

Hospital Health information management system

GUIDELINES FOR THE USERS

Designed for

PRIMARY MEDICAL CARE INSTITUTIONS

Patient Registration, Clinical Data Entry, and Pharmacy Operations



AN INTERVENTION OF

THE PROJECT TO IMPROVE IMPLEMENTATION OF DIGITAL HEALTH INFORMATION MANAGEMENT SYSTEM FOR NCD IN PRIMARY MEDICAL CARE INSTITUTIONS IN MATARA DISTRICT.

Introduction

GUIDELINES FOR HOSPITAL HEALTH INFORMATION MANAGEMENT SYSTEM USERS

In an era defined by technological advancement, the Healthcare industry has experienced a paradigm shift with the integration of electronic medical records (EMR) and electronic health records (EHR). In Sri Lanka, this transformation was started with the Hospital Health Information Management System (HHIMS), an Electronic Medical Records System that has revolutionized primary healthcare settings in Primary Health care Institutions (PMCI).

A project was initiated with the aim of improving the implementation of a Digital Health Information Management System in selected PNCIs in the Matara District. One of the objectives was to improve the implementation of the digital health system in these selected institutions. As part of this initiative, a booklet containing user guidelines for HHIMS was prepared and delivered as one of the project's key deliverables. Developing a user guide to HHIMS is an essential resource to empower healthcare professionals in getting full use of HHIMS.

The HHIMS in Sri Lanka is a multifaceted digital health information management system in patient care. With functionalities ranging from patient registration to clinical data entry, pharmacy operations, and lab operations. This user guide will help healthcare practitioners to navigate through the essential steps in the usage of HHIMS.

This is specifically tailored to address the unique needs of health staff in PNCIs. It offers step-by-step instructions for utilizing HHIMS effectively in the areas of patient registration, clinical data entry, and pharmacy operations.

The expertise of industry professionals, healthcare administrators, and HHIMS specialists have been drawn upon to compile this user guide. Each module is crafted with pictorial guidance to ensure that you can easily use HHIMS in your daily healthcare operations.

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1. How to connect to HHIMS

- 1) Turn on your computer and open a web browser.
- 2) In the browser's address bar, type the server IP address that was provided to you, and then press the enter key.
- 3) Your system manager will give you a user-name and password. Think of these as your personal signature that proves it's really you using the computer. So, always use your own user-name, and remember to log out when you're done using the computer. This is how things are usually done with computers. (Figure 1)
- 4) You can move from one box to the next by pressing the tab key on your keyboard.
- 5) Select your workstation E.g., OPD, Clinic
- 6) On the login screen, there are boxes where you need to enter your user-name and password. After filling them in, click the blue login button.

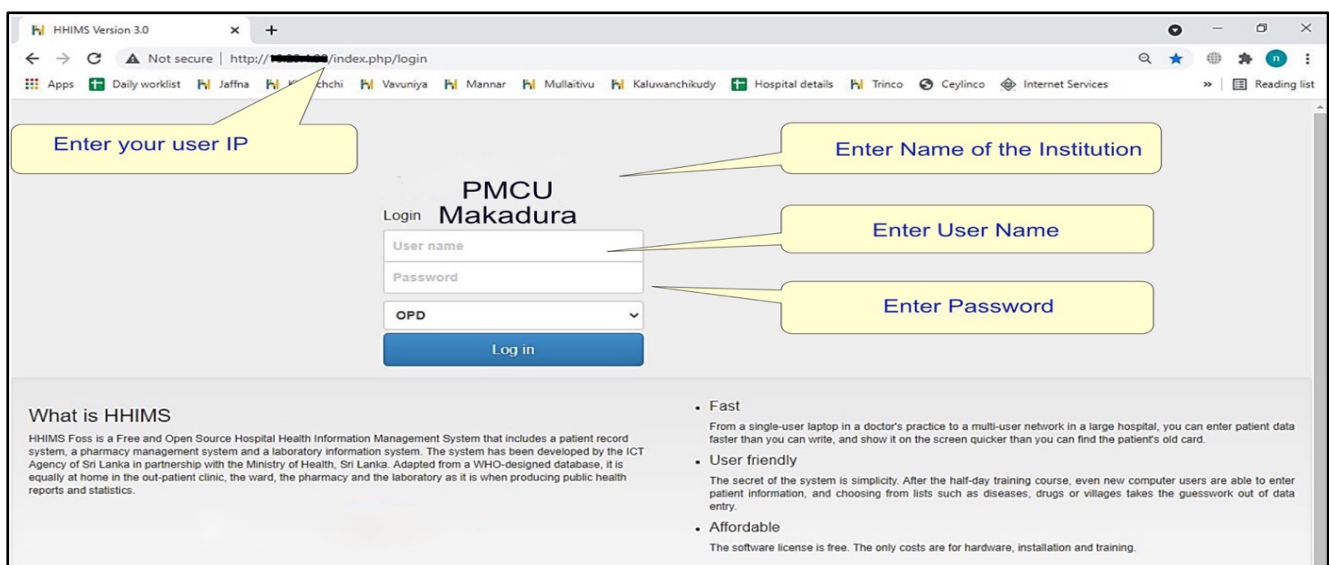


Figure 1: Login Screen

- 7) Add users such as Admin, Doctor, Lab. Tec., Nurse, Pharmacist, ECG Tec. Etc. (Figure 2)

COMPID	ICPCCode	Name	ICDCode	Remarks	isNotify	Active
887		forearm pain right side			0	1
886		forearm pain right side			0	1
885		abscess in mouth			0	1
884		menorrhagia			0	1
883		cough sputum burning sensation of abdomen			0	1
882		whitish discharge			0	1
881		stomach burning			0	1
880		body aches following accident			0	1
859		MSP			0	1
858		burning			0	1

Figure 2: Home page of user group

2. Registering a new patient

1) Registration Process

- Before a patient can receive care or visit the clinic, they must be registered.
- The system assigns a unique number called PHN (Personal Health Number) to each patient for identification.
- PHN will be visible on all screens and printed forms.

2) Avoid Duplicate Registration

- Do not register a patient more than once.
- If a patient is already registered, their details will appear on the right side of the screen when you type their name.
- Always check these details before creating a new entry.

3) Field Explanations

- When you register a new patient following information should be submitted. (Table 1)

Table 1: Information needed in new patient registration

Factor	Guidance to fill
1 National ID	The patient's national identification number.
2 Title	The form of address used in official documents.
3 Name	The patient's first name.
4 Other Name/Initials	Any other names or initials used by the patient.
5 Gender	Type 'F' for female or 'M' for male.

6	Civil Status	Choose from the drop-down list.
7	Ethnicity/Race	Choose from the drop-down list.
8	Blood Group	Select the patient's blood group from the drop-down list.
9	Age	Enter the patient's age
10	Date of Birth	Enter the date in YYYY/MM/DD format. If the exact date is unknown, enter the age.
11	Contact Telephone	Enter the patient's home or mobile phone number.
12	Address 1 and Address 2	Enter the patient's standard addresses.
13	Village	Type a few letters to look up villages, District, Division, and GN Division.
14	Guardian Name	Enter the name of the patient's guardian.
15	Guardian Relationship	If the guardian's name is entered, specify their relationship to the patient.
16	Remarks	Enter any additional patient information.

4) Important Notes

- Avoid entering both Age and Date of Birth; choose one.
- You can store patient information such as their home or mobile phone number, addresses, and guardian details.

5) Saving and Cancelling

- Click "Save" to store the new patient record or any changes made to an existing record.
- Click "Cancel" to exit the screen without saving changes.

3. Creating a patient visit

In HHIMS, doctors can easily pick their seat in the system. Here's how it works:

1. When a doctor logs in at an OPD workstation, they will see a welcome page.
2. On this page, the doctor can choose their assigned OPD room.

- Once they've selected their room, they can begin calling patients right away by clicking the "Start calling patients" button or by pressing CTRL+F.
- If they choose the latter, a small search box will appear. The doctor can then scan a patient's health card using a barcode scanner.
- After scanning, the system will take them to the patient's overview screen.

The screenshot shows a web-based medical application interface. At the top, there is a navigation menu with options like Home, Preferences, Search, Appointments, Clinic, Reports, Admission Refers, Notifications, Clinic Refers, Registry, and Log Out. The main content area is titled 'Patient overview' and features a profile card for Mr. D.T. Somarathna. The profile card includes fields for Full Name, Gender, Date of birth, Age, Civil Status, Guardian info, Contact Numbers, PHN, NIC, Address, and Ethnicity / Race. Below the profile card, there are several expandable sections: 'Previous OPD visits' (a table of visits), 'Previous admissions', 'Clinic visits', 'Examinations', 'Picture Archiving and Communication System Digital Results', 'Rabies Details', 'History', 'Allergies', 'Medication history', 'Latest lab results', 'Patient nursing notes', 'Files attached to the patient record', 'Injections', 'Injury Surveillance', and 'Trauma'. A left sidebar contains 'Commands' (e.g., Create a OPD Visit, Give an Admission) and 'Generic Modules'.

Figure 3: Patient overview screen.

4. Patient overview

This section provides a complete record of a patient's interactions with the hospital. Doctors can access detailed information about the patient, including personal data, medical history, allergies, past OPD visits, previous admissions, clinic visits, and injection details. (Figure 3)

Doctors can make better decisions by reviewing the patient's medical history. To see more about a previous visit, just click on the relevant row. A new screen will open up with more details about that specific visit.

5. Record OPD Visit information

To document a patient's visit, use the 'create an OPD visit' command found on the left side of the patient overview page.(Figure 4) When creating a visit, doctors have various options all in one place, including prescribing medications. They can also choose things like lab tests, injections, treatments, ECG, DICOM, or referring the patient to a clinic or for admission. Doctors can even note any food or drug allergies for that patient.

OPD visit

*Date and time of visit: 2021-10-04 08:26:08

* Onset Date: 2020-12-11

*Doctor: Mr.Nisanthan

*Visit Type: OPD

*Complaint / Injury: Fever,

ICD:

*ILI: Yes No

Remarks: Any remarks

Fields marked with an asterisk must be filled

Lab order	Prescription	Treatment
Allergies	History	Examination
Give injection	Refer to admission	Refer to clinic
ECG	DICOM	Rabies
Injury Surveillance	Refer to JMO	

Figure 4: OPD visit

6. Ordering laboratory Investigations

On this screen, doctors can easily order lab tests for a patient's OPD visit. They can select tests from a dropdown list and even unselect any tests they don't want to order. When they're ready, just click the 'create order' button. (Figure 5)

Home Preferences Search Appointments Clinic Reports Admission Refers Notifications Clinic Refers Day Surgery Registry

Mr. BALAN RAVI / Male / 32Yrs 0Mths 28Dys / Single / Vettukkadu / 0246-000001-7

OPD lab order

Complaint / Injuries : **Teeth/gum disease,** Onset Date : **2021-10-04** Visit type : **OPD**

Doctor : **Mr.Akila Wijesinghe**

Order Date: Priority: **Normal** Test group: **MULTIPLE BIOCHEMISTRY TESTS**

Back to visit

Multiple Lab Orders

Lab ordered for this visit

Available tests

<input checked="" type="checkbox"/>	Serum Electrolytes	MULTIPLE BIOCHEMISTRY TESTS	
<input checked="" type="checkbox"/>	CRP	MULTIPLE BIOCHEMISTRY TESTS	
<input checked="" type="checkbox"/>	test4	MULTIPLE BIOCHEMISTRY TESTS	Bacteriology
<input checked="" type="checkbox"/>	test4	MULTIPLE BIOCHEMISTRY TESTS	Biochemistry
<input checked="" type="checkbox"/>	test5	MULTIPLE BIOCHEMISTRY TESTS	Biochemistry

Test group dropdown options:

- ...Select...
- BIOCHEMISTRY
- Corona
- ECG
- FBS mg %
- Full blood count
- Lipid profile
- MULTIPLE BIOCHEMISTRY TESTS
- PPBS mg %
- Urine Sugar

Select only the tests you need

Create order Cancel

Figure 5: ordering Laboratory Investigations

You can also order multiple lab tests by clicking the 'Multiple Lab Orders' button. When the new screen appears, simply hold down the 'Ctrl' key on your keyboard while selecting the tests you want.

Home Preferences Search Appointments Clinic Reports Admission Refers Notifications Clinic Refers Registry Log Out

Mr. TEST / Male / 39Yrs 5Mths 9Dys / / Jaffna 0267-011731-2

*New Lab Order(s)

* OrderDate:

* Lab Order

- ESR
- FBS
- Full blood count
- hCG
- PPBS
- RBS
- S.Cre
- S.Cre, S.Cho.
- Total Cholesterol
- Urine Full Report

Priority: **Normal**

Remarks:

Fields marked with an asterisk must be filled

Save Cancel

Multiple tests can be selected using Ctrl

7. Issuing a Prescription

There are 3 options in selecting drugs

- a) Select by name
 - b) Select by favorite drugs list
 - c) Select by favorite group
- a) Select by Name

This is the usual way doctors prescribe medications. When a doctor clicks on 'Prescription,' this screen appears. If the doctor chooses a drug by its name, some windows will pop up on the right side of the drug. (Figure 6)

For each drug, doctors can pick the dose, how often it should be taken, and for how long. Then, they need to click 'Add' to put them on the prescription.

The default values for these drugs are shown in gray, and these are set by the pharmacist in the clinical drug table. Doctors can see all the added drugs on the screen and remove them by clicking the 'Delete' option

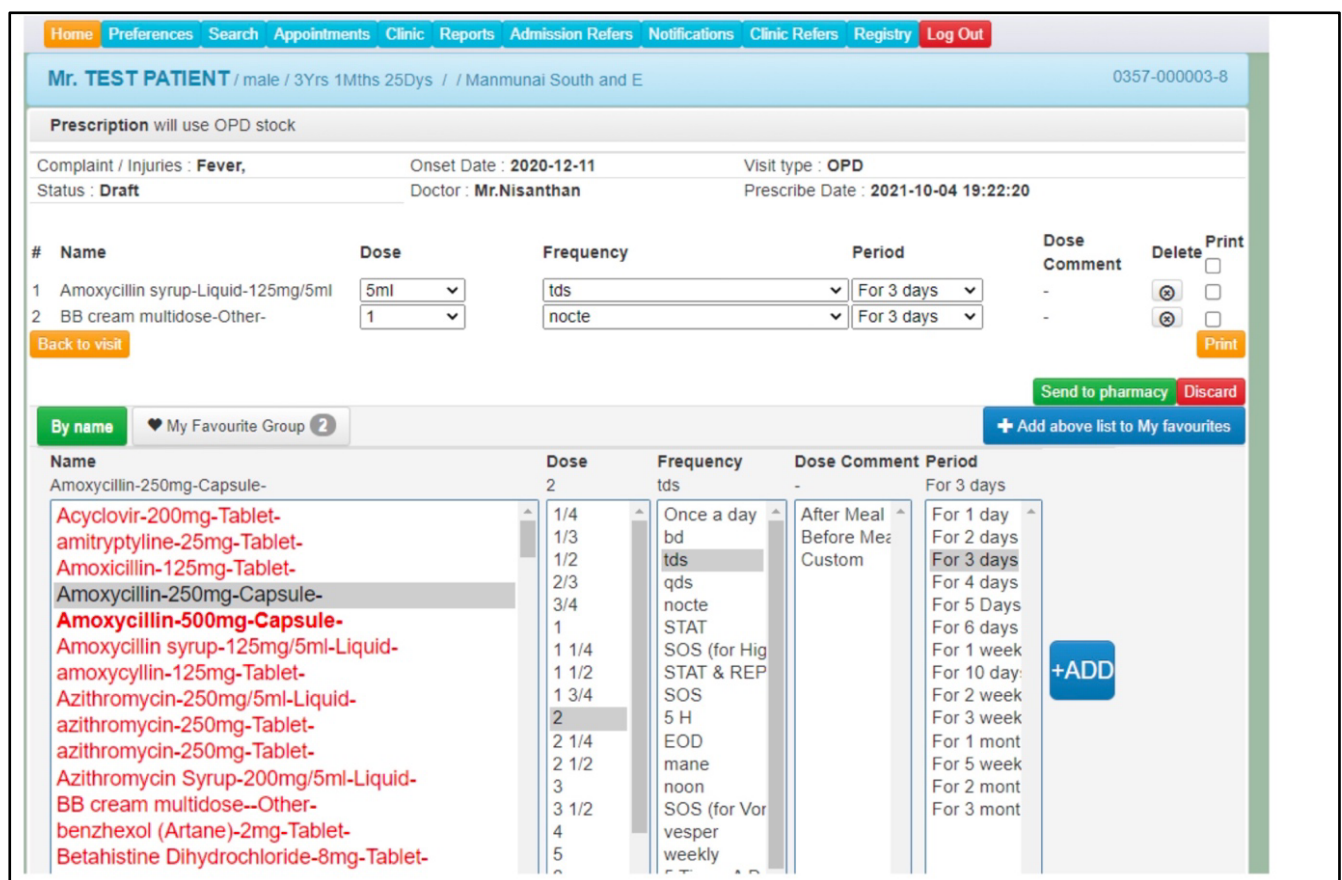


Figure 6: Select by Name

b) Select by favorite drugs list

To create a list of your favorite drugs, go to the 'Preference' menu and select the drugs you want to appear in your 'My Favorites' section when prescribing. These selected favorite drugs won't show up under the general drug list. This way, doctors can save time by easily choosing drugs from their favorite list instead of going through the entire list of available drugs. (Figure 7)

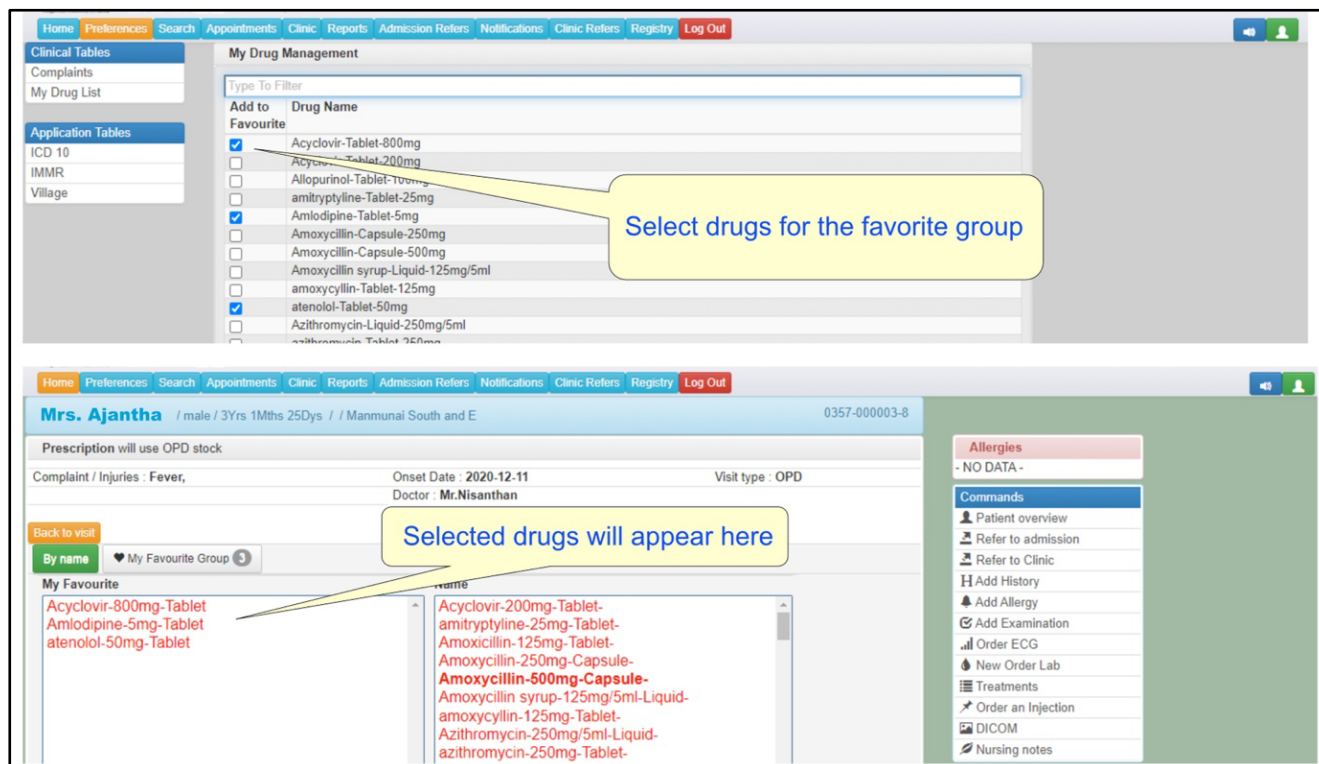


Figure 7: Selecting from favorite drugs list

c) Select by favorite group

HHIMS provides an easy way to prescribe drugs. Doctors can make it even more convenient by creating 'My Favorite Groups' for each patient's condition when they create a visit.

When a doctor clicks 'Add' next to 'List to My Favorite,' a little window pops up where they can give a name to the group. Clicking this button creates the favorite group (Figure 8)

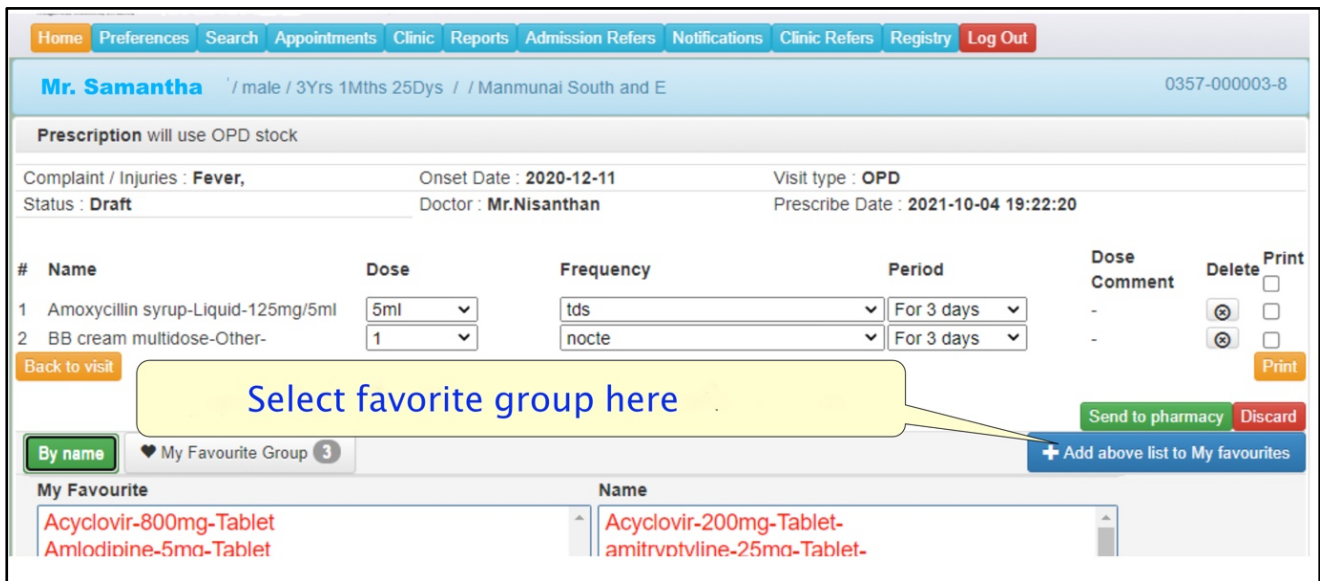


Figure 8: Selection by favorite group

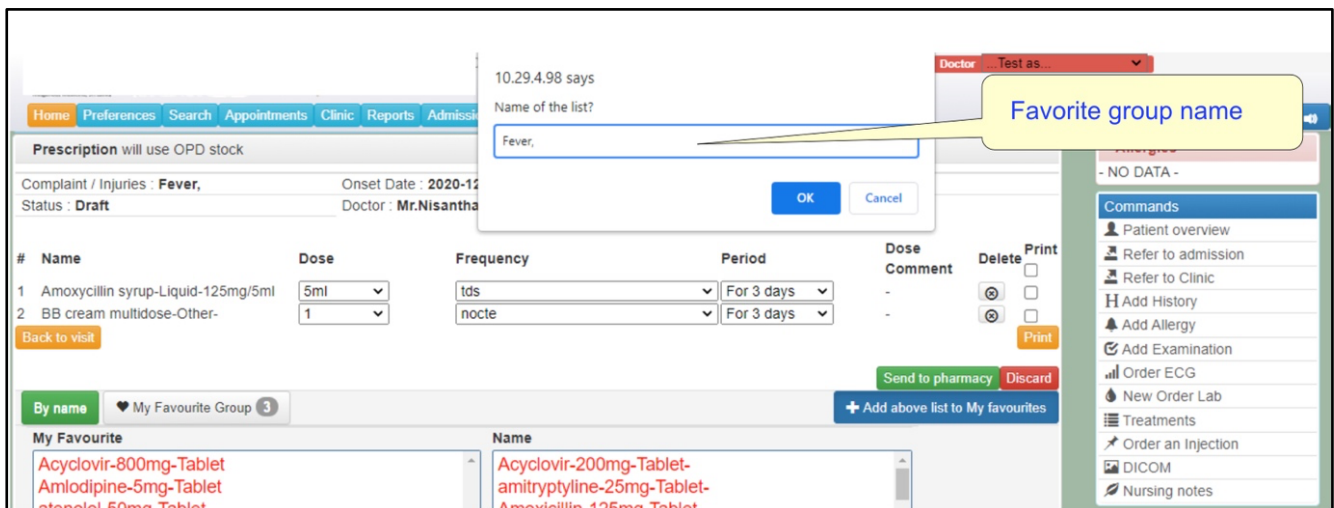


Figure 9: favorite group Name

Once the group is created, you can see it under 'My Favorite Groups.' It's a good idea to give the group a name that relates to the drug and the patient's condition. If another patient comes in with the same condition, you can easily prescribe all the drugs in that group by selecting the group name and then clicking 'Prescribe All.' This can help reduce patient waiting times. (Figure 10)

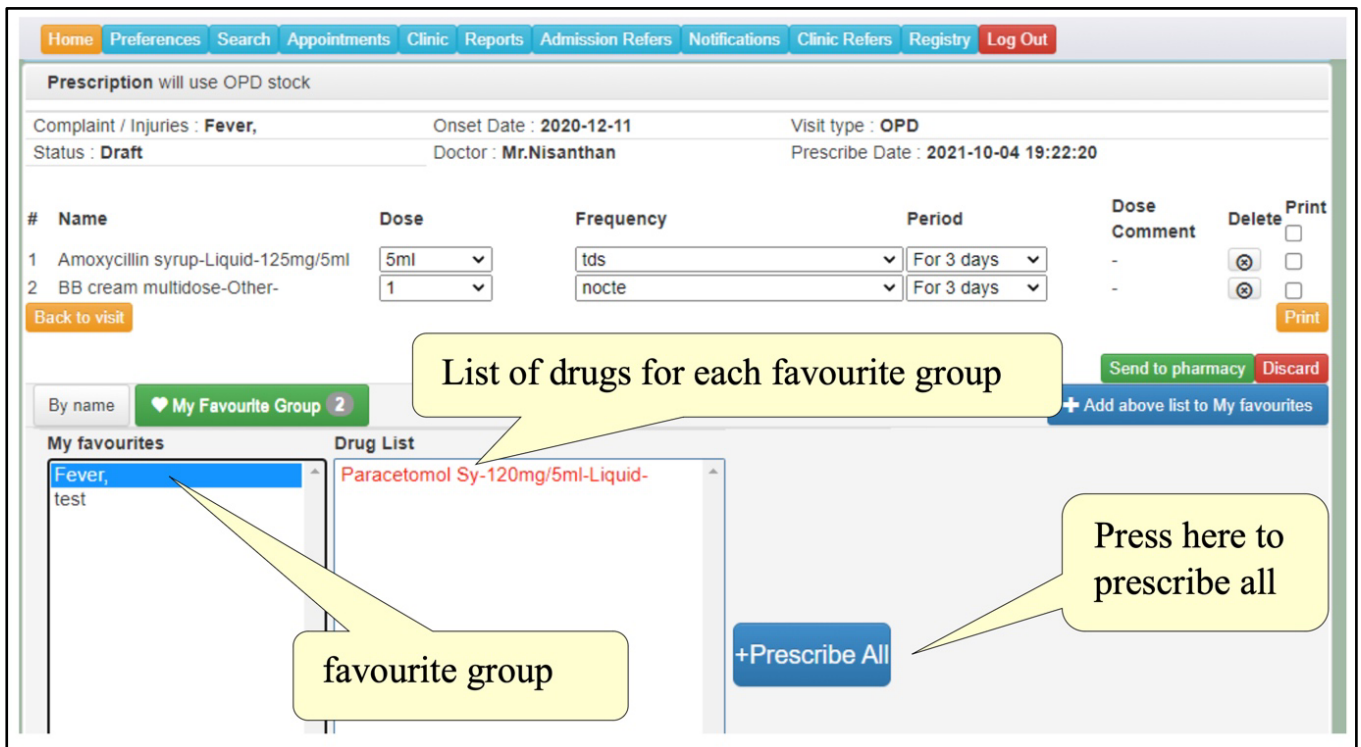


Figure 10: Favorite group

8. Ordering a Clinical or Surgical Procedure

To see all the active treatment procedure, click on the 'Treatment' button. You can choose the one you need and send to the procedure room. If you want to select more than one treatment, hold down the 'Ctrl' key. To add new treatments, go to the 'Preference' menu and find the 'treatment table' under the 'clinical table'. (Figure 11)

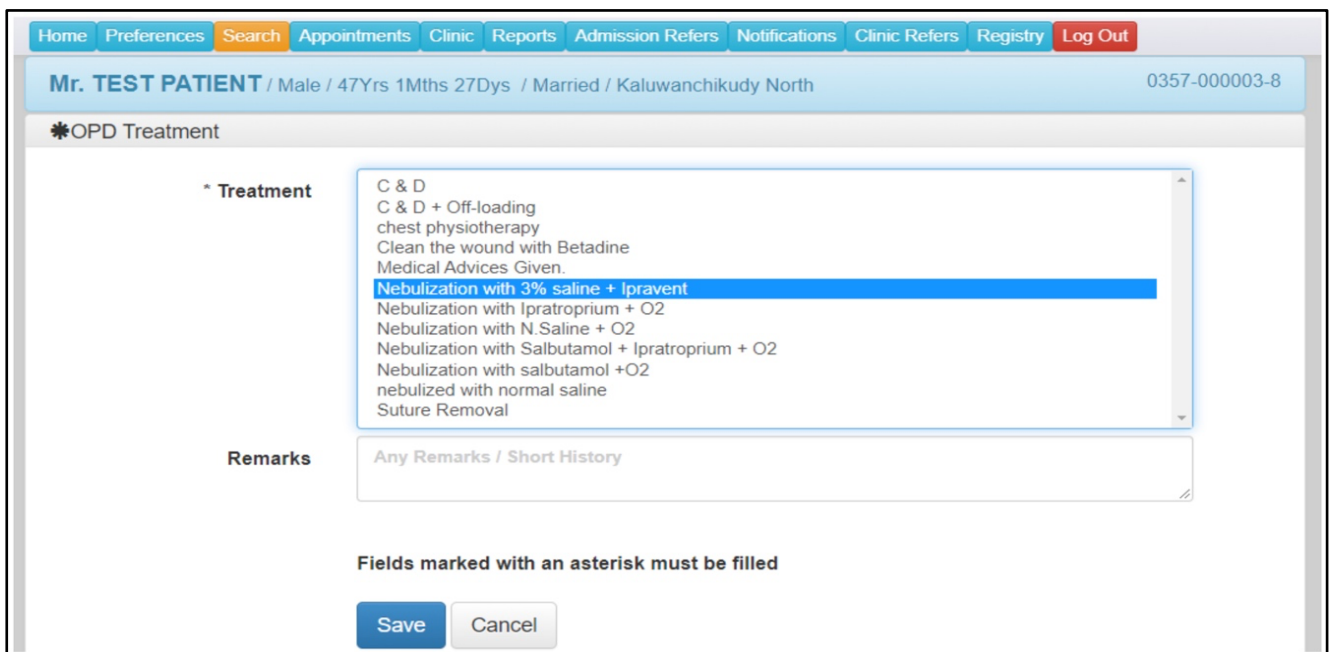
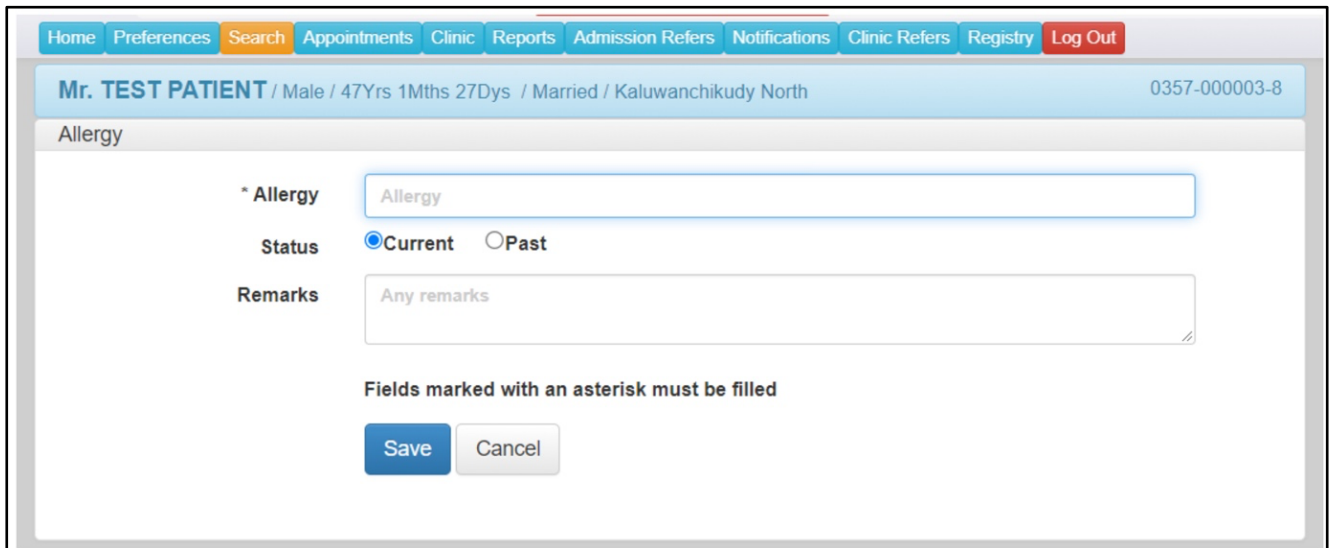


Figure 11: Ordering a clinical procedure

9. Recording Allergies

Patient's allergies can be added to his/her record to pop up in the screen. Details of allergies which may be related food or drug can be added. In order to popup an alert on the screens, you should select status as current. (Table 12)



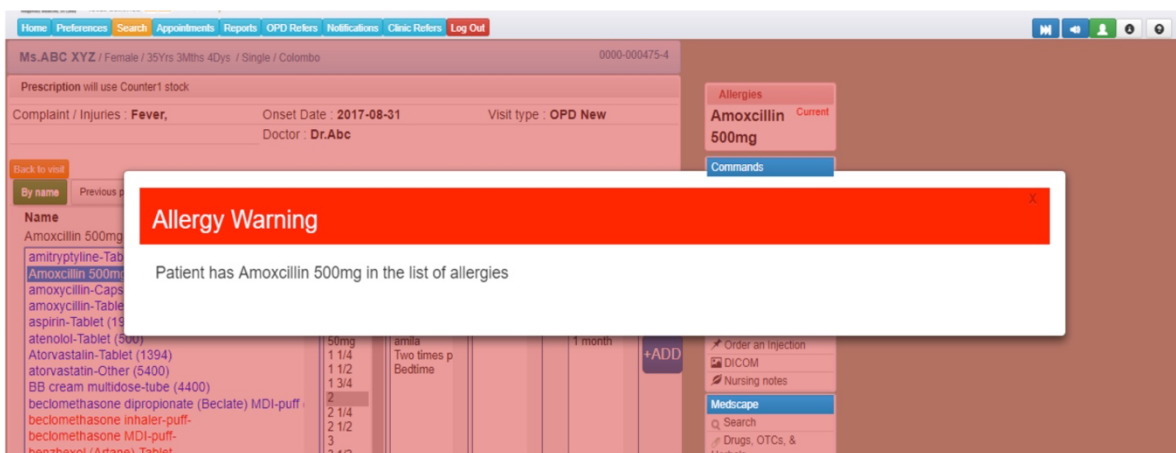
The screenshot shows a web-based form for recording allergies. At the top, there is a navigation bar with buttons for Home, Preferences, Search, Appointments, Clinic, Reports, Admission Refers, Notifications, Clinic Refers, Registry, and Log Out. Below the navigation bar, the patient information is displayed: Mr. TEST PATIENT / Male / 47Yrs 1Mths 27Dys / Married / Kaluwanchikudy North, with a patient ID of 0357-000003-8. The form is titled "Allergy" and contains the following fields:

- * Allergy:** A text input field containing the word "Allergy".
- Status:** Radio buttons for "Current" (selected) and "Past".
- Remarks:** A text area with the placeholder text "Any remarks".

Below the form, there is a note: "Fields marked with an asterisk must be filled". At the bottom of the form, there are two buttons: "Save" and "Cancel".

Figure 12: Recording the allergies of the patient

If the doctor tries to prescribe a drug that's in the patient's allergy record, a warning message will pop up. This way, the doctor can choose a different drug to add to the prescription. (Table 13)

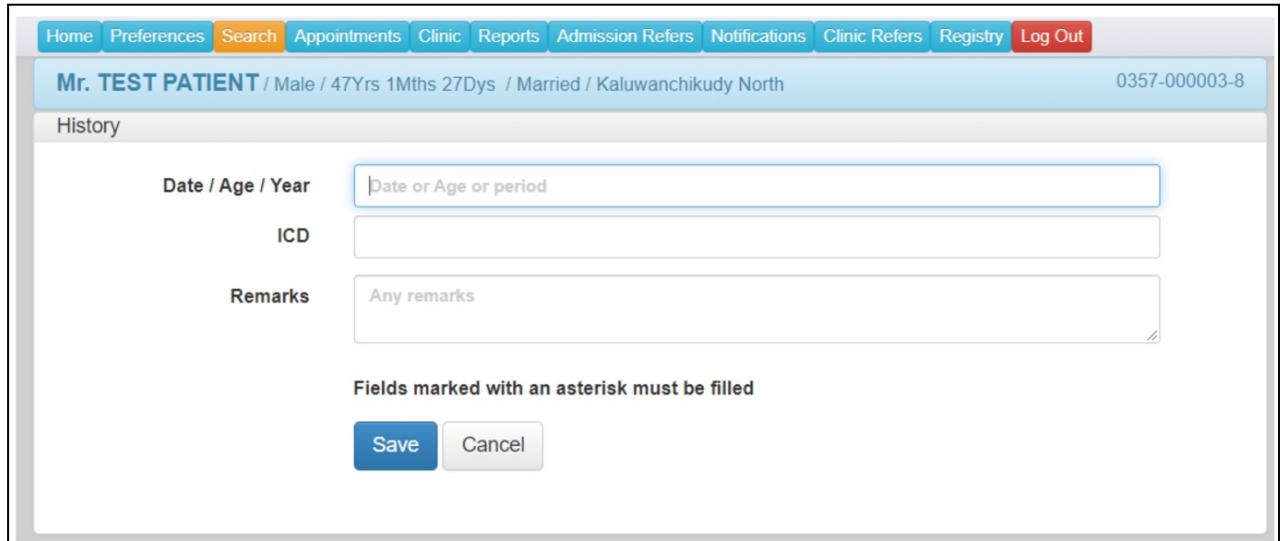


The screenshot shows a prescription screen for a patient named Ms. ABC XYZ / Female / 35Yrs 3Mths 4Dys / Single / Colombo, with patient ID 0000-000475-4. The prescription is for "Counter1 stock". The complaint is "Fever", with an onset date of 2017-08-31 and a visit type of "OPD New". The doctor is Dr. Abc. The allergies section shows "Amoxicillin 500mg" as a current allergy. A red "Allergy Warning" dialog box is displayed in the foreground, stating: "Patient has Amoxicillin 500mg in the list of allergies". The background shows a list of medications and a "Commands" panel with options like "Order an Injection", "DICOM", "Nursing notes", and "Medscape".

Figure 13: Allergy warning

10. Recording the History of the patient

You can document the patient's history here. If you know the exact date, you can enter it. You can also include the relevant ICD code. (Table 14)



The screenshot shows a web-based medical software interface. At the top, there is a navigation menu with buttons for Home, Preferences, Search, Appointments, Clinic, Reports, Admission Refers, Notifications, Clinic Refers, Registry, and Log Out. Below the menu, a patient header displays 'Mr. TEST PATIENT / Male / 47Yrs 1Mths 27Dys / Married / Kaluwanchikudy North' and a patient ID '0357-000003-8'. The main section is titled 'History' and contains three input fields: 'Date / Age / Year' with a placeholder 'Date or Age or period', 'ICD', and 'Remarks' with a placeholder 'Any remarks'. Below these fields is a note: 'Fields marked with an asterisk must be filled'. At the bottom of the form are two buttons: 'Save' and 'Cancel'.

Figure 14:Recording the History of the patient

11. Recording the examination findings

During the visit, the doctor can input examination findings General examination, cardiovascular system including blood pressure, Respiratory system examination findings, Neurological examination findings, Abdominal examination findings, and more. (Figure 15)

Home Preferences Search Appointments Clinic Reports Admission Refers Notifications Clinic Refers Registry Log Out

Mr. Samantha / Male / 47Yrs 1Mths 27Dys / Married / Kaluwanchikudy North 0357-000003-8

Examination

* Examination date 2021-10-05

Weight in Kg

Height in m

BMI Calculate

BP

General Examination

Neck

Abdomen

Neurological Findings

Temperature

Remarks

Fields marked with an asterisk must be filled

Save Cancel

Figure 15: Recording the Examination findings

12. Ordering an injection


You can order injections by using the 'Give an Injection' command. If you need to add multiple injections, just hold down the 'Ctrl' key on your keyboard. Once you select and save the injection, it will appear in the Procedure room for the nurses to administer. To add new injections, go to the 'Preference' menu and find the 'injection table' under the 'clinical table'. (Figure 16)

Figure 16: Ordering Injections

13. Referral Management through HHIMS

In certain situations, an OPD doctor might need to send a patient to a clinic or for admission. Likewise, a clinic doctor may need to refer a patient to another clinic or for admission. It's important to record these details in the patient's record.

HHIMS makes it easy to do this by using the 'Refer to admission' or 'Refer to clinic' command. After the referral is made, the system will show this on the screen, allowing for further processing. (Figure 17)

	Full Name:	Mr. D.T. Somarathna	HIN:	0357-000003-8
	Gender:	Male	NIC:	
	Date of birth:	12/09/1979	Address:	No. 22/66 Kakanadura Matara
	Age:	44y		
	Civil Status:	Married		
	Guardian info:	D.J. Samantha		
Contact Numbers:	041xxxxxxx			

Referring OPD information			
Type: OPD	Date & Time of visit: 2021-10-05 07:06:19	Onset Date: 2020-06-19	Doctor: Mr.Nisanthan
Complaint: Fever,	Notify: NO	ICD:	
Remarks:		CreatedBy: Mr. Nisanthan	Last Access By: Mr. Nisanthan

Referring Clinic Information	
Date & Time of Visit:	Onset Date:
2021-10-05 07:09:53	2020-06-19
Complaint:	Doctor:
Fever,	Mr.Nisanthan
Clinic:	
<div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #e0e0e0; padding: 2px;">-----Select-----</div> <div style="background-color: #e0e0e0; padding: 2px;">-----Select-----</div> <div style="padding: 2px;">ANC</div> <div style="padding: 2px;">Medical Clinic</div> <div style="padding: 2px;">Pediatric Clinic</div> <div style="padding: 2px;">Surgical Clinic</div> <div style="padding: 2px;">VP/OPD</div> </div>	

Refer to Clinic

Figure 17: Referral Management through the system

14. Dispensing drugs

1. Selection of the Department

- Pharmacists should choose their department as either OPD or Clinic when logging into the system. (Figure 18)
- The system will then display relevant information specific to the selected department.

Login

User name

Password

OPD

- OPD
- Clinic
- Inward

10.29.4.98 says

You are logged as 'Pharm'.

You will be redirected to 'Prescription' Patient PHN?

Figure 18: choose the department and enter the PHN

2. Dispensing Drugs

- Upon logging into HHIMS, a screen will appear with options for patient card handling.
- Pharmacists can either scan the patient card using a barcode scanner or manually enter the Patient Health Number (PHN). (Figure 18)
- The system will then redirect to a page displaying the ordered prescriptions for that patient.

3. Prescription Details

- Pharmacists can view the ordered drugs along with their respective quantities to be dispensed.
- Additionally, they can access details of any complaints entered by the doctor.

4. Dispensing Process

- If the drugs are ready to be dispensed to the patient, the pharmacist can simply click on the "Dispense" button to proceed to the next prescription.

The screenshot shows the Pharmacy module interface. At the top, there is a 'Pharmacy Log Out' button. Below that, patient information for 'Mr. TEST PATIENT DENTAL' is displayed, including gender, age, marital status, and address. A '0361-014149-5' ID is also shown. The main section is titled 'OPD Prescription dispensing' and shows 'OPD stock in use'. It lists the complaint as 'Cough', onset date as '2021-01-09', and visit type as 'OPD'. The doctor is 'Mr. Nishath Mohamed' and the prescribe date is '2021-01-09 13:24:10'. A table lists the prescription details:

#	Name	Formulation	Dose	Frequency	Dose Comment	Period	Quantity	Print
1	Acetazolamide-250mg	Tablet	1	bd	-	For 3 days	6 0 in stock	<input type="checkbox"/>

At the bottom of the table, there are buttons for 'Dispense', 'Print', and 'Back to list'. On the right side, there are several panels: 'Allergies' (penicillin, Current), 'Orders for this Visit', 'Other OPD Prescription', 'Other CLINIC Prescription', and 'JMO Referrals'.

Figure 18: Dispensing the drugs

5. Patient Information

- Supplementary patient information will be available on the right side of the screen for reference and context.

15. Pharmacy Statistics

The Pharmacy module provides various useful reports to streamline pharmacists' work. These statistics can also serve administrative purposes.

1. Daily drugs Dispensed
2. Drugs requested from the pharmacy
3. Uncountable drugs dispensed
4. Daily Drugs Dispensed

5. Drugs Stock log
6. Number of Daily Prescription
7. Current Stok balance