

MINISTRY OF HEALTH



OpenMRS MODULE USE GUIDE

MODULE NAME: HIV Drugs Reporting

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OVERVIEW

HIV or ARV Drugs (Antiretroviral drugs) are medications used in the treatment of HIV infection. To well manage those drugs, in many Rwanda's Hospitals and Health Centers there is a service in charge of such activity. HIV Drugs Reporting Module will help them to get some reports in an easy way and quickly. Its user should get cumulative patient's information and active's information.

With HIV Drugs Modules the user will be able to do 8 kinds of reports.

Patients on specific drug/drugs, here all ARV Drugs are displayed and user selects a certain number of drugs to report on.

Patients who have stopped drugs, this page allows to know patients who have stopped ARV Drugs and the reason those drugs have been stopped.

Patients' drugs' histories, this is where it will be easy to have many information of the patients (Identification, the programs he belongs to, when he has been enrolled, last encounter, last visit, etc)

Patients who have started treatment in specified period, this page help to know patients who have started taking ARV Drugs in a period provided.

Patients who started prophylaxis drugs in a period this is almost the same with the link explained here above but it concerns only prophylaxis drugs like its name.

Patients who have changed regimen from first to second line, here someone will able to list and view patients who were on regimen called first line and currently on second line regimen.

PreART patients, this means patients who are supposed to start ARVs Drugs but who still being on prophylaxis.

Patients on some drug's categories, this page lists first HIV drugs in categories. To see patients on some of them, someone should select in those categories. The available categories we have now are ARV, Prophylaxis, First Line and Second Line.

There it should be a possibility of using drug management attributes with other OpenMRS data model schema meaning that someone should be able to export data of patients with their drug regimens names, start date, end date within in sequence over a period of time; if someone has taken more than one regimen then it should give abilities of viewing different concepts evolution like, patient CD4 counts, Viral Load and weight.

This module should give possibilities of getting patients by different categories and in a given period.

Once the patients displayed, HIV Drugs Reporting Module gives the facility of exporting them into excel for different analysis.

MODULE FEATURES

Login page

This is the first page you see on the very first use of OpenMRS, and this is where you have to enter the system by specifying correctly your privileges (username and password).



Figure 1. Login page

Username and password

This is the security page, and once you enter the wrong username or password, you will have to correct it before you can log in, otherwise, you will have to check on the system administrator in order to get help.




Figure 2. Login page with Username and Password

- 1) Where we enter the *username*
- 2) Where we enter the *password*

Administration page



Currently logged in as Peter MIRANDA | [Sortir](#) | [Mon profil](#) | [Aide](#)

Accueil | Chercher/créer un patient | Dictionnaire | Activités | Module de Base | Administration

Administration

- Users**
 - [Manage Users](#)
 - [Manage Roles](#)
 - [Manage Privileges](#)
 - [Manage Alerts](#)
- Patients**
 - [Gérer Patients](#)
 - [Chercher patients pour fusionner](#)
 - [Manage Identifier Types](#)
- Person**
 - [Manage Relationship Types](#)
 - [Manage Person Attribute Types](#)
- Rencontres**
 - [Gérer rencontre](#)
 - [Manage Encounter Types](#)
- Locations**
 - [Manage Locations](#)
- Observations**
 - [Manage Observations](#)
- Commandes**
 - [Gérer commandes](#)
 - [Gérer regime de médicaments](#)
 - [Manage Order Types](#)
- Concepts**
 - [View Concept Dictionary](#)
 - [Manage Concept Drugs](#)
 - [Manage Proposed Concepts](#)
 - [Update Concept Words](#)
 - [Derive Concept Sets](#)
 - [Manage Concept Classes](#)
 - [Manage Concept Datatypes](#)
 - [Manage Concept Sources](#)
- Forms**
 - [Manage Forms](#)
 - [Manage Fields](#)
 - [Manage Field Types](#)
- HL7 Messages**
 - [Manage Queued Messages](#)
 - [Manage Deleted Messages](#)
 - [Manage HL7 Errors](#)
- Maintenance**
 - [Set Implementation Id](#)
 - [System Information](#)
 - [Audit Patient Identifiers](#)
 - [View Quick Reports](#)
 - [Manage Global Properties](#)
 - [View Server Log](#)
 - [View Database Changes](#)
- Modules**
 - [Manage Modules](#)
 - [Module Properties](#)
- Logic Module**
 - [Register Default Logic Rules](#)
 - [Logic Module Tester](#)
- Modules de MOH-Trac Plus**
 - [Activités](#)

Activités

Figure 3. Administration page

On this pages is displayed many things including a link called *activities* where you can use a module of choice.

Activities

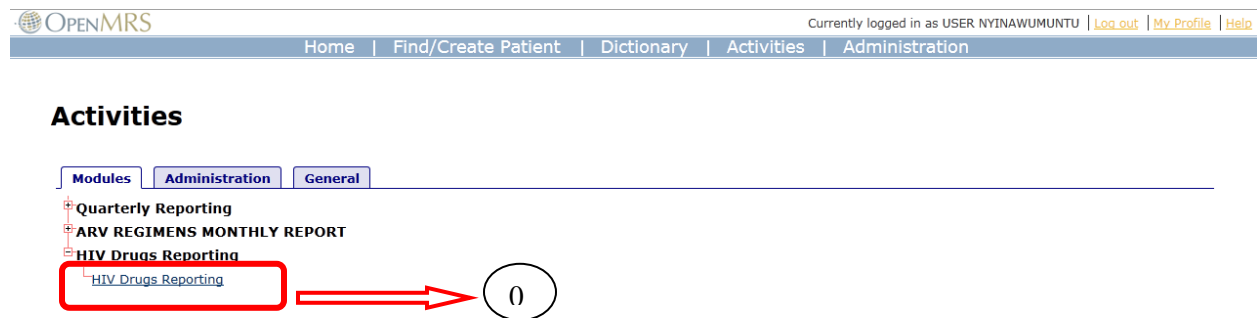


Figure 4. HIV Drugs Report Module

This brings someone to the page where are displayed different openMRS modules so that he can access directly the **HIV Drugs Reporting Module [0]**.

Main Page

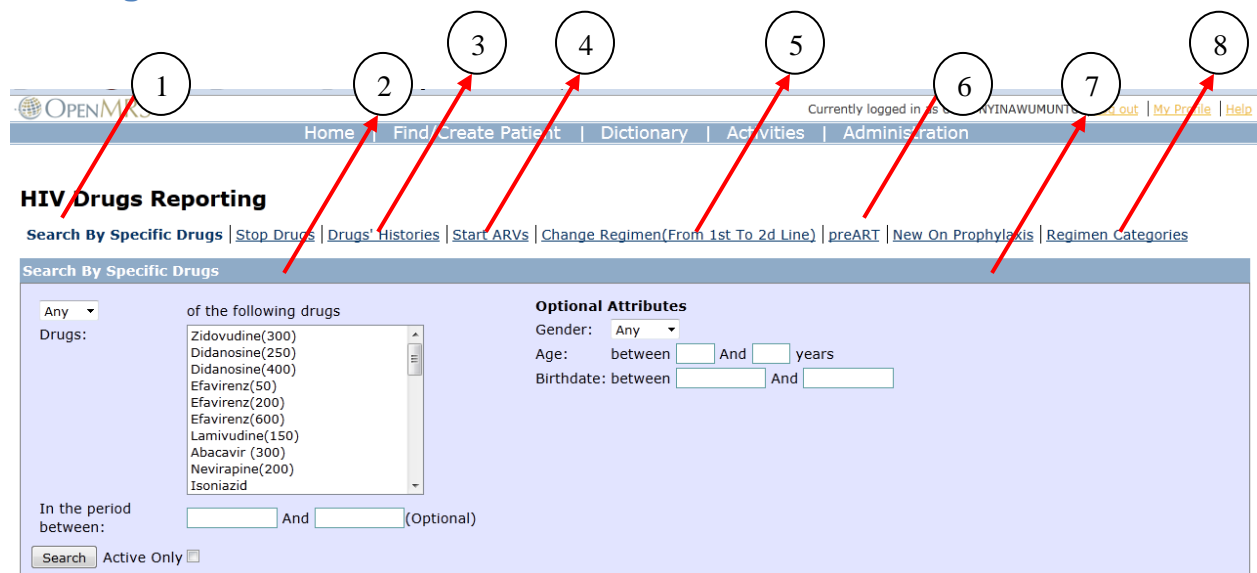


Figure 5. HIV Drugs Report Module Home Page

4.1 Search By Specific Drugs [1]

OPENMRS

Currently logged in as USER NYINAWUMUNTU | [Log out](#) | [My Profile](#) | [Help](#)

[Home](#) | [Find/Create Patient](#) | [Dictionary](#) | [Activities](#) | [Administration](#)

HIV Drugs Reporting

Search By Specific Drugs | [Stop Drugs](#) | [Drugs' Histories](#) | [Start ARVs](#) | [Change Regimen\(From 1st To 2d Line\)](#) | [preART](#) | [New On Prophylaxis](#) | [Regimen Categories](#)

Search By Specific Drugs

Any ▾ of the following drugs

Drugs: Zidovudine(300)
Didanosine(250)
Didanosine(400)
Efavirenz(50)
Efavirenz(200)
Efavirenz(600)
Lamivudine(150)
Abacavir (300)
Nevirapine(200)
Isoniazid

Optional Attributes

Gender: Any ▾

Age: between And years

Birthdate: between And

In the period between: And (Optional)

Search Active Only ☐

Figure 6. Search by Specific Drugs

Being on this page the user can make different searches using any, none and all.

Using Any

OPENMRS

Currently logged in as USER NYINAWUMUNTU | [Log out](#) | [My Profile](#) | [Help](#)

[Home](#) | [Find/Create Patient](#) | [Dictionary](#) | [Activities](#) | [Administration](#)

HIV Drugs Reporting

Search By Specific Drugs | [Stop Drugs](#) | [Drugs' Histories](#) | [Start ARVs](#) | [Change Regimen\(From 1st To 2d Line\)](#) | [preART](#) | [New On Prophylaxis](#) | [Regimen Categories](#)

Search By Specific Drugs

Any ▾
All
None

of the following drugs

Zidovudine(300)
Didanosine(250)
Didanosine(400)
Efavirenz(50)
Efavirenz(200)
Efavirenz(600)
Lamivudine(150)
Abacavir (300)
Nevirapine(200)
Isoniazid

Optional Attributes

Gender: Any ▾

Age: between And years

Birthdate: between And

In the period between: And (Optional)

Search Active Only ☐

When someone selects some drugs in the list and choose **ANY** in the drop down menu it should show patients taking those selected drugs among others.

Example:

On this figure there are 3 selected drugs among others.

When ANY will be used the system will give patients who are taking either 1, either 2 or all 3 drug(s).

Those drugs can be taken with others.

Using All

OPENMRS

Currently logged in as USER NYINAWUMUNTU | [Log out](#) | [My Profile](#) | [Help](#)

[Home](#) | [Find/Create Patient](#) | [Dictionary](#) | [Activities](#) | [Administration](#)

HIV Drugs Reporting

Search By Specific Drugs | [Stop Drugs](#) | [Drugs' Histories](#) | [Start ARVs](#) | [Change Regimen\(From 1st To 2d Line\)](#) | [preART](#) | [New On Prophylaxis](#) | [Regimen Categories](#)

Search By Specific Drugs

All ☐ Any ☒ None ☐

of the following drugs:

- ☒ Zidovudine(300)
- ☒ Didanosine(250)
- ☒ Didanosine(400)
- ☒ Efavirenz(50)
- ☒ Efavirenz(200)
- ☒ Efavirenz(500)
- ☒ Abacavir(300)
- ☒ Nevirapine(200)
- ☐ Isoniazid

Optional Attributes

Gender: Any

Age: between And years

Birthdate: between And

In the period between: And (Optional)

Active Only ☐

When someone selects drugs and choose **ALL** in the drop down menu, it should show patients taking **only** those **selected drugs** or in a combination with some prophylaxis drugs (cotrimoxazole(960), cotrimoxazole(480), cotrimoxazole sirop, Fluconazole and Dapsone).

Example:

The above query will display patients who are currently on regimen like:

- Zidovudine+Lamivudine+Nevirapine
- Zidovudine+Lamivudine+Navirapine+Cotrimoxazole(960)

Using None

OPENMRS

Currently logged in as USER NYINAWUMUNTU | [Log out](#) | [My Profile](#) | [Help](#)

[Home](#) | [Find/Create Patient](#) | [Dictionary](#) | [Activities](#) | [Administration](#)

HIV Drugs Reporting

Search By Specific Drugs | [Stop Drugs](#) | [Drugs' Histories](#) | [Start ARVs](#) | [Change Regimen\(From 1st To 2d Line\)](#) | [preART](#) | [New On Prophylaxis](#) | [Regimen Categories](#)

Search By Specific Drugs

All ☐ Any ☐ **None** ☒

of the following drugs:

- ☐ Zidovudine(300)
- ☐ Didanosine(250)
- ☐ Didanosine(400)
- ☐ Efavirenz(50)
- ☐ Efavirenz(200)
- ☐ Efavirenz(500)
- ☐ Abacavir(300)
- ☐ Nevirapine(200)
- ☐ Isoniazid

Optional Attributes

Gender: Any

Age: between And years

Birthdate: between And

In the period between: And (Optional)

Active Only ☐

When someone select drugs and choose **NONE**, that means that he wants to know the patients taking any of other ARVs except selected ones.

4.2 Stop Drugs [2]

HIV Drugs Reporting

Search By Specific Drugs | **Stop Drugs** | Drugs' Histories | Start ARVs | Change Regimen(From 1st To 2d Line) | preART | New On Prophylaxis | Regimen Categories

Who Stopped

Optional Attributes

Gender: Any

Age: between And years

In the period between: And (Optional)

Stopping Reasons

- TREATMENT COMPLETE
- TUBERCULOSIS TREATMENT COMPLETED
- PATIENT DEFAULTED
- PATIENT STARTING TUBERCULOSIS TREATMENT
- PATIENT DIED
- INTERACTION WITH TUBERCULOSIS DRUG
- PATIENT HAD SIDE EFFECTS
- OTHER NON-CODED
- PATIENT NO LONGER PREGNANT
- REGIMEN FAILURE

Drugs

- Zidovudine(300)
- Didanosine(250)
- Didanosine(400)
- Efavirenz(50)
- Efavirenz(200)
- Efavirenz(600)
- Lamivudine(150)
- Abacavir (300)
- Nevirapine(200)
- Isoniazid

drugorderexport.generic

- ZIDOVUDINE
- DIDANOSINE
- EFAVIRENZ
- LAMIVUDINE
- ABACAVIR
- NEVIRAPINE
- SONIAZID
- RIFAMPICIN
- ETHAMBUTOL
- PYRAZINAMIDE

Search

Figure 7. Stop Drugs

This form has a list of all drugs, their generics and the reasons that can justify why the patient has stopped some drugs.

When someone selects some drug, the generic and the reason, that means that he wants to see the patients who have stopped that drug(s) having the selected generic for a given reason.

4.3 Drugs's histories [3]

HIV Drugs Reporting

Search By Specific Drugs | Stop Drugs | **Drugs' Histories** | Start ARVs | Change Regimen(From 1st To 2d Line) | preART | New On Prophylaxis | Regimen Categories

Drugs's Histories

Optional Attributes

Gender: Any

Age: between And years

Birthdate: between And

Search Active Only ☐

Figure 8. Drugs's histories

This should give patients' histories i.e for each it shows the identification, the programs in which he has been enrolled in, his detailed regimens, etc.

4.4 Start ARV [4]

The screenshot shows the OpenMRS web application interface. At the top, the 'HIV Drugs Reporting' section is active, with the 'Start ARVs' link highlighted in a red box. Below this, the 'Start ARVs' form is displayed. It includes a search area with 'In the period between:' and two input fields for dates, followed by '(Optional)'. There is a 'Search' button and an 'Active Only' checkbox. To the right, under 'Optional Attributes', there are dropdown menus for 'Gender' (set to 'Any') and input fields for 'Age' (between two values) and 'Birthdate' (between two values).

Figure 9. Start ARVS

Here is where this module helps user to know patients who started HIV Drugs in a given period.

4.5 Change Regimen (From First To Second Line) [5]

The screenshot shows the OpenMRS web application interface. The 'Change Regimen(From 1st To 2d Line)' link is highlighted in a red box. Below this, the 'Change Regimen(From 1st To 2d Line)' form is displayed. It includes a search area with 'In the period between:' and two input fields for dates, followed by '(Optional)'. There is a 'Search' button and an 'Active Only' checkbox. To the right, under 'Optional Attributes', there are dropdown menus for 'Gender' (set to 'Any') and input fields for 'Age' (between two values) and 'Birthdate' (between two values).

Figure 10. Change Regimen(From First To Second Line)

Patient on first line is when he is taking any of ARVs except **Kaletra, Indinavir and Ritonavir**.

Patient on second line is when he/she moved from first line (like explained above) to second line i.e when he changed some other drug to Kaletra, Indinavir and Ritonavir.

4.6 preART Patients [6]

The screenshot shows the OpenMRS web application interface. The 'preART' link is highlighted in a red box. Below this, the 'preART' form is displayed. It includes a search area with 'In the period between:' and two input fields for dates, followed by '(Optional)'. There is a 'Search' button and an 'Active Only' checkbox. To the right, under 'Optional Attributes', there are dropdown menus for 'Gender' (set to 'Any') and input fields for 'Age' (between two values) and 'Birthdate' (between two values).

Figure 11. preART Patients

This should give the patients having taking only prophylaxis drugs i.e some of cotrimoxazole(960), cotrimoxazole(480), cotrimoxazole sirop, Fluconazole and Dapsone.

4.7 New On Prophylaxis [7]

The screenshot shows the 'New On Prophylaxis' form within the OpenMRS application. The top navigation bar includes links for Home, Find/Create Patient, Dictionary, Activities, and Administration. The user is logged in as USER NYINAWUMUNTU. The main content area has a breadcrumb trail: Search By Specific Drugs | Stop Drugs | Drugs' Histories | Start ARVs | Change Regimen(From 1st To 2d Line) | preART | **New On Prophylaxis** | Regimen Categories. The form itself has a title bar 'New On Prophylaxis'. It contains a search criteria section with a green border: 'In the period between: [] And [] (Optional)' and a 'Search' button. To the right, under 'Optional Attributes', there are dropdowns for Gender (set to 'Any') and input fields for Age (between [] And [] years) and Birthdate (between [] And []). There is also an 'Active Only' checkbox.

Figure 12. New On Prophylaxis

If it is on this page, someone gets patients who started prophylaxis drugs in a given period.

4.8 Regimen Categories [8]

The screenshot shows the 'Regimen Categories' form within the OpenMRS application. The top navigation bar is identical to Figure 11. The breadcrumb trail is: Search By Specific Drugs | Stop Drugs | Drugs' Histories | Start ARVs | Change Regimen(From 1st To 2d Line) | preART | New On Prophylaxis | **Regimen Categories**. The form has a title bar 'Regimen Categories'. On the left, there is a list of 'Regimen Categories' with checkboxes: ARVs, Prophylaxis, First Line, and Second Line. This list is enclosed in a green box. Below the list is a search criteria section: 'In the period between: [] And [] (Optional)' and a 'Search' button. To the right, under 'Optional Attributes', there are dropdowns for Gender (set to 'Any') and input fields for Age (between [] And [] years) and Birthdate (between [] And []). There is also an 'Active Only' checkbox.

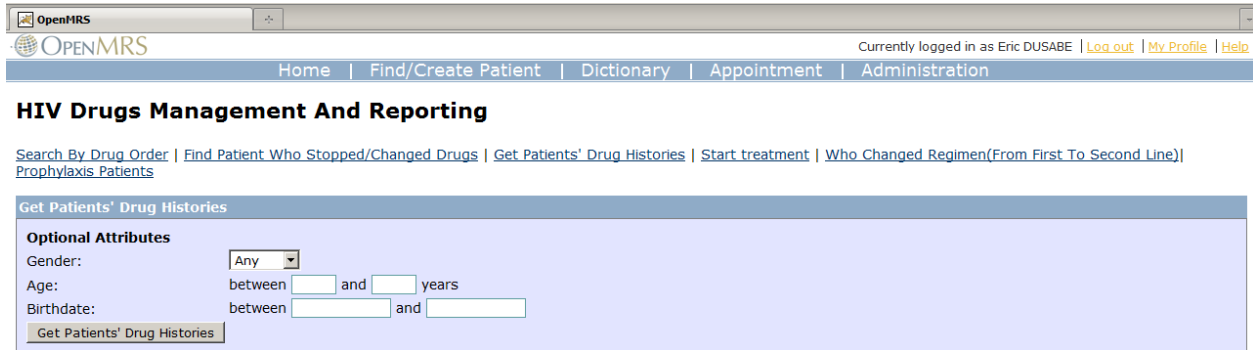
Figure 13. Regimen Categories

Being on this page, it is easy to get patients on a given drug's category. You just click/check on one category or more to see patients who are taking it/them.

Criteria

They are all fields (textfield, list, buttons, ...) displayed on the page. None is mandatory. This means that the user is free to provide what he wants according to the report conditions.

Using attributes



The screenshot shows the OpenMRS web application interface. At the top, there is a navigation bar with links: Home, Find/Create Patient, Dictionary, Appointment, and Administration. The user is logged in as Eric DUSABE. Below the navigation bar, the page title is "HIV Drugs Management And Reporting". There are several links: Search By Drug Order, Find Patient Who Stopped/Changed Drugs, Get Patients' Drug Histories, Start treatment, and Who Changed Regimen(From First To Second Line). The main section is titled "Get Patients' Drug Histories" and contains a form with the following fields:

- Optional Attributes
- Gender: Any (dropdown menu)
- Age: between [] and [] years
- Birthdate: between [] and []
- Get Patients' Drug Histories (button)

Figure 13. Using Patient Attributes

These attributes (gender, age, birthdate) can accompany other criteria to categorize patients.

Active and no Active patients

On every page there is a possibility to consider cumulative patients or patients who are active only.

If it is about cumulative patients, there is no need of checking **Active Only** button.

And if someone wants to displays those who are active only the **Active Only** button must be checked before searching.

Patient is active when he has **not been lost** (i.e if he have had encounter in 3 months basing on reporting period) to follow up or **exited from care**(for more details use Dictionary link and look for a concept called so).

Data Exportation

Figure 14. Data Exportation In Excel Sheet

Above on each list it appears two buttons to export data either in excel or in pdf for different analysis.

Once the list exported, for each patient you can see:

- Id
 - Names
 - Gender
 - Program(s)
 - All Cd4 count and the corresponding observation date(starting on one he had when he started treatment to one he had at the reporting date)
 - Regimes
- Each regimen has his start date, end date, and the drugs that make it

Conclusion

HIV Drugs Reporting module will be helpful when searching for some patients' information. Before users used to go through registers or/and excel sheets when they were asked to elaborate some report relating to the patients on ART. This took a lot of time and it was very easy to generate and give reports with wrong data.

HIV Drugs Reporting module has friendly interfaces with different criteria which will make much easier to generate different types of reports. The reporting activity will not be delaying and reports which will be generated will not contain any kind of error.