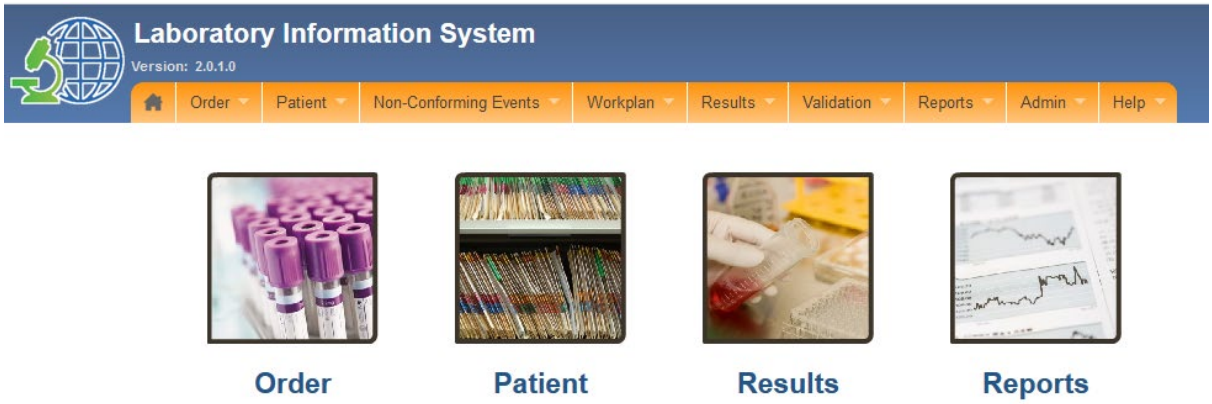
OpenELIS Global

Laboratory Information System Software

User Manual



Version 2.0

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For information on OpenELIS Global, visit www.openelisglobal.org

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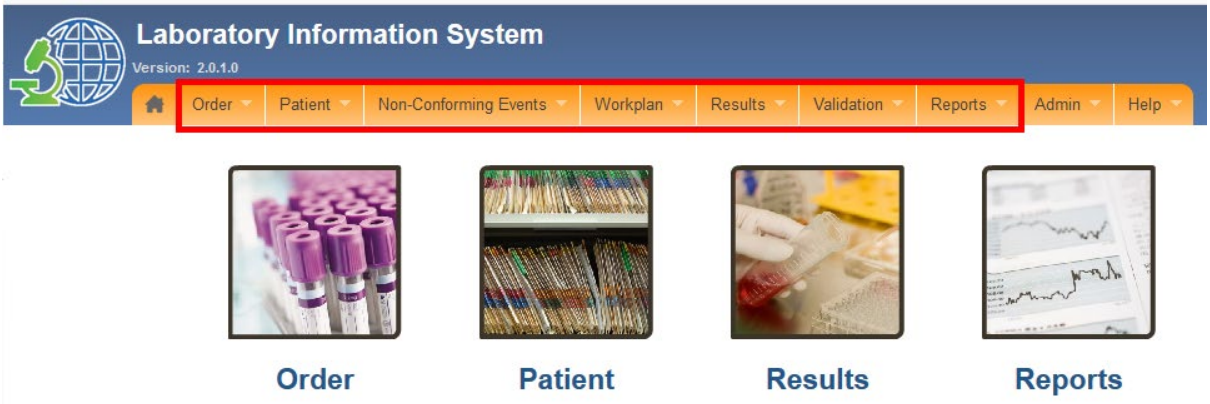
PART 1: NAVIGATING OpenELIS GLOBAL

The OpenELIS Global system is made up of seven modules to help with the collection and reporting of laboratory data. Once you connect to OpenELIS Global, the main menu appears across the top of the screen with modules that reflect the main activities of the laboratory workflow.



The modules are presented in the order of the laboratory workflow. The main menu always remains on the page and you can navigate to other modules to suit your work needs.

The modules are:

- Order
  - Enter individual laboratory analysis orders including order, provider, sample, test, and patient information
  - Enter batches of orders for a common sample type and test
  - View orders that are transmitted to OpenELIS electronically
  - Modify order information

- Patient
  - Add new patient information
  - Search for and view patient information
  - Update patient information

- Non-Conforming Events
  - Report a non-conforming event
  - Document monitoring and follow-up activities for non-conforming events

- Workplan
  - Create work plans for use by dispatch or laboratory units

- Results
  - Enter results
  - View results
  - Document referrals to other laboratory for confirmatory or other additional testing

- Validation (Biological Validation)

    - Validate results

- Reports
    - Generate individual patient results reports
    - Generate aggregate test reports
    - Generate laboratory management reports

Additional modules include

- Admin
    - Information about the software and set-up
    - Menus to configure various parts of the systems
    - Menus to manage users
    - Menus to manage the test catalog

      The guide for this module is available separately

- Help
    - User Manual is available here

PART 2: QUICK TROUBLESHOOTING

Be sure to use your own login credentials and password. If you need to reset your password, contact your system administrator or other designated User Manager.

Select the language (English or French) **before** logging in.

If the **Save** button is not activated, check that you have completed all required fields.

Required fields are marked by a red asterisk: *

PART 3: QUICK LINKS

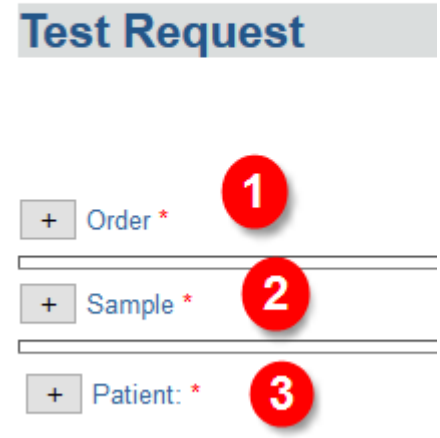
PART 4: ENTERING LABORATORY ORDERS

OpenELIS is organized around laboratory order which are made up of samples and their associated tests. The laboratory order must also be associated with a patient. The guides in this section include:

- How to create a laboratory analysis order
- How to modify or update a laboratory order
- How to add or update a patient's information

How to create a laboratory analysis order

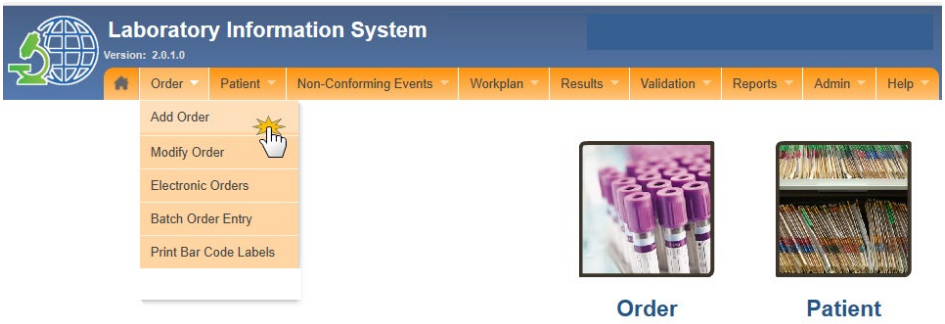
The laboratory order form has three parts: **Order**, **Sample**, and **Patient**.



By default, the Order section will be open. You must click on the  to open the other parts of the form. Required fields are indicated with a red asterisk *.

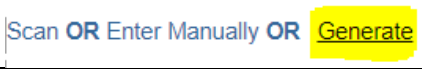
Laboratory Order Form: Part 1- ORDER

1. Hover the mouse over the tab "Order" and click "Add Order"

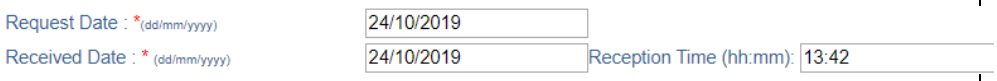


2. *Enter the lab number

IF…	THEN…
You use a barcode scanner	Use the barcode reader to scan the label. The number is displayed directly in the **Lab No.** input field. 

You want to manually enter the number	Type in the number into the input field. 	
You want to generate the number automatically	Click on "Generate". The number is displayed automatically in the input field. 	

3. *OpenELIS automatically fills the current date for the **Request Date** and the **Received Date.** Change, if needed, in the format dd/mm/yyyy (day/month/year) by typing over the numbers.



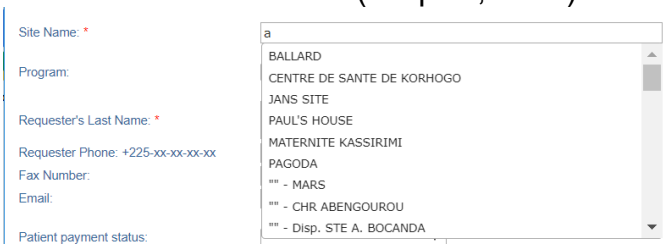
Note: The reception date is the date on which the sample is received at the laboratory.

You can also add the **Reception Time** in the format "hh:mm" (hours: minutes)

4. Enter the **Date of** the client's **Next Visit** (clinic appointment), if applicable, in the format dd/mm /yyyy.

5. *Enter the **Site Name** in the field.

The site is the institution (hospital, clinic) that requested the analysis.



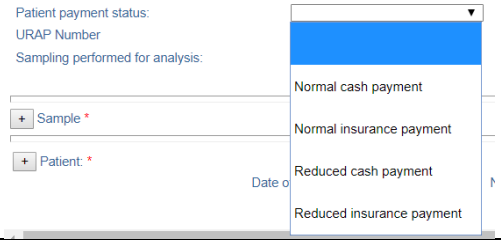
6. Enter the **Program**, if applicable to your version of OpenELIS Global. These are pre-defined.

7. *Enter the **Requester's Last Name** and **First Name.** (Provider who ordered the laboratory analysis).

8. Enter the requester's contact information:

- Phone number
- Fax number
- E-mail

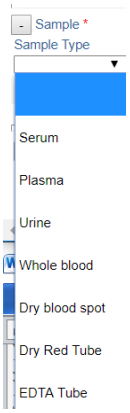
9. If applicable to your version of OpenELIS Global and your laboratory program, select the **Payment Status.**



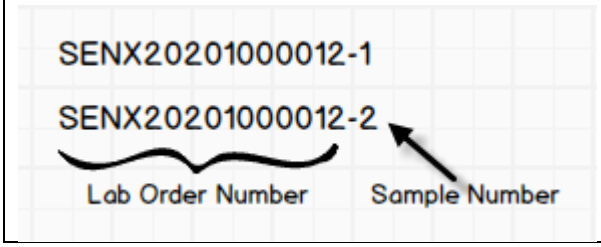
Laboratory Order Form: Part 2- SAMPLE

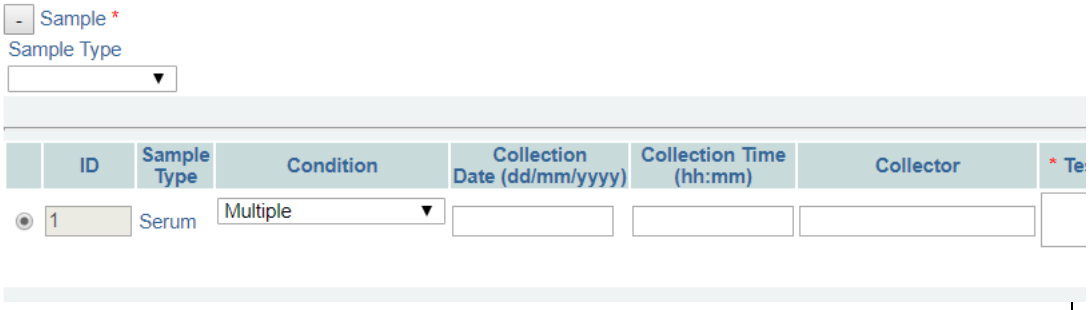
10. *Click on the button  next to "Sample" to open the section relating to the sample(s) in the order. This section is required.

11. *Select the **Sample Type** from the choices in the dropdown list.

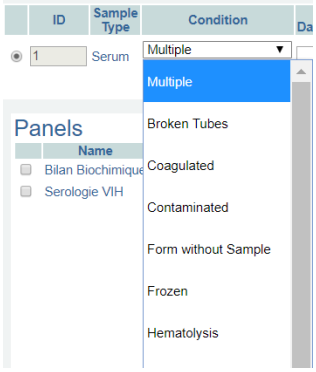


A table will appear below. Each sample you add is listed in the table and attributed a sample **ID** number. The sample ID comes after the Laboratory Order number, e.g.

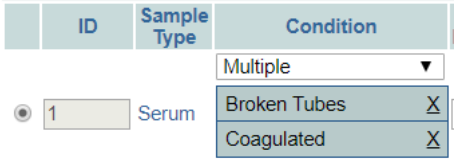




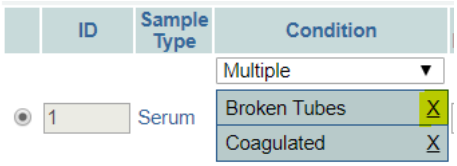
Specify the **Condition** of the sample by clicking on the relevant option from the choices in the drop down list.



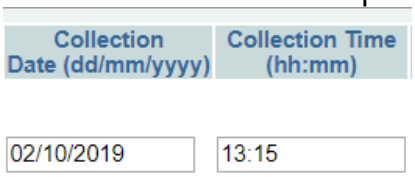
You can select more than one condition. Select each condition separately.



If you select an error by mistake, click the "X" next to the condition to remove it.

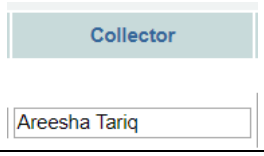


12. Enter the **Date and Time of Collection** when the sample was collected from the patient.



Note: OpenELIS fills the date and time of collection automatically with the Lab order date. It is not always the case that the date and time of the order entry are the same as the date and time of collection.

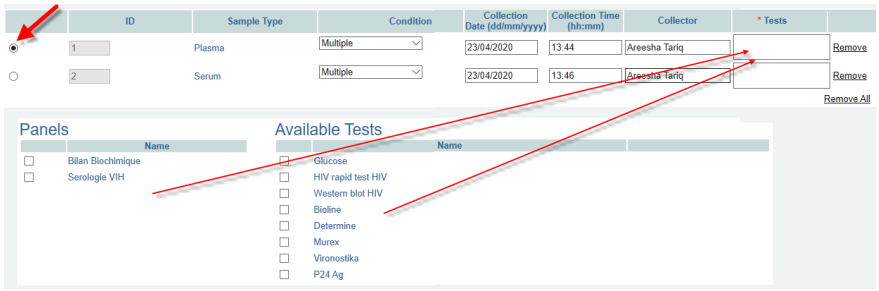
13. Enter the name of the person who collected the sample: the **Collector**.



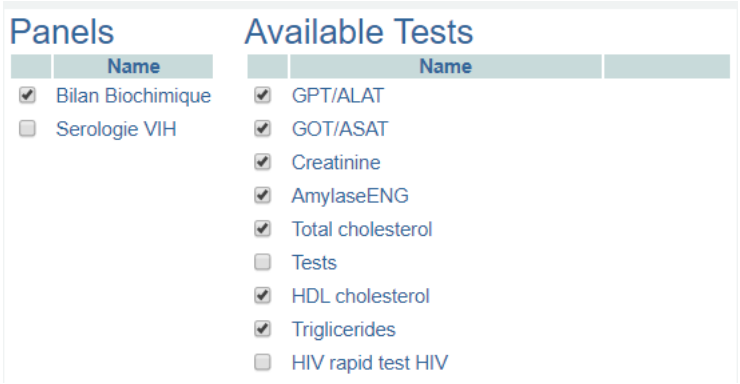
14. *Select the first sample for which you want to add a laboratory analysis, or test, by marking the radio button on the left.

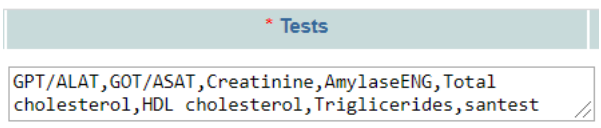
    A menu of tests available for that sample type will appear. Check the box next to each **Panel** or **Test** that is included in the laboratory order.

    As you select each analysis or panel, it will appear in the table.

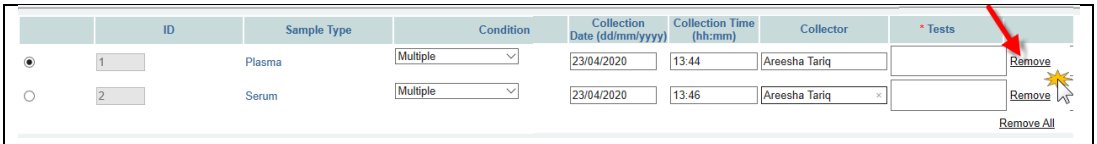


To add a **Test**, check the box corresponding to the test. To add a **Panel**, check the box corresponding to the panel. Tests that make up that panel are automatically checked and added to the table. It is possible to remove tests by unchecking the corresponding box.





If you add a sample by mistake, click **Remove** to remove the sample.



If you remove a sample, the other samples in the order will retain their original sample number. For example, if you have order SENX2020100012 with two samples and you delete the first sample, the remaining sample will still be numbered SENX2020100012-2.

Laboratory Order Form: Part 3- PATIENT

15. *Open the section for the patient by clicking the button +.

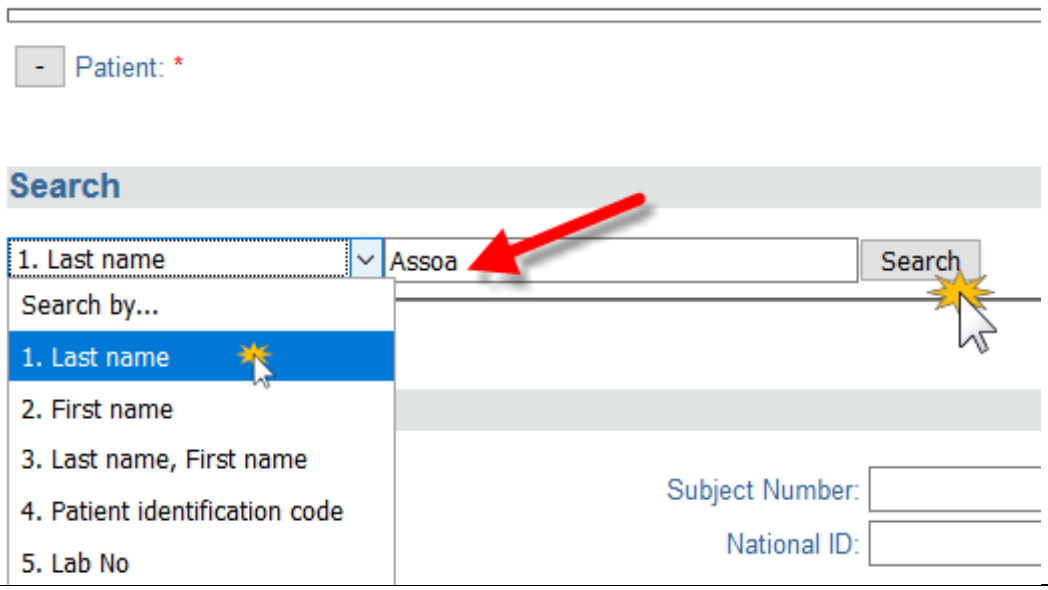
This opens two sections: Search and Patient Information.

16. It is best practice to first search the database for the patient record.

Select the search criterion from the dropdown list. You can search by:

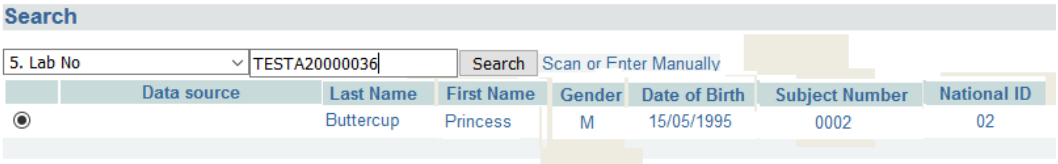
- Patient's last name (surname or family name)
- Patient's first name (given name)
- Patient's last and first name, separated by a comma
- Patient's identification code
- A previous lab order number associated with that patient- you can scan a bar code or enter this manually

Type in the search term (the name or code number) into the search field and click **Search.**



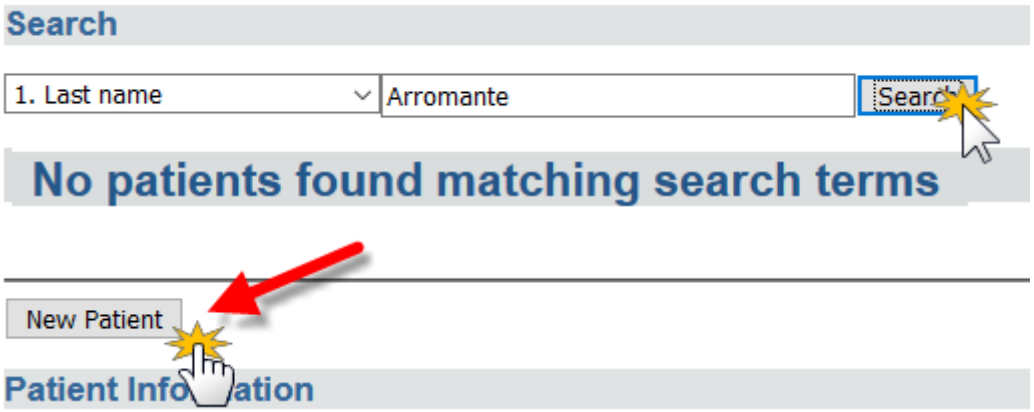
17. The search results appear in a table, listing the patient, their birth date, and identification code. Select the patient that matches the

one you want by clicking on the radio button next to that patient. The patient form will populate with that patient's information.



You can update the patient information in this part of the form as needed. Skip to **Step 19**.

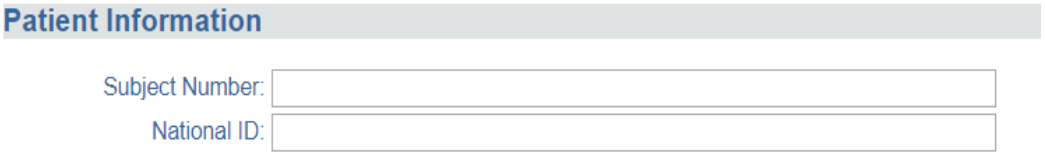
18. If no results match the desired patient, you will have to create a new patient record : click on **New Patient** button and the patient form will open.



19. Enter the new or updated patient information:

Subject Number (Patient ID code) and National ID code

NOTE: These may be labelled differently in your local configuration.



20. Enter the **Last Name** and **First Name** of the patient.

21. Physical Address and Phone Number :

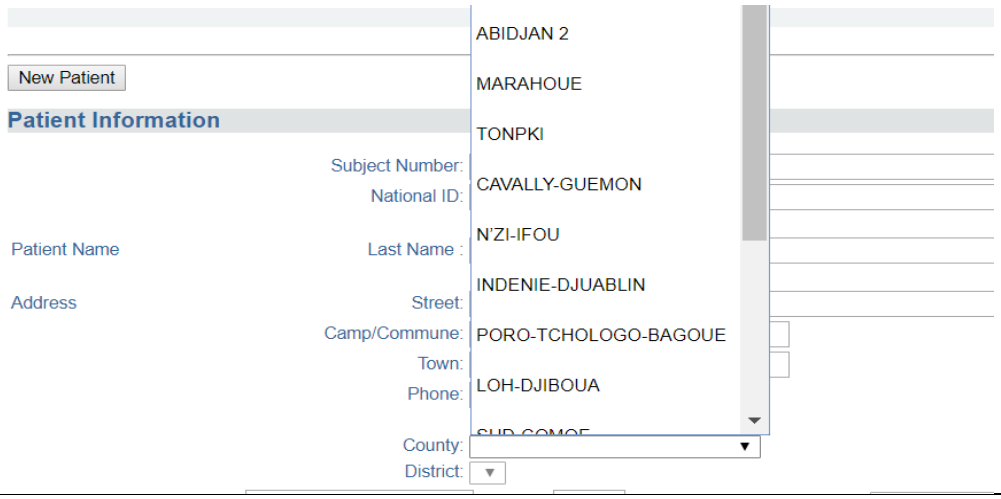
NOTE: The elements of the physical address will depend on your local configuration.

Enter the patient's Street, Camp/Commune/Area, Town/City, and Phone Number.

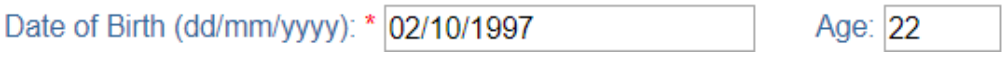
22. Physical Address continued:

Choose the patient's **Region/Province/County** and then the **District** from the drop-down list. The District drop-down list is activated once the County is selected.

NOTE: These may be labelled differently in your local configuration.

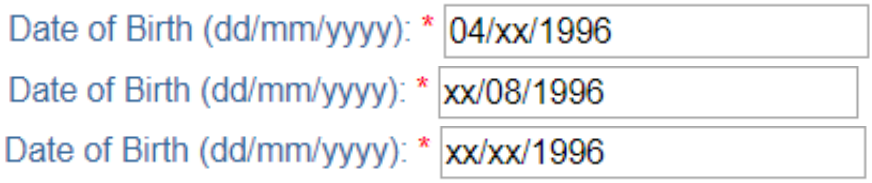


23. *Enter the patient's **Date of Birth** in the format dd/mm/yyyy.
Example : January 4, 1973 becomes 01/04/1973

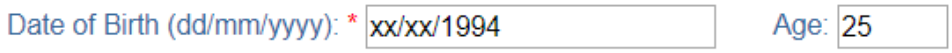


NOTE: Once the date of birth is entered, age is automatically calculated and displayed by the system.

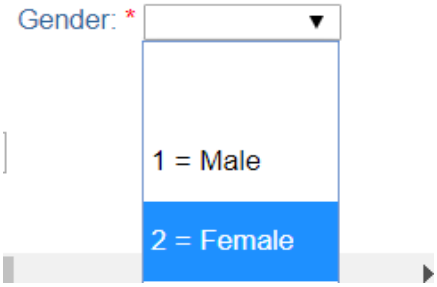
If the exact date (day and / or month) is not known but the year is known, type "x" in the place of unknown



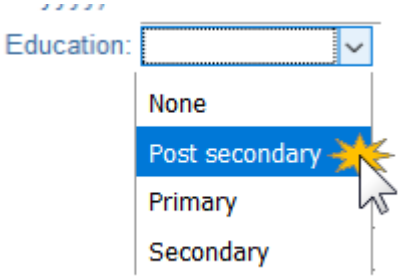
If you know the age, enter the patient's age in the given field and the system automatically calculates the birth year.



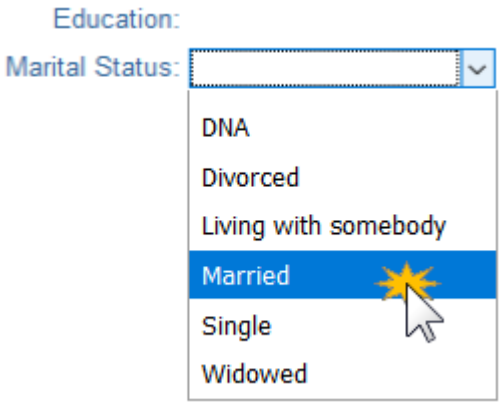
24. *Select patient's **Sex** (gender) by clicking the appropriate option in the dropdown list.



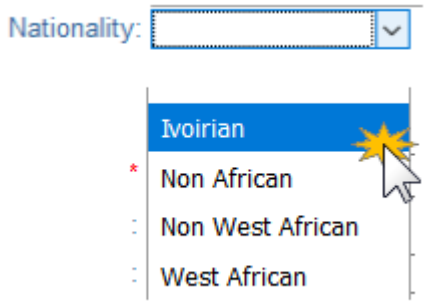
25. Select the most appropriate option from the dropdown list for patient's **Education**.



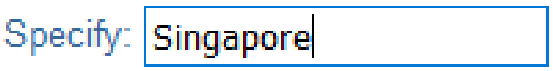
26. Select patient's **Marital Status** from the drop-down list.



27. Select the most appropriate option from the drop-down list for the patient's **Nationality**.



If applicable, **Specify** the nationality in the field next to the drop-down list.

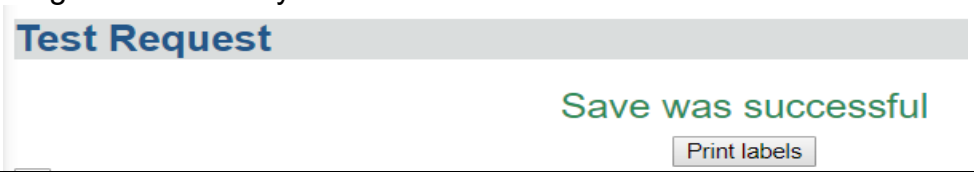


28. Verify that all the information entered in <u>all three parts of the lab order form</u> are correct. Click the **Save** button.

Note: The **Save** button is only active once all required fields have been filled.

If the "Save" button	Becomes active Save Cancel	Click "Save"
	Does not become active Save Cancel	Ensure all the fields on the page are correctly filled

A new page appears with a confirmation that the request was registered in the system.



How to modify or update a laboratory order

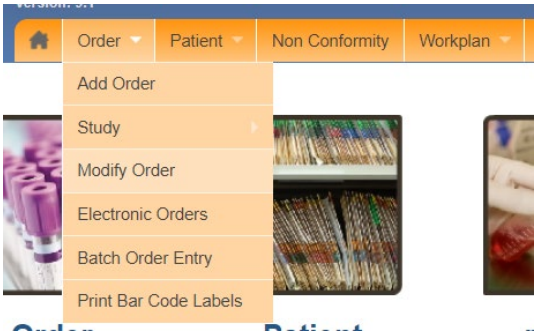
Use this function when you want to:

- Add another test or sample to the order
- Remove a test or sample from the order
- Change payment information
- Modify the lab number

Required fields are indicated with a red asterisk *.

The modify laboratory order form has three parts: **Modify Order**, **Modify Tests**, and **Add Order (Add Samples and Tests)**.

1. Hover the mouse over the **Order** tab and click **Modify Order**.

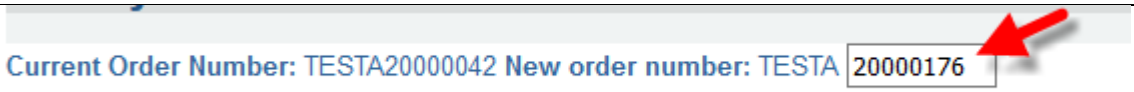


2. *Select the search criterion and then type in the number or name in order to find the lab order you to wish to update.

Note: You can search for the order you wish to update using the laborator order number or the patient information (Name or ID). Using the patient information will only give the most recent order as a result. For additional, older orders, you must search by the lab order number.

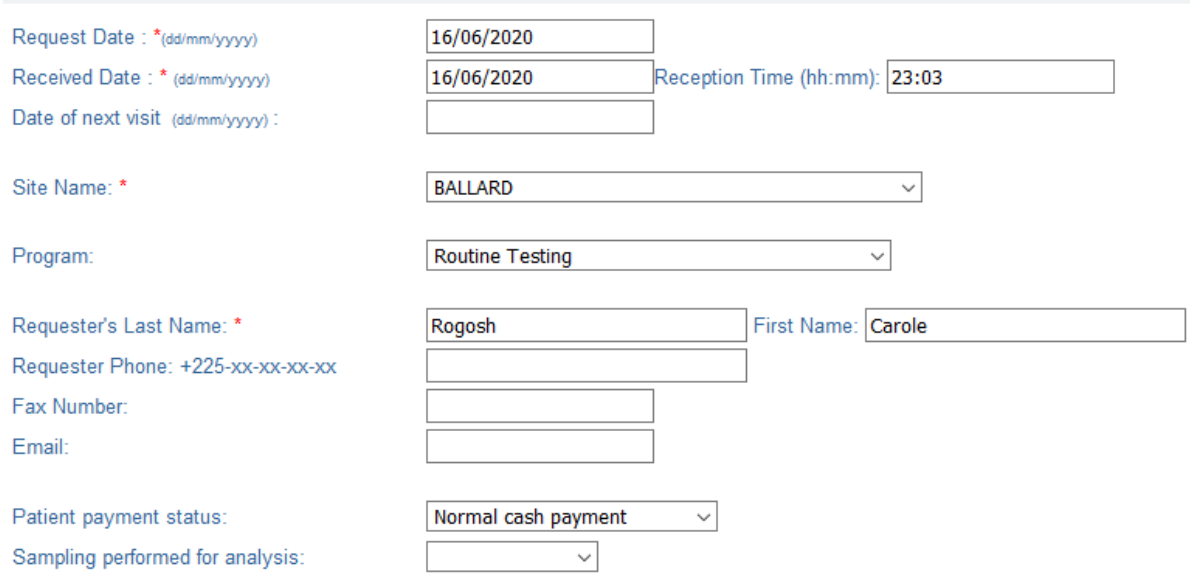
Modify Laboratory Order Part 1—Modify Order

3. You can modify the lab order number. Enter a new number in the field **New Order Number.**



If this is the only update you wish to make, scroll down to the bottom of the form and click the **Save** button.

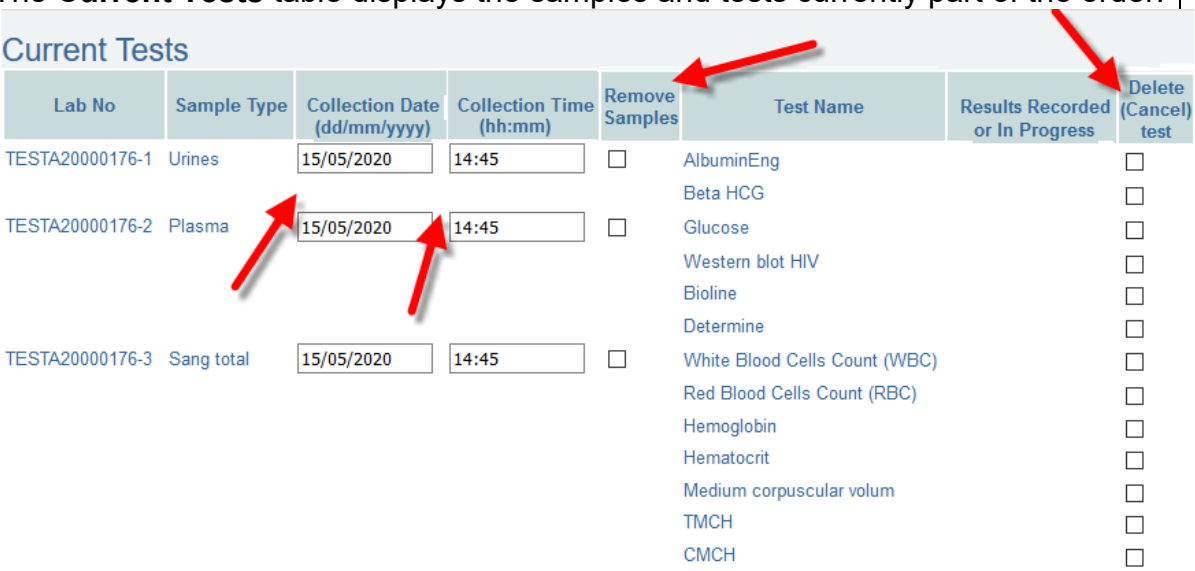
4. You can correct or update the following information about the order: Request Date, Received Date, Date of Next Visit, Reception Time, Site Name, Program, Requester information, and Payment Status.



NOTE: This function is usually used to correct mistakes made during order entry. If this is the only update you wish to make, scroll down to the bottom of the form and click the **Save** button.

Modify Laboratory Order Part 2—Modify Tests

The **Current Tests** table displays the samples and tests currently part of the order.



5. You can update the sample **Collection Date** and **Collection Time**.

If this is the only update you wish to make, scroll down to the bottom of the form and click the **Save** button.

6. To remove a sample and its associated tests from the lab order, check the box in the sample's row under **Remove Samples.**

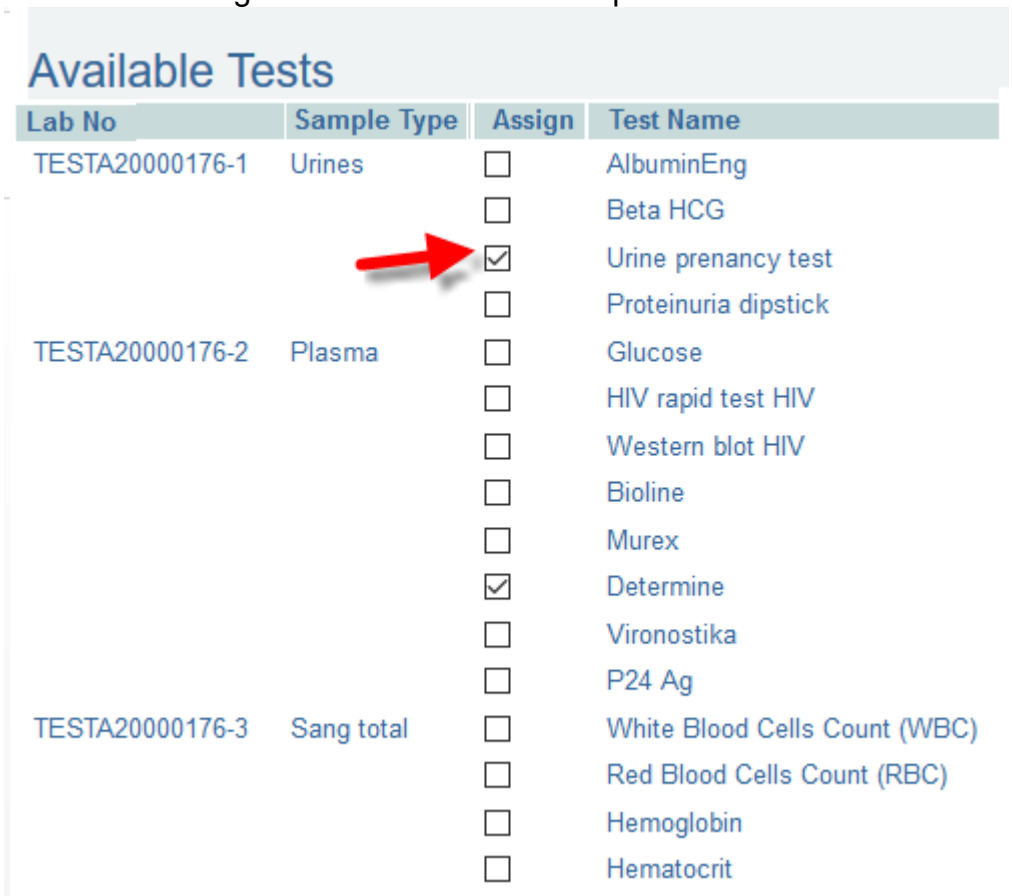
If this is the only update you wish to make, scroll down to the bottom of the form and click the **Save** button.

7. To remove a test from the lab order, check the box next to the test name under **Delete (Cancel) Test.**

NOTE: You can only delete a test if it has not yet been started. If it has been started (in progress) or completed, a **Y** will appear in the column **Results Recorded or In Progress**.

If this is the only update you wish to make, scroll down to the bottom of the form and click the **Save** button.

8. To add tests to samples that are currently in the order, go to the **Available Tests** table. Check the box next to the test you wish to add. Verify that you are adding the test to th correct sample.



If this is the only update you wish to make, scroll down to the bottom of the form and click the **Save** button.

Modify Laboratory Order Part 3—Add Order (Add Samples and Tests)

9. To add a new sample with its associated tests to the lab order, go to the section **Add Order.**
10. Select the **Sample Type** and fill in the sample information (see New Lab Order Step 11-13 for more details).
11. Select the desired **Tests** (see New Lab Order Step 14 for more details).

If this is the only update you wish to make, scroll down to the bottom of the form and click the **Save** button.

Once you have made all the necessary updates to the lab order, click the **Save** button.

How to add or update a patient's information

To add a new patient or update an existing patient's information, follow these steps:

1. Select **Add/Edit Patient** from the **Patient** tab on the main menu.

2. Follow **Steps 16-28** of **How to create a laboratory analysis order.**

PART 5: ELECTRONIC ORDERS

Orders sent electronically to OpenELIS will appear here with their order, sample, and test information. Select a term from the dropdown menu to sort the list of electronic orders.

PART 6: BATCH ORDER ENTRY

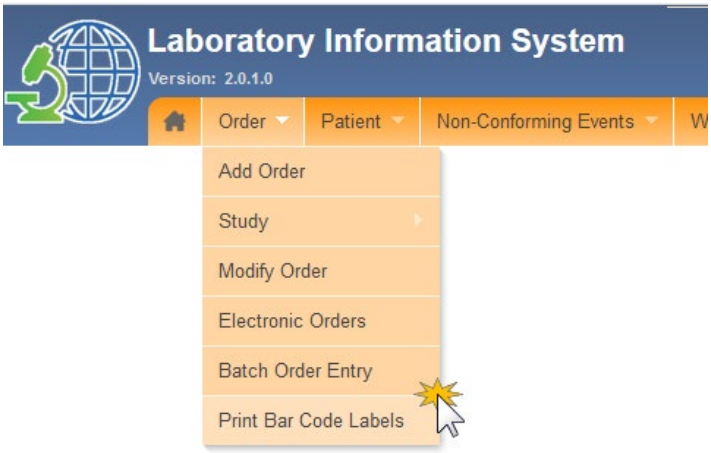
When you receive a group or batch of orders with the same sample type, test and/or facility of origin, batch order entry can speed up the order entry process.

For example, if you receive a batch of 100 DBS samples for viral load testing from North Regional Hospital, you can use batch order entry to set the sample type, test and hospital for all the samples at once. Then, you can rapidly print barcode labels for each sample. You have the option to include patient information right away, or save that data entry for a later point in time.

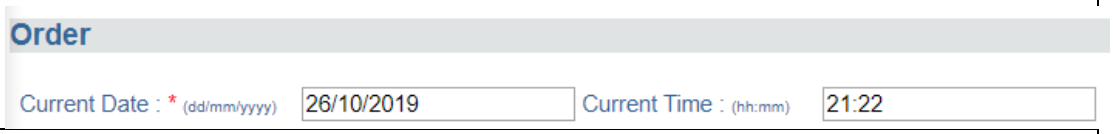
- How to set up batch order entry without individual patient data
- How to set up batch order entry with individual patient data
- How to print bar code labels

How to set up batch order entry without individual patient data

1. Hover the mouse over the **Order** tab and select **Batch Order Entry**.



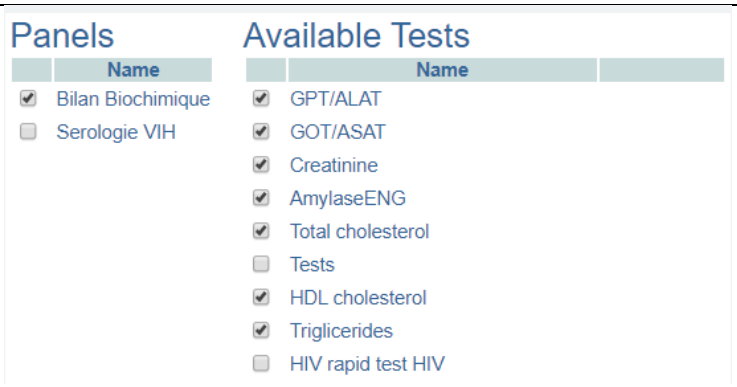
2. *In the Order section, verify the **Current Date** in the format dd/mm/yyyy and **Current Time** in the format hh:mm



3. *Change, if needed, the **Received Date** in the format dd/mm/yyyy and **Reception Time** in the format hh:mm.

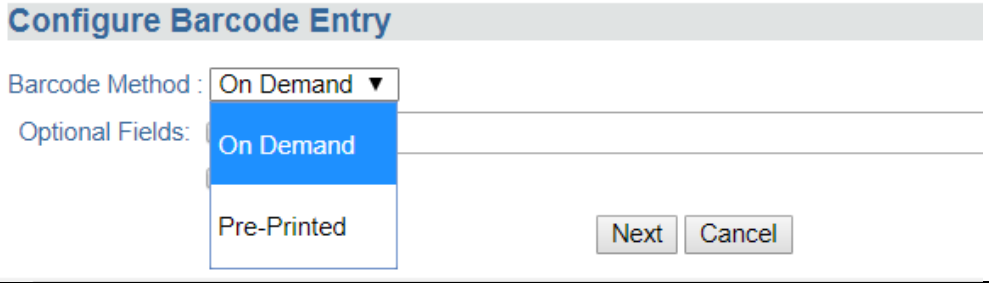
4. Select the **Form,** if applicable. The selections will depend on your local configuration.

5.In the Sample Section, select the **Sample Type** from the dropdown menu. Check the box(es) corresponding to the desired panel(s) and test(s):



Note: The number of panels and tests available for a sample depends on the type of sample (serum, plasma, blood, urine). The sample type and test will be the same for the entire batch being entered.

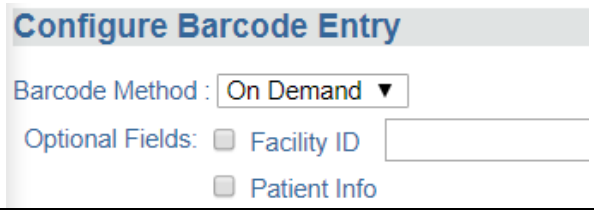
6. In the Configure Barcode Entry section, select the **Barcode Method** from the dropdown list. Choose **Pre-Printed** if the barcodes you are using are already printed labels. Choose **On Demand** if you will print the entire barcode label from OpenELIS.



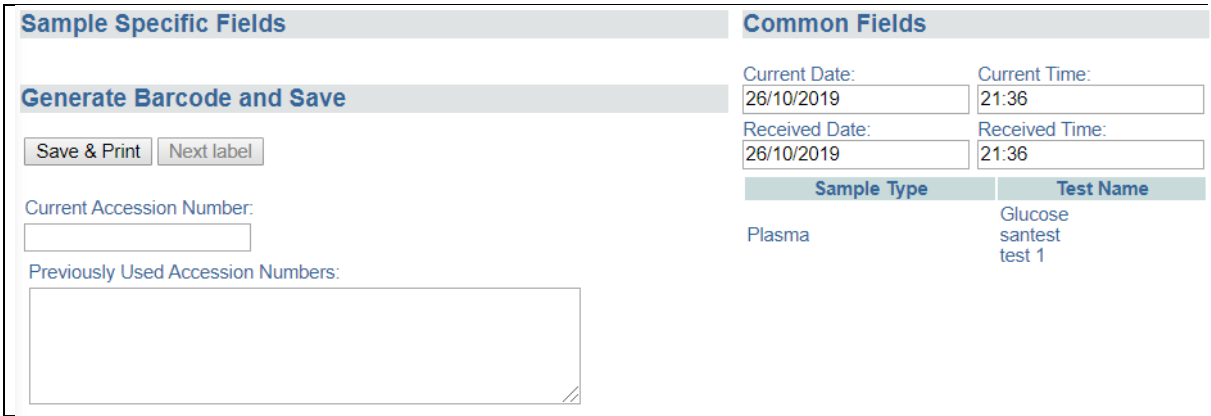
7. **Facility ID** and **Patient Information** are **Optional Fields**.

You can add **Facility ID** for the batch if they all have the same facility of origin. Check the box for **Facility ID** and enter the ID in the text field.

See the aid **How to set up batch order entry with individual patient data** for how to use the Patient Info field.



8. Click the **Next** button at the bottom of the page. A new page appears which gives you the summary of the sample and the option to save and print.



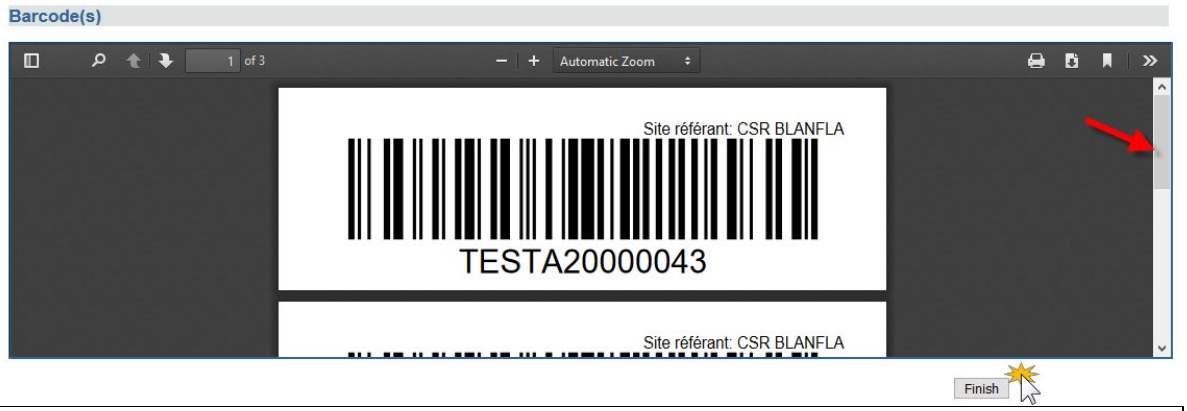
9. Update the **Current Date, Current Time, Received Date** and **Received Time** as needed.

10. Verify that the **Sample Type** and **Test Name** are correct.

11. Click **Save & Print.** The **Current Accession Number** for the first sample in the batch will be generated automatically and the barcode label will appear below.

You can enter any other accession/laboratory numbers associated with the sample (for example, the number assigned by the referring lab or facility) in the field **Previous Accession Numbers** to facilitate tracing.

12. Scroll within the barcode window to see all the labels: one for the paperwork and labels for the sample.



13. To go to the next sample in the batch, click the **Next Label** button. Repeat Steps 11-12.

14. When you have entered all the samples in the batch, scroll down and click the **Finish** button.

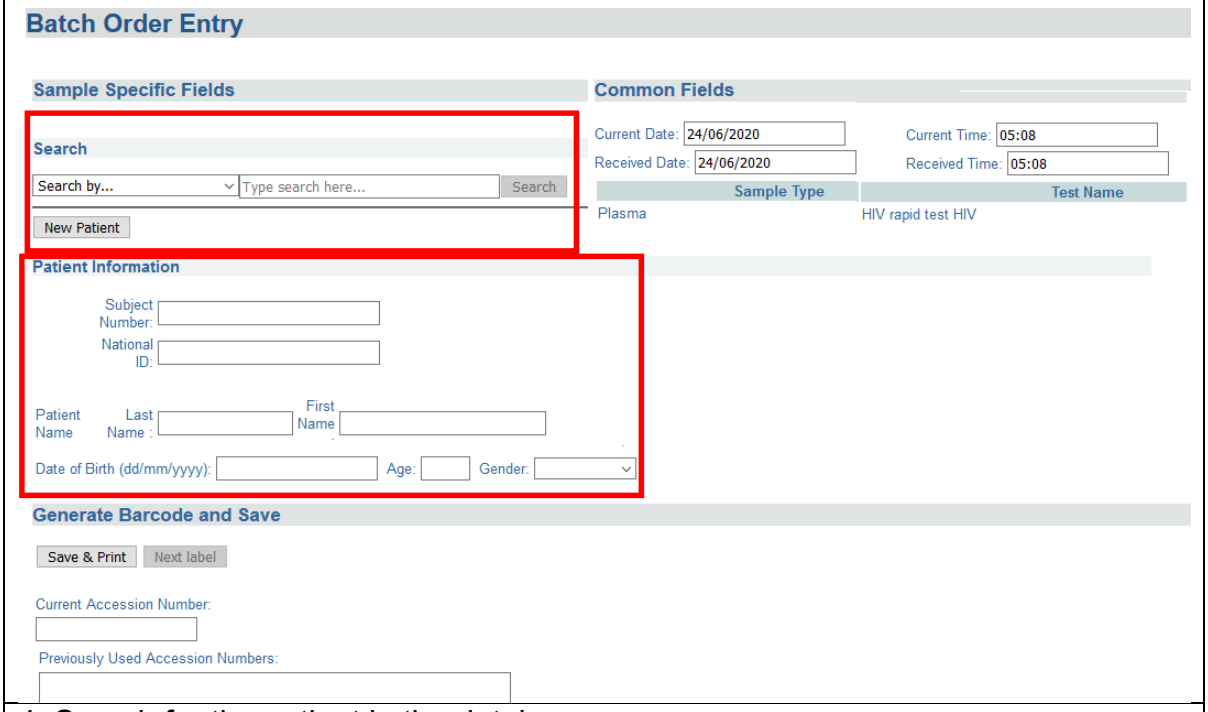
At a later point, go to **Order Entry** on the Order tab and scan the barcode to pull up the order and enter the patient data at that time.

How to set up batch order entry with individual patient data

1. Complete **Steps 1-6** of **How to set up batch order entry without individual patient data.**

2. Check the box next to **Patient Info** under **Optional Fields.** Click the **Next** button.

3. The Batch Entry page will appear with a section **Sample Specific Fields.**

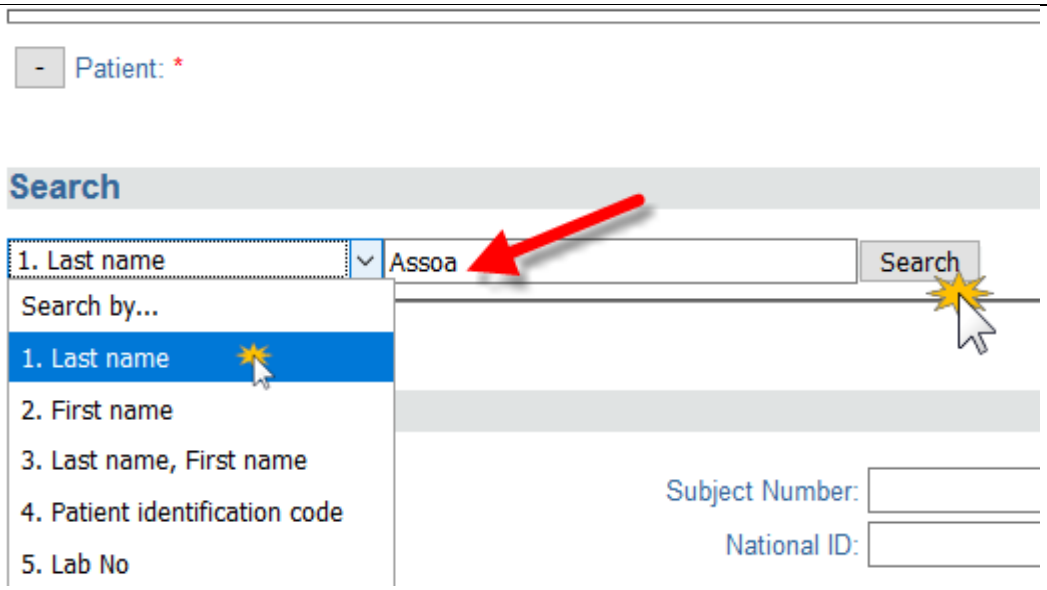


4. Search for the patient in the database:

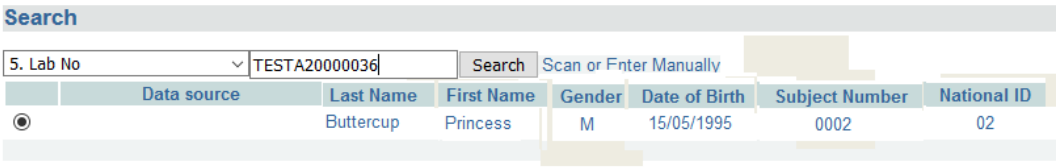
Select the search criterion from the dropdown list. You can search by:

- Patient's last name (surname or family name)
- Patient's first name (given name)
- Patient's last and first name, separated by a comma
- Patient's identification code
- A previous lab order number associated with that patient- you can scan a bar code or enter this manually

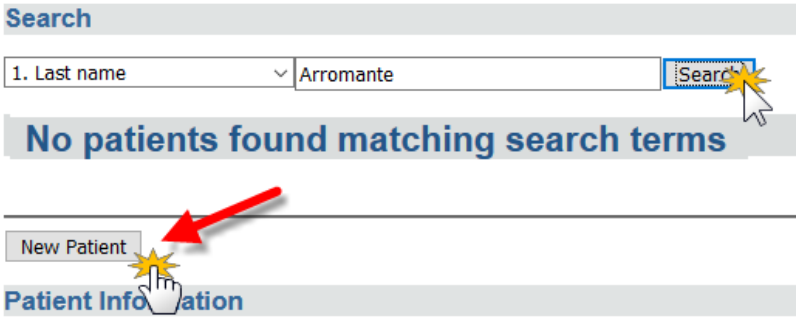
Type in the search term (the name or code number) into the search field and click **Search.**



The search results appear in a table, listing the patient, their birth date, and identification code. Select the patient that matches the one you want by clicking on the radio button next to that patient. The patient form will populate with that patient's information.



If no results match the desired patient, you will have to create a new patient record. Click on **New Patient** button to clear the form if needed.



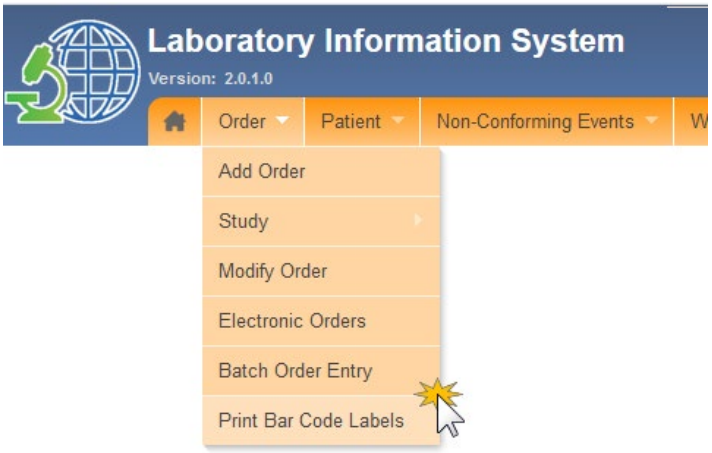
5. Enter the patient's **Patient ID, National ID, Last Name, First Names, Date of Birth** or **Age,** and **Sex (Gender).**

NOTE: Age is calculated automatically from the date of birth. If date of birth is not available but age is known, enter age only and a proxy date of birth will be assigned.

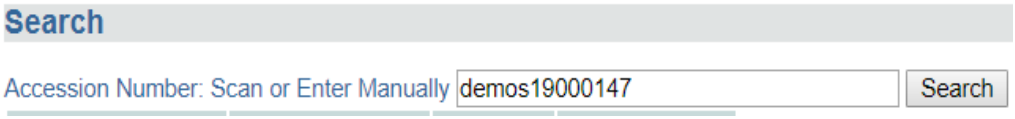
6. Complete **Steps 9-14** of **How to set up batch entry without individual patient data.**

How to print bar code labels

2. Hover the mouse over the **Order** tab, select **Print Bar Code Labels**.



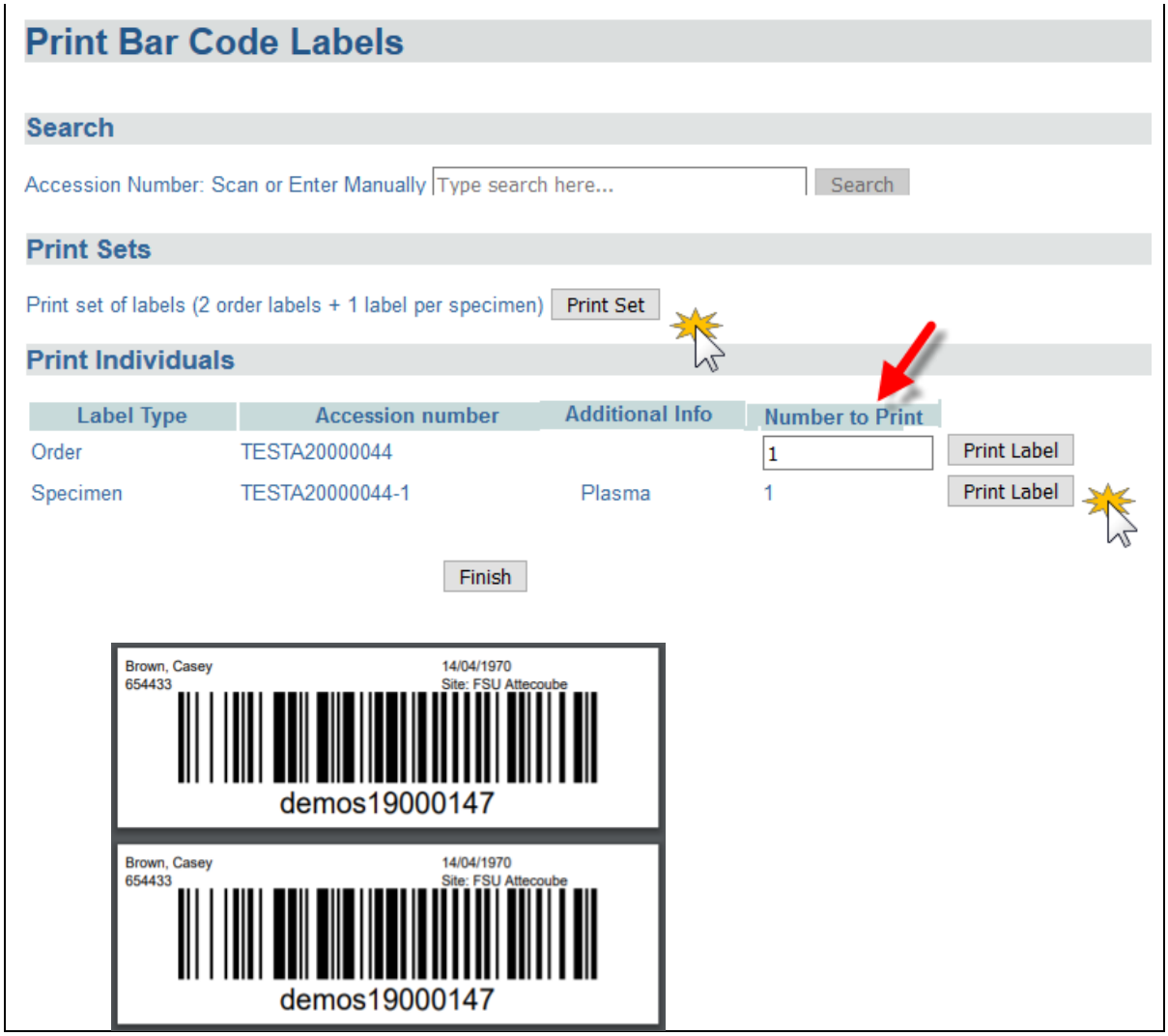
3. A search field will appear on the new page. Enter or scan in the **Accession Number** and click **Search.**



- The patient's basic information will be displayed along with the options to:
- Print Individuals
- Print Sets

Choose **Print Set** to print all the associated barcode labels. Choose **Print Label** to print only that label.

Click **Print Set/ Print Label** button. The barcode will be displayed. You can also set the number of times the barcode has to be printed.

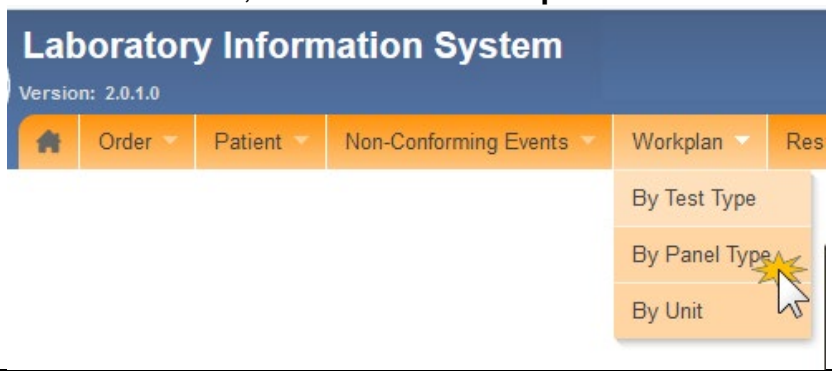

Print Bar Code Labels
Search
Accession Number: Scan or Enter Manually
Type search here...
Search
Print Sets
Print set of labels (2 order labels + 1 label per specimen)
Print Set
Print Individuals
Label Type
Accession number
Additional Info
Number to Print
Order
TESTA20000044
1
Print Label
Specimen
TESTA20000044-1
Plasma
1
Print Label
Finish
Brown, Casey
654433
14/04/1970
Site: FSU Attecoube
demos19000147
Brown, Casey
654433
14/04/1970
Site: FSU Attecoube
demos19000147

PART 7: WORKPLANS

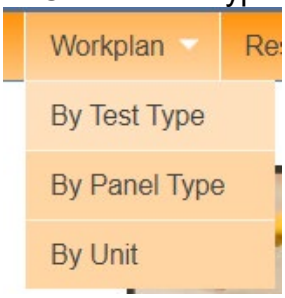
The laboratory can use workplans to facilitate work assignments for lab units, individual technicians, and dispatch of samples within the lab.
Workplans list the samples and tests to be done. The workplan can be organized by a single test or a panel, or for an entire lab unit.

How to create a workplan by test, by panel or unit

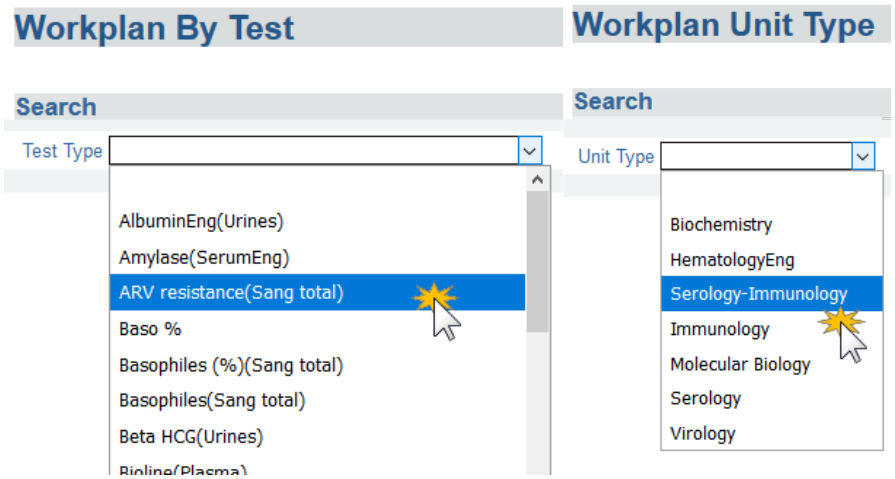
1. From the main menu, select the tab **Workplan**.



2. Click on the type of workplan you want: **By Test, By Panel,** or **By Unit.**



3. Select the **Test, Panel**, or lab **Unit Type** from the drop-down menu.



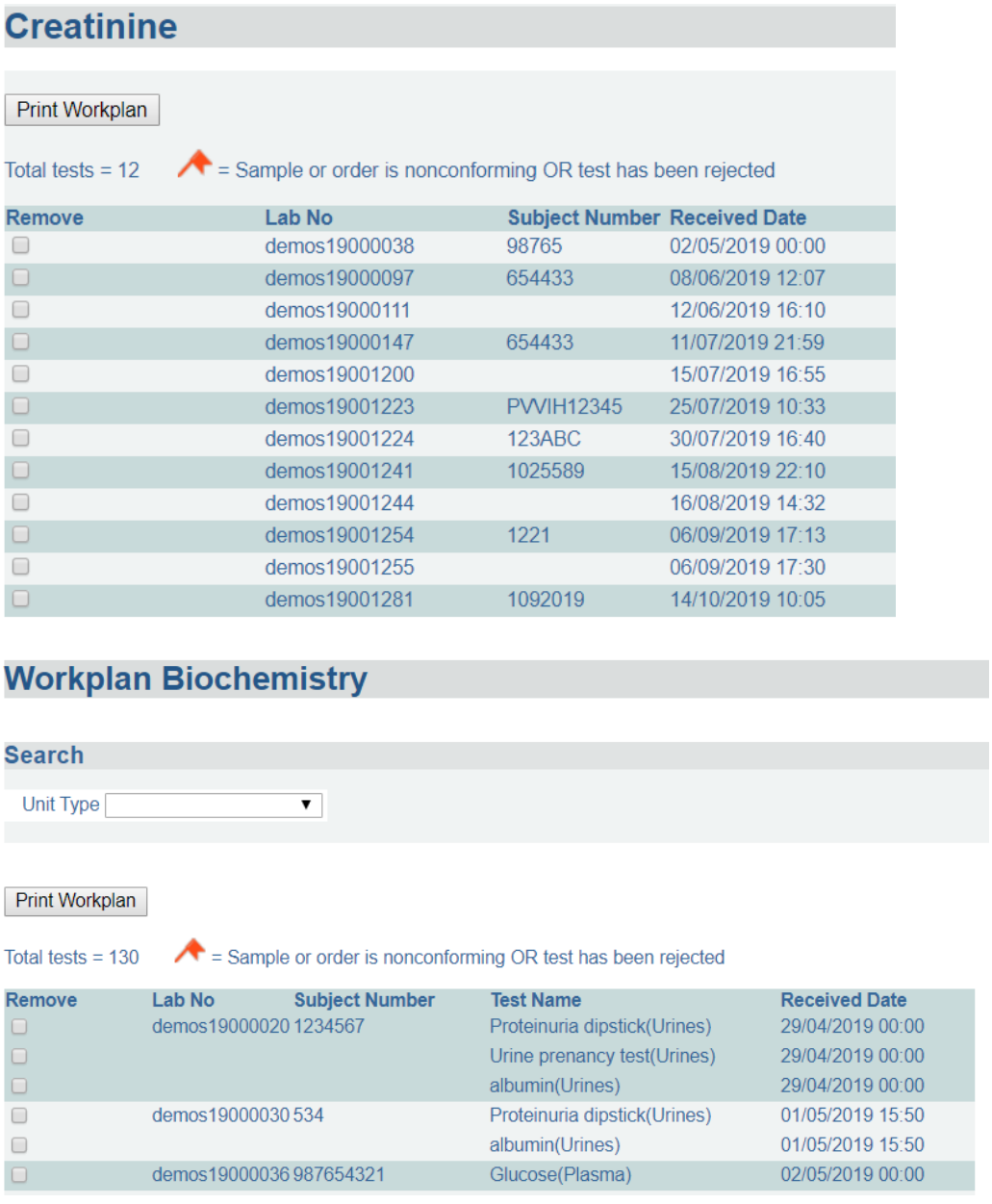
Click on your selection.

4. The workplan will appear.

The workplan lists all orders for that Test, Panel, or Unit that need to be done, along with the Patient ID (Subject Number), Received Date, Technician ID and other information depending on your local configuration. They are listed in order by lab number.

At the top of the page the number of **Total Tests** on the workplan.

A **Red Flag** next to an order indicates that either the sample or order has been reported for a non-conforming event.



5. Check the box **Remove** next to the lab number to remove a test from the workplan. This can be used to create different workplans for different technicians, for example.

Remove	Lab No	Subject Number	Test Name	Received Date
☐	demos19000016	321	CMCH(Sang total)	26/04/2019 00:00
☐			Eosinophiles (%)(Sang total)	26/04/2019 00:00
☑			Lymphocytes (Abs)(Sang total)	26/04/2019 00:00
☑			Monocytes (%)(Sang total)	26/04/2019 00:00
☐			Monocytes (Abs)(Sang total)	26/04/2019 00:00
☐			Neutrophiles (%)(Sang total)	26/04/2019 00:00
☐			Neutrophiles(Sang total)	26/04/2019 00:00
☐			Platelets(Sang total)	26/04/2019 00:00
☐	demos19000021	1234567	Eosinophiles(Sang total)	11/04/2019 00:00
☑			Lymphocytes (%)(Sang total)	11/04/2019 00:00
☐			Lymphocytes (Abs)(Sang total)	11/04/2019 00:00

6. To print the workplan, verify that all the tests that you want in the workplan appear. Click the **Print Workplan** button.

A new window will open with a PDF version of the workplan. This can be printed from your browser application.

PART 8: NON-CONFORMING EVENTS

A non-conforming event (NCE) or non-conformity is defined as a non-fulfillment of a requirement. An NCE occurs when there is a deviation from established policies and procedures. In the laboratory, examples of NCEs may include:

- Unlabeled/mislabeled specimens
- Missing specimens
- Specimen preparation errors
- Delay in turnaround times
- Incorrect delivery of reports
- Corrected reports

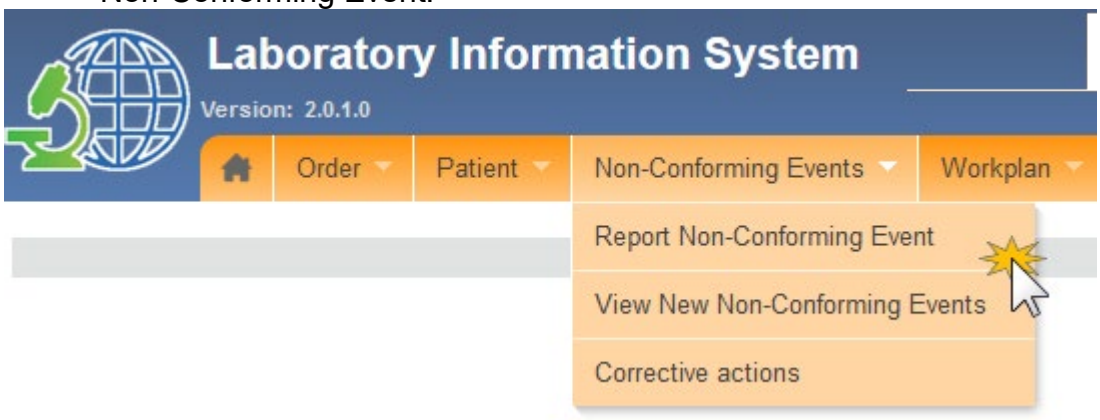
It is essential for quality assurance in the lab that staff and managers log all NCEs and their follow-up.

Non-Conforming Event management consists of four steps with the following guides:

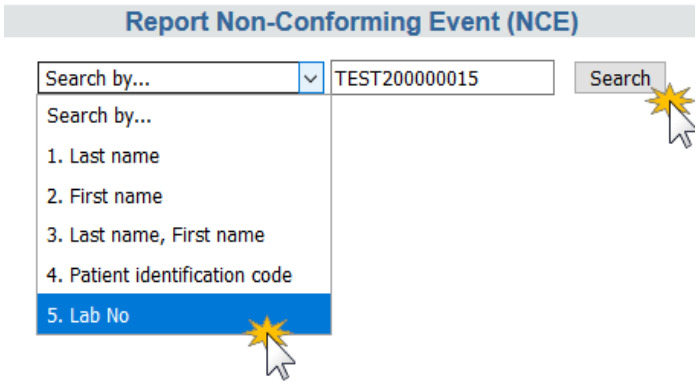
- Reporting a NCE
- Creating a Corrective Action Plan
- Monitoring the Corrective Action Plan
- Closing an NCE Report

How to report a non-conforming event (NCE)

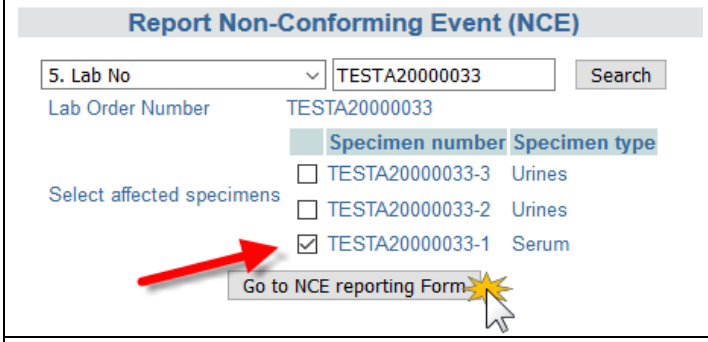
1. Hover the mouse over the Non-Conforming Events tab and select Report Non-Conforming Event.



2. Search for the lab number associated with the non-conforming event by selecting your search term from the drop-down menu and entering the number or name in the search field. Then click **Search**.



3. The order and its samples will display. Check the box next to the sample imnplicated in the NCE. If the NCE is not associated with a specific sample, check all the samples. Click the **Go to NCE Reporting Form** button.



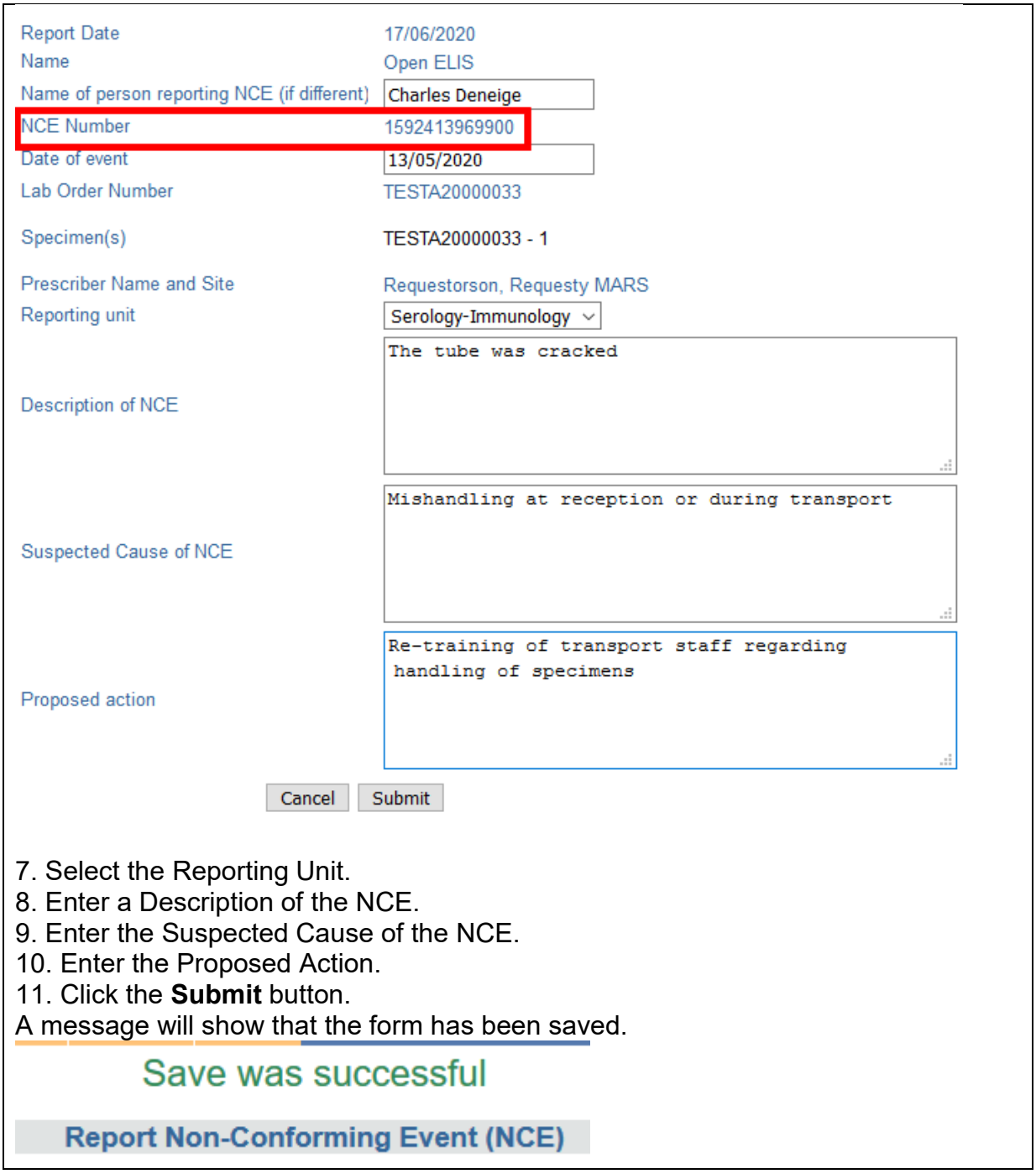
4. Verify the details that are automatically displayed: NCE report date (should be the current date), Name, and the lab order number, and specimen number.

5. Fill in the Name of person reporting if different, if needed.

NOTE: Name refers to the person filling this form. The staff member filling out the NCE reporting form may not be the same person who noticed or observed the NCE and reported it. Use the **Name of person reporting (if different)** for the person who first observed the NCE.

OpenELIS will automatically assign an **NCE Number** to the report.

6. Fill in the date of the NCE (this may be different from the report date).

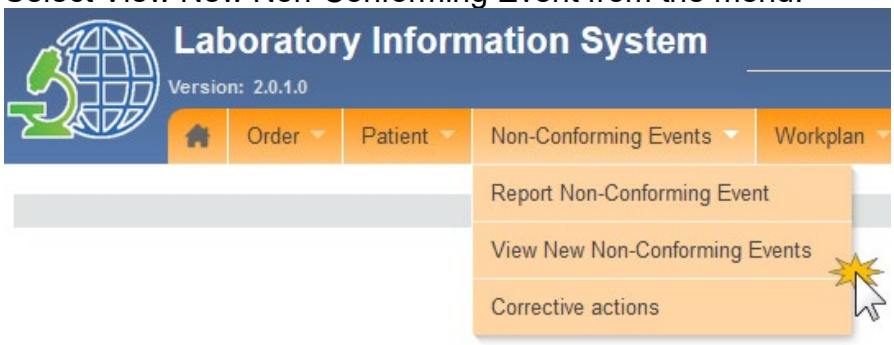


7. Select the Reporting Unit.
8. Enter a Description of the NCE.
9. Enter the Suspected Cause of the NCE.
10. Enter the Proposed Action.
11. Click the **Submit** button.

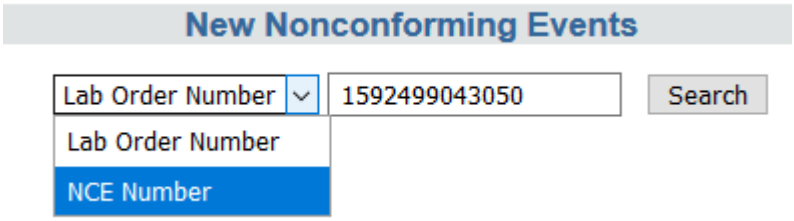
A message will show that the form has been saved.

How to create a NCE Corrective Action Plan

1. After the NCE reporting form has been filled, the next step is to fill the NCE Follow-Up Form. This may be done at a later date, per laboratory procedures. Select View New Non-Conforming Event from the menu.



2. Select **Lab Number** or **NCE Number** as your search term and enter the number in the search field. Click the **Search** button.

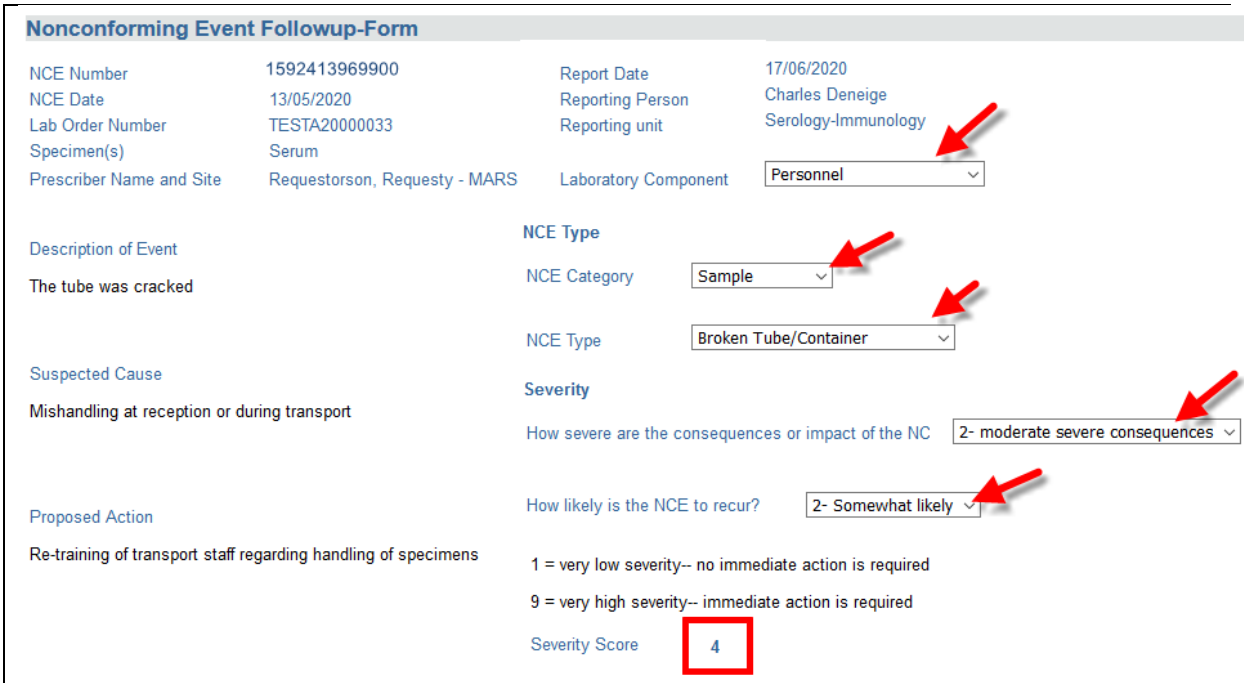


The NCE Follow-up Form has two parts: The NCE description section and the Corrective Action Plan.

NCE Follow-up Form: Part 1- NCE Description

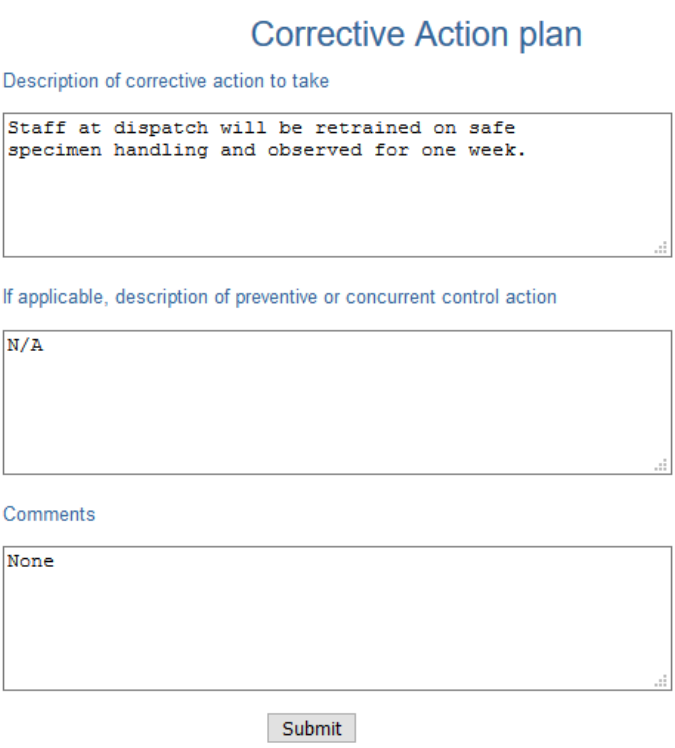
3. Verify the details of the NCE in the form. Fill in the remaining elements of the form using the dropdown lists.
4. Select the **Laboratory Component** (the NCE concerns which component of the lab).
5. Select the NCE Category.
6. Select the **CE Type**
7. Select the **Severity**
8. Select the Likely recurrence

The **Severity Score** is automated calculated.



NCE Follow-up Form: Part 2- Corrective Action Plan

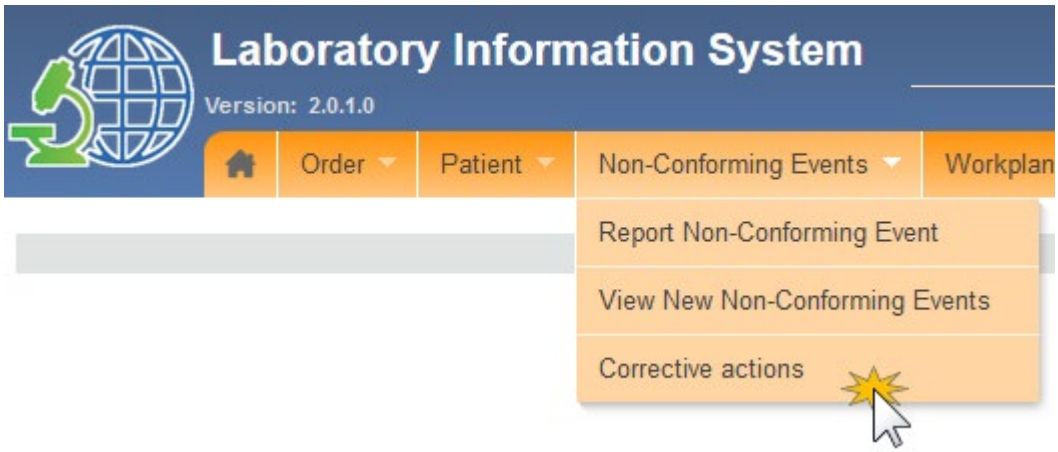
4. Enter the Description of the Corrective Action, the Preventive Action or Concurrent Control Action, and any Comments in the designated text boxes of the form.



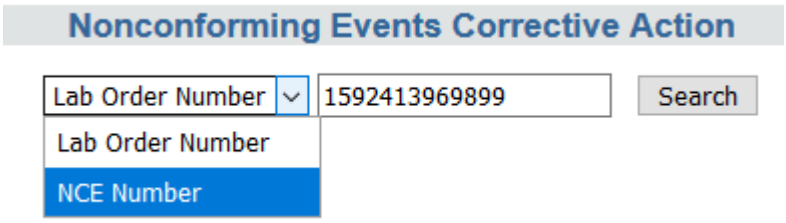
5. Click the **Submit** button.

How to monitor an NCE Corrective Action Plan

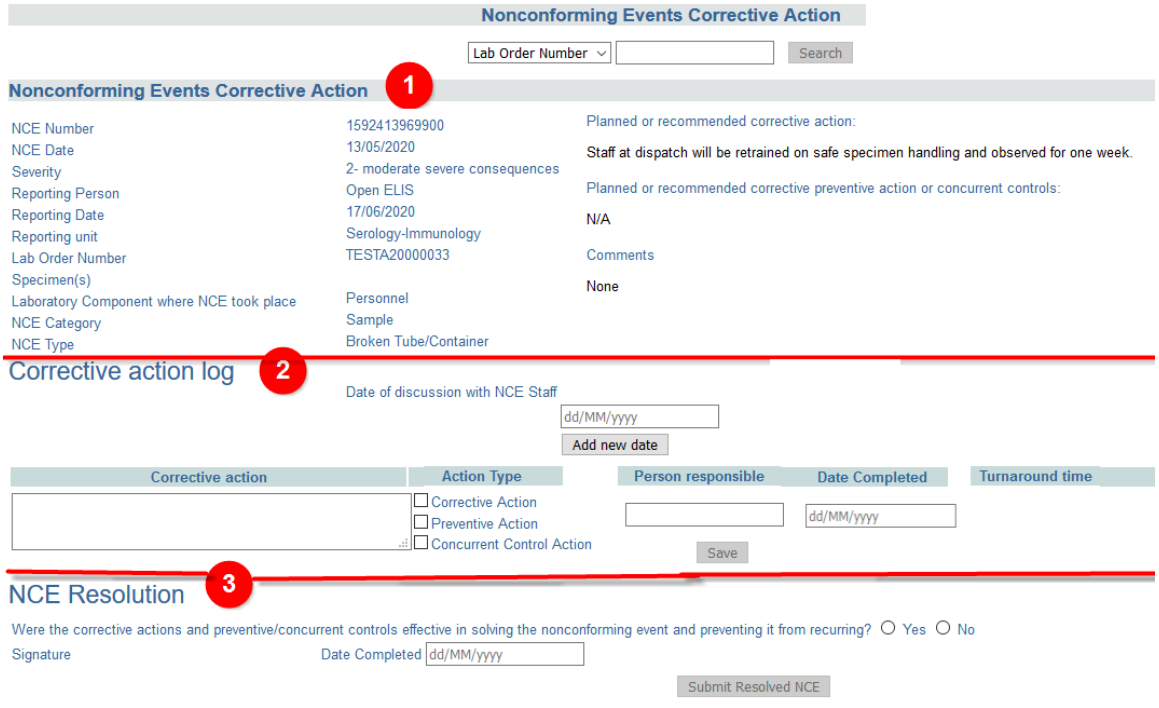
1. After the NCE follow-up form has been filled, acitvities related to corrective action or closing the NCE report should be logged in the Corrective Actions form, per laboratory procedures.
Select **Corrective Actions** from the menu.



2. Select **Lab Number** or **NCE Number** as your search term and enter the number in the search field. Click the **Search** button.



The NCE Corrective Action form has three parts: the NCE description; the corrective action log section; and the NCE Resolution section.

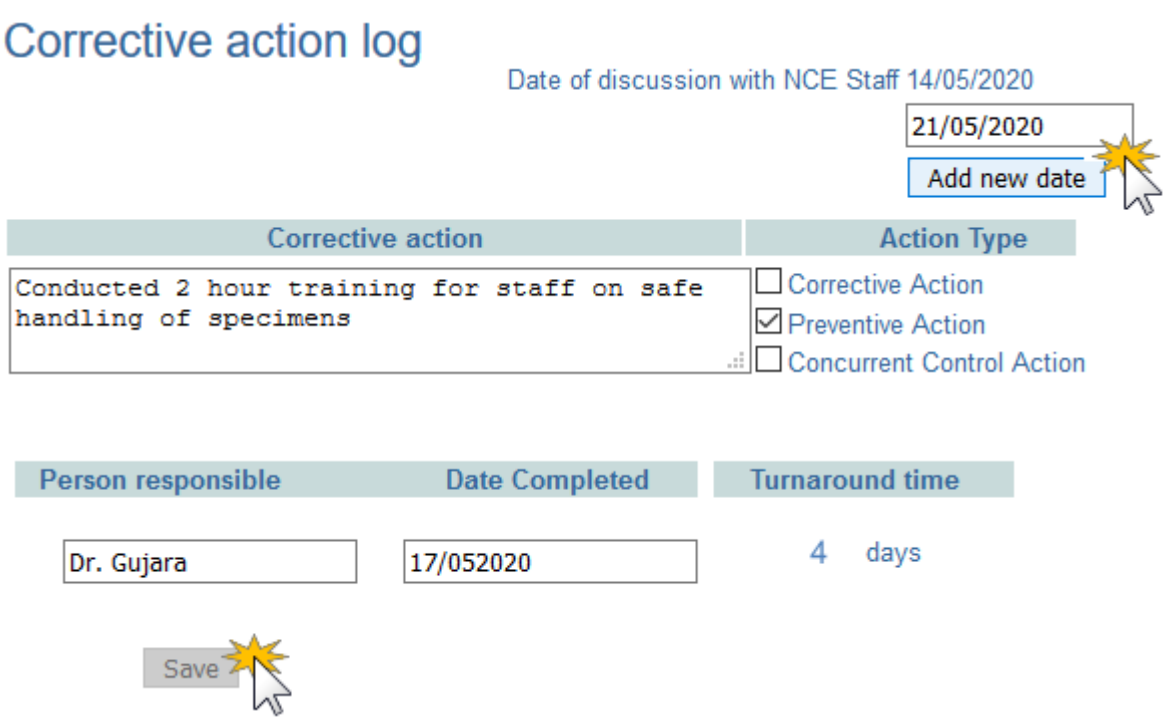


NCE Corrective Action form: Part 1- NCE Description

This section is view only. Verify that the information is correct.

NCE Corrective Action Form: Part 2- Corrective Action Log

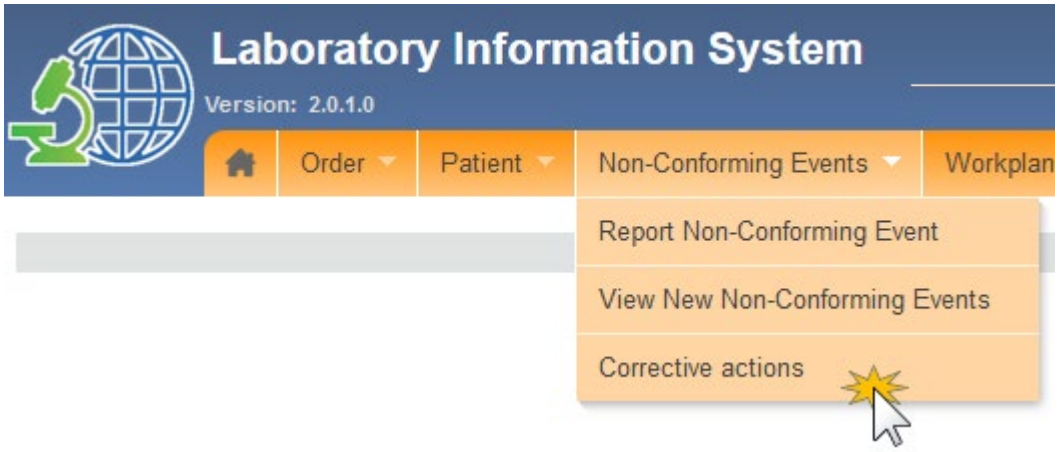
3. For each discussion with staff regarding the NCE, enter the **Date of Discussion** and click **Add New Date** button. The date will appear above the entry field. You may enter more than one date of discussion.
4. Enter text describing any **Corrective Action** taken and check the box next to the **Action Type.**
5. Enter the name of the **Person Responsible** for the corrective action and the **Date Completed** (the date the corrective action took place).
6. **Turnaround Time** is automatically calculated.
7. Click the **Submit** button to record the corrective action in the log.



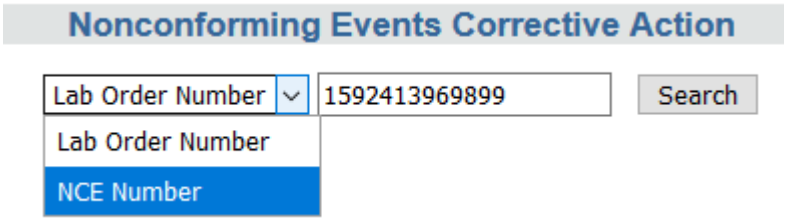
7. You may now navigate to a new page.
8. When you need to add additional corrective actions to the log, repeat steps 1-7.

How to close a resolved NCE

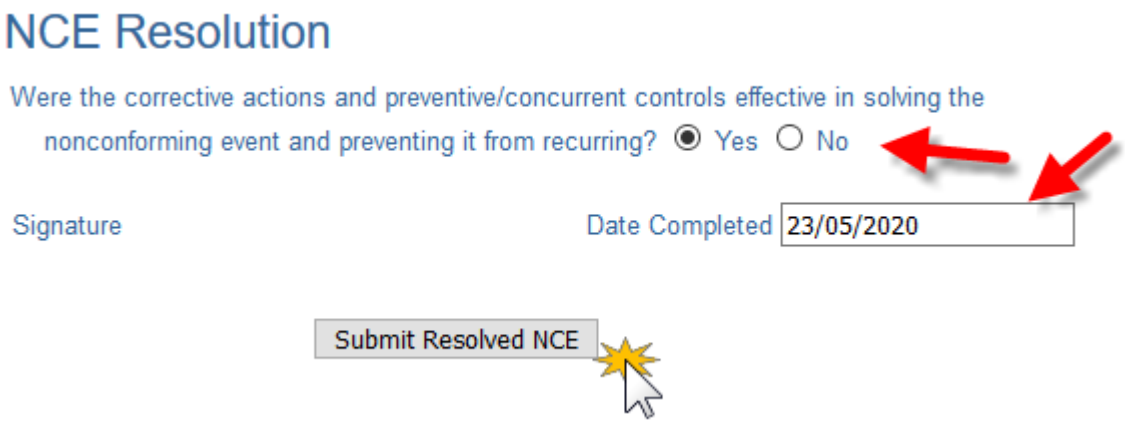
1. When all corrective action has been completed and the lab manager considers the NCE to be resolved, the NCE report should be closed, per laboratory procedures.
Select **Corrective Actions** from the menu.



2. Select **Lab Number** or **NCE Number** as your search term and enter the number in the search field. Click the **Search** button.



4. Scroll down to the **NCE Resolution** section.
5. If the corrective actions were sufficient to resolve the NCE, click **Yes** and enter the **Date Completed** (the date the NCE was considered resolved).
6. Click the **Submit Resolved NCE** button to close the NCE report.



The resolved NCE will no longer appear in the NCE reporting forms. To see details, use the **Reports** menu to select NCE related reports.

PART 9: ENTERING LAB TEST RESULTS

Once the samples and patient exist in the system, it is possible to record the results of analyzes made from the samples. It is at this stage that the lab technician plays an important role in the functioning of the information system. There are several ways to capture the results of laboratory tests for a patient: enter results by type of laboratory analysis, or search results by patient, lab number or the status of the analysis (conducted or not made).

This section includes the following guides:

- How to get to the results entry page
- How to enter results
- How to refer tests to an external laboratory for additional analysis
- How to enter the results of tests referred to an external laboratory

All samples reported as non-compliant will have a red flag side of their results.

How to get to the results entry page

1. From the main menu, select the **Results** tab.

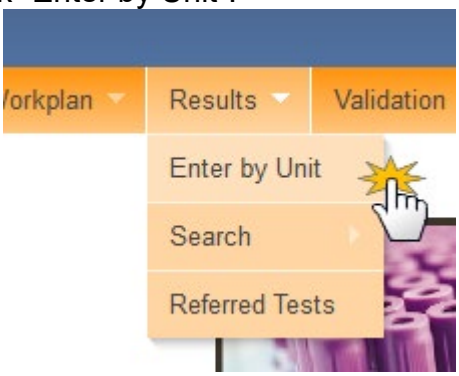
Results can be entered by

- Lab Unit
- Patient
- Laboratory Order Number.
- Test
- Date sample was collected
- Date sample was received
- Test status
- Sample status

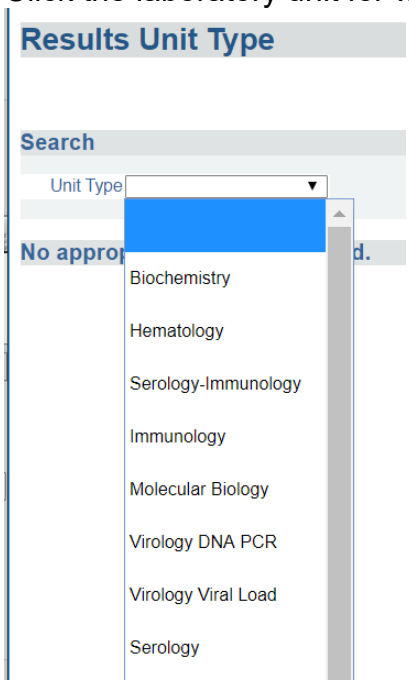
IMPORTANT:
If you select **Lab Unit**, all tests not yet resulted in that unit are displayed.
If you select by **Patient** or by **Lab Number,** *all* tests for that patient or laboratory order will be displayed, including tests that already have results entered.

To enter results by Unit

2. Click “Enter by Unit”.

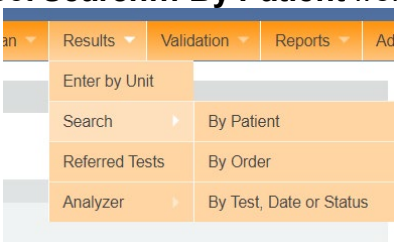


Click the laboratory unit for which you want to enter results.



To enter results by Patient

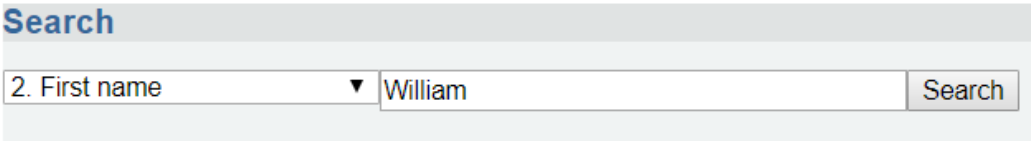
3. Select **Search… By Patient** from the Results tab.



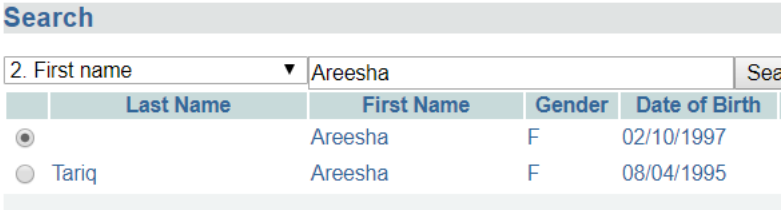
4. Click on **Search by**… drop-down list and select one of the following options:

- Last name
- First name
- Last and first name
- Patient identification code
- Lab No (any order associated with that patient)

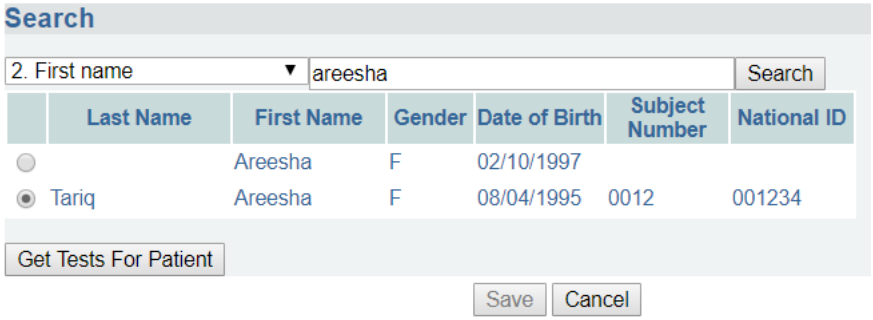
If you are looking for a patient by his first name, William, select search by "first name", type "William" in the search field and click on Search button.



5. Click the radio button to the left of the patient you wish to select.
Note: For this, use the other data you have at your disposal to verify the correct patient name.

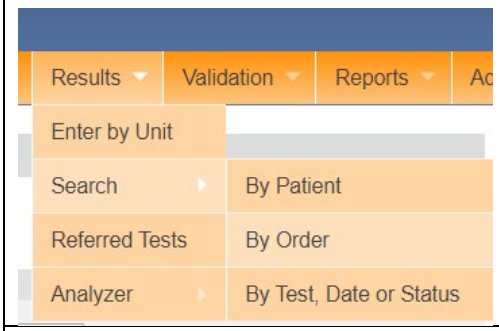


6. Click Get Tests For Patient.

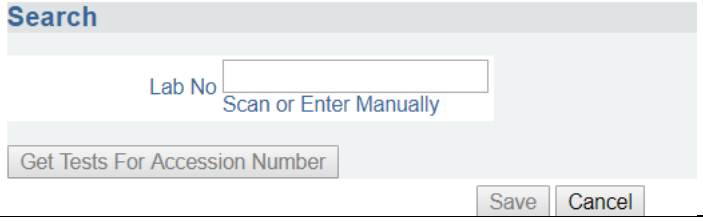


To enter results by Order

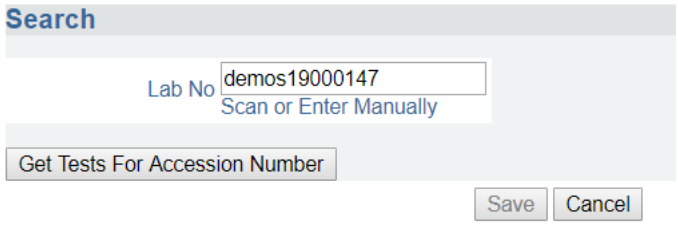
7. Click on **Search….By Order** from the Results tab.



8. A search field will appear. Enter the lab number in that field.

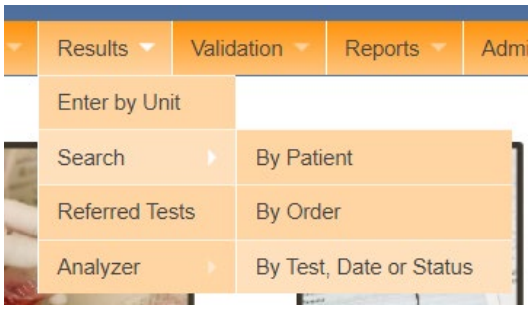


9. Click on Get Tests for Accession Number.



To enter results by Test, Date, or Status

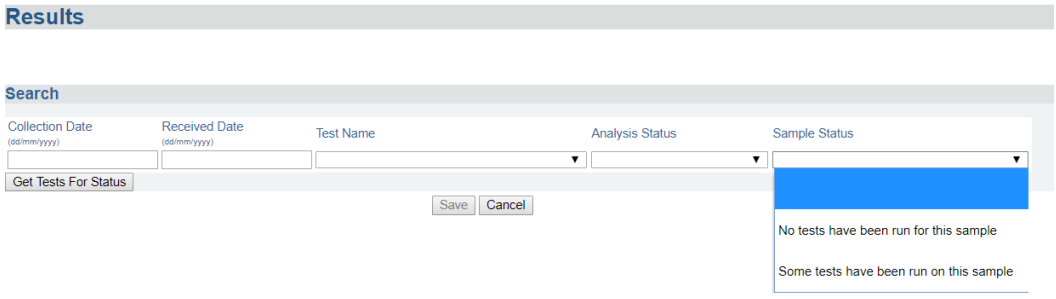
10. Select Search….By Test, Date or Status from the Results tab.



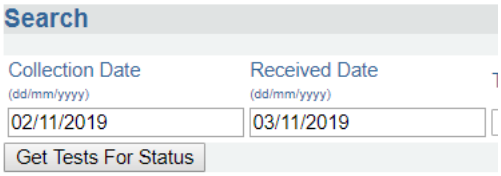
11. Enter any of the parameters in order to limit your search.

NOTE:
Collection date and received date should be in the format dd/mm/yyyy.

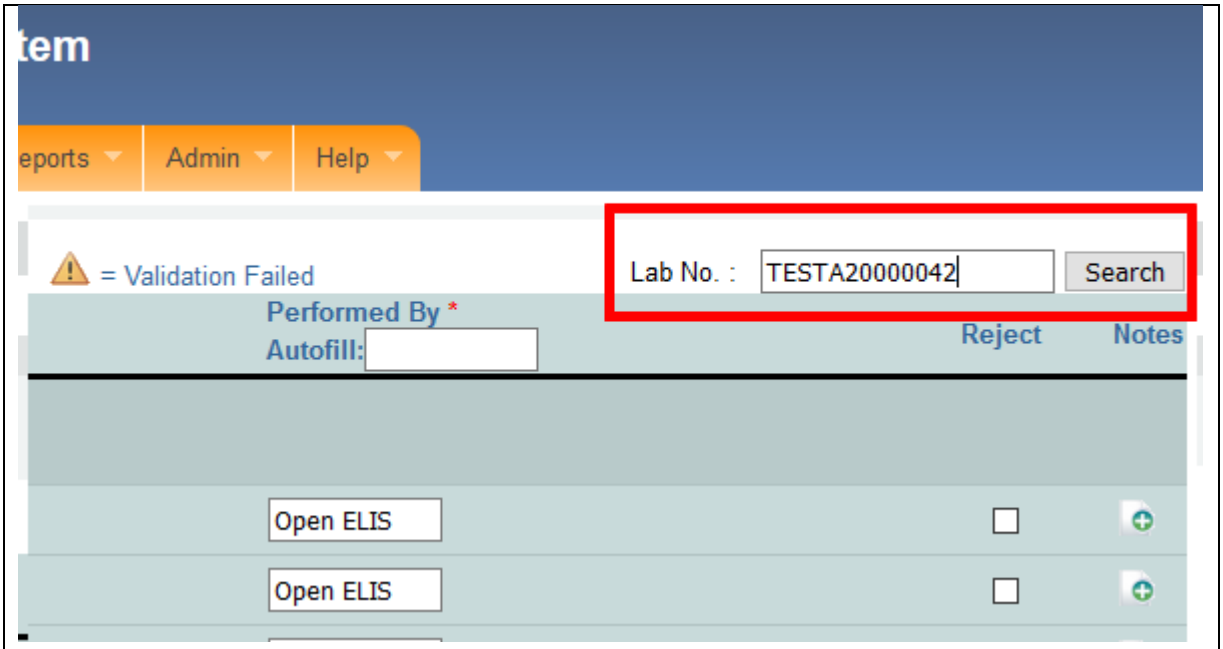
Select the **Test (Analysis)Status** or **Sample Status** from the respective drop-down lists.



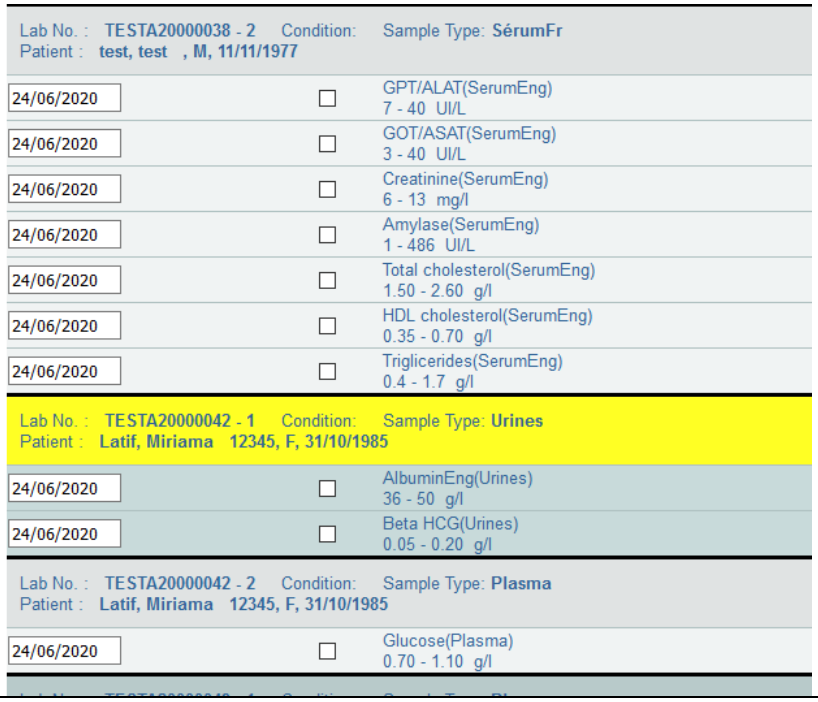
12. Click the Get Tests For Status button.



13. On any results entry page with multiple lab orders, you can go to a particular lab order by entering the lab number in the search field at top right of the page.



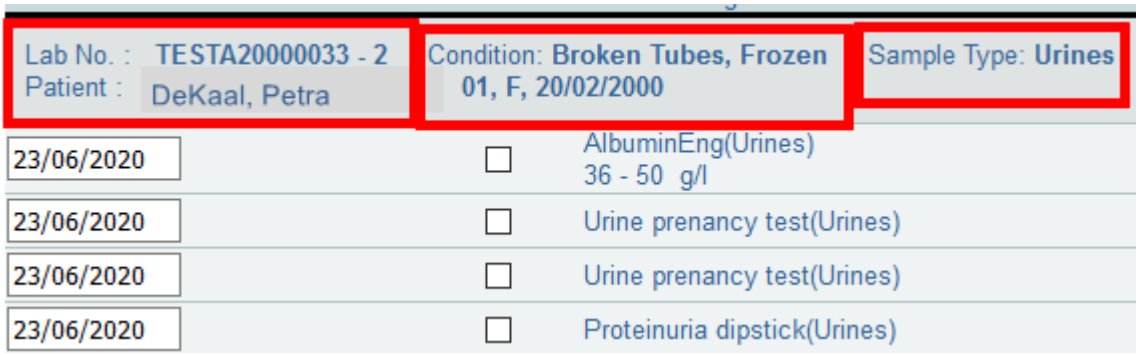
The lab order will be highlighted in yellow.



How to enter laboratory test results

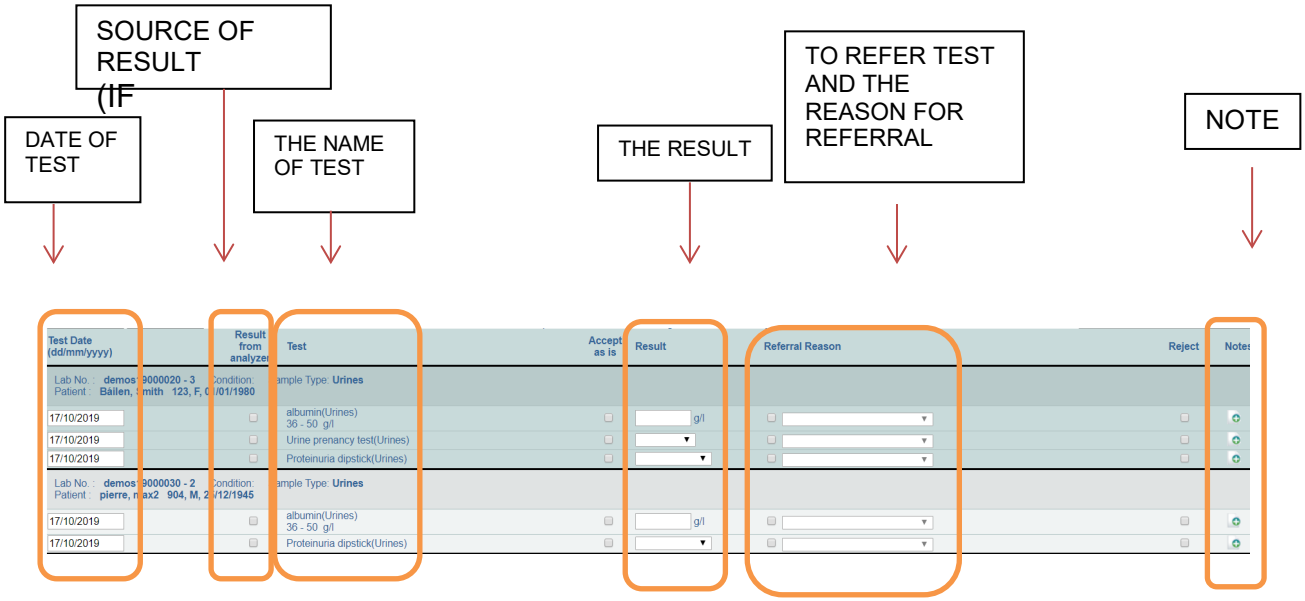
The results are displayed in order of the date of receipt and subsequently by laboratory number.

Each test displays the following information:
Lab Order/Sample Number, Sample Type, Sample Condition
Patient Name, Patient ID Number, Sex, Date of Birth

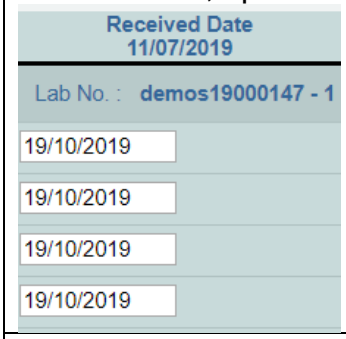


The results entry columns from left to right include:
Test Date, Name of Test, Result, Referral and Reason, Technician, Notes field

There are tickboxes for whether the result comes from an analyser, to confirm the result, whether the test must be referred for additional testing at another laboratory, and for rejecting a test for reason of non-conformity.

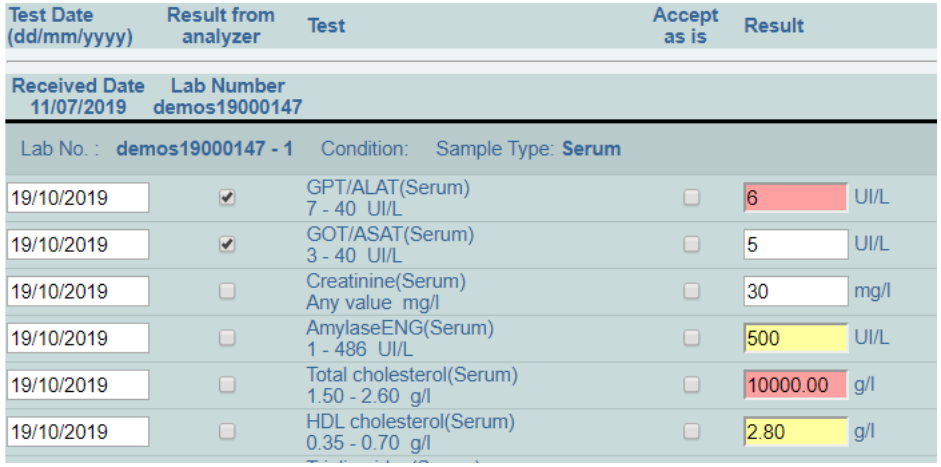


1. This field auto-populates with the current date. If the test was performed on a different date, update the **Test Date** field in format dd/mm/yyyy.



2. If the result is from an analyser machine, check the box **Result from Analyzer.**

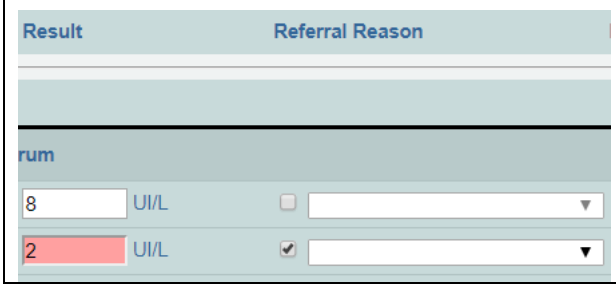
3. Enter the result in the column **Result.** For numerical results, type in the result. For other types, select the result from the drop-down list.

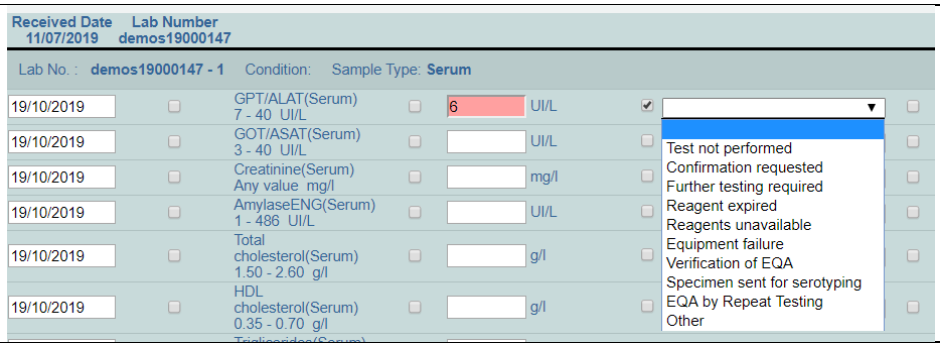


IMPORTANT:

- If the result is high or low (outside the normal range), the result field turns yellow.
- If the result is too high or too low (outside the valid range)`, the result field turns red to indicate an alert.
- If the result is in normal range, the result field remains white.

4. If the technician identifies a reason for referring the sample to another laboratory for confirmatory or other additional testing, they must check the box in the column **Referral Reason** and select a reason from the dropdown list.





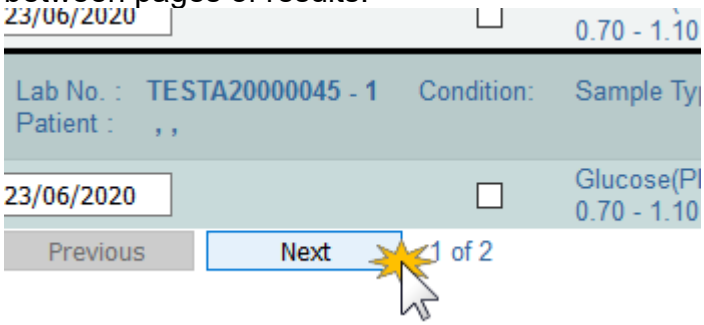
5. Depending on your local configuration, indicate the name of the technician who ran the test. This field may be autofilled and can be updated if the person entering the results is not the technician who ran the test.

6. Click the icon  to open the text box for **Notes**.

If you want to mention any important information, you can type in the text box.

Click the icon  to close the “Note” text box after you have typed your comments.

7. Use the P**revious** and **Next** buttons at the bottom of the page to navigate between pages of results.



8. Once you have entered all the results, go to the bottom of the page and click the **Save** button.

PART 10: REFERRED TESTS

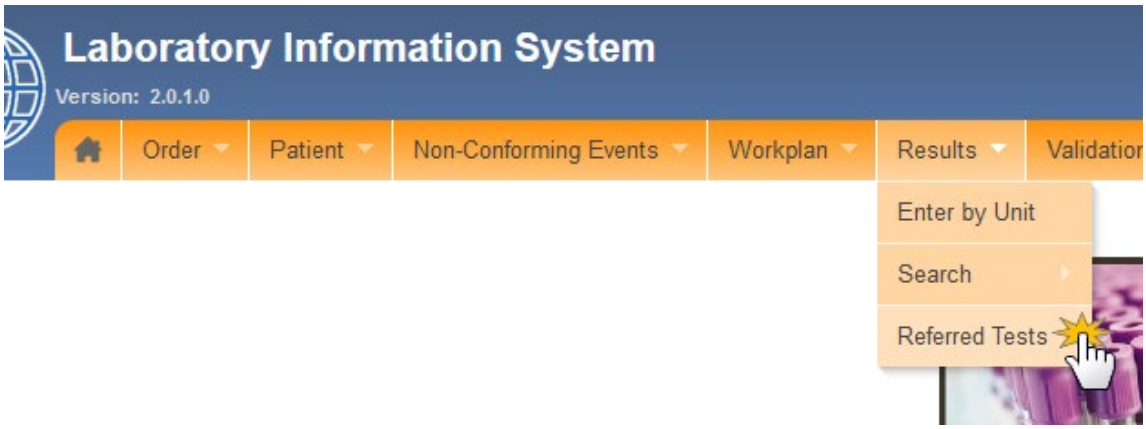
This section includes the guides:

- How to complete a referral of a test to another lab
- How to cancel a referral
- How to enter results from a referred test

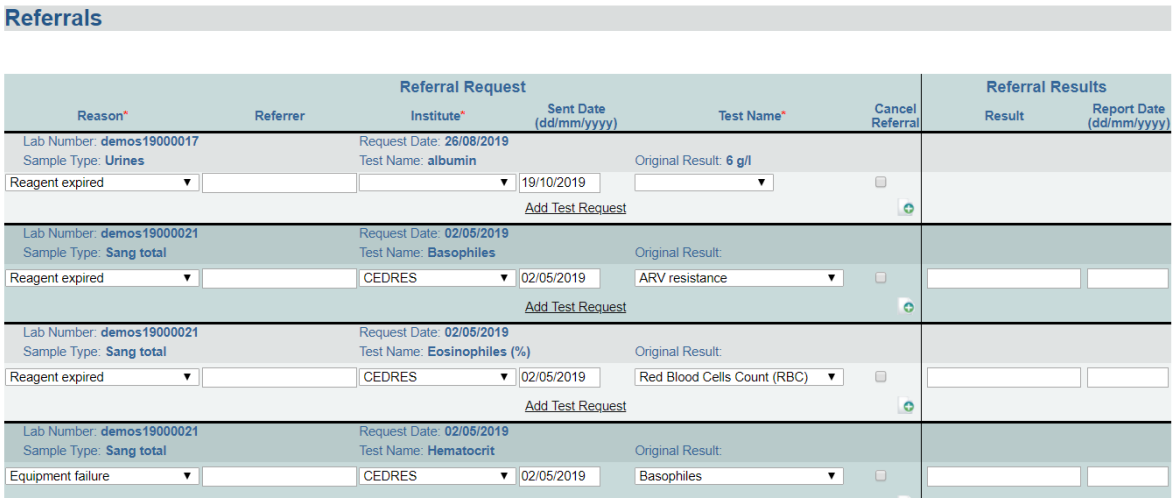
How to complete a referral of a test to another lab

If, during results entry, you checked the box for referral to another lab for confirmatory or other additional testing, you must complete the referral. Only then will you be able to enter the results from the other lab, once they are returned.

1. From the **Results** tab on the main menu, click on **Referred Tests**.

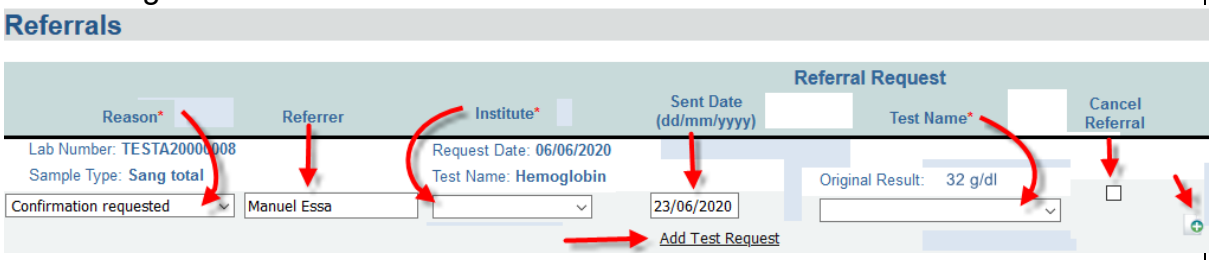


A list of all samples referred when entering the results will be displayed.

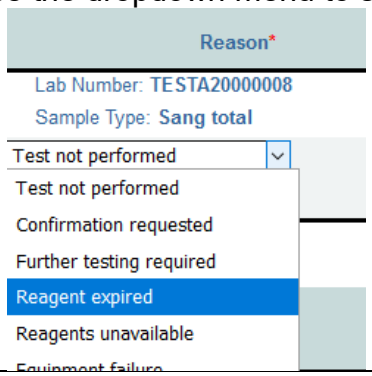


2. Find the desired laboratory order number in the list and verify the information. This information came from what was entered during results entry.
   - Lab number

- Date of referral request
- Type of sample
- Name of test
- Original result

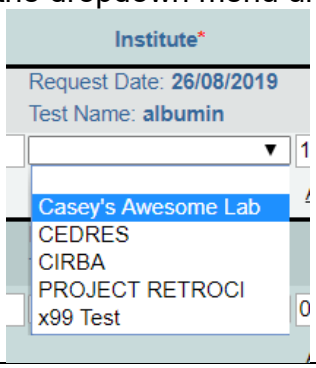


3. Confirm the reason for the reference that appears in the text box under the column “Reason”. If applicable, use the dropdown menu to select a new reason.

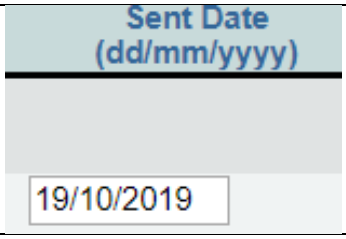


4. Type the name of the technician who referred the sample in the text box under the column “Referrer”

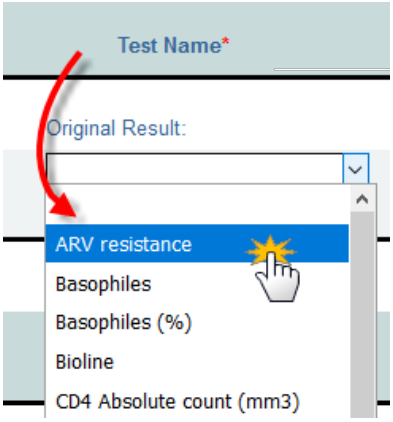
5. *Select the laboratory to which you are sending the sample for additional testing using the dropdown menu under **Institute.**



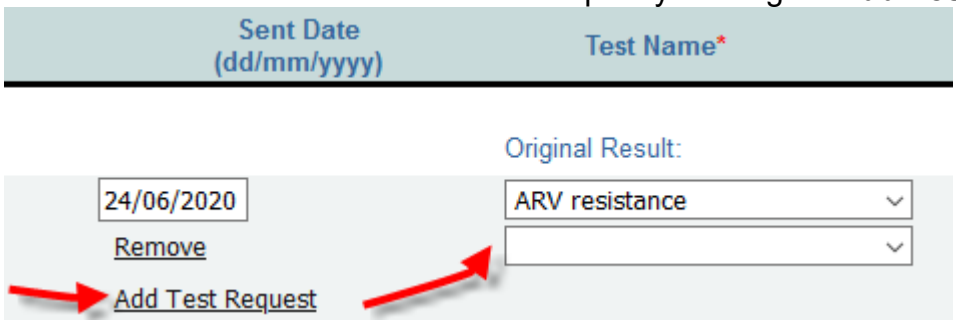
6. Confirm or change the date in the text box under the column “Sent Date” in the format dd/mm/yyyy. This should be the date that the sample is referred and sent to the external lab.



7. Select the test that the external laboratory is asked to do from the dropdown menu.



You can add additional tests for that sample by clicking on **Add Test Request.**



To remove an added test, click **Remove.**

8. Click the icon  to open the text box for **Notes**.

If you want to mention any important information, you can type in the text box.

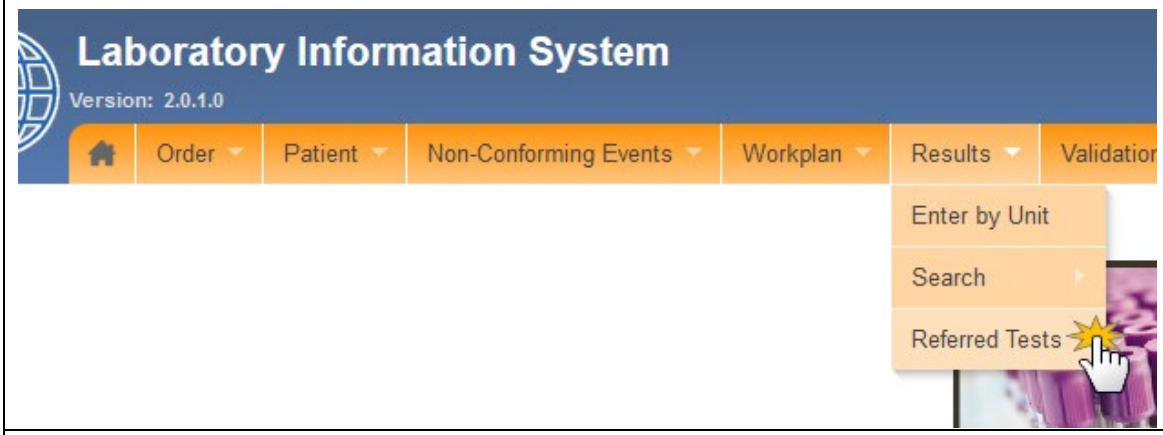
Click the icon  to close the “Note” text box after you have typed your comments.

9. Once you have completed all the information, scroll down to the bottom of the page and click on the **Save** button to save the referral.

How to cancel a referral

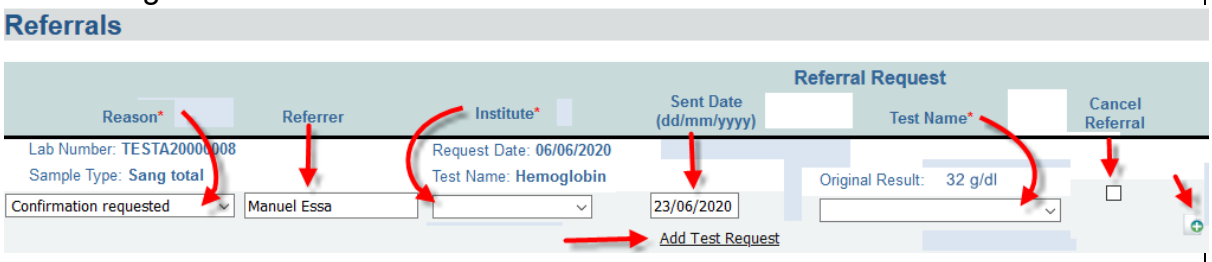
If you have indicated on the Results page that a sample should be sent for additional testing at another laboratory, and then must cancel the referral, follow these steps.

1. From the **Results** tab on the main menu, click on **Referred Tests**.

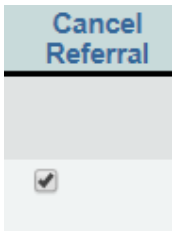


2. Find the desired laboratory order number in the list and verify the information. This information came from what was entered during results entry.

- Lab number
- Date of referral request
- Type of sample
- Name of test
- Original result



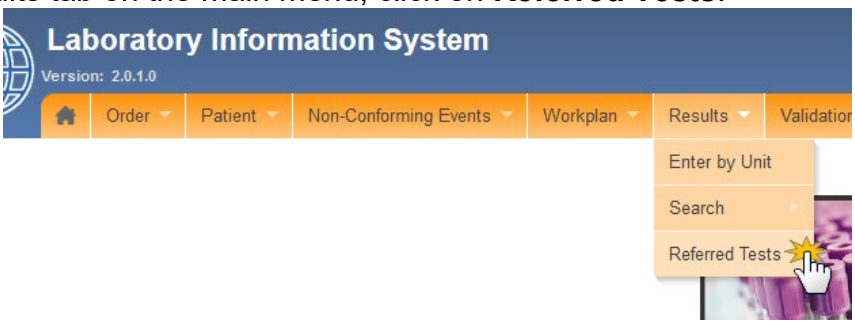
3. Check the box in column **Cancel Referral**.



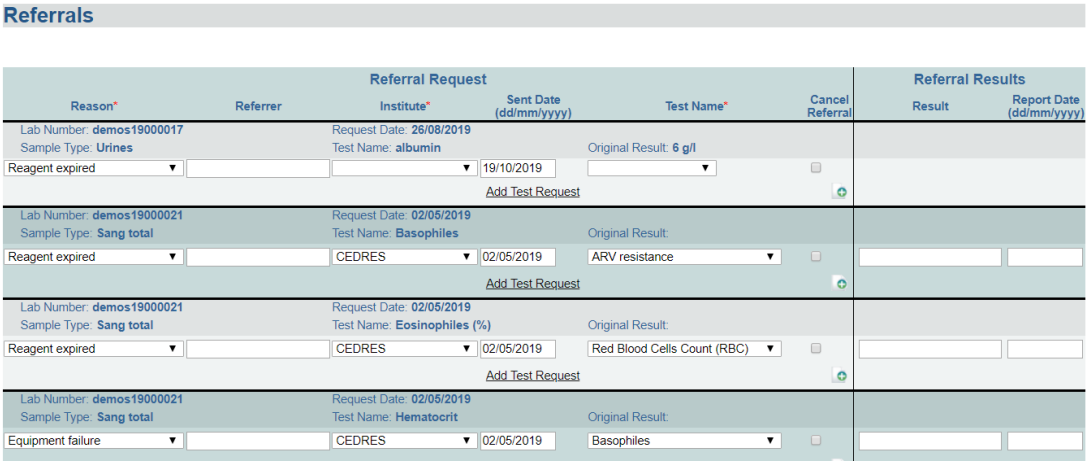
4. Once you have completed all the information, scroll down to the bottom of the page and click on the **Save** button to save the referral.

How to enter results from a referred test

1. From the Results tab on the main menu, click on **Referred Tests**.

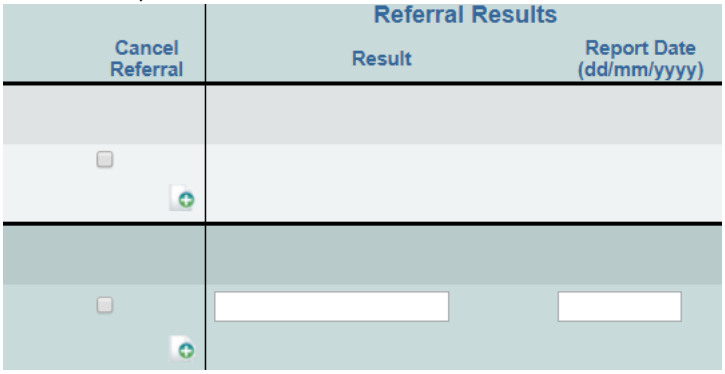


2. Find your desired sample in the list.

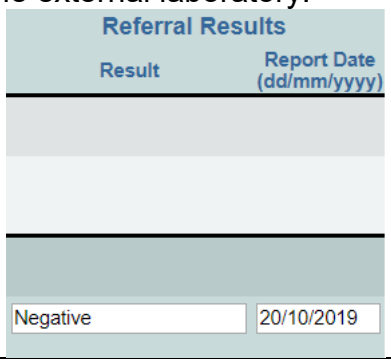


NOTE: You cannot change the requested test asked for a sample that has already been referred to the external laboratory. To redo the analysis request to the external laboratory, add a new test or tests by clicking the underlined words **Add Test Request**. Go to the aid "How To Complete a Referral" for specific instructions.

3. Under **Result**, enter the results received from the external laboratory.



4. Enter the **Report Date** in the format (dd/mm/yyyy). This is the date you received the report from the external laboratory.



5. Scroll down to the bottom of the page and click the **Save** button.

PART 11: RESULTS VALIDATION (BIOLOGICAL VALIDATION)

After results are entered by the lab technician, the biologist must review and validate the results.

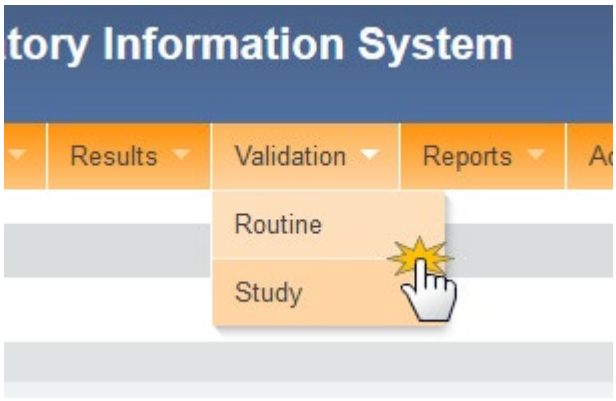
OpenELIS Global displays all results by laboratory unit, listed by laboratory number order. The biologist can then accept or reject the result.

Accepted results appear on the patient report. Rejected results return to the lab unit for re-testing or other verification. The guides in this section include:

- How to validate results
- Follow-up on rejected results

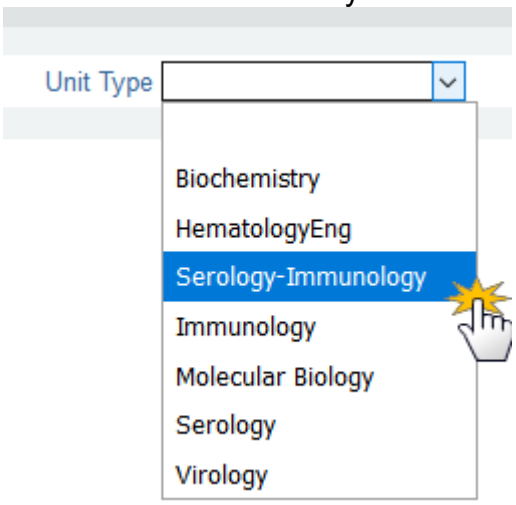
How to validate results

1. Select **Routine** from the **Validation** tab on the main menu.

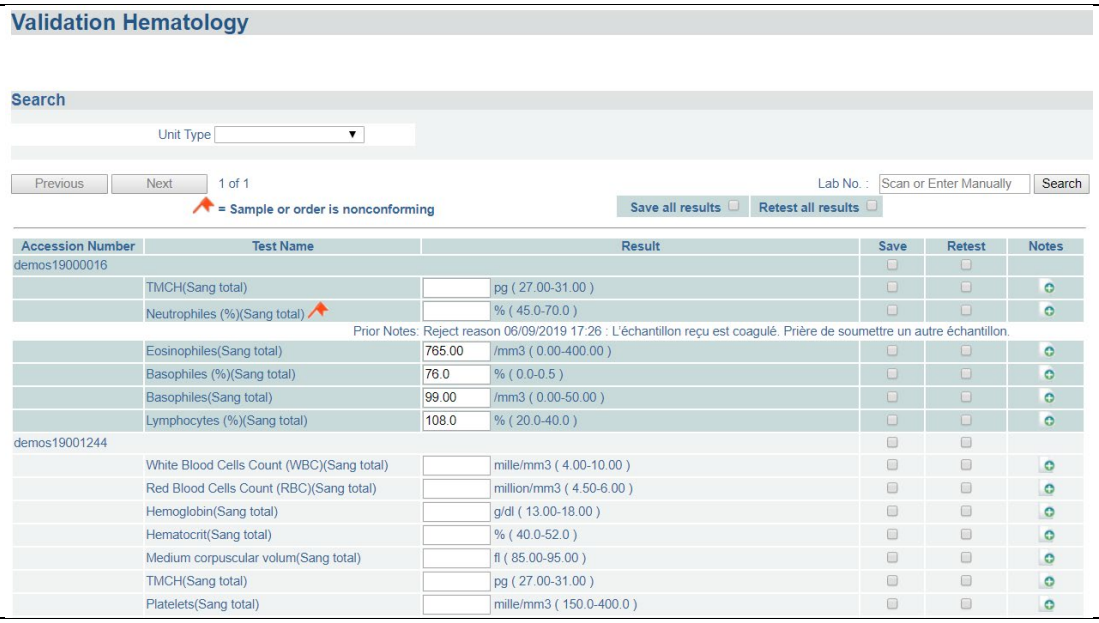


A new page will open displaying a dropdown menu to search for the laboratory unit.

2. Select the desired laboratory unit.



A list of all the results ready for validation in the laboratory is displayed.

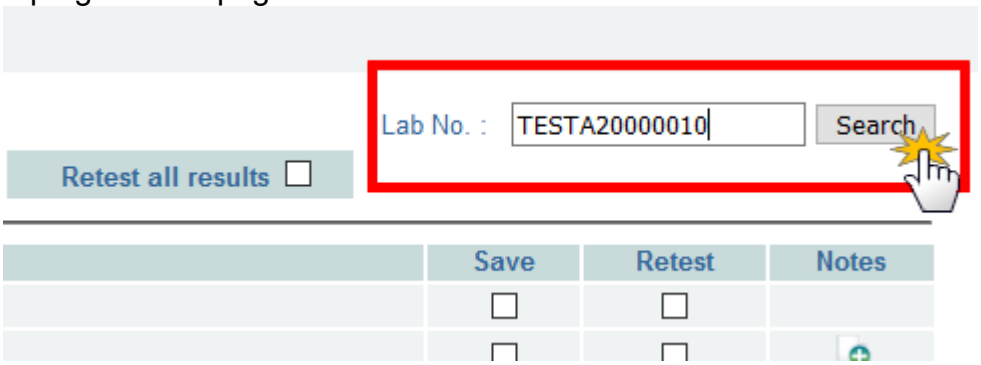


3. If all results are valid, you can check the box **Save All Results** to validate all results on the page at once.

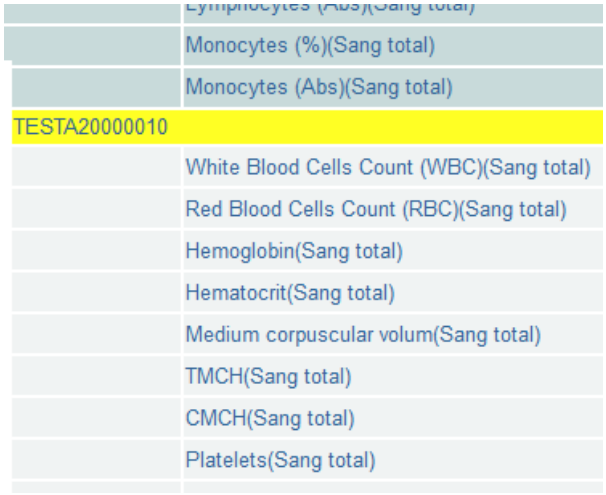
If none of the results are valid, use the checkbox **Retest All Results** to reject all of the results at once.

Otherwise, check the box under the appropriate column—**Save** for validate, **Retest** for reject—next to each test result.

You can go to a particular lab order by entering the lab number in the search field at top right of the page.



The lab order will be highlighted in yellow.

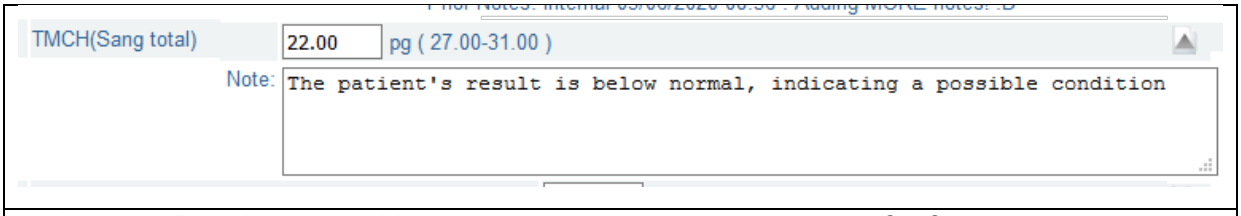


4. Click the icon  to open the **Note** text box.

For ***valid results***, enter any comments for the patient or provider that should accompany the test results. These comments will appear on the patient report.

For ***invalid results***, enter any comments for the lab technician regarding the validation of results and any required follow-up. These comments appear only for the lab and do not appear on the patient report.

Click the icon to close the Note text box.



5. Use the P**revious** and **Next** buttons at the top or bottom left of the page to navigate between pages of results.

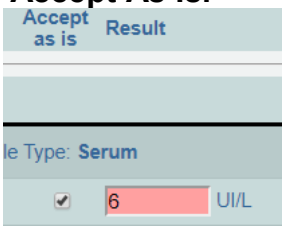
6. Once you have entered all the results, go to the bottom of the page and click the **Save** button.

Follow-up by Technician

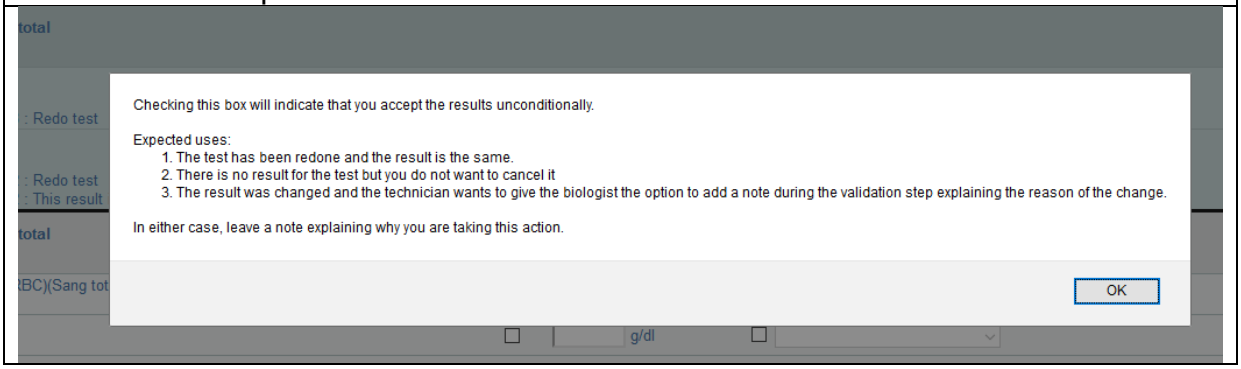
Results that are rejected during biological validation get sent back to the Results Entry stage. At that point, the lab technician can refer to any notes entered by the biologist. These appear below the result.

The technician may choose to indicate that the original result entered was correct. In that case, follow these steps. they must check the box un the column **Accept As Is.**

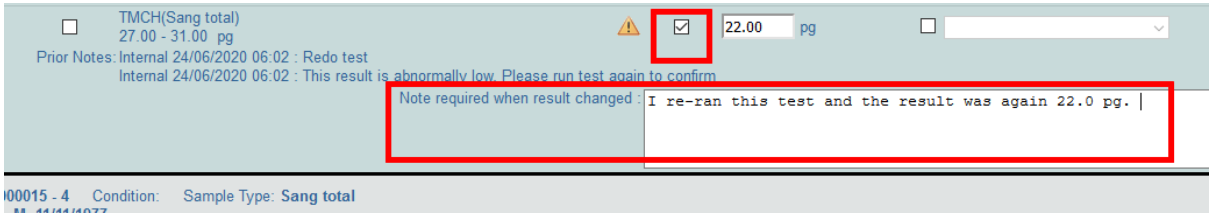
1. On the Results Entry page, go to the result that you wish to signal as correct. Check the box under the column **Accept As Is.**



A pop-up warning message requires you to confirm that you wish to make this assertion to accept the result. Click **OK.**



Enter explanatory comments. This is required and you will not be able to save the result without entering comments.



Scroll down to the bottom of the page and click **Save** to save the result and send it back to biological validation.

PART 12: REPORTS

Various reports are available in OpenELIS Global. They are grouped into three categories:

- Individual Patient Report
- Aggregate Reports
- Management Reports

The reports available depend on your local configuration.

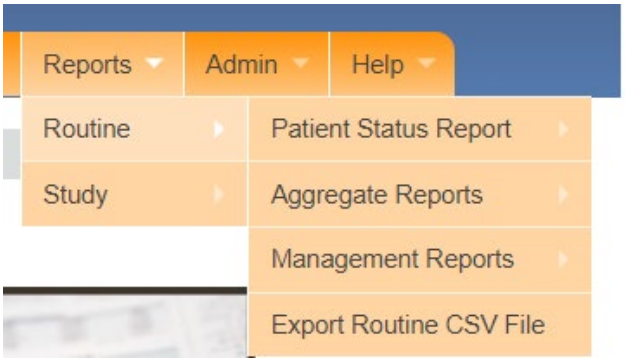
CATEGORY	REPORT
Individual Patient Report	Patient Test Results Report "Patient Status Report"
Aggregate Reports	Summary of All Tests
	Summary of HIV tests
Management Reports	Activity Reports
	Referred Tests Report Non-Conforming Events Reports
	Delayed Validation Report Audit Trail Report

There are two guides to producing reports:

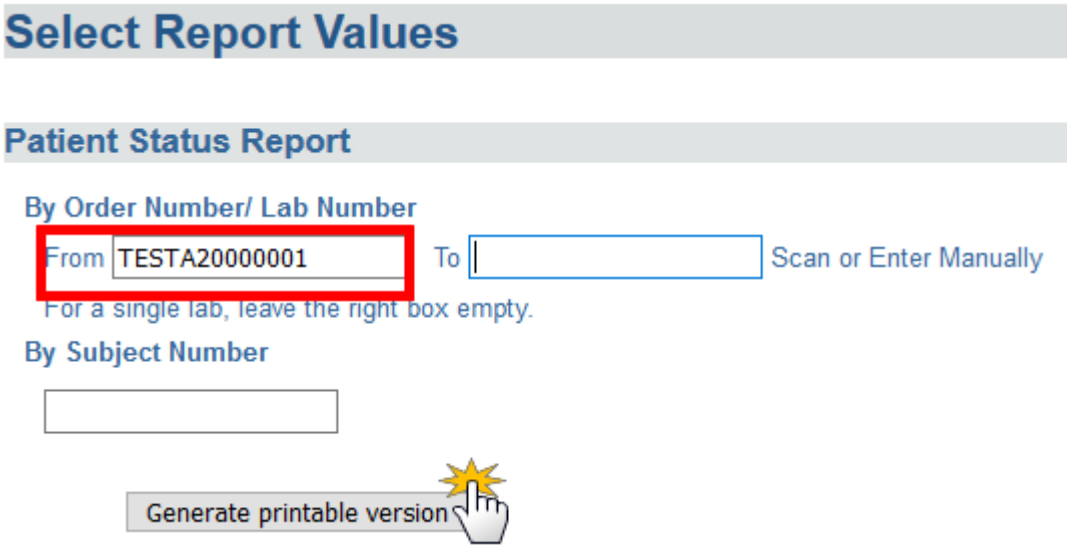
- How to generate the Patient Results Report
- How to generate all other reports

How to generate the Patient Results Report

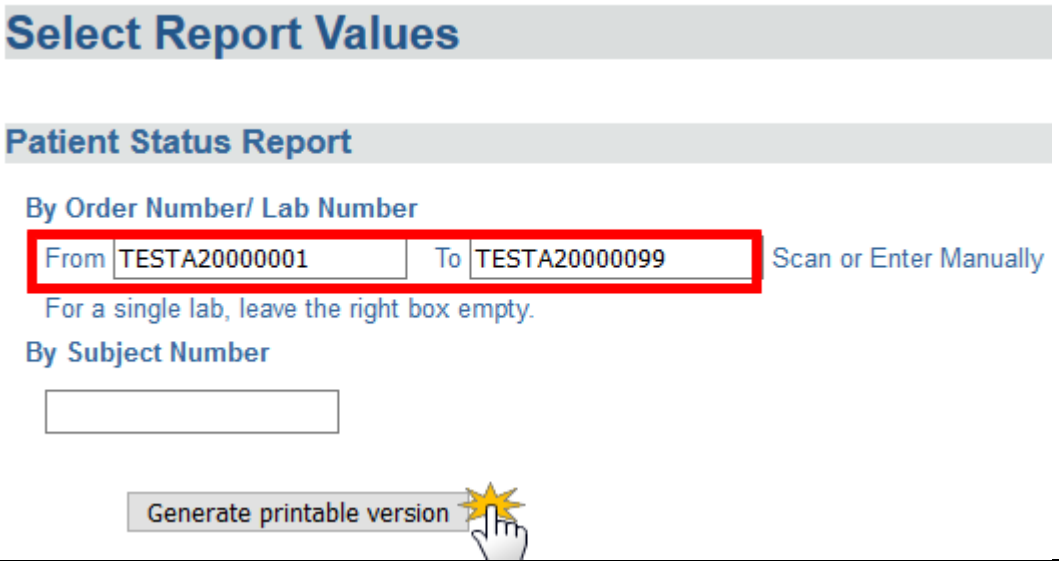
1. Select **Routine….Patient Status Report** from the **Reports** tab on the main menu.



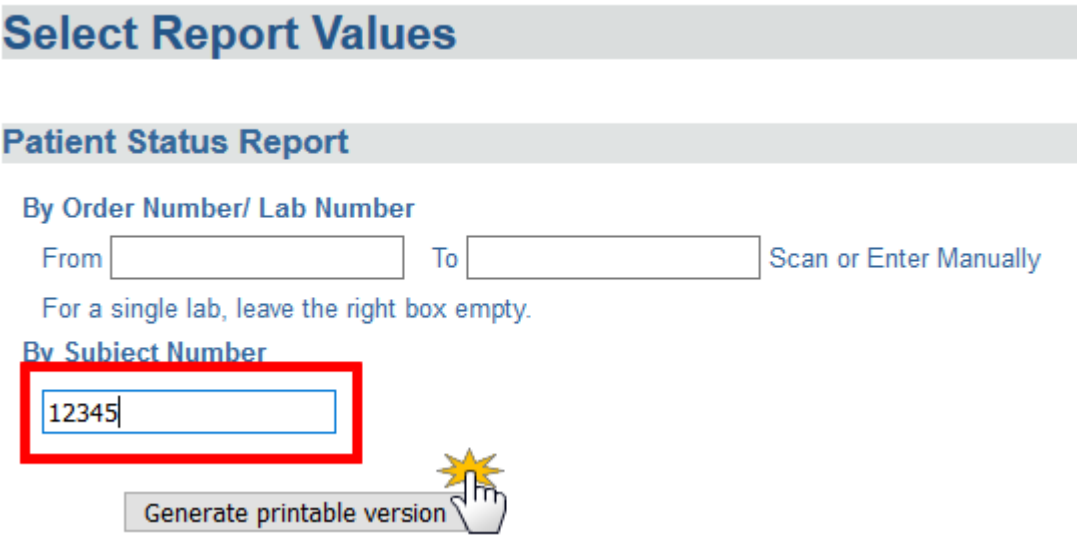
2. For *a single laboratory order:* Enter or scan the laboratory number in the **From** field. Click the **Generate printable version** button.



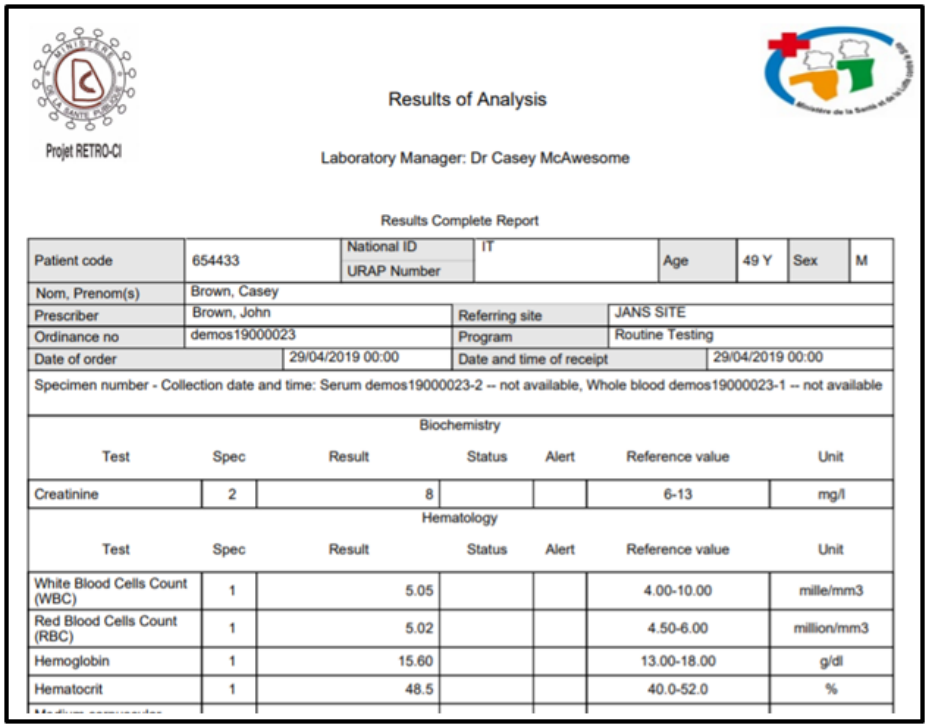
3. For *a contiguous range of laboratory orders by number:* Enter or scan the starting laboratory number in the **From** field and enter or scan the ending laboratory number in the **To** field. Click the **Generate printable version** button.



4. For *a single patient's entire order history:* Enter the **Patient ID** in the **From** field. Click the **Generate printable version** button.



A PDF version of the report will appear in a new browser window:



Projet RETRO-CI

Results of Analysis

Laboratory Manager: Dr Casey McAwesome

Results Complete Report

Patient code	654433	National ID / URAP Number	IT	Age	49 Y	Sex	M
Nom, Prenom(s)	Brown, Casey						
Prescriber	Brown, John	Referring site	JANS SITE				
Ordinance no	demos19000023	Program	Routine Testing				
Date of order	29/04/2019 00:00	Date and time of receipt	29/04/2019 00:00				

Specimen number - Collection date and time: Serum demos19000023-2 -- not available, Whole blood demos19000023-1 -- not available

Biochemistry

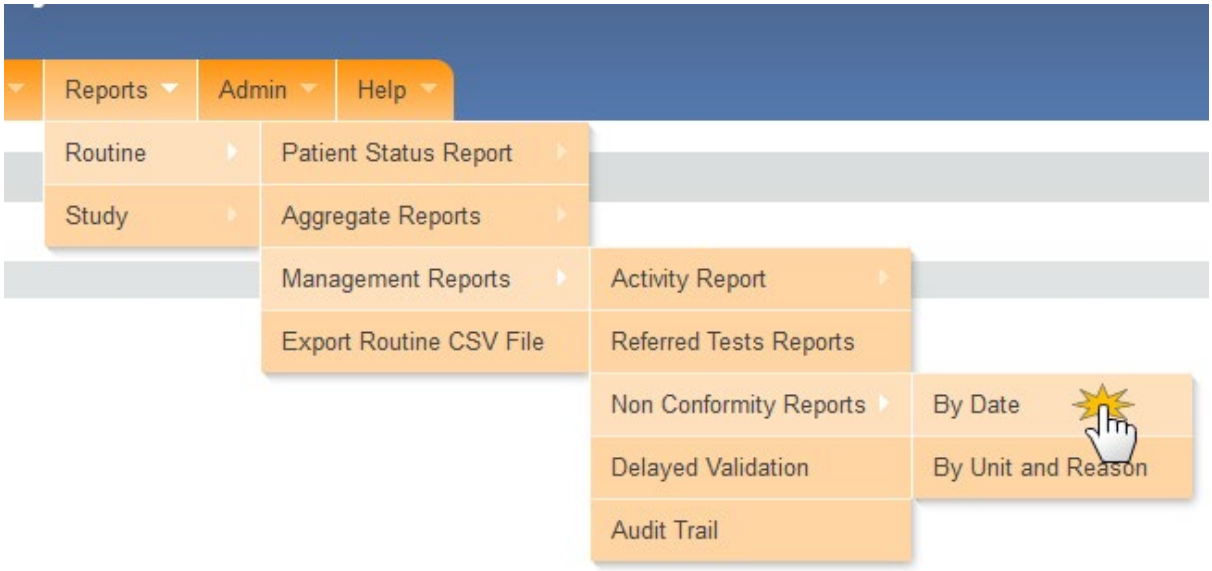
Test	Spec	Result	Status	Alert	Reference value	Unit
Creatinine	2	8			6-13	mg/l

Hematology

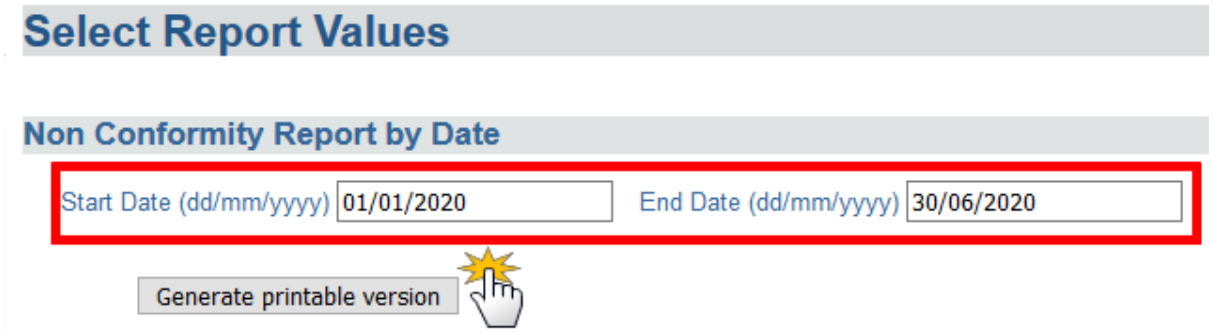
Test	Spec	Result	Status	Alert	Reference value	Unit
White Blood Cells Count (WBC)	1	5.05			4.00-10.00	mille/mm3
Red Blood Cells Count (RBC)	1	5.02			4.50-6.00	million/mm3
Hemoglobin	1	15.60			13.00-18.00	g/dl
Hematocrit	1	48.5			40.0-52.0	%

How to generate all other reports

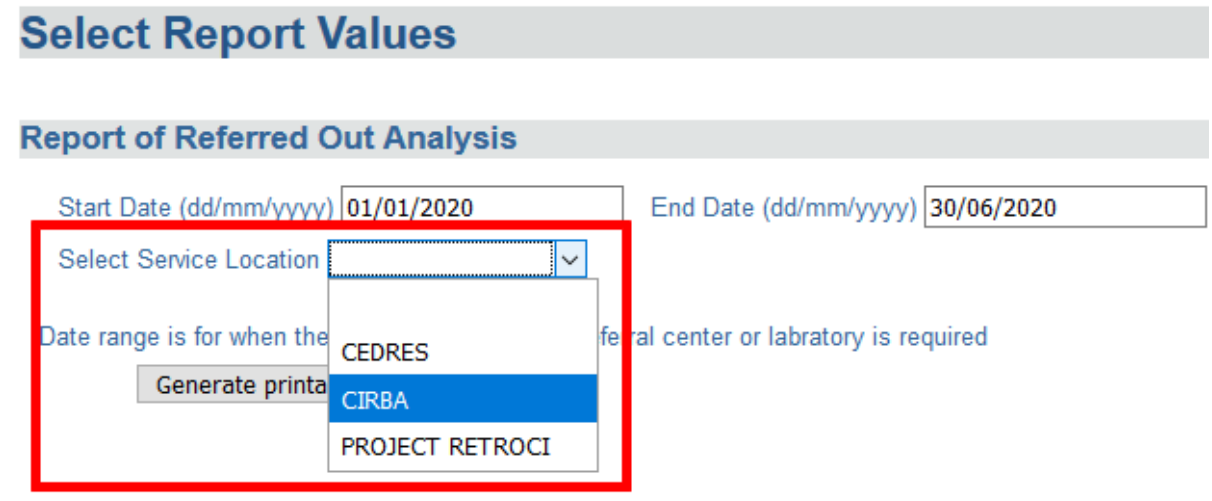
1. Select the desired report from the Reports tab.

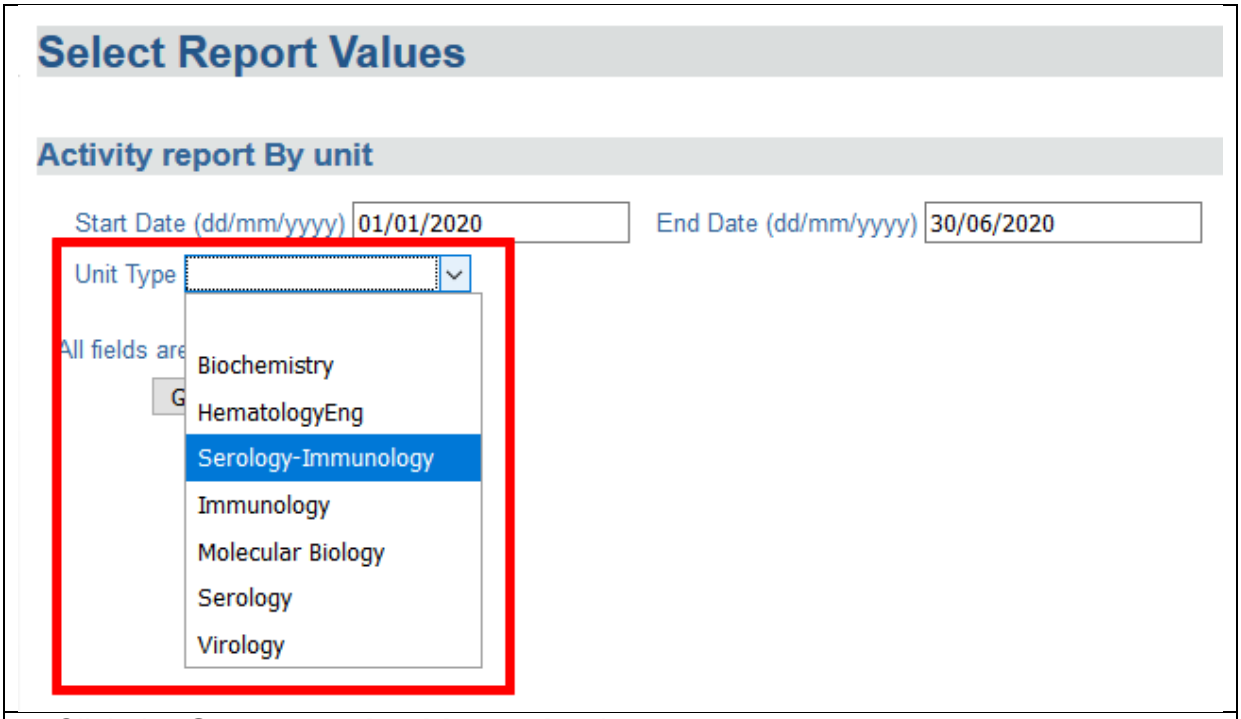


2. Enter the desired date range for the report by entering the **Start Date** and the **End Date** in the format dd/mm/yyyy.

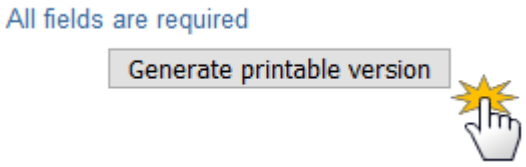


3. Select other parameters, if applicable, from the dropdown lists.





3. Click the **Generate printable version** button.



A PDF version of the report will appear in a new browser window.