



**OpenClinic v4.0.39**  
**User manual**

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# **OpenClinic**

## **Hospital Information management System**

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*by MXS SA*

*OpenClinic is an Open Source software for the management of hospital information flows. This program has been developed since 2006 by a team of doctors and IT professionnals from the Belgian company Medical eXchange Solutions. The source code has been put in the public domain in December 2008. Since that date, the OpenClinic software can be freely downloaded from SourceForge (<http://sourceforge.net/projects/open-clinic>).*

# OpenClinic User manual

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## Foreword

This user manual is a document in permanent transformation. Every update, every bug fix can modify the presentation of certain screens or could alter the behaviour of the application in certain situations. Please bear this in mind if you are using this manual with an OpenClinic software other than the 4.0.39 edition.



# **Section**

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I

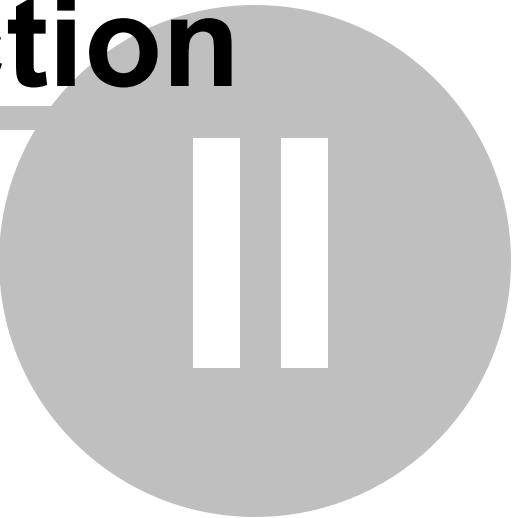
## 1 Introduction

OpenClinic is an application for information management in hospitals. This software covers several aspects of data management. The most important ones being:

- Administrative patient record management
- Financial patient record management
- The electronic health record
- Health insurance management
- Cash and payment management
- Pharmacy stock management
- Laboratory management
- Radiology management
- Statistics and epidemiology

This user manual explains in detail all functionalities supported in version 4.0.39 (05/10/2010)

# **Section**



II

## 2 Connecting to OpenClinic

OpenClinic is a Web application. This means that a user can access the application through a web browser. OpenClinic is compatible with several types of web browsers:

- Microsoft Internet Explorer version 5.5 or later
- Mozilla Firefox version 2.5 or later
- Opera version 10.0 or later
- Safari version 4 or higher
- Google Chrome version 5 or later

The presentation of some screens may differ depending on the browser. This is normal and depends completely on the browser in question.

To take full advantage of the functionality of OpenClinic, utility programs may also be installed on the client computer:

- Software for viewing and printing PDF documents (Acrobat Reader 8.0 or later, Evince ...)
- Webcam software for managing photos
- Software playback and recording of fingerprints (Microsoft Fingerprint Reader software, GFinger ...)
- Software for processing of radiological images

...

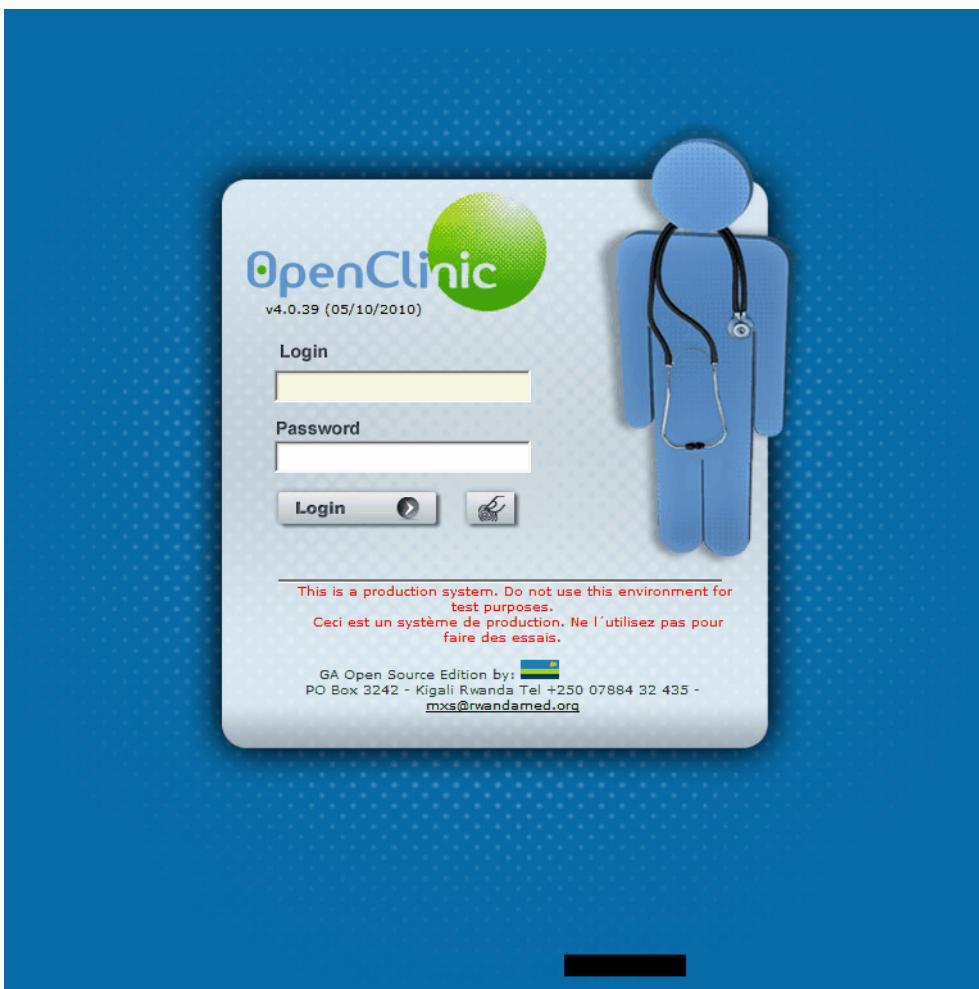
The use of these utilities is not covered in this manual. The reader should refer to the instruction manual of the program in question.

### 2.1 Accessing the OpenClinic server

To access the application OpenClinic, you have to connect with the web browser to the site whose URL was sent to you by your system administrator. Usually, this URL takes the following form:  
<http://openclinic.server.name/openclinic>. For reference, you may notice below the URL that you received from your system administrator:

#### My OpenClinic URL:

If the connection to the server OpenClinic was done correctly, you will get a login screen:



## 2.2 Login and password

To access the application OpenClinic, you need an access code. The access code consists of a login and password. Login uniquely identifies the user and password protects access to the application under the name of the user. You can not choose your login, you will be assigned one by your system administrator. Each user will receive their own login, which remains strictly personal. Any transaction will be recorded in OpenClinic linked to the logged on user login. It is therefore important not to transfer your user ID to someone else if you do not want to be responsible for operations carried out by another person. As a reminder, you can record the login which you have been given below:

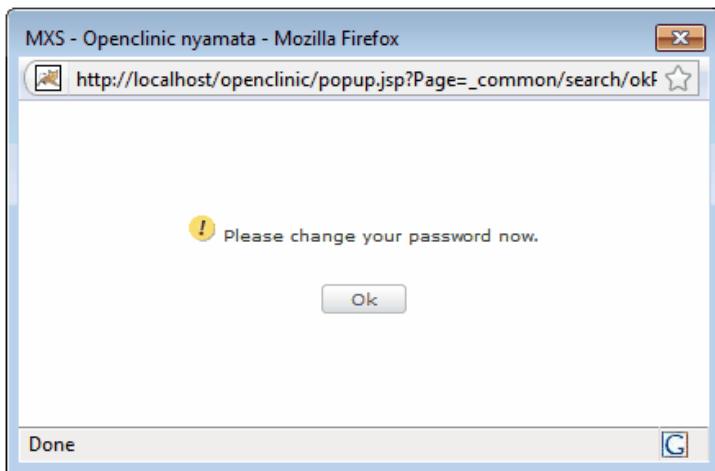
### My OpenClinic login:

The password protects access to the application on behalf of a particular user. Each user will have its own password. It is important not to use a password that is too easy (equal to login, your name, your date of birth) so that others can easily guess it and therefore obtain access to the system under your name. For this, a number of rules may be imposed by the administrator:

- Minimum number of characters
- Obligation to put letters in the password
- Obligation to put numbers in the password
- Obligation to lowercase in the password
- Obligation to put capital letters in the password

In addition, the password must be changed regularly. Your system administrator can configure the duration of validity of a password (the default is 120 days).

For your first access to OpenClinic, your system administrator will assign you an initial password. You will be asked to change this password at first login:



After clicking "Ok", you can enter the new password.

A screenshot of a "Modify password" form. The form has three input fields: "Enter the current password", "Enter the new password", and "Re-enter the new password". Below the fields is a "Modify" button. The entire form is contained within a blue header bar labeled "Modify password".

In the field "Enter the current password", please enter the password you received from your system administrator. In the 2 following boxes, you enter two times the new password you have chosen.

### 2.2.1 Access rights

OpenClinic has a very large number of modules to handle any kind of data. It is clear that each user should not treat all such data and it is desirable that the access rights in the system are limited to the relevant modules for each user. For this, the system administrator gives each user an "access profile". This profile determines the functionality and data available to those users. Upon login, the access profile is loaded by the system and the user in question will be presented modules that relate to him. For this it is possible (and probable) that some modules described in this manual are not accessible to you.

## 2.2.2 Default parameter values

To better adapt the application interface to each user, a number of parameters can be configured per user. At each connection, OpenClinic then loads the corresponding parameters for the user logged in:

- Language: the OpenClinic interface can be used in English, French, Portuguese and Dutch.
- Service: department where the user works. Some users may even work in several departments. The user service will determine among other parameters the clinical entry screens to be offered by default to the user
- Default Page: the page displayed after opening the patient record
- Focus: the field in the search window in which OpenClinic will position the cursor by default (normally the most commonly used for search of patients)
- Agenda: user preferences for the calendar
- ...

## 2.3 A few words about security

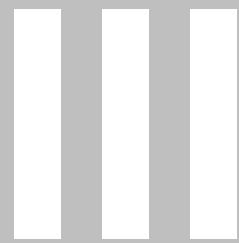
The OpenClinic application treats medical and therefore sensitive data, therefore the establishment of a number of safety rules is essential. The access protection through a combination of username / password combination, can not guarantee the security of data unless one follows a few basic rules:

1. Never write your password in a location that is accessible to other users (eg on the computer screen ...)
2. Never give your password to another person. Even the system administrator does not need your password to help you. In case of necessity, he can always generate a new password.
3. Do not choose a password that is too easy. Most illegal accesses to computer systems are realized due to passwords that are easy to guess.
4. Consider your login / password as a signature. Each transaction will be traceable in the software based on the connected user's login.
5. If in doubt, please change your password.
6. In case you notice that your login was used by someone else to make recordings in the system, notify the system administrator so he can take the necessary measures.



# **Section**

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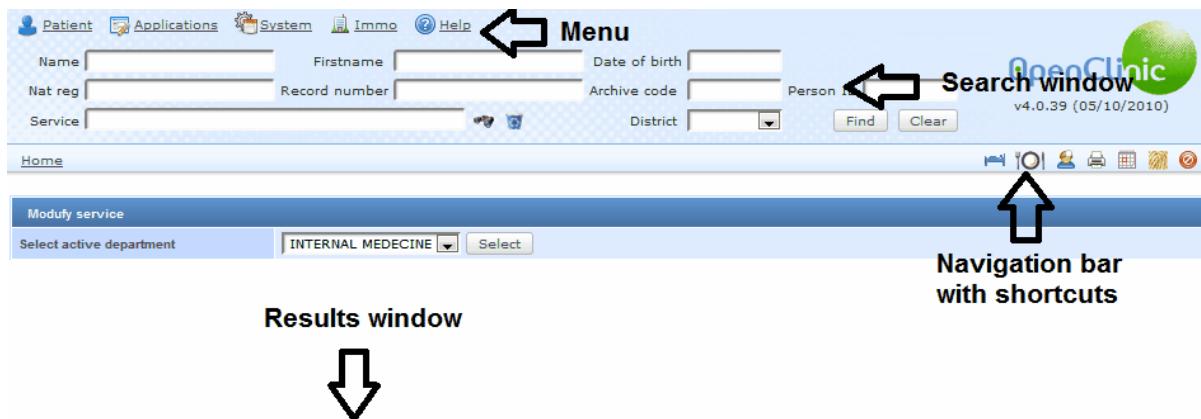


### 3 General information

The application OpenClinic is used as a website. In most screens, a simple base structure has been used.

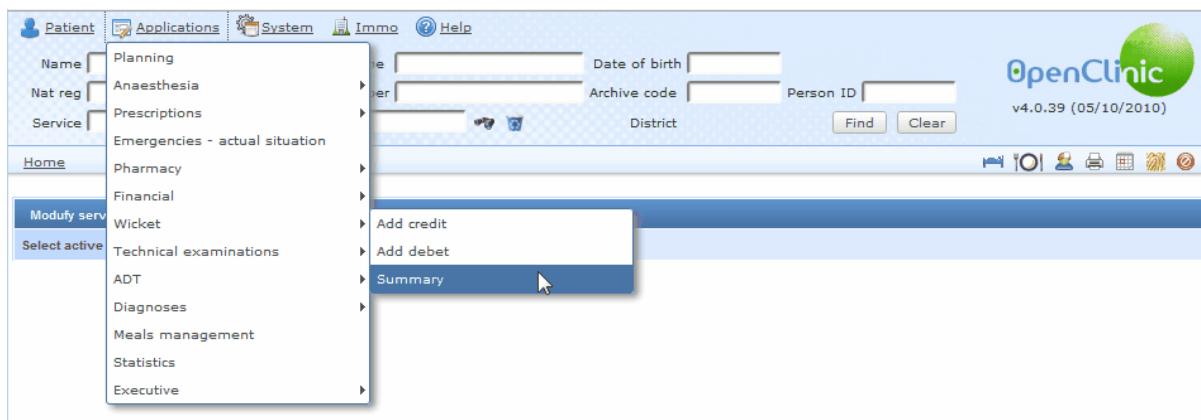
#### 3.1 OpenClinic user interface elements

The basic interface consists of 4 components: the menu, the search window, the navigation bar with shortcuts and the results window.



##### 3.1.1 The menu

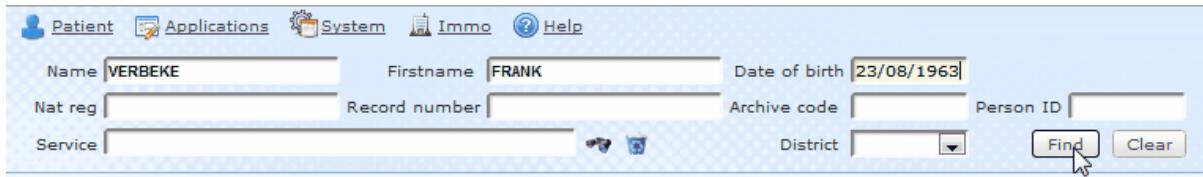
The menu offers the user all the features available in the screen being showed. The menu contents change depending on where the user is located in the application. To select a menu item, simply click on the option in question. A double click is not necessary in the menu, a single click will suffice.



##### 3.1.2 The search window

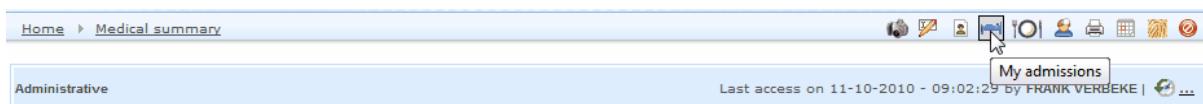
OpenClinic is 'patient-oriented'. This means that the file (administrative, financial and medical) of the patient is at the core of the application. Finding a patient record will be a key feature of OpenClinic.

Search criteria to find a patient record can be entered in the search window.



### 3.1.3 The navigation bar with shortcuts

The navigation bar on the left indicates the location of the user in the application. On the right of the navigation bar, the user will find a series of icons that include shortcuts providing access to frequently used functions.



The following shortcuts are available:

- Save the picture of the patient
- Quick entry of laboratory results for patient
- View patient's lab results
- View administrative patient data
- See a list of in-patients for which the logged on user is in charge
- Manage the patient's meals
- See a list of out-patients for which the logged on user is in charge
- Print the current page
- Access calendar
- Save fingerprint data for the patient
- Logoff

### 3.1.4 The results window

This part represents the real work space of the screen. The results of the functions called in the menu or in the search window will appear in the results window.

Record number	Nat reg	Name	Gender	Date of birth	Service	Date
41083	DUFITEMUNGU YVES		M	01/01/1988		
9603/2010	DUFITEYESU TITO		M	01/01/2009		
28577	DUFITEYESU YOTAMU		M	01/01/2003		
36596	DUFITIMANA VITAL		F	01/01/2007		
9096/09	DUFITISHIMEWE ESTHER		F	16/07/2009		
	DUFITUKIZA JEOVANISIE		M	01/01/2002		
634/10	DUFITUMUKIZA EGIDE		M	01/01/2005		
9095/09	DUFITUMUKIZA EMMANUEL		M	03/08/2008		
33398	DUFITUMUKIZA EMMANUEL		F	01/01/2004		
6970/10	DUFITUMUKIZA EPHRON		M	01/01/2005		
11955/09	DUFITUMUKIZA JANVIER		M	01/01/1994		
9432/10	DUFITUMUKIZA JEAN PIERRE		M	01/01/1990		

Total number of patients = 12

## 3.2 Printing of screens

Every OpenClinic screen can be printed using the "Print" icon in the navigation bar.

# **Section**

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# **IV**

## 4 Patient identification

### 4.1 Search criteria

To find a patient use the search window at the top of the screen. This window contains the following fields: Name, Firstname, Date of birth, Nat reg., Record number, Archive code, Person ID, Service, and District. In these fields, users can enter search criteria to identify a patient. Here are the details for the different fields:

- Name: the last name of the patient. The software makes no distinction between lowercase or uppercase. In addition, the search engine will ignore spaces and apostrophes.
- Firstname: the first name of the patient
- Date of birth: it is only possible to enter an exact date. It is therefore not possible to use the year of birth as search criteria.
- Nat reg: National identification number. Commonly this is the number of the identity card of the patient (for countries where it exists). The number can not exceed 50 characters and can contain letters and numbers.
- Record number: ID number of existing paper medical records in hospital
- Archive code: ID number of paper files archived in the hospital. The system offers the functionality to generate colored alphanumeric codes compatible with the ARIES paper filing system.
- Person ID: unique number that is assigned internally by OpenClinic to each patient registered in the system. This number is the preferred criterion for seeking patients (if it is known by the patient of course). Printed documents, labels and ID cards will systematically bear this number to identify the patient.
- Service: department where the patient is currently hospitalized or registered for consultation. It should be noted that from the moment the patient leaves the service in question and that his episode of care is closed, the search criterion will become useless to find this patient. In other words, only hospitalizations and active consultations can be found with this criteria.
- District: Health district where the patient is coming from.

All search fields can be combined at random to search for a patient record. It is clear that certain criteria (such as Person ID or Nat reg) will produce more effective searches directly returning the needed record. Other search criteria are less accurate (such as the last name) and many records may be returned by the application in the results window.

In case the search returns only one record, this record will be automatically opened by the application. If multiple records meet the criteria of patient search, the user must make a choice from the list of records by clicking the mouse on the desired record.

Record number	Nat reg	Name	Gender	Date of birth	Service	Date
41083		DUFITEMUNGU YVES	M	01/01/1988		
9603/2010		DUFITEYESU TITO	M	01/01/2009		
28577		DUFITEYESU YOTAMU	M	01/01/2003		
36596		DUFITIMANA VITAL	F	01/01/2007		
9096/09		DUFITISHIMEWE ESTHER	F	16/07/2009		
		DUFITUKIZA JEOVANISIE	M	01/01/2002		
634/10		DUFITUMUKIZA EGIDE	M	01/01/2005		
9095/09		DUFITUMUKIZA EMMANUEL	M	03/08/2008		
33398		DUFITUMUKIZA EMMANUEL	F	01/01/2004		
6970/10		DUFITUMUKIZA EPHRON	M	01/01/2005		
11955/09		DUFITUMUKIZA JANVIER	M	01/01/1994		
9432/10		DUFITUMUKIZA JEAN PIERRE	M	01/01/1990		

Total number of patients = 12

Warning: This search window is only used to look up a patient in the system. It is not possible to record patient data from this window.

#### 4.1.1 Clear search fields

Before entering data into the search criteria, it is important to use each time the "Clear" button. This will remove all data that are still in the search fields of the current patient. If you forget to empty the fields before changing the contents of any field, the search engine will combine the contents of the amended field with the contents that still linger in other fields. The result will probably be that no patient will be found by the system.

The "Clear" function is accessible both through the "Clear" button in the search window and via the "Patient" menu

#### 4.2 Wildcards

Where the exact spelling of the name of the patient is not known, the user can use wildcards:

- % represents a series of 0 or more of any character
- \_ represents exactly one character (any)

For example:

The search criterion for the name "B%ANDA" will return names such as BAKASANDA or BUANDA. The search term "B\_ANDA" will return BUANDA but not BAKASANDA.

## 4.3 Open a patient record

When the search criteria returned 1 single patient file, this file will be opened automatically by the system. Otherwise, the user must select the desired file by clicking on the corresponding line. Opening a file means that:

- A file already opened will be closed
- The new patient administrative data will be loaded into system memory
- The fields in the search window are filled with the corresponding content of the administrative record of the patient
- Additional patient data will be loaded into memory based on access rights of the connected user
- The menu will consist of options depending on the permissions of the logged on user
- The default page configured for the user will be displayed

Examples of default pages:

### Medical Summary

The screenshot shows the OpenClinic medical summary interface for patient VERBEKE, FRANK. The top navigation bar includes links for Patient, Medical summary, Nursing, Applications, Documents, System, Immo, Help, and a camera icon. The search bar contains fields for Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Nat reg, Record number, Archive code (AAC), Person ID (9966), Service, District, and buttons for Find and Clear. The version information v4.0.39 (05/10/2010) is also visible.

The main content area is divided into sections: Administrative, Medical, and Health record. The Administrative section displays encounter status (green), previous admission (23/07/2009), financial status (Balance: 0,00 RWF, Latest zero balance), insurance data (Insurance number: WORLD VISION #41100149 (A: 0/100), Company: RAMA #41100026 (B: 15/85), Tariff category: C: Private, Outset: 20/09/2008, B: RAMA/MMI 19/12/2009). The Medical section includes tabs for Medication, Vaccinations, Warnings, Problem list, and Reasons for the active encounter. The Health record section shows the date (26/04/2008), contact type (Emergency consultation), and user (FRANK, VERBEKE).

### Administrative record

The screenshot shows the OpenClinic software interface. At the top, there is a menu bar with links to Patient, Medical summary, Nursing, Applications, Documents, System, Immo, Help, and a logo for OpenClinic v4.0.39 (05/10/2010). Below the menu, a search bar contains fields for Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Nat reg, Record number, Archive code (AAC), Person ID (9966), Service, District, Find, and Clear buttons. A navigation bar below the search bar shows Home > Administration. Under Administration, there are tabs for Current personal data, Private, Family relationships, and Health facility personnel. The Current personal data tab is selected and displays the following information:

Native country	Belgium
Language	English
Gender	Male
National registry number	
TRACNet ID	
Family physician	
Marital status	Living together
Comment	

A Modify button is located at the bottom right of this section.

## 4.4 Create a patient record

In the event that no patient matches the search criteria, OpenClinic offers the user the ability to create a new record.

The screenshot shows the OpenClinic software interface. At the top, there is a menu bar with links to Patient, Applications, System, Immo, Help, and a logo for OpenClinic v4.0.39 (05/10/2010). Below the menu, a search bar contains fields for Name (BAKASANDI), Firstname (NOEL), Date of birth, Nat reg, Record number, Archive code, Person ID, Service, District, Find, and Clear buttons. A navigation bar below the search bar shows Home > Patient > Find. The main content area displays the message "No patients found". Below this, there are two links: [New patient](#) and [New patient + enter agenda](#).

By clicking on the "New Patient" link, OpenClinic will show a screen for entering administrative patient data. The data included in the search window will be automatically recovered in this record creation screen.

The screenshot shows the 'Current personal data' section of the OpenClinic application. The form contains the following fields:

- Family name \*: BAKASANDA
- Firstname \*: NOEL
- Date of birth: 15/01/1980
- Native country: Rwanda
- Person ID: (empty)
- Record number: (empty)
- Archive code: (empty)
- National registry number: (empty)
- Language \*: Kinyarwanda
- Gender \*: Female
- TRACNet ID: (empty)
- Family physician: (empty)
- Marital status: (empty)
- Comment: (empty)

\* mandatory fields.

For recording of administrative data, we refer to the next chapter ("The management of the administrative record of the patient")

Another possibility for the creation of a new patient record, is through the "Patient" menu: click on the "New Patient" item:



## 4.5 Medical summary

For each user, the system administrator can specify a default page that is displayed when opening a patient record. The default page most commonly used is the "Medical Summary". This page summarizes a number of informations constituting the patient's hospital chart:

A. Administrative section

- Patient encounters (hospitalization and consultation)
- Financial Summary
- Health insurance data
- Planning

B. Medical section

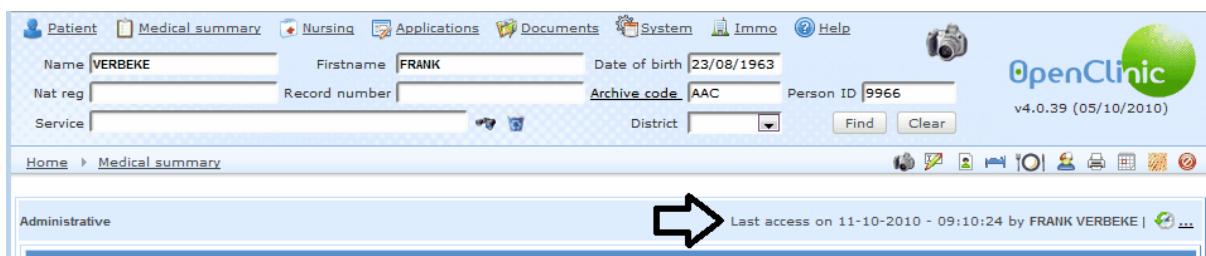
- Drugs
- Vaccinations
- Warnings
- Problem list
- Reasons for encounter
- Health record history (journal)

If the "Medical Summary" was configured as the default page, this screen will then automatically open when the patient record is found. Otherwise, the user can access it at any time by clicking on the menu "Medical Summary".



#### 4.5.1 Traceability

Every access to patient record is automatically logged by the system. By default, when opening a patient record, the system will display in the upper right corner of the page the user who last accessed the folder:



By clicking the three dots (...) to the right of this information, the user can view the entire history of recorded access:

The screenshot shows a 'History' window with a blue header. The window contains a list of recorded access events, each with a timestamp and the name of the user who accessed the record. The events listed are:

- 11-10-2010 - 09:51:59 by FRANK VERBEKE
- 11-10-2010 - 09:10:24 by FRANK VERBEKE
- 11-10-2010 - 09:02:29 by FRANK VERBEKE
- 08-10-2010 - 17:26:18 by FRANK VERBEKE
- 08-10-2010 - 17:25:40 by FRANK VERBEKE
- 08-10-2010 - 17:25:12 by FRANK VERBEKE
- 29-09-2010 - 06:33:23 by INNOCENT TUYIRINGIRE
- 19-09-2010 - 10:36:05 by INNOCENT TUYIRINGIRE
- 08-09-2010 - 10:13:09 by FRANK VERBEKE
- 08-09-2010 - 01:07:34 by FRANK VERBEKE
- 12-08-2010 - 00:31:26 by FRANK VERBEKE
- 11-08-2010 - 21:01:15 by FRANK VERBEKE

At the top of the list, there is a link 'Expand all Â»' and a vertical scroll bar on the right side of the window.

#### 4.5.2 Administrative section

The administrative section includes data from hospital records that are not restricted to health professionals (not covered by medical confidentiality). The composition of this section will be different depending on the permissions of the user in question (some users are accessing financial data and others don't, for example)

#### 4.5.2.1 Encounter status

The screenshot shows the OpenClinic medical summary interface. At the top, patient details are displayed: Name VERBEKE, Firstname FRANK, Date of birth 23/08/1963, Record number AAC, Person ID 9966, Service SMALL SURGERY. The OpenClinic logo and version v4.0.39 (05/10/2010) are in the top right. Below the header, a navigation bar includes Home, Medical summary, and various icons.

The main content area is titled "Administrative". It features a red box highlighting the "Encounter status" section. This section contains a table with columns: ID (1.70357), Type (Visit), Outset date (11/10/2010), Service (CLI.CHI.PET SMALL SURGERY), and Physician (FRANK, VERBEKE). Below this table, financial status (Balance: 0,00 RWF, Latest zero balance), insurance data (Insurance number: WORLD VISION #41100149 (A: 0/100), RAMA #41100026 (B: 15/85), Tariff category: C: Private, Outset: 20/09/2008, B: RAMA/MMI 19/12/2009), and planning information (Date: 26/04/2008, Contact type: Emergency consultation, User: FRANK, VERBEKE) are shown.

Below the administrative section, there are links for "Medical" (Medication, Warnings, Problem list, Vaccinations, Reasons for the active encounter) and "Health record" (Date, Contact type, User).

The section "Encounter status" provides the following information:

- Last admission: Date of last closed hospitalization. The date of an active hospitalization is never shown in this field. By clicking on the date displayed, the user can read the data from the last hospitalization.
- Last visit: date of last ended consultation. The date of an active consultation is never shown in this field. By clicking on the date displayed, the user can read the data from the last consultation.
- Active encounter: if at the time of opening the patient record, a hospitalization or a consultation is active (has a start date and no end date), data from this encounter will be displayed at the bottom of the section "Encounter status". The following columns are included:
  1. ID: unique identification number for the active encounter
  2. Type: hospitalization or visit (consultation)
  3. Start Date: start date of the encounter
  4. Service: department where the patient was hospitalized or consulted
  5. Physician: doctor responsible for consultation or hospitalization

By clicking on the line with the active encounter information, the user can check and/or edit the encounter data.

Note: a consultation or hospitalization closed will remain visible at this location for 24 hours after closing time before disappearing and being transferred to the fields "Last hospitalization" or "Last visit".

To create a new contact (hospitalization or consultation) from this section, click the at the right of the label "Encounter status"

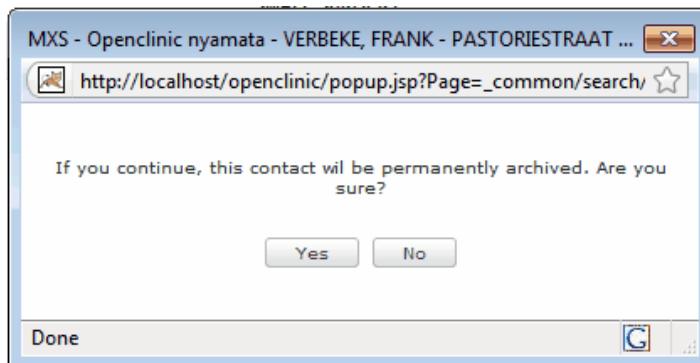
To access the contact history for the patient, click the at the right of the label "Encounter status". OpenClinic then displays a list of all the encounters that were registered for the active patient in the system:

The screenshot shows the OpenClinic software interface. At the top, there is a navigation bar with links for Patient, Medical summary, Nursing, Applications, Documents, System, Immo, and Help. Below the navigation bar, patient information is displayed: Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Nat reg (number), Record number, Archive code (AAC), Person ID (9966), Service (SMALL SURGERY), District (dropdown), Find, and Clear buttons. To the right, the OpenClinic logo and version v4.0.39 (05/10/2010) are visible. Below the header, a breadcrumb trail shows Home > ADT. A toolbar with various icons is present. The main content area is titled "Encounter history" and contains a table with columns: Type, ID, Outset date, Final date, Administrator, Service, Bed, and Reasons for encounter. Two entries are listed:

Type	ID	Outset date	Final date	Administrator	Service	Bed	Reasons for encounter
Visit	1.70357	11/10/2010	11/10/2010		SMALL SURGERY		
Visit	1.22543	23/07/2009	23/07/2009		PSYCHIATRICS		ICD10 R51 HEADACHE ICPC N0100 HEADACHE

The data of the active encounter (if any) appear in bold. Data from old (closed) contacts, will appear in gray and italics. To view data for a contact, simply click on the corresponding line.

At this point, the user also has the ability to delete contacts that have been made in error. To do this, he will have to click on the "trash" icon on the left of the line with the contact data. The system will ask to confirm the delete transaction:



**Caution: only encounters for which no financial data and / or medical content have yet been recorded may be erased this way!**

#### 4.5.2.2 Financial status

The screenshot shows the OpenClinic medical summary interface. At the top, patient details are displayed: Name VERBEKE, Firstname FRANK, Date of birth 23/08/1963, Record number AAC, Person ID 9966, Service SMALL SURGERY. The top right corner shows the OpenClinic logo and version v4.0.39 (05/10/2010). Below the header, a navigation bar includes Home, Medical summary, and other icons. The main area is divided into sections: Administrative, Medical, and Planning. The Administrative section contains an encounter table and a financial status table. The financial status table has a red border around it and displays Balance: 0,00 RWF and Latest zero balance: . To the right of this table, insurance data are listed: Insurance number WORLD VISION #41100149 (A: 0/100), Company C: Private, Tariff category 20/09/2008; RAMA #41100026 (B: 15/85), B: RAMA/MMI 19/12/2009. The Medical section includes tabs for Medication, Vaccinations, Warnings, Problem list, and Reasons for the active encounter. The Planning section shows a date 26/04/2008, contact type Emergency consultation, and user FRANK, VERBEKE.

The section "Financial Status" displays the following information

- Balance: the sum of all amounts owed and the recorded payments made by the patient.
- Last zero balance: last date on which a balance of 0 was recorded for the patient

By clicking on the at the right of the label "financial status", the user can encode a number of parameters:

The dialog box is titled "Modify balance". It contains three fields: Maximum balance (0.0 RWF), Minimum balance (0.0 RWF), and a Comment text area. At the bottom are Save and Back buttons.

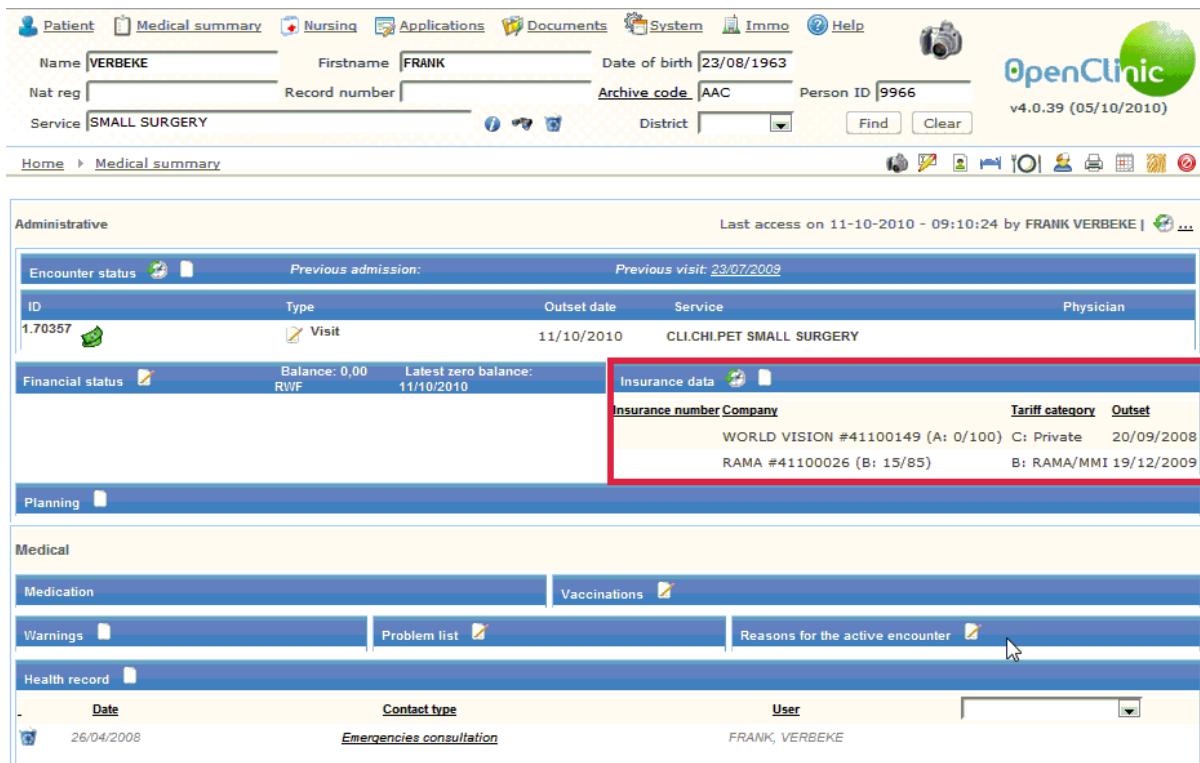
- Maximum balance: the balance creditor over which the hospital will reimburse the patient. This field is purely informational and is not used by the system to monitor certain transactions. The default is 0 (all credit is refunded to the patient on encounter closure).
- Minimum Balance: The outstanding balance under which the balance will appear in red in the "Financial Status" section of the "Medical Summary". The default is 0 (the user's attention is drawn to any debt of the patient in the hospital)
- Comment: free text up to 255 characters.

Click the Save button to save changes. OpenClinic then displays the data stored:

Balance summary	
Balance	0.0 RWF
Date	11/10/2010
Maximum balance	0.0 RWF
Minimum balance	0.0 RWF
Comment	
	<a href="#">Modify balance</a>

Click "Modify balance" to re-edit the data.

#### 4.5.2.3 Insurance



The screenshot shows the OpenClinic medical summary interface for patient VERBEKE, FRANK. The 'Insurance data' section is highlighted with a red box. It displays two active insurances:

Insurance number	Company	Tariff category	Outset
WORLD VISION #41100149	(A: 0/100)	C: Private	20/09/2008
RAMA #41100026	(B: 15/85)	B: RAMA/MMI	19/12/2009

In the section "Insurance data", the system displays a table with data for all health insurances active for the selected patient. The meaning of the different columns is as follows:

- Insurance number: record number of the patient with the insurer
- Company: Name of insurer
- Price category: the rate category that applies to the insurer
- Start Date: The date from which the patient is insured by that insurer

To edit data from a particular insurance, click on the corresponding line. To add a new insurance to the patient record, click the  at the right of the wording "Insurance data". For the recording of insurance data, we refer to the section "Encoding health insurance data" in "Financial Management".

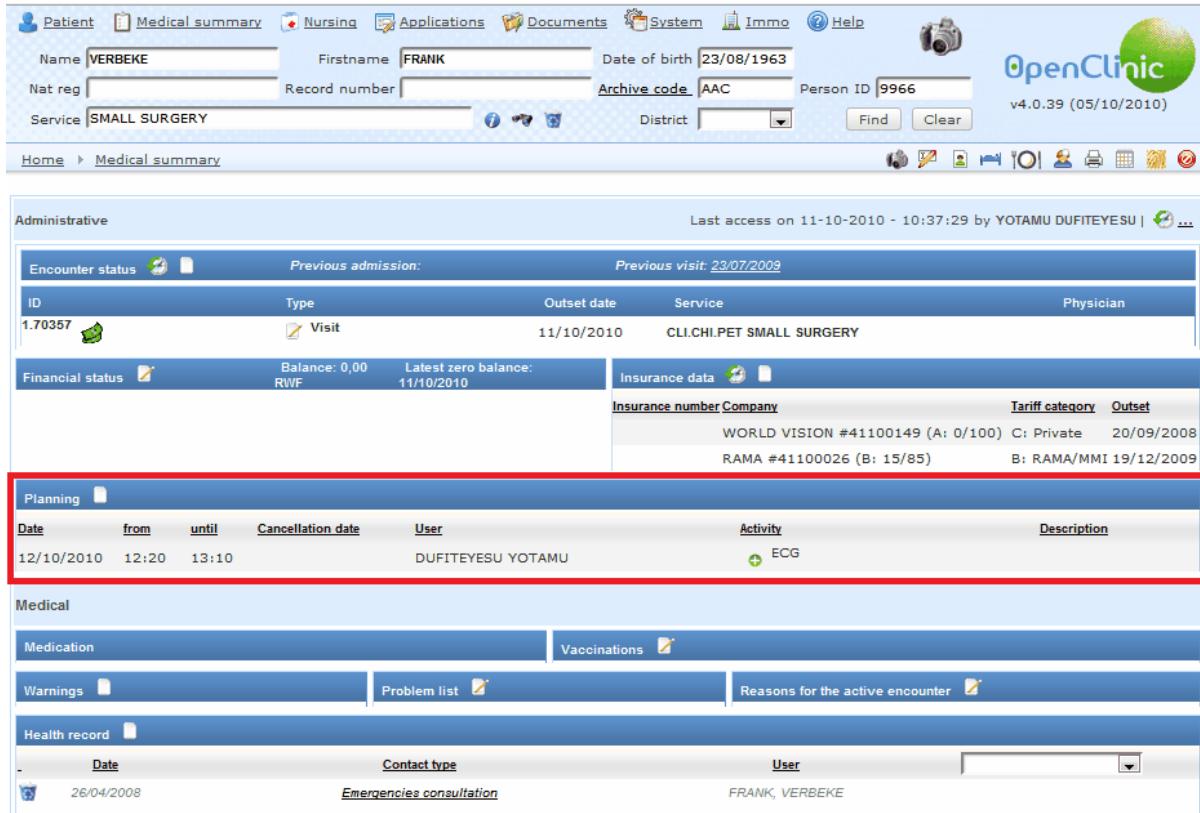
Click on the icon  at the right of the wording "Insurance data" to access the history of all insurances

that have been recorded for that patient in the system (even those for which the end date has already been exceeded):

Insurances history					
Outset date	Final date	Insurance number	Type	Company	Comment
20/09/2008			c	WORLD VISION #41100149	
19/12/2009			b	RAMA #41100026	

To view and/or edit data in the insurance history, click the corresponding row.

#### 4.5.2.4 Calendar



The screenshot shows the OpenClinic medical summary interface. At the top, there is a header with patient information (Name: VERBEKE, Firstname: FRANK, Date of birth: 23/08/1963), search fields, and a camera icon. Below the header, the navigation bar includes Home, Medical summary, and various clinical modules like Nursing, Applications, Documents, System, and Immo. The main content area is titled "Administrative" and shows the last access details. It includes sections for "Encounter status", "Previous admission", "Financial status", "Insurance data", and "Planning". The "Planning" section is highlighted with a red box and contains a table with columns: Date, from, until, Cancellation date, User, Activity, and Description. One row in the table is selected, showing a date of 12/10/2010, start time of 12:20, end time of 13:10, user DUFITEYESU YOTAMU, activity ECG, and a free text description. Below the planning section, there are tabs for "Medical" (Medication, Warnings, Problem list, Vaccinations, Reasons for the active encounter) and "Health record" (Date, Contact type, User).

The section "Planning" displays a list of all appointments that are open to the active patient. In this table, the following columns are included:

- Date: date of appointment
- From: start time of the appointment
- To: estimated end time of the appointment
- Date of cancellation: if you cancel an appointment, when the cancellation occurred
- User: health professional with whom the patient has an appointment
- Activity: the care delivery scheduled for this appointment
- Description: free text up to 255 characters.

The entire contents of an appointment may be viewed and/or edited by clicking on the corresponding line. OpenClinic will open a window as follows:

**Planning**

Planned date*	12	20	Hour	12/10/2010			
Until	13	10	Hour				
Execution date						Hour	
Cancellation date						Hour	
User*	DUFITEYESU YOTAMU						
Patient*	VERBEKE FRANK						
Activity	<input type="radio"/> Product <input checked="" type="radio"/> Examination ECG						
Context							
Description							
	<input type="button" value="Save"/> <input type="button" value="Delete"/> <input type="button" value="Back"/>						
* mandatory fields.							

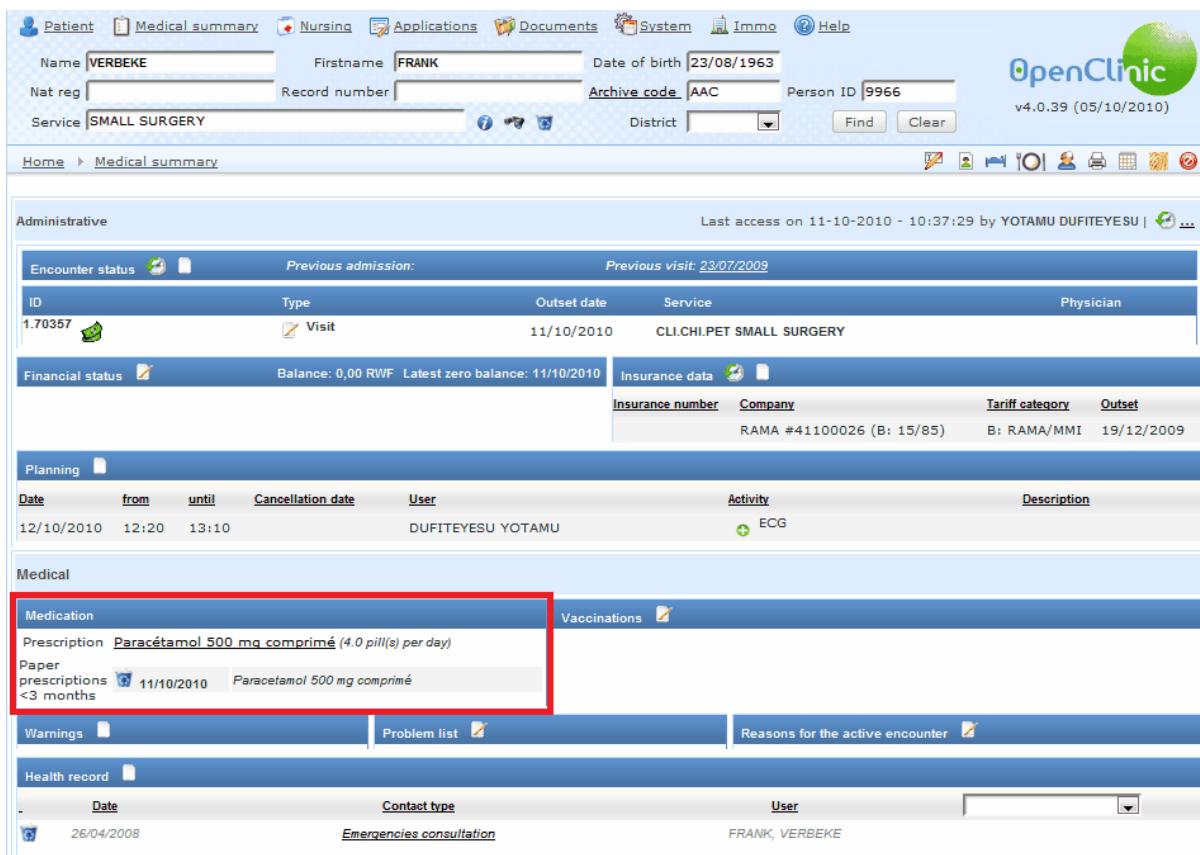
To access the calendar module, click the at the right of the wording "Planning".

For details on encoding appointments data, please consult the "Calendar management" chapter.

#### 4.5.3 Medical section

The medical section of the "Medical Summary" presents some data reserved for health professionals. Administrative users of the system do not normally access this section (this section will not appear when they access the system with their user code).

#### 4.5.3.1 Drugs



The screenshot shows the OpenClinic medical summary interface for patient VERBEKE, FRANK. The 'Medication' section is highlighted with a red box. It displays a prescription for Paracétamol 500 mg comprimé (4.0 pill(s) per day) from 11/10/2010, valid until 13:10 on 12/10/2010, issued by DUFITEYESU YOTAMU. The prescription is underlined.

Prescription	
Paracétamol 500 mg comprimé	(4.0 pill(s) per day)
Paper prescriptions	11/10/2010 Paracetamol 500 mg comprimé
<3 months	

In the section "Medication" are displayed:

1. Drugs prescriptions that have been encoded into the system and are still active (end date of prescription in the future). To view the contents of a prescription, click the underlined name of the drug. The system will display information on the prescription in a popup window:

The screenshot shows a window titled "Patient prescriptions administration VERBEKE FRANK". The form contains the following fields:

Product *	Paracétamol 500 mg comprimé
Dose *	4 pill(s) per 1 Day
Outset date *	11/10/2010
Final date *	14/10/2010
Packings *	16 ( 1 units per packing)
Prescriber *	VERBEKE FRANK
Service stock	
Supplying service	CENTRAL PHARMACY
Schema	8 h 12 h 16 h 20 h h h 1 # 1 # 1 # 1 # 1 # 1 #

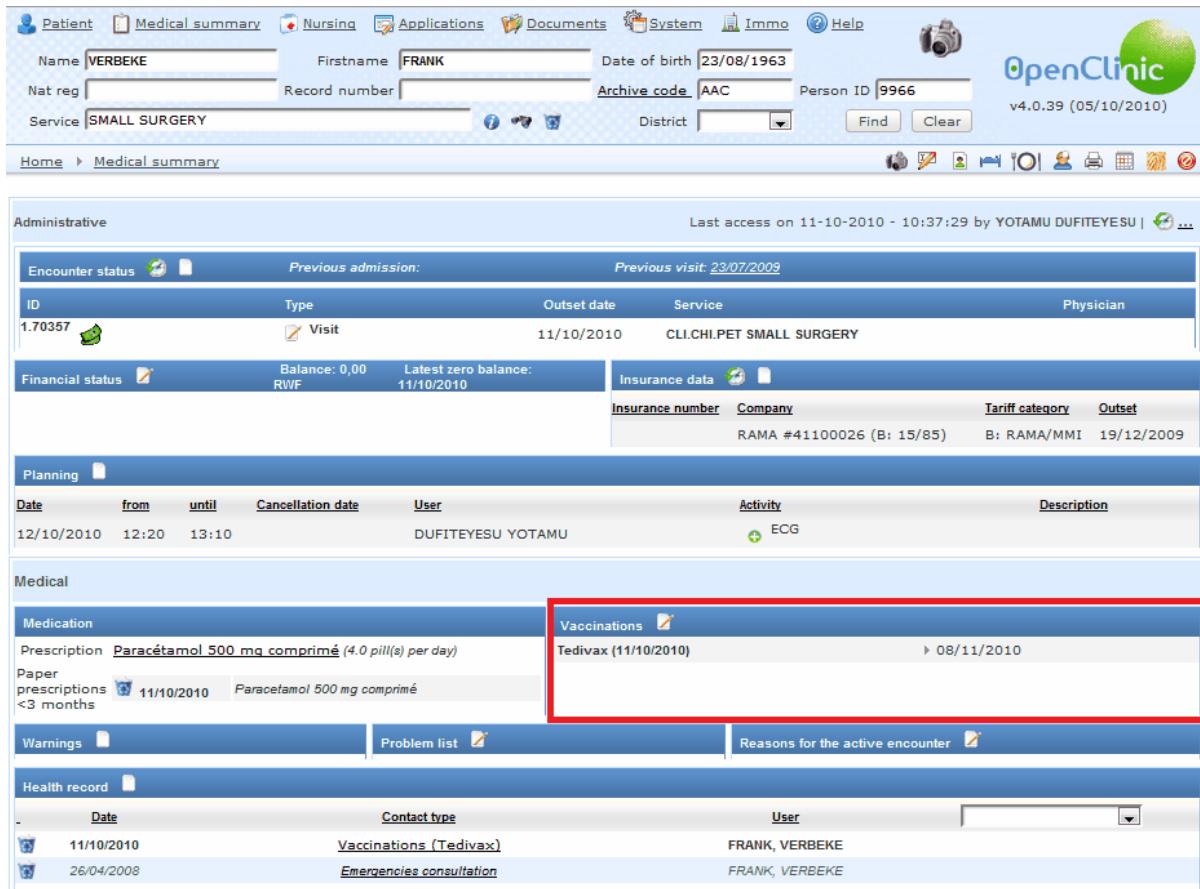
\* mandatory fields

Buttons at the bottom: Save, Delete, Back to summary, Done.

For more information on encoding prescription data, we refer to the chapter "Drug prescriptions"

2. Prescriptions that were printed by the system for the active patient in the last 3 months. If the user considers that certain paper prescriptions are no longer relevant, he can erase them by clicking the "trash" icon at the left of the prescription in question. For encoding and printing of prescriptions, we refer to the chapter "Drug prescriptions".

#### 4.5.3.2 Vaccinations



The screenshot shows the OpenClinic medical summary interface for patient VERBEKE, FRANK. The 'Vaccinations' section is highlighted with a red box. The interface includes sections for Administrative, Planning, and Medical information.

**Administrative:**

- Encounter status: Previous admission: 23/07/2009
- ID: 1.70357, Type: Visit, Outset date: 11/10/2010, Service: CLI.CHI.PET SMALL SURGERY
- Financial status: Balance: 0,00 RWF, Latest zero balance: 11/10/2010
- Insurance data: Insurance number: RAMA #41100026 (B: 15/85), Company: B: RAMA/MMI, Tariff category: 19/12/2009

**Planning:**

Date	from	until	Cancellation date	User	Activity	Description
12/10/2010	12:20	13:10		DUFITEYESU YOTAMU	ECG	

**Medical:**

- Medication: Prescription: Paracétamol 500 mg comprimé (4.0 pill(s) per day), Paper prescriptions: 11/10/2010, Paracetamol 500 mg comprimé <3 months
- Vaccinations: Tedivax (11/10/2010) → 08/11/2010
- Warnings, Problem list, Reasons for the active encounter
- Health record: Date: 11/10/2010, Contact type: Vaccinations\_(Tedivax), User: FRANK, VERBEKE
- Date: 26/04/2008, Contact type: Emergencies consultation, User: FRANK, VERBEKE

In the section "Vaccinations" are displayed the latest statements of vaccination for all vaccines that have been encoded for the patient. For each vaccine are included the following:

- Name of vaccine
- Date of last vaccination (date in brackets behind the name of the vaccine)
- The next date of vaccination for the vaccine in question. For vaccinations whose date of next vaccination has been exceeded and which therefore represent a risk to the patient, the software will add an ! icon before the name of the vaccine.

To access the module that will allow complete management of vaccinations, click the  at the right of the wording "Vaccinations". For more details on this module, see "Vaccinations management".

#### 4.5.3.3 Warnings

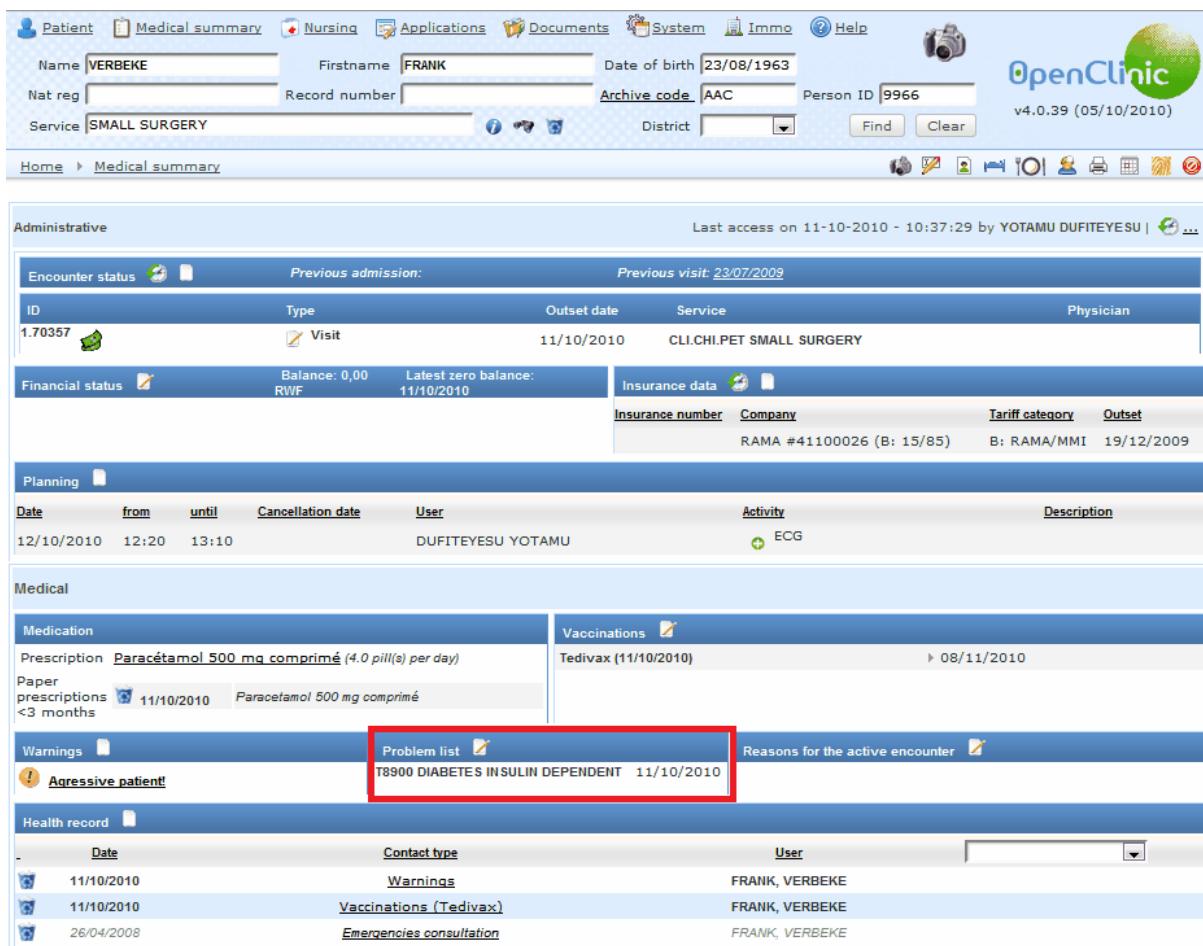
The screenshot shows the OpenClinic interface with the 'Medical summary' tab selected. The 'Administrative' tab is active. In the 'Warnings' section, there is a single entry: 'Aggressive patient!'. This entry is highlighted with a red rectangular box.

Under "Warnings" are included all warnings encoded for the patient and whose expiration date has not yet expired. To view and/or edit the details of a warning, click on the underlined text. To encode a new warning, click the at the right of the label "Warnings". The following screen will be displayed:

Warnings	
Name	<u>Aggressive patient!</u>
Description	(empty)
Expiry date	(empty)
<input type="button" value="Save"/> <input type="button" value="Back"/>	

For details on encoding warnings, see "Warnings and alarms".

#### 4.5.3.4 Problem list



The screenshot shows the OpenClinic medical summary interface. At the top, patient details are displayed: Name VERBEKE, Firstname FRANK, Date of birth 23/08/1963, Record number AAC, Person ID 9966, Service SMALL SURGERY. The OpenClinic logo and version v4.0.39 (05/10/2010) are in the top right. Below the header, the navigation path is Home > Medical summary. The main content area is titled 'Administrative' and contains sections for Encounter status, Financial status, Planning, Medication, Vaccinations, Warnings, and Health record. A red box highlights the 'Problem list' section under the 'Warnings' heading, which lists 'T8900 DIABETES INSULIN DEPENDENT 11/10/2010'. The 'Health record' section shows entries for 11/10/2010 (Contact type: Warnings, User: FRANK, VERBEKE), 11/10/2010 (Contact type: Vaccinations (Tedivax), User: FRANK, VERBEKE), and 26/04/2008 (Contact type: Emergencies consultation, User: FRANK, VERBEKE).

The Problem List covers the diagnoses or active diseases that are significant enough to constitute a problem or a permanent disability for the patient. It is left to the discretion of the clinician what illness is a real problem for the patient. The list of problems, if properly used, will present a very brief summary of current health status of the patient.

Under "Problem List" is posted every encoded active problem for the patient. For each problem the system will display:

- ICPC-2 code or ICD-10 as appropriate.
- The name of the problem as defined in the ICPC-2 and ICD-10 classifications.
- The start date of the problem.

To access the problem list management module, click the  at the right of the wording "Problem list". For more details on the encoding of health problems, see "Problem list management".

#### 4.5.3.5 Reasons for the active encounter

The screenshot shows the OpenClinic medical summary interface for patient VERBEKE, FRANK. The 'Reasons for the active encounter' section is highlighted with a red box. It lists two entries: ICD10 R04.2 HEMOPTYSIS and ICPC R2400 HAEMOPTYSIS.

Reasons for the active encounter	
	ICD10 R04.2 HEMOPTYSIS
	ICPC R2400 HAEMOPTYSIS

Under "Reasons for the active encounter" are included all the reasons for the contact (consultation or hospitalization) in progress. If no active encounter exists, nothing will appear in this section. For each reason for encounter are displayed:

- An indication if this is an ICPC-2 (ICPC) or ICD-10 code
- ICPC-2 code or ICD-10 code as the case
- The name of the reason for encounter as described in the classifications ICPC-2 and ICD-10

If he has the necessary permissions, the user can delete incorrect reasons for encounter by clicking on the "trash" icon that is to the left of each contact pattern. The user can access the module for encoding reasons for encounter by clicking on the to the right of the wording "Reasons for the active contact". For more details on the encoding of reasons for encounter, see "Encoding of reasons for encounter".

#### 4.5.3.6 Examinations

The screenshot shows the OpenClinic medical summary interface. At the top, patient details are displayed: Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Archive code (AAC), Person ID (9966), Service (SMALL SURGERY). The OpenClinic logo and version (v4.0.39 (05/10/2010)) are also present.

**Administrative** section:

- Encounter status: Previous admission: Previous visit: 23/07/2009
- ID: 1.70357, Type: Visit, Outset date: 11/10/2010, Service: CLI.CHI.PET SMALL SURGERY
- Financial status: Balance: 0,00 RWF, Latest zero balance: 11/10/2010
- Insurance data: Insurance number: RAMA #41100026 (B: 15/85), Company: B: RAMA/MMI, Tariff category: 19/12/2009

**Planning** section:

Date	from	until	Cancellation date	User	Activity	Description
12/10/2010	12:20	13:10		DUFITEYESU YOTAMU	ECG	

**Medical** section:

Medication	Vaccinations
Prescription: Paracétamol 500 mg comprimé (4.0 pill(s) per day) Paper prescriptions: 11/10/2010 Paracetamol 500 mg comprimé <3 months	Tedivax (11/10/2010) → 08/11/2010
Warnings: <b>Agressive patient!</b>	Problem list: T8900 DIABETES INSULIN DEPENDENT 11/10/2010
	Reasons for the active encounter: ICD10 R04.2 HEMOPTYSIS, ICPC R2400 HAEMOPTYSIS

**Health record** section (highlighted with a red border):

Date	Contact type	User
11/10/2010	Warnings	FRANK, VERBEKE
11/10/2010	Vaccinations (Tedivax)	FRANK, VERBEKE
26/04/2008	Emergencies consultation	FRANK, VERBEKE

The section "Health record" covers the history of all the examinations that have already been entered for the patient in the OpenClinic system. For these examinations, the following columns are displayed:

- Date: date of examination
- Type of contact: description of the examination
- User: user who entered the examination data
- Context: The department in which the examination was performed (optional)

##### Notes:

By clicking on the "trash" icon on the left of each examination, the user can delete an examination that was encoded by mistake. This will be possible for any examination for which he is himself the author (user who did the encoding). For any other examination, a special authorization code will be asked by the system.

The examinations that have been linked to the active contact (if any) are displayed in bold. Other examinations are displayed in gray italics.

By clicking on the header of each column (Date, Contact Type, User, and Context), the examinations will be sorted according to the contents of the selected column. By clicking a second time on the same column header, sorting will be reversed.

Open an existing examination by clicking on the underlined name in the column "Contact type". You can access the module for examinations management (such as adding a new examination) by clicking on

the  to the right of the wording "Health record". For details on encoding examinations, see the section "Medical Examinations" in "The medical record".

# **Section**



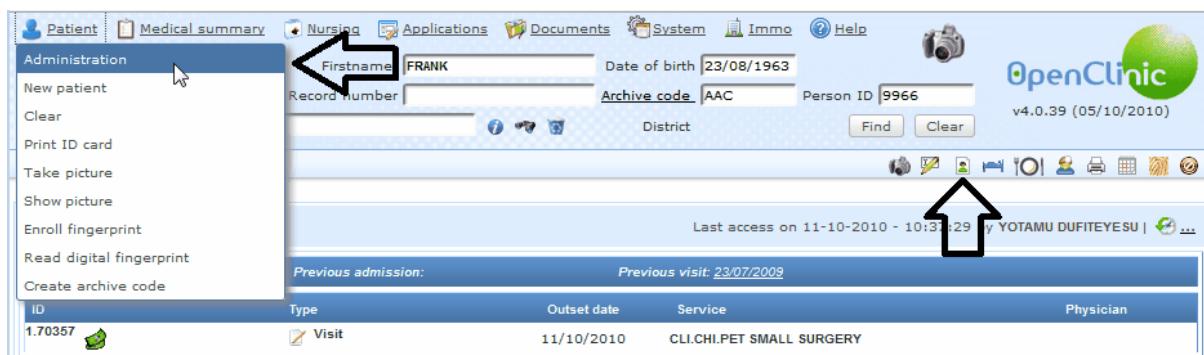
V

## 5 Administrative management of patient records

Correct and complete patient administrative data are essential for proper management of hospital information. Without proper identification of the patient, no further treatment of patient information will make sense. Administrative data entry will follow a number of site-specific rules and thus must be adapted to the requirements of each hospital. OpenClinic can furthermore be adapted to local needs in different countries to better match administrative regulations.

### 5.1 View administrative data

Administrative data are accessible via the "Administration" item in the "Patient" menu or via the shortcut "Administration" in the navigation bar.



The administrative record consists of four tabs:

- Current personal data: contains data related to the person. It should be noted that when opening the patient record, the fields in the search window are filled with appropriate content of the patient's administrative record. The contents of these fields are not repeated in the four tabs of the administrative record.
- Private: address, contact information and business data of the patient
- Family relationships: relationships with other patients included in the OpenClinic system
- Health facility personnel: only applicable for records involving hospital staff. This tab covers information about the function and qualifications of the person in the hospital.

Current personal data	Private	Family relationships	Health facility personnel
Native country	Belgium		
Language	English		
Gender	Male		
National registry number			
TRACNet ID			
Family physician			
Marital status	Living together		
Comment			

[Modify](#)

A tab can be enabled (displayed) by clicking on the title of the tab.

### 5.2 Create or modify an administrative record

At the time of the creation of a new patient record (see also chapter "Patient Identification"), the administrative record of the patient is presented to the user in edit mode. The same situation can be

obtained by clicking on the "Modify" button in the administrative record in viewing mode:



The screenshot shows the OpenClinic software interface. At the top, there is a navigation bar with links for Patient, Medical summary, Nursing, Applications, Documents, System, Immo, Help, and a logo for OpenClinic v4.0.39 (05/10/2010). Below the navigation bar, there are several input fields: Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Nat reg (empty), Record number (empty), Archive code (AAC), Person ID (9966), Service (SMALL SURGERY), District (empty), Find, and Clear buttons. Below these fields is a breadcrumb navigation: Home > Administration. Under the administration section, there are four tabs: Current personal data (selected), Private, Family relationships, and Health facility personnel. The 'Current personal data' tab contains the following data in a table:

Native country	Belgium
Language	English
Gender	Male
National registry number	
TRACNet ID	
Family physician	
Marital status	Living together
Comment	

At the bottom of the form is a 'Modify' button.

In edit mode, the administrative record is as follows:



The screenshot shows the OpenClinic software interface in edit mode. The top navigation bar and search fields are identical to the viewing mode. The breadcrumb navigation shows Home > Administration > Current personal data. The 'Current personal data' tab is selected and contains the same fields as the viewing mode, but they are now interactive input fields. The data entered is: Family name \* (VERBEKE), Firstname \* (FRANK), Date of birth \* (23/08/1963), Native country (Belgium), Person ID (9966), Record number (empty), Archive code (AAC), National registry number (empty), Language \* (English), Gender \* (Male), TRACNet ID (empty), Family physician (empty), Marital status (Living together), and Comment (empty). At the bottom of the form are 'Save' and 'Back' buttons. A note at the bottom left states: '\* mandatory fields.'

The same 4 tabs appear, but this time the fields containing administrative data and appearing in the search window (Name, Firstname, Date of birth, Nat reg, Record number, Person ID and District) have been added. The user can now complete and/or modify the contents of each field. By clicking the "Save" button, changes will be saved in the database.

### 5.2.1 Current personal data

Current personal data	Private	Family relationships	Health facility personnel
Family name *	VERBEKE		
Firstname *	FRANK		
Date of birth *	23/08/1963	<input type="button" value="Calendar"/>	<input type="button" value="Help"/>
Native country	Belgium 		
Person ID	9966		
Record number			
Archive code	AAC		
National registry number			
Language *	English	<input type="button" value="Down"/>	
Gender *	Male	<input type="button" value="Down"/>	
TRACNet ID			
Family physician			
Marital status	Living together		
Comment			

\* mandatory fields.

- Family name: last name of the patient
- Firstname: first name (s) of the patient
- Date of birth: you must enter an exact date. It is impossible to enter only the year of birth. Some users choose to put the first of January of the year if the exact date is unknown.
- Native country: country of birth of the patient
- Person ID: identification number automatically assigned by OpenClinic and displayed for informational purposes only. The user can not change this number.
- Record number: number of existing paper records in the hospital. If multiple records for the same patient exist, all file numbers can be encoded separated by an "/" character
- Archive code: code automatically assigned by OpenClinic based on an algorithm compatible with the archiving system ARIES.
- National registry number: ID card number of the patient
- Language: the patient's primary language. Warning: if the patient record is also a user record, it must specify one of the languages supported by the system for the user interface (English, French, Portuguese or Dutch).
- Gender: gender of the patient
- TRACNet ID: identification number of the patient in research programs
- Family physician: patient's family physician
- Marital status: marital status of the patient
- Comment: free text (maximum 255 characters)

## 5.2.2 Private

	<b>Current personal data</b>	<b>Private</b>	<b>Family relationships</b>	<b>Health facility personnel</b>
Address modification on	28/12/2007 <input type="button" value="Calendar"/> <input type="button" value="16"/> <input type="button" value="Print"/>			
Address	PASTORIESTRAAT 58			
District	TIENEN <input type="button" value="Search"/>			
Sector	BOUTERSEM <input type="button" value="Search"/>			
Zipcode				
Country	Belgium <input type="button" value="Binoculars"/> <input type="button" value="Trash"/>			
Email	Frank.Verbeke@mxs.be			
Telephone	016/721047			
Cellphone	0475/621569			
Province	<input type="button" value="Search"/>			
Municipality	BOUTERSEM			
Cell				
Position	CEO			
Company	MXS SA			
Comment				

\* mandatory fields.

- Address modification on: date of effect of the change of address (OpenClinic keeps track of address modifications for a patient)
- Address: address of the patient
- District: administrative district of the patient
- Sector: administrative sector of the patient
- Zipcode: zipcode of the patient
- Country: country of residence of the patient. The selection of a country is through a search screen. The country can not be encoded directly into the field. To search for the country, click on the "binoculars". To clear the field "Country", click the "trash" icon.
- Email: email address of the patient. Several email addresses can be entered in this field.
- Telephone: telephone number of the patient
- Cellphone: mobile number of the patient
- Province: province of residence of the patient
- Municipality: village of residence of the patient
- Cell: administrative unit of residence of the patient
- Position: professional occupation of the patient
- Company: patient's employer
- Comment: free text (maximum 255 characters)

The contents of this screen may be different depending on the country in which the system is used. OpenClinic may modify the wording and content of fields based on the administrative organization of the country.

### 5.2.3 Family relationships

The screenshot shows the 'Family relationships' tab selected in the top navigation bar. Below it, there are tabs for 'Source person', 'Other person', and 'Relationship'. A message 'No family relationships found' is displayed. A form titled 'Add family relationship' contains fields for 'Other person' (with a search icon) and 'Relationship' (with a dropdown menu). Buttons for 'Add' and 'Clear' are at the bottom, along with 'Save' and 'Back' buttons.

OpenClinic allows you to save links between different patient records in the database as family relationships. This allows in some cases to find a patient record through a record of a parent or another family member. This is particularly useful in the case of newborns, for which the first and last names are often not definitively known at record creation.

To save a family relationship, the user will:

1. Click on the "binoculars" to the right of the "other person". In doing so, the user can identify the other record that will be linked to the patient:

The screenshot shows the 'Family relationships' tab selected. A search dialog box is overlaid on the page, titled 'MXS - Openclinic nyamata - VERBEKE, FRANK - PASTORIESTRAAT 58 ...'. It has fields for 'Name' (containing 'kara'), 'Firstname', 'Date of birth', and 'Gender'. A 'Find' button is present. Below these are tables for 'Name', 'Gender', and 'Date of birth'. The list of results includes:

Name	Gender	Date of birth
KARABO KENIA	F	01/01/2006
KARAGIRE CELESTIN	M	15/05/1987
KARAKE TWAHIRWA EDOUARD	M	01/01/1983
KARAMA ALPHONSE	M	01/01/1974
KARAMA EDOUAR	M	01/01/1943
KARAMA ELIAS	M	01/01/1972
KARAMA HERTIER	M	31/08/2008
KARAMAGA ANTOINE	M	01/01/1957
KARAMAGE EDOUARD	F	01/01/1952
KARAMAGE EDUARD	M	01/01/1952
KARAMAGE PIERRE	M	01/01/1943
KARAMBIZI ANTOINE	M	01/01/1942
KARAMBIZI EMMANUEL	F	01/01/1953
KARAMBIZI FRANCOIS	M	01/01/1970
KARAMBIZI INNOCENT	M	01/01/1961

At the bottom of the dialog, there are 'Done' and 'Close' buttons.

2. Identify the desired record by clicking on the name of the patient.
3. Set the link of kinship in choosing an option in the "Relationship" field

The screenshot shows the 'Family relationships' tab selected in a top navigation bar. Below it, a sub-tab 'Source person' is active. A message 'No family relationships found' is displayed. An 'Add family relationship' form is open, showing a search result for 'KARAGIRE CELESTIN'. The 'Relationship' dropdown menu is open, showing options: 'Choose', 'Choose', 'Brother/Sister', 'Child/Parent', and 'Partner'. Buttons for 'Save' and 'Back' are at the bottom right.

## 5.2.4 Health facility personnel

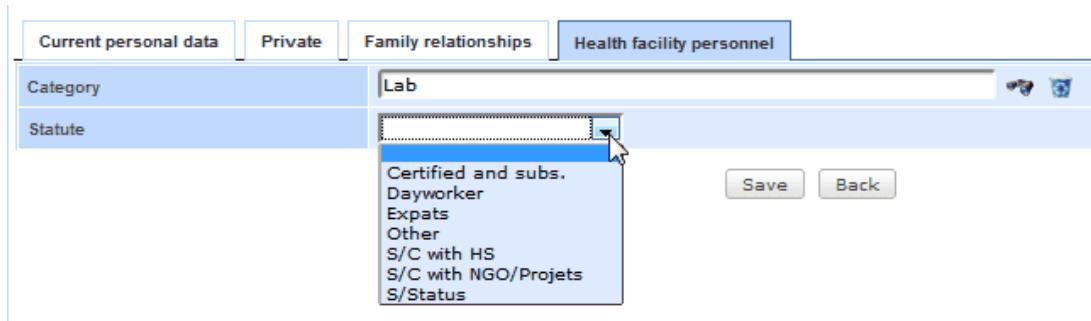
The screenshot shows the 'Health facility personnel' tab selected in a top navigation bar. Below it, a sub-tab 'Category' is active. A search bar is present above the 'Category' field. The 'Statute' field has a dropdown arrow. Buttons for 'Save' and 'Back' are at the bottom right.

For each record of an employee of the hospital (clinic or health facility), OpenClinic can enter some additional information:

1. Category: indicates the category of staff. To register a personnel category, click the "binoculars" icon to the right of the field "Category". You will then get a search window that lets you select a category. Where a category still contains sub-categories, a "+" icon will appear to the left of the category. By clicking on this icon, you'll get the underlying categories. Select a category by clicking on the name.

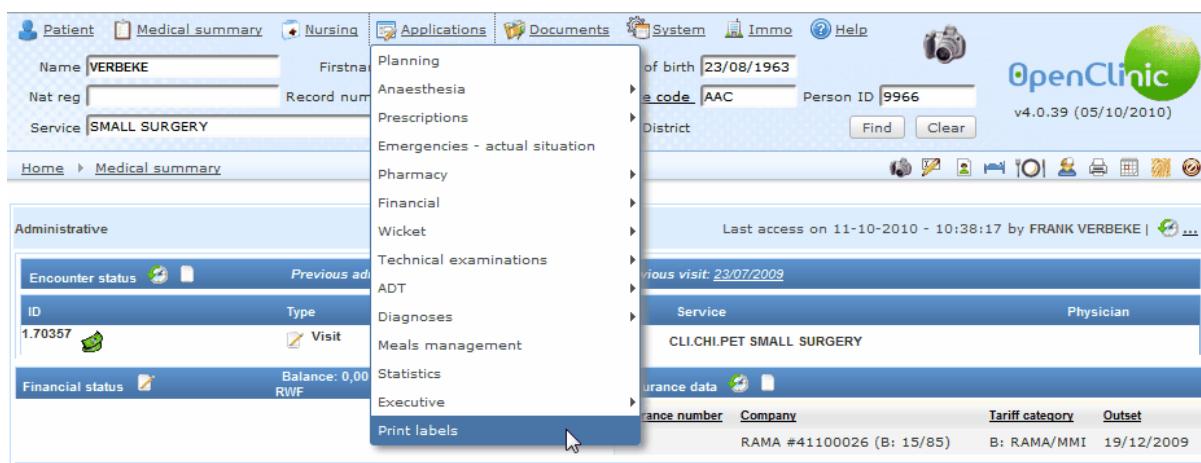
The screenshot shows the 'Category' search interface. A tree view displays categories: '1 Physicians', '2 Nurses', '3 Paramedics', and '4 Administrative personnel'. A 'Find' input field and 'Find' button are at the top of the search window. A 'Close' button is at the bottom right, and a 'Done' button is at the bottom center.

2. Status: Choose the status of the person by selecting an option

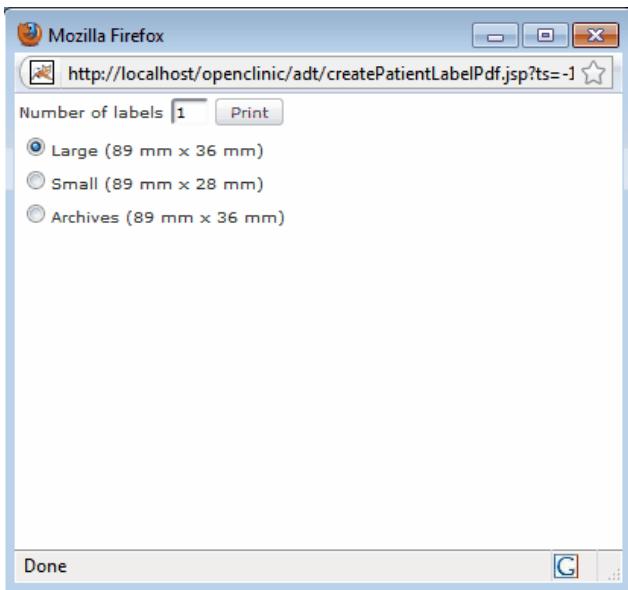


## 5.3 Label printing

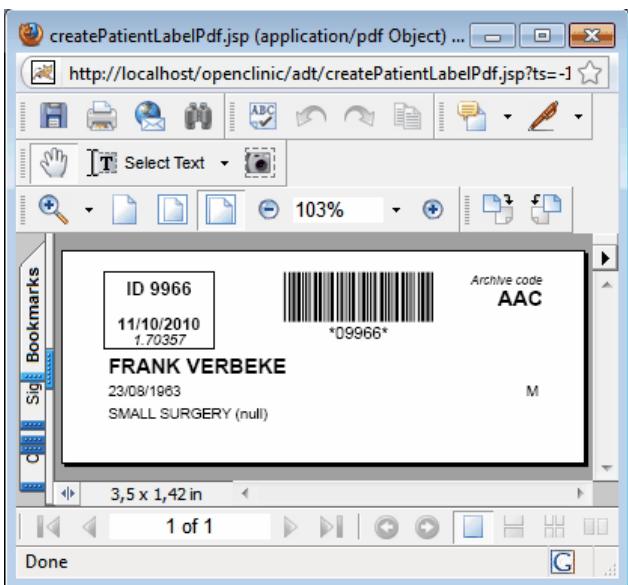
For the identification of paper documents, it can be very interesting to be able to generate labels. OpenClinic offers the ability to print several types of identification tags. This feature is only accessible after opening a patient record. Via the menu "Applications" option "Printing labels" the user can generate labels for the active patient.



Select the type of labels you want and indicate the number of labels to print.



Then press the "Print" button. The labels will then be displayed in PDF format and you can use your PDF manager (Adobe Acrobat Reader or other) for printing.



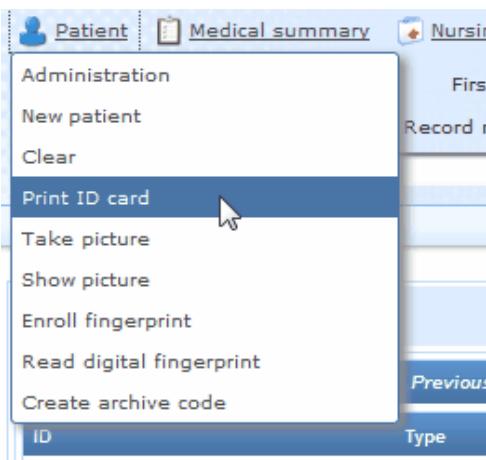
### 5.3.1 Barcodes

OpenClinic allows printing of barcodes on the label. These barcodes can be read with any bar code reader that is compatible with the standard Code 39.

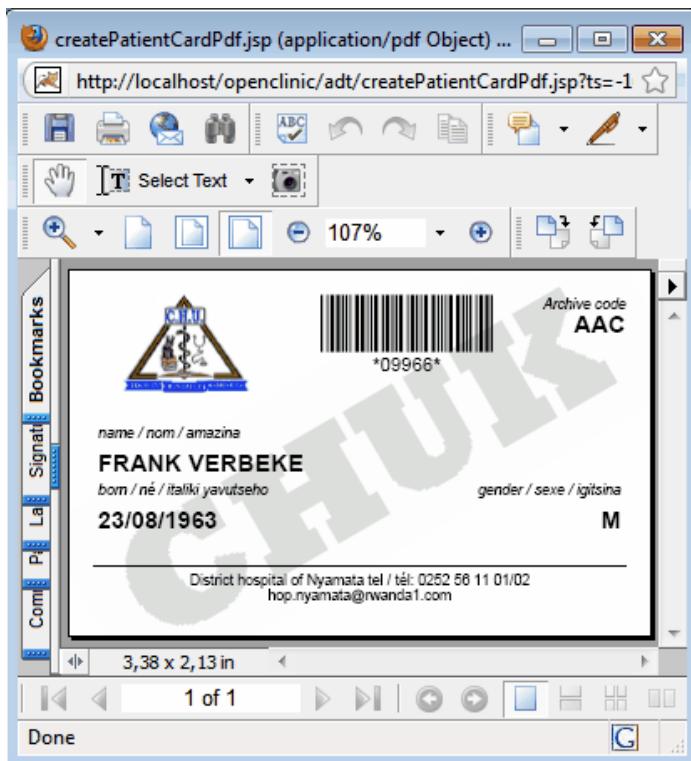
## 5.4 Patient cards

Depending on the hardware configuration, the software allows the generation of patient cards. These are usually printed on plastic cards of the 'credit card' type and require a specific printer. The patient card printing also requires the PDF document manager (like Acrobat Reader), making it compatible with virtually any printer supported by the operating system used on the client (Windows or Linux).

To access the printing module of patient cards, select the "Print ID Card" option in the "Patient" menu.



The card is generated directly based on the administrative data stored in the system.

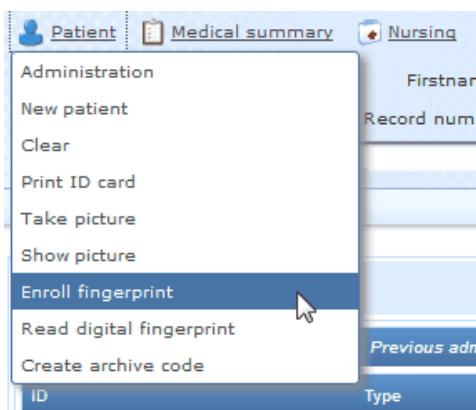


## 5.5 Fingerprints

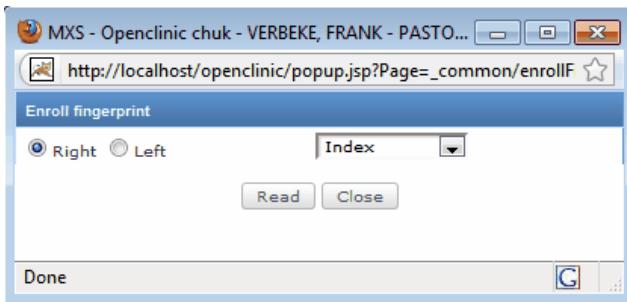
For the identification of patients, it is possible to use fingerprint readers. To do this, the system must have the necessary hardware: a fingerprint reader driver compatible with GFinger (eg Microsoft Fingerprint Reader).

### 5.5.1 Register fingerprints

The registration of fingerprints can be activated via the "Enroll fingerprint" option in the "Patient" menu.



Then a screen will appear offering the option to save up to 10 fingerprints for the patient (one per finger).

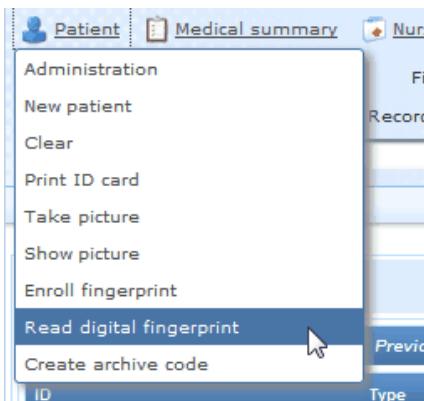


To select the hand, select "Right" or "Left", then select the finger you will use for recording.

### 5.5.2 Read fingerprints

To read fingerprints, do the following:

1. Select the "Read digital fingerprint" option in the "Patient" menu.

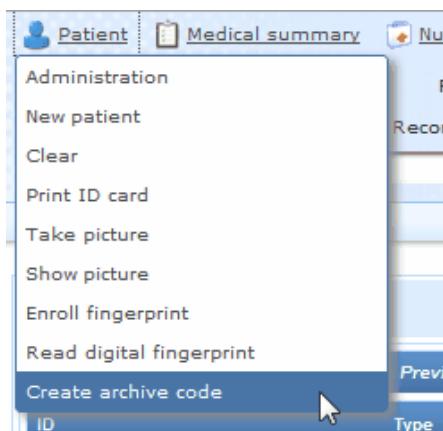


2. Then the patient places on the fingerprint reader a finger for which a fingerprint has been previously recorded. If the fingerprint is recognized by OpenClinic, the patient record will be automatically opened by the system.

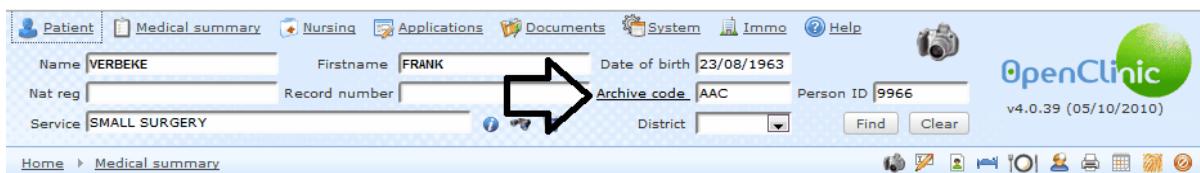
## 5.6 Record archiving

To create a link between the electronic patient record and the archived paper record, an archiving module has been implemented in OpenClinic. This module can generate for each patient a unique code based on letters. The code generation system is compatible with the archiving system ARIES (<http://www.aries-document.be>) and allows the encoding of 11,881,376 files archived with a combination of only 5 letters. Each letter of the generated archive code is provided with a color consistent with the classification labels of ARIES.

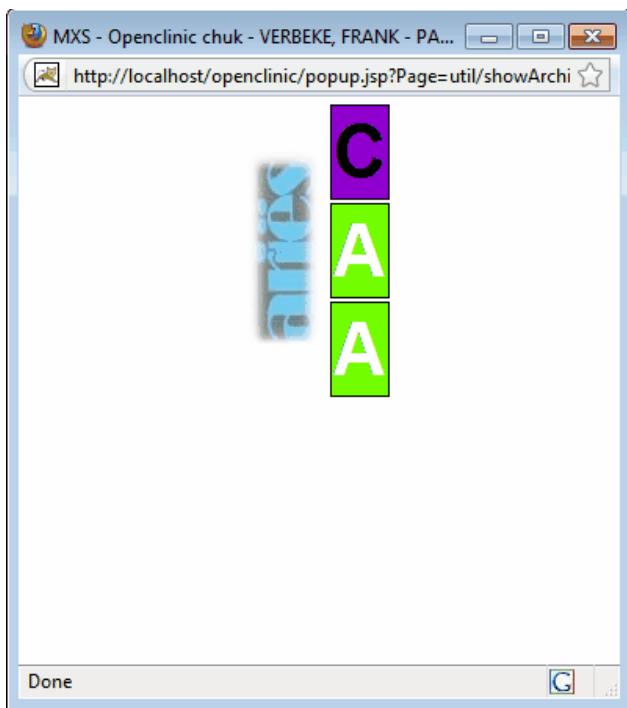
The archive code can be generated for the patient record via the "Create archive code" option in the "Patient" menu.



Viewing the generated code can be achieved by clicking on the link "Archive code" in the search window.



The result is as follows:





# **Section**



**VI**

## 6 Encounter management

### 6.1 What is an encounter (or a contact)?

The notion of an encounter or contact is essential in the OpenClinic system. A contact is a period during which the patient was present at the hospital for treatment, diagnostic or administrative follow-up. Any activity related to a patient registered in the OpenClinic software should always be linked to a contact. Thus, the contact will encompass all activities that relate to the same episode of care in the health facility.

OpenClinic allows the management of two types of contacts: hospitalizations and polyclinic consultations:

- Hospitalization: the patient was placed in a bed for at least 1 day during the episode of care
- Visit: The patient was not put in a bed during the episode of care

The registration of a contact for each patient in hospital is essential if we are to exploit fully and correctly reports on clinical activities, administrative and financial transactions. Without a complete and systematic recording of contacts, the usefulness of the OpenClinic software will be considerably reduced.

### 6.2 Creating a new contact

There exist several methods for creating a new contact:

1. Via the "Medical Summary"

- Users for whom the "Medical Summary" has been configured as the default page by the system administrator, there's not much to do: the screen "Medical Summary" will appear automatically at the opening a patient record.
- Other users can activate this screen via the menu "Medical Summary"

Patient Medical summary Nursing Applications Documents System Immo Help

Name VERBEKE Firstname FRANK Date of birth 23/08/1963  
 Nat reg Record number Archive code AAC Person ID 9966  
 Service SMALL SURGERY District Find Clear

OpenClinic v4.0.39 (05/10/2010)

Home > Medical summary

**Administrative**

Last access on 11-10-2010 - 13:12:21 by FRANK VERBEKE |

ID	Type	Outset date	Service	Physician
1.70357	Visit	11/10/2010	CLI.CHI.PET SMALL SURGERY	

**Financial status**

Balance: 0,00 RWF Latest zero balance: 11/10/2010

**Insurance data**

Insurance number Company Tariff category Outset  
 RAMA #41100026 (B: 15/85) B: RAMA/MMI 19/12/2009

**Planning**

Date	from	until	Cancellation date	User	Activity	Description
12/10/2010	12:20	13:10		DUFITEYESU YOTAMU	ECG	

**Medical**

**Medication**

Prescription Paracétamol 500 mg comprimé (4.0 pill(s) per day)  
 Paper prescriptions 11/10/2010 Paracetamol 500 mg comprimé <3 months

**Vaccinations**

Tedivax (11/10/2010) → 08/11/2010

**Warnings**

! Aggressive patient!

**Problem list**

T8900 DIABETES IN SULIN DEPENDENT 11/10/2010

**Reasons for the active encounter**

ICD10 R04.2 HEMOPTYSIS  
 ICPC R2400 HAEMOPTYSIS

**Health record**

Date	Contact type	User
11/10/2010	Warnings	FRANK, VERBEKE
11/10/2010	Vaccinations (Tedivax)	FRANK, VERBEKE
26/04/2008	Emergency consultation	FRANK, VERBEKE

Note: depending on the permissions of the logged on user, some aspects of the "Medical Summary" will be visible and others not. To create a new contact from this screen, you must click on the "new" icon to the right of "Encounter status"

Administrative

Last access on 11-10-2010 - 13:12:21 by FRANK VERBEKE |

ID	Type	Outset date	Service	Physician
1.70357	Visit	11/10/2010	CLI.CHI.PET SMALL SURGERY	

**Financial status**

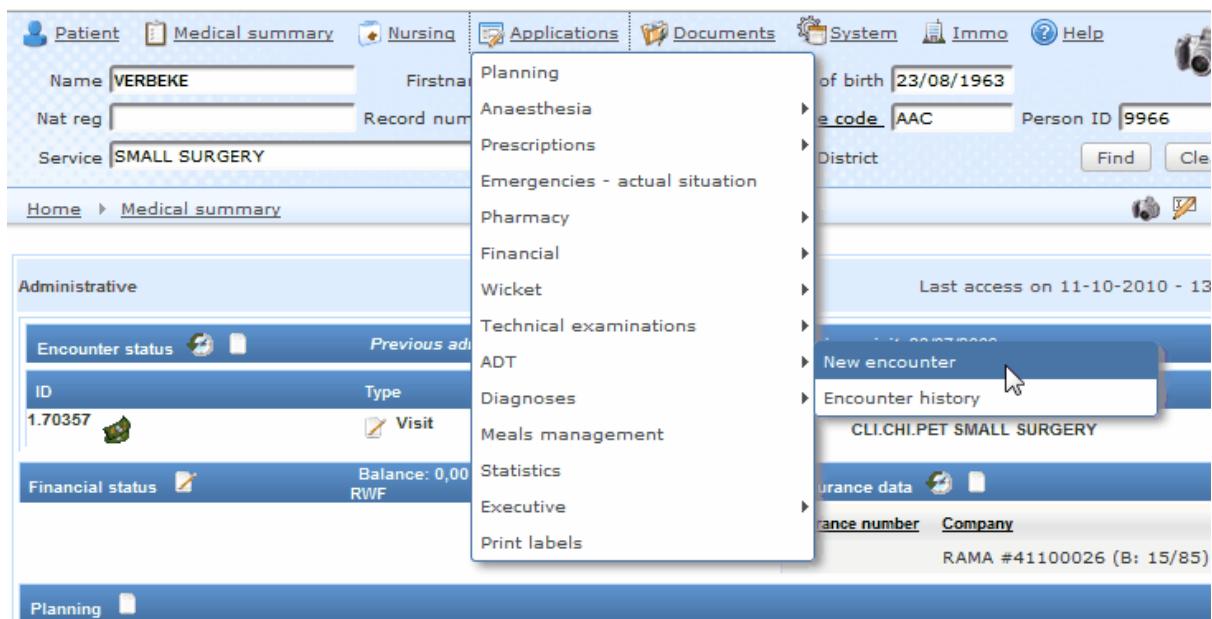
Balance: 0,00 RWF Latest zero balance: 11/10/2010

**Insurance data**

Insurance number Company Tariff category Outset  
 RAMA #41100026 (B: 15/85) B: RAMA/MMI 19/12/2009

## 2. Via the menu

- Select the "ADT> New encounter" option in the "Applications" menu



The 2 methods have the result that the window for entering contact data will be displayed:

Type *	Visit
Outset date *	11/10/2010
Final date	
Origin *	
Administrator	
Service	
Internal transfers	
Situation	Zone
Evolution	Choose
Destination	
<input type="button" value="Save"/> <input type="button" value="Back"/>	

## 6.2.1 In-patients

By setting the "Type" to "Admission", the following data can be entered:

Encounter	
Type *	<input type="text" value="Admission"/> 
Outset date *	<input type="text" value="11/10/2010"/>   16 14:03
Final date	<input type="text"/>  
Origin *	<input type="text"/> 
Administrator	<input type="text"/>  
Service	<input type="text"/>  
Bed	<input type="text"/>  
Internal transfers	
Situation	<input type="text" value="Zone"/> 
Evolution	<input type="text" value="Choose"/> 
Destination	<input type="text"/>  
In-patient accomodation days already invoiced	= 0 days
In-patient accomodation days to invoice	<input type="text" value="null"/>  <input type="checkbox"/> Charge <input type="text" value="1"/> days
	<input type="button" value="Save"/> <input type="button" value="Back"/>

\* mandatory fields

- Outset date: beginning of episode of care. This field is automatically filled in with date and time of creation of the contact
- Final date: end of the episode of care. At the time this date is entered, the contact is closed and no changes can be achieved afterwards.
- Origin: origin of the patient (other hospital, health center, home ...)
- Administrator: the health professional who is responsible for the care of the patient. To capture this information, the user will have to click on the "binoculars" to the right of this field. The system will display a search screen. Note: only health professionals registered in the system as users may be selected.

The screenshot shows the 'Encounter' form on the left and a search dialog on the right. The encounter form includes fields for Type (Admission), Outset date (11/10/2010), Final date, Origin, Administrator, Service, Bed, Internal transfers, Situation (Zone), Evolution (Choose), and Destination. A note at the bottom says '\* mandatory fields'. The search dialog has a title bar 'MXS - Openclinic chuk - VERBEKE, FRANK - PASTOERIESTRAAT 58 BOUTERSEM Tel: 01...' and a URL 'http://localhost/openclinic/popup.jsp?Page=\_common/search/searchUser.jsp&ts=-1691560759&'. It contains a 'Name' field, a 'Firstname' field, and buttons 'Find' and 'Clear'. The main area lists patient names with their counts in parentheses:

- MANIRAHO MICHEL 19800 (149)
- MPANIBANJE THIERRY 24344 (84)
- MUDAHEMUKA GENTIL 30009 (127)
- MUGANGA SIMEON 693/02 (133)
- MUGENZI JUVENAL 28375 (124)
- MUJAWASE JULIENNE 3271/08 (106)
- MUKAKABEGO AURORE 5365/06 (112)
- MUKAKIGELI IMMACULEE 20062 (35)
- MUKAKIGERI IMMACULEE 20121 (54)
- MUKAMARIGERI IMMACULEE 20119 (92)
- MUKAMANA ATHANASIE 26365 (113)
- MUKAMANA GRACE 19977 (59)
- MUKAMANA JANVIERE 20064 (36)
- MUKAMARIZA ROSINE 25654 (99)
- MUKAMPAGAZI ODETTE 7733/10 (32)
- MUKAMUHIRE ILDE 22989 (72)

At the bottom of the search dialog are 'Close' and 'Done' buttons.

- Service: department where the patient is hospitalized. To capture this information, the user will have to click on the "binoculars" icon to the right of this field. The system will display a search screen. Caution: only services offering in-patient beds will be selectable. This will avoid wrongfully finding patients hospitalized in a billing department or pharmacy.

The screenshot shows the 'Encounter' form on the left and a search dialog on the right. The encounter form includes fields for Type (Admission), Outset date (11/10/2010), Final date, Origin, Administrator, Service, Bed, Internal transfers, Situation (Zone), Evolution (Choose), and Destination. A note at the bottom says '\* mandatory fields'. The search dialog has a title bar 'MXS - Openclinic chuk - VERBEKE, FRANK - PASTOERIESTRAAT 58 BOUTERSEM Tel: 01...' and a URL 'http://localhost/openclinic/popup.jsp?Page=\_common/search/searchService.jsp&ts=-1691560'. It contains a 'Find' button and a 'Clear' button. The main area is a tree view under 'Home' labeled 'CLINICAL DEPARTMENTS':

- CLI.CHI SURGERY
- CLI.INT INTERNAL MEDECINE
- CLI.MAT MATERNITY
- CLI.OUT OUTPATIENTS CLINIC
- CLI.PED PEDIATRICS
- CLI.PSY PSYCHIATRICS
- CLI.USI INTENSIVE CARE**

At the bottom of the search dialog are 'Close' and 'Done' buttons.

- Bed: the bed where the patient is hospitalized. This requires the prior encoding of beds that exist in the hospital departments. To capture this information, the user will have to click on the "binoculars" icon to the right of this field. The system will display a search screen. For beds already occupied, the system will display the patient's name in it. Warning: the current system does not allow more than

one patient being hospitalized in the same bed.

The screenshot shows two windows side-by-side. On the left is the 'Encounter' management form, which includes fields for Type (Admission), Outset date (11/10/2010), Final date, Origin, Administrator, Service (INTENSIVE CARE), Transfer date (11/10/2010), Bed, Internal transfers, Situation (Zone), Evolution (Choose), Destination, In-patient accommodation days already invoiced (0 days), and In-patient accommodation days to invoice (null). There are also Save and Back buttons at the bottom. A note at the bottom left says '\* mandatory fields'. On the right is a search results window titled 'Bed' with a URL http://localhost/openclinic/popup.jsp?Page=/\_common/search/searchBed.jsp&ts=-1690863530&VarCod. The results table has columns 'Bed' and 'Patient'. It lists BED 1, BED 2, BED 3, BED 4, and BED 5, with DUFITISHIMWE ESTHER associated with BED 5. There are 'Find' and 'Clear' buttons at the top of this window, and a 'Close' button at the bottom.

- Internal transfers: displays internal transfers that took place during the contact.
- Situation: indicates whether the patient's origin is in the area covered by the health facility
- Evolution: specifies the patient's clinical course at the end of hospitalization. This field is required in order to close a contact. The content of this field depends on the local configuration of the system. The defaults are: Improvement, Died, Deterioration, Escaped and Reference.
- Destination: the destination of the patient at the end of hospitalization. We can choose a destination that has been configured in a list of services (external) in OpenClinic. You can access the list of services by clicking on the "binoculars" icon to the right of the field.
- In-patient accommodation days already invoiced: this is a read-only information. The figure shows the number of hospital days that have already been billed to the patient before.
- In-patient accommodation days to invoice: indicates the number of hospital days that have yet to be charged given the findings in the previous field. If the user wants to switch to the billing of a number of days, he should first select the type of stay (room), then check the field "Charge" and indicate at the right of this field the number of days to be billed.

As long as the field "Final Date" has not been filled in, the "Save" button is available and the user can still make changes to the contact in question. After completing the "Final Date", the contact is automatically closed and the "Save" button is no longer available. Changes will no longer be possible from that moment.

### 6.2.2 Out-patients

By setting the "Type" to "visit", the following may be entered:

**Encounter**

Type *	Visit
Outset date *	11/10/2010 <input type="button" value=""/>
Final date	<input type="button" value=""/>
Origin *	<input type="button" value=""/>
Administrator	<input type="button" value=""/>
Service	<input type="button" value=""/>
Transfer date	11/10/2010 <input type="button" value=""/>
Internal transfers	
Situation	Zone
Evolution	Choose
Destination	<input type="button" value=""/>
<input type="button" value="Save"/> <input type="button" value="Back"/>	

\* mandatory fields

- Outset date: beginning of episode of care. This field is automatically filled in with date and time of creation of the contact
- Final date: end of the episode of care. At the time this date is entered, the contact is closed and no changes can be achieved afterwards.
- Origin: origin of the patient (other hospital, health center, home ...)
- Administrator: the health professional who is responsible for the care of the patient. To capture this information, the user will have to click on the "binoculars" to the right of this field. The system will display a search screen. Note: only health professionals registered in the system as users may be selected.

**Encounter**

Type *	Admission
Outset date *	11/10/2010 <input type="button" value=""/>
Final date	<input type="button" value=""/>
Origin *	<input type="button" value=""/>
Administrator	<input type="button" value=""/>
Service	<input type="button" value=""/>
Bed	<input type="button" value=""/>
Internal transfers	
Situation	Zone
Evolution	Choose
Destination	<input type="button" value=""/>
In-patient accomodation days already invoiced	= 0 days
In-patient accomodation days to invoice	<input type="button" value=""/> null <input type="button" value=""/> Charge <input type="text" value="1"/>
<input type="button" value="Save"/> <input type="button" value="Back"/>	

\* mandatory fields

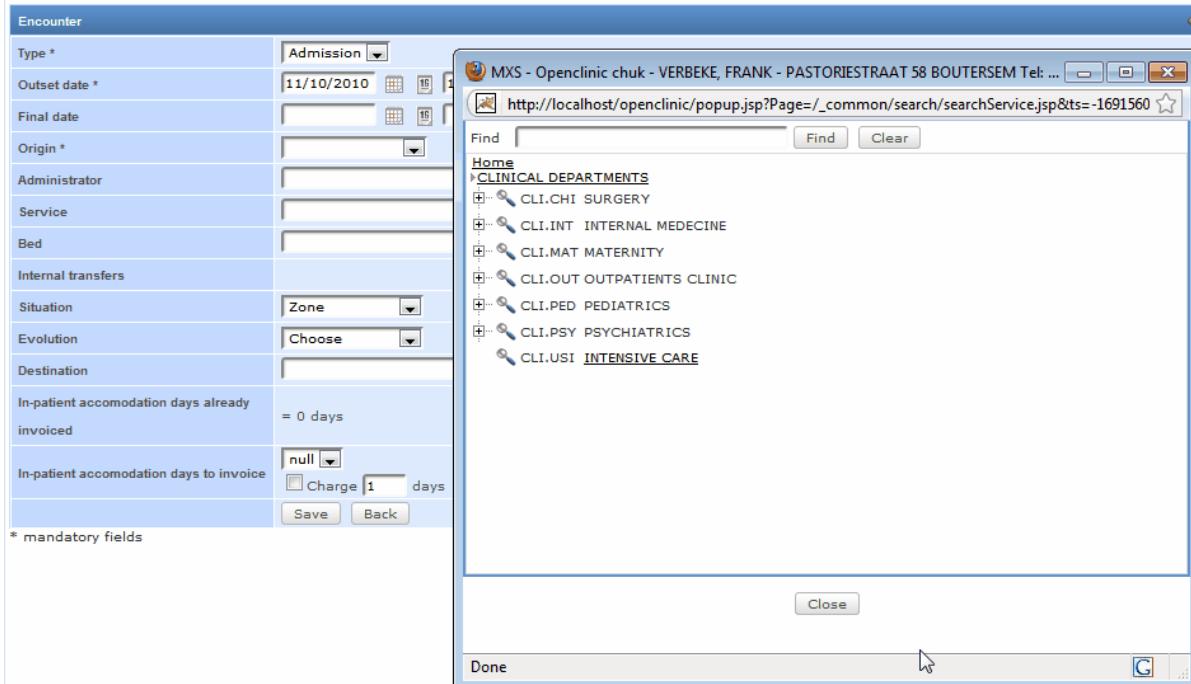
MXS - Openclinic chuk - VERBEKE, FRANK - PASTOPIESTRAAT 58 BOUTERSEM Tel: 01...

http://localhost/openclinic/popup.jsp?Page=\_common/search/searchUser.jsp&ts=-1691560759&...

Name	Firstname	
MANIRAHO MICHEL	19800 (149)	<input type="button" value=""/>
MPANIBANJE THIERRY	24344 (84)	<input type="button" value=""/>
MUDAHEMUKA GENTIL	30009 (127)	<input type="button" value=""/>
MUGANGA SIMEON	693/02 (133)	<input type="button" value=""/>
MUGENZI JUVENAL	28375 (124)	<input type="button" value=""/>
MUJAWASE JULIENNE	3271/08 (106)	<input type="button" value=""/>
MUKAKABEGO AURORE	5365/06 (112)	<input type="button" value=""/>
MUKAKIGELI IMMACULEE	20062 (35)	<input type="button" value=""/>
MUKAKIGERI IMMACULEE	20121 (54)	<input type="button" value=""/>
MUKAMANA ATHANASIE	26365 (113)	<input type="button" value=""/>
MUKAMANA GRACE	19977 (59)	<input type="button" value=""/>
MUKAMANA JANVIERE	20064 (36)	<input type="button" value=""/>
MUKAMARIZA ROSINE	25654 (99)	<input type="button" value=""/>
MUKAMPAGAZI ODETTE	7733/10 (32)	<input type="button" value=""/>
MUKAMUHIRE ILDE	22989 (72)	<input type="button" value=""/>

- Service: department where the patient is hospitalized. To capture this information, the user will have to click on the "binoculars" icon to the right of this field. The system will display a search screen. Caution: only services offering in-patient beds will be selectable. This will avoid wrongfully finding

patients hospitalized in a billing department or pharmacy.



- Transferts internes: affichage des transferts internes qui ont eu lieu au cours du contact.
- Internal transfers: displays internal transfers that took place during the contact.
- Situation: indicates whether the patient's origin is in the area covered by the health facility
- Evolution: specifies the patient's clinical course at the end of hospitalization. This field is required in order to close a contact. The content of this field depends on the local configuration of the system. The defaults are: Improvement, Died, Deterioration, Escaped and Reference.
- Destination: the destination of the patient at the end of hospitalization. We can choose a destination that has been configured in a list of services (external) in OpenClinic. You can access the list of services by clicking on the "binoculars" icon to the right of the field.

As long as the field "Final Date" has not been filled in, the "Save" button is available and the user can still make changes to the contact in question. After completing the "Final Date", the contact is automatically closed and the "Save" button is no longer available. Changes will no longer be possible from that moment.

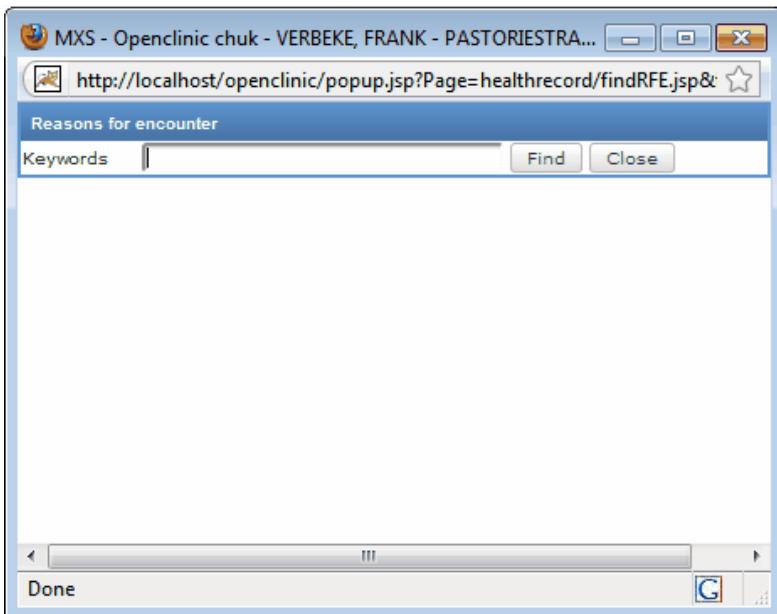
### 6.2.3 Registration of reasons for encounter

At the bottom of the screen for entering the contact information, you will see a link titled "Reasons for encounter ICPC-2/ICD-10". This link provides access to the encoding of reasons for encounter and is an important element in the management of patient's clinical data as well as for statistical analysis of disease patterns of patients who presented to the institution.

The screenshot shows the 'Encounter' form in OpenClinic. It includes fields for Type (Visit), Outset date (11/10/2010), Final date, Origin (Health center), Administrator, Service (SMALL SURGERY), Internal transfers, Situation (Zone), Evolution (Choose), and Destination. At the bottom are Save and Back buttons. A note at the bottom left says '\* mandatory fields'. A large black arrow points downwards from the top of the form towards the 'Reasons for encounter ICPC-2/ICD-10' link at the bottom right.

Reasons for encounter ICPC-2/ICD-10

When you click on this link, a screen for encoding reasons for encounter will appear.



In the "Keywords" field, you can enter keywords that best describe the patient's complaints. Based on these keywords, after clicking the "Search" button, OpenClinic will look for ICPC-2 codes that match those keywords. In the example below, we specified "headache" as the search key. The software will return a list of diseases that may be associated with one or more search keys. The user can then choose the appropriate item by clicking it.

Reasons for encounter

Keywords: headache

ICPC-2

N0100	HEADACHE
N9000	CLUSTER HEADACHE
N9500	TENSION HEADACHE

Done

After selecting the desired item, a new screen opens, asking for more specifications on the reason for encounter.

Certainty and severity of the diagnosis

Diagnosis code *	N0100
ICPC	HEADACHE
ICD10	G44.3 CHRONIC POSTTRAUMATIC HEADACHE
Chronic *	<input type="radio"/> Yes <input type="radio"/> No
New case *	<input type="radio"/> Yes <input type="radio"/> No
Planned consultation *	<input type="radio"/> Yes <input type="radio"/> No
Transfer to problemlist	<input type="checkbox"/>

\* mandatory fields

Done

- Diagnosis code: ICPC-2 code of the item which was selected in the previous screen
- ICPC: name of the item selected in the previous screen
- ICD10: a list of ICD-10 codes corresponding to the ICPC-2 code. ICD-10 allows a more detailed coding of diseases and reasons for encounter. OpenClinic passes through the system of classification ICPC-2 (with only 700 classification codes) to limit the codes to choose from in ICD-10 (> 12,000 codes), because the direct encoding of information in ICD-10 would be too cumbersome for the user.
- Chronic: Is it a chronic symptom or not?
- New case: is this a new case or not (the patient was already known in the system with this kind of problem)?
- Planned consultation: the consultation was it planned or is it self-reporting?
- Transfer to problem list: the symptom is important enough to be included in the list of medical

problems of the patient?

Note: Depending on the symptom encoded, other fields may appear in this screen (eg diarrhea: is it bloody?)

Once the user clicks on "Add", the application will return to the screen for registering the contact information and the ICPC-2 and ICD-10 coded reasons for encounter will be added at the bottom of the page.

Encounter	
Type *	Visit
Outset date *	11/10/2010 <input style="width: 20px; height: 20px;" type="button" value="..."/> 10:02 <input style="width: 20px; height: 20px;" type="button" value="..."/> <input style="width: 20px; height: 20px;" type="button" value="..."/>
Final date	<input style="width: 20px; height: 20px;" type="button" value="..."/> <input style="width: 20px; height: 20px;" type="button" value="..."/> <input style="width: 20px; height: 20px;" type="button" value="..."/>
Origin *	Health center
Administrator	<input style="width: 400px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="button" value="..."/> <input style="width: 20px; height: 20px;" type="button" value="..."/>
Service	SMALL SURGERY <input style="width: 20px; height: 20px;" type="button" value="..."/> <input style="width: 20px; height: 20px;" type="button" value="..."/>
Internal transfers	<input style="width: 20px; height: 20px;" type="button" value="..."/> 11/10/2010 00:00 - <input style="width: 200px; height: 20px;" type="text"/> SMALL SURGERY
Situation	Zone <input style="width: 20px; height: 20px;" type="button" value="..."/>
Evolution	Choose <input style="width: 20px; height: 20px;" type="button" value="..."/>
Destination	<input style="width: 400px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="button" value="..."/> <input style="width: 20px; height: 20px;" type="button" value="..."/>
	<input type="button" value="Save"/> <input type="button" value="Back"/>

\* mandatory fields

Reasons for encounter ICPC-2/ICD-10	
<input checked="" type="checkbox"/> ICD10 R04.2 HEMOPTYSIS	
<input checked="" type="checkbox"/> ICD10 R51 HEADACHE	
<input checked="" type="checkbox"/> ICPC N0100 HEADACHE	
<input checked="" type="checkbox"/> ICPC R2400 HAEMOPTYSIS	

Note: For the active contact (which therefore has no end date), the reasons for encounter may also be encoded via the "Medical Summary" screen by clicking on the icon to the right of "Reasons for the active encounter".

**Administrative**

Last access on 11-10-2010 - 13:42:15 by FRANK VERBEKE | [Edit](#)

Encounter status	Previous admission:	Previous visit: 23/07/2009		
ID 1.70357	Type Visit	Outset date 11/10/2010	Service CLI.CHI.PET SMALL SURGERY	Physician

**Financial status** Balance: 0,00 RWF Latest zero balance: 11/10/2010 **Insurance data**

Insurance number	Company	Tariff category	Outset
RAMA #41100026 (B: 15/85)	B: RAMA/MMI	19/12/2009	

**Planning**

Date	from	until	Cancellation date	User	Activity	Description
12/10/2010	12:20	13:10		DUFITEYESU YOTAMU	ECG	

**Medical**

Medication	Vaccinations
Prescription Paracétamol 500 mg comprimé (4.0 pill(s) per day) Paper prescriptions  11/10/2010 Paracetamol 500 mg comprimé <3 months	Tedivax (11/10/2010)  0 / 11 2010

Warnings	Problem list	Reasons for the active encounter
<b>Aggressive patient!</b>	T8900 DIABETES INSULIN DEPENDENT 11/10/2010	<ul style="list-style-type: none"> <li> ICD10 R04.2 HEMOPTYSIS</li> <li> ICD10 R51 HEADACHE</li> <li> ICPC N0100 HEADACHE</li> <li> ICPC R2400 HAEMOPTYSIS</li> </ul>

Another path to the reasons for encounter is provided by the link "Reasons for encounter ICPC-2/ICD-10" found in most of the clinical data entry screens (medical examinations).

Patient Medical summary Nursing Applications Documents System Immo Help

Name: VERBEKE Firstname: FRANK Date of birth: 23/08/1963  
 Nat reg: [redacted] Record number: [redacted] Archive code: AAC Person ID: 9966  
 Service: SMALL SURGERY District: [redacted]

Home > Medical summary

Date: 11/10/2010

**Reasons for encounter ICPC-2/ICD-10**

- ICD10 R04.2 HEMOPTYSIS
- ICD10 R51 HEADACHE
- ICPC N0100 HEADACHE
- ICPC R2400 HAEMOPTYSIS

**Diagnoses of the actual document ICPC-2/ICD-10**

**Contact diagnoses ICPC-2/ICD-10**

**SNOMED-CT**

**Problem list**

Description	Onset
T8900 DIABETES INSULIN DEPENDENT	11/10/2010

# **Section**



**VII**

## 7 Financial management

The financial management modules of the software OpenClinic cover the handling of several types of financial information:

- Health insurance as implemented in the country
- Health facility cash management
- The encoding of the care deliveries provided to patients
- The management of patient invoices and insurance invoices
- Management of payments made by patients and insurers

OpenClinic covers the processing of financial information for the registration of delivered products and services up to the invoicing. Accounting and analytical accountancy are not covered by the current version. Nevertheless, OpenClinic allows the transfer of billing information to popular accounting software such as Sage, Ciel! or Venice. Communication with this kind of external software is not covered in this manual and in principle requires the intervention of an experienced system integrator.

In summary, the basic module supports:

- The association of patient records to one or more insurers
- The management of an unlimited number of care deliveries (see "Management of care deliveries" in the "System" chapter)
- The management of an unlimited number of tariff categories for care deliveries (see "Management of care deliveries" in the "System" chapter)
- The management of an unlimited number of insurers (see "Managing insurars" in the "System" chapter)
- The management of an unlimited number of complementary insurers (Care co-payments) (see "Managing insurers" in the "System" chapter)
- Managing a maximum of 26 different medical coverage plans per insurance (see "Managing insurers" in the "System" chapter)
- The encoding of an unlimited number of care deliveries per contact (see "Encoding of care deliveries" in this section)
- The generation of patient invoices and receipts (see "Patient invoicing" in this section)
- Generating invoices and bills for insurers and complementary insurers (see "Invoice insurer and complementary insurer" in this section)
- Management of payments (patient and insurance payments) and withdrawals (see "Cash management" in this section)

### 7.1 Registration of health insurance data

Health insurance is organized differently from one country to another. OpenClinic has a module for basic health insurance management covering several health insurance systems in the world. Nevertheless, it is likely that the specific organization of health insurance in some countries requires special development. These specific features are obviously not covered in this manual.

To encode the health insurance data for a patient, the user must click on the icon "New" to the right of the "Insurance" section in the screen labeled "Medical Summary":

Patient Medical summary Nursing Applications Documents System Immo Help

Name: VERBEKE Firstname: FRANK Date of birth: 23/08/1963  
 Nat reg: Record number: Archive code: AAC Person ID: 9966  
 Service: SMALL SURGERY District: Find Clear

Home > Medical summary

Administrative Last access on 11-10-2010 - 13:42:15 by FRANK VERBEKE | [Edit](#)

Encounter status	Previous admission:	Previous visit: 23/07/2010
ID: 1.70357	Type: Visit	Outset date: 11/10/2010 Service: CLI.CHI.PET SMALL SURGERY

Financial status Balance: 0,00 RWF Latest zero balance: 11/10/2010 Insurance data [Edit](#)

This transaction will provide access to the screen that encodes links between patient records and insurance coverage plans:

Patient Medical summary Nursing Applications Documents System Immo Help

Name: VERBEKE Firstname: FRANK Date of birth: 23/08/1963  
 Nat reg: Record number: Archive code: AAC Person ID: 9966  
 Service: SMALL SURGERY District: Find Clear

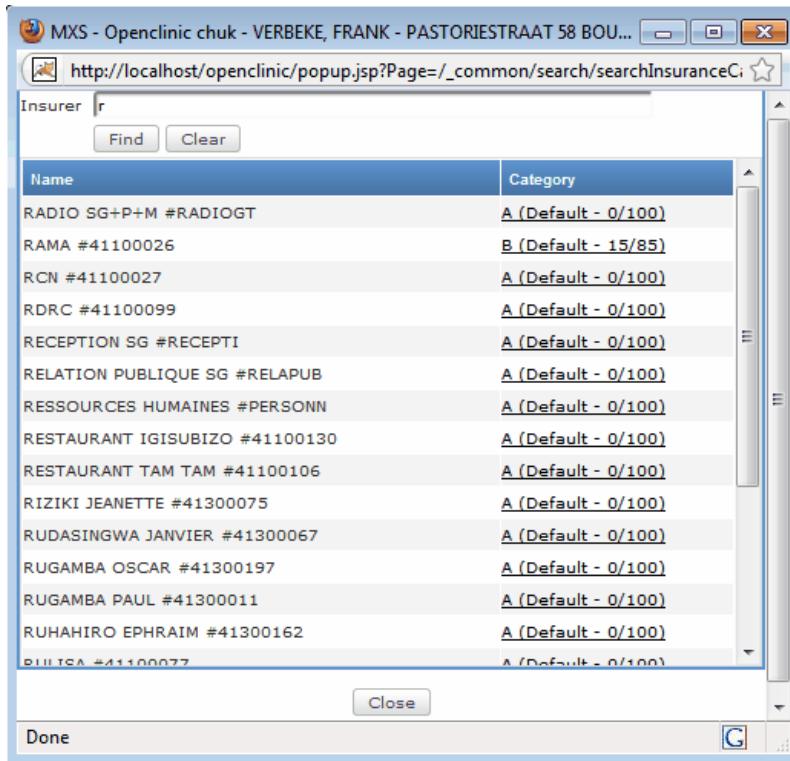
Home > Financial

Health insurance

Insurance number	
member	
Company	
Category	
Tariff category	
Outset	11/10/2010 <a href="#">Calendar</a> <a href="#">Binoculars</a>
Final date	
Comment	

[Save](#) [Back](#)

- Insurance Number: Enter in this field the membership number provided by the insurer
- Member: name of the person that gives access to medical coverage from the insurer (this can be the patient or a relative by whom's insurance plan the patient is being covered)
- Company: the insurer covering the patient. There is no way to directly edit the content of this field. The user will have to click on the "binoculars" icon to the right of this field in order to access a search screen. This screen will look up the insurer among the insurers that are configured in the system.



In the "Insurer" in this screen, one can use wildcards to find the insurer wanted: the character "%" represents 0 or more characters (any), the character "\_" represents exactly 1 character (any).

When the user clicks the "Search" button, the application will display all insurers that meet the search criteria. The insurer's name is displayed in the first column of the result table. All medical coverage plans provided by the insurer will appear in the second column. Select the desired coverage plan by clicking the link.

- Category: This field indicates the coverage plan chosen in the previous step. The field is read only.
- Tariff category: This field indicates the rate category of the selected insurer . The field is read only.
- Outset: date from which health coverage is provided by the insurer
- Final date: end date of medical coverage provided by the insurer
- Comment: free text up to 255 characters.

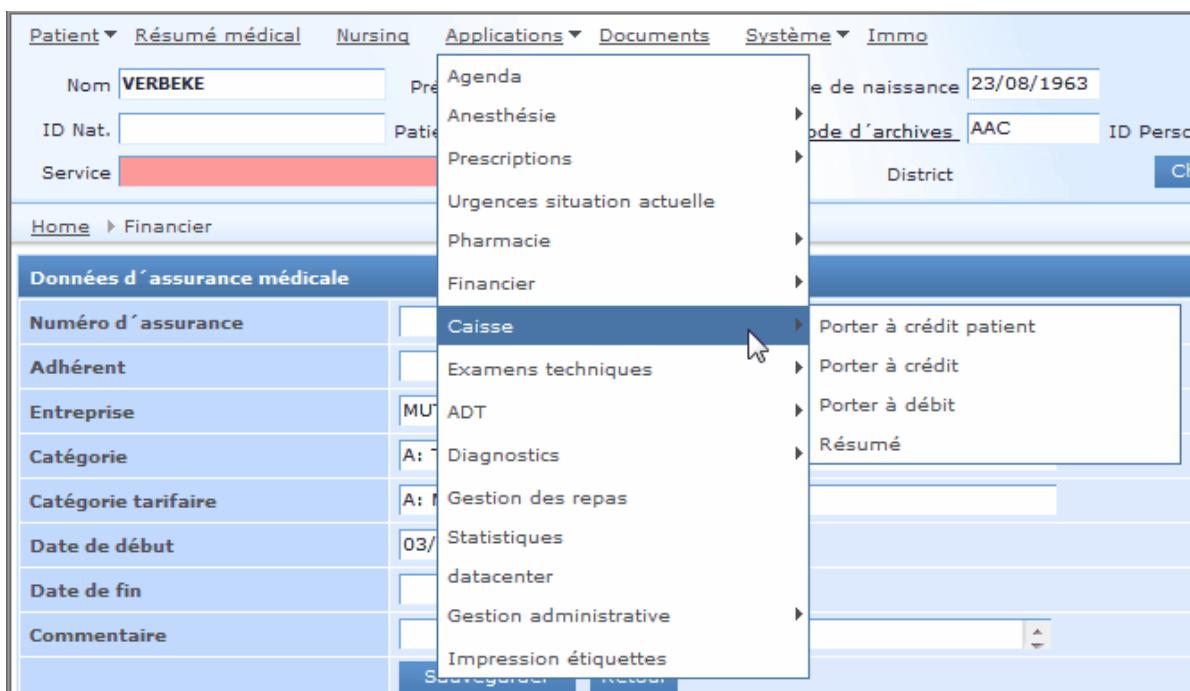
Note: OpenClinic allows encoding of several insurers for a patient record. By default, when encoding care deliveries that have been provided to the patient, the software will automatically choose among the insurers the insurance that is most beneficial for the patient.

Note: for patients without health insurance, it is advisable to configure an insurer entitled "himself." This insurer will then become the default insurer for patients without insurance.

## 7.2 Cash register management

OpenClinic allows the configuration of one or more cash registers within the health care institution. Only users who have received access rights to a cash register will have the opportunity to encode transactions for it. If no cash register access has been configured for the user, it will be impossible to record payments and/or cash withdrawals.

Operations on the cash registers are accessible via the "Wicket" option in the "Applications" menu.

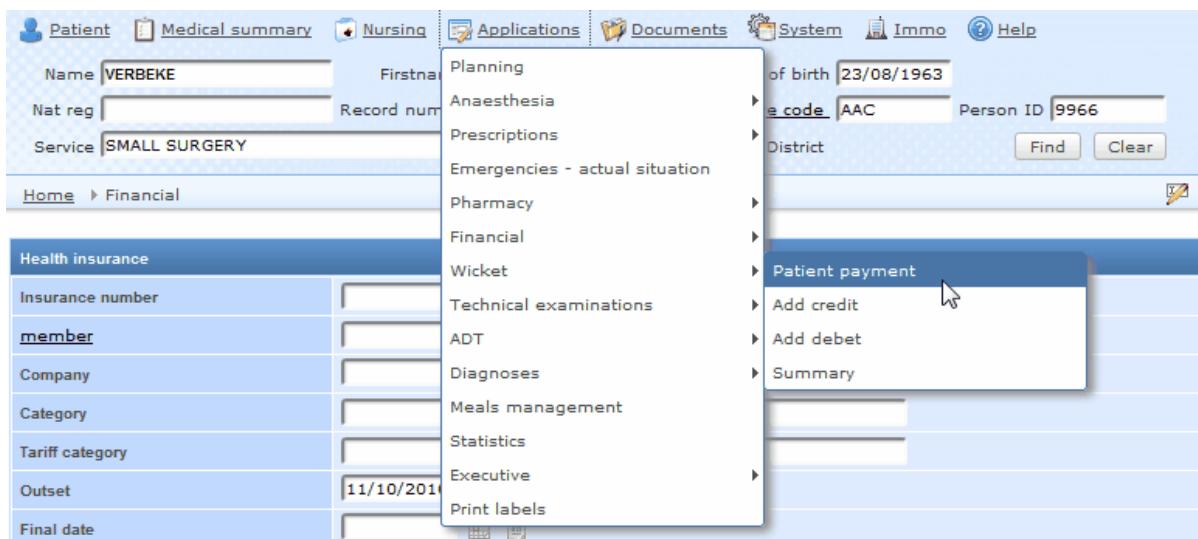


## 7.2.1 Revenue

The cash register revenue can be divided into two categories: payments by patients and other cash receipts.

### 7.2.1.1 Patient payments

To enter payment data on patient payments, users can select the "Wicket>Patient payment" option in the "Applications" menu.



This will open the following input screen:

The screenshot shows the OpenClinic software interface. At the top, there is a header bar with various menu options like Patient, Medical summary, Nursing, Applications, Documents, System, Immo, and Help. The version information v4.0.39 (05/10/2010) is also visible. Below the header, a search window is displayed with fields for Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Nat reg, Record number, Archive code (AAC), Person ID (9966), Service (SMALL SURGERY), District, and buttons for Find and Clear. The URL Home > Financial is shown above the search window. The search window title is "Search window". Below the search window, a data entry window titled "Patient payment" is shown. It contains fields for N° payment (11/10/2010), Date (11/10/2010), Invoice, Amount (RWF), Type (Payment patient), Encounter (1.70357, 11/10/2010 10:02, Visit), Description, Wicket (Choose), and a Save button. A note at the bottom of the data entry window states: "\* Fields with asterisk are mandatory".

This screen is divided into two parts: a search window and a window encoding.

### 1. Search window

- Outset: the start date of the period for which the user wants to search for payments made by the patient. If the field is not filled, today's date is used (00:00 pm)
- End: the end date of the period for which the user wants to search for payments made by the patient. If the field is not filled, today's date is used (23:59 pm)
- Minimum: the minimum amount for the payments sought. If the field is not filled, the value 0 is used.
- Maximum: the maximum amount for the payments sought. If the field is not filled, the value 9999999999 is used.

By clicking the "Search" button, the software will return a list of payments corresponding to the criteria. At the opening of this screen, all payments corresponding to the default search fields are returned (meaning all payments made today).

To modify a payment already registered, just click on the payment you want in the results table of the search window and then change the content in the data entry window.

### 2. Data entry window

N° payment: unique identifier for the payment that has been selected for editing. This field is read-only. For new payments, this field will be empty because an identification number is assigned when saving the payment.

Date: the date of payment. By default this field is filled with the creation date of the payment

Amount: payment amount

Type: type of payment. The input module of the cash receipts allows for the registration of several types of revenue. This field is put on "patient payment" by default.

Encounter: the contact to which the payment relates. By default, this field will be filled with data from the current contact for the patient selected. If no active contact exists, the software will warn the user and

ask to manually select an active contact. The user can do this by clicking on the "binoculars" icon to the right of the field. OpenClinic then displays a list of all known contacts for the patient.

The screenshot shows two windows. The top window is titled 'Financial status' and displays a search interface for financial records. It includes fields for 'Date' (Outset and End), 'Amount' (Min and Max), and buttons for 'Search', 'Clear', and 'New'. Below this, a message says 'No records found'. The bottom window is titled 'MXS - Openclinic chuk - VERBEKE, FRANK - PASTORIESTRAAT 58 BOUTERSEM ...' and shows a list of encounters. The table has columns: ID, Outset, End, Service, and Type. Two rows are listed:

ID	Outset	End	Service	Type
1.70357	11/10/2010 00:00		SMALL SURGERY	Visit
1.22643	23/07/2009 18:00	23/07/2009 18:00	PSYCHIATRICS	Visit

Buttons for 'Close' and 'Done' are visible at the bottom of this window. A note at the bottom left of the main screen states: '\* Fields with asterisk are mandatory'.

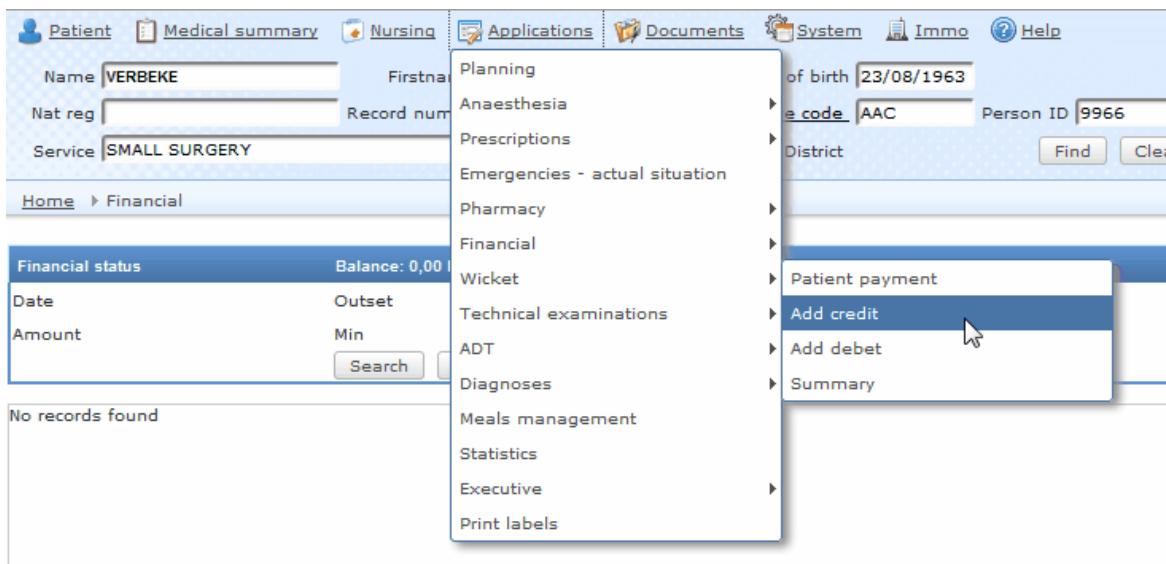
- Description: free text up to 255 characters
- Wicket: list of cash registers to which the user has access. Choosing a cash register is mandatory in order to record a payment. If the "Wicket" field does not appear on the screen, this means that the connected user does not have access rights to any of the cash registers configured in the system. He will then have to contact the system administrator to assign access rights to one or more cash registers.

Click the Save button to record the payment in the database.

Note: OpenClinic still offers an alternative method (as a shortcut) to make payments when a patient receives a care delivery. Please refer to chapter "Patient invoicing> Patient payments" for more details on this alternative approach.

#### 7.2.1.2 Other payments

To enter data for payments other than those made by patients, the user can select the "Wicket> Add credit" option in the "Applications" menu.



This will open the following screen:

The screenshot shows the 'Wicket: add credit' data entry window. It includes fields for ID, Wicket (Choose), Date (11/10/2010), Transaction type (Choose), Amount (RWF), and Comment. Below the window is a 'Payments list' table with one entry:

Date	ID	Wicket	Transaction type	Amount RWF	Comment
11/10/2010	1.31234	CENTRAL WICKET	Patient payment	1000.0	Payments list VERBEKE FRANK -

This screen is divided into two parts: a data entry window and a list of payments

#### 1. Data entry window

- Wicket: list of cash registers to which the user has access. Choosing a cash register is mandatory in order to record a payment. If the "Wicket" does not appear on the screen, this means that the connected user does not have access rights to any of the cash registers configured in the system. He will then have to contact the system administrator in order to assign access rights to one or more cash registers.
- Date: the date of payment. By default this field is filled with the creation date of the payment
- Transaction type: payment type.
- Amount: payment amount
- Comment: free text up to 255 characters

Click the Save button to record the payment in the database. The payment will appear in the registered list of payments.

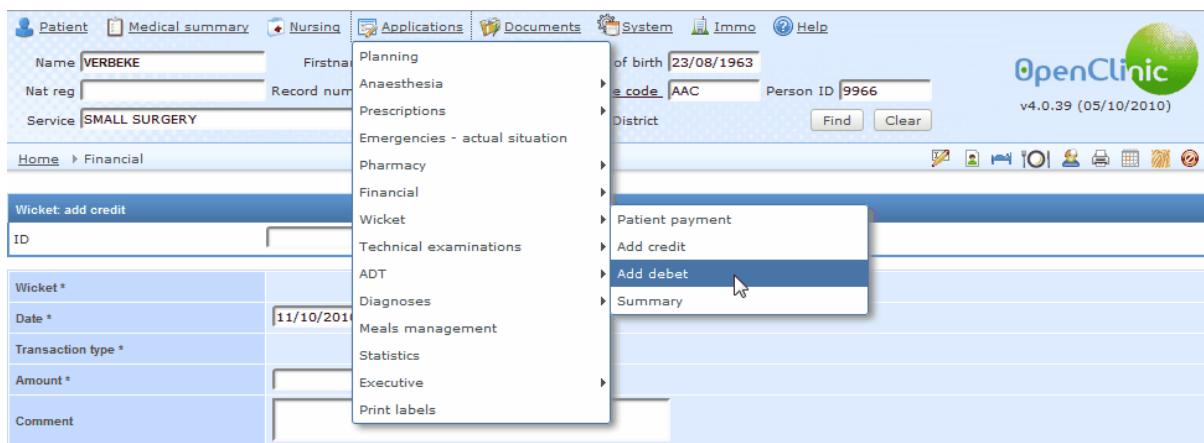
## 2. List of payments

In this part of the screen OpenClinic displays all payments that were made today for the cash registers to which the user has access rights. This list does not filter on the type of transaction which means that the system will also show patient payments which have already been made.

At the top of the cash payments screen, there is a field called "ID". This field allows the user to specify an identification number of a payment in order to change it. After clicking the "Search" button, the contents of this payment will be displayed in the data entry window to allow the user to make changes.

### 7.2.2 Withdrawals

Access to cash withdrawals is done via the "Wicket> Add debet" option in the "Applications" menu.



This will open the following screen:

The screenshot shows the 'Wicket debet transaction' screen. At the top, there are fields for Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Archive code (AAC), Person ID (9966), Record number, Service (SMALL SURGERY), and District. Below this is a toolbar with various icons. The main area is titled 'Wicket debet transaction' and contains fields for 'Wicket\*', 'Date\*', 'Transaction type\*', 'Amount\*', and 'Comment'. A 'Save' button is at the bottom. To the right, there is a section labeled 'Data entry window' containing a table with columns 'Date', 'ID', 'Wicket', 'Transaction type', 'Amount RWF', and 'Comment'. At the bottom, there is a section labeled 'Withdrawals list'.

This screen is divided into two parts: an encoding window and the list of outputs

### 1. Encoding window

- Wicket: list of cash registers to which the user has access. Choosing a cash register is mandatory in order to save a withdrawal. If the "Wicket" does not appear on the screen, this means that the connected user does not have access rights to any of the cash registers configured in the system. He will then have to contact the system administrator in order to assign access rights to one or more cash registers.
- Date: The date of the withdrawal. By default this field is populated with the date of creation of the withdrawal.
- Transaction type: withdrawal type.
- Amount: amount of the transaction
- Comment: free text up to 255 characters

Click the Save button to save the withdrawal in the database. The withdrawal will appear in the withdrawals list.

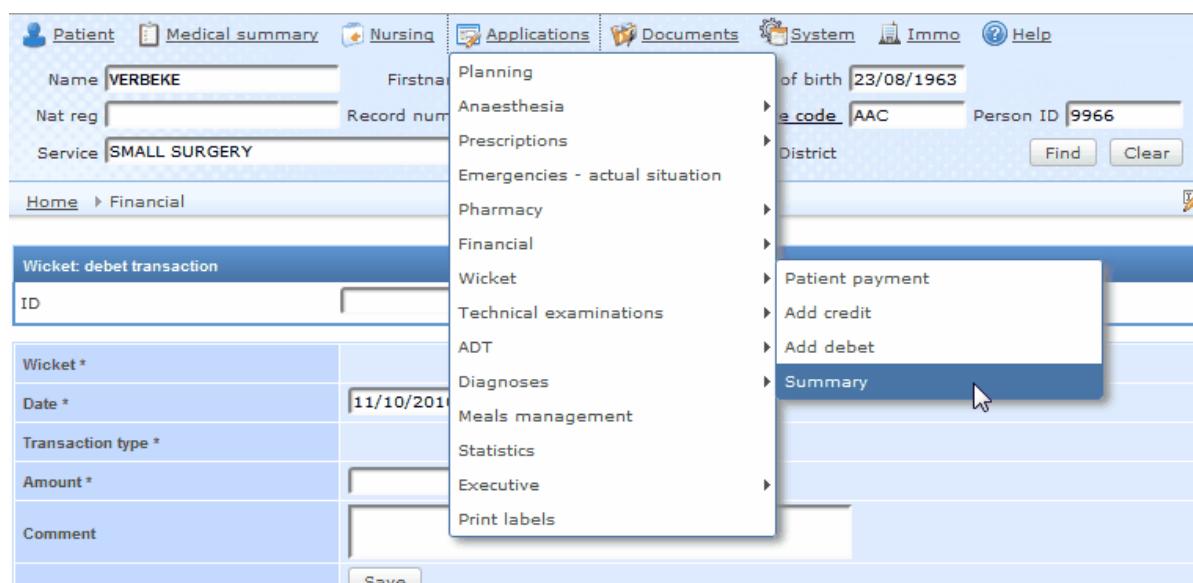
### 2. List of withdrawals

In this part of the screen OpenClinic displays all withdrawals that were made today for the cash registers to which the user has access rights.

At the top of the cash withdrawal management screen, there is a field called "ID". This field allows the user to specify an identification number of a withdrawal in order to change it. After clicking the "Search" button, the contents of this withdrawal will be displayed in the data entry window to allow the user to make changes.

## 7.2.3 Cash register summary

The user can at any moment view a status summary for all cash registers he has access to. This can be done via the "Wicket> Summary" option in the "Applications" menu.



The following screen will be displayed:

**Wicket summary**

Wicket*	Choose
Period	from 11/10/2010 until 11/10/2010
<input type="button" value="Search"/> <input type="button" value="Back"/>	

- Wicket: the list of cash registers to which the user has access. You must specify in this field the cash register for which a status summary is requested.
- Period: The period for which the transaction details are requested. The software will summarize the operations (revenue and withdrawals) before the date of commencement of that period in an amount representing the cash situation of departure. Then all the operations from the start date until the end of the period will be shown. Finally, the new cash position at the end date of the period will be calculated and displayed.

To produce the summary report, press the "Search" button.

The search result will be as follows:

**Wicket summary**

Wicket*	1.7 CENTRAL WICKET
Period	from 11/10/2010 until 11/10/2010
<input type="button" value="Search"/> <input type="button" value="Back"/>	

**Out**  
No records found

**In**

Transaction date	ID	Amount RWF	Type	User	Comment
11/10/2010	1.31234	1000	Payment patient	VERBEKE FRANK	VERBEKE FRANK -

Total 1000 RWF

Out 0  
In + 1000  
SALDO 1000 RWF

Begin situation 0  
Saldo + 1000  
ACTUAL SITUATION 1000 RWF

At the top of the page all withdrawals are displayed. After the withdrawal section you will find revenue details for the specified period. The amounts of withdrawals and revenue are then summed to calculate the balance of the period.

By clicking the "Print" button, the user will get the cash summary as a PDF document. This document can be easily printed using the printing functions of the PDF client software.

**WICKET SITUATION : CENTRAL WICKET**

from 11/10/2010 until 11/10/2010

**OUT**  
No data

**IN**

Date	Amount	Type	User	Comment
11/10/2010 00:00	1000 RWF	Payment patient	VERBEKE FRANK	VERBEKE FRANK -
Total	1000 RWF			

Income ventilation according to invoicing category  
OTHER 1000 RWF

Income ventilation per department  
CLI.CHI.PET SMALL SURGERY 1000 RWF 100%

**WICKET SITUATION**

Out	0 RWF	Begin situation	0 RWF
In	+ 1000 RWF	Saldo	+ 1000 RWF
SALDO	1000 RWF	ACTUAL SITUATION	1000 RWF

Printed by VERBEKE FRANK at 11/10/2010

## 7.3 Care deliveries registration

One of the most common financial transactions in hospitals is the encoding of the services performed by care providers to patients. OpenClinic allows encoding of an unlimited number of care deliveries for each contact (visit or hospitalization) for a registered patient.

Warning: Any care delivery provided must necessarily be linked to a contact. Without contact, it is impossible to record a care delivery for the patient. The user accesses the care deliveries input screen via the "Financial> Patient debit" option in the "Applications" menu

Patient Medical summary Nursing Applications Documents System Immo Help

Name: VERBEKE Firstname:   
Nat reg:  Record num:   
Service: SMALL SURGERY

Home > Financial

**Wicket summary**

Wicket *	
Period	from 11/11/2010

Search

**Out**  
No records found

**In**

Planning  
Anaesthesia  
Prescriptions  
Emergencies - actual situation  
Pharmacy  
Financial  
**Wicket**  
Technical examinations  
ADT  
Diagnoses  
Meals management  
Statistics  
Executive  
Print labels

of birth: 23/08/1963  
e code: AAC Person ID: 9966  
District Find Clear

Patient payment  
Insurarc payment  
**Patient debit**  
Patient invoices  
Insurarc invoices  
Invoices complementary insurars  
Find invoice  
Re-open invoice

The following screen will then be shown:

The screenshot shows the OpenClinic software interface. At the top, there is a header bar with various menu items like Patient, Medical summary, Nursing, Applications, Documents, System, Immo, Help, and the OpenClinic logo. Below the header, there are patient details: Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Nat reg (Record number), Archive code (AAC), Person ID (9966), Service (SMALL SURGERY), District (dropdown), Find, and Clear buttons. The main area has a breadcrumb navigation (Home > Financial) and a toolbar with icons for edit, delete, etc.

**Search window:**

Date	Outset	End
Amount	Min	Max

Buttons: Search, Clear, New, Today.

Table results:

Date	Contact	Activity	Amount	Canceled
09/08/2010	1.22543, 23/07/2009 -> 23/07/2009, Visit (FRANK VERBEKE)	1 x Cloxacilline gelule 250 mg	5,0 RWF	

**Data entry window:**

Fields include:

- Date \* (11/10/2010)
- Insurances \* (RAMA #41100026)
- Activity \* (dropdown)
- Quantity (1)
- Encounter \* (1.70357, 11/10/2010, Visit)
- Provider (dropdown)
- Patient invoice (dropdown)
- Insurar invoice (dropdown)
- Comment (text area)
- Canceled (checkbox)

Buttons: Save, \* mandatory fields.

This screen is divided into two parts: a search window and a data entry window.

### 1. Search window

- Start: the start date of the period for which the user wants to find encoded care deliveries for the patient. If the field is not filled, todays date is used (00:00 pm)
- End: the end date of the period for which the user wants to find encoded care deliveries for the patient. If the field is not filled, todays date is used (23:59 pm)
- Minimum: the minimum amount for care deliveries sought. If the field is not filled, the value 0 is used.
- Maximum: the maximum amount for care deliveries sought. If the field is not filled, the value 999999999 is used.

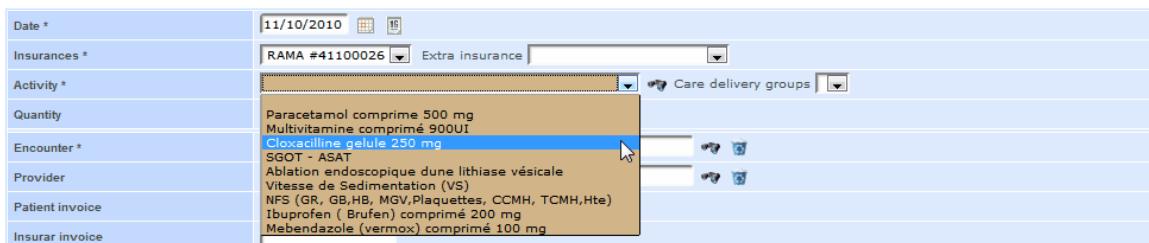
By clicking the "Search" button, the software will return a list of care deliveries matching the search criteria. At first opening of this screen, all care deliveries matching the default values of the search fields and that have not yet been billed to the patient will be returned (ie today's non-invoiced care deliveries). To modify a care delivery already registered, just click on the desired care delivery in the table of results of the search window and then change the content in the data entry window.

### 2. Data entry window

- Date: the date of care delivery. By default, the software will use the date of creation of for a new care delivery. If the user wishes to encode a care delivery that has been done in the past, he will have to change this date to match the date of execution.
- Insurances: The first field contains the list of insurances that have been linked to the patient's record (see also "Encoding of health insurance data"). If several insurances were coded in the patient record,

OpenClinic will select by default the insurance that is most beneficial for the patient. The field "Supplementary" allows, where appropriate, to encode an insurer will pay co-payments for patients (this option will obviously utilize in countries where the concept of supplemental insurer exists).

- Activity (or care delivery): several methods exist to select one or more care deliveries for the patient:
  - **Method 1:** select a care delivery that appears in the list of care deliveries frequently encoded by the logged in user (the software automatically calculates the frequency of use of care deliveries)



- **Method 2:** click on the "binoculars" to right of the "Activity" field. This will open a search screen to find a care delivery in the table of all care deliveries available in the system.



The care deliveries search screen is as follows:

Code	Description	Type	Price RWF	Category
ORL00033	Paracenthèse / AG	ACTES	0.0	A: 3750, B: 7500, C: 11250
ORL0007	Paracenthèse SS. Anest.	ACTES	0.0	A: 6250, B: 12500, C: 18750
MAINFG26	Paracétamol 1 g IM flacon	Anesthésiques, antiinfl, anti-goutt	0.0	A: 0, B: 0, C: 0
MAINFG27	Paracétamol 500mg+Vit C(Effelargan +vit C) bte de 2tube de 10comp eff	Anesthésiques, antiinfl, anti-goutt	0.0	C: 0, A: 0, B: 0
MAINFG15	Paracetamol comprime 100 mg	Anesthésiques, antiinfl, anti-goutt	10.0	A: 0, B: 0, C: 0
MAINFG17	Paracetamol comprime 500 mg	Anesthésiques, antiinfl, anti-goutt	2.4	
MAINFG16	Paracetamol sirop 100ml	Anesthésiques, antiinfl, anti-goutt	202.5	
MAINFG29	Paracetamol suppositoire 125 mg	Anesthésiques, antiinfl, anti-goutt	82.8	
MAINFG14	Pro-paracetamol flacon 1gr	Anesthésiques, antiinfl, anti-goutt	0.0	A: 0, B: 0, C: 0
MBA009	Pro-paracétamol flacon 1gr	Médicaments divers	980.0	C: 0, B: 0, A: 0

- Code: unique code for the care delivery to search for

- Description: (part of) the name of the care delivery to seek
  - Type: type of care delivery to search for (instruments, medicines, etc. ...). This field is automatically filled with all types of care deliveries that have been encoded into the OpenClinic system.
  - Price: The price of the care delivery to seek
  - Sort: results sort order
- After clicking the "Search" button, the system will display at the bottom of the page all the care deliveries that match the search criteria provided. To select a care delivery click on the corresponding line.

- **Method 3:** select in a single transaction several care deliveries that have been consolidated in a "Care delivery group" by clicking on the field "Care delivery groups."

The care delivery groups are configured by the system administrator and include one or more care deliveries per group .

After selecting the care delivery and/or care delivery group, the software will automatically calculate the amount payable by the health insurer, the complementary insurer (if applicable) and co-payments (partly paid by the patient).

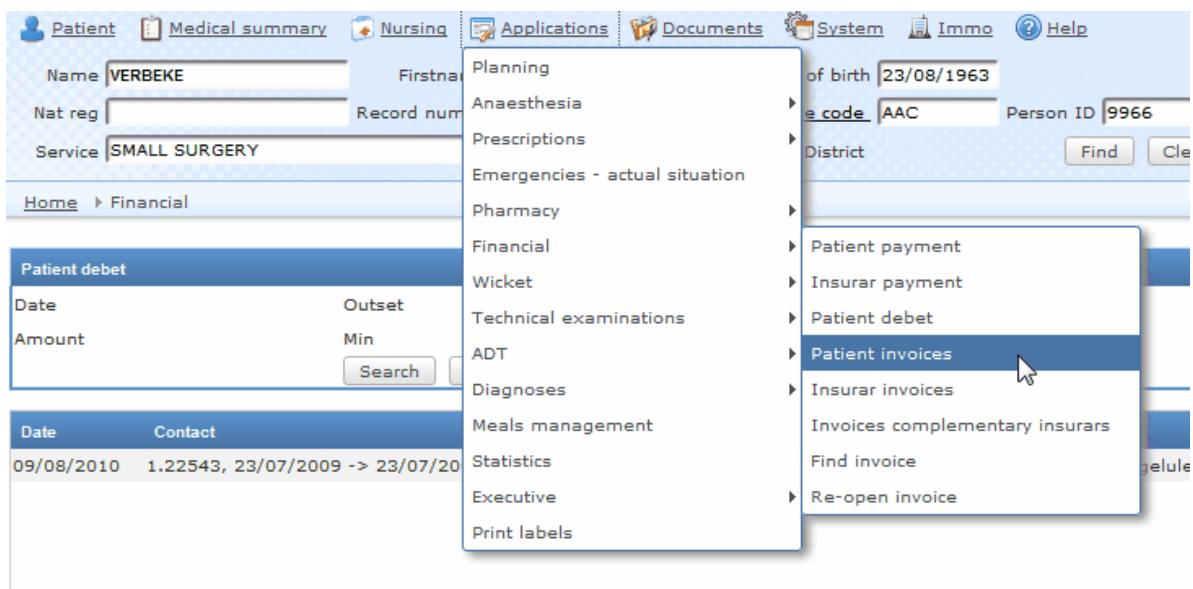
- Quantity: the number of selected care deliveries to encode into the system. When you change the quantity, OpenClinic recalculates the amounts to be paid by the patient and the insurers.
- Encounter: encounter to which the care deliveries are linked.
- Provider: the department of the hospital who performed the service (optional)
- Patient invoice: the patient's invoice on which the care delivery has been resumed. By default this field is blank. It will be automatically updated during the process of patient invoicing (see "Patient invoicing")
- Insurer invoice: the insurer's invoice on which the benefit has been resumed. By default this field is blank. It will be updated automatically when encoding insurer invoices (see "Insurer and complementary insurer invoicing").
- Comment: free text up to 255 characters.
- Canceled: To cancel an existing benefit, the user must check this field.

Click the Save button to save the care delivery in the database. The saved care delivery will be automatically included in the non-invoiced care deliveries list in the search window.

## 7.4 Patient invoicing

After the encoding of the care deliveries provided to a patient, the user can proceed to the creation of an invoice. To do this, the user operates as follows:

1. Identify the patient (if not done yet)
2. Click on the "Financial> Patient invoices" option in the "Applications" menu



Then the following screen will be shown:

The screenshot shows the 'Patient invoices' screen. At the top, patient details are displayed: Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Archive code (AAC), Person ID (9966). Below this is a toolbar with icons for patient management. The main area is divided into two windows: a 'Search window' at the top and a 'Data entry window' at the bottom. The 'Search window' has a header 'Patient invoices' and a search bar for 'Invoice number'. The 'Data entry window' has a header 'Data entry window' and contains several sections: 'Invoice number' (input field), 'Date' (set to 11/10/2010), 'Invoice status' (set to Open), 'Balance' (set to 0.00 RWF), 'Activities and products' (table showing a single row for a visit on 09/08/2010), 'Payments' (table showing a single row for a payment on 11/10/2010), and a 'Payments' section with a table showing a single row for a payment on 11/10/2010. Buttons for 'select all', 'unselect all', and 'Save' are present in the 'Payments' section.

### 7.4.1 Editing an existing invoice

In the first part at the top of this screen (search window), the user will be able to open an existing invoice for the selected patient. To this end, several methods exist:

1. Search for an existing invoice based on the number of the invoice. If the invoice number is known, the user can enter it in the "invoice number" field and then click the "Search" button.
2. If the invoice number is not known, the user can retrieve a list of all invoices already established for the selected patient, clicking on the "binoculars" to the right of the field "invoice number". OpenClinic then displays a list like this:

The screenshot shows the OpenClinic application interface. At the top, there is a navigation bar with links for Patient, Medical summary, Nursing, Applications, Documents, System, Immo, and Help. Below the navigation bar, patient details are displayed: Name (VERBEKE), Firstname (FRANK), Date of birth (23/08/1963), Record number, Archive code (AAC), Person ID (9966), Service (SMALL SURGERY), District, Find, and Clear buttons. The main area shows a table titled 'Patient invoices' with columns for Date, Invoicenumber, Balance RWF, and Invoice status. A search bar for 'Invoice number' is present above the table. On the left, there are sections for 'Activities and products' and 'Payments'. A modal dialog box titled 'Search patient invoice' is overlaid on the main screen. This dialog has its own table with the same columns as the main table, showing three results: 03/05/2010, 12414, 0 Canceled; 20/01/2010, 1760, 0 Canceled; and 18/01/2010, 1481, 0 Closed. The dialog also includes a 'Close' button and a 'Done' button at the bottom.

Select the desired invoice by clicking on the corresponding line and the content of the invoice will be automatically displayed on the screen.

Note: by default, in the lower part of the search window are displayed all the invoices that are still open (see below). If no invoice is open, nothing is displayed.

### 7.4.2 Create a new invoice

In case the user wants to create a new invoice, rather than opening an existing one, he can click the "New" button in the search window and then proceed to the encoding in the data entry window. If the user chooses to create a new invoice by clicking the "New" button in the search window, the following data will appear in the data entry window:

- Invoice Number: The invoice number is automatically assigned by OpenClinic when saving a new invoice. At this time, this field is empty and can not be changed by the user
- Date: date of invoice. By default, the system puts today's date
- Invoice status: an invoice may have 2 statuses (open or closed). An open invoice is still subject to

change. Once closed, an invoice can not be changed anymore through the user interface. The closure of an invoice will be necessary in order to print it: this way it is always guaranteed that the invoice data that are in the system are identical to those that appear on the printed invoice rendered to the patient.

- Balance: the sum of care delivery amounts and payments listed on the invoice. An invoice will be fully paid when the balance = 0.
- Activities (or care deliveries) and products: in this area are displayed all encoded care deliveries for the patient that have not yet been invoiced. To select care deliveries to be put on this new invoice, check them individually, or click the "Select All" button to select them all at once.

Date	Created	Contact	Activity	Amount	Credit	Inv.Ins.
09/08/2010	09/08/2010 16:03	1.22543, 23/07/2009 -> 23/07/2009, Visit	1 x Cloxacilline gelule 250 mg	0.0 RWF		

As and when care deliveries are selected, the balance of the invoice will automatically adapt.

- Payments: are displayed in this area all payments that the patient already made and that have not yet been linked to another invoice (payments not consumed, such as advance payments). The user can link one or more payments to the current invoice by checking them individually or by clicking the "Select All" button (same procedure as for the selection of care deliveries). In a typical situation where an invoice is created and no payment has been made yet, this area will be empty. The balance of the invoice will show the amount yet to pay.

Once all data are entered, press "Save". A unique number will be assigned to the invoice.

#### 7.4.3 Patient payments

For all invoices that already exists in the system (eg an invoice that you just created and saved as described in the previous section), a set of new buttons appear at the bottom of the page:



For this, use the "Payment" button. When you click this button, the screen for registration of invoice payments will appear:

N° payment

Date \* 11/10/2010

Invoice 27818

Amount \* 0.0 RWF

Type \* Payment patient

Encounter \* 1.70357, 11/10/2010 10:02, Visit

Description

Wicket \* 1.7 CENTRAL WICKET

Save

\* Fields with asterisk are mandatory

Done

- N° payment: a payment made in the system will receive a tracking number. This number is automatically assigned by OpenClinic and can not be entered by the user. At this moment, as the payment has not yet been registered in the system, this field will be empty (the number has not yet been assigned)
- Date: date of payment
- Invoice: invoice number for which payment is made
- Amount: The amount of the payment. By default, the system will resume in this field the balance of the bill because usually the patient will pay the full amount of the invoice. In case of partial payment, the user can modify this field.
- Type: the type of payment made. Default "patient payment" is selected and this value shall be changed only in exceptional cases.
- Encounter: the encounter to which this payment relates. By default the system will select the active encounter for the patient. Where no active encounter exist for the patient when entering the payment (eg a late registration fee), the user can select a contact already closed by clicking on the "binoculars". In that case a search screen will appear, which takes up all contacts that have already been recorded for the patient. Note: This field is required to record a payment.
- Description: free text comment up to 255 characters
- Wicket: the cash register in which money from the payment will be put. In this field, the user will only be able to select the cash registers to which he has access. The "Wicket" field is also a mandatory field for recording a payment.

Click the Save button to save the payment.

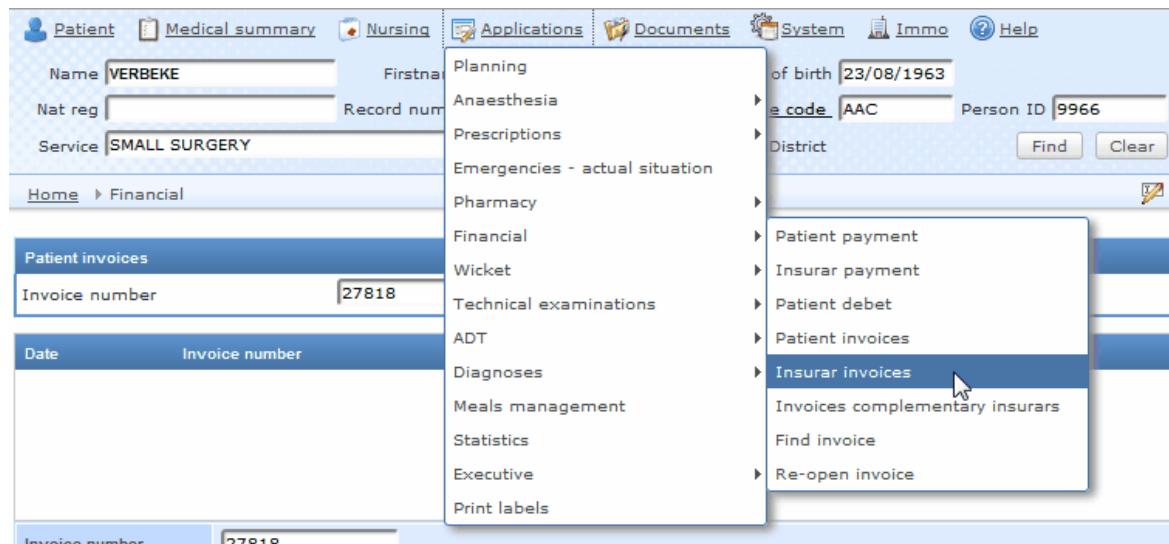
## 7.5 Insurer and complementary insurer invoicing

For each recording of a care delivery for a patient, OpenClinic automatically ventilates co-payments (partly paid by the patient) in the financial records of the patient and the amount covered by the insurer in the financial records of the insurer. In case of support from co-payment by a complementary insurer, that amount will be registered into the financial record of the complementary insurer instead of the patient. At

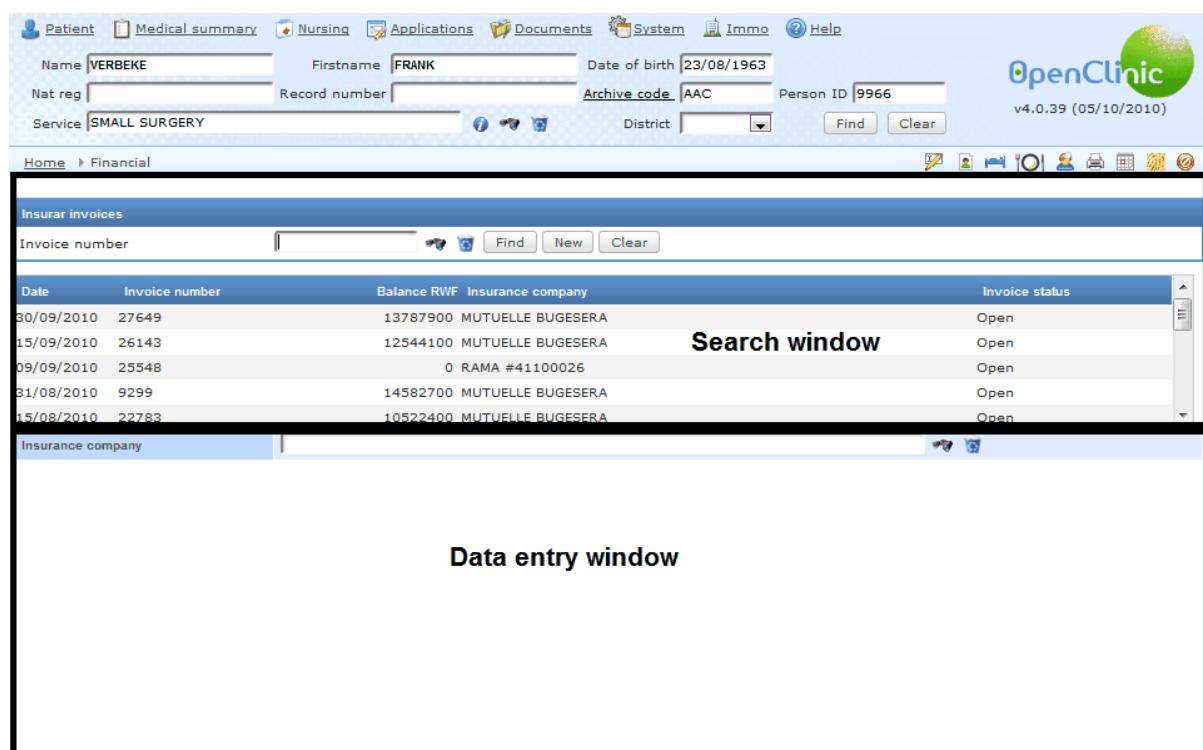
any time, an insurer invoice or complementary insurer invoice may be created based on the care deliveries already registered for patients covered by the insurer in question.

### 7.5.1 Insurar invoice

In order to access the insurer invoicing module, the user has to click the "Financial>Insurer invoices" option in the "Applications" menu.



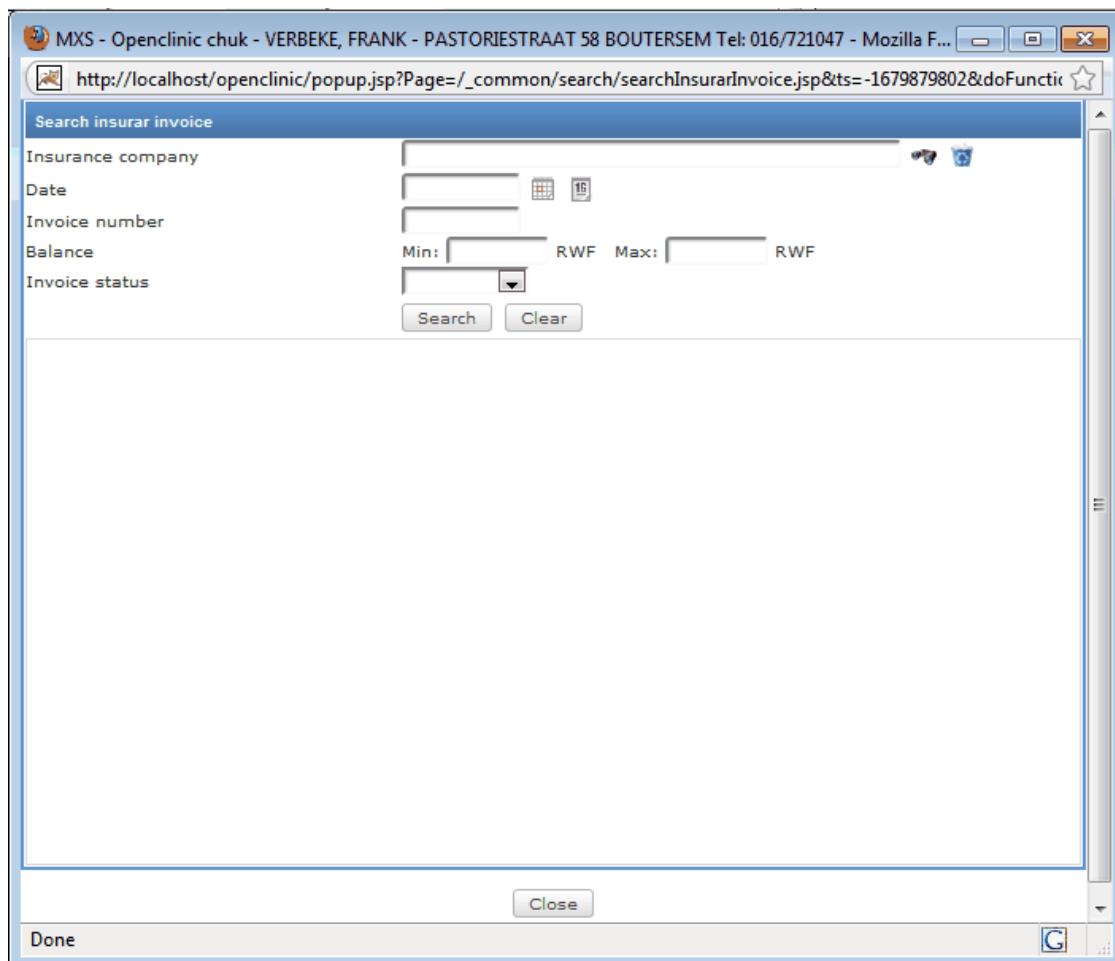
The following screen will then be shown:



### 7.5.1.1 Opening an existing insurer invoice

In the first part at the top of this screen (search window), the user will be able to open an existing invoice for an insurer. To this end, several methods exist:

1. Search for an existing invoice based on the number of the invoice. If the invoice number is known, the user can enter it in the "invoice number" field and then click the "Search" button. If OpenClinic finds the invoice, the invoice data will be displayed in the data entry window.
2. If the invoice number is not known, the user can retrieve a list of all invoices previously established for an insurer, by clicking on the "binoculars" icon to the right of the field "invoice number". OpenClinic then displays the following screen:



In this screen, you must specify the search criteria to find a particular invoice. The following search criteria are available:

- Insurance company: click on the "binoculars" to identify the insurance company for which you want to find invoices.
- Date: If you specify this search criterion, only invoices for the specified date will be returned by the system
- Invoice number: If you already know the invoice number, you can specify it here
- Balance: specify a minimum and maximum to find the invoices with an unpaid balance between these two values

- Invoice status: Specify if you want to find only "closed", "open" or "canceled" invoices (see later in this chapter for details on the status of an invoice).

Click "Search" to find the invoices that match the specified search criteria. This is an example of a results screen:

The screenshot shows a Mozilla Firefox browser window with the title 'MXS - Openclinic chuk - VERBEKE, FRANK - PASTORIESTRAAT 58 BOUTERSEM Tel: 016/721047 - Mozilla F...'. The URL in the address bar is 'http://localhost/openclinic/popup.jsp?Page=\_common/search/searchInsurerInvoice.jsp&ts=-1679879802&doFunctio...'. The page content is titled 'Search insurer invoice' and contains the following search fields:

Insurance company	RAMA #41100026	<input type="button" value=""/>	<input type="button" value=""/>
Date	<input type="text"/> <input type="button" value=""/>	<input type="button" value=""/>	<input type="button" value=""/>
Invoice number	<input type="text"/>		
Balance	Min: <input type="text"/> RWF	Max: <input type="text"/> RWF	
Invoice status	<input type="button" value=""/>		

Below the search fields is a 'Search' button and a 'Clear' button. The main area displays a table of search results:

Insurance company	Date	Invoice number	Balance RWF	Invoice status
RAMA #41100026	09/09/2010	25548	0	Open
RAMA #41100026	01/04/2010	9111	1649780	Open
RAMA #41100026	31/03/2010	6135	1469320	Closed
RAMA #41100026	28/02/2010	8823	1524110	Closed
RAMA #41100026	05/02/2010	5034	1026000	Closed
RAMA #41100026	01/01/2010	9112	9125	Open

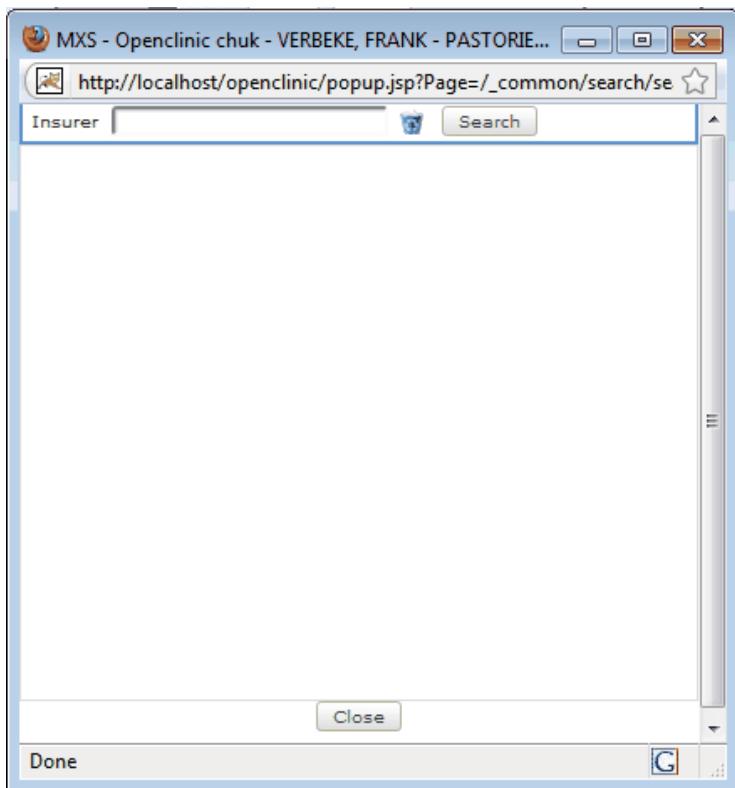
At the bottom of the window, there is a 'Done' button and a toolbar with icons.

To select an invoice in the list, click on the corresponding line. The invoice number will be listed in the "invoice number" field and the procedure outlined in 1 (above) can be followed.

3. In the lower part of the search window, OpenClinic displays all invoices that have the status "open". When clicking on any of these invoices, the relevant data will be automatically displayed in the data entry window.

#### 7.5.1.2 Creating a new insurer invoice

To create a new insurer invoice , click "New" in the search window. OpenClinic then displays a screen where you can search the insurer for which you want to create an invoice:



Put in the "Insurer" field the first letters of the name of the insurer you want to search for and then click "Search". Then OpenClinic display all insurers whose names start with specified letters (note that the wildcards "%" and "\_" are also allowed for searching):

Insurer name	Insurer contact
AAR	
ABEGAYIRE VEDASTE #41300104	
ACCESS	
ACCUEIL M #PEDIAC1	
ACDI VOCA #41100144	
ADMINISTRATEUR + JURSTE #ADMJUR	
AHA #41100124	
AMBASSADE D'ALLEMAND #41100041	
ANECHA #41100040	
ANESTHESIE M #ANEST	
APPRO LINGE SG #APPROL	
APPRO SG #APPROSG	
ARCHIVE S.G. #ARCHIVE	
ASSURANCE QUALITE SG #ASSURQUALITE	

Click the insurer you sought for. Then OpenClinic will create a new invoice in the data entry window and fills in the insurer related fields.

### 7.5.1.3 Encoding insurar invoice data

The procedure for encoding data is similar to the one for creating new invoices and retrieving existing ones. After opening an existing invoice or after creating a new invoice, a screen similar to the following one will be displayed:

Date	Invoice number	Balance RWF	Insurance company	Invoice status
30/09/2010	27649	13787900	MUTUELLE BUGESERA	Open
15/09/2010	26143	12544100	MUTUELLE BUGESERA	Open
09/09/2010	25548	0	RAMA #41100026	Open
31/08/2010	9299	14582700	MUTUELLE BUGESERA	Open
15/08/2010	22783	10522400	MUTUELLE BUGESERA	Open

**Insurance company:** RAMA #41100026

Invoice number:	<input type="text"/>																														
Date *	<input type="text"/> 11/10/2010 <input type="button"/>																														
Invoice status *	<input type="button"/> Open																														
Period	<input type="text"/> 01/09/2010 <input type="button"/> until <input type="text"/> 30/09/2010 <input type="button"/> <input type="button"/> Update <input type="button"/> updateBalance																														
Balance	<input type="text"/> 0 RWF																														
<table border="1"> <thead> <tr> <th></th> <th>Patient name</th> <th>Date</th> <th>Contact</th> <th>Activity</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>AHORUMENYEREYE LEONARD</td> <td>16/09/2010</td> <td>1.68492, 16/09/2010 -&gt; 16/09/2010, Visit</td> <td>1 x Consultation medicale malade (non refere)</td> <td>1912.0 RWF</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td>1 x Fiche de consultation</td> <td>128.0 RWF</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td>1 x Bon de labo</td> <td>170.0 RWF</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td>1 x ECRU (consultation de malade)</td> <td>1010.0 RWF</td> </tr> </tbody> </table> <input type="button"/> select all <input type="button"/> unselect all			Patient name	Date	Contact	Activity	Amount	<input type="checkbox"/>	AHORUMENYEREYE LEONARD	16/09/2010	1.68492, 16/09/2010 -> 16/09/2010, Visit	1 x Consultation medicale malade (non refere)	1912.0 RWF	<input type="checkbox"/>				1 x Fiche de consultation	128.0 RWF	<input type="checkbox"/>				1 x Bon de labo	170.0 RWF	<input type="checkbox"/>				1 x ECRU (consultation de malade)	1010.0 RWF
	Patient name	Date	Contact	Activity	Amount																										
<input type="checkbox"/>	AHORUMENYEREYE LEONARD	16/09/2010	1.68492, 16/09/2010 -> 16/09/2010, Visit	1 x Consultation medicale malade (non refere)	1912.0 RWF																										
<input type="checkbox"/>				1 x Fiche de consultation	128.0 RWF																										
<input type="checkbox"/>				1 x Bon de labo	170.0 RWF																										
<input type="checkbox"/>				1 x ECRU (consultation de malade)	1010.0 RWF																										
<table border="1"> <thead> <tr> <th></th> <th>Date</th> <th>Type</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <input type="button"/> select all <input type="button"/> unselect all <input type="button"/> Save			Date	Type	Amount	<input type="checkbox"/>																									
	Date	Type	Amount																												
<input type="checkbox"/>																															

- Insurance company: this field displays the name of the insurance company for which an invoice is encoded. If an existing invoice, the content of this field can not be changed. In the case of a new invoice, an icon "binoculars" appears to the right of the field to allow the user to choose another insurer.
- Invoice number: the invoice number is automatically assigned by OpenClinic and therefore is not manually changeable by the user. In the case of an existing invoice, the invoice number will be displayed in this field. In the case of a new invoice, this field will be empty.
- Date: date of invoice.
- Invoice status: the following values are available for an invoice status: "open", "closed", "canceled". For accounting purposes, a status of "proforma" still exists in some versions but that status is no longer used.
  1. Open: status "open" means that changes can still be made on the invoice. Until the invoice is closed it will be impossible to print the invoice as before printing it must be assured that the data

- included on a printed invoice will remain identical to those available in the system.
- 2. Closed: status "closed" means that no changes can be made to the invoice. Status "closed" is required to print an invoice.
  - 3. Canceled: means that the invoice was canceled in the system. The cancellation of an invoice results in care deliveries that were related to that invoice, will again be marked "un-invoiced". The system will behave as if this invoice has never been established. Only the invoice number of the canceled invoice will remain used and cannot be recovered.
  - Period: only visible when an invoice is "open," All the care deliveries still to be charged to the insurer and falling within the specified period will be displayed in the table "Activities and products". By default, the period covers the last full month before the date of creating the invoice (ie last month's care deliveries are shown). To change the period, change the contents of the start date and/or end date, then click "Update."
  - Balance: the sum of the amounts due for the care deliveries listed on the invoice and the payments already made to the same invoice.
  - Activities (or care deliveries) and products: in this table appear first all care deliveries that have been linked to the invoice. To the left of each care delivery you will see a checkbox which is checked for each of these care deliveries. In the case of an open invoice will also be added care deliveries yet to be billed to the insurer and for which the date falls within the specified period. For the latter, the checkbox will appear unchecked. The user can in this case also make changes to the invoice by checking/unchecking care deliveries (add them to or remove them from the invoice). To uncheck/check all care deliveries in one operation, use the "check all" and "uncheck all" buttons.

	Patient name	Date	Contact	Activity	Amount
	AHORUMENYEREYE LEONARD	16/09/2010	1.68492, 16/09/2010 -> 16/09/2010, Visit	1 x Consultation medicale malade (non refere)	1912.0 RWF
				1 x Fiche de consultation	128.0 RWF
				1 x Bon de labo	170.0 RWF
				1 x ECRIVANIE DE LA PRESTATION	1010.0 RWF

- Payments: in this table appear the payments already made by the insurer. Usage of this table is identical to the care deliveries table. To uncheck/check all payments in a single operation, use the "check all" and "uncheck all" buttons.

Buttons:

- In case of a new invoice, only the "Save" button will appear. Click this button to save the changes encoded in the date entry window. The button "Save" will remain available for any invoice with an "open" status.
- In case of an existing invoice with the status "open", the following buttons are available:

<b>Save</b>	Printing language	English	Sort by date	Default model	Print prestation list
-------------	-------------------	---------	--------------	---------------	-----------------------

1. Save: see above.
  2. Print prestation list: as the invoice status is not "closed", it is not possible to print the invoice. Nevertheless, it is possible to print a "care deliveries list" that includes all data of the invoice without the invoice number and the wording "Invoice". It is possible to modify a number of print settings using the fields to the left of the button "Print prestation list": the printing language, sorting and invoice template.
- In case of an existing invoice with the status "closed":

Printing language	English	Sort by date	Default model	Print invoice
-------------------	---------	--------------	---------------	---------------

A closed invoice can not be amended anymore, therefore the "Save" button will not appear.

Consequently a button "Print invoice" will be available for all closed invoices. It is possible to modify a number of print settings using the fields to the left of the button "Print invoice": the printing language, sorting and invoice template.

Example of an invoice (default template):



## INVOICE

<b>RAMA</b>			
Invoice number: 27820		Date: 11/10/2010	
<b>PRESTATIONS</b>			
Patient/date	Encounter	Inv.	Activity
11/10/2010 VERBEKE, FRANK °23/08/1963 M			
	1.70357, Visit	27819	[ADM020] 1 x Fiche de consultation
	1.70357, Visit	27819	[CONS00007] 1 x Consultation medecin generaliste (refere): tous les jours
			Subtotal 1.658,00 RWF
<b>PAYMENTS</b>			
No data			
<b>PRICE TO PAY</b>			
		Prestations 1658 RWF	
		Payments - 0 RWF	
		<b>TOTAL 1658 RWF</b>	

Payment conditions: Our invoices are to be paid within 30 days after reception of the invoice. Please add the invoice number to your payment information. After the delay of 30 days, an interest of 5pt per month may be added. The payment has to be made on our bank account nr 040-0200147-69 at the Bank of Kigali (B.K.).

Printed by VERBEKE FRANK at 11/10/2010

The physician director, Dr. Dariya MUKAMUSONI

Example of an invoice (new RAMA template):

		Province: District:	Month: 10/2010												
Name of the FOSA															
<b>INVOICE SUMMARY FOR RAMA</b>															
#	Date	Inv.	Nr Member	Member	Beneficiary	CONS 100%	LAB 100%	IMA 100%	HOS 100%	ACT 100%	MAT 100%	AUTR 100%	MED 100%	TOT 100%	TOT 55%
1	11/10/2010	27819			VERBEKE, FRANK	0,00	0,00	0,00	0,00	1.600,00	150,00	150,00	1.650,00	1.658,00	
					Page subtotal	0,00	0,00	0,00	0,00	1.600,00	0,00	150,00	0,00	1.650,00	1.658,00
					Page total										
					Subtotal					1.600,00	150,00			1.650,00	1.658,00
					Total										
<b>PAYMENT INFO</b>															

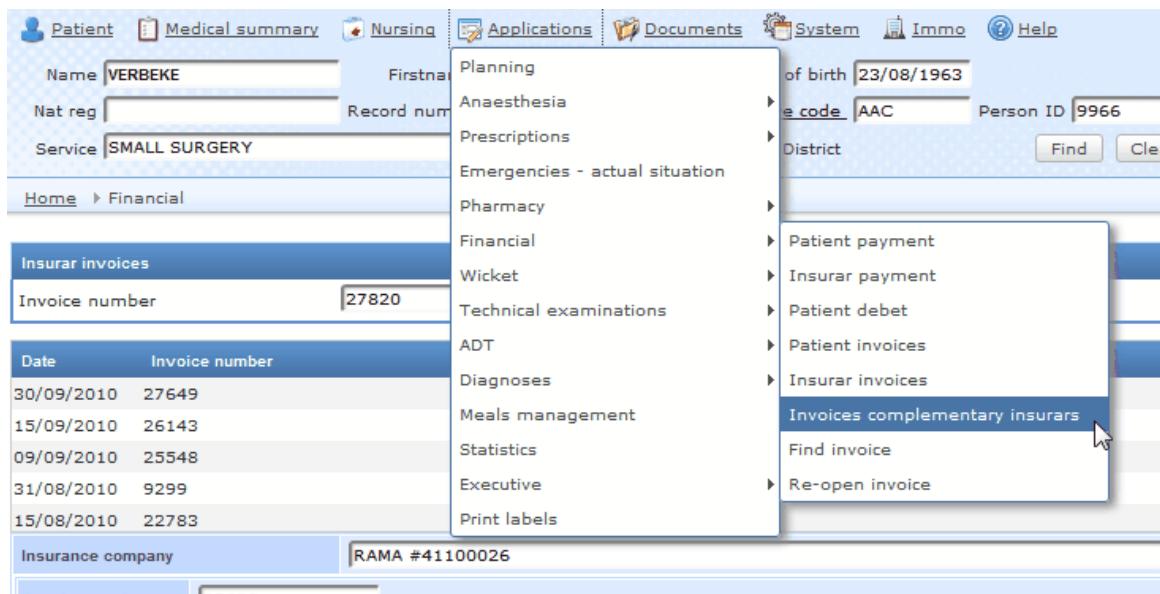
Payment conditions: Our invoices are to be paid within 30 days after reception of the invoice. Please add the invoice number to your payment information. After the delay of 30 days, an interest of 5pt per month may be added. The payment has to be made on our bank account nr 040-0200147-69 at the Bank of Kigali (B.K.).

Printed by VERBEKE FRANK at 11/10/2010

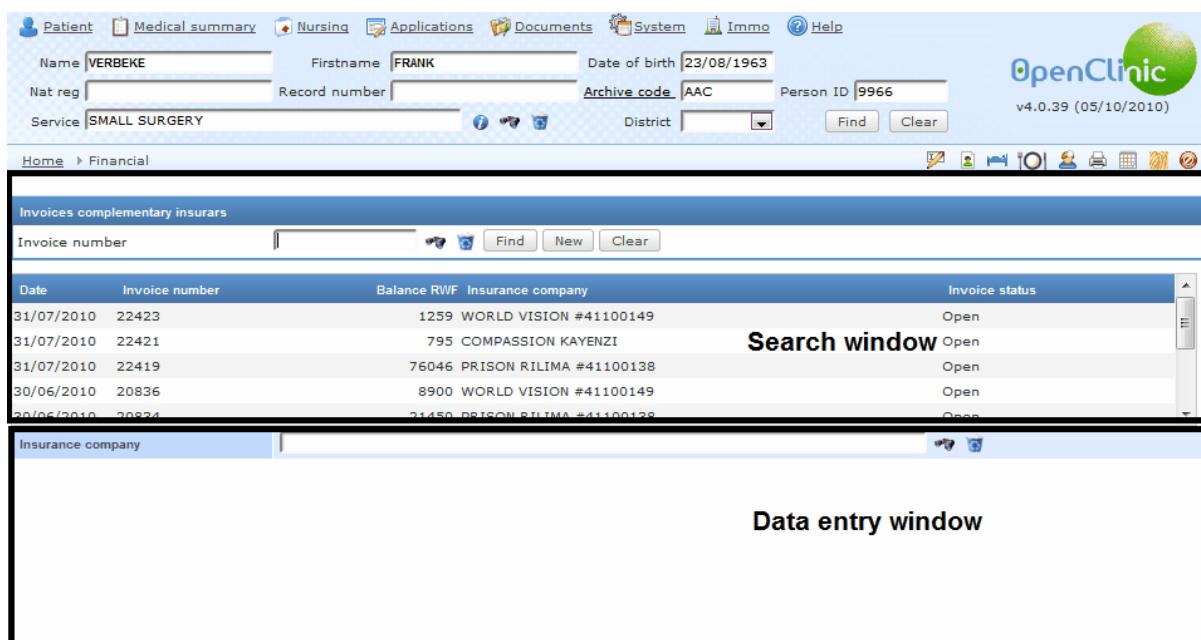
The physician director, Dr. Dariya MUKAMUSONI

### 7.5.2 Complementary insurar invoice

In order to access the complementary insurer invoicing module, the user has to click the "Financial>Invoices complementary insurers" option in the "Applications" menu.



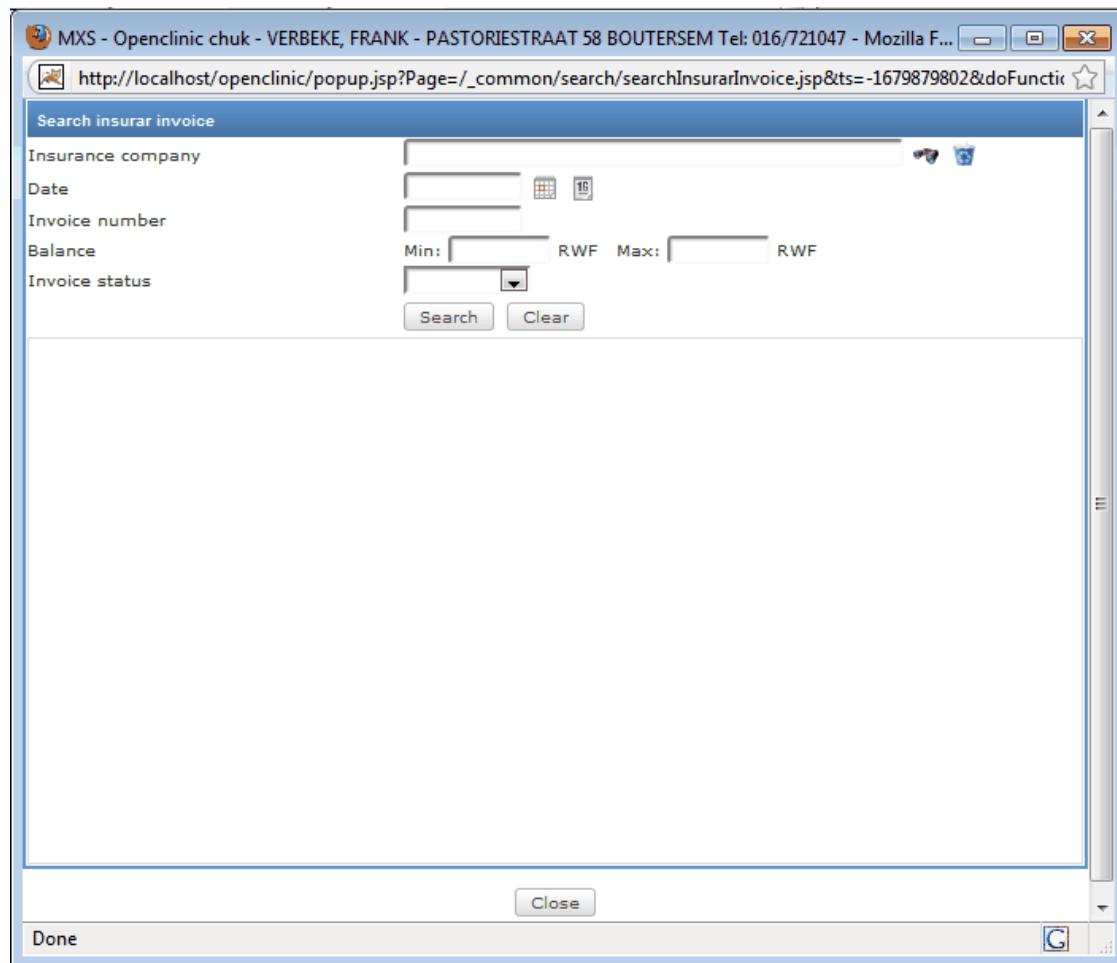
The following screen will then be shown:



### 7.5.2.1 Opening an existing complementary insurer invoice

In the first part at the top of this screen (search window), the user will be able to open an existing invoice for a complementary insurer. To this end, several methods exist:

1. Search for an existing invoice based on the number of the invoice. If the invoice number is known, the user can enter it in the "invoice number" field and then click the "Search" button. If OpenClinic finds the invoice, the invoice data will be displayed in the data entry window.
2. If the invoice number is not known, the user can retrieve a list of all invoices previously established for a complementary insurer, by clicking on the "binoculars" icon to the right of the field "invoice number". OpenClinic then displays the following screen:



In this screen, you must specify the search criteria to find a particular invoice. The following search criteria are available:

- Insurance company: click on the "binoculars" to identify the complementary insurance company for which you want to find invoices.
- Date: If you specify this search criterion, only invoices for the specified date will be returned by the system
- Invoice number: If you already know the invoice number, you can specify it here
- Balance: specify a minimum and maximum to find the invoices with an unpaid balance between these two values
- Invoice status: Specify if you want to find only "closed", "open" or "canceled" invoices (see later in this chapter for details on the status of an invoice).

Click "Search" to find the invoices that match the specified search criteria. This is an example of a results screen:

The screenshot shows a search dialog box titled 'Search insurer invoice'. It contains fields for 'Insurance company' (set to 'WORLD VISION #41100149'), 'Date' (with a calendar icon), 'Invoice number' (empty), 'Balance' (with 'Min:' and 'Max:' fields and RWF currency indicators), and 'Invoice status' (a dropdown menu). Below these fields are 'Search' and 'Clear' buttons. The main area displays a table of search results:

Insurance company	Date	Invoice number	Balance RWF	Invoice status
WORLD VISION #41100149	31/07/2010	22423	1259	Open
WORLD VISION #41100149	30/06/2010	20836	8900	Open
WORLD VISION #41100149	31/05/2010	20835	7981	Open

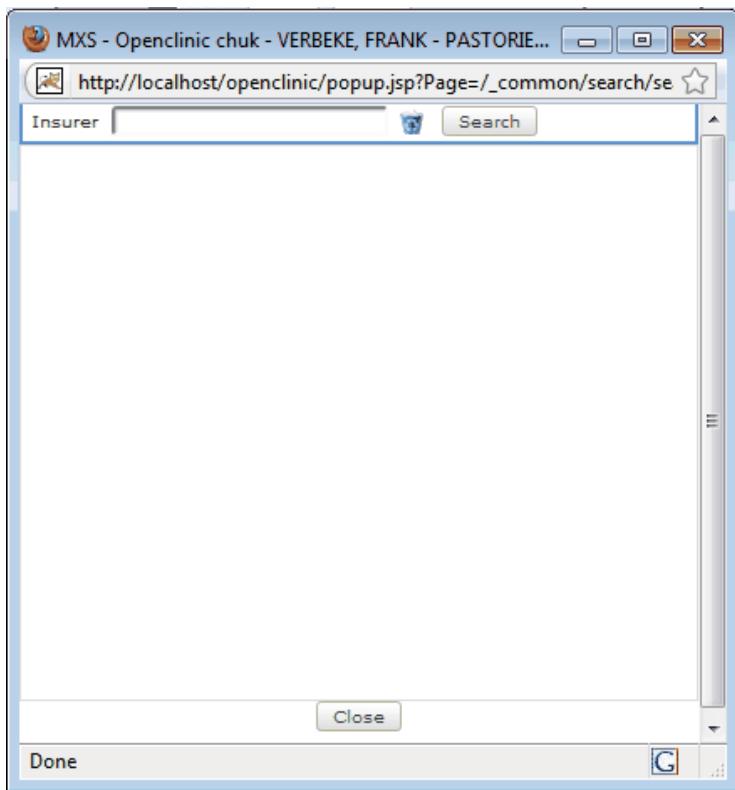
At the bottom of the dialog is a 'Close' button.

To select an invoice in the list, click on the corresponding line. The invoice number will be listed in the "invoice number" field and the procedure outlined in 1 (above) can be followed.

3. In the lower part of the search window, OpenClinic displays all invoices that have the status "open". When clicking on any of these invoices, the relevant data will be automatically displayed in the data entry window.

#### 7.5.2.2 Creating a new complementary insurer invoice

To create a new complementary insurer invoice, click "New" in the search window. OpenClinic then displays a screen where you can search the complementary insurer for which you want to create an invoice:



Put in the "Insurer" field the first letters of the name of the complementary insurer you want to search for and then click "Search". Then OpenClinic display all complementary insurers whose names start with specified letters (note that the wildcards "%" and "\_" are also allowed for searching):

Insurer name	Insurer contact
AAR	
ABEGAYIRE VEDASTE #41300104	
ACCESS	
ACCUEIL M #PEDIAC1	
ACDI VOCA #41100144	
ADMINISTRATEUR + JURSTE #ADMJUR	
AHA #41100124	
AMBASSADE D'ALLEMAND #41100041	
ANECHA #41100040	
ANESTHESIE M #ANEST	
APPRO LINGE SG #APPROLGS	
APPRO SG #APPROSG	
ARCHIVE S.G. #ARCHIVE	
ASSURANCE QUALITE SG #ASSURQUALITE	

Click the insurer you sought for. Then OpenClinic will create a new invoice in the data entry window and fills in the complementary insurer related fields.

### 7.5.2.3 Encoding complementary insurer invoice data

The procedure for encoding data is similar to the one for creating new invoices and retrieving existing ones. After opening an existing invoice or after creating a new invoice, a screen similar to the following one will be displayed:

Date	Invoice number	Balance RWF	Insurance company	Invoice status
30/09/2010	27649	13787900	MUTUELLE BUGESERA	Open
15/09/2010	26143	12544100	MUTUELLE BUGESERA	Open
09/09/2010	25548	0	RAMA #41100026	Open
31/08/2010	9299	14582700	MUTUELLE BUGESERA	Open
15/08/2010	22783	10522400	MUTUELLE BUGESERA	Open

Insurance company																										
Invoice number	RAMA #41100026																									
Date *	11/10/2010																									
Invoice status *	Open																									
Period	01/09/2010 until 30/09/2010																									
Balance	0 RWF																									
<table border="1"> <thead> <tr> <th>Patient name</th> <th>Date</th> <th>Contact</th> <th>Activity</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>AHORUMENYEREYE LEONARD</td> <td>16/09/2010</td> <td>1.68492, 16/09/2010 -&gt; 16/09/2010, Visit</td> <td>1 x Consultation medicale malade (non refere)</td> <td>1912.0 RWF</td> </tr> <tr> <td></td> <td></td> <td></td> <td>1 x Fiche de consultation</td> <td>128.0 RWF</td> </tr> <tr> <td></td> <td></td> <td></td> <td>1 x Bon de labo</td> <td>170.0 RWF</td> </tr> <tr> <td></td> <td></td> <td></td> <td>1 x ECRU (consultation de malade)</td> <td>1010.0 RWF</td> </tr> </tbody> </table>		Patient name	Date	Contact	Activity	Amount	AHORUMENYEREYE LEONARD	16/09/2010	1.68492, 16/09/2010 -> 16/09/2010, Visit	1 x Consultation medicale malade (non refere)	1912.0 RWF				1 x Fiche de consultation	128.0 RWF				1 x Bon de labo	170.0 RWF				1 x ECRU (consultation de malade)	1010.0 RWF
Patient name	Date	Contact	Activity	Amount																						
AHORUMENYEREYE LEONARD	16/09/2010	1.68492, 16/09/2010 -> 16/09/2010, Visit	1 x Consultation medicale malade (non refere)	1912.0 RWF																						
			1 x Fiche de consultation	128.0 RWF																						
			1 x Bon de labo	170.0 RWF																						
			1 x ECRU (consultation de malade)	1010.0 RWF																						
<input type="button" value="select all"/> <input type="button" value="unselect all"/>																										
<table border="1"> <thead> <tr> <th>Date</th> <th>Type</th> <th>Amount</th> </tr> </thead> </table>		Date	Type	Amount																						
Date	Type	Amount																								
<input type="button" value="select all"/> <input type="button" value="unselect all"/>																										
<input type="button" value="Save"/>																										

- Insurance company: this field displays the name of the complementary insurance company for which an invoice is encoded. If an existing invoice, the content of this field can not be changed. In the case of a new invoice, an icon "binoculars" appears to the right of the field to allow the user to choose another complementary insurer.
- Invoice number: the invoice number is automatically assigned by OpenClinic and therefore is not manually changeable by the user. In the case of an existing invoice, the invoice number will be displayed in this field. In the case of a new invoice, this field will be empty.
- Date: date of invoice.
- Invoice status: the following values are available for an invoice status: "open", "closed", "canceled". For accounting purposes, a status of "proforma" still exists in some versions but that status is no longer used.
  1. Open: status "open" means that changes can still be made on the invoice. Until the invoice is closed it will be impossible to print the invoice as before printing it must be assured that the data

- included on a printed invoice will remain identical to those available in the system.
2. Closed: status "closed" means that no changes can be made to the invoice. Status "closed" is required to print an invoice.
  3. Canceled: means that the invoice was canceled in the system. The cancellation of an invoice results in care deliveries that were related to that invoice, will again be marked "un-invoiced". The system will behave as if this invoice has never been established. Only the invoice number of the canceled invoice will remain used and cannot be recovered.
- Period: only visible when an invoice is "open," All the care deliveries still to be charged to the complementary insurer and falling within the specified period will be displayed in the table "Activities and products". By default, the period covers the last full month before the date of creating the invoice (ie last month's care deliveries are shown). To change the period, change the contents of the start date and/or end date, then click "Update."
  - Balance: the sum of the amounts due for the care deliveries listed on the invoice and the payments already made to the same invoice.
  - Activities (or care deliveries) and products: in this table appear first all care deliveries that have been linked to the invoice. To the left of each care delivery you will see a checkbox which is checked for each of these care deliveries. In the case of an open invoice will also be added care deliveries yet to be billed to the complementary insurer and for which the date falls within the specified period. For the latter, the checkbox will appear unchecked. The user can in this case also make changes to the invoice by checking/unchecking care deliveries (add them to or remove them from the invoice). To uncheck/check all care deliveries in one operation, use the "check all" and "uncheck all" buttons.

	Patient name	Date	Contact	Activity	Amount
	AHORUMENYEREYE LEONARD	16/09/2010	1.68492, 16/09/2010 -> 16/09/2010, Visit	1 x Consultation medicale malade (non refere)	1912.0 RWF
				1 x Fiche de consultation	128.0 RWF
				1 x Bon de labo	170.0 RWF
				1 x ECRIVANIE DE LA RECETTE	1010.0 RWF

- Payments: in this table appear the payments already made by the complementary insurer. Usage of this table is identical to the care deliveries table. To uncheck/check all payments in a single operation, use the "check all" and "uncheck all" buttons.

Buttons:

- In case of a new invoice, only the "Save" button will appear. Click this button to save the changes encoded in the date entry window. The button "Save" will remain available for any invoice with an "open" status.
- In case of an existing invoice with the status "open", the following buttons are available:

<input type="button" value="Save"/>	<input type="button" value="Printing language"/>	Dutch	<input type="button" value="Sort by date"/>	<input type="button" value="Print prestation list"/>
-------------------------------------	--	-------	---	--

1. Save: see above.
  2. Print prestation list: as the invoice status is not "closed", it is not possible to print the invoice. Nevertheless, it is possible to print a "care deliveries list" that includes all data of the invoice without the invoice number and the wording "Invoice". It is possible to modify a number of print settings using the fields to the left of the button "Print prestation list": the printing language, sorting and invoice template.
- In case of an existing invoice with the status "closed":

<input type="button" value="Printing language"/>	Dutch	<input type="button" value="Sort by date"/>	<input type="button" value="Print invoice"/>
--	-------	---	--

A closed invoice can not be amended anymore, therefore the "Save" button will not appear.

Consequently a button "Print invoice" will be available for all closed invoices. It is possible to modify a number of print settings using the fields to the left of the button "Print invoice": the printing language, sorting and invoice template.

Example of an invoice :



## INVOICE



\*627820\*

### RAMA

Invoice number: 27820 Date: 11/10/2010

### PRESTATIONS

Patient/date	Encounter	Inv.	Activity	Amount
<b>11/10/2010</b>				
VERBEKE, FRANK °23/08/1963 M				
1.70357, Visit	27819	[ADM020]	1 x Fiche de consultation	128,00 RWF
1.70357, Visit	27819	[CONS00007]	1 x Consultation medecin generaliste (refere): tous les jours	1.530,00 RWF
				<b>Subtotal</b> 1.658,00 RWF

### PAYMENTS

No data

### PRICE TO PAY

Prestations	1658 RWF
Payments	- 0 RWF
<b>TOTAL</b>	<b>1658 RWF</b>

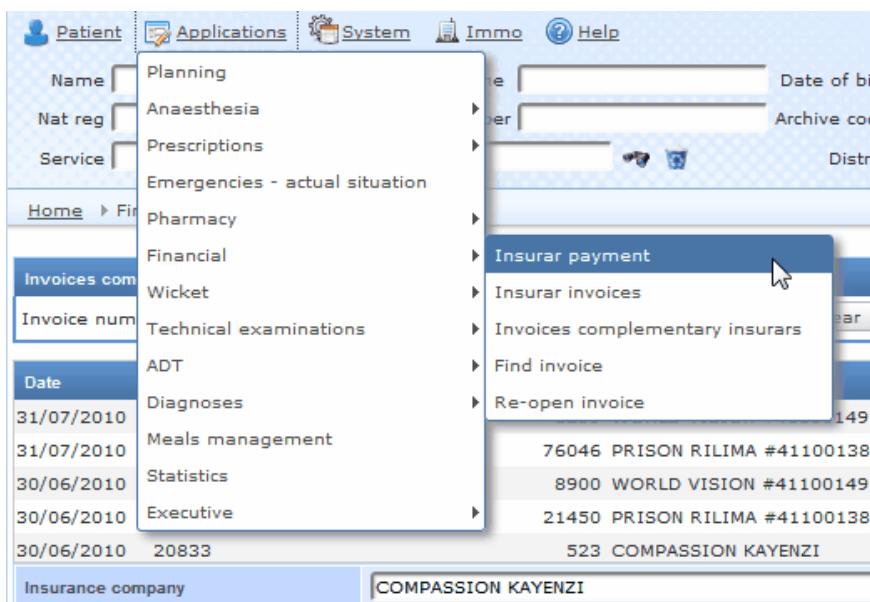
Payment conditions: Our invoices are to be paid within 30 days after reception of the invoice. Please add the invoice number to your payment information. After the delay of 30 days, an interest of 5ptc per month may be added. The payment has to be made on our bank account nr 040-0200147-69 at the Bank of Kigali (B.K.).

Printed by VERBEKE FRANK at 11/10/2010

The physician director, Dr. Dariya  
MUKAMUSONI

## 7.6 Insurar payments

In order to access the insurar payment modules, the user has to click the "Financial> Insurar payment" option in the "Applications" menu.



The following screen will be shown by OpenClinic:

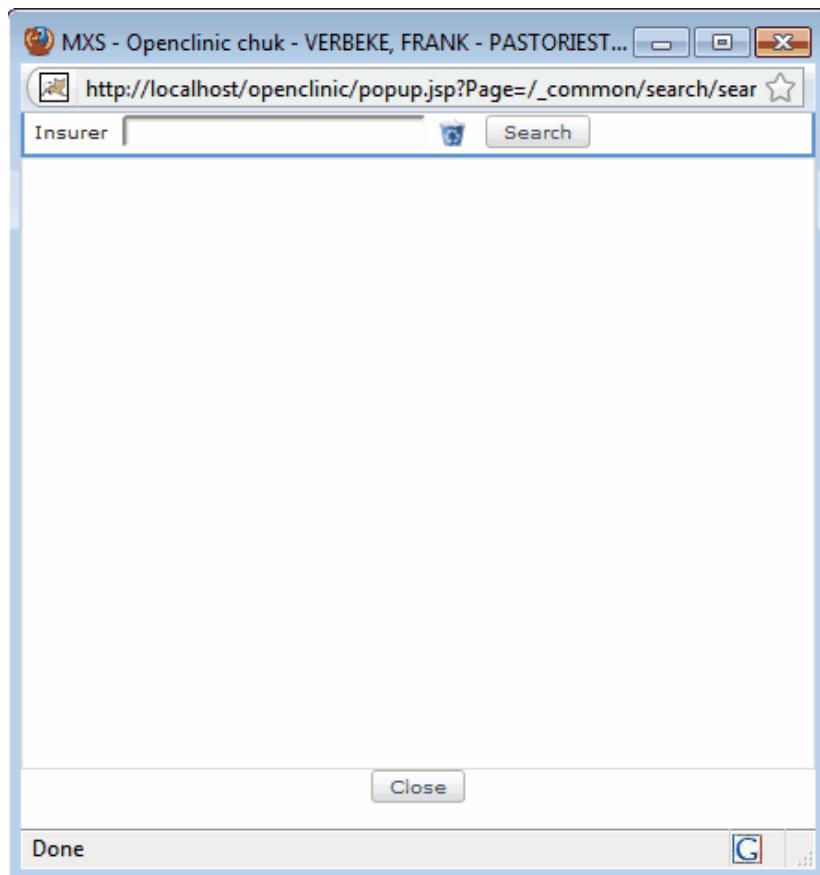
The screenshot displays two windows for managing insurer payments. The top window, titled 'Insur payment', is a 'Search window' with fields for 'Insurer \*', 'Date', 'Outset', 'End', 'Amount', 'Min', and 'Max'. It includes 'Search', 'Clear', and 'New' buttons. The bottom window is a 'Data entry window' with fields for 'Date \*' (set to 11/10/2010), 'Insurer \*', 'Invoice \*', 'Amount \*' (set to RWF), 'Type \*' (set to 'Payment insurance company'), and 'Description'. It also has 'Save' and 'Clear' buttons. The OpenClinic logo and version v4.0.39 (05/10/2010) are visible in the top right corner.

## 7.6.1 Retrieving an insurer payment

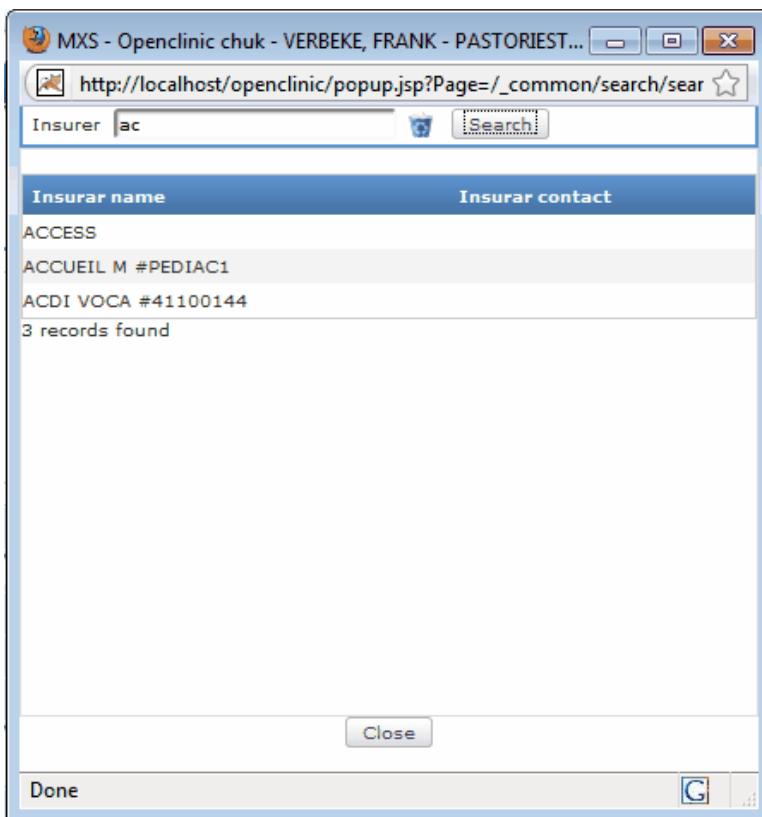
In the search window, the user can retrieve an insurer payment already registered in the system. The following search criteria are available:

- Insurer: fill in this field the name of the insurer for which you are looking for a payment. To do this,

click on the "binoculars" to the right of the field. OpenClinic will open a window that allows you to select an insurer.



Put in the "Insurer" field the first letters of the name of the insurer and then click "Search". OpenClinic will display all insurers whose names start with the specified letters (note the wildcards "%" and "\_" are also allowed for searching):



Click the insurer sought. Then OpenClinic copies the name of the insurer in the "Insurer" field in the search window of the insurance payments screen. The field "Insurer" is a mandatory search criteria. Without any data in this field, no search will be conducted by OpenClinic. If the "Insurer" is the only criterion for research, OpenClinic returns all payments made by the insurer which have not yet been linked to an insurer invoice.

- Start Date: when you put a date in this field, only payments made on or after that date will be shown
- End date: when you put a date in this field, only payments made on or before that date will be shown
- Minimum: if you fill out this field, only the payments that equal or exceed the amount specified will be displayed
- Maximum: If you fill out this field, only payments in the amount equal to or less than the amount specified will be displayed

Click "Search" to start the search. Click "Clear" to clear all search boxes (eg prior to encoding new search criteria)

To select and edit an existing insurer payment, click on the payment from the list of payments that appear in the lower part of the search window.

### **7.6.2 Creating a new insurer payment**

To create and edit a new insurer payment, click the "New" button in the search window

### **7.6.3 Editing the content of an insurer payment**

After selecting an existing insurer payment or creating a new payment, the user can encode data in the insurer's payment encoding window (data entry window):

Date *	12/10/2010 <input type="button" value="Calendar"/> <input type="button" value="16"/>
Insurer *	<input type="text"/>
Invoice *	<input type="text"/> <input type="button" value="Binoculars"/> <input type="button" value="Search"/>
Amount *	RWF
Type *	Payment insurance company <input type="button" value="Down"/>
Description	<input type="text"/>
<input type="button" value="Save"/>	

\* Fields with asterisk are mandatory

- Date: the date of payment. By default, OpenClinic will fill in the creation date of the payment.
- Insurer, the insurer that made the payment. To select an insurer, click the "binoculars" to the right of the field.
- Invoice: This field will take the number of the invoice for which payment was made. Click the "binoculars" to right field to search for an invoice. OpenClinic then displays a window as follows:

The screenshot shows a search dialog titled "Search insurer invoice". It includes fields for Insurance company, Date, Invoice number, Balance (with min and max values), and Invoice status (set to "Open"). Below the search form is a table of results:

Insurance company	Date	Invoice number	Balancenbsp;RWF	Invoice status
MUTUELLE BUGESERA	30/09/2010	27649	13787900	Open
MUTUELLE BUGESERA	15/09/2010	26143	12544100	Open
MUTUELLE BUGESERA	31/08/2010	9299	14582700	Open
MUTUELLE BUGESERA	15/08/2010	22783	10522400	Open
PRISON RILIMA #41100138	31/07/2010	22419	76046	Open
WORLD VISION #41100149	31/07/2010	22423	1259	Open
PRISON RILIMA #41100138	30/06/2010	20834	21450	Open
COMPASSION MARANYUNDO	30/06/2010	20832	5131	Open
WORLD VISION #41100149	30/06/2010	20836	8900	Open
COMPASSION KAYENZI	30/06/2010	20833	523	Open
COMPASSION EPR NYAMATA	31/05/2010	15748	183	Open
WORLD VISION #41100149	31/05/2010	20835	7981	Open
PRISON RILIMA #41100138	31/05/2010	15757	6573	Open
RAMA #41100026	01/04/2010	9111	1649780	Open

Done

In this window, the user can provide the following information for finding an invoice:

1. Insurance company: the insurer for which the user seeks invoices. If the "Insurer" field in the encoding of the payment screen insurer was already filled in, the identification of that insurer is

automatically included in "Insurance company". Click the "binoculars" to the right of the field to modify the content of it.

2. Date: if you specify this search criterion, only invoices for the specified date will be returned by the system
3. Invoice number: if you already know the invoice number, you can specify here
4. Balance: specify a minimum and maximum to find invoices with a remaining balance between these two values
5. Invoice status: specify if you want to find only invoices with the "closed", "open" or "canceled" status.

Click "Search" to find the invoices that match the specified search criteria. An example of a screen with the results:

Insurance company	Date	Invoice number	Balance	Invoice status
RAMA #41100026	01/04/2010	9111	1649780	Open
RAMA #41100026	01/01/2010	9112	9125	Open

To select an invoice in the list, click on the corresponding line. The invoice number will be resumed in the "Invoice" field on the insurer payment data entry screen..

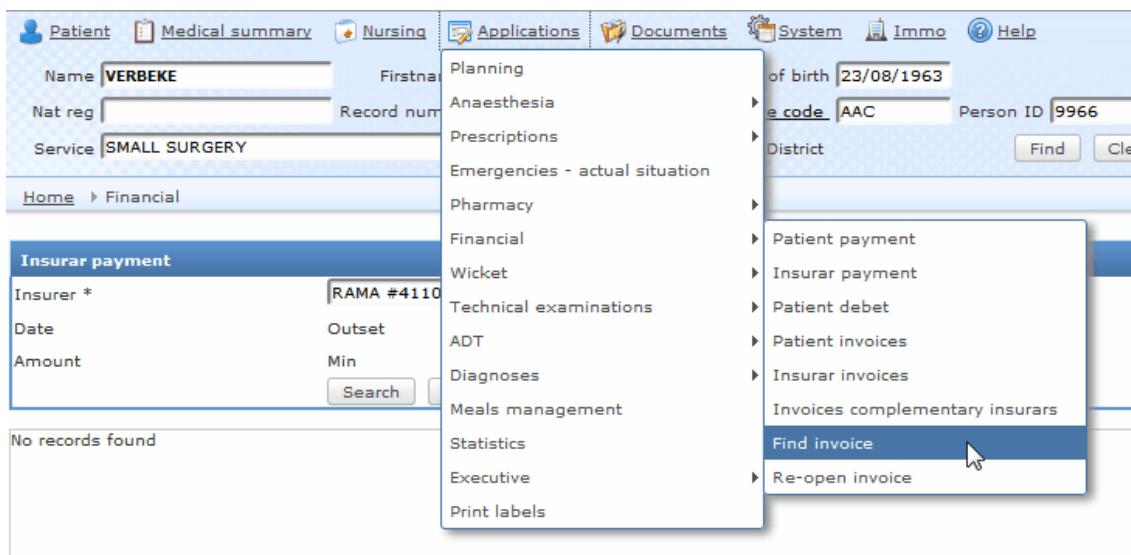
- Amount: payment Amount
- Type: type of payment. By default, the type of payment is "Payment insurance company". According to the local configuration of the system, other types of payment may be possible.
- Description: free text commentary of up to 255 characters.

Click the "Save" button to save changes to the database.

## 7.7 Finding an invoice

Patient, insurance and complementary insurer invoices all use the same counter for numbering of the invoices. In other words: there is only one list of invoices in the system regardless of the type of addressee.

A specific module has been developed in OpenClinic for fast searching an invoice. The module can be accessed by clicking on the "Financial> Find invoice" option in the "Applications" menu:



Once the user clicks this option, OpenClinic will open the following screen:

The screenshot shows the 'Find invoice' search interface. It features several search criteria: Date (Outset), Amount (Min, RWF, Max, RWF), and Invoice number. Below these are radio buttons for selecting the type of invoice: Patient, Insurer (which is selected), and Extra ins. At the bottom are 'Search' and 'Clear' buttons.

- Outset: when you put a date in this field, only payments made on or after that date will be posted
- End: when you put a date in this field, only payments made on or before that date will be displayed
- Min: if you fill out this field, only the payments that equal or exceed the amount specified will be displayed
- Max: if you fill out this field, only payments in the amount equal to or less than the amount specified will be displayed
- Invoice number: if you fill out this field, only the corresponding invoice number will be displayed
- Invoice type: specify if a patient invoice, insurance invoice or complementary insurer invoice is being sought

At least the "Invoice Type" and one other search criterion must be provided in order to perform the search. After clicking the button "Search", the result will be displayed below the search criteria:

Invoice number	Date	Destination	Type of invoice	Amount RWF	Payment	Invoice status
27818	11/10/2010	VERBEKE, FRANK	Patient	0,00	Ok	Closed
27819	11/10/2010	VERBEKE, FRANK	Patient	0,00	Ok	Closed

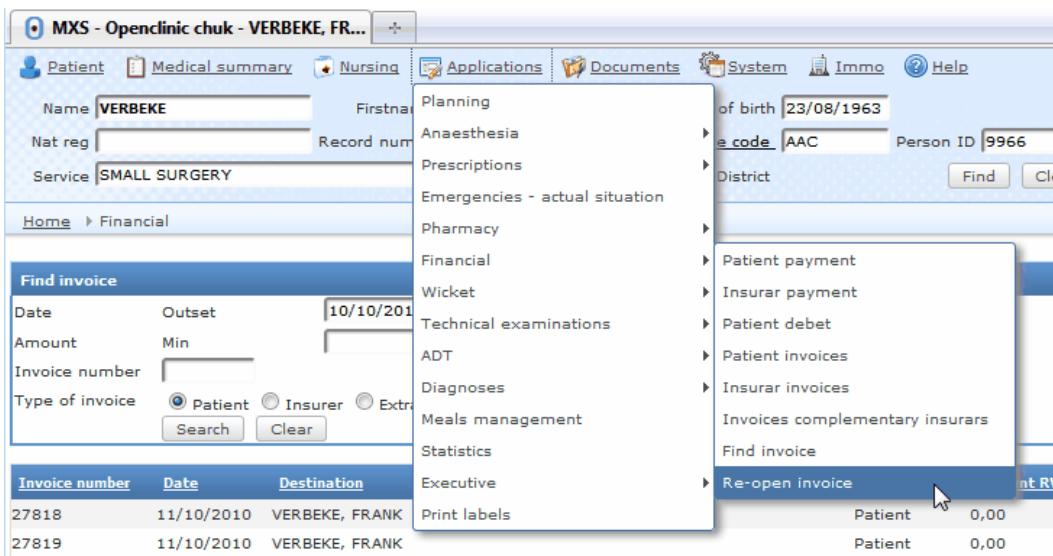
Click on the invoice sought to view it. In the displayed screen, the invoice processing is done as explained in the sections "Patient invoicing" and "Insurer and complementary insurer invoicing".

## 7.8 Corrections on invoices

As long as an invoice has the status "open", changes can still be made on it by any user with necessary access rights. Once an invoice has received the status "closed", no changes can be recorded anymore (the "Save" button will have disappeared in the screens showing closed invoice data). In some cases, however, it may be acceptable to modify an invoice that has already received the status "closed":

- misallocation of status "closed"
- invoice has not yet been printed (no risk for content mismatch between printed invoice and OpenClinic system data)
- all printed copies of the invoice have been recovered

To allow the correction of errors on closed invoices, OpenClinic has a module for changing the status of an invoice from "closed" to "open". This module should be reserved for users with specific access rights in order to avoid the risk of inconsistency and fraud. You can access this module by clicking the "Financial> Re-open invoice" option in the "Applications" menu:



The following screen will be shown:

**Find invoice**

Invoice number

Type of invoice  Patient  Insurer  Extra ins.

- Invoice number: the number of the closed invoice to reopen
- Type of invoice: specify if a patient invoice, insurer invoice or complementary insurer invoice

The two search criteria must be completed in order to search. After clicking the button "Search" the search results will be displayed below the search criteria:

**Find invoice**

Invoice number

Type of invoice  Patient  Insurer  Extra ins.

Invoice number	Date	Destination	Type of invoice	Amount RWF	Payment	Invoice status
27820	11/10/2010	RAMA #41100026	Insurer	1658,00	Ok	Closed

If the invoice status can be changed to "open" by the system, a button "Re-open invoice" will appear below the invoice data. Press this button to change the invoice status to "open".



# **Section**



**VIII**

## 8 Classification and encoding

The classification and coding of key information is essential to allow correct statistical analysis and exchange of information with other information systems in the health sector. In addition, the use of international classifications warrants comparability with other health facilities around the world.

The OpenClinic system integrates the following classifications in the current version:

- ICPC-2 (in French: CISP2): International Classification for Primary Care, Version 2. This classification is maintained by WONCA (World Organization of National Colleges, Academies and Academic Associations of General Practitioners / Family Physicians)
- ICD-10: International Classification of Diseases, version 10, managed by WHO (World Health Organization)
- LOINC: Logical Observation Identifiers Names and Codes, managed by the Regenstrief Institute and Indiana University
- DSM IV: Diagnostic and Statistical Manual of Mental Disorders, version IV, managed by American Psychiatric Association
- 3BT: bi-classified bi-lingual Belgian thesaurus , managed by the Department of Public Health in Belgium
- KPGS: Kigali Pathology Grouping Set, managed by the VUB (Belgium) and CHUK (Rwanda)

### 8.1 Reasons for encounter

See the section "Registration of reasons for encounter" in the chapter "Encounter management".

### 8.2 Diagnostics

#### 8.2.1 Access to diagnostic encoding

OpenClinic permits encoding of diagnoses during or at the end of each contact. For each diagnosis, it is possible to specify the degree of certainty of the diagnosis and the severity of the clinical condition for the patient.

To access the encoding of diagnoses, multiple paths are possible:

1. The link "Diagnostics of the actual document ICPC-2/ICD-10" found in most clinical data entry screens (medical examinations). This is the preferred path for clinicians.

Patient Medical summary Nursing Applications Documents System Immo Help

Name VERBEKE Firstname FRANK Date of birth 23/08/1963  
Nat reg Record number Archive code AAC Person ID 9966  
Service SMALL SURGERY District Find Clear

Home > Medical summary

Date 12/10/2010 Clinical examination

**Summary Family anamnesis Personal history**

BP ()	/	/	Temperature (°C)	Weight (Kg)	Length (cm)	BMI
-------	---	---	------------------	-------------	-------------	-----

**General**

Subjective		
Objective		
Evaluation		
Planning		
Heartrhythm	<input type="checkbox"/> /min	<input checked="" type="radio"/> Regular <input type="radio"/> Irregular
Blood pressure	Right arm <input type="text"/> / <input type="text"/> mmHg	Left arm <input type="text"/> / <input type="text"/> mmHg
Temperature	<input type="text"/>	
Respiratory frequency	<input type="text"/> /min	
Smoking	<input type="checkbox"/>	Per day
Alcohol	<input type="text"/>	
Sports	<input type="checkbox"/>	hours a week

**Reasons for encounter ICPC-2/ICD-10**

- ICD10 R04.2 HEMOPTYSIS
- ICD10 R51 HEADACHE
- ICPC N0100 HEADACHE
- ICPC R2400 HAEMOPTYSIS

**Diagnoses of the actual document ICPC-2/ICD-10**

**Contact diagnoses ICPC-2/ICD-10**

**SNOMED-CT**

**Problem list**

**Description Outset**

T8900 DIABETES INSULIN DEPENDENT	11/10/2010
----------------------------------	------------

**Medication**

Product	Outset date	Final date	Dose
Paracétamol 500 mg comprimé	11/10/2010	14/10/2010	4 pill(s) per day

**Paper prescriptions (12/10/2010)**

Create paper based prescription

Printing language EN Print and save Save Back

2. Through the "Statistics" option in the "Applications" menu. This is the path of preference for diagnostic encoders working in a central encoding unit of the hospital.

Patient Medical summary Nursing Applications Documents System

Name VERBEKE Firstname FRANK Date of birth 23/08/1963  
Nat reg Record number Archive code AAC Person ID 9966  
Service SMALL SURGERY District

Home > Medical summary

Date 12/10/2010 Clinical examination

**Summary Family anamnesis Personal history**

BP ()	/
-------	---

**General**

Subjective		
------------	--	--

**Planning**

Anaesthesia

Prescriptions

Emergencies - actual situation

Pharmacy

Financial

Wicket

Technical examinations

ADT

Diagnoses

Meals management

**Statistics**

Executive

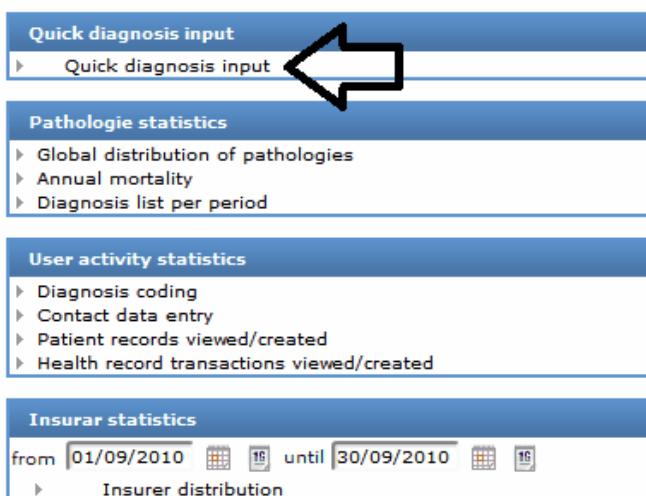
Print labels

ICD1

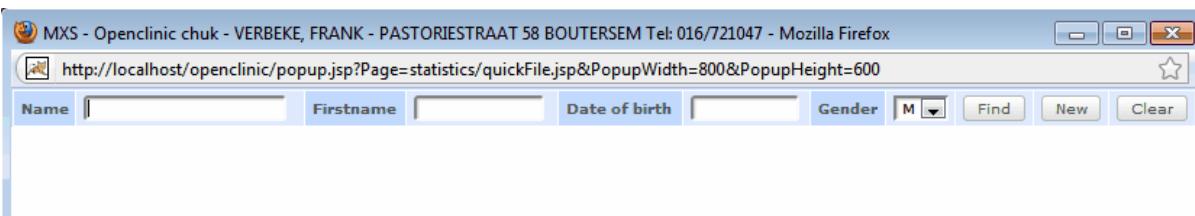
ICD1

ICPC

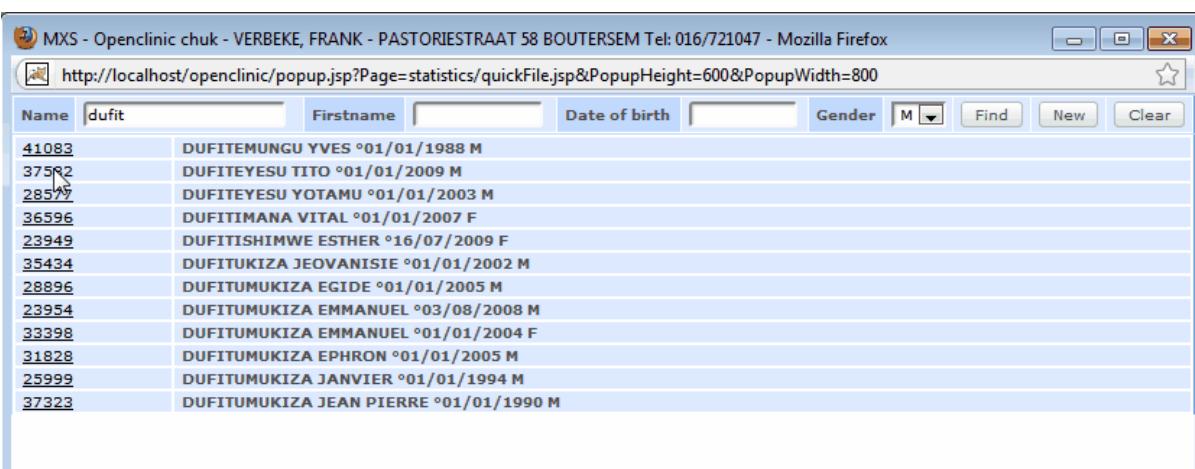
This menu will open the statistics window in which the user must choose the link "Entering rapid diagnostics"



This link will open the "Quick diagnosis input" screen:



The user can then search for patient records by specifying the name, first name or date of birth, and then click the "Search" button. In the patient list returned by the application, select the patient wanted by clicking on its ID number in the first column.



The software will then display the list of encounters that have already been saved in the database for this patient (can be empty)

You can choose the contact that you want to encode diagnoses for by clicking on the date in the first column, or create a new contact by clicking the "New encounter" if the desired contact does not already exist. The result of both operations is that the simplified contact data entry window will appear:

- Type: Visit or Admission
- Onset date: beginning of episode of care for the patient
- Final date: End of episode of care of the patient
- Service: clinical department that took care of the patient
- Evolution: clinical outcome of treatment (improvement, deterioration, escaped, died, etc. ...)

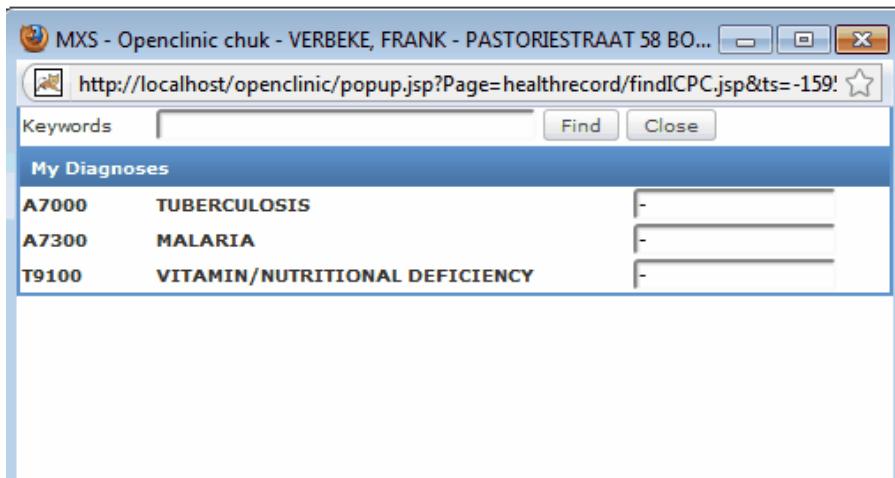
To encode diagnoses in this screen, click on "Diagnosis CIS-2/ICD-10" link.

## 8.2.2 Encoding diagnoses

The diagnostic encoding screen will assist the user while searching the ICPC-2 and ICD-10 classifications through a medical dictionary. This means that the user will be able to enter one or more keywords for clinical conditions sought and that the OpenClinic search engine will suggest clinical concepts that might match those keywords.

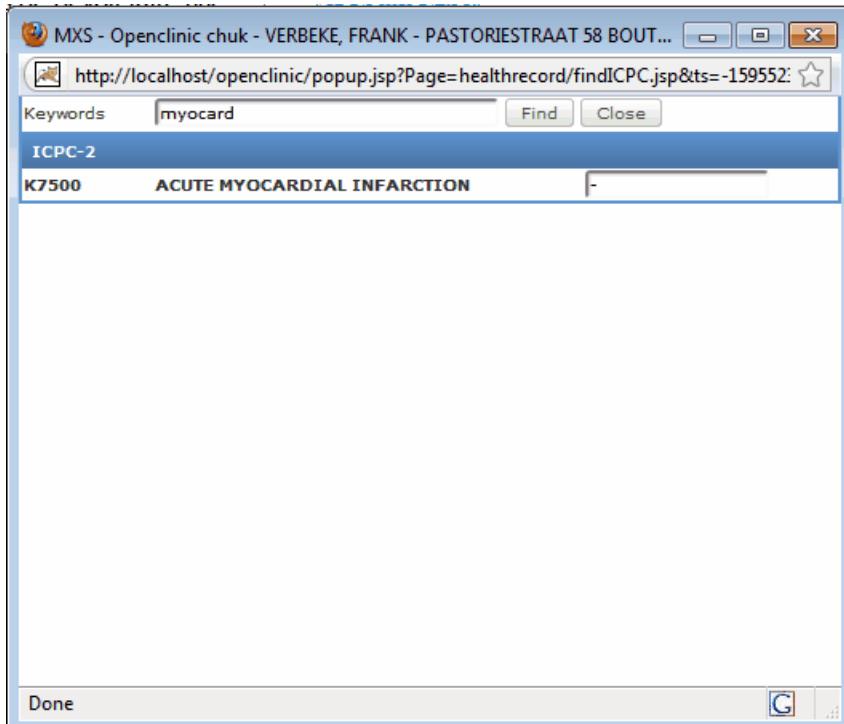
At the opening of the diagnostic encoding screen, 2 sections are presented to the user:

- A section for encoding keywords
- A section called "My diagnoses" (if the user has not yet defined any diagnoses in the "My Diagnoses" list - see "Configuration" chapter - , then this second part will not appear)



- Keywords: type in the keywords and click "Find"
- My diagnosis: each user can define for himself a list of diagnoses that are often used (see below in the "Configure My diagnosis list"). This list will prevent in many cases having to do a search based on keywords: the user can simply select the diagnosis in this predefined list.

In case the user would have chosen to do a keywords based search, the search results will be displayed on the next screen. Depending on the system configuration, ICD-10 and ICPC-2 results or only ICPC-2 results will be displayed at this level! In the following screens, the user will be able to provide more specifications about the diagnosis. Choose a diagnosis by clicking on the corresponding line.



Once the user has made an initial choice of diagnosis, the application will present a second screen in which more details can be provided for the diagnosis:

The screenshot shows a Mozilla Firefox browser window displaying a form titled "Certainty and severity of the diagnosis". The form contains the following data:

Diagnosis code *	A7300
ICPC	MALARIA
ICD10	B50.9 PLASMODIUM FALCIPARUM MALARIA, UNSPECIFIED
Certainty *	500
Seriousness *	270
Present on admission	<input type="checkbox"/>
New case	<input checked="" type="checkbox"/>
Transfer to problemlist	<input type="checkbox"/>
Service	SMALL SURGERY

\* mandatory fields

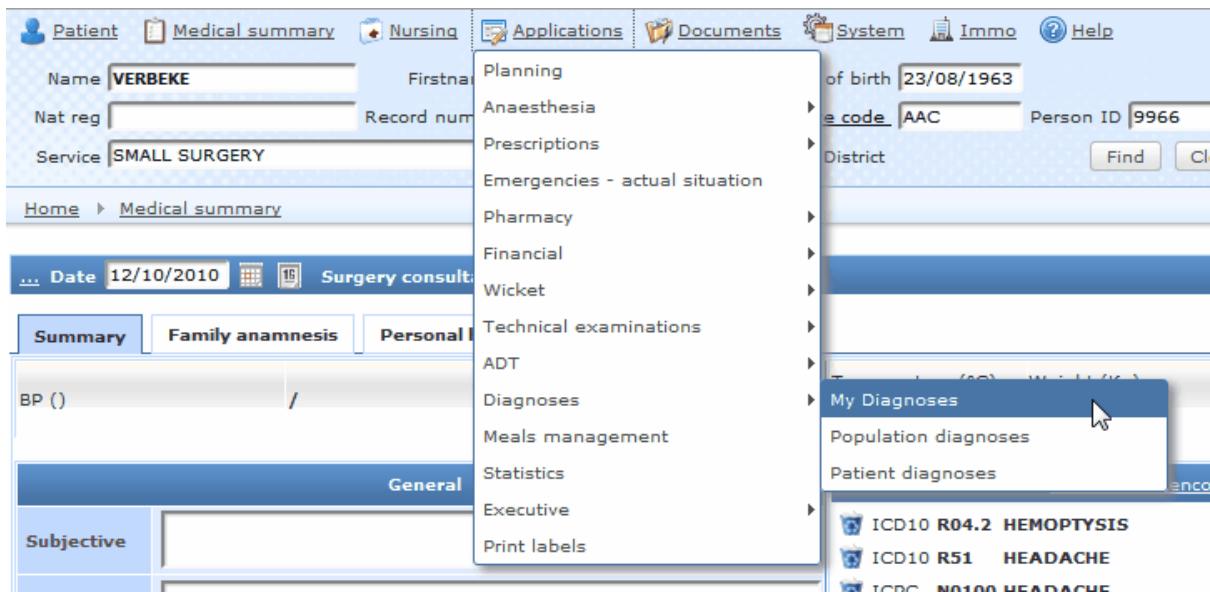
Done

- Diagnosis code: diagnostic code selected in the previous screen
- ICPC: label of selected diagnosis in the previous screen (assuming that the selected diagnosis was encoded in ICPC-2)
- ICD10: a list of ICD-10 diagnoses corresponding to the ICPC-2 code that was chosen. This list of ICD-10 codes will usually specify the diagnosis in more detail.
- Certainty: the certainty with which the diagnosis was made. A value of 1000 (maximum) means it is certain (eg after laboratory confirmation) and a very low value represents a possible but unlikely diagnosis. The default is 500 (probable diagnosis)
- Seriousness: a user can encode a score that represents the weight of the diagnosis for the patient (0 = no consequence for the patient, 1000 = certain death). The default values are calculated for each disease based on the results of the study "Global Burden of Disease" that was conducted by WHO in 2004
- Present on admission: this field indicates whether the condition existed at admission or has instead developed during hospitalization. This information is essential if one wants to do analysis of nosocomial complications in intra-mural care.
- New case: indicates whether this concerns a patient who presents for the first time with this disease. OpenClinic automatically searches in the history of the patient's diagnoses to detect earlier diagnoses that would be similar to the actual diagnosis. In the event that such diagnoses are found in history, they will be displayed to the right of this field and the "New cases" will be unchecked by default.
- Transfer to the list of problems: if the user considers that the diagnosis is still active and is important enough to be transferred to the list of problems, he can check this field.
- Service: the clinical department in which the diagnosis has been recorded. In order to prevent encoding errors, OpenClinic will only provide the following clinical departments as an option:
  1. The active department linked to the user account
  2. The department the patient encounter refers to (in-patient or out-patient)
  3. In case diagnostic encoding is performed from a medical examination data entry screen: all departments that have been linked to the used clinical data entry screen (e.g. SURGERY department if a "Surgery consultation" data entry screen is used, ORL if an "Audiometry" screen is used...).

By clicking the Add button, the diagnosis will be recorded in the patient record.

### 8.2.3 Configuration of "My diagnoses" list

To facilitate and accelerate the encoding, each user can define a list of diagnoses that are common in their daily work. This list of diagnoses will be systematically presented when opening the Diagnostic encoding screen (see above) and in many cases avoid having to go through searches based on keywords. Every user can access the module for configuring "My diagnosis" via the "Diagnoses> My diagnoses" option in the "Applications" menu



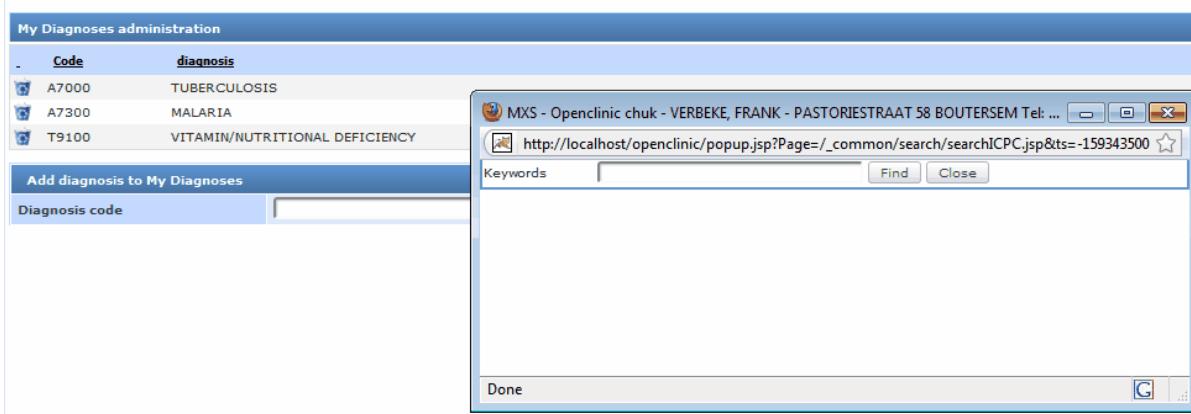
OpenClinic will then display the following screen:

My Diagnoses administration	
<u>Code</u>	<u>diagnosis</u>
A7000	TUBERCULOSIS
A7300	MALARIA
T9100	VITAMIN/NUTRITIONAL DEFICIENCY

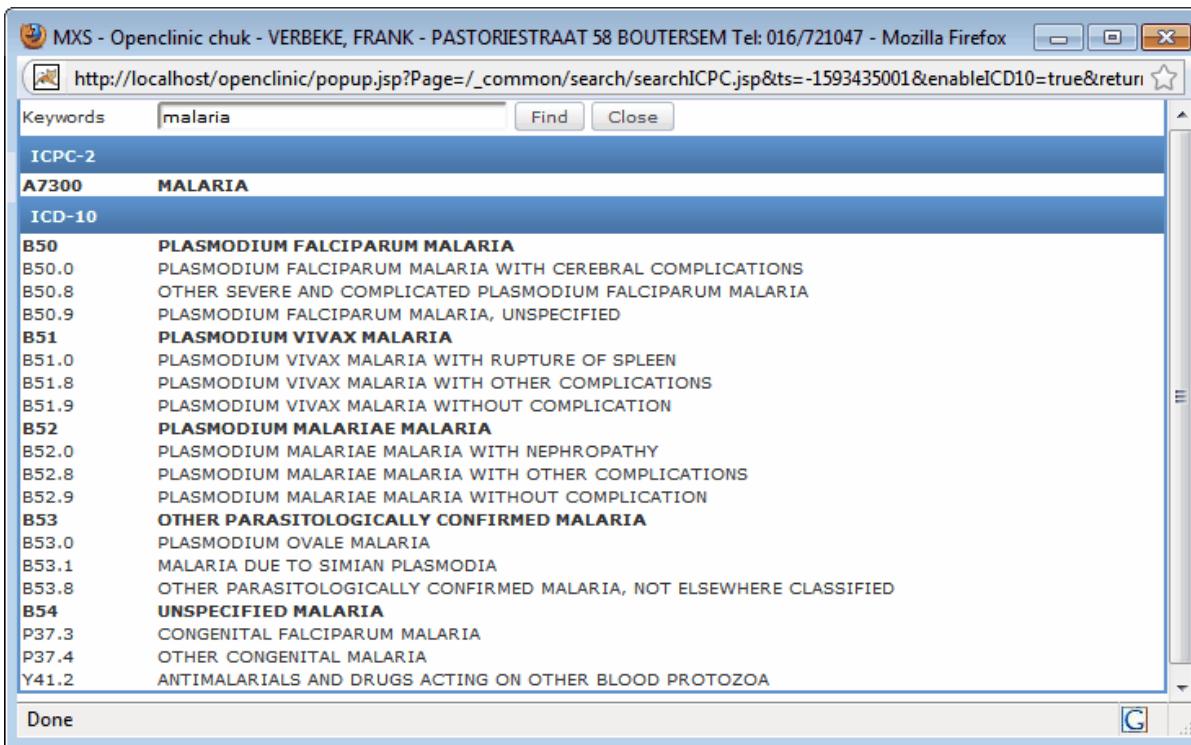
Add diagnosis to My Diagnoses

Diagnosis code

At the top of the screen you will see the list of diagnoses that are already present in "My diagnoses." The first time you open this window, this list will be empty of course. At the bottom of the screen, you can search for a diagnosis to add to the list by clicking the "binoculars" to the right of the field "Diagnosis code". Then, the software displays a search screen for diagnoses:



In the "Keywords" field, you type the keywords based on which you want to seek for a diagnosis and then you click the "Find" button.



The software will return all ICPC-2 codes and ICD-10 codes that match the keywords provided. Select the desired diagnosis by clicking on the corresponding line.

Note: you can add as many ICPC-2 and ICD-10 codes to the "My diagnoses" list as you want

After selecting a diagnosis, you will return to the previous screen. Now click the plus icon and the diagnosis will be added to the list of "My diagnoses."

**My Diagnoses administration**

<u>Code</u>	<u>diagnosis</u>
	A7000 TUBERCULOSIS
	A7300 MALARIA
	T9100 VITAMIN/NUTRITIONAL DEFICIENCY

**Add diagnosis to My Diagnoses**

Diagnosis code



# **Section**



**IX**

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