Bika Health · Patient demographics

Functional specification and use cases

Draft version 0.6, lemoene, 29 September 2007

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1 Purpose of this document

This document is used to establish a common understanding of what is required and for developers to calculate the time and effort required as basis for a quote. Cases and functionality in the LIMS are described in layman's language

It also serves as a functional specification for programmers working on the project and quality management tool

It is used to estimate development cost and establish a quote

2 Document history

V0.6 Corrected index and numbering

v 0.5 Second iteration after more feedback from Ope

Edits to:

- Patient deletion
- Analyses per staff member report
- Patient Guarantor
- Date formats

Uploaded document refreshed

v 0.4 First iteration after feedback from Ope

The document has been uploaded to http://www.bikalabs.com/softwarecenter/bikahealth/roadmap/3/patientusecases/view

v 0.2 First draft

3 Associated reading

Please also read:

- Patient Demographics DB Feature enhancement at http://www.bikalabs.com/softwarecenter/bikahealth/roadmap/3
- Data Dictionary http://www.bikalabs.com/softwarecenter/bikahealth/roadmap/3/patientdd/view
- Entity Relation Diagram http://www.bikalabs.com/softwarecenter/bikahealth/roadmap/3/patienterd/view

4 Document convention

Important

Only functionality additional to that already available in Bika is discussed here

Ordering Physician/Hospital = 'Clients'

In the context of Bika Health, a LIMS for health laboratories, laboratory clients are medical practices, hospitals and clinics ordering analyses on medical samples such as blood, saliva etc. For the purpose of this document and simplicity's sake, these are still called clients here. The physicians, nurses etc. working at these client organisations, the people the system interacts with, are for the same reasons still called 'client contacts' here

Other

All uses cases are acted out by role players which can be the system itself, other interfaced systems or any user authorised as *admin, labmanager, labtechnician, labclerk* or *client*

In most cases *client* refers to the client's *contact* as their representatives are known in the system

For each use case it is assumed the role players are logged-on and authorised to execute the actions required by them

5 Lingo

- The plural for 1 analysis is many analyses
- AR - indicates an Analysis Request, the collection of individual analyses requested per sample
- Text in square brackets indicates push buttons, e.g. [Submit]
- Text between vertical lines indicates navigational tabs, e.g. | Home |

6 General

To avoid confusion with American date formats, dates and times are displayed in the standard Bika format, *dd Mmm yyyy hh*h*mm*, e.g. 15 Aug 2007 16h49

7 Patient demographics module

7.1 Patient demographics and system set-up

Several 'tables' are maintained in the system set-up and the values used in look-up lists when completing or editing other objects related to patients. Where these items are listed on drop down look-ups, entries to the fields are restricted to those on the list only

These lists are accessed from the 'preferences' link which makes them available under the 'Bika configuration' heading in the navigation portlet amongst the other configuration items

Only the users authorised as lab manager are allowed to create, edit and delete items on these lists

Lists to be maintained

Tribes

Races

Identifier types, e.g. Passport, Driver's license, etc

Feature types, e.g. Scar, Tribal marking, Tattoo, etc

Local Government Areas

Citizenship

Civil status

7.2 Patient list

Lists of patients in the system are available from an 'Patients' item in the left hand navigation column - clicking 'Patients' here opens a page with two tabs, one for active patients and another for deleted patients. The active patient list is the default

Patients can be selected to be edited, deleted or changed to active again from the deleted list. An [add patient] button at the bottom of the lists is clicked to add a new patient

The patient lists are batched and behave like all the other lists in the system, e.g. any of the AR lists

The list has columns for Title, First name, Surname, Gender, ID, ID type, Birth date, Telephone number, Mobile phone number and email address

7.3 Create patient record

Use case

Role players: Lab clerk, Lab manager

1. The role player navigates to the patients lists and push the [add patient] button
2. The system creates a new patient record with unique ID - this ID is for system use for referencing only and never shown to users
3. The system opens a blank 'edit patient' form, of similar format as that for 'edit client contact' - it has |default|, |address| and |guarantor| tabs
4. The role player completes the the following fields on the |default| tab:

   Title

   First name (compulsory)

   Surname (compulsory)

   At least 1 patient identifier must be supplied, together with its type:
   An ID type is selected from a look-up, say a passport or driver's license, and ID field completed. If secondary IDs are available, they are entered in similar fashion

   Gender (compulsory) radio buttons, Male or Female

   Race, restricted to values from a look-up

   Citizenship, restricted to values from a look-up

   Civil status, restricted to values from a look-up

   Birth date (compulsory)

   The role player checks a 'Birth date estimated' check box if the birth date for the patient was estimated

   Birth place

   Mother's first name (compulsory)

   Mother's surname (compulsory)

   Telephone number

Mobile telephone number

Email address

Feature type, Feature description, Feature image - to optionally upload a digital image of the feature. These can be repeated for secondary features

Remarks, free text entry

5. The role player presses [next] and the |address| tab, similar to that for client contacts, opens where the following fields are completed:

   Address, space for 3 lines (compulsory)

   City/Town (compulsory)

   State/Province

   Postal code (compulsory)

   Country, restricted to values from a look-up

   Local Government Area, restricted to values from a look-up

6. The role player ticks a check box to indicate whether the patient requires a guarantor to pay for the analyses. If the check box is left unchecked, he/she does not require a guarantor
7. If the patient indeed requires a guarantor, the role player must provide details and presses [next] for the |guarantor| tab to open where the following fields are then completed:

   Title

   First name (compulsory)

   Surname (compulsory)

   Telephone number

   Mobile telephone number

   Email address

   Address, space for 3 lines (compulsory)

   City/Town (compulsory)

   State/Province

   Postal code (compulsory)

Country, restricted to values from a look-up

Remarks, free text entry

8. The role player may press [previous] to navigate to any of the previous tabs to amend inputs there if necessary
9. The role player presses [save] to save the information, or [cancel] to cancel

7.4 Modify patient record

Use case

Role players: Lab clerk, Lab manager

1. The role player navigates to the patients list and click on the patient to be edited
2. All the fields described in 'Create patient record' are now available to be edited
3. The role player presses [save] to save the information

7.5 Delete patient record

Only the labmanager is allowed to delete a patient. To maintain database integrity, the system does not physically delete patients from the system. The patient record's status is only changed from active to deleted

'Deleted' patient records

are not listed amongst active patients, but on a seperate tab for 'deleted' patients

are not made available in patient look-ups

can still be found through the system's search function

Use case

Role players: Lab manager

1. The role player navigates to the active patients list clicks on the patient to be deleted
2. The patient's edit tab opens
3. The role player completes a 'reason for deletion' free text field
4. The role player clicks the [delete] button at the bottom of the page
5. The record cannot be deleted if the 'reason for deletion' field is empty, this field is compulsory for deletions
6. If the record is successfully deleted, the system confirms the deletion with a message to that effect
7. The deletion is logged in the patient record's audit trail

7.6 Patient record logs

All patient record creation, modifications and deletions are logged and the logs made available on a |log| tab on the patient's page, similar to how Bika currently treats AR logs

The logs have columns for:

Action

User

Date/Time

8 Analysis requests, edits and Patient demographics

'Patient' becomes another Sample attribute at AR and Sample creation time, similar to the way Sample type is treated in the AR creation form and views currently

When completing the AR request form, a compulsory patient field needs to be completed. Patients are available and restricted to the names on a look-up list - similar to the current sample type look-up, the patients available are narrowed down as the user starts typing in the field, using patient surname as search term

Use case · Requesting analyses

Role players: Client contact, Lab clerk, Lab manager

NB Only functionality additional to the existing analysis requesting workflow is described here

1. Like in the existing Bika LIMS, the role player navigates to the client (Physician or Hospital) ordering the analyses, click the |analysis requests| tab and on the following screen, the [add new analysis request] button

   If it is the client's contacts may order request the analyses themselves on-line. The |analysis requests| tab appears on their LIMS home page
2. On the new analysis request form, one of the top rows of fields are reserved for 'Patient'
3. The patient field is compulsory and may only be completed with valid patient names captured in the system earlier via the patient maintenance screens
4. Analyses cannot be requested for 'Deleted' patients, only patients with 'active' status are valid
5. The role player completes the field by starting to type the patient's surname. Similar to the way sample type selection works on this page in the current Bika, the system presents all valid patient names in the system containing the letters typed for the user to select one from

   The selection list is presented in the format: surname, first name

   For example, if the role player wants to select the patient John Smith, he starts typing 'jo' and the system will offer all patients in the system whose first name starts with 'jo' to select from:

   ...

Jock Bushveld
Joe Cocker
Johannes Ndo
John Smith
John Xsibya
Joshua Roberts
...

The list shortens as the role player provides more letters of the name - the current Sample type look-up list is good example how this works

Say the user types 1 more letter of the name, 'joh', the above example list will be shortened to:

Johannes Ndo
John Smith
John Xsibya

6. The role player click on the name of the patient to be used and it is entered into the field
7. The role player continues and completes the form, pressing the [submit] button to complete the analysis request
8. If the patient field was left empty or completed incorrectly, e.g. with a patient name that is not on the database already, the user is returned to the request form and a warning message displayed to inform the role player to correct the error

Use case · Editing ARs

Role players: Client contact, Lab clerk, Lab manager

As in the current Bika LIMS, ARs in sample due status may still be edited by role players on the AR's |edit| tab

1. The role player navigates to the AR to be edited
2. Only AR's still in 'sample due' status may be edited
3. A look-up list exactly like that described in the creating AR use case, is available to select a valid patient already on the database
4. When the role player completed the edits, he/she clicks [save] and the edits are saved to the database
5. If the patient field was completed with an invalid patient name, the system returns the role player to the edit tab and displays a message instructing the role player to correct the error

9 Analysis results and Patient demographics

The patient name is shown on all views of Analysis results:

- AR lists have a column for patients in which the patient's name is displayed as 'First name Surname', e.g. John Smith

- The patient name is also displayed as one of the AR attributes on individual AR view, edit and mange results tabs
- Worksheets: On the 'AR in columns' view, the patient name is displayed amongst the sample attributes, just below Sample type

10 Invoices and Patient demographics

Invoices remain the same as in current Bika LIMS, except that the patient name, address and telephone number are shown in relation to their ARs on invoice lines

11 Queries, Reports and Patient demographics

Patient name, from a look-up, can be used as parameter in data base queries and reports in order to view all results for a single patient. All other query and report parameters stay the same as in current Bika LIMS, including selecting a date range for the query

- Analysis request queries. A 'Patient name' field is included amongst the query parameters. The same patient look-up functionality used on the AR creation form is used to complete this field with valid patient names
- If a patient name is not provided, results are tabled for all patients
- No Patient report as such is included, but a [print] button is provided on the patient query results screen from where the results are printed as displayed: 4 ARs per page, in reverse chronological order

12 Analyses per staff member report

This report is used to determine the number of analyses done by staff members for a selected period from analysis logs

Use case

Role players: Lab manager

1. The role player navigates to the reports menu and selects 'Analyses per staff member'
2. He/she completes the begin and end dates for the report
3. He/she might select a specific staff member from a look-up list. If this field is left empty, the report is compiled for all staff members
4. The report is then displayed in a table, 1 row per analysis, 1 column per staff member
5. Each cell contains the number of that analyses per staff member as intersected by the corresponding row and column
6. Each column is totalled at the bottom, each row at the right

7. It looks like this:

	Staff member 1	Staff member 2	Staff member 3	Total
Analysis a	nn	nn	nn	**nn**
Analysis b	nn	nn	nn	**nn**
Analysis c	nn.	nn	nn	**nn**
Total	**nn**	**nn**	**nn**	**nn**

8. The role player may then print the report by pushing a [print] button