

**Laboratory User Stories**

Version 1.0

12 September 2011

Covers

1. Patient Sample Collection
2. Sample Preparation
3. Conducting Lab Investigation
4. Recording Investigation Results

# *Document Details*

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| **Document Number** | **LAB-V1/24Sept2011** |
| Document Description | This document provides the user story for LAB Related processes at JSS, Bilaspur |
| Author  | Sharath Hangal  |
| Reference Document  | The document draws upon the Lab Workflow Flow diagram provided and details out the AS IS and TO Be Processes. **JSS EMR New Patient workflow.pdf** – Sept 2011, on Google Docs  |
| Activities covered  | Patient Sample Extraction, Lab Investigation, Recording Investigation Results |
| Number of Pages  |  |

# *Document History*

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| **Version & Date** | **List of Changes** |
| Ver 1.0 – Sept 26, 2011 | Base Document for Review. |
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# Introduction

Laboratory (Lab) Investigation is a critical part of patient care. This is split into three logical sets of requirements, viz., Patient Sample Collection, Sample Prepation, Lab Investigation and Recording Investigation Results.. The activities presently carried out are in AS IS Process column and the proposed is in TO BE process column.

Activities that have occurred prior to LAB Activities are

1. Registration
2. Screener
3. OPD/ IPD consultation
4. Clinician Orders for LAB Investigation

The ordering activity being completed, these are expected to be available against patient name / registration number as part of EMR for downstream processing activities viz., Sample extraction, lab Investigation, and Recording Lab Results.

# Points to Note

## Process Note

* Lab investigation Orders are typically of four types viz., Hematology, Bio-Chemistry, Microscopic, and Microbiology. ***(Note: Radiology which is also in the set of investigation activities will be addressed separately later)***
* Certain Samples will be marked as Urgent and need to be prioritized for processing all through the cycle – Sampling, Investigation and Recording Results
* The results of Lab Investigations are in two forms viz., standard templates and text documents
	+ Standard Templates – These are specific to each test. For example Routine Urine test will have details that are to be recorded in a particular form
	+ Text Documents – These are in free flow texts
* Samples arrive from the emergency room (located in the OPD), from the wards, from the OT, and from the field, i.e., Sub Centers
* When Samples are received from the Sub Centers, results are relayed physically back to the sub center in books where the investigation notes are recorded and this needs to continue for some more time. In the future these will also be connected.
* Investigation results from labs outside of JSS are recorded in the patient EMR by a Nurse under the instructions of the clinician. Sometimes, the clinician themselves shall capture these results on to the EMR though an image capture from the tablets. However these details will be available in the OPD user story document.

## Sample Types and Sample Preparation

* There are different types of samples for different tests. A single sample may be used for multiple tests. For ex. Blood, Urine, Stool, Vaginal Swab, Sputum, Skin, Semen,
* There are certain pre-requisites to be met for each sample extraction. These need to be checked before sample extraction. These instructions are specific to tests and standard for all patients. These instructions are to be made available to the sample extraction staff alongside the order. Typical examples are
	+ Lipid Profile Investigation- The precondition here is that the patient should not have taken any liquid or solid prior to extraction of sample
	+ Glucose Test - 2 samples - Fasting blood sample and another samples 1 hr 45 mins after breakfast
	+ Medication completion – completion of a treatment course that was advised
	+ So on..
* Sample Preparation can be of any of the following types
	+ Sampling for Culture test
	+ Sample on a Slide and then Stain the slide
	+ Sample on Slide, Cover and apply re-agent
	+ Sample for Centrifuge
	+ Sample for Centrifuge and wet mount
	+ Making slide for differential cell count, gram stain and Z‐N stain

# Patient Sample Extraction (OPD)

**Note:**

1. **Personnel** – Sample Extraction Attendant/ Lab Attendant / Nurse
2. **Preparation** – Before Operations start for the day
	1. Check for stock of Vacutiners, Bottles, Slides
	2. Sterilized Surgical instruments required for extraction of tissue samples
3. **Start Time** - Work Begins at 9AM in the morning when OPD orders start
4. **All interaction with the system are provided in this color**

## Sample Collection Activities at OPD

|  |  |
| --- | --- |
| **AS IS PROCESS** | **TO BE PROCESS** |
| Two attendants are in this area – Patients are in a queue | One Attendant in Charge of Sample Collection logs into the system **Presented on the screen is list** of Patient Registration Numbers, Patient Name, Date and Time of the Order (ascending – FIFO). This is a list of all pending orders in the system – Patient Wise and arranged in ascending order based on Date and Time (FIFO). The list of orders are for the Current Date. **All urgent Orders in the list are at the top and Marked in a different color** for the Attendant to pick these and process on priority |
| One attendant receives the patient file, records patients registration number, and the investigation that is required.  | **Case 1 – Attendant Calls out the Patient for providing Sample** * Attendant **Clicks on the Patient Registration Number and retrieves** the list of Investigations Ordered by the Clinician for the patient. (There could be multiple investigations ordered by the clinician, one below the other)
* **On Screen Details** - Below each order, the standard procedure to be followed for sample Collection is provided (see **Points to Note** above). Viz., Sample type, Sample Collection process
* Attendant Calls out the Patient Name, Checks for
	+ The Registration Number to ensure it is the right patient
	+ Pre-requisites for Sample Collection procedure (Fasting etc) and any other preconditions for sampling that is **listed on screen**
 |
|  |  **Case 2 – Patient Approaches the Attendant for providing Sample** Note: This case occurs when the clinician has ordered investigation and the patient is not prepared for the providing a sample – for ex. Fasting Blood. Therefore the patient may turn up on another day. * Patient Approaches Lab Attendant and provides Registration Number
* **Attendant enters the registration number and clicks on “Retrieve Lab Orders”**
* **All pending orders of the Patient for which samples are not collected are listed on the screen with the pre-requisites for sample collection**
* Attendant checks for Pre-requisites for Sample Collection procedure (Fasting etc) and any other preconditions for sampling that is **listed on screen**
 |
|  | **Case 3 – Ordering a Re-Test** **In certain cases, the clinician/ lab manager may order a re-test. This could be due to ambiguties in sample/ investigation results etc. These are special cases and will be accompanied by a note from the competent authority** * Patient Approaches the Attendant with Note on ReTest that has the specific test that is to be taken up once again .
* Attendant Verifies the
	+ The Registration Number to ensure it is the right patient
	+ **Enters Registration Number on the screen and clicks on “Retrieve Old Orders”**
	+ All the orders for the last 15 days for the patient are listed on the screen with Pre-requisites for Sample Collection procedure (Fasting etc) and any other preconditions for sampling that is **listed on screen**
* Attendant **Clicks on specific test that need Sample Collection**
 |
| The other attendant collects samples (draws blood, etc) in appropriate containers (see **Points to Note** above)After completing the sample extraction, all containers with samples are labeled with adhesive paper labels and pen, indicating the patient's registration number and the investigation type (abbreviated) requested. If multiple investigations are to be conducted on the same sample, the names of all investigations are marked on the label /container | Case 1 – Attendant Draws the sample Case 2 – Patient is given a container to deposit the sample which is collected once sample is provided Case 3 – Patient provides the sample that is brought along and is transferred to the right container After any of the three mutually exclusive cases above * Attendant marks off the investigation order on the system that the sample is collected. Date and time are automatically recorded in the EMR
* all containers with samples are labeled with adhesive paper labels and pen, indicating the patient's registration number and the test type (abbreviated) requested
* If multiple investigations are to be conducted on the same sample, the names of all investigations are marked on the label /container
* Repeat till all samples are collected for the patient.
 |
|  | If any of the pre-requisites are not met, the investigation order is not completed, the attendant does not mark on the investigation order and these will appear as pending investigation orders (for instance if the patient has had food, the fasting requirement is not met) and this will be a pending order in the EMR against the patient name.  |
| Samples are physically segregated in trays and kept separately based on the terms of the lab where these are processed. (Hemat, Bio Chemistry, Micro biology and Microscopic Investigations)  | Samples are physically segregated in trays and kept separately based on the terms of the lab where these are processed. (Hemat, Bio Chemistry, Microbiology and Microscopic Investigations)  |
| Patient is directed to wait outside | Patient is directed to wait outside |

## Impact of the New Sample Collection Process

1. NOTE Exceptions:
	1. ***As regards Investigation orders from other locations such as Wards, OT, Emergency /Casualty, the personnel ordering and collecting sample could be the same. These personnel must be provided with the rught privilege for order entry and sample collection***
	2. ***In all cases an Order entry in the EMR is a must.***
	3. ***Sample collected is to be acknpweldged in the system for downstream activities of investigation and reporting into the EMR***
2. The ledger for entering the patient sampling with Investigation details is nore more required
3. Position one computer for each Sampling Attendant Desk (minimum two required)
4. Networking may be required for the computers
5. One sampling Attendant is required and Role is limited to
6. ***Retrieving patient Details and list of investigations ordered***
7. ***Ensuring the patient is right and patient has followed pre-investigation instructions (fasting, etc)***
8. ***Collect Sample, label sample container and Acknowledge Sampling for the investigation is done***
9. ***Segregation of sample for different areas***
10. Any Urgent requirements are processed on Priority. These requests are listed at the top and using a different color so that there is a visual cue

## Sampling System Services

1. Screen Refresh for auto update of Investigation orders placed by Nurse/Clinicians. Urgent orders top the list
2. Patient Lab Order Details Retrieval from EMR based on Registration Number / Patient Name
3. Investigation and Pre-requisites listing for a patient for each of the Investigation Orders
4. Time stamp for each sample collected against an Investigation Order
5. On sample being collected, the order is removed from the list and will be accessible by entering the patient registration number – The order followed here is LIFO

## Data Elements – Sample Extraction

1. Date Time
2. Patient Demographic Details (Patient demographics Object)
3. Patient orders and patient Pending Orders are listed Pre-requisites for sampling. If no Pre-requisites such as fasting etc then it the pre-requisies is blank.
4. Sample Type for each investigation order from master
5. Sample collection completion flag
6. Sampling Attendant details

## UX / Activities to be Performed for New Registration

1. Login and Click on Sample extraction screen,
2. List of Patients for whom sample extraction is necessary is listed
3. Click on the Patient Name / Registration Number
4. Call out the Patient Name
5. Verify the Patient
6. Check for pre-requisites of Sample extraction from patient
7. Prepare container with label using pen and paper adhesives, writing patient number and investigation type to be conducted
8. For each Investigation Order
	1. Extract Sample in the right container
	2. Mark on the system that sampling is done for the test
	3. Segregate the sample and store in designated area
	4. Next Investigation order for the same patient till end of Order
9. Send patient to Waiting Area

## Sampling Forms with data elements

 All mandatory elements are shown in Red. There could be changes to these during the pilot / PoC as and when scheduled

1. List of Patients for Sample extraction Screen
	1. Provides the List of Patients with Urgent ones on top and in visually different color.
	2. List is FIFO
	3. Click on the Patient Name takes to Extract Sample Screen
2. Collect Sample Screen
	1. Patient Details
		1. Name, Registration Number, Address, Phone Number – Using this, the attendant ensures it is the right patient
	2. Investigation Details
		1. List of Pending investigations for the patient One below the other
		2. For each Investigation Ordered
			1. Investigation Order, Doctor Name, Date and Time of Order, Check box for having completed the sampling
			2. Note for each investigation order - Pre-requisites for the test from the master
			3. After Sampling Clicks on Check box for the investigation
		3. After all Sampling is done, Click on Save
		4. On Clicking Save
			1. If there are some check boxes not filled – means smapling not completed, a Message is provided which the attendant acknowledges
			2. Save the record
		5. Cancel button Cancels the sampling activity
3. Re- Sampling for Re-Test Screen
	1. Enter Patient Registraiton Number / Patient Name
	2. List of All Investigations ordered for the last two visits (parameterized to say even last 5 visits)
		1. Choose investigation
		2. For Each Investigation Chosen
			1. Investigation Order, Doctor Name, Date and Time of Order, Check box for having completed the sampling
			2. Note for each investigation order - Pre-requisites for the test from the master
			3. After Sampling Clicks on Check box for the investigation
		3. After all Sampling is done, Click on Save
		4. On Clicking Save
			1. If there are some check boxes not filled – means smapling not completed, a Message is provided which the attendant acknowledges
			2. Save the record
		5. Cancel button Cancels the sampling activity
4. Patient Query Screen The general screen that is used to query patient details
	1. Enter any of the four Patient related information
		1. Patient Name
		2. Patient Surname
		3. Thesil
		4. Age / Date of Birth
		5. Gram Panchyat
		6. Village
		7. Contact phone Number
	2. Query and Cancel buttons
5. Patient Query Response screen1
	1. List of all matching records with Pagination
	2. Select the right patient
6. Patient Demographics Query Output Screen
	1. Patient Demographic Details
	2. Edit and Cancel buttons
	3. On Edit go to Patient Demographics Edit Screen

# Sample Preparation at Lab

**Note:**

1. **Personnel** – A designated person periodically retrieves the sample from the sampling stations/desks to the respective labs.
2. **Preparation** – Before Operations start for the day
	1. Sampling preparation items (slides, stain, reagents, containers etc are ready)
3. **Start Time** - Work Begins at 9AM in the morning when patients activity starts
4. **All interaction with the system are provided in this color**

## Sample Preparation Activities

Process for preparation is specific to the test as provided in the excel sheet embed

|  |  |
| --- | --- |
| **AS IS PROCESS** | **TO BE PROCESS** |
| Sample Preparation for different areas in the lab happen at different places/Desks | Sample Preparation for different areas in the lab happen at different places/Desks**Note****Each Desk is configured for tests and sample preparation activity. For ex. The group of tests that involve Slide preparation for microbiology tests are configured for a particular role and this person sees only the patients who are to be taken up for Microbiology Slide preparation activities. Similarly for the others** |
|  | Sample preparation Attendant Logs into the system |
| Sample is taken from the container  |   |
|  | On a part of the screen, Count of samples collected till ‘now’ that await Sample preparation are listed on the screen Below the Total Samples counter for the desk, In All Samples for a specific lab are listed on the screen with Registration Number, Patient Name, Investigation name, Doctor, Sampling Date and Time **All Urgent investigation orders are listed first with a visual cue for priority processing** An Attendant is despatched to collect samples |
|  | Lab **attendant clicks on the Patient Investigation Order**  |
|  | List of investigations for the patient for that lab area (Microbiology, hematology etc) are listed along with Sample Preparation process  |
|  | Attendant Selects the sample from the physical tray and acknowledges receipt of sample The counter that tracks the number of samples to be processed is lowered by 1  |
| Prepares the sample as per the process  | Attendant Prepares the sample as per the process with marking on the Slide/ Container1 etc. Note: Samples are prepared by different methods for testing. The Excelsheet embed below has the details  |
|  | Provides the sample to the Lab for investigation  |

|  |
| --- |
|  Excel sheet with the details (Daniel this is incomplete as of now. Need to complete with the list of tests and the sample preparation process)  |

Understood. Will work with the lab manager on this.

## Impact of the Sample Preparation Process

1. If the same sample is to be used for different tests at different labs, how is this done? Is there only one single Sample preparation station? If yes, complexity increases and the sample has to travel to the other lab area.
2. The only extra activity for Sample Preparation attendant would be to acknowledge sample is prepared so that only these show up at the next station viz Investigation table

## Sample Preparation Services

1. Counter for Tracking the number of Samples lab area wise for sample preparation
2. Registration Number based Retrevial of Patient orders that have completed Sample extraction
3. Update Sample Preparation Flag on Patient EMR, Reduce tracking counter by 1

## Data Elements – File Readiness Activities

1. Date time
2. Patient Object
3. Patient orders for which sample colletion is Complete
4. Update flag for Patient sample preparation
5. Lab Attendant details

## UX / Activities to be Performed for Sample preparation Activities

1. Click on the first patient in the list for whom sample is to be prepared
2. List of Investigations for which sample preparation is to be done (this is listed only after sample collection is complete)
3. Click on first order
	1. Lists the Sample Preparation Process
	2. Locate Sample for from tray
	3. Prepare sample as per process
	4. Acknowledge Sample preparation done
	5. Date and time of the Sample Preparation recorded in EMR
	6. Counter reduced by 1
	7. Next Investigation for the patient
4. After all samples for the patients are prepared,
	1. Click Save
	2. Screen Refresh with list of Patients for whom Sample Preparation is pending

## Sample preparation Forms with data elements

1. List of Patients for Sample Preparation Screen
	1. List of Patients for whom Sample preparation is to be carried out –
		1. Urgent Orders are listed first in a different color
		2. Screen Provides the List of Patients with Urgent ones on top and in visually different color.
		3. List is FIFO
		4. Click on the Patient Name takes to prepare Sample
2. Specific Patient Sample Preparation screen
	1. Lists all investigations for the patient
		1. Investigation Name
		2. Sample Preparation process
		3. Checkbox for having completed the sample preparation
		4. Next Investigation
		5. Save Button to save the record. Cancel button to move away from the record

# Lab Investigation Activities

**Note:**

1. **Personnel** – Lab Attendant for investigation
2. **Preparation** – Before Operations start for the day
	1. Machines are in working conditions
	2. Area is clean
	3. Supplies are stocked
	4. Reagents in supply.
3. **Start Time** - Work Begins at 9AM in the morning when patients activity starts
4. **All interaction with the system are provided in this color**

## Lab Investigation Activities

|  |  |
| --- | --- |
| **AS IS PROCESS** | **TO BE PROCESS** |
|  | Lab Attendant Sign-on to the system  |
|  | **Click on Lab Investigation Reporting** * Lists all the patients for whom sample preparation for “this.lab” is to be done
* Urgent Orders are prioritized at the top as in the cases provided above
* List has Patient name, Investigation, Doctor Name
 |
| Lab attendant Picks the sample | Lab Attendant **clicks on the patient Registration Number** / Investigation typeAll the investigations for this.patient are listed  |
| Conducts test and enters results in the Register and Patient file  | For each Investigation listed under this.lab* Lab Attendant clicks on the first Investigation
* Resulting Screen is shown for the Investigation
* identifies the sample for the patient
* Conducts the test (loads to Centrifuge, examines with microscope etc)
* Enters results in the Resulting screen
* Clicks Save result
* Screen refreshed with data input seeking confirmation
	+ Results color coded (abnormally high to abnormally low)
	+ Results compared with Reference values stored for the test based on Age and Sex
	+ On Confirmation Save result
 |

“this.lab” – There are four labs in the hospital viz., hematology, Bio Chemistry, Microbiology and Microscopic examination. This.lab refers to the lab for which the activity is to be done

## Impact of the Lab Investigation Process

1. Lab investigation Attendant needs to be provided with a Computer and Network

## Investigation Services

1. Patent Order Details Query Service
2. Investigation Resulting Template Service

## Data Elements – Lab investigation Activities

1. Date and Time
2. List of Patients for whom sampling is done for “this.lab”
3. Patient Object with Investigation Orders
4. Investigation and Results Input Templates (these are forms by themselves)
5. Lab investigations and Their reference values for Standard Tests based on Age and Sex

## UX / Activities to be Performed for Lab Investigation Activities

1. Lab Attendant for this.lab logs into the system
2. List of Patients for whom investigation is to be performed is shown. Urgent orders are at the top
3. Attendant Clicks on the first patient
4. List of Investigations to be conducted for this.lab are shown with priority orders at the top
5. Attendant picks the first patient in the list,
6. List of investigations for the patient are listed with sample type
7. For each investigation in the list for this.lab.
	1. Attendant clicks the sample from the sample tray
	2. Resulting screen is shown
	3. Conducts investigation
	4. Inputs results in the template
	5. Clicks Saves Result
	6. Confirmation on the Results being entered are correct with Color coding
		1. Color coded for Different ranges Abnormally high to Abnormally low
		2. On confirmation save result
	7. Next Investigation for the same patient for this.lab

## Lab Investigation Forms with data elements

1. Patient Query Form as in other cases
2. Screen List of Patients for investigation at this.lab
	1. Note
		1. There are four areas in the lab that conduct different types of tests
		2. Specific area for this.lab.attendant is of relevance here
	2. Patient Meta data from patient object
	3. Lists the Patient Registration number, Patient Name, Doctor
3. Screen for specific Patient Investigations at this.lab
	1. List of Investigations for the patient
4. Screen for entering results of investigations
	1. Template for entering results

## Note on Lab results Reporting

1. The results for each type of test are entered using templates.
2. The elements in a template may vary based on the test from about 1 item to many items for ex
	1. Case 1 - only one item is to be reported for the test
		1. Resulting value 1
		2. And an additional Notes field (free text)
	2. Case 2 – A set of items are to be reported for the test
		1. Resulting value 1
		2. Resulting value 2
		3. Resulting value 3
		4. And so on
		5. And an additional Notes field (free text)
	3. Case 3 – is a profile test and there are number of results that are to be reported
		1. Resulting value 1
		2. Resulting value 2
			1. Resulting value 21
			2. Resulting value 22
			3. Resulting Value 23
		3. Resulting Value 3
		4. And so on
		5. And an additional Notes field (free text)
	4. Case 4
		1. Only free text (that is available as a draft text as a result template with edit (Add, Mod, Del) permissions
3. Results reported for a test have to be compared with Reference values for Case 1 , 2, 3
	1. Reference Values are different based on Sex and Age
	2. Lab results are normally compared to these Reference Values and Categorized as
		1. Abnormally High
		2. High
		3. Normal
		4. Low
		5. Abnormally Low
	3. Whenever the results are to be entered in text, a suggested draft text (so to say - template of free text) may be provided, that can be edited by the Lab attendant. The text in note itself can be edited (add, mod, del portion of the text). The reference values in these cases are also part of the draft text

A simple example in the following text t*he investigator would change only the items in the parenthesis*. And may add to the text with other observations

*“The tissue culture investigation after 3 days revealed* ***{no/low/normal/moderatly high/abnormally high}*** *presesnce of “xyz”..*

# Lab Results Approval Activities

**Note:**

1. **Personnel** – Lab Approver for results
2. **Preparation** – Before Operations start for the day
	1. **Need to fill these out if there are any pre-requisites**
3. **Start Time** - Work Begins at 9AM in the morning when patients activity starts
4. **All interaction with the system are provided in this color**

## Lab Results Approval Activities

|  |  |
| --- | --- |
| **AS IS PROCESS** | **TO BE PROCESS** |
| Lab Approver Checks the results for the patient investigation in the Ledger for any abnormal values  | Lab Approver Sign-on to the system  |
| Approver checks the results recorded on the patient file  | **Click on Lab** Investigation Approval**Lists all** the Patient Registration Numbers, patient Names, Doctor, Investigation, Investigator and Brief results are displayed in a row. At the end of the row a check box that will be clicked indicating approval is providedBrief Results provide the details if the Results are Abnormally High, High, Normal, Low or Abnormally Low**Click on the Brief Results** opens up the details of the results window for the investigation **with** reference Values for the Age and Sex and The actual values from Investigation |
| Approver Signs on the register and patient file | **Lab Approver Clicks on the Checkbox**  |
|  | After completing the items on the screen, the approver clicks on Approve button  |
|  | The items where the check box is ticked **are saved as Approved Results** **Only Approved Results are posted to the EMR till then these are maintained as provision in the EMR** |
|  | Note: If the patient investigation orders are not fulfilled for what ever reason, these keep piling up on the screen. It is therefore suggested that one of two things be done A. Lab Approver purges the orders regularly after say 15 days (parameterized) B. As an EOD process the purging is automatic The requirement below is for the lab manager to purge **Lab manager clicks on Purge records** **List of Records where Investigations are ordered but Sample Collection is not done are listed in LIFO** **List has Patient Registration Number, Patient name, Investigation, Doctor, Date and Time of Order , Check box for marking off for deletion**  |
|  | The Lab Manager Ensures that these are old orders (say 15 days old) **Lab Manager individually marks off the orders, or clicks Selects ALL** **Clicks on the button Purge** **These orders are marked off as Purged.**  |

## Impact of the Lab Investigation Process

1. Lab investigation once approved, cannot be amended
2. Approver may be mapped to many labs and all the results will show up on the screen
3. Printing of results will be possible only by this role.
4. Purging orders is available to only this role
5. Purging is based on a paramter maintained for the number of days

## Lab Approval Services

1. Patient investigation Report Retrieval service
2. Comparison with Reference Values
3. Sorting the results based on Lab, Investigation, type of results – Normal, Abnormal etc
4. Storing Approved Results

## Data Elements – Lab investigation Activities

1. Date and Time
2. List of Patients for whom Investigations are done and awaiting approval
3. Patient wise Investigation and brief Results with approval
4. For each investigation the details of results with their reference values based on Age and Sex

## UX / Activities to be Performed for Lab Investigation Activities

1. Approver Logs into the system
2. List of Patients for whom Results approval is awaited is shown
3. Brief results provide the essence of the investigations
4. Approver Clicks on the patient name for reviewing results in details
5. Patient Age and Sex, Investigation results with reference values are shown on the screen with
6. Approver approves the results by clicking on the approve button
7. The results are saved and made available in the EMR as approved results

## Lab Approver Forms with data elements

1. List of Resulting awaiting Approval
	1. List of contains

Patient Reg Number, Name, Doctor Name, Investigation Name, Investigator, Brief Results, Approve Check Box

* 1. Form contains save and Cancel Button
		1. Save – Saves all the results where the check box is ticked
		2. Cancel – Reverts all the checkboxes to empty
1. Details Results View
	1. Click on Brief Results/Patient Name will bring up the following
		1. Patient Name
		2. Patient age
		3. Patient Sex
		4. Diagnosis
		5. Link to Access full EMR
		6. Investigation Name
			1. Reference Value for patients age and Sex
			2. Actual Values of investigation
		7. Approve and Cancel Button
		8. Click on Approve Button – saves the record in the EMR
2. Patient Details Query Screen
	1. As in the previous cases the patient EMR access is provided