Government of Tanzania Hospital Management Information System (GoT-HoMIS)

End-User Manual

[Image showing a sign-in page]

President’s Office – Regional Administration and Local Government (PORALG)
PREAMBLE

This document has been developed to assist the end user of Government of Tanzania hospital Management Information System (GoT-HoMIS) as they interact with the system accomplishing their daily duties.

This document has shown all the steps and process that a particular user can follow and archive their desired task. The end user is expected to follow the processes as described in this manual and in case of any failure they should contact the support personnel assigned to the health facility.

This manual document contains all modules which are well detailed in their process flow and the description is well described through the system captured images. The sub-modules of the system have also been illustrated with screen shots from the system.

Be informed that the data used is the example screen shots is not from the real environment, hence maintaining the security of the patient data/information is one of the major task of anyone who is expected to interact with the system.
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PART ONE

Accessibility and Browser Compatibility

The GoT-HoMIS system is a web based application that runs on modern browsers. In order for the system interface to behave correctly, the users’ computer must have a latest browser that must meet the following conditions:

- The browser must support HTML5
- JavaScript must be enabled on the browser
- Preferably, the browser is Google Chrome or Mozilla Firefox.

The system will be accessible through domain name or IP address as will be directed by the installing technician. Sample address looks as http://192.168.25.32/got-homis

Login

Upon accessing the system address, the browser will load a login page onto which the user shall enter his/her username and password. The user will be provided with initial password but such a password must be changed to the user’s secret passphrase immediately upon first time login. The login page is presented in the figure below.

![System Login Form](image)

Figure 1: System Login Form

Should the login attempt fail, the login form will display “invalid credentials” error message. The user will be required to re-enter correctly his/her login credentials. If the error persists, this may imply that the account is no longer usable and therefore the user has to communicate with the immediate support team personnel.
While using the application, the LAN infrastructure or connectivity to the hosting server may temporarily be lost. Should such a situation happen at the moment of login, the system will display a generic or empty error message. Such a situation shall be resolved by making sure that, the user’s computer has a connection to the LAN before escalating the troubleshooting procedures to the support team.
Changing User Password

Remember that, the initial password used to login into is a default one provided by the support personnel. This password must be changed immediately after initial login. Password update of a user will ensure the security of the system and avoiding tempering of information by unauthorized users. To access the password changing form, click on the icon located on the top left corner of the page and choose **Change Password**.

![Password Reset Page](image)

**Figure 3 Password Reset Page**

![Password Mismatch Error](image)

**Figure 4: Password Mismatch Error**
PART TWO

The GoT-HoMIS system is designed into different modules that together deliver the functionality required to capture and support hospital business process. Users of the system will be required to login and the system shall load onto the interface the corresponding module links. Functionality will be available by clicking on corresponding module icon on the initial logged-in dashboard.

Registration Module

This module is accessible by users with the receptionist role. After successful login in the system, reception module will be loaded in the Application Dashboard.

To enter the registration module, click on the registration icon to load the module. The Registration Module contains three functionalities which are:

- Patient registration and initiating patient visit
- Edit existing patient
- Corpse registration

Figure 4: Receptionist Dashboard

Figure 6: Registration Module Items
Patient Registration

Patient registration starts when patient arrives at the reception window, here they will find a data clerk/receptionist who will ask a few questions in order to fill the patient registration form. Patient registration involves activities such as capturing accurate demographic details of new patients, updating of patients information, health card validation and deciding on the required mechanism of bills payment. Click on the [REGISTER PATIENT] menu button to obtain a new patient registration. After filling all required fields, click on the [REGISTER] button to save the patient’s data. The saving action will lead to generation of MRN number of the patient. The system will bring back a printable OUT-PATIENT CARD that the receptionist shall print and handle to the patient.

Figure 5: New Patient Registration

Figure 6: Patient Records Card on Successful Patient Registration
Managing Categories and Services

Patient categories i.e. cost sharing, exempted, NHIF, NSSF and others are managed in the managing category and services page. After successful registration of new patient, the receptionist will click [GO TO ENCOUNTER] to get back to the menus page. Search the registered patient by typing either name of the patient or Medical Record Number (MRN) of the patient (the one on the printed card). Utilize the suggestion list by choosing the correct entry as you type.

![Figure 9: Searching patient name](image)

The encounter form is intended to initiate “that day visit” of the patient. Note that, the value of the input fields should be “selected” when suggestions are shown; **your own entry will not be recognized.** If the user has manually entered a value on such field, attempt to save the form will bring the message “Please fill all required fields”.

On the encounter form, specify the patient’s payment category (Cost Sharing, NHIF, Exemption …) and Service (in this case, consultation). The Re-attend checkbox will be marked [✓] if the patient is re-attending for a follow-up. Click on the [SUBMIT] button to save the record. At this stage, the patient’s visit has been initiated and the patient can now proceed to the cashier if his/her payment category requires payment otherwise go to consultation room queue.

![Figure 7: Managing Category and Services](image)
Updating Patient Records

This menu item is used to update patient details of an already registered patient. Click on the [Edit Patient] button from the Registration Module menus. Enter the patient MRN on the search box and select the corresponding patient. Edit form entries accordingly and then click the [UPDATE] button to update the patient information. Note that, the Outpatient Card can be reprinted by visiting this form.

![Edit Patient form]

Figure 8: Updating patient records

Registering a Corpse

The mortuary installation of a facility normally receives dead bodies from two sources namely deceased patients who were receiving treatment at the facility or ones brought to the facility to get mortuary services. In the later case, corpse registration will be handled at the reception using the [REGISTER CORPSE] menu button of the registration module. On the registration dashboard the registrar/receptionist will click [REGISTER CORPSE] button to load the Dead body registration form. After filling all required fields and submitting the form, the data will be sent to the Mortuary module.
This module is responsible for collecting bills and printing receipts. The module is accessible to users with cashier role. The normal login of the system will be used to get access to the module. After successful login of the cashier, payment dashboard will be loaded with cashier icon.
From the dashboard cashier will click on the Payments icon to open payment form. Payment page has three sections which are payment details, bills and Payment Methods.

![Billing page](image)

**Figure 11: Billing page**

**Payment Details**

In the input field under this section of the form, enter the customer MRN. Click on the “PREVIEW BILL” to view the patient bill.

**Bill preview**

It shows item name, item price, item quantity and Total price. Item name can be services, procedure and medicine. The total is worked out of the quantity provided and price.

**Payment Methods**

On payment methods cashier can select payment type from the “select Payment Option” which can either be card payment or cash payment. After selecting payment option cashier will click “PROCESS BILL” to produce receipt. The system generates a receipt acknowledgment that specifies the payment has been received by the cashier. The receipt bears patient details i.e. Patient name, Medical Record Number, Health Card Number, Receipt Number and the processing staff details which are Staff Name, Designation and Receipt date.
Viewing Cashier’s Total Transactions

The system tracks the total transactions per cashier. In order to view the value collected by a cashier over a specific range of time; select the start date in the “From” field and the end date in the “To” field. Click on the [TRANSACTION] button to view the total sale by the cashier.
**Nurse**

**Vital Sign Module**

Vital signs are clinical measurements that indicate the state of patient’s essential body functions. This module is accessible by users with nurse role in the system. After successfully login Nurse Application dashboard will be loaded and nurse will click vital sign icon then vital sign forms will be opened. The process of taking vital sign will start after searching and selecting a patient from the "**search patient**" field. The nurse will then fill the vital signs measurements on the loaded form and then click the **"SAVE VITALS" button** to save the records. Each record of vital signs taken from a patient will be available to the attending doctor as part of the patient’s profile. The list of various vital sign measurements will be grouped by the date on which they were recorded.

![Application Dashboard](image)

**Figure 12 Nurse Application Dashboard**
Outpatient Department (OPD) Module

OPD is the section of the hospital where patients are provided medical consultations and other allied services when visiting a health facility. The module is accessible to users with doctor’s role. After successful login, Doctor will click Outpatient icons to open Patient management page.
Before using any sub-category Doctor must search patient in the “**Type medical record number**” field. OPD module used by Doctors for medical consultation and other services. Module has the following sub-categories.

- Previous profile
- Clerk sheet
- Diagnosis
- Investigation
- Confirmed diagnosis
- Management
- Disposition
- Blood Request

### Previous Profile

Patient previous profile will be loaded in this sub-category. To view patient history Doctor must search patient name or medical record number in the “**Type medical record number**” field, after that patient record information will be loaded in the accordions. In previous profile tab there are three other categories i.e. OBSERVATION, PHYSICAL EXAMINATION AND ADMISSION DETAILS.

- Vital Signs and Anthropometrics—contains all vital signs as recorded by the nurse. To view vital sign click on the label “**Vital Signs and Anthropometrics**” and then click to the date that will displayed below it.
- History – Contains Chief complains, Review of systems, past medical History, Birth History, Gynecological and Obstetrics, Family and Social History.
- Diagnosis – contains all previous records relating to diagnosis.
- Physical examination – This tab used to view previous record of Musculoskeletal, Respiratory System, Cardiovascular System, Gastrointestinal System, Central Nervous System, Genitourinary and Endocrine System.

**Clerk Sheet**

Clerk sheet tab contains five accordions, which are;

**History and Examination** – To open this accordion click “History and Examination” tab to open Chief complain forms and Review of other Systems. To fill this form Doctor must search phrase in the field, select duration and duration list then click “ADD”. After clicking add button system will show the list of complains, if there are any mistakes occurred during filling complains form, Doctor will click “(-)” sign to remove complains from the list. On the other hand Doctor is able to see the particulars of the informant in the case the patient came someone to assist her/him, also doctor can directly access the vital signs recorded by the nurse.

![Figure 15 History and Examination form](image)

**Past Medical History** - In past medical history patient will express concerns to the doctor, and doctor will search phrase in the form accordingly. This tab contains five form fields which are Allergies, Current Medication, illness, Admission and Immunization.
Gynecological and Obstetric History - To open gynecological and obstetric history, doctor will click the accordion and table form will be displayed. The table form contains two categories Gynecology and Obstetrics history with their forms fields.

Physical examination - On physical examination doctor can examine in terms of musculoskeletal, Respiratory, cardiovascular, Gastrointestinal, Genitourinary, Centro nervous and Endocrine. In each of the above the doctor will be examining by searching...
paraphrase according to different systems in four categories which are inspection, palpation, percussion and Auscultation. After searching, information will be displayed in three categories which are System, Category, Observation and Actions.

Figure 18: Physical Examination Tab

**Family History.** Family history comprise six fields forms, at this phase all information will be needed to be filled manually by the doctor, and doctor will click “SAVE” to store the patient data.

Figure x: Family History.
**Family and Social history** - Contains four form fields which are chronic illness in the family, substance abuse, Adoption, Others where doctor will search paraphrase in the first field form and fill in the left three fields accordingly and then click “SAVE” button to submit them.

![Figure 19: Family and Social History tab](image)

**Diagnosis**

Another sub-category of patient management is diagnosis. To open diagnosis click in the “DIAGNOSIS” tab, the two form field will open i.e. Provisional Diagnosis and Differential diagnosis, in both two fields doctor can search in the form and after adding diagnosis doctor will click “ADD DIAGNOSIS” to save diagnosis.
Investigation

On investigation doctor will click will have two choices, laboratory or Radiology. If the Doctor will click laboratory accordion to suggest investigation to be performed in the Laboratory. After opening laboratory tab, doctor will able to view three category which are Biochemistry, Hematology, Histopathology and Microbiology while if the Doctor will click Radiology other options will appear too. To open them doctor will click the links and other categories will be opened and doctor will be ought to follow the procedure provided.
The laboratory tab will have the following sub tabs which after clicking them they will take the doctor to the respective type of inspections.

For Radiology
The Radiology tab will have the following sub tabs which after clicking them they will take the doctor to the respective type of radiology investigation if is the CT scan, X-RAY, ultrasound etc.

**Confirmed Diagnosis**

On opening confirmed diagnosis, click “CONFIRMED DIAGNOSIS” tab, after placing or searching the client in search bar, system will load investigated results and confirmed diagnosis field where doctor will search paraphrase. After finishing searching doctor will click “ADD CONFIRMED” to save confirmed diagnosis.
Management

In this sub-category doctor will click “MANAGEMENT” button to open new prescription form. After opening the form, doctor will see two buttons named “procedures” where by the doctor will be able to categorize and what describe what kind of procedures should be offered to the patient, and “treatment” where by the doctor will be able to describe what kind of medicine should be offered to the patient. Also doctor will be able to see the previous treatment and medication offered to the patient.

Figure 22 Management tab
Disposition

To open disposition doctor will click “DISPOSITION” to select either of the following services Admission, Internal referral, External Referral, or Diseased. On admission the admission notes will be opened and doctor will search ward and its accommodation fee. After filling all form fields, doctor will click “ADMIT THIS PATIENT” to admit the patient. On internal referral doctor will choose the department to refer a patient and reason for the referral. After filling internal referral doctor will click “SEND” to send internal referral. Also the doctor can externally refer the patient to the external hospital and lastly for diseased people should be sent to mortuary.

Blood Request

At this sub module doctor will be able to request blood bank from the blood Bank, doctor will be needed to fill in the form to get the service from the blood bank.

Casualty Module

Emergency department can be assessed either by doctor or any authorized person. To register emergency patient click “REGISTRATION” and form fields will be opened i.e. First name, Middle name, Last name, Age, Gender, Accident type, place of accident, Relative and Relationship. After finishing the registration form click “SUBMIT” to save data.
Another sub-category in Casualty module is “PROCEDURES”. On procedures tab there are two form fields which are” MRN/PATIENT NAME SEARCH” and “PROCEDURE/OPERATION “ where doctor will search the name of the patient in order to recommend procedure/operation. After finishing to fill the form doctor will click “SUBMIT” to save the procedure.

The next tab is “TRAUMA” after opening form doctor will search the patient first before filling the trauma form. Trauma form has Systolic blood pressure on admission field, Neurological Status on admission, Score for serious injuries, Respiratory rate on Admission, Kampala Trauma score II Total, Occupation, place where injury occurred, cause of injury, activity at a time of injury, injury event date, patient arrival date, doctor attendance date, score for serious injuries, palatable pulse on admission, disposition, status at two week, mode of arrival and intent. After finishing filling the form doctor will click “SUBMIT” button to save data in the database.
Another tab is “ADULT EMERGENCY” where Quick references will be searched in the “search quick references”. Quick references are categorized on Complaints, Nursing, Laboratory, Medication and Radiology.

![Quick References](image)

**Figure 24** Quick reference of Fever & Fever w/immunocompromised patient

![Quick References](image)

**Figure 25** Quick references of GI Bleed

The last tab on the module is the “EMERGENCY ROOM”. Click on the button “EMERGENCY ROOM” and the corresponding forms will be opened with different form fields. Before filling the form doctor must search the patient in the “search patient” after finishing filling the form doctor will click “SUBMIT” to save data in the database.
IPD Module

This module is also accessible to users with the doctor role in the system. After successfully login click **INPATIENTS** icon to open IPD DASHBOARD. The dashboard has various tabs where by some of them do the same as in the OPD, and other new tabs. The dashboard has the following:

- Previous profile: -this show the previous information of the patient,
- Procedures: - at this part doctor can specify the procedure that can be offered to the patient.
- Continuation notes: - at this part doctor can enter continuation notes by typing at the space provided.
- Disposition: - at this part doctor or nurse can perform a lot of tasks including all process of discharging the patient, internal referral, sending the corpse to the mortuary.
Figure 27 Doctor Application Dashboard

Figure 28 Inpatient Dashboard
Blood Request, at this sub module doctor will be able to see all blood request from site that request the blood. Also doctor will be able to issue the blood whenever necessary.

Blood storage,

Blood stock, at this sub-module the doctor will be able to see the balance of the remaining blood at the store.
**External Blood Request**, at this module the doctor will be able to view all external blood request from other facility and offer them whenever possible according to the bank of the requested bank.
Nursing Care Management

Nursing care management page has nine (9) tabs, which are:

- Vitals
- Treatments
- Intake/Output
- Nursing care
- Observation
- Checklist
- To be admitted
- Reports
- Discharges.

Figure 29 Nursing Care Management Page

Vitals

In this sub-category patients measurements will be filled in the forms including body weight, body temperature, systolic pressure, diastolic pressure, respiratory rate, heart rate, oxygen saturation. After filling all field click “SAVE VITALS” to save patient measurements.
Treatments

To use this tab first search patient name after that preview of the prescription of the patient will loaded in six categories i.e. Medicine, Unit, Frequency, Dose, Route and Quantity. After viewing preview enter remark and then click “SAVE NOTES”.

Figure 30 Vitals Capture Form

Figure 38: Treatments
Intake/Output

Inputs contain three categories i.e. I.V, ORAL, NGT and Output contains four categories which are VOMIT, URINE, STOOL, NGT. After finishing entering information click “SAVE” to store information’s.

NURSING CARE has Nursing Care plans and new care plan form field where by nursing care plans can be viewed and in new care plan plans for the patient can be inserted. After finishing the form click “SAVE PLAN” to save information.

![Figure 39: Intake/Output](image)

Observation

Observations are grouped in five categories which are Vital signs, Intake, Output, Treatments and Remarks with their sub categories. To view all information system user must search the patient first in the “SEARCH PATIENT” field.

![Figure 31 Observation](image)
Checklist

To use checklist search a patient by using either name or MRN after that fill checklist form by writing some description on patient case not presented, patient catheterized, patient-dentures removed, patient pre anesthetic done, patient consent form signed, patient investigation results, patient all documents present, patient canulation and pre load done, patient equipment complete, patient identification tag present, patient premedication given, patient starvation accessed, patient observation done BP and Anaesthetist name. After finishing the form click “SUBMIT” to save.

Figure 32 Checklist

TO BE ADMITTED - Shows wards to be admitted, gender, Medical record Number, Action and patient name.

Figure 33 To Be Admitted

REPORTS - Nursing care management report can either be admitted patients report or to be discharged report. In order to view report search patient first in the “search patient” field.
Figure 34 Reports

DISCHARGE - Discharge has notifications on the right side of the tab. Notification count number of discharged patients per facility which will be shown in the table with some descriptions.

Figure 35 Discharge

Clinical Services

Clinical services have six sub-categories which are dashboard, procedures, continuation notes, disposition, medication and blood request.

DASHBOARD - Signifies previous profile of the patient and previous profile categories.

PROCEDURES - On procedure click “ADD” to add procedures and operation. After finishing adding procedures and operations click “SAVE” to save changes.
**CONTINUATION NOTES** – Add your notes in the “**enter your notes here**” after finishing to add notes click “**SAVE NOTES**”.

**DISPOSITION**- On disposition choose discharge type whether deceased, normal discharge, referral, internal. After opening the discharge type different forms will be opened.
MEDICATION - On medication search medicine, enter unit, frequency, route, dose and system will generate the quantity of medicine. After that, click “ADD” and then “SAVE”. After finishing the first form continue with the next by filling required information as it directed by placeholders.

BLOOD REQUEST – In this tab fill BHT No, ABO, Weight and RhD to request blood on “REQUEST BLOOD” button.
Dispensing Module

This module is accessible by user of the system with dispensing role. A dispenser may have login account to different dispensing windows. The Module allows the user to perform the following tasks:

a) Dispense medicine
b) Receiving medicine
c) Storage Control
d) Request Medicine

After successfully login, the user will be presented with the following interface:

Figure 50: Dispensing Module

Figure 51: Dispenser Module Menu Items
**Dispense medicine**

A dispenser will have to search for a patient using patient name or patient medical record number (MRN) into the search box as showed into the figure below.

A dispenser will select the patient and the list of medicine to be dispensed will be displayed automatically below the patient search box.

![Figure 52: Medication to Dispense to a Patient](image)

**Receiving medicine**

At the dispensing room a dispenser will have to request for items from the sub store through the system and confirm receiving of the items and quantity after sub store hand out the items.

![Figure 52: Receiving Supplies from Sub store](image)
Storage Control

A Dispenser can view balance of the dispensing room by item name, batch number, balance, and store.

![Dispensing Department](image)

Figure 53: List of Supplies Balances in the Dispensing Store

A dispenser can also view history of the item that where ordered and handed out by the sub store to the dispensing room as showed on the room below.

![Dispensing Department](image)

Figure 54: Record of Received Supplies

Request Medicine

A dispenser will request medicine/item through the system by filling in the form and specify which sub store to request to.
A dispenser can also view requested item form the requested sub store and view the status of the request.

**Referrals Module**

This is a referral module. This module allows a doctor to refer a patient to another hospital and also view incoming referrals from another hospital. It also helps in previewing incoming referral case for early preparations or re-sends the referral to another hospital in case the case cannot be handled in that hospital.

a. Send referral case  
b. Review incoming referral  
c. Send feedback
A doctor will have to login into the system in order to access referral module on the application dashboard. By clicking to referral module link a doctor will be directed to referral disboard.

**Figure 57: Referral Module**

**Figure 58: Referral Dashboard Menu Items**

### Outgoing Referral

A doctor will search for a patient on the search box and patient information will be loaded into the referral form. A doctor will have to select which information to be sent to the referring hospital and add more information according to the case. Type of referral, referring region, referring facility are more files that a doctor will have to specify. A doctor will then print referral form.
Incoming Referral

Personnel on duty at the referral facility will view the incoming referral depending on the receiving department belonging. More details of the referral can be viewed in advance.
Administration Module

This is Administration module that is used to setup and administer application security, batch processing capabilities of the system. With the System Administration module you can, create and maintain system users, create and maintain system access and security through responsibilities, report groupings, and access menus. Through this module the only users interacting with the system are the ones registered in the system and they have been assigned a role by the system administrator. The module has the following sub modules:-

a) Administration
b) Password recovery/reset
c) Facility registration
d) Configuration

Administration

Under administration sub module a system administrator will register all users according their role and levels into the system. System will capture user basic information user name, email, type, facility, role, password, and save the information.
Password Recovery

Under password recovery sub module system administrator will reset password for users. User will have to provide username and the system will check validity of the username system administrator can now reset by typing in the new password and re-type the new password again then save.
Facility registration

Under this sub module a system administrator will register a facility by typing in correct facility code, name, council, status, removed date, facility address and facility level. This is the initial stage during system deployment.
Configuration Facility

Under configurations menu, the administrator will have to configure address, department, and item categories of the facility.

![Configuration Menu](image)

**Figure 64: Setting Facility Address**

A system administrator will also register facility departments according to the facility and save the department registration.

![Department Registration](image)

**Figure 65: Defining Department of a Facility**

A system administrator will also register a number of item categories per facility. Item categories stand for the categories of the services that a facility offers to patients e.g. Medication, Procedures, etc.
Operating Theatre Module

This is Operating Theatre Module. Under the operating theatre all procedure will be recorded as per theatre procedures. A nurse should search for patient, and then follows the five sub section under theatre. The module has the following sub-modules:-

- a) Operating Theatre
- b) Anaes Procedure
- c) Skin Disinfections
- d) Apply Tourniquet
- e) Material Count

Click on the [Operating Theatre] menu item to load the detail form. Fill in the required fields and click on the [Submit] button to save the record.
<table>
<thead>
<tr>
<th><strong>Figure 68:</strong> Filling the Operating Theatre Form</th>
</tr>
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<tbody>
<tr>
<td><strong>Figure 69:</strong> Anaes Procedure Form</td>
</tr>
<tr>
<td><strong>Figure 70:</strong> Skin Disinfections Detail Form</td>
</tr>
</tbody>
</table>
Figure 71: Tourniquet Detail Form

<table>
<thead>
<tr>
<th>OPERATING THEATRE</th>
<th>ANAESThesiS PROCEDURE</th>
<th>SKIN DISINFECTIOnS</th>
<th>APPLY TOURNIQUET</th>
<th>MATERIAL COUNT</th>
</tr>
</thead>
<tbody>
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<td>Apply a tourniquet to:</td>
<td>Time (from - to):</td>
<td>Drainage</td>
<td>Other drainage</td>
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<td>Bloodless</td>
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<td>Drain vacuum</td>
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<td>Specimen</td>
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<td>Other Specimen</td>
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<th>2ND COUNTING INTRAOPERATIVE</th>
<th>ADDITIONAL NEW ITEMS</th>
<th>FINAL COUNT</th>
<th>DISCREPANCIES</th>
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Submit
Mortuary Module

This module offers the user with various interactions to keep record of mortuary services at the health facility. The system allows the user to perform the following duties:

a) Store a newly arriving body to a specific storage cabinet
b) Write postmortem report
c) Record chargeable items on preparing a dead body
d) Define storage spaces within the morgue
e) View various report (All deceased bodies in the morgue, Bodies Collected, Bodies not yet collected, Real time storage space availability)

The main menu when the user visits the module looks as follows:
Figure 73: Main Menu of the Mortuary Module

Storage Services

This menu is used to record a newly arriving dead body to a specific storage cabinet. Click on the [STORAGE SERVICES] menu to get a form on which the newly arriving body can be allocated storage space. Enter the “Dead Body Number” onto the search box and select the corresponding record. Once the record is loaded with the details, choose a storage cabinet on the input box captioned “Choose Cabinets” and then select the space from the selector below it captioned “Choose Space”. Click onto SAVE button to store the record into the database.

Figure 74: Allocating Space to a new Dead Body
Autopsy

This menu is used to record postmortem report on a dead body. Click on the [AUTOPSY] menu to get a form on which the autopsy report can be entered. Enter the “Dead Body Number” onto the search box and fill-in the postmortem report on the box provided. Click onto SAVE button to store the record into the database.

Preparations

This menu is used to record chargeable items on preparing a dead body on the day the body is collected. Click on the [PREPARATIONS] menu to get a form on which the paid-for services performed on the body can be recorded. Enter the “Dead Body Number” onto the search box and then fill-in the item and quantity of each service while clicking onto ADD for each service performed. When done with individual items, click onto SAVE button to store the record into the database.
Storage Management

This is a setup menu item (mostly used once) used to define storage spaces available in the morgue facility. Using this menu, the storage cabinets and slots in each cabinet are defined so that they can be selected to store a dead body being received at the morgue. Click on the [STORAGE MANAGEMENT] menu to open the corresponding form. On the left-side of the form (marked “Create Cabinet”), define cabinets by specifying the cabinet name (for instance CAB1, CAB2, etc.), storage capacity of each cabinet (i.e. the number of dead bodies it can hold at a time) and the location of the cabinet (within the morgue facility such as west wing, east wing, etc.). Click onto SAVE for each cabinet defined. On the right side of the form (marked “Create Storage Space”), select a cabinet and create slots in it. For instance, a cabinet named CAB1 was created on the left side with capacity 10, then the right side is used to create 10 named slots within this cabinet. When bodies are being stored into the cabinet, a single slot is consumed whenever a body is stored and released whenever a body is collected. Click onto SAVE for each slot defined for the cabinet. Note that, these features can be used to define floor space as a cabinet with desired number of storage slots.

Figure 76: Recording Paid-for Preparation Services

Figure 77: Defining Storage Spaces in the Morgue Facility
Reports

This menu item is used to display various reports concerning the morgue operations such as all deceased bodies in the morgue, bodies collected, bodies not yet collected, and real time storage space availability.

![Mortuary Department](image)

**Figure 78: Report of All Dead Bodies in the Morgue Facility**

![Mortuary Department](image)

**Figure 79: Report for Collected and Uncollected Bodies**
Lab Module

This module is used by the Lab personnel to receive lab test requests and post back test results. Cost sharing patients who have been ordered for lab tests have to pay at the cashier window before their details are available on this module. On opening the module, the user will be presented with the following interface. On this module, there are three menu items; Requests which shows the number of pending requests ordered by doctors or test requests of a specific patient, Lab Results which is used to record the test results of a patient and Post Results that is used to verify the recorded results and post them back to the ordering doctor.

Requests

This menu item is used to display the lab test requests ordered on a particular patient. Enter the patient’s MRN number on the search box to get the list of ordered test. For each test, the lab personnel should confirm whether the test is accepted or rejected (for any valid technical reason such as unavailability of reagents) by making the appropriate choice and save it using the SAVE button on the right side of the record.
Figure 82: List of Lab Requests Ordered on K011-00-00-62/2016 Patient

**Lab Results**

On this menu, the lab technician records the test results of all accepted test requests of a particular patient. Depending on how the result is reported, the technician can choose **Positive/Negative** result, or supply test measure as required using the input field as shown below.

![Lab Results Image]

Figure 83: Recording Lab Test Results

**Post Results**

After the results have been recorded, they should be verified and posted back to the ordering doctor. Click on the [Post Results] menu to open the corresponding form. The recorded tests
should come with a “not verified” status. The verifying technician should click on Verify button to verify and post the test result to the ordering doctor.

**Figure 84: Verifying and Posting Lab Test Results**

**Pharmacy Module**

This module is used to handle medical item receivables and distributions within the health facility. The module contains two parts: The Pharmacy (Main Store) items and the Sub-store items. On entering the Pharmacy sub-module, the user is presented with the following menu items. Note that most of the shown menu items have sub-menu items available under each of them.
Main Stores

This menu contains two sub-menus; [Main Store Balance] and [Main Store Records]. The [Main Store Balance] shows available balance, holding store and the reorder level of each medical item where as the [Main Store Records] shows batch number, quantity, expiry date, holding store and source of received medical supplies.
Figure 88: [Main Store Records]

**Item Issuing**

This menu item is used to disburse supplies to the lower level of the supplies chain i.e. the Sub-stores in the health facility. The menu contains two sub-menus named [Item Issuing Process] and [Item Issued Records]. The former provides a form onto which the Main Store clerk fill in the records when disbursing supplies to the lower level while the later shows records of this activity.

Figure 89: [ITEM ISSUING] Sub-menu Items

**Item Issuing Process**

This menu provides a form onto which the Main Store clerk records the details of supplies exiting the store to the next lower level. The clerk should fill in the details required by the form as shown in the figure below. Note that “Store Name” is [this] store from which supplies are being removed and “Issued To” is the sub-store to which particular supplies are destined.
ITEM ISSUED RECORDS

This menu displays the list of records that shows details of supplies disbursement from the Main Store to Sub-store within the facility.

Item Receiving

This menu item is used to receive supplies from higher supply sources such as the MSD or commercial supplier. The menu contains two sub-menus named [Item Receiving Process] and [Item Received Records]. The former provides a form onto which the Main Store clerk fill in the records when receiving supplies while the later shows records of this activity.
Item Receiving Process

This menu provides a form onto which the Main Store clerk records the details of supplies entering the main store. The clerk should fill in the details required by the form as shown in the figure below. Note that “Store Name” is this store to which the supplies are being received.

Item Received Records

This menu displays the list of records that shows details of supplies received into the Main Store of the facility.
Clients/Partners

This menu item is used to define clients of the main store. These are usually the sub-stores within the health facility or any other facility which obtain supplies from the store. The menu features two items names [Add Clients/Partners] and [Clients/Partners] list. The former provides a form onto which the main store clerk can define a new sub-store or supply partner and the later provides a list of the defined entities.
Prices

This menu item is used to set service pricing at the health facility with three sub-menu items namely [Create Item Prices], [Prices Update] and [Price List]. [Create Item Prices] provides a form onto which the clerk defines a price of a particular service, [Prices Update] uses the same form to update the price of an existing priced item and [Price List] shows the list of priced items.
The user may have noted that typing on particular fields brings up a suggesting list. The list is fetched from the database which contains predefined “concepts” such as medicine names, clinical procedures, etc. The [ITEMS DESCRIPTION] menu offers a place by which more concepts can be added into the dictionary. This menu contains two sub-menus namely [Create Items Description] and [Items Description List]. The former presents a form onto which new concepts can be added to the dictionary and the later displays a list of existing ones. Note that this list applies throughout the system and usable by any facility running the system.
Dispensers

This menu is used to show list and define dispensers at particular dispensing points or sub store within the health facility. The clerk should use the form to assign users to assigned stations.

Order

This menu shows the list of supplies ordering placed from sub-stores or dependent entities. The list shows the item being ordered, quantity, who ordered and date of requisition. The Main Store clerk can satisfy the requisition by clicking on the “ISSUE” button and complete the resulting form.
When the user visits the Sub-Stores sub-module, the following interface is presented:
This sub module is targeted at the clerk(s) manning the sub store(s) of the facility. Through the module, the clerk can confirm supplies received from the main store, place an order to the main store, receive order from dispensing points, disburse supplies to dispensing points and view store balances. The module contains **Issuing**, **SuppliesRequisition** and **Dispensing** forms that respectively handle disbursing supplies to dispensing points, place order to the main store and define dispensing points within the facility. The remaining menu items display the respective lists.
X-Ray Module

This module allows the radiologist to share the x-ray image with the ordering doctor. After login, the radiologist is presented with the following initial interface:

- Enter patient MRN
- Click Search

Figure 112: Searching X-Rayed Patient
Once the patient MRN has been entered and searched, the radiologist will be presented with the following expanded interface onto which s/he can upload the x-ray image and search other MRNs.

![Figure 113: Uploading Patient X-Ray Image](image1)

After clicking on the [Upload Now] button, the system will open a page on which the uploaded image can be viewed. A link at the top right corner of the page allows the radiologist to go back to the MRN search form.

![Figure 114: Uploaded Image, Switching Back to Upload Page](image2)