top margin in *twips*
Size	
CanGrow	True/False; allows the data to exceed the size of the field, pushing any data following down the report.
CanShrink	True/False; use when the field is capable of shrinking based on the contents of the field; useful to hide images dynamically, if not present; property will not hide any borders present; Report Section must also be set to CanShrink
Height	Height of the field in *twips*
Width	Width of the field in *twips*
TextDisplay	
BackColor	Defines the background color of the field
BarCode	To print the data in barcode format, select one of the possible symbologies from the list: Code 39, Code 93, Code 128. 2D barcodes are added through the Commands menu.
Font	Defines the font and size for how the data is printed
ForeColor	Defines the color of the field text

Parameter	Description
HideDuplicates	True/False; if a field is repeated, additional instances of that field can be hidden. e.g. on a case with multiple specimens a single specimen number has multiple profiles. We don't need to see that specimen number listed next to each profile, so True can hide the specimen number next to successive profile name. Right-clicking on the *HideDuplicates* link opens an option to check *ForceUniqueRows*, which ensures that rows that appear duplicate due to column selections appear on report, if unique for other fields. The default and general setting is to check both HideDuplicates and ForceUniqueRows.
KeepTogether	True/False; if a field wraps and is long enough that it will wrap onto another page the report, True will move that field to the next page in an attempt to keep the entire field on one page. In the event that a field is longer than a page in length, the field will continue onto a second page regardless. Note: any other fields in line with this field will also be moved down to the next page.
RTF	True/False; when True, rich text formatting may be entered in the text field; e.g. Result{\super\ xyz} will print as Result^{xyz}.
Text	For field labels, this is the actual text that will print on the report.
TextAlignment	Alignment of text within the field; LeftTop (default), CenterTop, RightTop, etc.; helpful to keep consistent
TextDirection	Direction of text within the field; Normal, Up or Down
WordWrap	Allows value to wrap to second line, if needed; use with CanGrow

Creating a Report with the Query Designer Window

If the e.Query Management Report Designer is configured in your system, clicking the **New** button on the Report Designer opens the Query Designer Window, shown below, for privileged users. The Query Designer Window displays the following three tabs that take you through building your management report.

- **Design Query Tab – where you select the fields to print on your report and define the filters to be used to select the data; displayed as the default**
- **Preview Query Data Tab – where you can get a preview of the selected data based on the query you created in the first tab**
- **Report Setup Tab – where you specify a name for the report and other formatting options**

NOTE: *To edit a query on a report that was previously created with the e.Query Designer version, click the ellipsis at the end of the* **<Query Designer>** *field.*
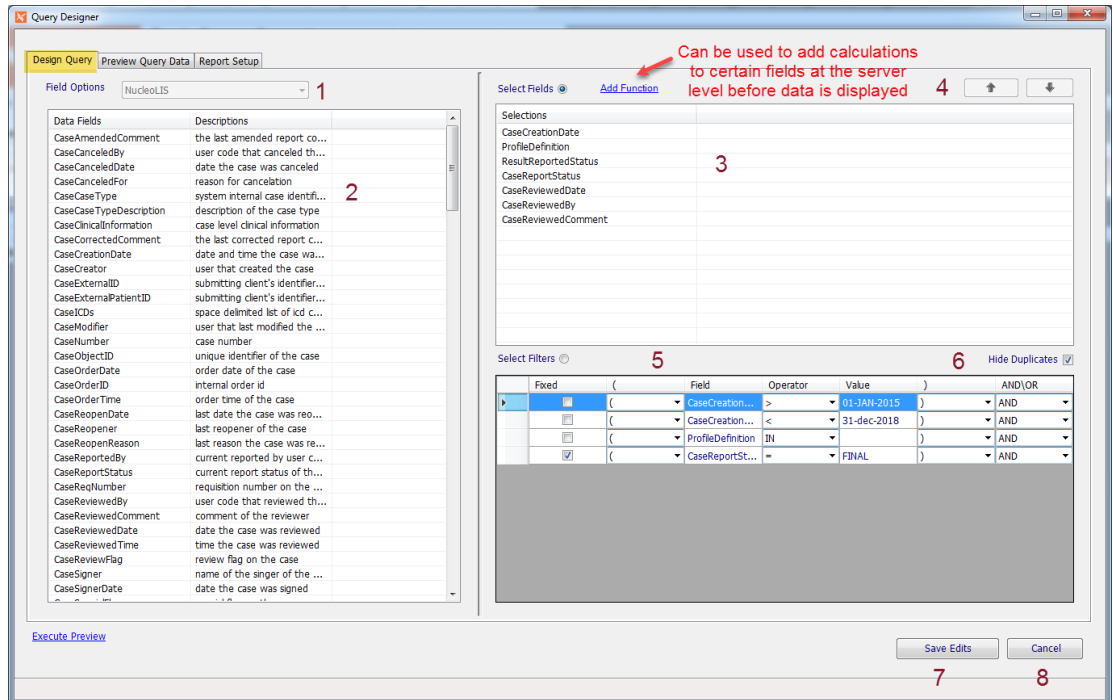
Figure 14-2 - Query Designer Window - Design Query Tab

Design Query Tab

The Design Query Tab shown above is split into available field choices on the left and on the right, the selected fields and filters chosen for the report. The first step in creating a new report is to select a database **View** from the Field Options pick list, which offers a subset of fields in the database to choose from to create your report. As of this writing, the following standard Views are available in NucleoLIS. Additional views may be created through the *e.Query Data Models* library.

- Physicians and Groups
- NucleoLIS Orders
- NucleoLIS (legacy)
- NucleoLIS - Billing
- NucleoLIS - Worksheets
- NucleoLIS - Worksheets Committed
- NucleoLIS - Variants
- NucleoLIS - Constituents
- NucleoLIS
- NucleoLIS Charges
- NucleoLIS Outreach\EMR Orders

The Design Query Tab contains the following components:

Window Component	Function
Field Options (1)	This drop-down list contains a list of *SQL Views* configured by Psyche based on the Psyche products you own. The options listed are named to reflect the collection of fields they contain. For example, select NucleoLIS for general NucleoLIS reports, NucleoLIS w\constituents when your NucleoLIS report requires constituent data, Charges for NucleoLIS Charges, or Physician and Groups for Physician and/or Group data. WindoPath clients may have a longer list, including Library options. Select the one appropriate for the report you are creating. If the view displayed in Field Options has had a full description stored for it, right-clicking the view name allows you to display the full description.
Data Fields List and Descriptions (2)	Once a *Field Option* has been selected, the *Data Fields* and Descriptions are filled in the left grid according to what is defined in the selected *Field Option*. Descriptions are computer generated and can be modified by the user by right-clicking on the description and selecting **Set Column Description**. Enter a more user-friendly description in the next box.
Select Fields Building Box (3)	Here is where you add the fields you want to print on your report. To add fields, make sure the *Select Fields* button is highlighted and double-click the chosen fields from the *Data Fields* list. They will added to the *Field Selections* box, one per line in order of selection.
Arrows (4)	If you decide you want your fields in a different order after selecting them, select the field you want to move and use the *Up* and *Down* arrows to move it to the desired location.
Select Filters Building Box (5)	Here is where you add the filters you want to select data by when running the report. To add filters, make sure the *Select Filters* button is highlighted and double-click the chosen fields from the *Data Fields* list. They will added to the *Field Selections* box, one per line in order of selection. At least one filter needs to be added in order to create a report and you may have up to 18 filters saved in a single report.
Hide Duplicates (6)	If checked (default), complete duplicate rows will only print once on the report.
Create Report / Save Edits (7)	When creating a new report, the *Create Report* button becomes available after adding at least one filter and a Report Name. The report is then saved and you are returned to the Management Report Designer window. If updating a previously saved report, click *Save Edits* to save any modifications made in this session.

Window Component	Function
Add Function	Click **Add Function** to open the *Select Function* window where server side *Query Language* functions can be added to your query. Basic knowledge of Query Language is helpful when adding functions. A categorized list of functions is available for selection. The text box below the drop-down lists displays a description of the function. The list of functions are categorized as: *Date*, *String*, *Math* and *Advanced*. The fist 3 categories are using standard query language and would be described in an external Query Language reference. The *Advanced Functions* may include specialized functions that were created by Psyche Systems to generate date specific for Psyche products, among other advanced functions. The Advanced Functions include: **cast:** Converts a value (of any type) into a specified datatype **coalesce:** Returns the first non-null value in a list **convert:** Converts a value (of any type) into a specified datatype **isnull:** Return a specified value if the expression is NULL, otherwise return the expression **isnumeric:** Tests whether an expression is numeric **dbo.gpFnSourceProfileOverdue:** *NucleoLIS* - Returns the overdue objective for the source\profile combination passed **dbo.gpFnLastReport:** NucleoLIS - Returns the selected field on the last result report generated on a case **XMLPluck:** *Psyche* - Extracts values from XML based data based on instructions. It helps to understand the XML structure you are pulling data from. *(See TM#163572)* **AAOEPluck:** *Psyche* - Extracts answers from XML based AskAtOrder question data **SeverityDiscrepancy:** *WindoPath* - Calculates severity discrepancy of two diagnosis codes **GetLibraryField:** Extracts a field value from a valid application library, physician, or user table - GetXString: Converts data stored as XML to user friendly display. Currently only available for *CanSignProfiles*. If the function requires arguments, the button next to the function drop-down list becomes an ellipsis. Clicking the ellipsis loads the Argument builder window, where parameters for the argument are selected and entered.

Window Component	Function
	If the function does not require arguments, the button next to the function drop-down list display a "+". Clicking the "+" adds the function.
	Click **OK** to add the function to your list of selected fields.
	Note: Previously built functions may be edited by right-clicking the function in the *Select Fields* building box. The *Add Function* window opens for edits.
Other Menu	If enabled *(SWR preference ManagementReports: AdHocEnabled)*, the **Other** menu in the upper right corner of the *Design Query* tab allows you to select previously created queries with **Select Query**. See *e.Query (Data Analysis)* section for more details.
Cancel (8)	Closes the Query Designer Window without saving the report.

Creating Filters

In the Select Filters Building Box, filter rows are added by clicking the Check Filters button and then double-clicking the Data Field you want the report to use to filter the selected data. Once a Data Field has been added, filters are edited by modifying the following criteria.

Filter Criteria	Definition
First Column	To create a "pick list" for the user to select values when running the report, right-click on the left box for the filter for which you want to add choices. The Configure Filter window, shown below opens.
Fixed	Check the Fixed box if you want this filter to be applied each time the report is run and not give the user prompted options.
(	Default; start of contained expression; select blank for more complicated queries
Field	This is the name of the field you selected by double-clicking one from the Data Fields List.

Filter Criteria	Definition
Operator	**equal (=)** - filters records where field contents is equal to filter value
	not equal (<>) - filters records where field contents is not equal to filter value
	greater than (>) - filters records where field contents is greater than filter value
	greater than or equal to (>=) - filters records where field contents is greater than or equal to filter value
	less than (<) - filters records where field contents is less than filter value
	less than or equal to (<=) - filters records where field contents is less than or equal to filter value
Additional Operators	**BEGINS WITH** - filters records where field contents begin with the filter value
	ENDS WITH - filters records where field contents end with the filter value
	CONTAINS - filters records where field contents contain the filter value
	IN - to build a comma separated list (ABC,DEF); IN is used when a pick list is created for the filter. See *Configure Filter Window* below
	IS NULL - filters records where field contents is null or empty'
	NOT CONTAINS - filters records where field contents do not contain the filter value
	NOT BEGINS WITH - filters records where field contents do not begin with the filter value
	NOT ENDS WITH - filters records where field contents do not end with the filter value
Value	Enter the actual field value on which you want the filter to match; MIN / MAX can be used for default date range using wide limits. Numeric values can be used for dates, such as -365 for one year back, 0 for today.
)	Default; end of contained expression; select blank for more complicated queries
AND/OR	Use **AND** to apply this filter row *and* the next one in the query Use **OR** to apply this filter row *or* the next one in the query

Configure Filter Window

To create a *"pick list"* for the user to select values when running the report, right-click on the left box for the filter for which you want to add choices. The Configure Filter window, shown below opens.

- **Set Argument Display:** the prompt the user sees for this argument when running the report. The report generator inserts spaces in logical places automatically. e.g. ProfileDefiniton will display as Profile Definition when run.

- **Set Pick List Item:** When creating a limited Pick List, Pick List items may be added to the Pick List by entering each in this field and clicking Add.

- **Pick List Options:** To display all possible options from which to select, click **Load**, then double-click each option to add them to the Pick List on the right.

- **Pick List:** Displays all added items added to the Pick List. Check the ones you want to be default selections.
- **Use Dynamic Pick List:** Check to create a Pick List of all possible values.
- **Allow Multi Select**: Check to allow the user to select multiple values when running the report.

Click **OK** to save pick list or **Cancel** to exit window without saving.
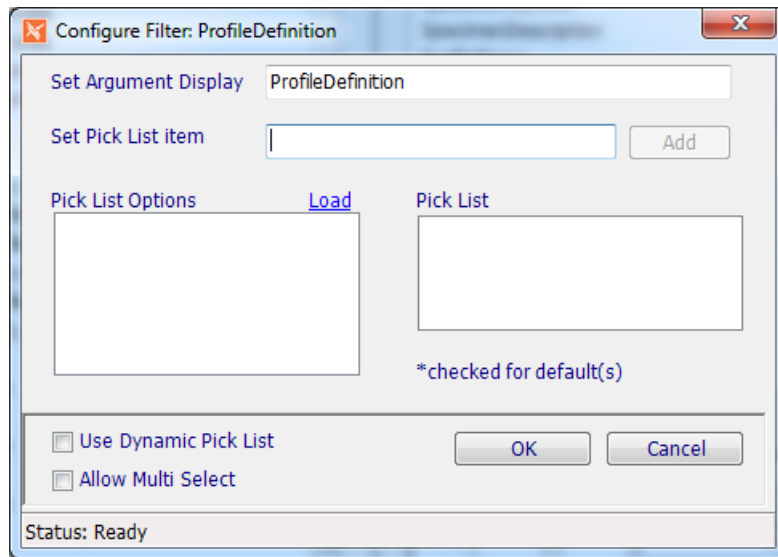
Figure 14-3 - Configure Filter Window for editing filter 'pick lists'.

Execute Preview

Opens a *Query Filter* window displaying filter prompts that have been included in the report. Once filter prompts are entered or selected, the selected report data is displayed in the *Preview Query Data Tab*.

Preview Query Data Tab

Once a report query has been created in the Design Query Tab, or any time you open the Query Designer for an enhanced report, Click the Execute Preview hyperlink to display a preview of the report's contents. This is useful to check that you created the report as you intended and may also be used as a quick online lookup.

After clicking Execute Preview, the Preview Query Tab is displayed showing the report's data, similar to the example below.
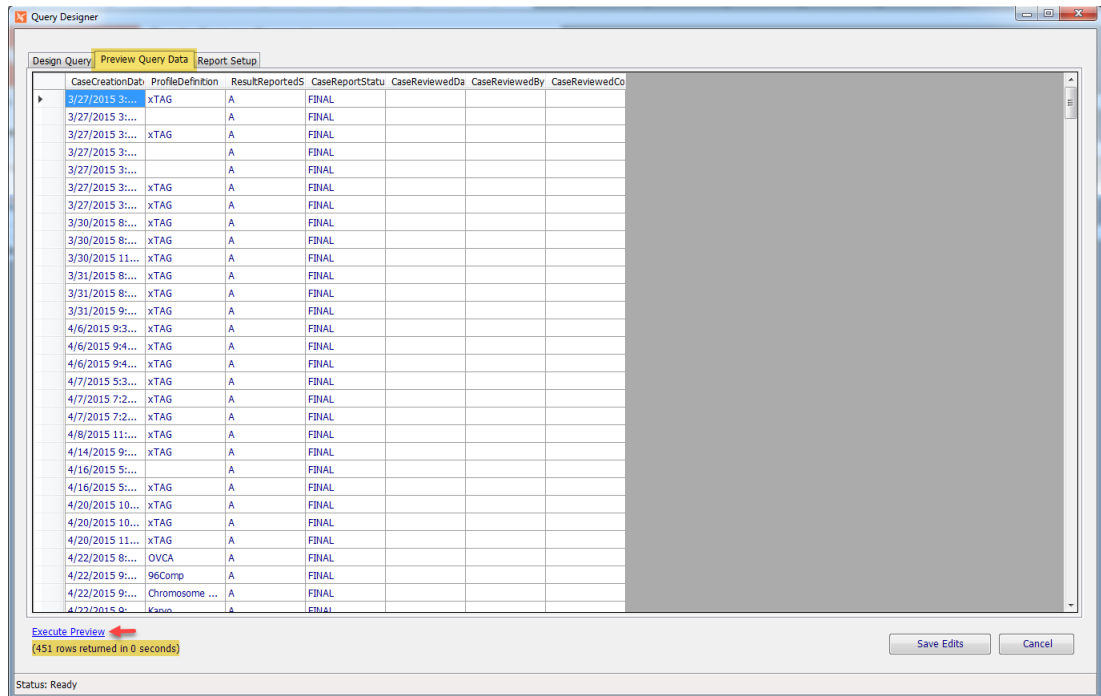
Figure 14-4 - Query Designer Window - Preview Query Tab

If you are satisfied with the report data extracted and displayed and this is an existing report, you can Save Edits in the Preview Query Tab, or if it's a new report, click the *Report Setup Tab* to enter the Report Name and other optional fields.

Report Setup Tab

Most of the Report Setup Tab fields are display only or may be configured on the main Report Designer window. Refer to the Report Parameters section on Page 2 for descriptions on those fields.

Name*: Required field; you only need to enter the Name in order to create the report. Once a name has been entered, the Create Report button becomes available and the report can be saved with the current settings.

Description: Description that will be displayed on default template, if the REPORT_DESC field is present.

Full Description: optional; will print on Management Reports Report as a more complete description of what the report generates.

Category*: Required field; defaults to General; select other Category if desired; category allows users to sort by reports by management report category when selecting a Management Report to run.

When Name at least is entered, click Create Report to create and save the new report or Saved Edits to save modifications to an existing report.
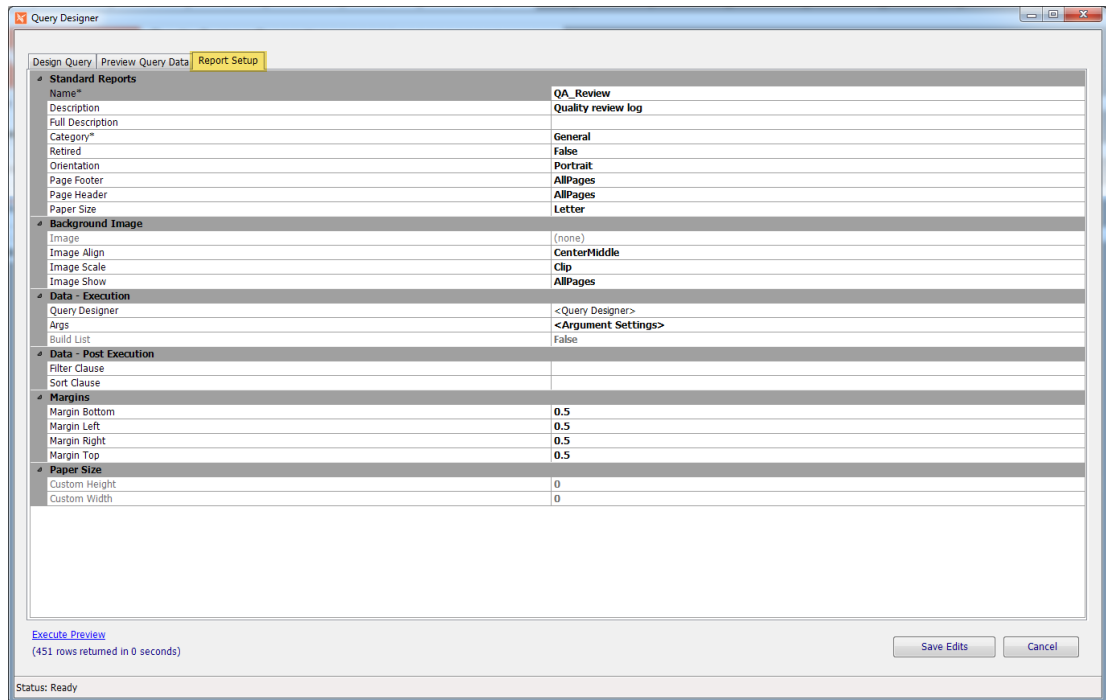
Figure 14-5 - Query Designer Window - Report Setup Tab

e.Query Menus

Transfer\Other Menu

Menu Option	Description
Import Format	Allows you to select and import a Component One report file format (XML) created from another area or installation.
Export Format	Allows you to export a Component One report file format (XML) of the current report so that it can be imported into another area or version.
Transfer	**Import Library Item:** Allows import of the library of Management Reports. **Export Library Item:** Allows export of the library of Management Reports.
All Args Display	Prints all arguments used in the report format on the report for reference.

Commands Menu

The Report Designer Commands Menu offers many specialized options to help with formatting the report.

Menu Option	Description
Date [long]	Inserts date in format: *Day, Month date, Year* (e.g. Tuesday, August 15, 2017)
Date [short]	Inserts date in format: *mm/dd/yyyy* (e.g. 8/15/2017)
Time [long]	Inserts time in format: *hh:mm:ss AM/PM* (e.g. 3:24:46 PM)
Time [short]	Inserts time in format: *hh:mm AM/PM* (e.g. 3:24 PM)
Page	Adds page number
Page w\Count	Adds page number of total. (e.g. Page 1 of 4)
Select All (Ctrl+Shift+A)	Selects every element that has already been placed on the report
Add Computed \ Inline	Opens a window where you can add calculations to the report. Optionally, your system may be configured to allow inline Rich Text Formatting configuration through this window as well. *See below for more details.*
Add Header	If not using templates for management reports, Add Header places these standard header type fields at the top of the report: REPORT_NAME, REPORT_DESC, SITE_LOGO, SITE_NAME, SITE_ADD1, SITE_ADD2.
Add Template	Templates can be used to create a series of fields that have the same properties. You add the template, format it to what you want...bold, larger font, etc. Then each time you add a template, it will look like the one you just formatted.
Add Page Break	Adds a page break at that point of the report, causing report to feed to next page when printing.
Add 2D Barcode	Opens a dialog box to select the Data Field you want to configure the barcode as.
Add Combo Field	Allows you to add a field that contains multiple data fields and optionally literal text. In the Combo Field dialog box, select the Data Fields and enter and add literal text. Use arrows to rearrange. Once added, Combo Fields can be opened by double-clicking them.
Add Background Image	Allows you to select an image file that will be used as a background for the report, such as a light colored watermark image. You will not be able to see the image until you print a test page. Only one image can be added to the master report. No sub-report or dynamic inserted report will display a background image.
Clear Background Image	Clears any background image that has been added.
Formatting >	Opens a submenu of formatting and alignment options when multiple fields are selected: Set Table Row, Align Left, Align Center, Align Right, Align Top, Align Middle, Align Bottom, Equal Height, Equal Width, Equal Size

Menu Option	Description
Add Group	Adding a Group inserts a sorting sub-section into the report using a Data Field selected in the *Group By* window. A sub-header and footer are created for the Group, if needed. Selecting **Add group** opens this Group By window where Sort order and Keep Together are also available. **Sort:** ASC = Ascending; DESC = Descending. **Keep Together:** **KeepNothing:** Do not try to keep the group together. **KeepWholeGroup:** Keep the group header, detail, and footer together on a page. **KeepFirstDetail:** Keep the group header and first detail section together on a page.
Edit Groups *(replaces Add Group and Remove Group)*	In *Edit Groups* all defined groups are displayed in the list box on the hand side. Selecting a group from the list box displays it's properties on the right hand side. The properties (such as Sort, KeepTogether) can be edited as desired. The Apply button confirms the edits and refreshes the display in the list box **New:** Adds a new group. (initiates an "Apply" operation on the currently selected record first) **Remove:** Removes the selected group **OK:** Accepts the changes and passes them to the designer. **Cancel:** Cancels the changes. The **Name** entry field is informational (previously hidden). **Note:** The Group By field can contain a computed item utilizing VBScript.

Menu Option	Description
Remove Group	Removes any Group that has been inserted into the report, allowing you to select the Data Field used in the group to remove.
Bring To Front	Brings the selected element to the top layer of the report placing it on top of other elements.
Send To Back	Moves the selected element to the bottom layer of the report placing it under other elements.
Toggled Retired	Allows end user to retire reports that can't be modified, such as Psyche standard report.
Show Retired	Displays any reports that may have been created and retired in the Select Format drop-down report list.
Snap To Grid On	Turns on invisible grid that elements will position to making alignment of elements easier
Snap To Grid Off	Turns off invisible grid for alignment of elements
Conditional Formatting	If enabled, opens a window where you can build formatting statements for data that appears on the report. *See below for more details.*

Add Computed \ Inline Window

The *Add Computed \ Inline Command* allows you to create calculations and data manipulations to fields that appear on the report. In this window you are building a query to perform these actions and the process can be simple or very complicated.

Query functions are made available along with choices for fields and specific formatting settings. NucleoLIS database structure is very helpful, but you may need to work with your application specialist to achieve your final result.

The Add Computed \ Inline window contains *2 tabs*: one for **computed functions** and one for **inline data changes and RTF formatting**. In the Add Computed tab you have the following fields:

- **Common Functions** and then a drop-down field to select the report field on which to apply the common function. If the Common Functions list does not contain what you need, use the Function Categories to select a specific function. The **Add** button adds the common function to the query building box at the bottom.

- **Function Categories** for more complicated functions and then a drop-down list to select the specific function within that category. Once a function is selected, click the **ellipsis** (...), if present, to open a second window where parameters (*or arguments*) are entered specific to that function. Usually a report field is selected here. The **Add** button adds the advanced function to the query building box at the bottom.

- The bottom of the Add Computed \ Inline window shows available *fields* from the report, a list of *query syntax commands* that *advanced* users may click to create complicated computations, and a *building box* showing the actual query being built.
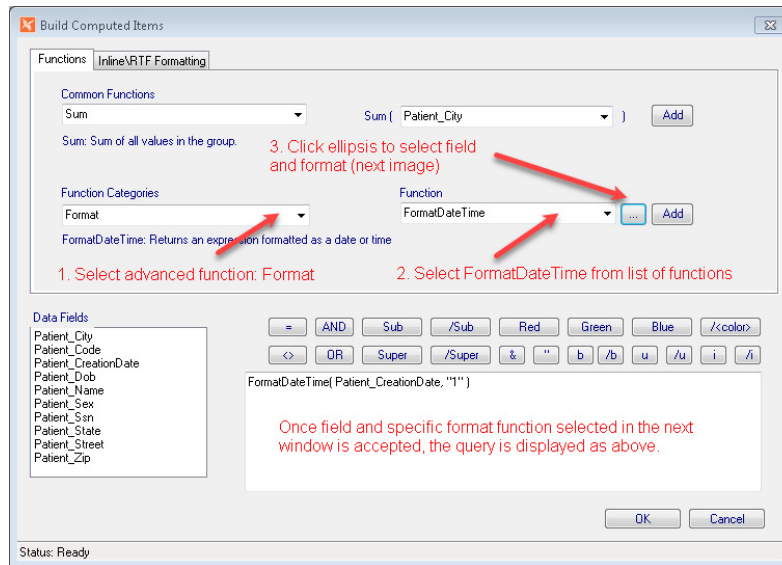
Figure 14-6 - Build Computed Items - Functions Tab

Computed Example

In the example above, we are formatting a date field to use a particular date format. Select the date field you want to format and select Add Computed \ Inline from the Commands menu. If you don't select a field beforehand, one will be added after the query is built.

Following the steps shown in Figure 14-6:

1 **Select Format from the Function Categories.**

2 **Select FormatDateTime from the list of functions.**

3 **Click the ellipsis to open the following window:**

4 **Select the Patient_CreationDate field for Argument 1.**

NOTE: *Make sure the data you are applying the function to is compatible with the function. e.g using the FormatDateTime will not work on a field that contains only a date.*

5 **For Argument 2, select a date format. 1- weekday monthname year was chosen. Friday, May 01, 2020, which displays dates in the format: *Friday, June 12, 2020*.**

6 **Click OK from both windows to exit Function Builder, then save the report.**
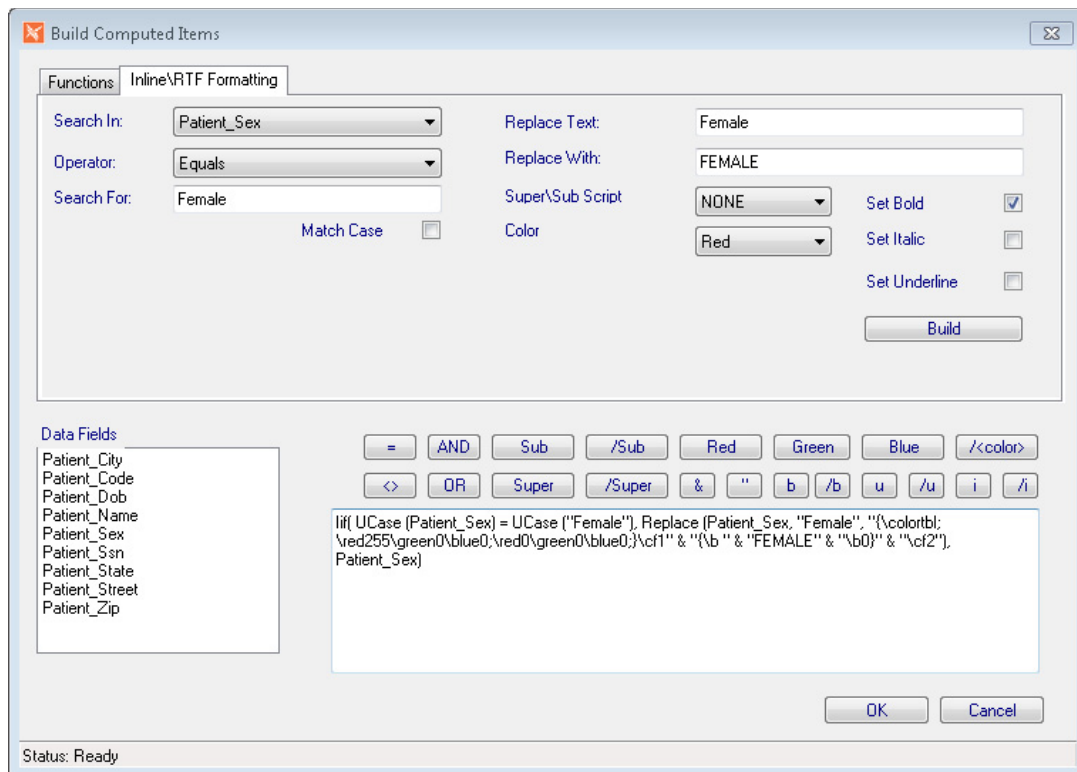
Figure 14-7 - Build Computed Items - Inline\RTF Formatting Tab

Inline \ RTF Formatting Example

In the example shown in Figure 14-7 we are searching in the *Patient_Sex* field for the text of "Female" and replacing "Female" with upper-case "FEMALE", while bolding and making the text red.

With these formatting changes the report displays any patient sex not in the database as "Female" as the field parameters dictate, but "Female" will display as **FEMALE**.

The formatting parameters you may set using the Inline\RTF Formatting tab include:

- Super\Subscript
- Color of text
- Bolding text
- Italic text
- Underlined text

To create an Inline\RTF Format modification:

1 In the Inline\RTF Formatting tab, select the field that contains the text you want to modify.

2 Enter the text to match and what to replace it with.

3 Select the formatting parameters you want to set.

4 Once all are specified, click Build. The query displays in the building box.

5 Click OK and save the report.

NOTE: *When setting Inline\RTF formatting to a field, the RTF Text Display field must be set to* **True**. *See Page 6.*

Conditional Formatting Window

The Conditional Formatting window allows you to add a considerable amount of Structured Query Language (SQL) to your report to modify any of the report fields. The window offers you a list of fields available on the report, a list of valid arguments that may be used, and buttons to help you enter proper syntax. As fields, functions and arguments are selected, the SQL function is built in the building box. A good understanding of SQL is recommended, but basic formatting can be easily achieved.

The example in Figure 14-8 shows a formatting function that is set to COUNT the number of values in the ConstituentResult column that equal "DETECTED". If that count is zero (0), then in the field named "NOPATH", display the text *"No Pathogens Identified"* and give NOPATH a height of 225. If that statement is not true, such as the count is greater than zero, display nothing in NOPATH field and drop the field height to zero.

The ConstituentObjectID is included with the ConstituentResult since the object ID would always be unique and therefore the tally of DETECTED is for unique profile constituents.
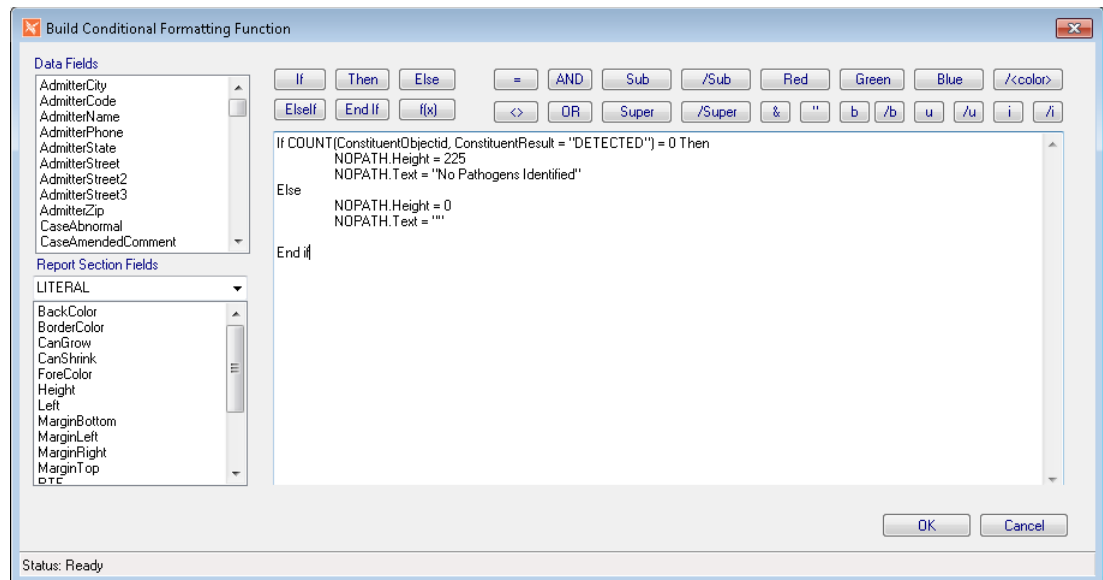
Figure 14-8 - Conditional Formatting Functions Example

NOTE: *You must first select a data field before the Conditional Formatting menu option is enabled on the Commands Menu.*

Audit Menu

Menu Option	Description
Show Audit	Opens a window of all changes that have been made to the current report

Operational Buttons

Button	Operation
Add Field	Adds a generic text field that can be changed to any text
Print Test	Opens windows print dialog box so you can print a test of the report
Copy	Makes a copy of the currently selected field
Add Image	Opens a search window to locate and find an image to add to the report
Run	Previews the current report design to the screen
New	Clears all fields to create a new report
Save	Saves the currently displayed report format
Save As	Prompts for a filename to save the displayed report with a new name
Delete	Deletes the currently displayed report
Close	Closes the report designer

Standard e.Query Views in NucleoLIS

Code	Description
STANDARD_MASTER	NucleoLIS
gpVw Master	NucleoLIS (legacy)
gpVw MasterCharges	NucleoLIS - Billing
MASTER_FULL	NucleoLIS - Constituents
gpVwAJIOrders	NucleoLIS-Orders
gpVwMasterWorksheets Variants	NucleoLIS-Variants
gpVwMasterWorksheets	NucleoLIS - Worksheets
gpVwMasterWorksheetsCommitted	NucleoLIS - Worksheets Committed
STANDARD_MASTERCHARGES	NucleoLIS Charges
STANDARD_OUTREACHLINK	NucleoLIS Outreach\EMR Orders
exVw PhyslcIanAndGroups	Physicians and Groups

e.Query (Data Analysis)

An optional tool is available on the NucleoLIS Operations Menu that allows you to query the database *on-the-fly* for quick statistics gathering. If enabled, selecting **e.Query (Data Analysis)** opens a window that is very similar to the window you see when you create a query in e.Query. See Figure 14-9 below.
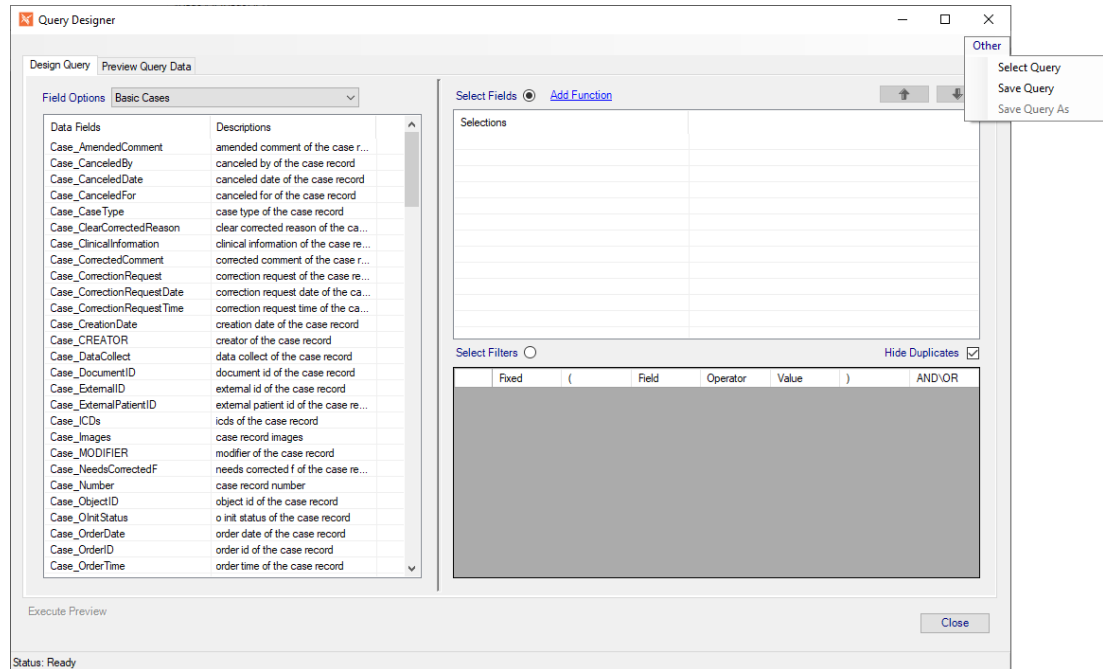
Figure 14-9 - e.Query (Data Analysis)

The *e.Query (Data Analysis)* window includes the *Design Query* and *Review Query Data* tabs, described earlier in this chapter. It does not contain the *Report Setup* tab. If you wish to create a report, use *e.Query (Design Management Reports)*.

Other Menu

In the upper-right corner of the e.Query (Data Analysis) window is the **Other** popup menu that allows you to open existing queries or save new ones.

- **Select Query:** Selecting the Select Query menu option opens the Select Saved Query window, shown below.

NOTE: *Only the Select Query option is available when running e.Query Designer.*

- **Save Query:** Saves any changes made to the opened query.
- **Save Query As:** Opens a library type window where you can name and save the query. You can also right-click a listed query to open the query's library window and retire it.
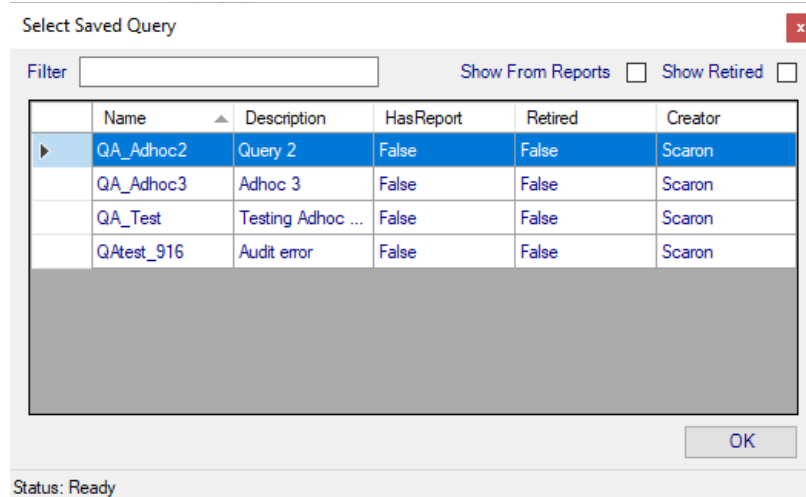
Figure 14-10 - Select Saved Query Window

The following are the types of queries you may access:

- Any queries that have been previously saved are listed when you open the window.
- Click the Show From Reports checkbox to view queries that have been built into reports.
- Click the Show Retired checkbox to view queries that have been retired.

You may also use the filter field to find a query by name, if there are many queries saved. Any user who has the privileges to run *e.Query (Design Management Reports)* can run *e.Query (Data Analysis)*.

e.Query Quick Start Guides

This section includes a series of procedures that can be used as a quick reference to some of the more used features in e.Query. As additional Quick Start Guides are created, they will be added to this section.

Although these examples were created in *e.Boost* using *WindoPath* data and reports, the principles demonstrated apply to all Psyche applications.

QS - Creating a Report

To create a new report, follow these steps:

1 **Open e.Query by either clicking the e.Query icon or selecting e.Query (Management Report Designer) from the Operations menu.**

2 **Click the New button in the lower right corner.**

3 **Select a view in the drop-down list labeled "Field Options".**

4 **Double-click any Data Fields on the left to add as a field on the report (Fields contain information that displays on the report). As items are selected, they appear on the right.**

5 **Use the arrow keys to determine the order you want the information to appear on the report.**

6 **Click the Select Filters radio button.**

7 **Double-click Data Fields to use as filters. Every report needs at least one filter (so the report will not display every patient in the database).**

8 **Adjust the Operator and Value as needed. In the example below, these filters are looking for (1) case was reported greater than or equal to (on or before) 8 days ago, (2) case was reported less than or equal to (on or before) one day ago, and (3) case current needs status is complete.**

9 **Click the Execute Preview link to ensure you are getting the data you are expecting.**

10 **Click the Report Setup tab in the upper left corner of the Query Designer Window.**
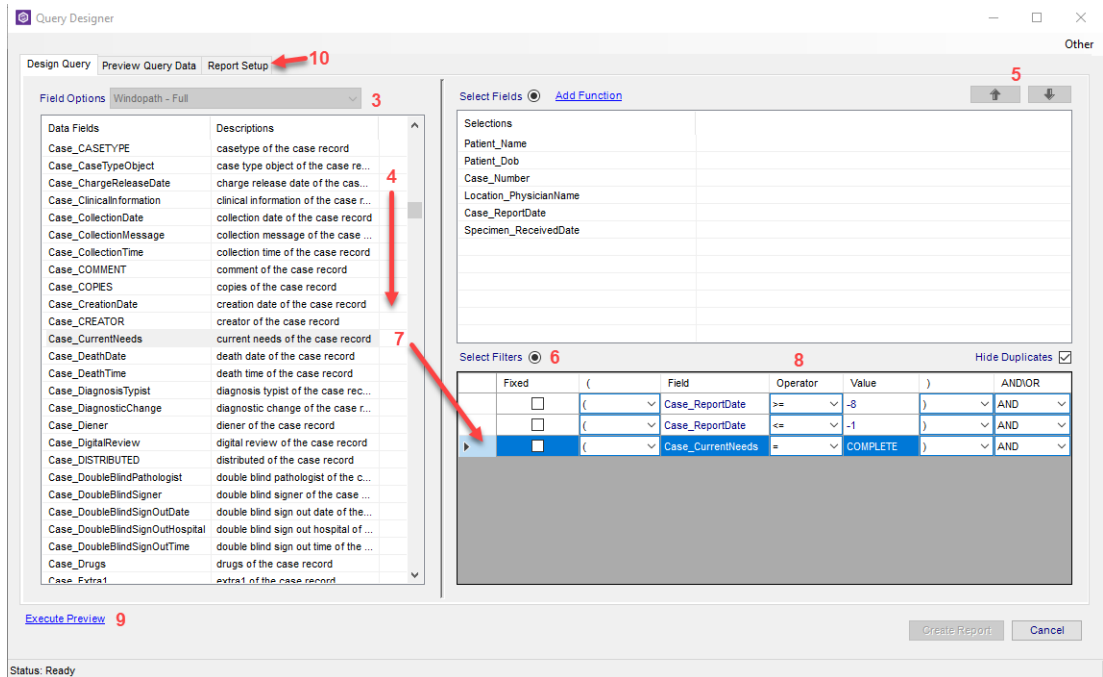
11 **Add a Name for the report.**

12 **Add/edit any additional options here, including report descriptions, paper orientation, header/footer information, margins, etc.**

13 **Click Create Report button.**
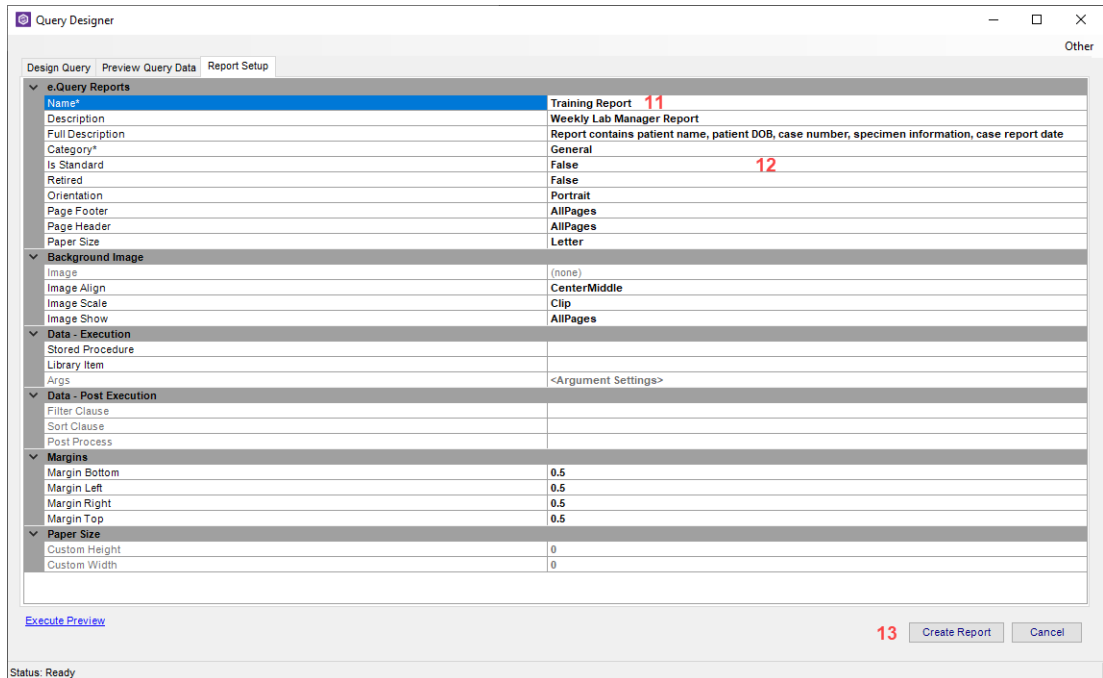
QS - Totals and Counts

e.Query allows users to count and sum fields. In order to use the sum function, your data fields must contain a number.

If you are looking for a total number of cases, use the count function. The count function will add up the number of instances in a data field (in this case, the number of cases). Trying to sum the cases numbers won't work, as it would be trying to add non-numeric values. For example, you cannot add S2021-0001 + P2021-0003, but you can count S2021-0001 as one case, and P2021-0003 as the second case, etc).

To add a count total:

1 **From the Commands menu, select Add Computed/Inline.**

2 **In the Common Functions drop-down list, select Count.**

3 **In the Count drop-down list, select the field you want to count (in the example below, it is Case_Number, which will count the number of cases).**

4 **Click the Add button.**

5 **Note the SQL statement that was populated in the box at the bottom. There should not be a need to change it.**

6 **Click OK.**

7 **The Count will be added as a data element. In the example below, the Count was moved to the Group Footer, so the count of the cases will appear in the footer of each group**

Header

WindoPath
The End-to-End Laboratory LIS Solution

25 Birch Street
Milford MA

Training Report
weekly lab manager report

PageHeader

GroupHeader0   Location_PhysicianName (Location_PhysicianName)

Location_PhysicianName

Patient Name	Patient Dob	Case Number	Case Report Date

Detail

Patient_Name	Patient_Dob	Case_Number	Case_ReportDate

GroupFooter0   Location_PhysicianName (Location_PhysicianName)

Count
(Case_Number)

PageFooter

Now()   Now()   "Page " & [Page] & "

Footer

<ALL_ARGS>

WindoPath
The End-to-End Laboratory LIS Solution

25 Birch Street
Milford MA

Training Report
weekly lab manager report

Bloch, Bertie F.

Patient Name	Patient Dob	Case Number	Case Report Date
Torbit, Malena C.	1956-11-15	S2016-003191	2016-05-25
Torbit, Malena C.	1956-11-15	S2016-003191	2016-05-25

2

Fare, Nickole V.

Patient Name	Patient Dob	Case Number	Case Report Date
Nero-Balasko, Demetrius	1959-10-26	F2016-000246	2016-07-07

1

Kreutzer, Lindsay

Patient Name	Patient Dob	Case Number	Case Report Date
Eastes-Schaarschmidt,	1974-05-21	F2016-000141	2016-04-18

1

QS - Calculating Time Between Two Dates

To calculate the amount of time between two dates, use the Date Differential function.

1   From the Commands menu, select Add Computed/Inline.

2   In the Function Categories drop-down list, select Date.

3   In the Function drop-down list, select DateDiff.

4   Click the ellipsis button.

5   For Argument 1, select the interval you want to see for the amount of time between the two dates (how many years, days, hours, etc between the two dates).

6   Select the starting date field in the drop-down list for Argument 2.

7   Select the second/end date field in the drop-down list for Argument 3.

8   Click OK.
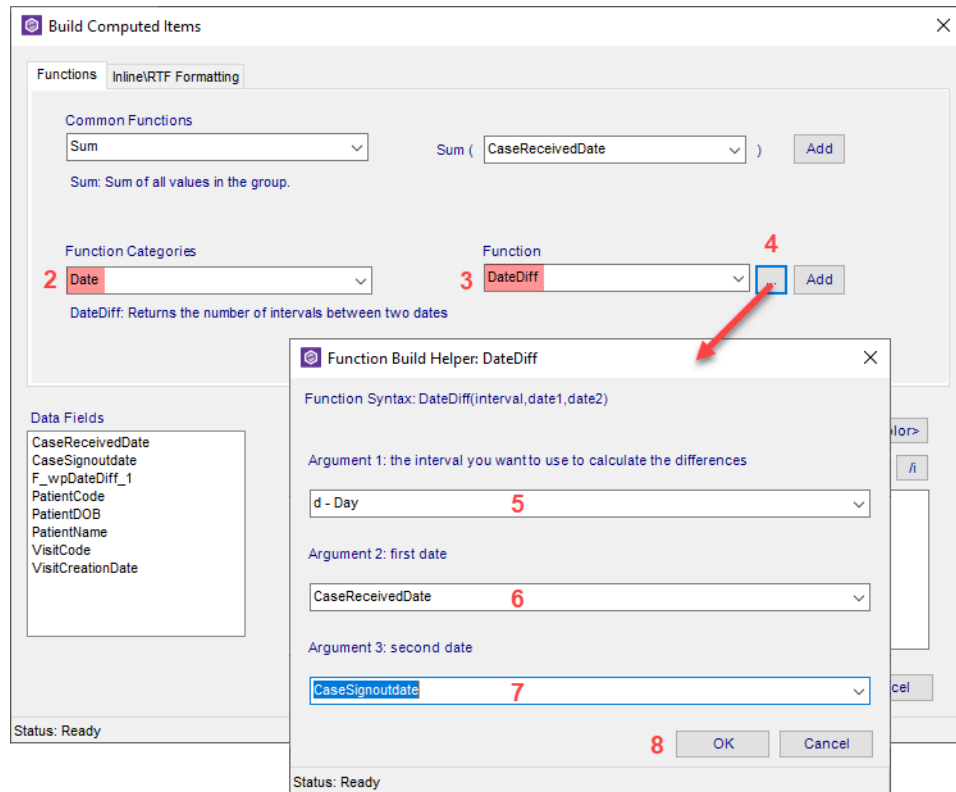
9   Note the SQL statement is created based on your selections.

10 Click OK.
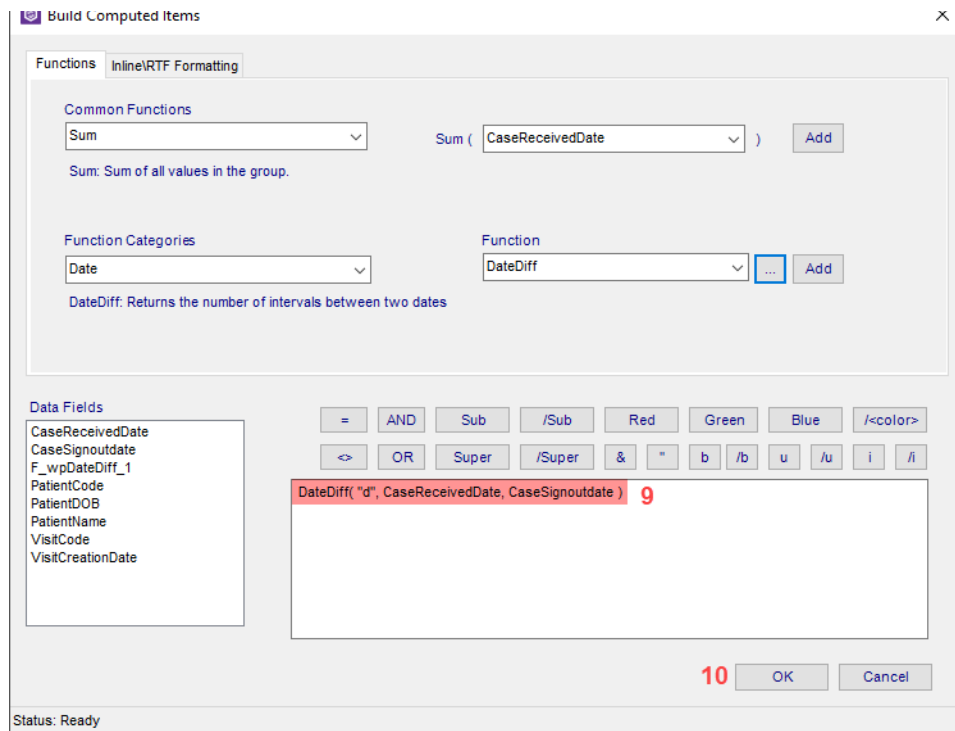
11 The data element of DateDiff appears in your workspace. Move it to where you want it to display on the report.

12 Add a header or label as desired by using the Add Field button in the lower left corner of the window.

QS - Sorting and Grouping Data

Once a report is created, you can sort the data to appear in the order you want. Sorting will re-order the existing data in whichever way you choose.

To sort data on your report:

1 From the e.Query Designer window, click in the empty gray space to see the e.Query Reports options panel.

2 Find the *Data – Post Execution* section and click in the *Sort Clause* field.

3 Click the ellipsis button to open the Edit Sort Clause window.

4 The left will display all data currently selected on your report. Double-click any data points you want to sort by. For example, if you want to sort all data alphabetically by patient name, see example A below. If you want to sort by Case Report Date, and then sort secondarily by Case Number, see example B below.
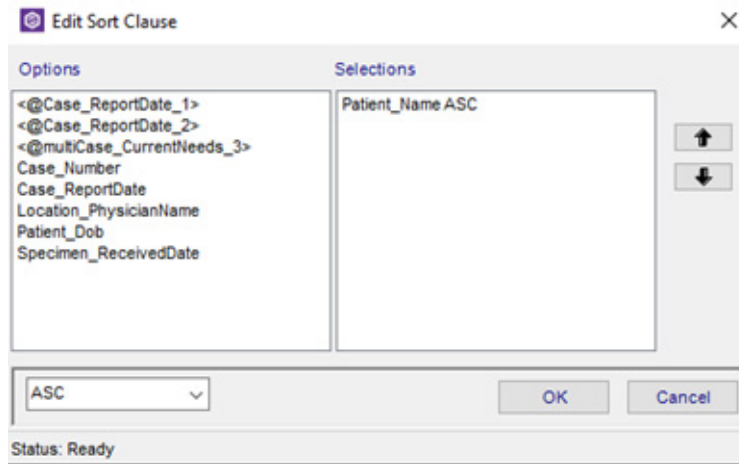
Example A
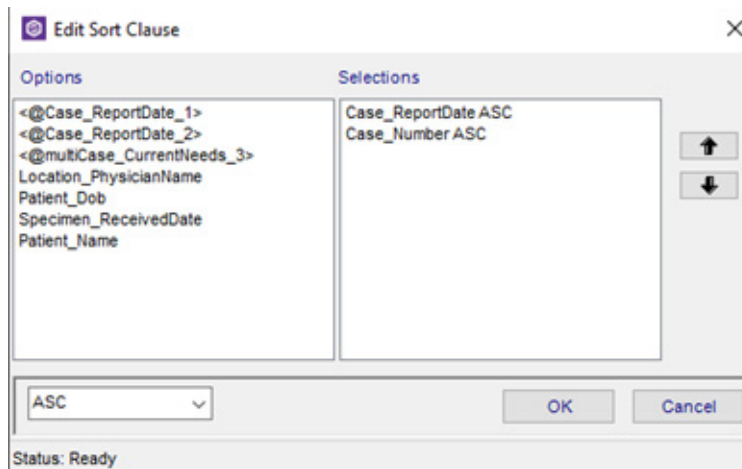
Example B

5 Use the arrow buttons to indicate the order you want the information to be sorted.

6 Use the ASC or DESC drop-down to determine if it will be sorted ascending (smallest to largest or alphabetically) or descending (largest to smallest, or reverse alphabetical order).

7 Click OK.

Grouping Data

Data on your report can also be grouped. Unlike sorting, which simply re-orders the data, grouping will separate data according to how a group is set up. Sorting will still apply within groups. In order words, if you group by Submitter, but sort by Report Date and Case Number, each time you have a new Submitter listed, the data will be sorted by Report Date, and then Case number.

To create a group:

1 From the Commands menu, select Add Group.

2 A Group By window appears. Select the Data Field by which you want to group the data.

3 Select ASC or DESC to determine if you want the information to appear in ascending or descending order.

4 Select appropriate Keep Together option, as desired.

5 Click OK.

In the example below, the report was grouped by submitter (in this view, it is labeled as Location_PhysicianName)

Before Group

After Group

Use the Group Header and Group Footer to place data that will only appear once per group. In the example below, the submitter data field *(Location_PhysicianName)* was moved into the Group Header. That way, instead of appearing once per line of data, it will appear once per *group* of data.

Before Group

After Group

25 Birch Street
Milford MA

Bloch, Bertie F.

Patient Name	Patient Dob	Case Number	Case Report Date
Torbit, Malena C.	1956-11-15	S2016-003191	2016-05-25
Torbit, Malena C.	1956-11-15	S2016-003191	2016-05-25

Fare, Nickole V.

Patient Name	Patient Dob	Case Number	Case Report Date
Nero-Balasko, Demetrius	1959-10-26	F2016-000246	2016-07-07

Kreutzer, Lindsay

Patient Name	Patient Dob	Case Number	Case Report Date
Eastes-Schaarschmidt,	1974-05-21	F2016-000141	2016-04-18

Nunery-Murrill, Racheal

Patient Name	Patient Dob	Case Number	Case Report Date
Kaffka, Gustavo L.	1948-11-02	S2016-005357	2016-09-01
Lighter, Leonardo	2017-11-20	S2017-003204	2017-05-22
Kocka, Kieth V.	1958-09-09	S2017-007225	2017-11-21
Trover, Vi B.	1929-10-30	S2018-000126	2018-01-09
Trover, Vi B.	1929-10-30	S2018-000126	2018-01-09

Perrot, Marquita

Patient Name	Patient Dob	Case Number	Case Report Date
Bourraine, Wilson	1996-09-18	S2017-005173	2017-08-17
Bourraine, Wilson	1996-09-18	S2018-001401	2018-03-06

Notes

Chapter 15
Run Management Reports

NucleoLIS is delivered with several management reports used for managing your lab. The Run Management Reports operation is how you run these specialized reports.

Management Report Window

You access management reports by clicking the Run Management Reports icon from the operations tool bar or menu. These reports will help to give the information needed for daily work flow and cumulative summaries.
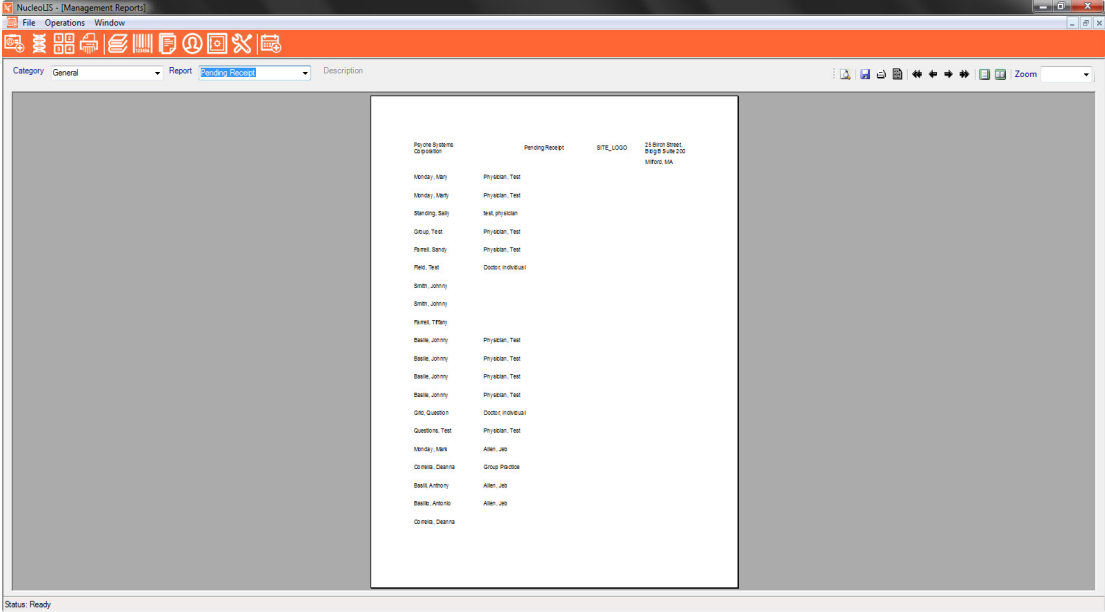
Figure 15-1 - Management Reports Window

How to Execute a Management Report

1   Select a report Category and Report in which to execute. (Reports are grouped by various categories in accordance with the report's objective: Abnormal, General, Library, Results. Other categories may be defined.)

2   Click the execute report menu item.
You may be prompted to enter parameters (such as date ranges) that serve to limit the reports data. The report displays in the window.

Other Operations

1 Click the Save icon to save the report. 💾
PDF, HTML, and XLS are supported.

2 Click the Print icon to print the report. 🖨

3 Use the arrows to navigate the pages of the report. ⏪ ⬅ ➡ ⏩

4 Select single or multiple page layout. 📄 📖

5 Apply a Zoom factor to increase or decrease the display size of the report.

To Import/Export a Management Report:

1 Save existing report in .XML format.

2 Export existing report and save to desktop.

3 Import using the Transfer tab in Outreach Manager under Design Management Reports, find the file and save it.

4 Or click on the Export button in the Management Report window to Export. 📄
Files will be exported in .csv format.

The "Management Reports" Report

NucleoLIS is installed with a standard report that lists *all* the standard reports provided with your system, along with the report descriptions. This is very useful when learning what each report includes and deciding which you want to use.

To generate the Management Reports report, select the Library Category and the Report name of Management Report. The Management Report will list the following for each report in the system, if available.

Report Name

Report Category

Report Description

Report Full Description

Figure 15-2 shows a current sample of the Management Report.

Management Reports

Report Name	Report Category	Report Description	Report Full Description
Abnormal Cases	Abnormal	Abnormal Cases	Displays all Final or Corrected cases that are deemed abnormal. The report can be filtered at runtime by and range of report dates, submitting group(s) or case type(s). This report is sorted by report date.
Abnormal Constituent Rates By Constituent	Abnormal	Abnormal Constituent Rates By	Displays a count and percentage of abnormal constituents for Final or Corrected cases. The report can be filtered at runtime by and range of received dates, submitting group(s),profile(s), profile Type(s), and reportable only. This report is grouped and sorted by constituent description.
Abnormal Constituent Rates By Source	Abnormal	Abnormal Constituent Rates By	Displays a count and percentage of abnormal constituents for Final or Corrected cases. The report can be filtered at runtime by and range of received dates, submitting group(s),profile(s), profile Type(s), and reportable only. This report is grouped and sorted by specimen source description.
Abnormal Constituents	Abnormal	Abnormal Constituents	Displays all reportable abnormal constituents for Final or Corrected cases. The report can be filtered at runtime by and range of received dates, submitting group(s), case type(s), profile(s) or constituents. This report is sorted by received date.
Abnormal Constituents By Source	Abnormal	Abnormal Constituents By	Displays all abnormal constituents for Final or Corrected cases. The report can be filtered at runtime by and range of received dates, submitting group(s),profile(s), profile Type(s), and reportable only. This report is grouped by specimen source description and sorted by received date
Abnormal Profile Rates By Profile	Abnormal	Abnormal Profile Rates By	Displays a count and percentage of abnormal profiles for Final or Corrected cases. The report can be filtered at runtime by and range of received dates, submitting group(s),profile(s), profile Type(s), and reportable only. This report is grouped and sorted by profile description.
Abnormal Profile Rates By Source	Abnormal	Abnormal Profile Rates By	Displays a count and percentage of abnormal profiles for Final or Corrected cases. The report can be filtered at runtime by and range of received dates, submitting group(s),profile(s), profile Type(s), and reportable only. This report is grouped and sorted by specimen source description.
Abnormal Profiles	Abnormal	Abnormal Profiles	Displays all reportable abnormal profiles for Final or Corrected cases. The report can be filtered at runtime by and range of received dates, submitting group(s), case type(s), profile(s) or constituents. This report is sorted by received date.
Abnormal Profiles By Profile	Abnormal	Abnormal Profiles By Profile	Displays all abnormal profiles for Final or Corrected cases. The report can be filtered at runtime by and range of received dates, submitting group(s),profile(s), profile Type(s), and reportable only. This report is grouped by profile description and sorted by received date

Notes

Chapter 16
e.Monitor - Process Monitoring

e.Monitor is a software module designed to watch your system processes, display indicators noting there's a problem, and notify the system manager with alert displays and email notices of any issues. Processes that may be monitored with e.Monitor include, but are not limited to: email delivery, Fax delivery, Outreach orders to LIS, LIS results to Outreach, WindoPath Results and EMR Connections status. You may view the status of running processes at any time through the e.Monitor window, which also allows you to drill down to view details about the specific process.
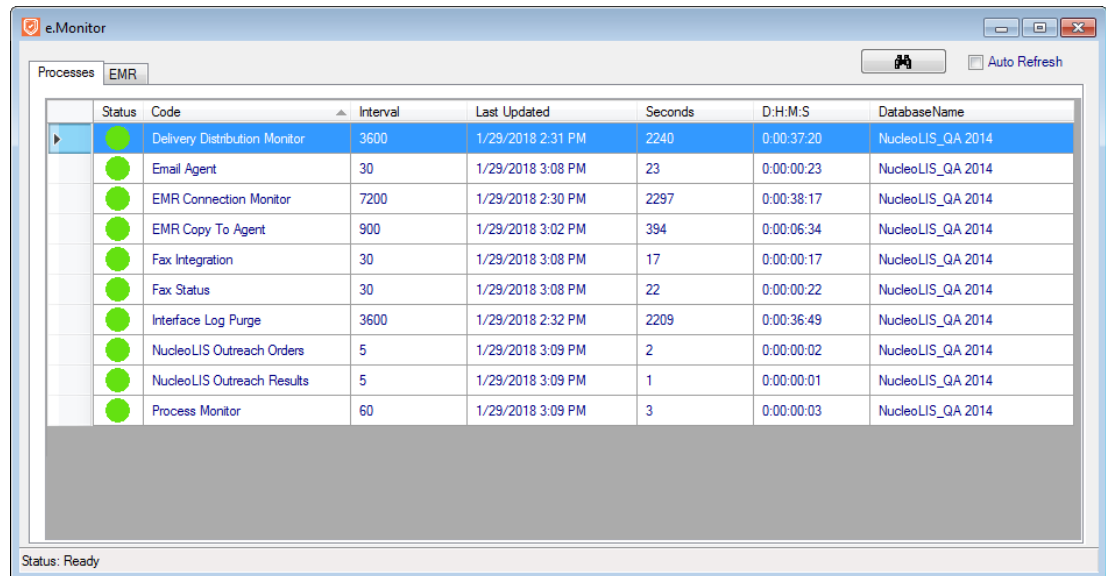
By getting notifications from e.Monitor, you can troubleshoot and resolve issues quickly. The processes displayed in e.Monitor by default are basic internal processes, such as faxing, email processes, etc., including the process that monitors them. Interface monitoring is available as an add-on module.

In recent versions, the ability to "hide" processes, which you might want to do for those processes that don't need much attention, has been added to e.Monitor, along with being able to stop and start certain processes. These are described later in this chapter.

Once enabled, e.Monitor is available from within any e.lixa product: NucleoLIS, MicroPath, e.Outreach, and e.Boost, by clicking the e.Monitor icon, shown on the left, in the product toolbar. The e.Monitor window shown in Figure 1 opens within the current product window.

e.Monitor Window

Once the e.Monitor window opens, there are two tabs available to access different processes (or plugins). The **Processes** window displays initially as the default and the second tab displays any active EMR interfaces that have been installed and enabled.

Figure 1 - e.Monitor Process Window

The Processes tab displays the status of faxing, email processes, etc., including the process that monitors them. Interface monitoring is available as an add-on module.

EMR tab displays all installed EMR interfaces and their status.

The original sorting in the e.Monitor window is by Code/process name, but could be sorted by any column by clicking on the column header. Columns can be resized and will maintain those sizes when you exit and return within that session.

Hide/Show processes from view

From the e.Monitor process window, you may *hide*, *show* and *remove* processes from view by right-clicking on a process row and selecting an option from the menu. This assists in maintaining a simpler display for general daily monitoring.

- **Hide:** Removes the process from display in the e.Monitor window, but keeps it running. Hidden items will continue to be monitored by the Process Monitor.

- **Show:** Available on any process when a process was previously hidden. The Show menu includes a sub menu of each currently hidden process.

- **Remove:** The Remove option should only be used for processes that are no longer valid items. If an item is removed, and is an active and valid process, the item will be added back to the list the next time the process runs. Removed menu items are NOT monitored by the Process Monitor.

Stop/Start/Restart BackBone processes in e.Monitor

If enabled, background processes that are controlled by the Psyche BackBone Service may be stopped, started or restarted (stop, then started) from e.Monitor.

These process are identified in the e.Monitor window by right-clicking the process and opening the context sensitive menu for that process. which will include the following menu options after *Hide* and *Show*:

- **Start:** Starts the current process
- **Stop:** Stops the current process.
- **Restart:** Stops, then Starts the current process; takes longer than start or stop.

NOTE: *This functionality is not available for all processes seen in e.Monitor. Processes that run as windows services (traditional interfaces, for example) do not support this functionality.*

Processes that may be stopped, started or restarted from e.Monitor include the following. More may be added in later revisions.

- Delivery Distribution Monitor
- eBoost Maintenance
- Email Agent
- EMR Connection Monitor
- EMR Copy To Agent
- Fax Integration
- Fax Status
- Interface Log Purge
- NucleoLIS Outreach Orders
- NucleoLIS Outreach Results
- NucleoLIS Ref Lab Orders
- Outreach Maintenance
- Process Monitor

Stop/Start/Restart menu items are enabled and disabled according to the process's current state. For example, if a process is known to be enabled, Stop and Restart will be enabled. If a process is known to be disabled, only Start will be enabled.

A process's current state is not always in sync with the Green\Red\Yellow indicators in e.Monitor. For example a row may display a Red indicator, yet be enabled. (This scenario is indicative of a problem)

Activating Stop/Start/Restart

Once one of the menu items is initiated, the request launches a progress bar, which is used to communicate that work is in process and the status of the request to the user. The progess bar should not be closed giving the process a chance to complete.

When complete, the progress window indicates "Request Ended" followed by the outcome of the request.

- "Request Ended (Compete)" which indicates success.
- "Request Ended (Expired)" indicates that the Backbone did not respond within the time allocation (set at 2 minutes). Expired does not necessarily indicate failure, but likely does.

To check the status of the process on which an action was attempted, you can right-click on the process to see the available actions at that point. For example, if the process has started, Start will not be an option.

A database refresh of the e.Monitor window is executed upon closing the Progress window.

Processes Window

The process plugins available for display in e.Monitor can be categorized into three categories, as shown in the list below. Interface monitoring is available as an add-on module. The actual list of processes (or plugins) seen in the e.Monitor window depends upon what is installed and configured on your system and enabled.

System Monitor Services

Watch other processes making sure they are working as intended

- **Delivery Distribution Monitor**
  Monitors the delivery of faxes and emails, whether reports or alerts; sends alerts when there's a failure to send

- **EMR Connection Monitor**
  Monitors the status of enabled EMR Connections and sends alert notices when there is an issue

- **EMR Copy To Agent**
  Monitors the process that handles Copy To reports

- **Interface Log Purge**
  Monitors the process that purges interface logs

- **Process Monitor**
  Monitors the health of all the other plugin processes and sends alert notices when there's an issue.

Delivery Services

Plugins that manage delivery of faxes, email, and printed reports.

- **Email Agent**
  Monitors the delivery of all emails

- **Fax Integration**
  Executes the faxing of reports via Interfax

- **Fax Status**
  Monitors the status of delivered faxes to Interfax until deemed successful

Interface Services

May include various types of interfaces

- **NucleoLIS Outreach Orders**
  Monitors the process that sends orders from Outreach to NucleoLIS

- **NucleoLIS Outreach Results**
  Monitors the process that sends results from NucleoLIS to Outreach

- **NucleoLIS WP Link Orders**
  Monitors the process that sends orders from WindoPath to NucleoLIS

- Any instrument or device interface you have may be listed, if configured.

Process Window Columns

- **Status Indicator** - The name of each process is preceded by a color indicator as described below to make identifying issues easier.

Indicator Color		What it means
Green	🟢	Indicates that the process has last run at the predefined interval
Yellow	🟡	Indicates the process has not run within the predefined interval, but it is within the allowed grace period percentage (usually 5 min)
Red	🔴	Indicates the process has not run within the predefined interval or allowed grace period percentage (usually 5 min); *action should be taken*
Blue	🔵	Indicates the process uses a non-numeric interval, such as Monday, Tuesday

- **Code** - Name of the Plugin Process
- **Interval** - Number of seconds that plugin is configured to run; when starting or stopping a process, the interval must pass before the indicator reflects the change.
- **Last Updated** - Date/time the process last ran
- **Seconds** - Number of seconds since last time Process ran
- **D:H:M:S** - How long ago the process last ran (days:hours:minutes:seconds)

The **Binoculars** button can be used to perform a refresh of the available EMR Clients display or checking the Auto-Refresh checkbox will automatically refresh the display every 15 seconds.

Process Detail Windows

You may drill-down to view more details on a process by double-clicking that process row. Depending on the process, either the **Delivery Monitor** window opens or the **Interface log** window.

Delivery Monitor Window

The *Delivery Monitor* window, shown in Figure 2, opens when you double-click one of the processes listed below.

The difference between each window display is that filters are filled in to sort and only display data significant to that particular process.

- **Delivery Distribution Monitor:** opens the Delivery Monitor window with filter fields set to display *Delivery Distribution Monitor* emails sent
- **EMR Connection Monitor:** opens the Delivery Monitor window with filter fields set to display *EMR Connection Monitor* emails sent
- **EMR Copy To Agent:** no details to display currently
- **Interface Log Purge:** no details to display currently
- **Process Monitor:** opens the Delivery Monitor window with filter fields set to display *Process Monitor* emails sent
- **Email Agent:** opens the Delivery Monitor window with filter fields set to display *all* emails sent

- **Fax integration:** opens the Delivery Monitor window with filter fields set to display faxes sent

- **Fax Status:** opens the Delivery Monitor window with filter fields set to display faxes sent
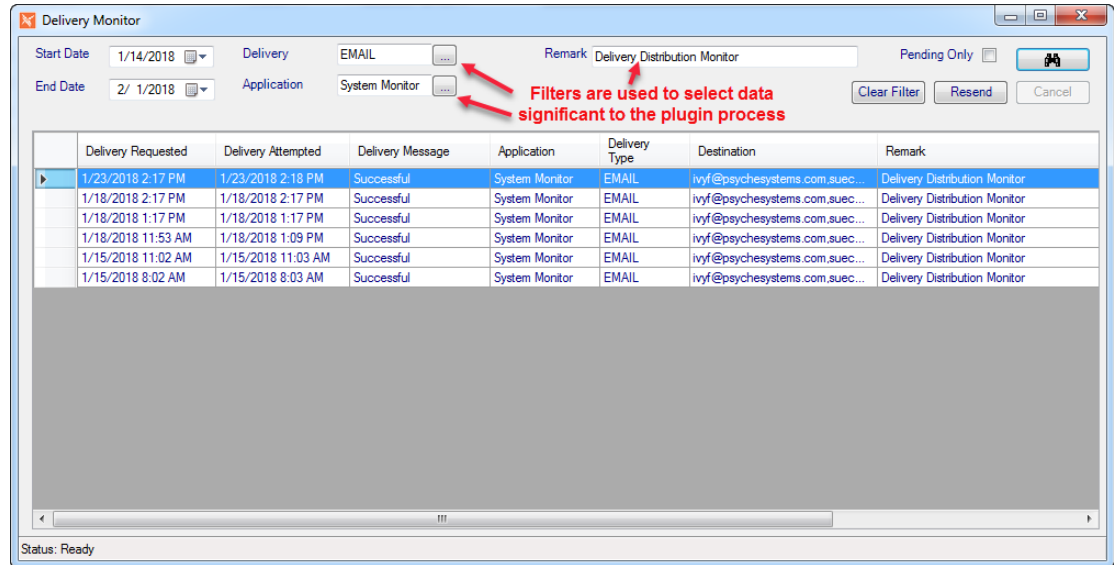
Figure 2 - Delivery Monitor Window - opened from Delivery Distribution Monitor process

Delivery Monitor Window Columns

Field or Button	Description
Delivery Requested	Date/Time the process received the distribution request
Delivery Attempted	Date/Time the process attempted to distribute the request
Delivery Message	Varying messages, such as Sent, Successful, Canceled by x, or failure error message
Application	Depends on what applications you have installed: NucleoLIS, EMR II, Outreach, WindoPath, etc.
Delivery Type	One of the following delivery methods: Email, Fax (Interfax), Print, RFAX (RightFax)
Destination	Email, printer, or Fax number
Remark	Report messages include the case number, destination, report status; other messages may include process name; Remarks are filled in from monitor processes to limit transactions related to that process. For example, when you drill down to details for the EMR Connection Monitor, the remark field is filtering records with the remark "EMR Connection Monitor".

With the fields at the top of the Delivery Monitor window, you can filter the display by any or a combination of the following:

- **Start Date / End Date:** Used to limit the display to a specified date range.
- **Delivery:** Click drop-down box to select one of the four available delivery methods: Email, Fax, Print, RFAX (RightFax).
- **Application:** Click drop-down box to select one of the possible applications installed, such as NucleoLIS, Outreach, EMR II.
- **Remarks:** Text can be entered to filter specific messages, such as doctor or group name.
- **Pending Only:** Click checkbox to filter pending distributions only.

Delivery Monitor Window Buttons

- **Binoculars:** Start search, as in throughout the NucleoLIS program.
- **Clear Filter:** Clears any selected filters applied and refreshes display.
- **Resend:** The Resend button is used to resend a report or transaction. Highlight the specific record and click Resend to submit it again.
- **Cancel:** The Cancel button is used to stop a transaction that was just resent. If a report has been queued and is in the process of being resent, Cancel will stop the process.

Interface Log Window

The **Interface Log** window, shown in Figure 3, opens when you double-click one of the processes listed below or any configured interface process. For example:

NucleoLIS Outreach Orders: opens the Interface Log window with filter fields set to display Outreach Orders that were sent to NucleoLIS (or any LIS)

NucleoLIS WP Link Results: opens the Interface Log window with filter fields set to display NucleoLIS WP Link Results that were sent to WindoPath

Figure 3 - Sample Interface Log Window - opened from NucleoLIS Outreach Orders process

Interface Log Window Columns

Field or Button	Description
ObjectID	Internal record identification number
Creation Date	Date/Time the transaction was received by the interface
Update Time	Date/Time the record was updated, if appropriate
Type	Type of interface, such as NucleoLIS Outreach Results
Patient Code	Patient identification code of transaction
Visit Code	Visit identification code of transaction
Case Number	Case number of transaction
Message Sent	Message that was sent; clicking in cell displays raw message
Message Received	Message that was received; clicking in cell displays raw message
Message Status	Status of transaction, such as Successful or Pending
Comments	Any additional comments from interface

With the fields at the top of the Delivery Monitor Window, you can filter the display by any or a combination of the following:

- **Start Date / End Date:** Used to limit the display to a specified date range.
- **Interface Type:** Click drop-down box to select one of the available interface types.
- **Case Number:** Enter a case number to limit transactions to that case.
- **Patient Code:** Enter a patient number to limit transactions to that patient.
- **Visit Code:** Enter a visit number to limit transactions to that visit.

Interface Log Window Buttons

- **Binoculars**: Starts search, as in throughout the NucleoLIS program.
- **Resend:** The Resend button is used to resend a transaction. Highlight the specific record and click Resend to submit it again.
- **Clear Filter:** Clears any selected filters applied and refreshes display.

NOTE: *The Resend feature is not available for all interfaces and transactions. If not available, the Resend button will be dithered.*

EMR Window

The list of EMR interfaces seen in the e.Monitor EMR tab depends upon what EMR and/or AutoPrint connections you have installed, configured and enabled on your system. Figure 4 shows an e.Monitor **EMR** window with one client having passed status checks and one that has not.
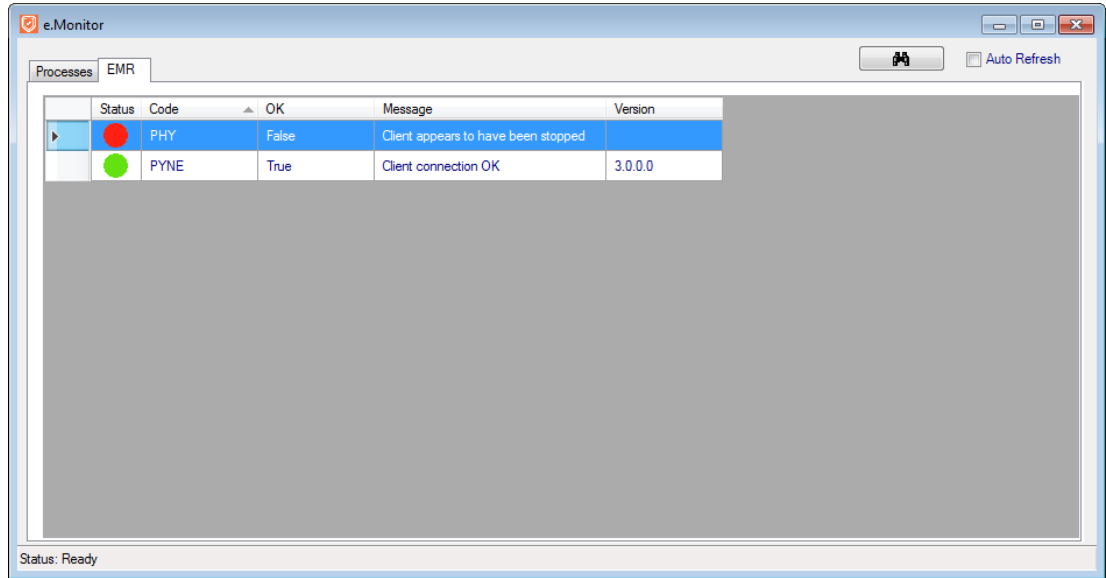
Figure 4 - e.Monitor EMR Window

EMR Window Columns

• **Status Indicator** - The code of each EMR client is preceded by a color indicator as described below to make identifying issues easier.

Indicator Color		What it means
Green	🟢	Indicates that the process has last run at the predefined interval
Yellow	🟡	Indicates the process has not run within the predefined interval, but it is within the allowed grace period percentage
Red	🔴	Indicates the process has not run within the predefined interval or allowed grace period percentage or EMR Interface has had one, or more, failures; *action should be taken*

• **Code** - Code for the EMR Client

• **OK** - All connection checks have passed; True/False

• **Message** - Message regarding current status; e.g. "Client connection OK", "Client appears to have been stopped".

• **Version** - Version number of EMR interface for that client

The Binoculars button can be used to perform a refresh of the available EMR Clients display or checking the Auto-Refresh checkbox will automatically cause a refresh every 15 seconds.

Double-click a client row to open the EMR Client Details window for that client.

EMR Client Details Window

The EMR Client Details window is separated into two sections. The top section includes all the *Transaction Activity* that has occurred for that EMR. Various filters are available to sort the transactions to what you want to see. The bottom section of the window displays *Pending Reports*, if there are any. In times of high volume, you are more likely to see pending reports.

Figure 5 - EMR Client Details Window

EMR Transaction Activity Columns

Field or Button	Description
Event Date	Date/Time the transaction occurred
Description	Description of transaction, such as "Client Response", "Server Process"
Responder	The entity that is sending the transaction, such as Client, Server
PatientName	Name of patient, if result transaction
VisitCode	Visit identification code of patient, if result transaction
CaseNumber	Case number, if result transaction
Type	The format type of the report being sent, such as HL7, PDF64
MessageSent	Message that was sent; clicking in cell displays raw message
MessageReceived	Message that was received; clicking in cell displays raw message
Status	Status of transaction, such as Successful, Pending
Comments	Any additional comments from interface, or version number for non-transaction records
SubmitterCode	Submitter Code, if result transaction
SubmitterGroup	Submitter Group Code, if result transaction

EMR Pending Reports Columns

Field or Button	Description
Event Date	Date/Time the transaction occurred
Description	Description of transaction, such as "Report"
PatientName	Name of patient
VisitCode	Visit identification code of patient
CaseNumber	Case number
ReportDate	Date the report was first sent
Status	Status of transaction, such as Pending

With the fields at the top of the EMR Client Details window, you can filter the display by any or a combination of the following:

- **Start Date / End Date:** Used to limit the display to a specified date range.
- **Include Return As Clients:** Check to include those accounts that have been linked to an existing EMR account for result delivery to a single practice.
- **Transactions Only:** Use this checkbox to limit records that are report transactions; most likely used often.
- **Filter:** Select one of the following from drop-down list: CaseNumber, PatientName, SubmitterCode, SubmitterGroup, and VisitCode.

Then depending on the Filter choice, enter the appropriate criteria in the Criteria field.

EMR Client Detail Window Buttons

- **Binoculars:** Starts search, as in throughout the NucleoLIS program.
- **Resend:** The Resend button is used to resend a transaction. Highlight the specific record and click Resend to submit it again.

NOTE: *The indicators for both processes and EMR Interface Connections (including AutoPrint) reflect the status of the process or connection itself, and not every transaction that the program processed. In order to view the status of individual messages and transactions, you need to drill-down to see individual transactions in the detailed windows.*

Examples of Alert Email Messages

From Process Monitor – When EMR Connection Monitor (or any process) not running/stopped

Process Monitor
Reporting status at 5/30/2019 12:58:15 AM

Alert: Process EMR Connection Monitor last ran at 5/29/2019 10:52:57 PM

From Delivery Distribution Monitor when Fax delivery has timed out and Fax canceled

Delivery Distribution Monitor
Reporting activity from 5/18/2019 12:05:57 PM to 5/18/2019 1:05:57 PM

The following records have failed delivery since 5/18/2019 12:05:57 PM
NucleoLIS-FAX - Canceled by 0 (Case Report - M2017-000006 \ Pyne, Warren \ FINAL) Scaron

From Delivery Distribution Monitor when invalid Fax# is used for physician recipient and using Interfax

Delivery Distribution Monitor
Reporting activity from 6/1/2019 2:48:23 PM to 6/1/2019 3:48:23 PM

The following records have failed delivery since 6/1/2019 2:48:23 PM
NucleoLIS-FAX - FAIL-Error Code:-111 Attempting to fax to a number that is not the designated fax number in a developer account. (Case Report - M2019-000006 \ Pyne, Warren \ FINAL)

From Delivery Distribution Monitor when destination printer is out of paper.

Delivery Distribution Monitor
Reporting activity from 11/19/2019 7:24:04 PM to 11/19/2019 11:24:04 PM

The following records have been pending delivery for at least 30 minutes
NucleoLIS-PRINT - Printer Error - No Paper (Case Report - M2019-000033 \ Pyne, Warren \ FINAL) Scaron

From EMR Connection Monitor – possible EMR client alerts

EMR Connection Monitor
Reporting activity from 4/19/2019 1:21:38 PM to 5/4/2019 1:54:29 PM

EMR2:Client not activated
EMRACCT:Client not activated
GROUP:Client side processing failures detected (1)
APA:Client side processing failures detected (1)
PHY:Client appears to have been stopped

Chapter 17
e.Docs - Document Scanning/Viewing

e.Docs is a Psyche Systems software module that allows you to scan paper documents, assign them to a specific case, store them digitally, and then view at any time. You would need a WIA (Windows Image Acquisition) compliant flatbed or sheet-fed type scanner, with or without an automatic document feeder. The scanner can be installed on the computer from which you will be scanning or a network server.

Once enabled, e.Docs is available from within any e.lixa product: NucleoLIS, MicroPath, e.Outreach, and e.Boost, by clicking the e.Docs icon, shown on the left, in the product toolbar or selecting e.Docs from the Operations Menu. The **e.Docs Window** shown in Figure 1 opens within the current product window.

In *WindoPath*, you access the e.Docs module directly by selecting **Scanned Documents** from the *Display* menu on the *Accession* window or any window where a case has been accessed.

NOTE: *In order to access e.Docs directly from WindoPath, you must be logged in WindoPath with a User Account that exists in e.Boost and has privilege to run e.Docs.*

If you have a Psyche product that is integrated with e.Docs, you may scan documents to attach to a case directly from the product's *Accession Window*. See **Product Integration** below.
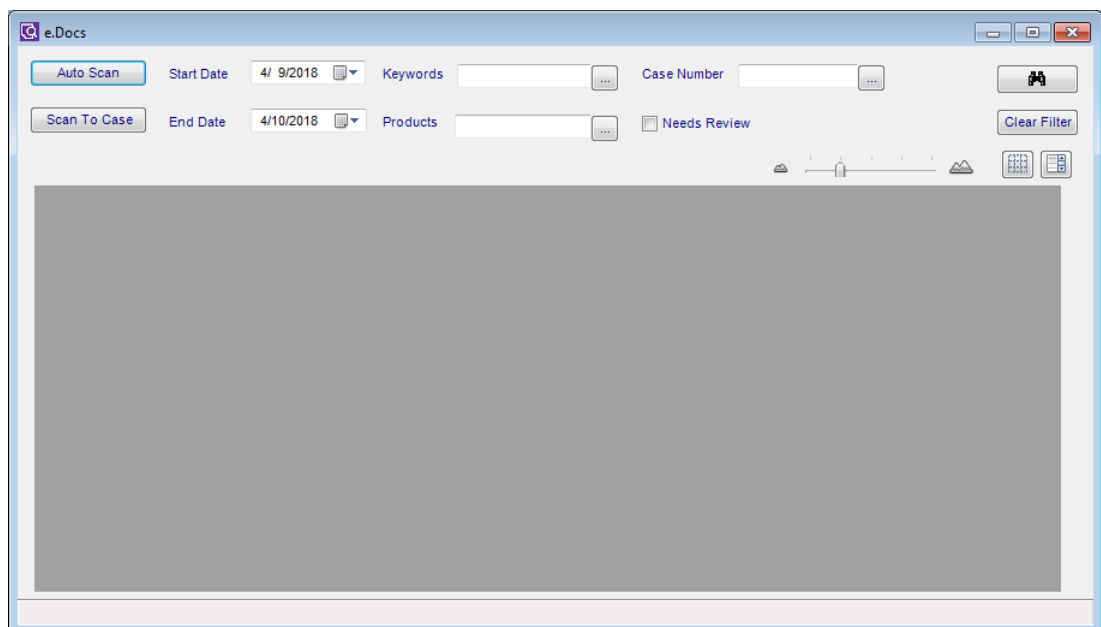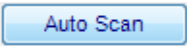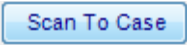
Figure 1 - e.Docs Window

Scanning new documents

There are two ways a document can be scanned from within e.Docs and assigned to a case. Either a barcode label of the Case Number can be affixed to the document and e.Docs automatically locates and reads the Case Number from the barcode *or* during the scanning process, you enter the Case Number to which you want to attach the document.

Click one of the two buttons shown below to initiate a new scan. The method you choose depends on your laboratory's work flow.

Auto Scan	Use to automatically scan documents that have a supported barcode attached of the Case Number to which you want to attach it.
Scan To Case	Use to scan directly to a Case; a dialog box prompting for the Case Number opens. See Figure 2.

1 **With either method, e.Docs present a window where you select from available scanners set up on your computer. Using multiple scanners and mixed scanner types (auto-feed, flatbed, etc.) is supported.**
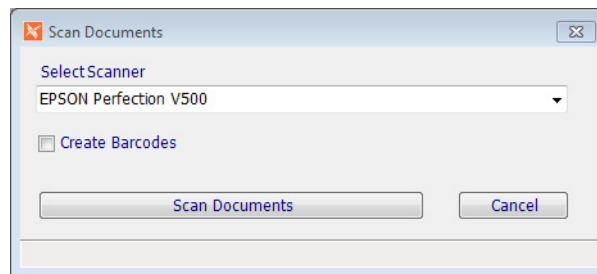
Figure 2 - e.Docs Select Scanner dialog box

2 **Select the scanner you want to use from the drop-down list. Check** Create Barcodes **if you want e.Docs to digitally add a barcode to the scanned document. Barcodes are positioned in the upper-left corner.**

3 **Once the scanner is selected, e.Docs scans the document and locates the barcode (if using the automatic option), and processes the document. You will see a message box telling you can continue other work.**

4 **If scanning to a case number, the following prompt is displayed:**
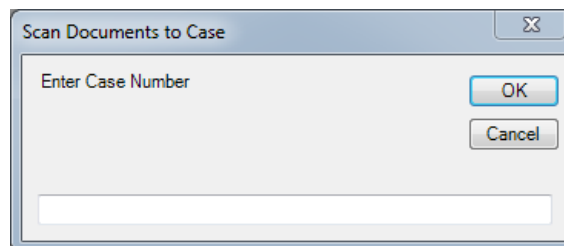
Figure 3 - Scan Documents to Case prompt.

5 **Enter the Case Number to which you want to attach the document. If the Case Number entered is found to be valid in either NucleoLIS, MicroPath, or WindoPath, depending on what products you have, e.Docs continues and a Windows dialog box opens to select the scanner device to use.**

You will see a message box telling you can continue other work.

-
-

6   Click OK to return to the e.Docs Window and scan another document if needed.

It can take several seconds to complete the process, but once completed, the scanned document file is stored in the configured *Filestore* folder and can be accessed by clicking the binoculars performing a search.

Product Integration

If you have other Psyche products, such as NucleoLIS, MicroPath, or WindoPath, you may use e.Docs to attach scanned documents to a case from within the program's *Accession* window. With a case selected in *NucleoLIS* or MicroPath, select the **Scanned Documents** option from the Scan menu item and the scanner selection window shown in Figure 2 above opens.

If you are using *WindoPath* and have a case accessed, select **Scan a Document** from the *Display* menu to initiate scanning.Scanning proceeds as described above. Depending on your system's configuration, you may be prompted to select a workstation before selecting a scanner.

NOTE: *When scanning with e.Docs, the program controls the scanner and you should **not** press any buttons on the scanner to initiate scanning.*

To locate previously scanned documents

Once the *e.Docs Window*, shown in Figure 1, is opened by clicking the e.Docs icon or by selecting e.Docs from the Operations, *Filter Fields* are used to select, view and print documents that have been previously scanned and stored with e.Docs.

With WindoPath, you can locate previously scanned documents from any window where a case is accessed and the Display menu is available. Select **Scanned Documents** from the *Display* menu to open the e.Docs Window.

Filter Field	Use
Start/End Date	Enter start and end dates to search for case documents that have been scanned within that date range. Default is one month.
KeyWords	If you are searching for a particular phrase or code, such as a diagnosis, you can select one from the keyword drop-down list by clicking the keyword elipsis (...). As e.Docs scans each document, it creates a library of words and numeric sequences it was able to extract from the documents and makes them available as searchable keywords. These keywords are displayed in the Keyword drop-down list.
Products	Depending on which Psyche products you have installed, you may limit your search by the products listed in the Products drop-down list.
Case Number	If Case Number is known, it can be entered in this field to access only documents assigned to that case. The specified date range is ignored when searching by Case number.
Needs Review Check box	Check to search for documents that do not have a Case Number assigned and are labeled "UNKNOWN".

Filter Field	Use
🔍	Standard Search button to initiate a search using current filter settings
Clear Filter Button	Clears the filter fields

Tools

Above and right corner of the document display area are tools that are used when viewing scanned documents.

- **Size Slider:** The slider modifies the size of the document thumbnail images in the e.Docs Window that were retrieved from a document search while in *Grid View*.

- **Grid View:** Displays retrieved documents as image thumbnails (default); newest documents are to the right/bottom. See Figure 3.

- **List View:** Displays retrieved documents in a list, as seen in Figure 4. Newest documents are at the end of the list.
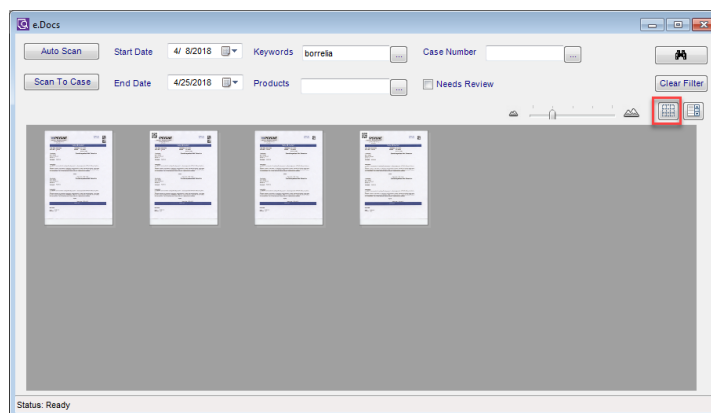
Figure 4 - e.Docs with Retrieved Documents in Grid View
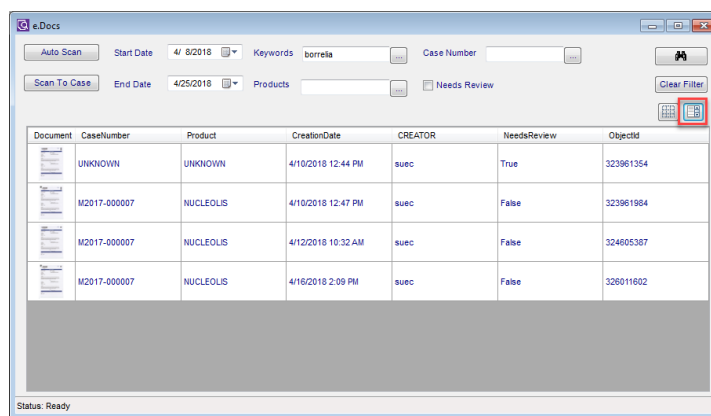
Figure 5 - e.Docs with Retrieved Documents in List View

NOTE: *During the scanning process, if e.Docs cannot locate the detected or entered Case Number as a valid case in the database, the document will be labeled as "UNKNOWN" in e.Docs.*

e.Docs Image Viewer Window

Once a document has been located by any search method, they can be viewed individually in the Image Viewer Window shown in Figure 5. Whether in Grid or List View, click the document you want to view to open the Image Viewer for that case.

If multiple documents have been scanned for the case, a thumbnail image of each document is displayed on the left and each attached document can be viewed.

Use normal Windows close button to close a case's documents.
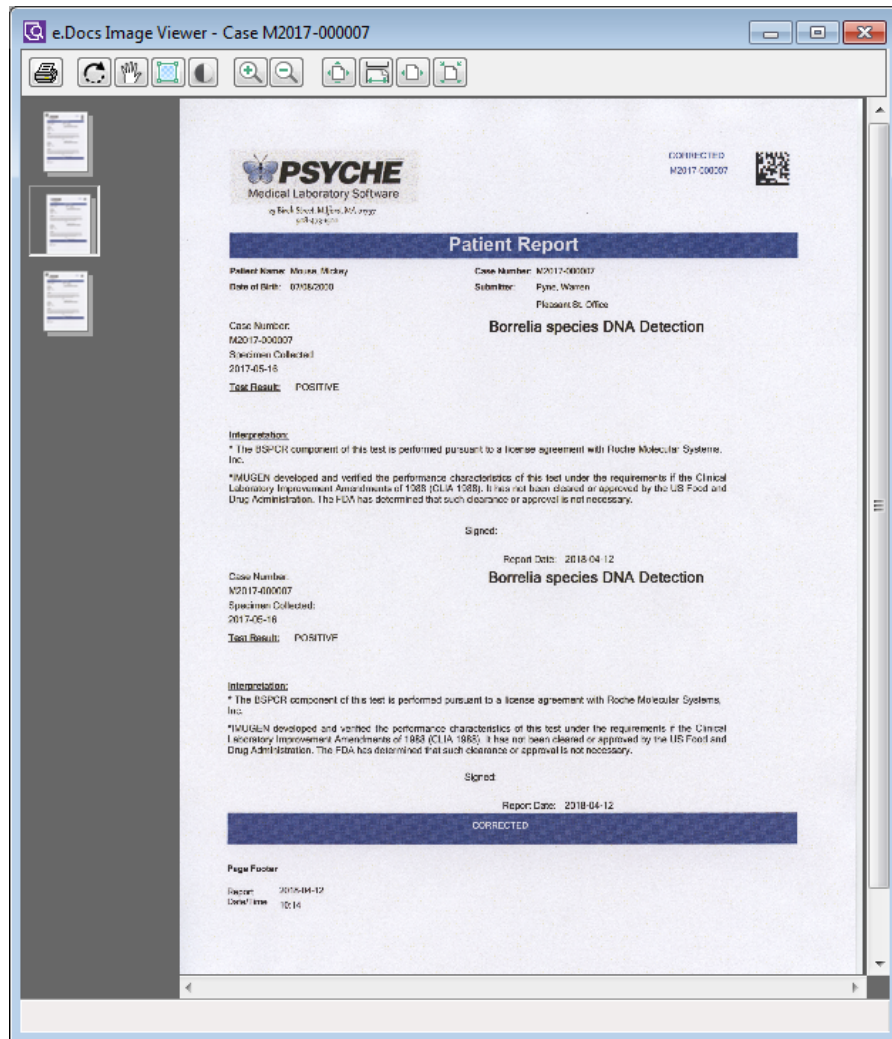
Figure 6 - e.Docs Image Viewer Window

Image Viewer Tools

Once you have a document open in the Image Viewer, you can use the Image Viewer Tools to zoom in or manipulate the display as needed.

Tool Icon	Use
Print Image	Opens a Windows dialog box to select a printer for printing
Rotate Image	Rotates image in the Viewer, if it was scanned horizontally
Pan Image	If zoomed in, allows you to drag the image to view another area
Select Image	Allows you to select a specific area to zoom into
Invert Image	Changes a negative image to positive and positive to negative
Zoom In	Zooms in incrementally to make image larger
Zoom Out	Zooms out incrementally to make image smaller
Full Page View	Displays full image regardless of Image Viewer window size
Page Width View	Fills the width of the window with the image, but does not distort
Stretch Image View	Stretches the image so that the width fills the window; may distort image
Actual Size View	Displays image in actual size

NOTE: *When designing reports to be scanned to e.Docs or affixing labels for e.Docs to locate and read, a reasonable amount of white space needs to be present around the barcode so it can be located by e.Docs.*

Recommended report barcode formats are Code 39, Code 93, Code 128, and Data Matrix 2D, but multiple formats may be supported.

•

• **LocalScannersOnly:** Set to **False**. (If site network installation is accommodating, this may be able to be set to True, in which case only the current user's workstation and scanner will be available.)

• **NucleoLISDisplay:** Set to **True** to display e.Docs Documents field on Case in Accession and Result Manager. Field ellipsis opens e.Docs module.

• **(O849)** If site network installation is accommodating, this may be able to be set to False, in which case only the current user's workstation and scanner will be available.)

NOTE: *In order to access e.Docs directly from WindoPath, you must be logged in WindoPath with a User Account that exists in e.Boost and has privilege to run e.Docs.*

Chapter 18
Clinical / Toxicology Testing

With NucleoLIS you have the option to define tests and profiles for clinical or toxicology use, instead of the standard molecular test options. The specialized clinical and toxicology *functions* you apply to each clinical or toxicology profile provides standard result entry and reporting formats specific for each type of test.

Examples of the Result Entry windows for clinical and toxicology profiles are shown in Figure 18-1 and 18-2.

Before you can use NucleoLIS to process clinical or toxicology tests, steps need to be made to configure NucleoLIS for this functionality. This configuration is performed by both Psyche and the system manager. This chapter describes what you need to know to configure and define for both clinical and toxicology testing, and also the result entry and reporting process specific to these tests.

Figure 18-1 - Sample Result Entry Window for a clinical profile as defined by the clinical function

Figure 18-2 - Sample Result Entry Window for a toxicology profile as defined by the toxicology function

Configuration - Preferences

Since the preferences that need to be enabled are *Site Wide Reserved (SWR)* preferences, they must be activated by Psyche.

Clinical Tests

- **SWR Clinical preference:** Set Enabled to True; activates the preference
- **CriticalCommentField:** R# of field in DED used for critical comment (typically R6)
- **LibraryDefault:** Select from one of 5 standard profile libraries (DNA Seq, FISH, Immuno, Karyotype, PCR, or their alias, if defined. This field is optional and should only be used if ALL the profiles in that library are intended to be clinical profiles.

Toxicology Tests

- **SWR Toxicology preference:** Set Enabled to True; activates the preference
- **LibraryDefault:** Select from one of 5 standard profile libraries (DNA Seq, FISH, Immuno, Karyotype, PCR, or their alias, if defined. This field is optional and should only be used if ALL the profiles in that library are intended to be toxicology profiles.

Clinical and Toxicology

- **SWR DEDFunctions:** Set Enabled to True. Enables activation and configuration of DED functions used for Clinical and Toxicology results. DED Configuration window displays links: *Set Functions* and *Set Constituent Functions*. Enabling requires application restart.
- **ConstituentFunctionDefinitions:** Defines constituent-based function definition; Format: *FunctionName|Arg1^Arg2...ArgN|*. The ones installed in your system are the defaults and should not require any changes. They are listed here for reference.

Clinical Function Default	ClinProc|R1,GetUnits-R2,GetRange-R3,GetCriticalRange-R4,GetRangeFlag-R5,GetRangeFlagComment-R6,GetCriticalComment|ClinProc
Toxicology function Default	ToxProc|R1,GetDetected-R2,GetConsistent-R3,GetCutoff-R4,GetDetectionWindow-R5,GetResultText|ToxProc

- **ProfileFunctionDefinitions:** Defines profile-based function definition - *not in use*

NOTE: *Clinical and toxicology tests may be defined in the same NucleoLIS system, along with molecular testing, as long as no default clinical/toxicology library has been defined.*

Configuration - Library

Once the functionality is enabled, configuration of clinical and toxicology testing involves the following and is usually performed in this order:

- creating test definitions
- specifying clinical ranges or toxicology parameters for those tests
- creating profile definitions and setting the profiles as either clinical or toxicology profiles
- adding the defined tests as constituents

To help streamline the process of defining clinical and toxicology tests prior to the profiles being created, the *Show Fields* checkboxes described below have been added to your Test Definition library windows, depending on which type of testing is enabled.

Show Fields

Since library test definitions are usually created before the profile definitions that will contain the tests as constituents, the specialized clinical and toxicology fields may be displayed as the tests are being created by checking the **Show Clinical Fields** *or* **Show Tox Fields**, shown below.

This allows you to add the clinical and toxicology parameters before the tests have actually been defined as clinical or toxicology tests when added to the specific profile.
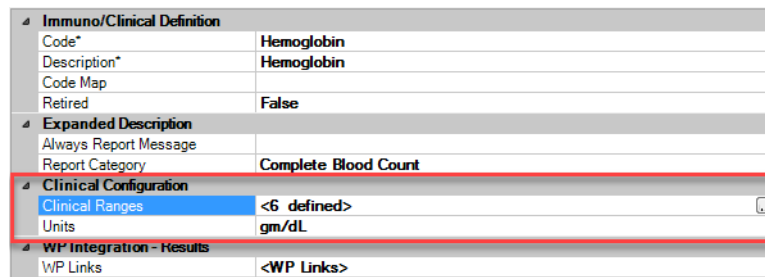
NOTE: *If a test has already been defined as a clinical or toxicology test, these check boxes do not affect the field display.*

Test Definitions

Tests are defined in whichever Test Definition library you have selected. Clinical, toxicology and molecular tests can all coexist in the same library. Tests are added much as they are for molecular, with a few additions.

Clinical Tests

For clinical tests, you may define *Clinical Ranges* and *Units*, shown in Figure 18-3 below.

Figure 18-3 - Clinical Test Definition Fields

- **Clinical Ranges:** Click the ellipsis to open the *Edit Clinical Ranges Window*, shown in Figure 18-4, where all the clinical ranges are defined. Once ranges have been added, the field will display an indication of the number of ranges already defined. e.g. **<5 defined>**
- **Units:** Specify the standard units of measure for the test.

Edit Clinical Ranges

Ranges are added to the test in the *Edit Clinical Ranges* window shown in 18-4, one at a time, by clicking the New button. For each range defined, you may specify the normal range, critical range, age, sex, race and fasting status to be used to evaluate and flag the entered results. Ranges also have an optional Descriptor field, which may be used to add additional descriptive test to the range being applied and can be added to reports.

The final **Sequence Number** field is important to keep the ranges in a critical order from most specific to least specific. This is to ensure that a result value is evaluated with the most specific range first, then if there's no match, the next is evaluated and so on, until the "catch all" least specific range is found.
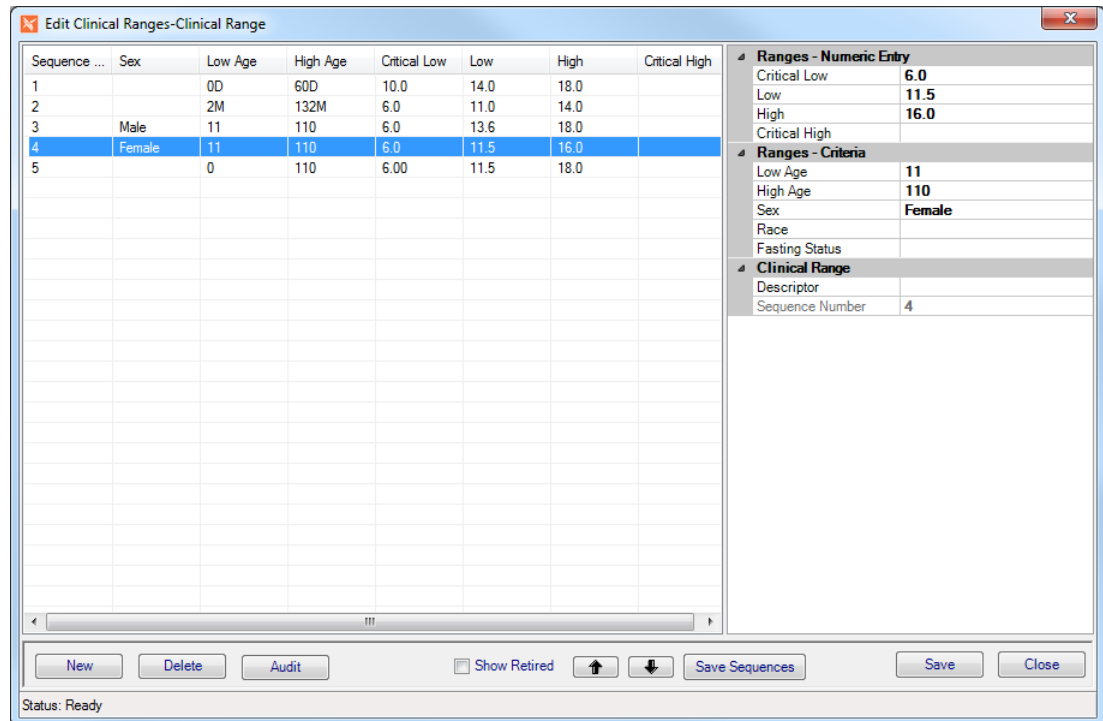
Figure 18-4 - Edit Clinical Ranges Window

Field	Description
Ranges - Numeric Entry	
Critical Low	Low cut off value for critical range. Any result below is considered critical low.
Low	Low cut off value for normal range. Any result below is considered low.
High	High cut off value for normal range. Any result above is considered high.
Critical High	High cut off value for critical range. Any result above is considered critical high.

Field	Description
Ranges - Criteria	
Low Age	Low end of age for age related ranges
High Age	High end of age for age related ranges
Sex	Select appropriate sex definition from the stored Selection List for Patient Sex
Race	Select appropriate race definition from the stored Selection List for Patient Race
Fasting Status	Select appropriate fasting status from the stored Selection List for Specimen Fasting Status
Clinical Range	
Descriptor	Optional descriptive text to further explain the range and/or result value
Sequence Number	Sequence number is used to maintain the order in which defined ranges are processed and is incremented as ranges are added. If ranges are removed or added later, it is important to check the order of all ranges in the ranges list and click the Save Sequences button to re-sequence them., if necessary.

Range Specification Rules

The number of digits following the low and high, normal and critical range values determine the number of significant digits that will be used for results. For example, if a range is defined as 2.2 to 5.5, a result entered as 3 will be padded to one space after the decimal or 3.0. NucleoLIS will never round off converting 3.53 to 3.5 though.

If the range is specified with a mismatched number of digits following the decimal, the number of digits in the lowest defined range is used.

Edit Clinical Ranges Buttons

Button	Function
New	Clears fields to create a new defined range
Delete	Deletes current defined range
Audit	Displays an audit log of transactions made to the range
Up/Down Arrows	Use the Up and Down arrow buttons to sort the ranges in order of least specific to most specific for proper range processing. Once ranges are in the correct order, click the Save Sequence button to save the sequence numbers in the new order.
Save Sequences	Saves the ranges with new sequence numbers from one to how many ranges are defined.
Save	Saves the range as displayed
Close	Closes the Edit Clinical Ranges window

Toxicology Tests

For toxicology tests, you may define the *toxicology values* shown in Figure 18-5 below.

Immuno/Clinical Definition	
Code*	AMB
Description*	Ambien
Code Map	
Retired	False
Expanded Description	
Always Report Message	
Report Category	
Toxicology Configuration	
Cut Off Value	50
Detected String	DETECTED
Undetected String	NOT DETECTED
Detection Window	50-300
Illicit	False
Detected Text	DETECTED TEXT
Undetected Text	UNDETECTED TEXT
Consistent With List	AMB
Toxicology Configuration - Confirmation	
Confirmation	AMB2
Confirmation Charge	P0019 CAN-RP
Order Confirmation When	Detected
WP Integration - Results	
WP Links	<WP Links>

Figure 18-5 - Toxicology Test Definition Fields

Field	Description
Toxicology Configuration	
Cut Off Value	Sets the maximum value for a non detected result. Test units may be added to the cut off value, in the format *valuespaceunits.* e.g. 3.0 ng/dl
Detected String	Sets the value to report for detected results; defaults to **DETECTED**
Undetected String	Sets the value to report for undetected results; defaults to **NOT DETECTED**
Detection Window	Sets the value to report for the detection window
Illicit	True if the constituent is considered illicit; not currently in use
Detected Text	Additional text to result when drug is detected
Undetected Text	Additional text to result when drug is not detected
Consistent With List	Select from the pick list of drug(s) defined in the Drug Definition library; items selected indicate whether a detected result is considered "consistent" with prescribed medications. Drug consistency is compared to the entries in the Case Prescription Drugs field when result values are entered.
Toxicology Configuration - Confirmation	
Confirmation	Select from a pick list of tests to order for confirmation of a detected drug result.
Confirmation Charge	Charge to add to case when confirmation test is ordered

Field	Description
Toxicology Configuration	
Order Confirmation When	This field defines under which circumstances the confirmation is ordered: None, Detected, NotConsistent, or DetectedAndNotConsistent

Profile Definitions

Clinical and Toxicology profiles are added the same as any profile type. Constituents with clinical or toxicology type parameters are added to the profile, then the profile is set to either *Is Toxicology = True* **OR** *Is Clinical = True*.

Figure 18-6 - Profile Definition Settings

When a profile is saved as a clinical *or* toxicology profile, the specific special function for that test type is applied as shown in the *Data Entry Definition* examples below.

Figure 18-7 - Standard Clinical Constituent Function
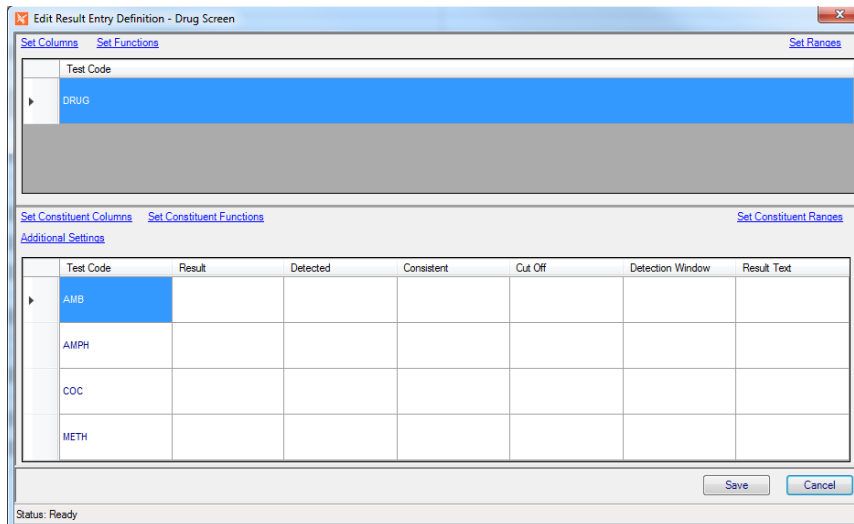
Figure 18-8 - Standard Toxicology Constituent Function

Set Functions/Set Constituent Functions

With either the Clinical or Toxicology preference enabled in your system, the Data Entry Definition window contains two additional links: *Set Functions* and *Set Constituent Functions*. Set Functions allows you to set a predefined function to the profile, while Set Constituent Functions allow you to set a function to the constituents of the profile.

At this time, there are no standard functions for the profile and only the two standard functions for constituents, as documented in this chapter: *clinical* and *toxicology*. The specific preferences enables the appropriate function to be automatically assigned when the profile is specified as clinical or toxicology and saved, so there is no need to modify them in the Configure Functions window, shown below. Future development may make more functions available and therefore use of the Configure Functions window required.
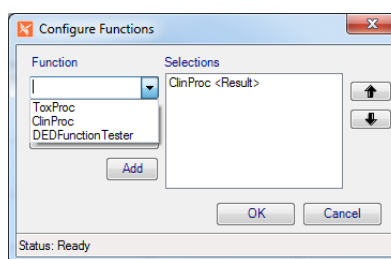
Data Entry Definitions for Clinical and Toxicology Profiles

When defining Clinical or Toxicology profiles, the *Data Entry Definitions* may be used to set up the Result column of constituent records, including setting defaults and other result settings.
Any other columns on the constituents, such as Cutt Off or Range Flag, are not accessible to the user.

Ordering Clinical / Toxicology Tests

Ordering clinical and toxicology tests is not any different than ordering molecular or any other tests, however, if you are expecting the clinical ranges to apply accurately, DOB and sex must be entered on the patient, and possibly fasting and race depending on the range parameters you have defined.

Also, with toxicology testing, drug consistency will not be accurate unless the drug taken by the patient as been recorded. NucleoLIS and other integrated products allow Ask At Order questions, so that the drug the patient is taking may be recorded when the test is ordered. These responses are recorded in typically the Questions field of the profile. Ask At Order questions and responses are defined in the NucleoLIS library.

Defining drugs and dosage

To enable the functionality that performs drug consistency checking, the Drug Definition library must be populated with all drugs expected to be reported and tested, and then the drugs listed on the *Consistent With List* for that toxicology test. See the Library chapter for a description of these definition libraries.

Cases that have toxicology profiles ordered need to have the Prescription Drugs field entered with the prescribed drug the patient is taking. Click the ellipsis (...) in the Prescription Drugs field to open the Edit Prescription Drugs window, shown in Figure 18-9.
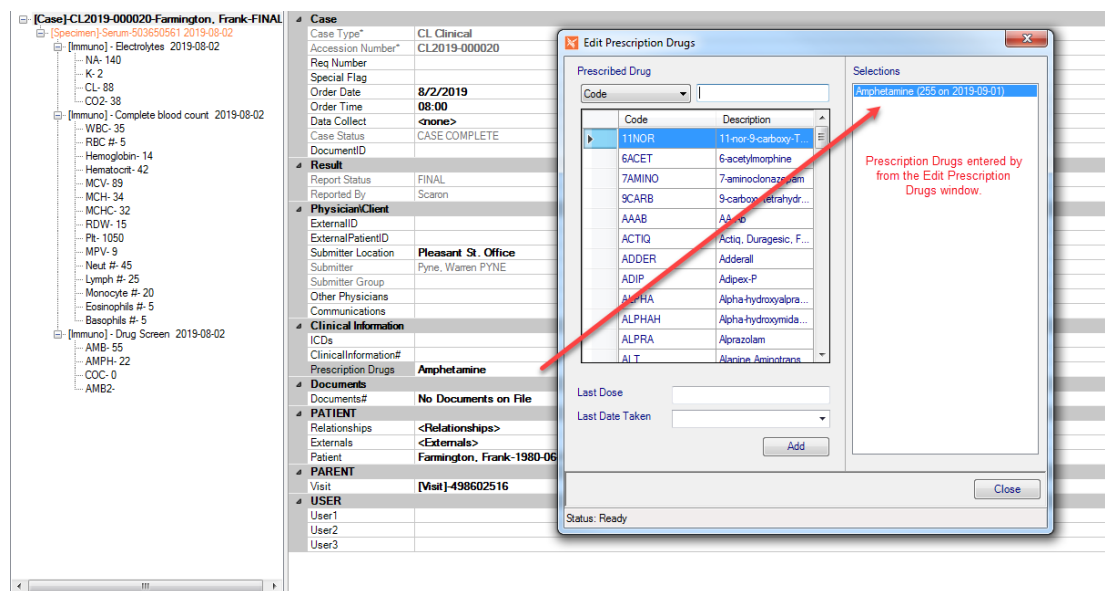
Figure 18-9 - Edit Prescription Drugs Window

Adding Drugs in the Edit Prescription Drugs window:

1. You may search for and select the prescribed drug by Code or Description be choosing one from the drop-down list.

2. Drugs may be accessed quickly by typing characters in the search field.

3. Enter the last dosage in the Last Dose field.

4. Select the Last Date Taken from the date pick list.

5 **Make sure the correct drug is highlighted and either double-click the name of the drug or press enter to move the drug, dose and date to the Selections section.**

6 **To delete a drug, double-click it to remove it from the Selections list.**

7 **When done, click the Close button and the drug, dose, and date are stored in the Prescription Drugs field on the Case.**

In the example above, the patient has an Amphetamine result value of 255 and Amphetamine has a cutoff value of 250, so the toxicology interpretation is considered Detected, but consistent with the does the patient has taken of that drug. See Figure 18-10 below.

Figure 18-10 - Example of Detected, but Consistent toxicology result

NOTE: *Prescribed drugs may also be recorded in a different field depending on your system's configuration and possible integrations with other systems.*

Entering Clinical / Toxicology Results

Entering clinical results manually may be performed directly in the appropriate field in the directory tree, the Result Entry window, shown in Figure 18-9 and 18-10, for that profile, or in the Consolidated Data Entry Window.

Clinical

As clinical results are entered, the appropriate units, range and range flags are calculated and entered according to what is specified for the test and appropriate for the result entered. When critical results (low or high) are entered, the *Comment* field will contain the following text by default: CRITICAL_COMMENT_REQUIRED. This comment must be replaced by a comment reflecting the action taken by the user entering the result before the profile can be completed and case finalized. See example below.

Figure 18-11 - Example of a Clinical Result Entry Window

Toxicology

As toxicology results are entered, detection, consistency, cut off values, detection window, and additional result text are calculated and entered on the profile, based on the parameters defined for that test. See example in Figure 18-10.

Figure 18-12 - Example of a Toxicology Result Entry Window

Clinical / Toxicology Reporting

Any of the special test related fields described in this chapter may be added to a Result Report. See Figure 18-11 for a report example showing both clinical and toxicology tests and related text.

Figure 18-13 - Example report of clinical and toxicology results