Pharmacy Information System (PhIS)
and
Clinic Pharmacy System (CPS)

System Design Document
(SDD)

Order Management Mobile

Version	**: 1.0**
Document ID	**: PhIS_CPS/SDD/OM MOBILE**

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REVISION HISTORY

Version No	Date of Release	Prepared by	Reviewed by	List of changes from Previous Version
1.0	29/6/2018	Sitinor Megawati Saurani	Zainura Said	Baseline for Order Management Mobile version 1.7

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1. Introduction

Pharmaniaga Logistics Sdn. Bhd. executes software development, enhancement and maintenance projects for its clients. The term “project” is used to describe the full set of activities from the time the proposal is accepted and project initiation note or contract is signed to the time all the software and services are delivered according to the acceptance of the proposal/contract.

This process is to ensure both user requirements and software requirements of the projects developments are gathered appropriately from stakeholders and are documented in User Requirements Specification (URS) and System Design Documentation (SDD) specifically.

2. Purpose

The purpose of the document is to describe the purpose and functionality of the software product requested by client. This document outlines the project's details, requirements, interface, design issues, and components to ensure that each requirement has been met.

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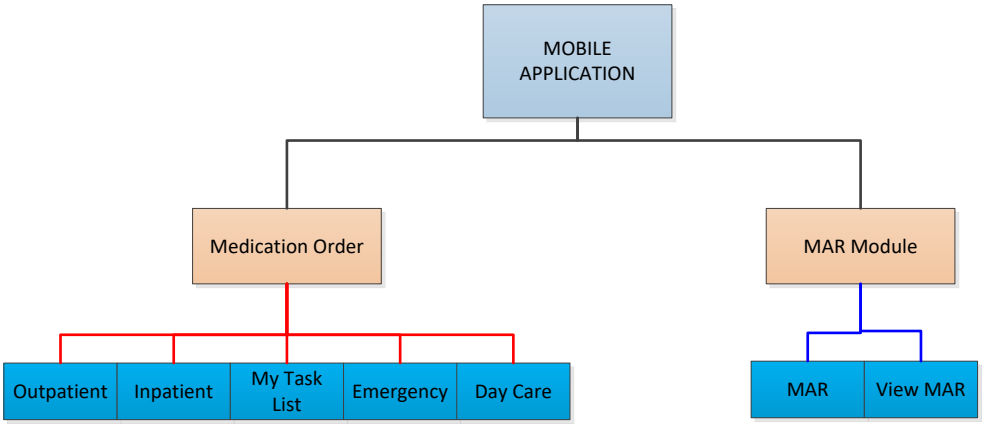
3. Detailed System Design

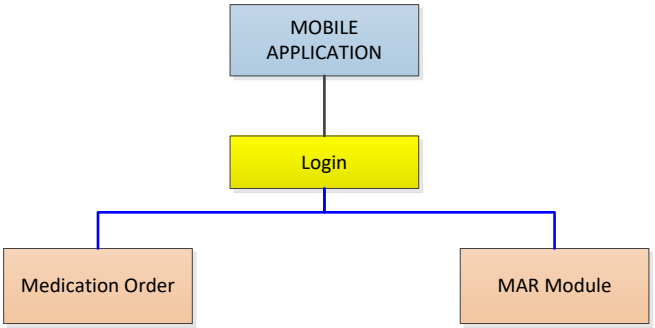
3.1 Mobile Application Overview

Mobile application Management allows the authorized mobile user of the system to create, view and manage the medication order of the Patients visiting the hospital or clinic.



MB.OV1: Mobile Application Overview

3.2 Login Overview



LG.OV1: Login Overview

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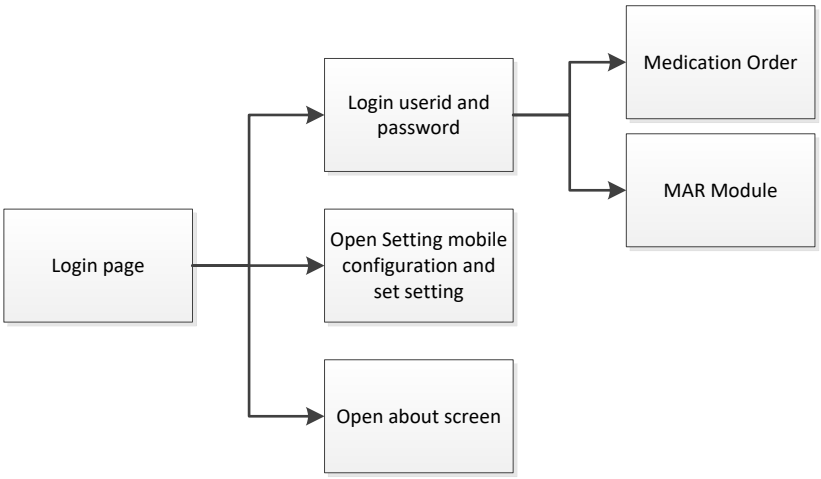
3.2.1 Block Diagram



LG.BD1: Login block diagram

3.2.2 Purpose

Login screen will allow authorized user to enter their login id and password to access into the mobile application. There were also 'About' and 'Setting' menu where user able to see the version number of the mobile application and setting of the mobile server which it was connected to. User shall be able to access into Medication Order module or MAR Mobile module, depends on the access right of the user.

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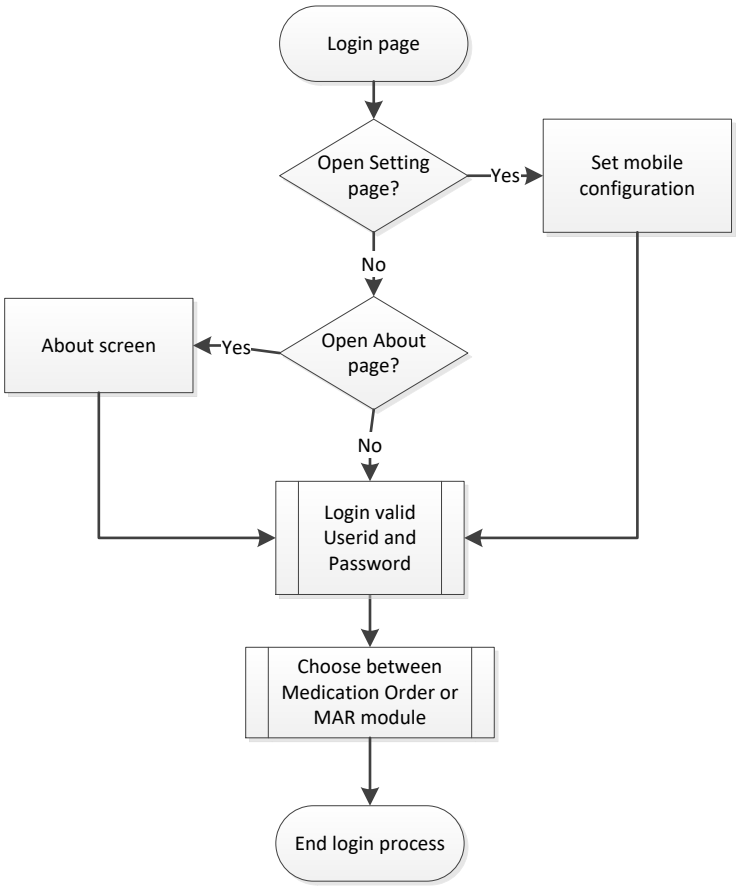
3.2.3 Screen Navigation Diagram



LG.SND1: Login mobile flow

3.2.4 Detail Functionality and Screen

3.2.4.1 Login screen

3.2.4.1.1 Screen Design

ID	LG.SD1
Description	Login Screen
Diagram i. Login page	

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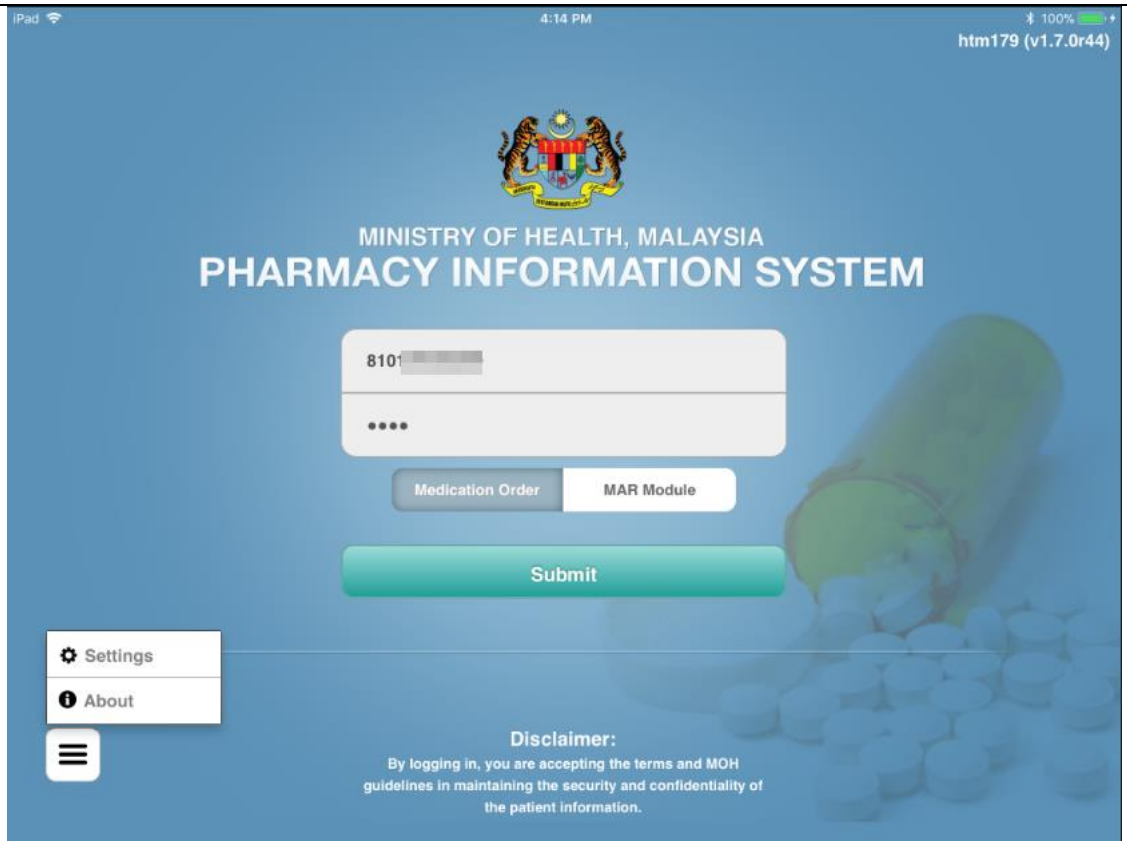
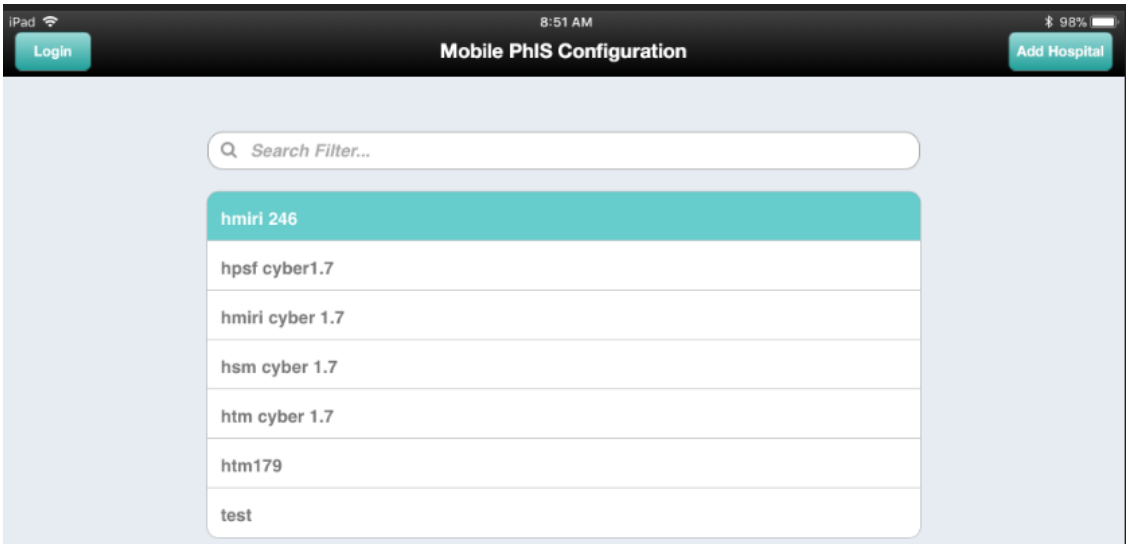


ii. Mobile PhIS Configuration



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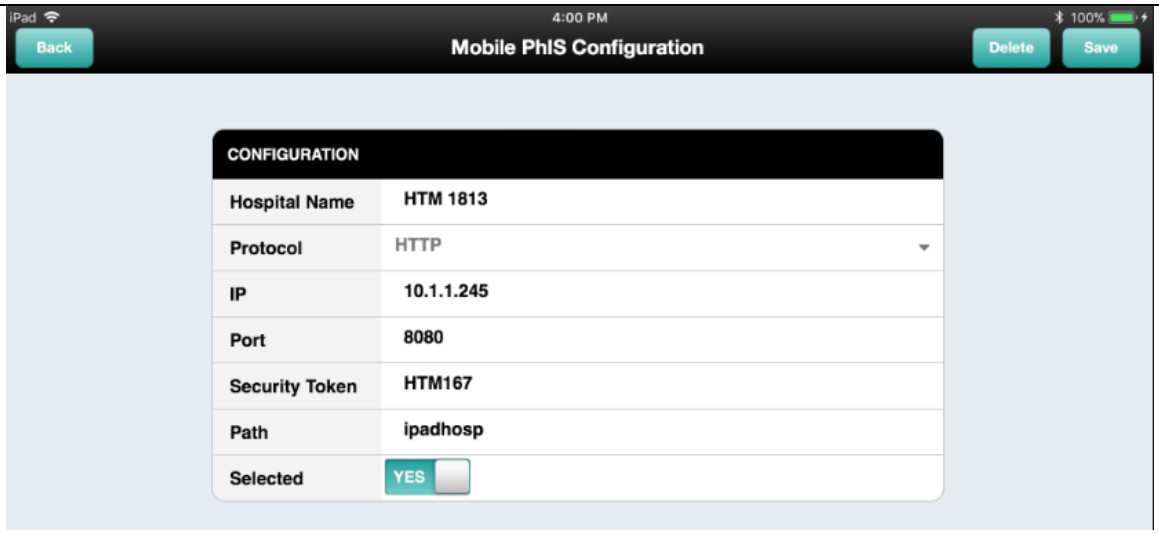
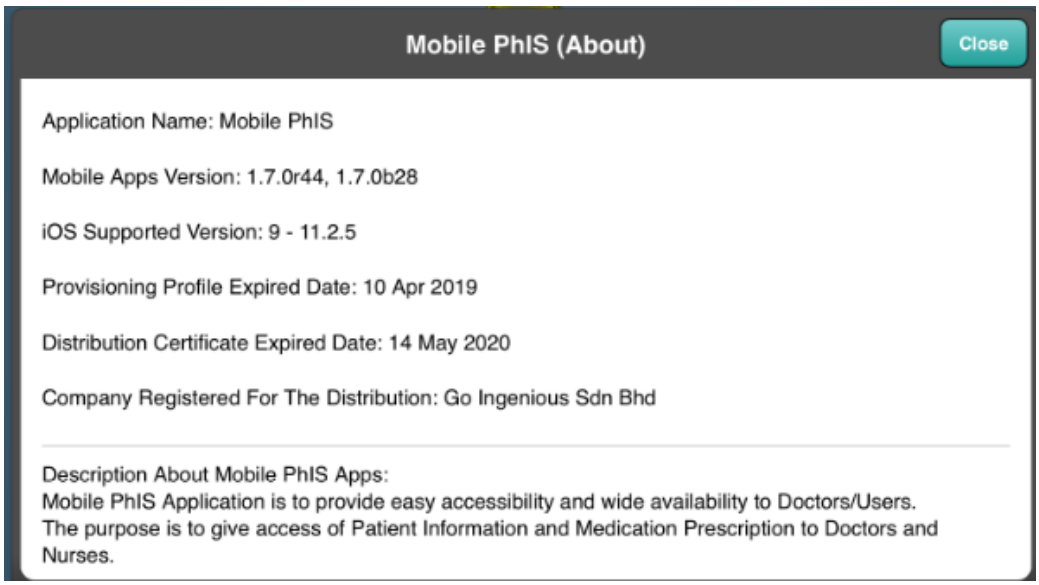


iii. Mobile PhIS About



Notes	• Tap on 'Medication Order' button, user will be able to access into Medication Order mobile version. • Tap on 'MAR Module', user will be able to access into Medication Order module. • Tap on 'Submit' button, user will be logged into mobile application • Tap on 'Setting' link, Mobile PhIS configuration page will be opened. • Tap on 'About' link, Mobile PhIS (About) information page will be opened. • Tap on 'Login' button to open back login page. • Tap in 'Add Hospital' button to add in new setting for hospital mobile server. • Tap on mobile server name for editing. • Tap on 'Back' button to go back to the listing of mobile server setting.

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	• Tap on 'Delete' button to delete existing mobile server setting. • Tap on 'Save' button to save the new mobile server setting. • Tap on 'Close' button in About page to close the about screen.
Cross References	None

3.2.4.1.2 Application Business Rules

No.	Name	Description
1.	Login page	User with mobile access right shall be able to login and access the mobile application. The setting was set in Maintenance under sub User Profile module. There was a checkbox for 'mobile access'. If this checkbox is tick, user shall be able to login into mobile application. The group that usually used mobile application same from prescriber groups and nurses group.
2.	Server setting page	• The server setting usually done by administration team. This is a place where user can set the hospital name, protocol, IP address, port, security token ID and path name. • Before set on the server configuration, admin user has to create the token ID first in web application under Maintenance-General. At the same time, user has to make sure that the wireless connection is up. • Once all information was entered, select the 'Selected' option to 'Yes'. This will make sure that we choose out new setting to connect to mobile server and access into the application. Before close the screen, save the information by tap on 'Save' button.
3.	About page	About page is just to display the application version number. Every time when the version is changes, the information will also change to a new one.

3.2.4.1.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
Login Page				
1.	Login ID	Patient listing shall be retrieved from the database for all registered patients with visit based on matching MRN.	Yes	Text field
2.	Password	Patient listing shall be retrieved from the database for all registered patients with visit based on matching Patient Name.	Yes	Text field
Mobile PhIS Configuration				
1.	Hospital Name	Admin user able to enter the hospital name and it is a free text field.	Yes	Text field
2.	Protocol	Protocol used for the connection. User able to choose either HTTP or HTTPS. However, for the PhIS Mobile application, we always set it as HTTP protocol.	Yes	Drop down
3.	IP	Admin user shall be able to enter the IP Address for the mobile/phis server.	Yes	Text field

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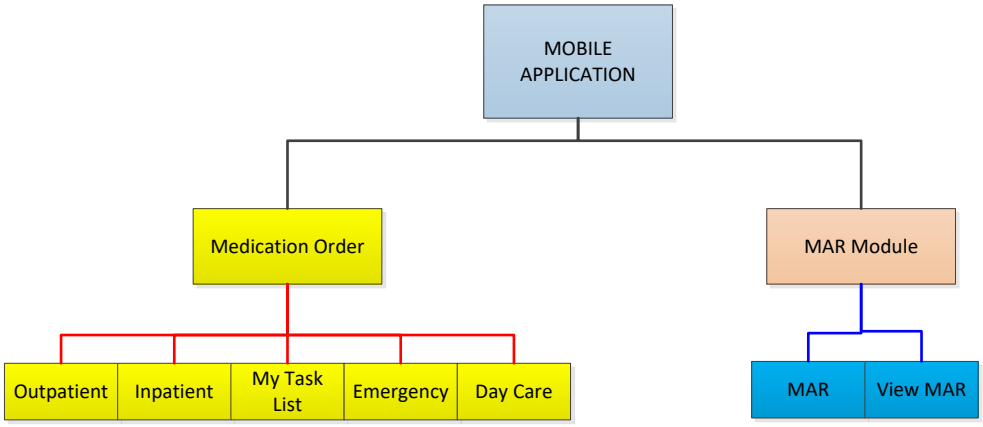
No.	Name	Description	Mandatory	Format
4.	Port	The port number used by the server.	Yes	Text field
5.	Security Token	Before enter the security token, admin user have to create first (for the first time setting) the security token ID in web application under Maintenance/General/Mobile module. Once security token ID has been created and saved in web, enter the created token ID into this field.	Yes	Text field
6.	Path	The pathname in server used for mobile application.	Yes	Text field
7.	Selected	User able to choose between Yes or No. Choose Yes if user wants to make the created configuration as the current mobile connection to PhIS. Choose No if do not wants the created setting as a current configuration but wants to keep the information save in the list.	Yes	Dialog box

3.2.5 Integration

No.	Name	Description
1.	PhIS Application	Mobile application will integrate with PhIS application. Any update on mobile shall also update to PhIS system. Both applications used the same database. Any update from both side should reflect to each other screen.

3.3 Medication Order Module (Mobile)

3.3.1 Overview



MO.OV1: Medication Order Mobile Overview

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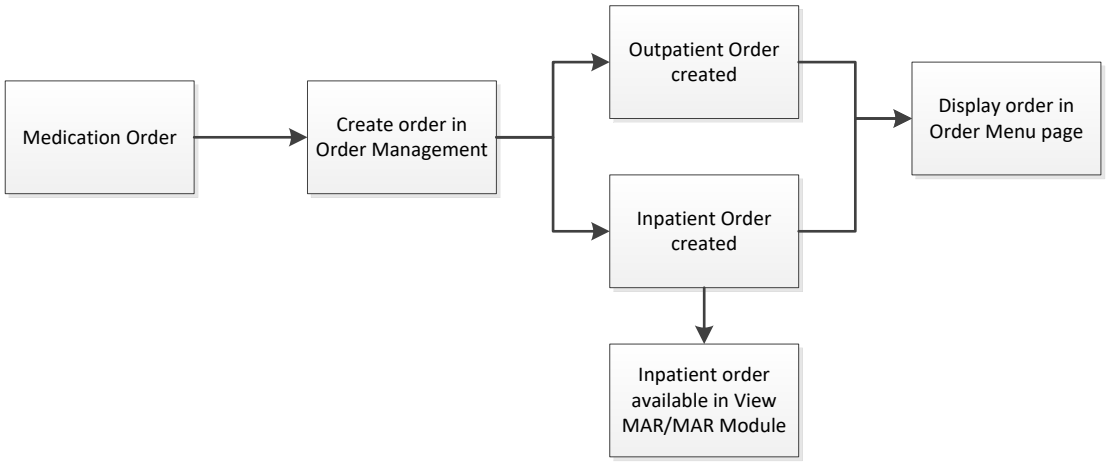
3.3.2 Block Diagram



MO.BD1: Medication Order Mobile diagram

3.3.3 Purpose

Medication Order shall enable user to choose which order type to be created using mobile application. Prescriber shall be able to create order for Outpatient, Inpatient, Emergency and Daycare only. This module also has a function for prescriber view task list. Task list screen used to reject or authorize the pending drugs that need authorization and also to endorse the drug that have been intervene by pharmacist.

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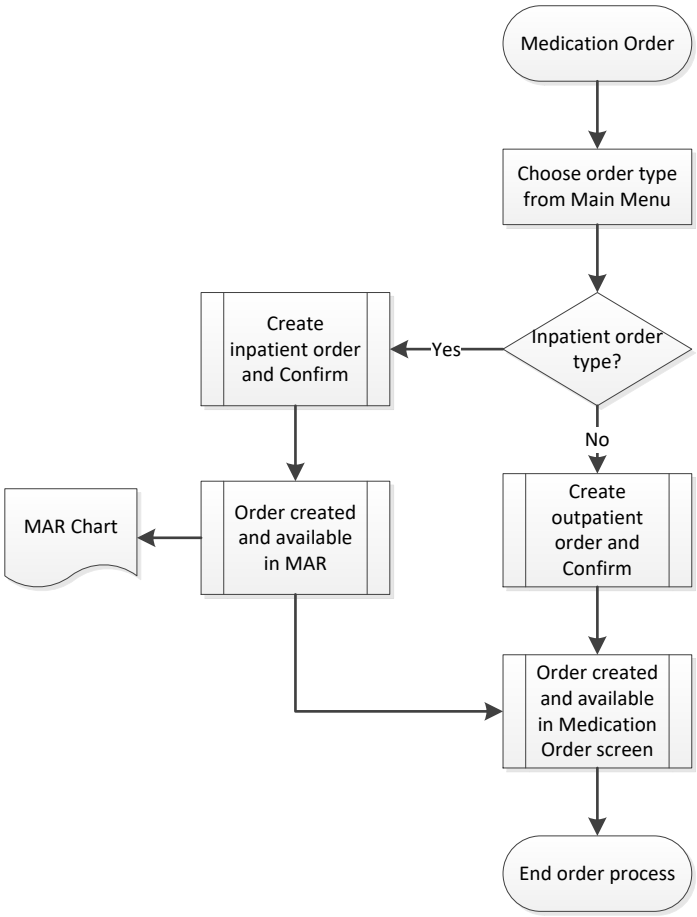
3.3.4 Screen Navigation Diagram



MO.SND1: Medication Order Mobile flow

3.3.5 Detail Functionality and Screen

3.3.5.1 Main Menu (mobile)

3.3.5.1.1 Screen Design

ID	MO.SD1
Description	Main Menu Dashboard
Diagram	

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Notes	• Tap on 'Outpatient' icon to open outpatient location and outpatient patient list. • Tap on 'Inpatient' icon to open inpatient location and inpatient patient list. • Tap on 'Emergency' icon to open emergency location and emergency patient list. • Tap on 'Day Care' icon to open day care location and cay care patient list. • Tap on 'My Task List' icon to open task list page and do drug authorisation or drug endorsement.
Cross References	None.

3.3.5.1.2 Application Business Rules

No.	Name	Description
1.	Main Menu Dashboard	Main menu dashboard will appear after authorise user login into the mobile application. There are few types of order which authorise user can create such as: • Outpatient Order • Inpatient Order • Emergency Order

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No.	Name	Description
		• Day Care Order
2.	My Task List	User with access right to authorise and endorse drugs will be able to see the record listing in My Task List page. Usually prescriber with higher level will be able to open and view list of drugs in My Task List page.

3.3.5.1.3 Input Validation Rules

No input validation rules in this page.

3.3.5.2 Outpatient Clinic (mobile)

3.3.5.2.1 Screen Design

ID	MO.SD2
Description	Outpatient Clinic

Diagram

i. Outpatient Clinic Listing

ii. Outpatient Patient List

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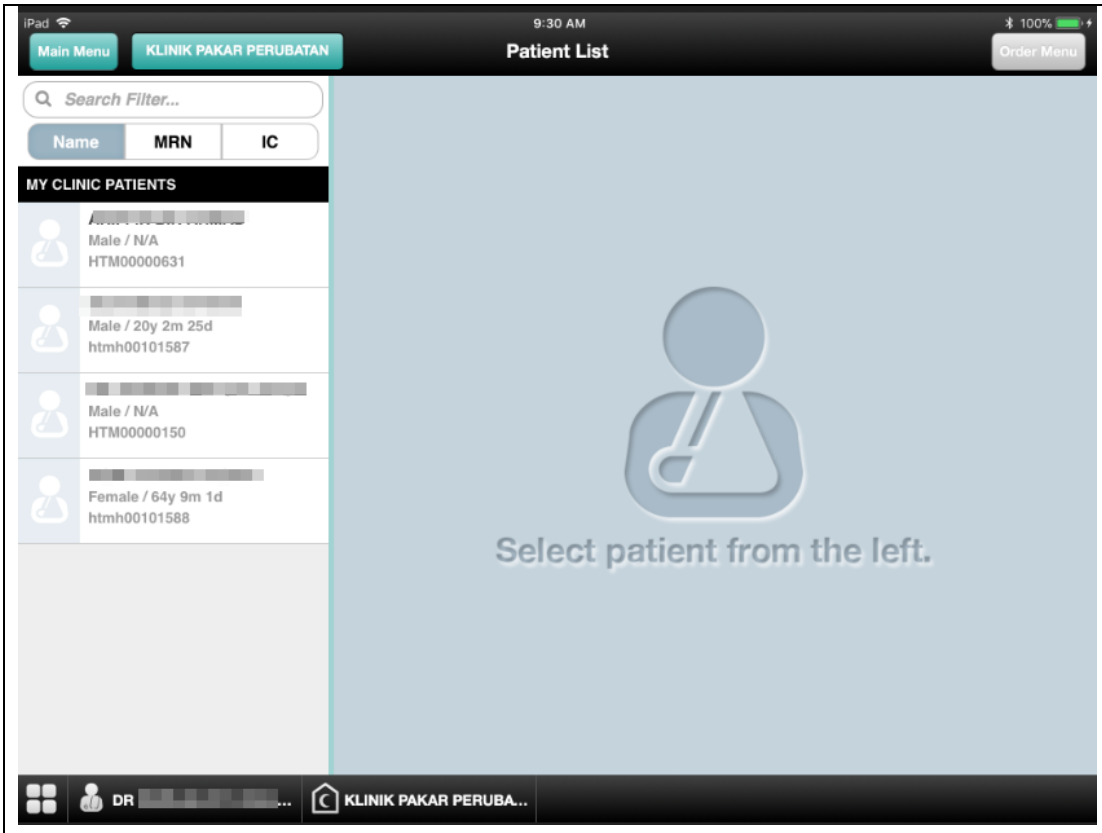

Notes	• Tap on 'Main Menu' button, the main menu dashboard will appear. • Tap on clinic location to view the list of outpatient clinic. • Tap on patient name to enable the Order Menu button. • Tap on 'Order Menu' button to open the Order Menu page.
Cross References	MO.SD1 – Main Menu Dashboard OM.SD1 – Order Management mobile

3.3.5.2.2 Application Business Rules

No.	Name	Description
1.	Patient Listing	• The listing of patient name will be displayed for current outpatient active visit. It will be sorted in alphabetical order, from A to Z. Once the login prescriber create the drug order for selected patient, other prescriber cannot see this patient name under his/her list. The patient name will display under MY PATIENTS list. • By tap on the patient name, the details of the patient information such as allergies, diagnosis, demographic, pharmacist notes and ADR report will appear on the right side.
2.	Clinic Listing	The listing of the clinics is based on the granted location of the login user id. User shall be able to open other clinic location by tap on the clinic location button where he/she has the grant access.

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3.3.5.2.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
1.	MRN	Patient name shall be retrieved from the database for all registered patients with outpatient visit based on matching MRN and related to original prescriber/pharmacist name that create the order.	No	Search field
2.	IC	Patient name shall be retrieved from the database for all registered patients with visit based on matching IC number or other identification number and related to original prescriber/pharmacist name that create the order.	No	Search field
3.	Name	Patient name shall be retrieved from the database for all registered patients with visit based on matching Patient Name.	No	Search field

3.3.5.3 Inpatient Medication Order (mobile)

3.3.5.3.1 Screen Design

ID	MO.SD3
Description	Inpatient Medication Order

Diagram

i. Inpatient Wards Listing

ii. Inpatient Patient List

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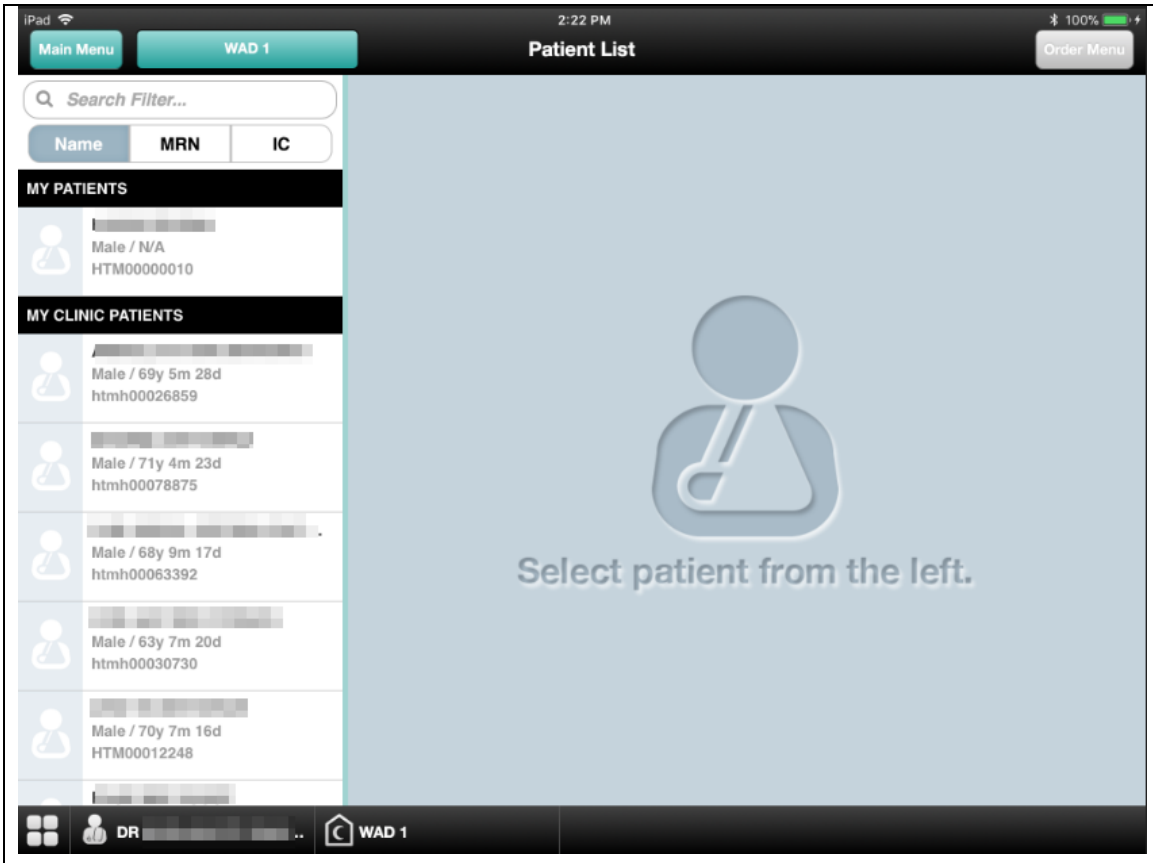

Notes	• Click on Search to search patient name based on filter criteria. • Click on 'Discharge' button to discharge the selected patient (pharmacy based). • Click on Discharge checkbox to select patient for discharge. • Click on 'Refresh' icon to refresh the listing.
Cross References	MO.SD1 – Main Menu Dashboard OM.SD1 – Order Management mobile

3.3.5.3.2 Application Business Rules

No.	Name	Description
1.	Patient Listing	• The listing of patient name will be displayed for active inpatient visit. It will be sorted in alphabetical order, from A to Z. Once the login prescriber create the drug order for selected patient, other prescriber cannot see this patient name under his/her list. The patient name will display under MY PATIENTS list. • By tap on the patient name, the details of the patient information such as allergies, diagnosis, demographic, pharmacist notes and ADR report will appear on the right side.

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No.	Name	Description
2.	Wards Listing	The listing of the wards is based on the granted location of the login user id. User shall be able to open other ward location by tap on the ward location button which he/she has the grant access.

3.3.5.3.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
1.	MRN	Patient name shall be retrieved from the database for all registered patients with outpatient visit based on matching MRN and related to original prescriber/pharmacist name that create the order.	No	Search field
2.	IC	Patient name shall be retrieved from the database for all registered patients with visit based on matching IC number or other identification number and related to original prescriber/pharmacist name that create the order.	No	Search field
3.	Name	Patient name shall be retrieved from the database for all registered patients with visit based on matching Patient Name.	No	Search field

3.3.5.4 My Task List (mobile)

3.3.5.4.1 Screen Design

ID	MO.SD4
Description	My Task List
Diagram i. My Task List (Order Authorization)	

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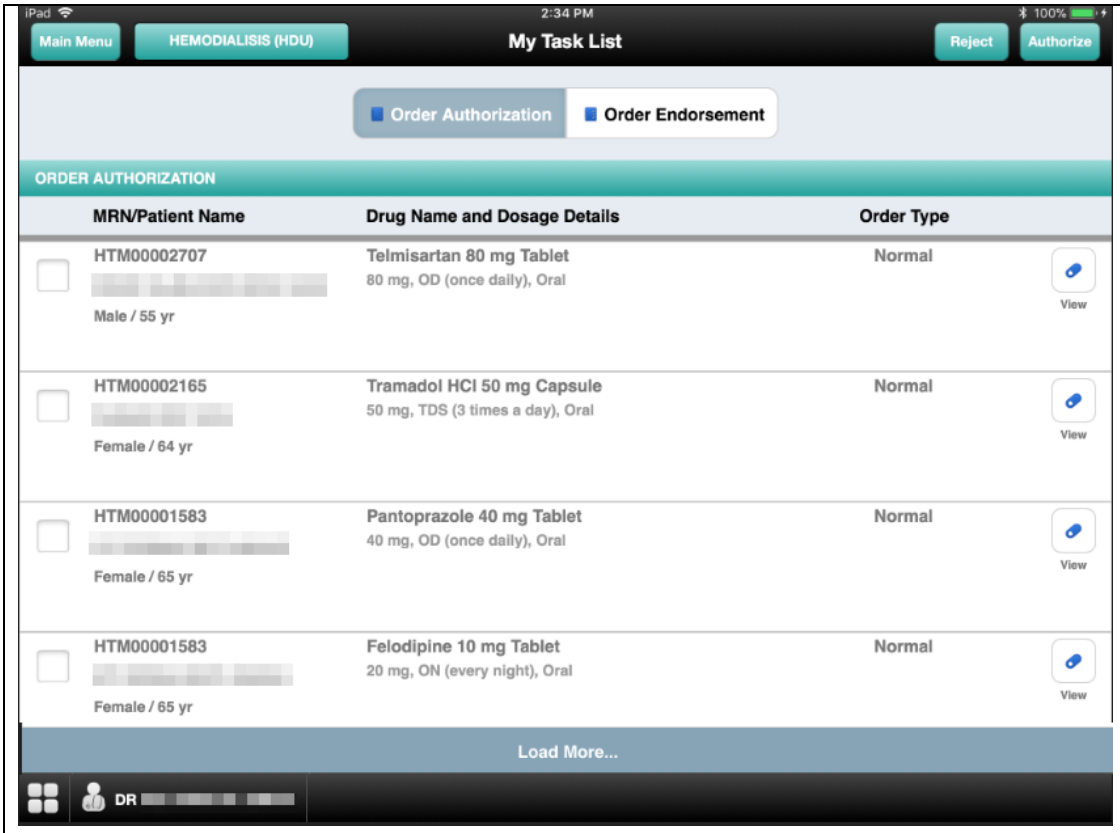
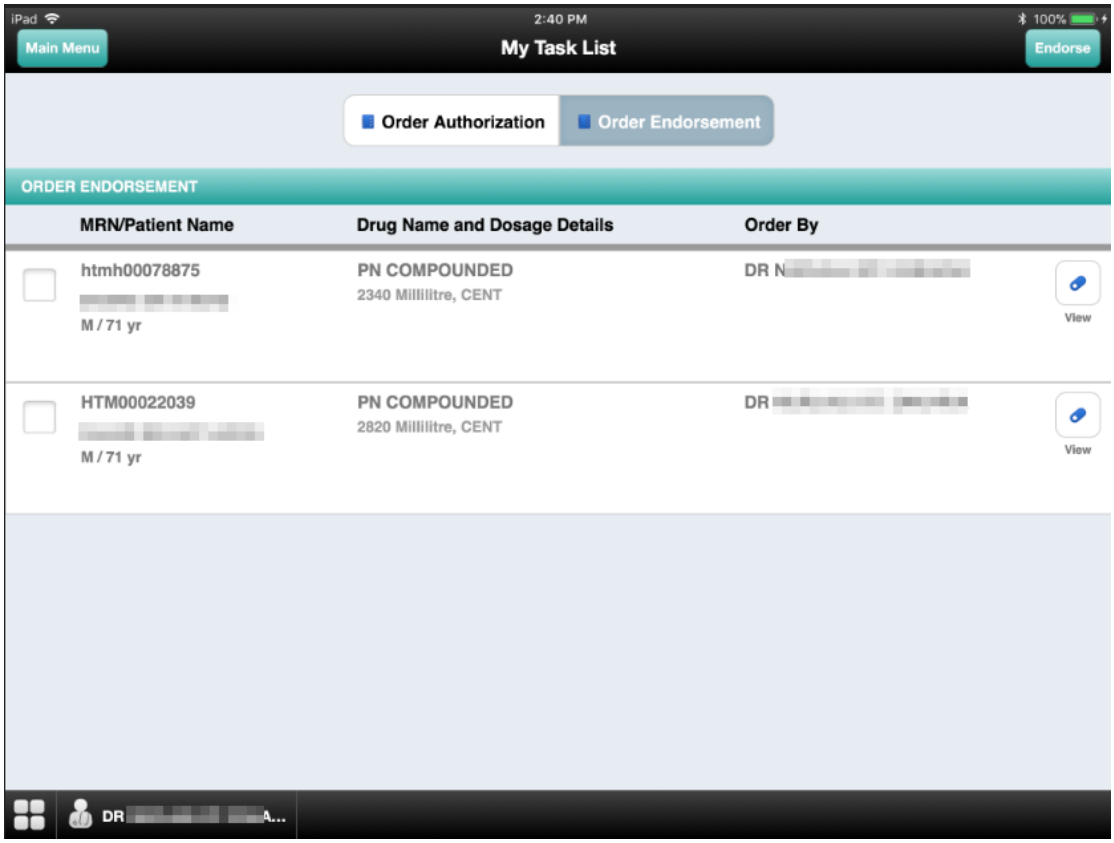


ii. My Task List (Order Endorsement)



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Notes	• Tap on 'Order Authorization' button to open the authorization page with drugs listing that need the authorization. • Tap on 'Order Endorsement' button to open the endorsement page with drug listing that need the endorsement. • Tick on the checkbox on the left side of the drugs name to select the drug for further action. • Tap on 'Reject' button to reject the drug that need authorization. • Tap on 'Authorize' button to authorise the drugs. • Tap on 'Endorse' button to endorse the drugs. • Tap on 'Main Menu' button to go back to Main Menu Dashboard.
Cross References	MO.SD1 – Main Menu Dashboard OM.SD1 – Order Management mobile PhIS_CPS_SDD_OM_Web_v1.0 – Medication Order from web application for a drugs that need authorization and endorsement.

3.3.5.4.2 Application Business Rules

No.	Name	Description
1.	Listing of drugs	• Listing on drugs in Authorisation page will depends on the access of the login user ID. A prescriber which has a prescriber category as Consultant/Specialist and above will be able to view and authorize the drugs. • Prescriber with category of Medical Office/House Officer has an access to endorse the drugs.
2.	Order Authorisation	Prescriber shall be able to authorise the drugs from his/her listing. Once drugs has been authorised, drug status will be updated as 'Authorise' and no more status of 'Pending Authorise' appear in dispensing screen in web application.
3.	Reject Authorise Drug	• Prescriber shall be able to reject the drugs that need authorisation. After drug is rejected, medication will be discontinued. Authorisation still required for the next order. • Any cancellation of order before authorisation (dispensed or not), should not flow to specialist and should not displayed as (PA) in dispensing screen. a. To remove PA status at drug record which has been cancel or stop either has been dispensed or not yet from Authorisation List. These cancelled/stop drug should not display as 'Pending Authorise (PA)' when display in Screening, Preparation or Dispensing screen. Status for this drug will be update to 'Cancelled'. b. If any doctors/pharmacist order the same drug again to the same patient, which previously has been cancelled, system should allow to order with authorise message. The new order will again require for the drug authorisation again.

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No.	Name	Description
4.	Order Endorsement	Prescriber able to endorse the drugs which has been intervene by pharmacist. Once a drug has been endorsed, status will be updated to endorse and drug name will be removed from the endorsement page.

3.3.5.4.3 Input Validation Rules

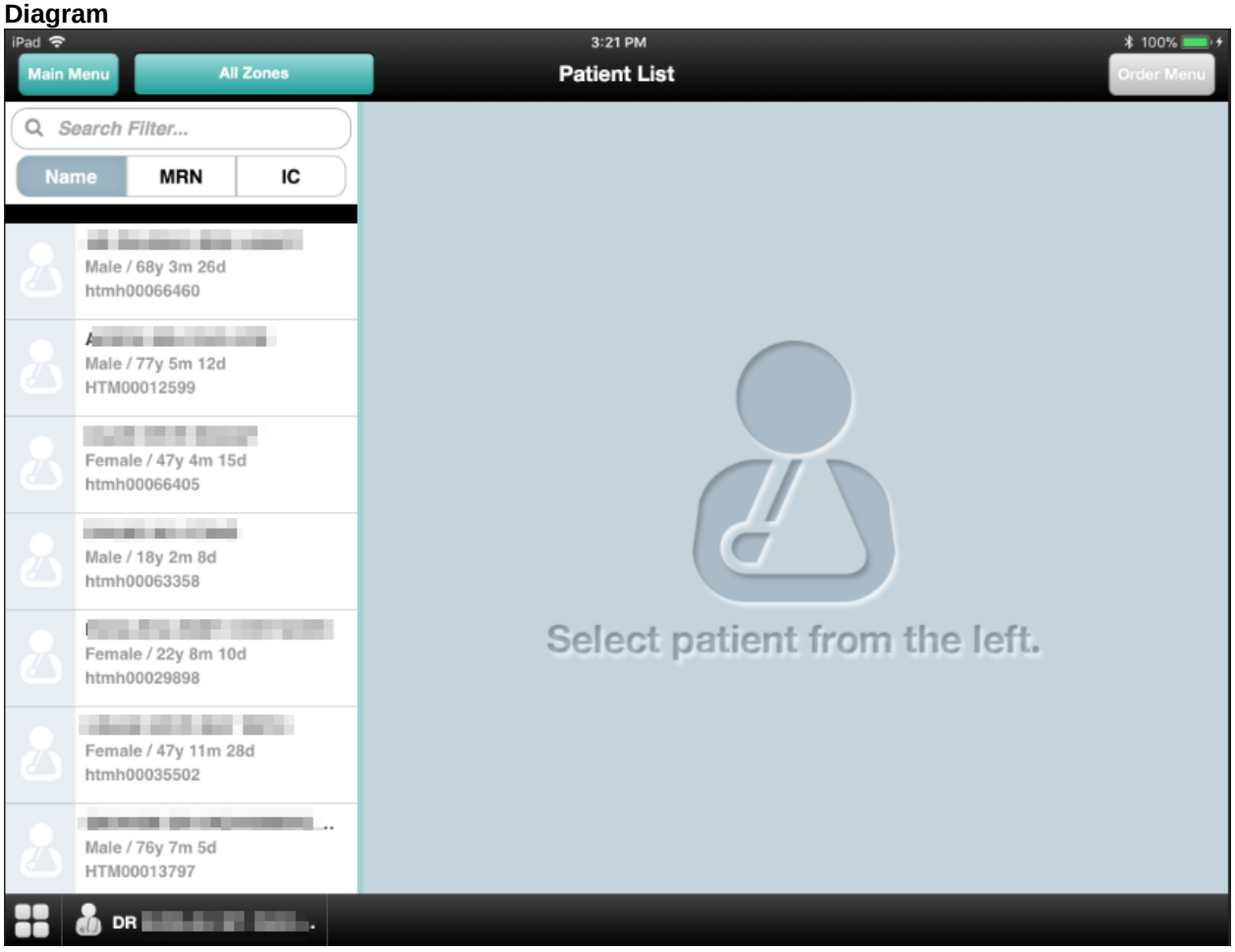
No.	Name	Description	Mandatory	Format
1.	Checkbox	The 'Selection' checkbox will be used for Reject and Authorise button. User has a selection either to reject or to authorise the drug by ticked on the checkbox before perform the actions.	Yes	Checkbox

3.3.5.5 Emergency Order (mobile)

3.3.5.5.1 Screen Design

ID	MO.SD5
Description	Emergency Order Mobile

Diagram



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Notes	• Tap on 'Main Menu' button to go back to Main Menu Dashbard. • Tap on 'All Zones' button to view the emergency zone available in the hospital. • Tap on patient name to view patient details and able to go to Order Management module.
Cross References	MO.SD1 – Main Menu Dashboard OM.SD1 – Order Management mobile

3.3.5.5.2 Application Business Rules

No.	Name	Description
1.	Patient Name	• The listing of patient name will be displayed for active emergency visit. It will be sorted in alphabetical order, from A to Z. Once the login prescriber create the drug order for selected patient, other prescriber cannot see this patient name under his/her list. The patient name will display under MY PATIENTS list. • By tap on the patient name, the details of the patient information such as allergies, diagnosis, demographic, pharmacist notes and ADR report will appear on the right side.
2.	All Zones	Emergency zones that available in the hospital. Currently for mobile, only display 3 zones which are: • Green Zone • Yellow Zone • Red Zone

3.3.5.5.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
1.	MRN	Patient name shall be retrieved from the database for all registered patients with outpatient visit based on matching MRN and related to original prescriber/pharmacist name that create the order.	No	Search field
2.	IC	Patient name shall be retrieved from the database for all registered patients with visit based on matching IC number or other identification number and related to original prescriber/pharmacist name that create the order.	No	Search field
3.	Name	Patient name shall be retrieved from the database for all registered patients with visit based on matching Patient Name.	No	Search field

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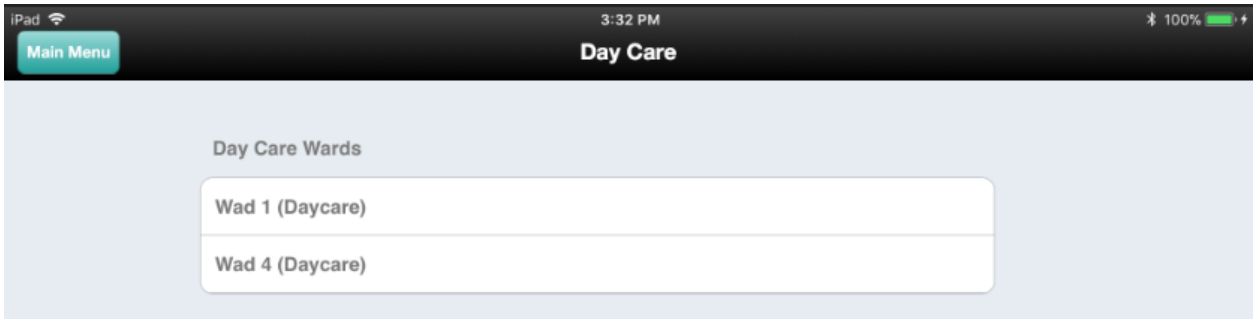
3.3.5.6 Daycare Order (mobile)

3.3.5.6.1 Screen Design

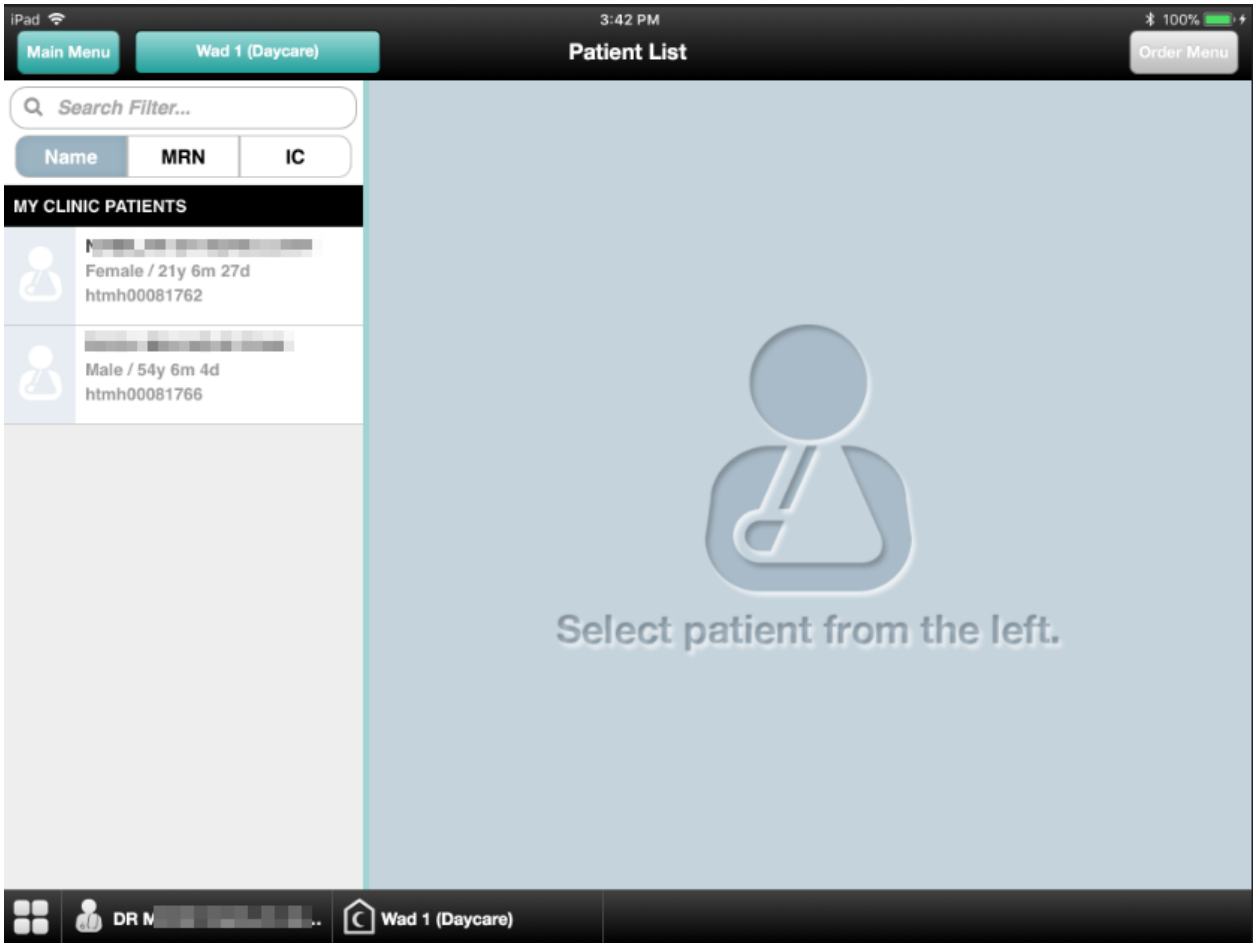
ID	MO.SD6
Description	Daycare Order Mobile

Diagram

i. Daycare Listing



ii. Daycare Patient List



Notes	• Tap on 'Main Menu' button to go back to Main Menu Dashboard. • Tap on Daycare location button to view other daycare wards available in the hospital.

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	• Tap on patient name to view patient details and able to go to order management module.
Cross References	MO.SD1 – Main Menu Dashboard OM.SD1 – Order Management mobile

3.3.5.6.2 Application Business Rules

No.	Name	Description
1.	Patient Name	• The patient name under daycare patient list only appear for a prescriber that has access to daycare visit. • The listing of patient name will be displayed for active daycare visit. It will be sorted in alphabetical order, from A to Z. Once the login prescriber create the drug order for selected patient, other prescriber cannot see this patient name under his/her list. The patient name will display under MY PATIENTS list. • By tap on the patient name, the details of the patient information such as allergies, diagnosis, demographic, pharmacist notes and ADR report will appear on the right side.
2.	Daycare Ward Listing	The listing of the daycare wards is based on the granted location of the login user id. User shall be able to open other ward location by tap on the ward location button which he/she has the grant access.

3.3.5.6.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
1.	MRN	Patient name shall be retrieved from the database for all registered patients with outpatient visit based on matching MRN and related to original prescriber/pharmacist name that create the order.	No	Search field
2.	IC	Patient name shall be retrieved from the database for all registered patients with visit based on matching IC number or other identification number and related to original prescriber/pharmacist name that create the order.	No	Search field
3.	Name	Patient name shall be retrieved from the database for all registered patients with visit based on matching Patient Name.	No	Search field

3.3.6 Integration

None.

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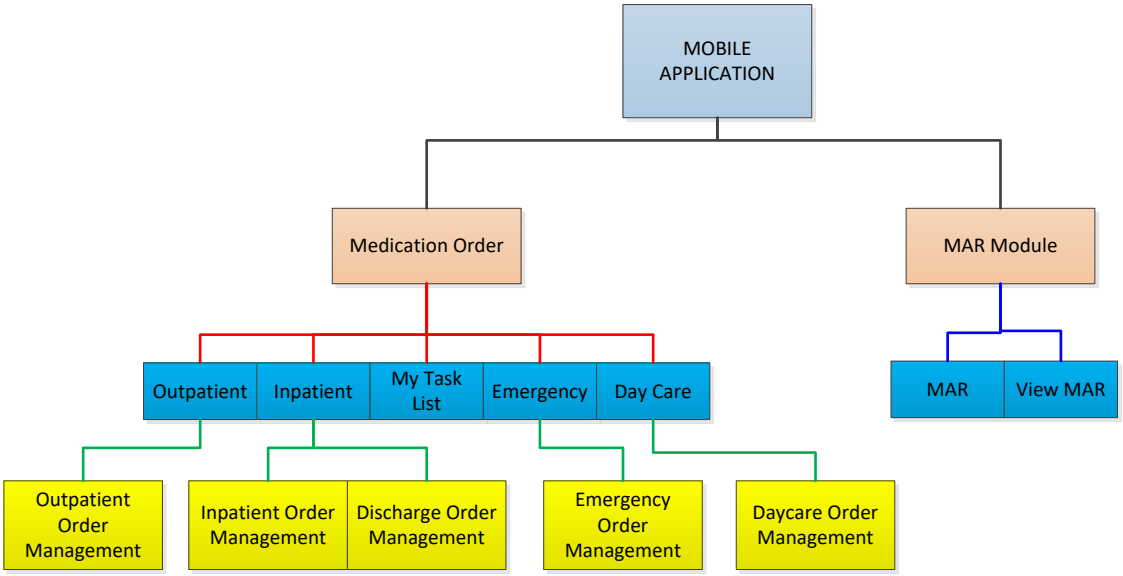
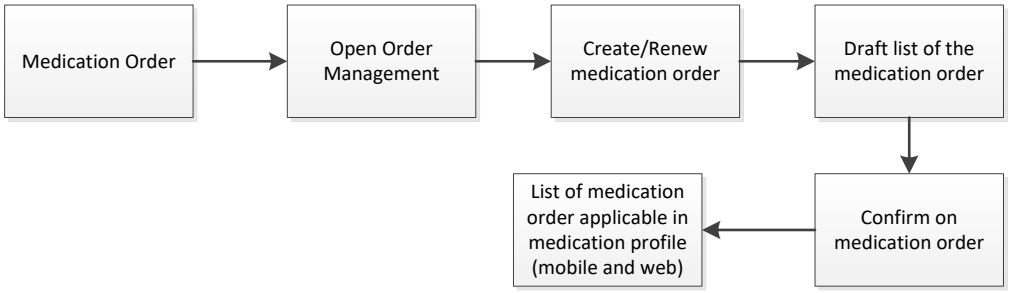
3.4 Order Management Module (Mobile)

3.4.1 Overview



OMM.OV1: Order Management Mobile

3.4.2 Block Diagram



OMM.BD1: Order Management

3.4.3 Purpose

Medication Order in mobile screen allows Doctors, Medical Officers and any authorized person to record and monitor Normal / Special medication orders for Inpatients and Outpatients.

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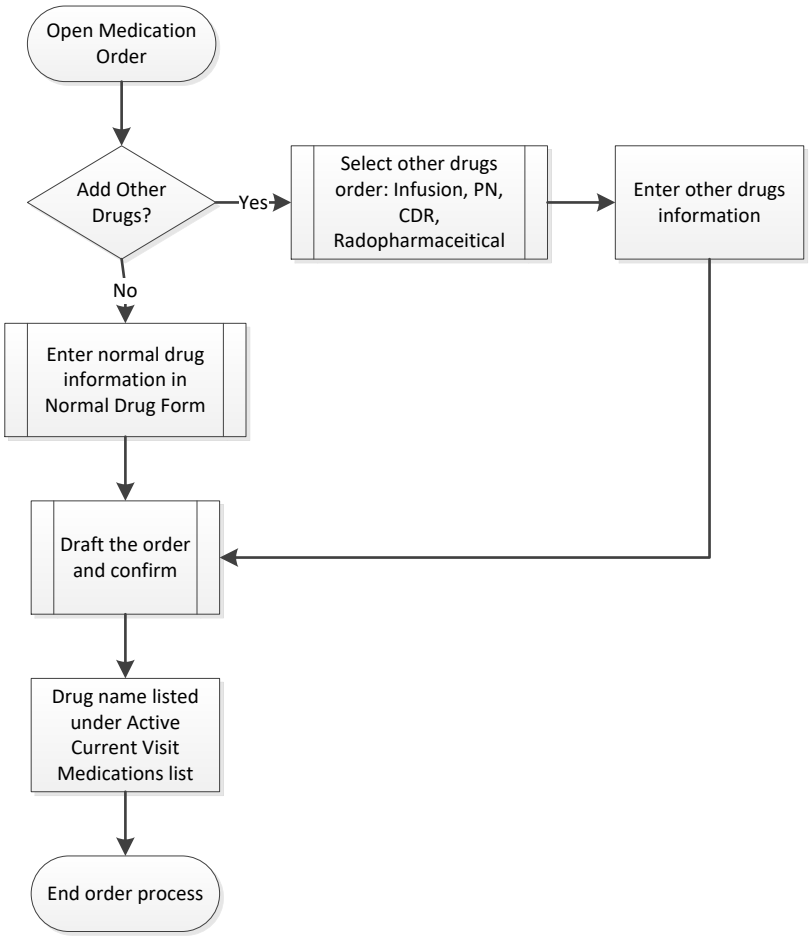
3.4.4 Screen Navigation Diagram



OMM.SND1: Order Management Mobile flow

3.4.5 Detail Functionality and Screen

3.4.5.1 Order Management

3.4.5.1.1 Screen Design

ID	OMM.SD1
Description	Order Management
Diagram i. Order Menu	

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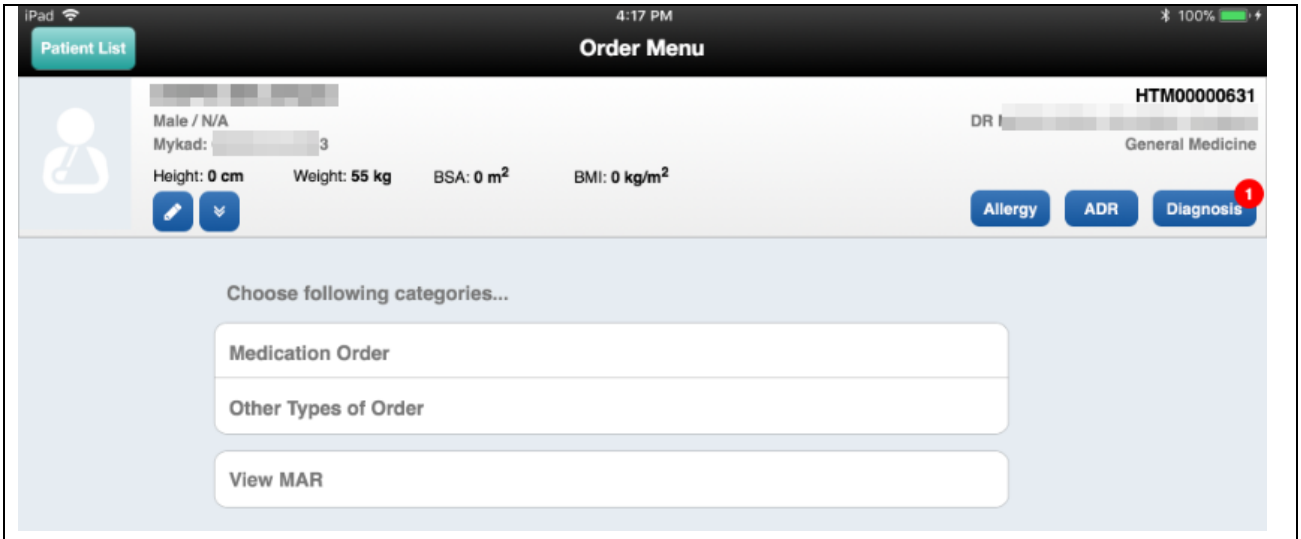
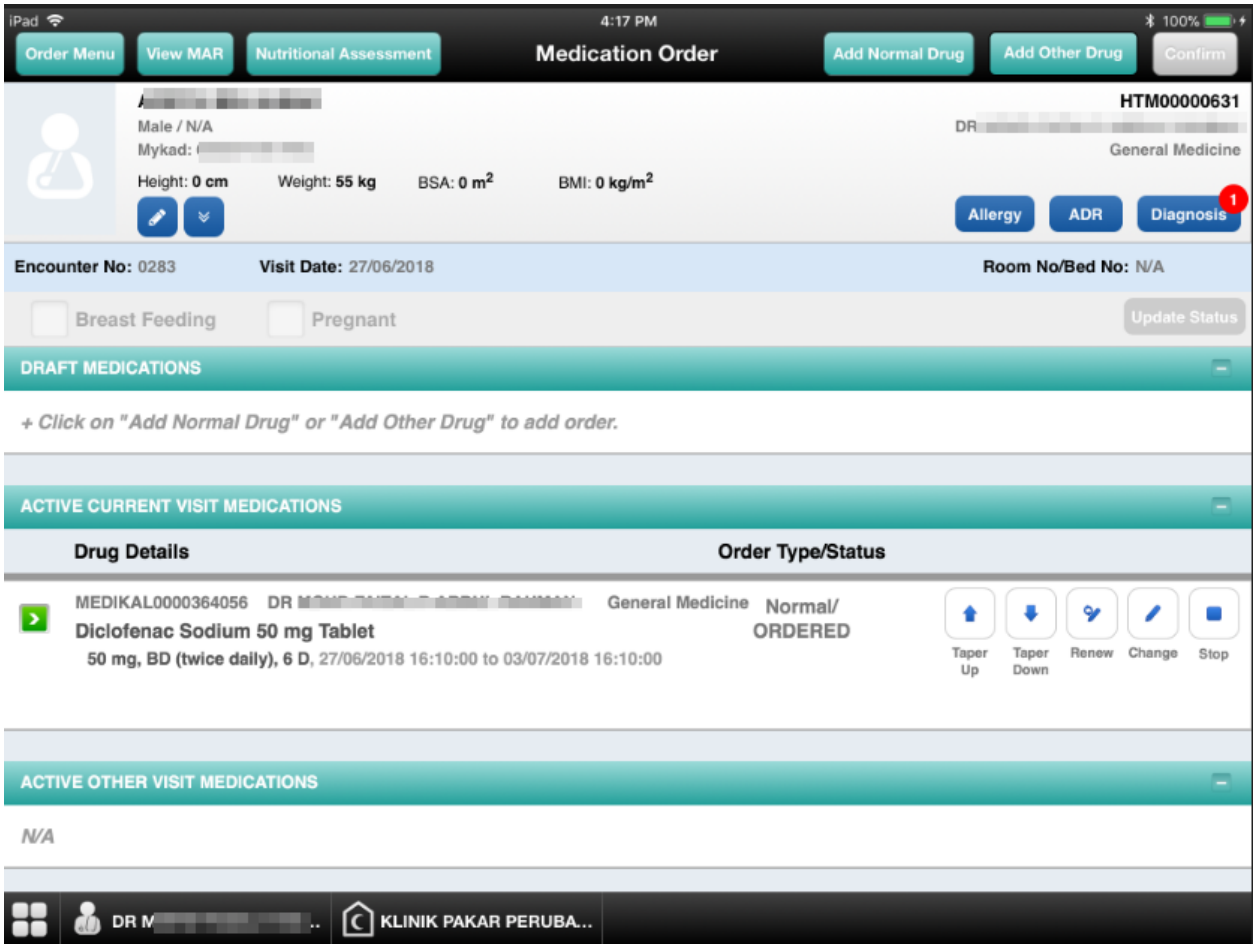


ii. Medication Order



iii. Other Types of Order

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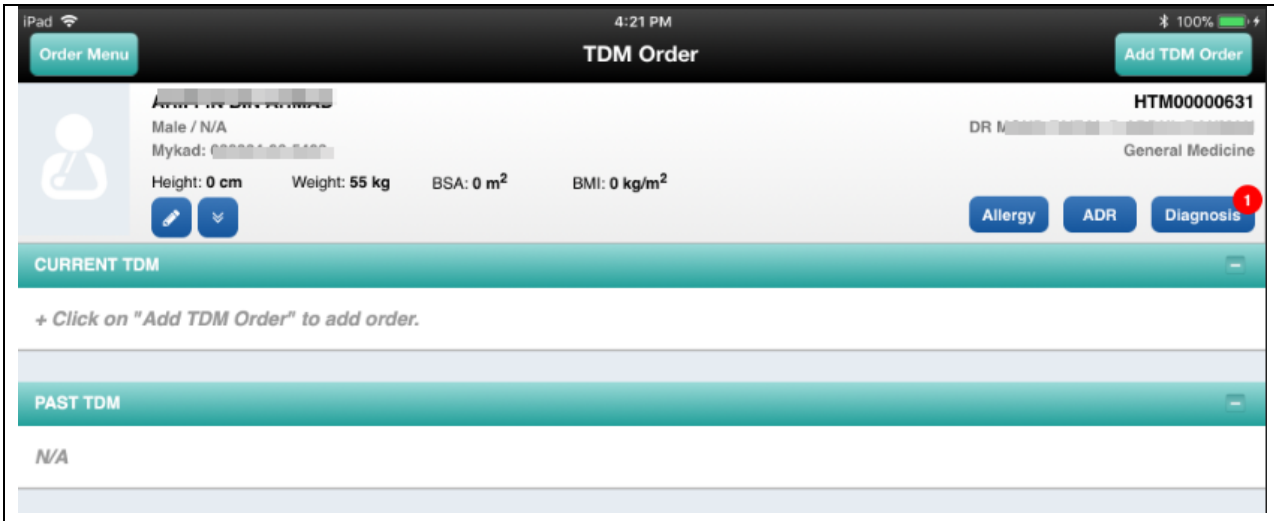
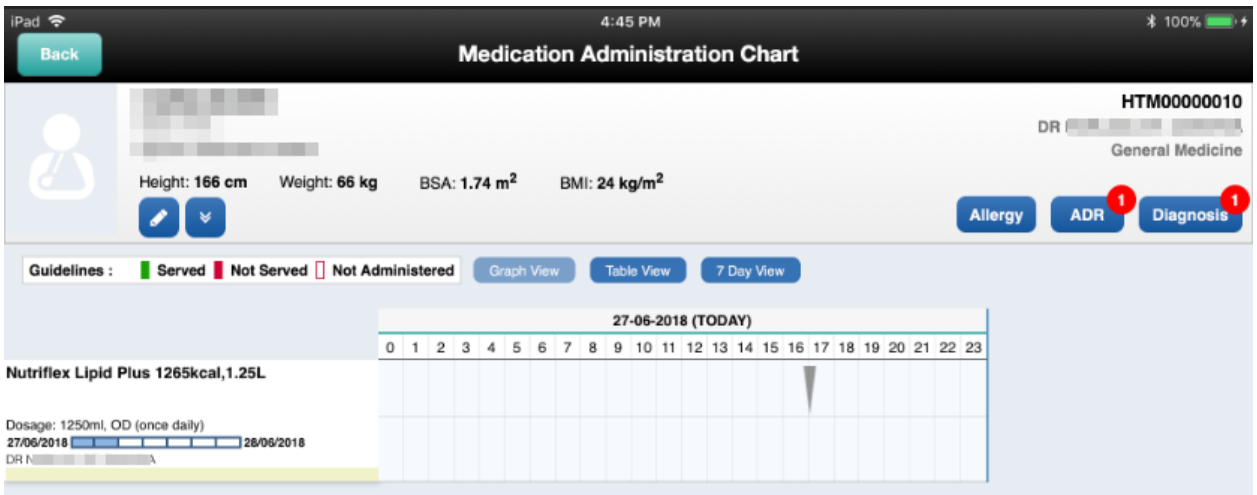


iv. View MAR (for inpatient order) – refer to MAR **section 3.5**



Notes	• Tap on 'Patient List' button to go back to the listing of patient names. • Tap on 'Medication Order' button to open Medication Order page. • Tap on 'Other Type of Order' to open TDM order page. • Tap on 'Add TDM Order' to add new TDM order. • Tap on 'Allergy' button to open the allergy page. • Tap on 'ADR' button to view ADR list. • Tap on 'Diagnosis' button to view and add diagnosis. • Tap on 'Back' button to go back to previous page.
Cross References	MO.SD1 – Main Menu Dashboard OM.SD1 – Order Management mobile

3.4.5.1.2 Application Business Rules

No.	Name	Description
1.	Order Menu	User shall be able to access into 3 different page from this menu which listed as below:

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No.	Name	Description
		• Medication Order – used to create new medication order, renew existing order, change existing order or stop existing order (refer to next **section 3.4.5.2** for details information about Medication Order in mobile). • Other Type of Order – used to access into TDM order list and create new TDM order • View MAR – used to view the MAR chart list and it is applicable for inpatient order only (refer to **section 3.5** for MAR section and specification document on MAR Mobile, PhIS_CPS_SDD_MAR_Mobile_v1.0 for more details on View MAR).

3.4.5.1.3 Input Validation Rules

No input validation rules available in this page.

3.4.5.2 Medication Order (mobile)

3.4.5.2.1 Screen Design

ID	OMM.SD2
Description	Medication Order (mobile)
Diagram i. Medication Order	

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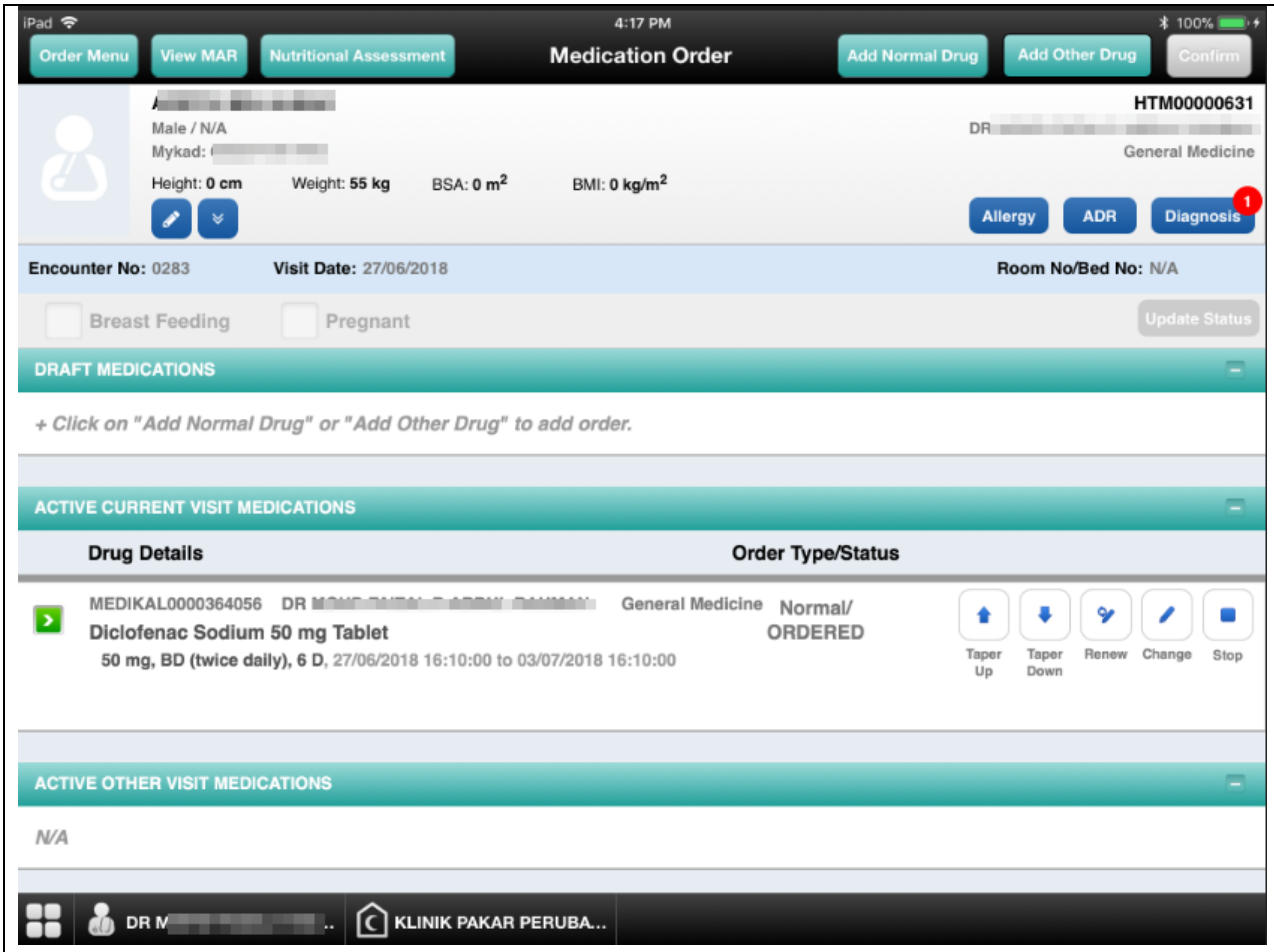

ii. Edit/Add Height and Weight

iii. Add Normal Drug

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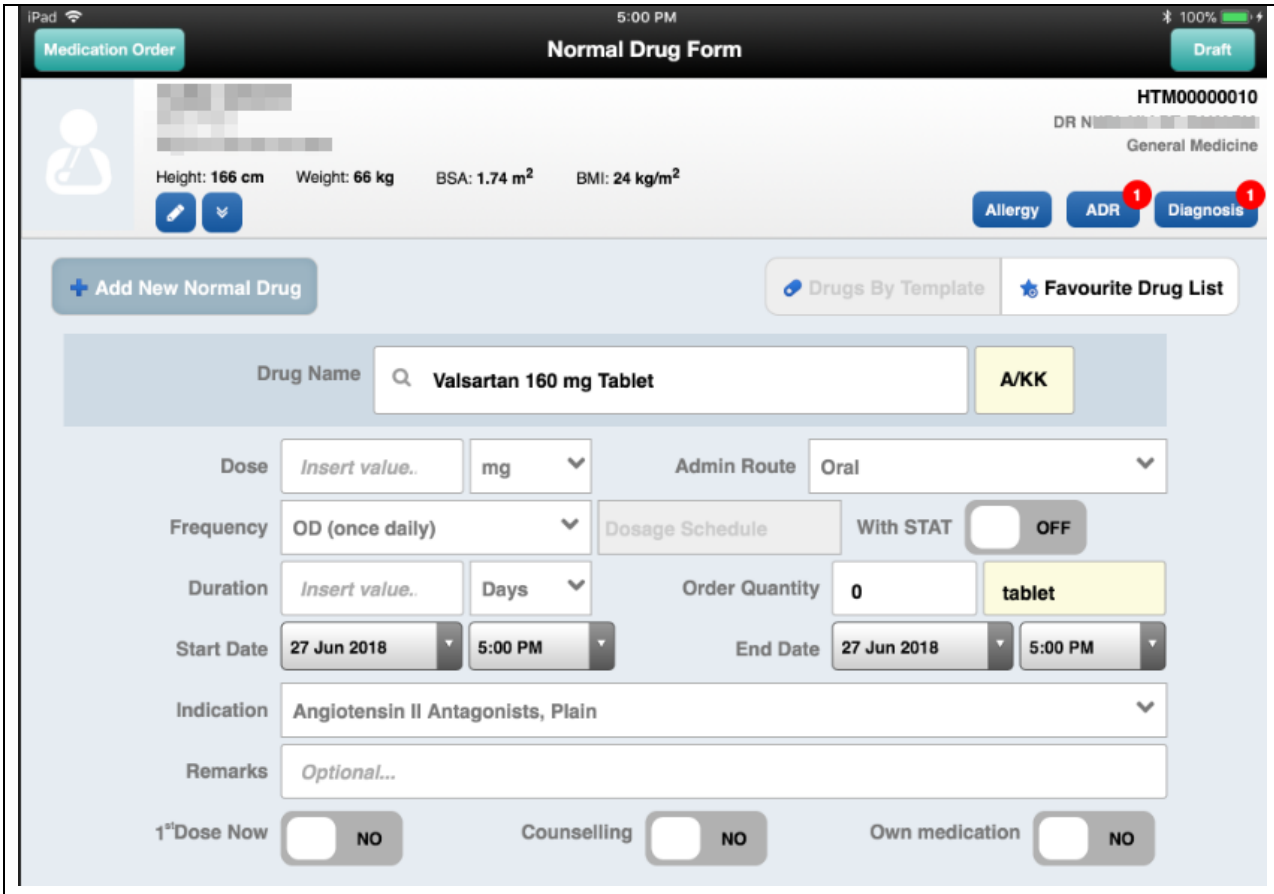

Notes	• Tap on 'Add Normal Drug' button to open Normal Drug Form and create drug order. • Tap on 'Add Other Drug' button to list other type of drug order and choose the drug category for other drug order. • Tap on 'Order Menu' button to go back to Order Manu page. • Tap on 'View Mar' button to open View MAR chart. • Tap on 'Nutritional Assessment' to open Nutritional Assessment Listing page. • Tap on 'Allergy' button to open the allergy page. • Tap on 'ADR' button to view ADR list. • Tap on 'Diagnosis' button to view and add diagnosis. • Tap on 'Taper Up' button • Tap on 'Taper Down' button • Tap on 'Renew' button • Tap on 'Change' button • Tap on 'Stop' button to • Tap on 'Draft' button to save draft order. • Tap on 'Medication Order' button to go back to medication order page.
Cross References	OMM1.SD1 – Order Management listing

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3.4.5.2.2 Application Business Rules

No.	Name	Description
1.	Medication Order page	• This page is accessible by a prescriber with granted location same with patient. • At Medication order page, user shall be able to add normal drug order, add other drug order (PN, CDR, Infusion, Radiopharmaceutical), view the MAR chart, add new nutritional assessment, add allergy, view ADR report and view/add diagnosis. • This page also enable user to edit/add height and weight for a patient which available from this icon . • User also shall be able to taper up or taper down the confirm drugs by taps on this button Taper Up Taper Down . Once the drug has been taper up, user cannot do taper down and vice versa (rules apply in version 1.7). Taper button will be enabling if the drug has a taper flag, which setting done in Drug Master screen (web application). • User also can renew from the existing order by taps on this button, Renew . On taps of Renew, the drugs order details page will appear and user able to enter dose, duration and date for renew order. • User shall be able to Change (modify) Change the existing order. This Change function is for modification on the existing order. After change the order, drug information will be modified and drug details will be updated. It will NOT Stop existing order and create new order as in Web Change function. • User able to stop the order by taps on this button Stop . Once taps on Stop, drug status will be temporarily show as STOP and user able to enter Remarks for stop but it is not mandatory. The taps again on Update Status button Update Status to stop the order.
2.	Add normal drug	• This page will be open when user taps on 'Add Normal Drug' button. Normal Drug Form page will be opened. In this page, user needs to enter the drug name first with minimum 3 letter of the drugs name. Select the drug name from the search listing and automatically the other details information field will appear. • Normal order – Create medication order for patient. Consist of the following function: a. Normal Order (default value will follow drug master setup)

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No.	Name	Description
		i. Mandatory information during order are: • Drug Name - Drug name can be search by Active Ingredient, Drug Name and Trade Name. Trade Name is common brand name for this drug. Information defined in drug master. • Dosage – Dosage of the drug required (per administration) • Administration Route [1] - Drug administration route • Frequency [2] – Drug frequency • Duration – Duration of the order • Start and End Date – Start and end date of the order ii. Non-Mandatary Information • Drug Indication • Drug Remarks iii. Auto displayed information • Order Quantity – calculated based dose, frequency, duration and administration route. However, user is allowed to change this value. • Drug Category – Category of the drug[i]. Please refer to 'Appendix' section. • Dispense Location – Order routing for dispensing. b. Drug Name, Administration Route, Frequency and Indication are defined in master table and link to specific drug with default value.
3.	Pediatrics dose	Pediatrics age define in ref_codes If patient dose less than pediatrics age, default dose will be 0. It will not follow setting in drug master for safety reason. If patient weight is empty, alert will appear and ask user to enter the patient weight before proceed with the order.
4.	Taper Drug	Order same drug with increasing/decreasing the total dose. Order date between dose must be continuous and cannot overlap. • Taper up – increase the dose. (e.g.:) *i. Prednisolone 5mg tablet, 10 mg, BD, 1/1-7/1 = 10 mg * BD = 20 mg* *ii. Prednisolone 5mg tablet, 10 mg, TDS, 8/1-15/1 = 10 mg * TDS = 30 mg* *iii. Prednisolone 5mg tablet, 15 mg, TDS, 16/1-21/1 = 15 mg * TDS = 45 mg* • Taper down – decrease the dose

[1] *A route of administration in pharmacology and toxicology is the path by which a drug, fluid, poison, or other substance is taken into the body. Routes of administration are generally classified by the location at which the substance is applied. Common examples include oral and intravenous administration.*

[2] Frequency - *The number of regular recurrences in a given time*

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No.	Name	Description
		*i. Prednisolone 5mg tablet, 10 mg, TDS, 1/1-7/1 = 10 mg * TDS = 30 mg* *ii. Prednisolone 5mg tablet, 10 mg, OD, 8/1-15/1 = 10 mg * OD = 10 mg* *Prednisolone 5mg tablet, 5 mg, OD, 16/1-21/1 = 5 mg * OD = 5 mg*
5.	Dosage Schedule (Split dose)	a. The optimum therapeutic dose and optimum interval between doses e.g.: *Prednisolone 5mg tablet, 10 mg (8:00 am), 5 mg (8:00pm)* b. User also can change the time only without change the dose. (Some patient required specific time and not follow exactly time in frequency master) e.g.: for BD dose instead of 8:00 and 8:00 pm, user want to change to 6:00 am and 6:00am *Prednisolone 5mg tablet, 5 mg (6:00 am), 5 mg (6:00pm)*
6.	Maximum order duration	Maximum order duration for outpatient is 365 days. For inpatient is 7 days. For some drug, possible to have different order limit. This can be configured in drug master.
7.	1st Dose Now	Use for inpatient order where doctor wants to prescriber the order but the serving time has been passed or yet to come (more than 1 hour from schedule admin time). 1st Dose Now checkbox used to order the drugs and given to the patient immediately. User can see the serving dose in MAR record immediately after doctor order the drug with 1st dose now flag.

3.4.5.2.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
1.	Drug Name	Drug name can be search by Active Ingredient, Drug Name and Trade Name. Trade Name is common brand name for this drug. Information defined in drug master.	Yes	Text field (Searching field)
2.	Dosage	Dosage of the drug required (per administration). Value will be defaulted to selected drug strength. If drug without strength, value will be defaulted to quantity value from drug master.	Yes	Text field with drop down on UOM
3.	Administration Route	Drug administration route which refer to Administration Route code table.	Yes	Drop down list
4.	Frequency	Drug frequency which refer to Frequency code table.	Yes	Drop down list
5.	With STAT	If drug order is to be given immediately, choose With Stat = ON.	No	Dialog box
6.	Start Date	Order Start date.	Yes	Calendar in format

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No.	Name	Description	Mandatory	Format
				dd/mm/yyyy
7.	End date	Order End date.	Yes	Calendar in format dd/mm/yyyy
8.	Duration	Duration of the order. Calculated in days. Formula: *Duration = End date - Start date.* On change of this value, order end date will be updated.	Yes	Text field
9.	Duration Unit	Value refer to reference code. Default to 'Day(s)' however user can select specific value: • Day(s) • Weeks • Year	Yes	Drop down list
10.	Drug Indication	Indication of the drug on particular disease. Data will appear after user enter the drug name, if any.	No	Drop down list
11.	Order Quantity	Calculated based dose, frequency, duration and administration route. However, user is allowed to change this value.	Yes	Text field
12.	Remarks	Remarks entered by prescriber. Previous prescriber's remark can been seen once same drug being ordered for the same patient.	No	Text field
13.	1st Dose	1st Dose Now checkbox used to order the drugs and given to the patient immediately. User can see the serving dose in MAR record immediately after doctor order the drug with 1st dose now flag. Set this dialog box to Yes if need to give the dosage on current time.	No	Dialog box
14.	Counselling	Choose Counselling dialog box=Yes if patient need counselling.	No	Dialog box
15.	Own Medication	Choose Own Medication diaog box = Yes if the drug order is own medication order. This drug will be highlighted with pink color in MAR and dispensing pharmacy screen (web).	No	Dialog box

3.4.5.3 Allergy (mobile)

3.4.5.3.1 Screen Design

ID	OMM.SD3
Description	Allergy (mobile)
Diagram i. Allergy	

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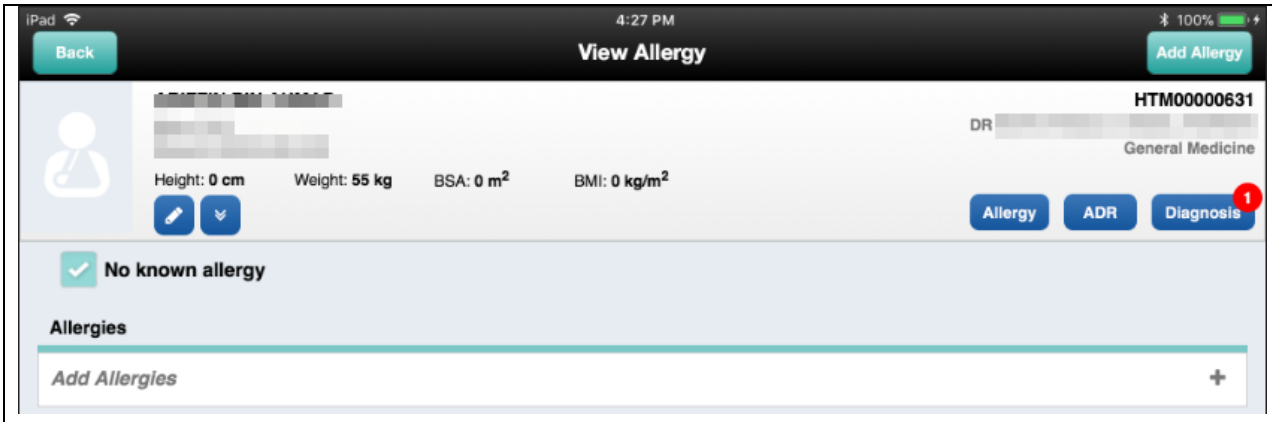
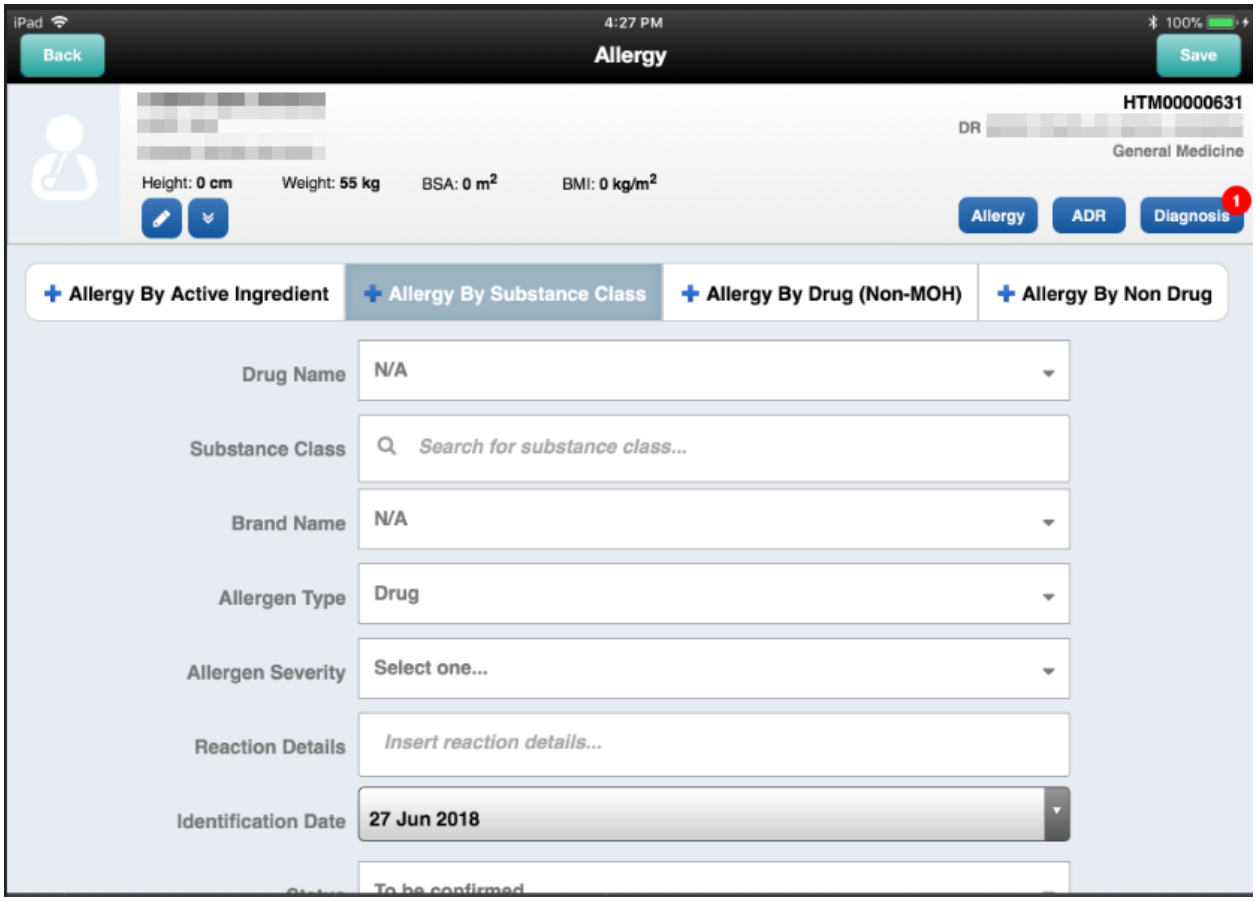


ii. Add Allergy



Notes	• Tap on 'Back' button in View Allergy page to go back to Medication Order page. • Tap on 'Add Allergy' button to add in new allergy drugs. • Tap on 'Back' button in Allergy page to go back to View Allergy page. • Tap on 'Save' button to save the new allergy.
Cross References	OMM.SD2 – Medication Order mobile

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3.4.5.3.2 Application Business Rules

No.	Name	Description
1.	Mandatory field	Patient will be screened for allergies. Once allergy is added, allergy severity and reactions details field is mandatory to be filled.
2.	Allergy status	Allergy with status='Confirmed', user will be alert with the allergy drug message but still able to proceed with the drug order. If allergy drug status other than 'Confirmed', no alert will display.
3.	Allergy by Active Ingredient	Allergy by active ingredient is a drug that registered under MOH. User able to search on drug name by active ingredient.
4.	Allergy by Non Drug (Non-MOH)	Non MOH drugs is a drug that was not registered under MOH. User able to add in allergy by drug name which is not under MOH into a free text field. Select this type of allergy by click on the radio button.
5.	Allergy by Substance Class	Allergy by substance class is a drug that registered under MOH and link with Active Ingredient.
6.	Allergy by Non Drug	Non drugs allergy is an allergy reaction to a specific foods or environment.

3.4.5.3.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
Allergy Input Field				
1.	Drug Name	Search on drug name that will be add as allergy drug for the patient. User able to search with minimum 3 letters of the drug name and drug name that match with the 3 letters will be listed for user to choose.	Yes	Text field
2.	Substance Class	Substance class value will appear based on the input value from Active Ingredient.	Yes	Drop down list
3.	Brand Name	Brand name is the brand name of the drug product. User can find the brand name using search screen.	No	Text field
4.	Reaction Details	It is to describe the specific reaction of the allergy with length 100 character.	Yes	Text field
5.	Allergen Type	Allergen type consist of allergy that cause from drugs, foods or miscellaneous.	No	Drop down list
6.	Allergen Severity	Allergen severity is categories of allergy based on the ranking either mild, moderate, severe or unknown.	No	Drop down list
7.	Identification Date	It is to indicate when allergy is being detected.	Yes	Calendar in format dd/mm/yyyy
8.	Status	It is to indicate the status of the allergy drugs either it is a Confirmed, Suspected, To be confirmed or Resolved status.	Yes	Drop down list

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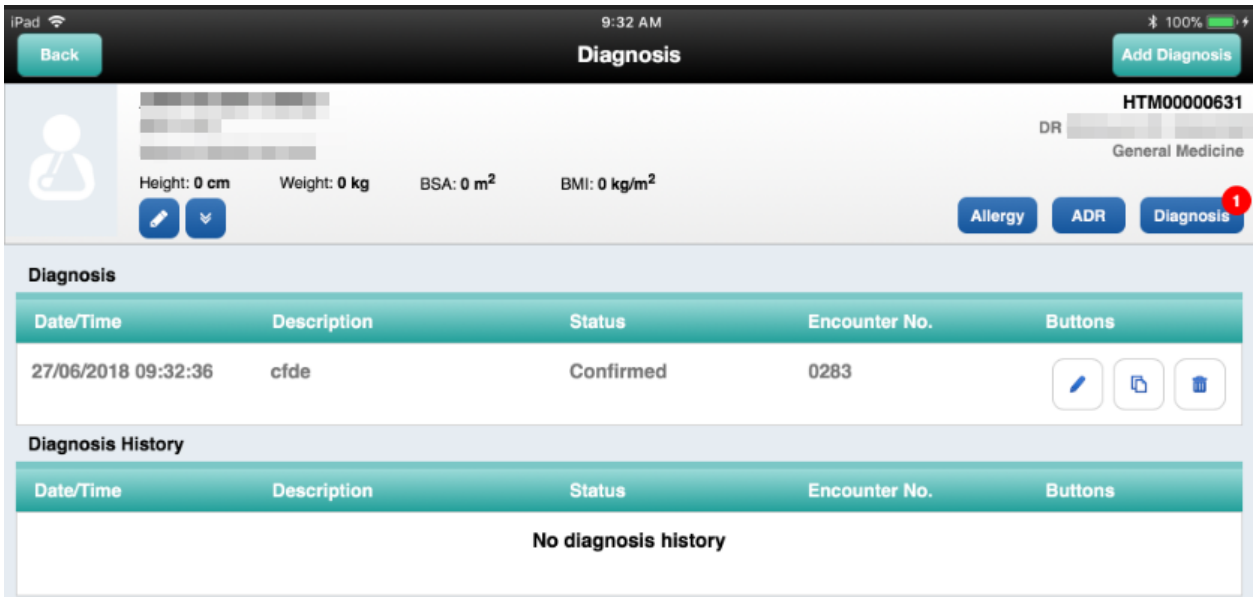
3.4.5.4 Diagnosis (mobile)

3.4.5.4.1 Screen Design

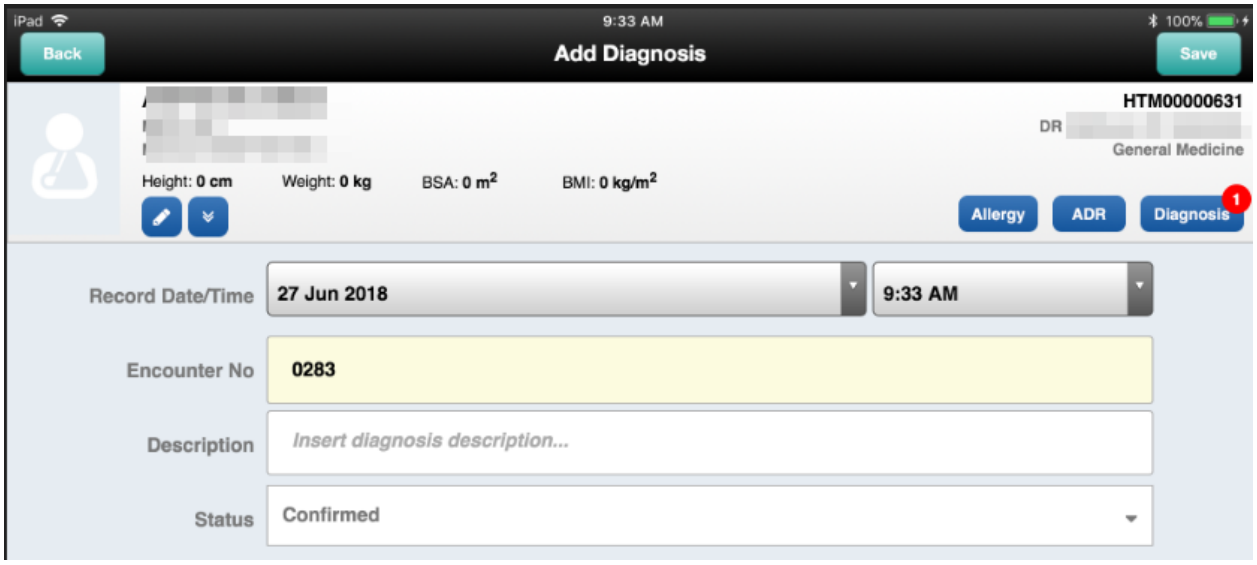
ID	OMM.SD4
Description	Diagnosis (mobile)

Diagram

i. Diagnosis



ii. Add Diagnosis



Notes	• Tap on 'Back' button in Diagnosis page will bring back user to Medication Order. • Tap on 'Add Diagnosis' button will opened Add Diagnosis screen.

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	• Tap on 'Back' button in Add Diagnosis screen will bring back user back to Diagnosis screen. • Tap on 'Save' button will save the new diagnosis created.
Cross References	OMM.SD1 – Order Management mobile

3.4.5.4.2 Application Business Rules

No.	Name	Description
1.	Diagnosis	There are 2 sections of diagnosis in this page: • Diagnosis – will show the diagnosis for the current visit. User shall be able to edit , copy and delete the current diagnosis from all these action buttons. • Diagnosis History – will show the diagnosis from previous visit
2.	Diagnosis Description	Diagnosis description is mandatory per visit for full based. If user did not enter any diagnosis, an alert will appear during confirmation of the drugs order.

3.4.5.4.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
1.	Record Date/Time	Date and time recorded once diagnosis record is created.	No	Calendar format in dd/mm/yyyy
2.	Diagnosis Description	Description of the diagnosis.	Yes	Text field
3.	Encounter No.	Number generated by system automatically and non-editable.	Yes	Text field (non-editable)
4.	Status	Status of the diagnosis must be selected from the drop down menu with value of "Confirmed", "Suspected", "Resolved", and "To be confirmed".	No	Drop down list

3.4.5.5 ADR (mobile)

3.4.5.5.1 Screen Design

ID	OMM.SD5
Description	ADR (mobile)
Diagram	

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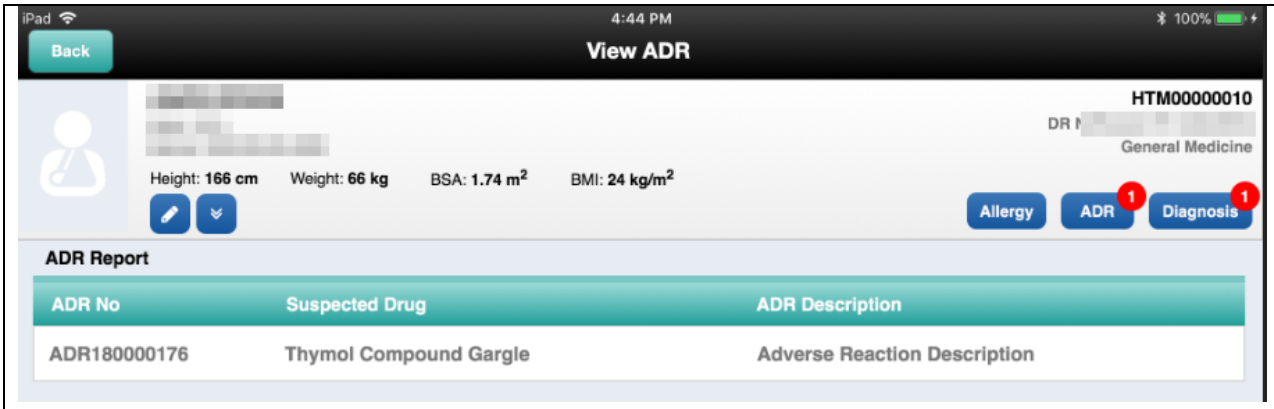

Notes	• Tap on 'Back' button, it will go back to Medication order page.
Cross References	OMM.SD1 – Medication Order mobile PhIS_CPS_SDD_Clinical_v1.0 – details information on ADR

3.4.5.5.2 Application Business Rules

No.	Name	Description
1.	ADR Report list	List of ADR report will appear if any input by user on ADR report. For more details on ADR, refer to PhIS_CPS_SDD_Clinical_v1.0.

3.4.5.5.3 Input Validation Rules

There is no input validation for this page. It is for view purpose only.

3.4.5.6 Nutritional Assessment (mobile)

3.4.5.6.1 Screen Design

ID	OMM.SD6
Description	Nutritional Assessment (mobile)
Diagram i. Nutritional Assessment	

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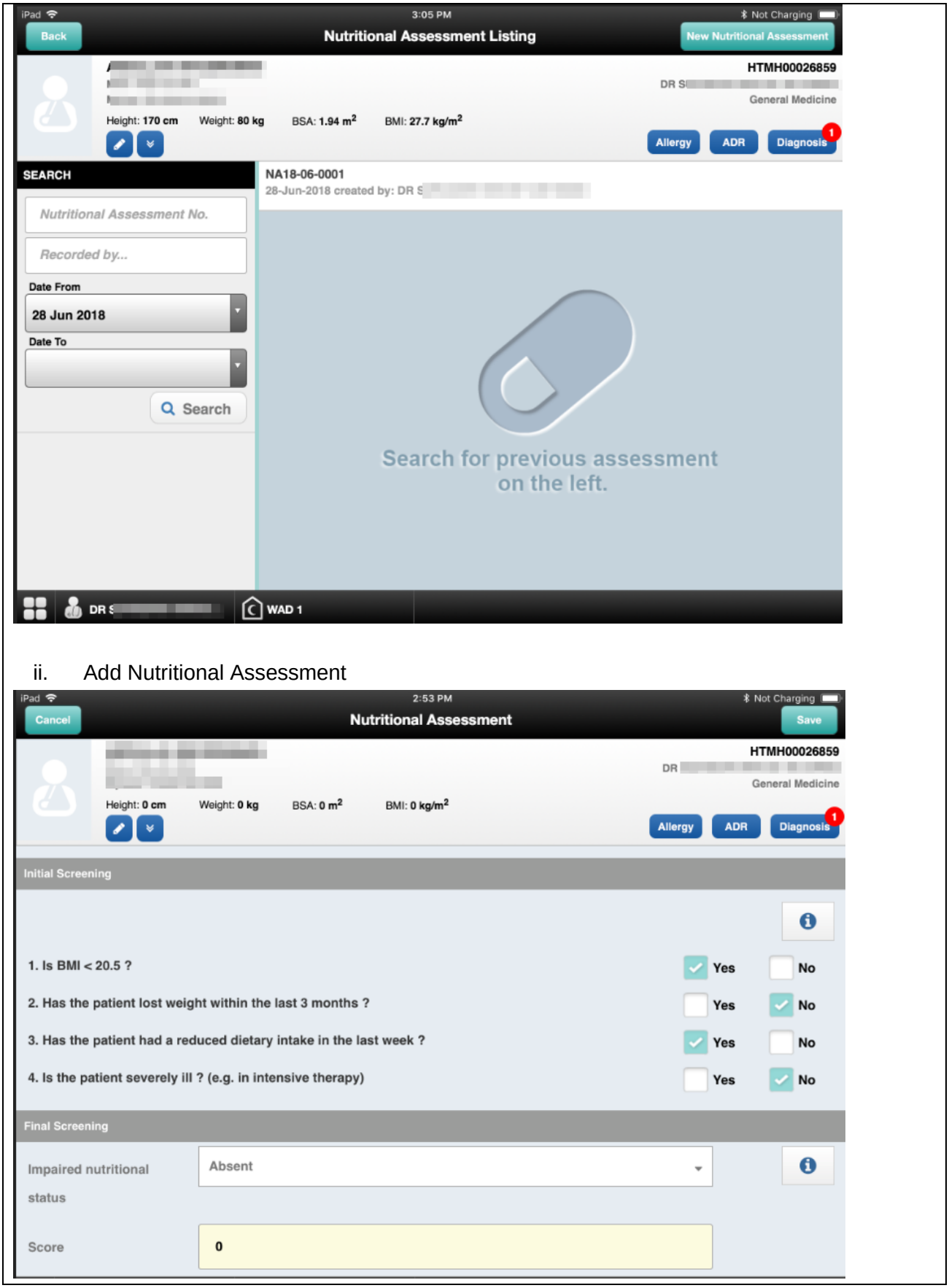

ii. Add Nutritional Assessment

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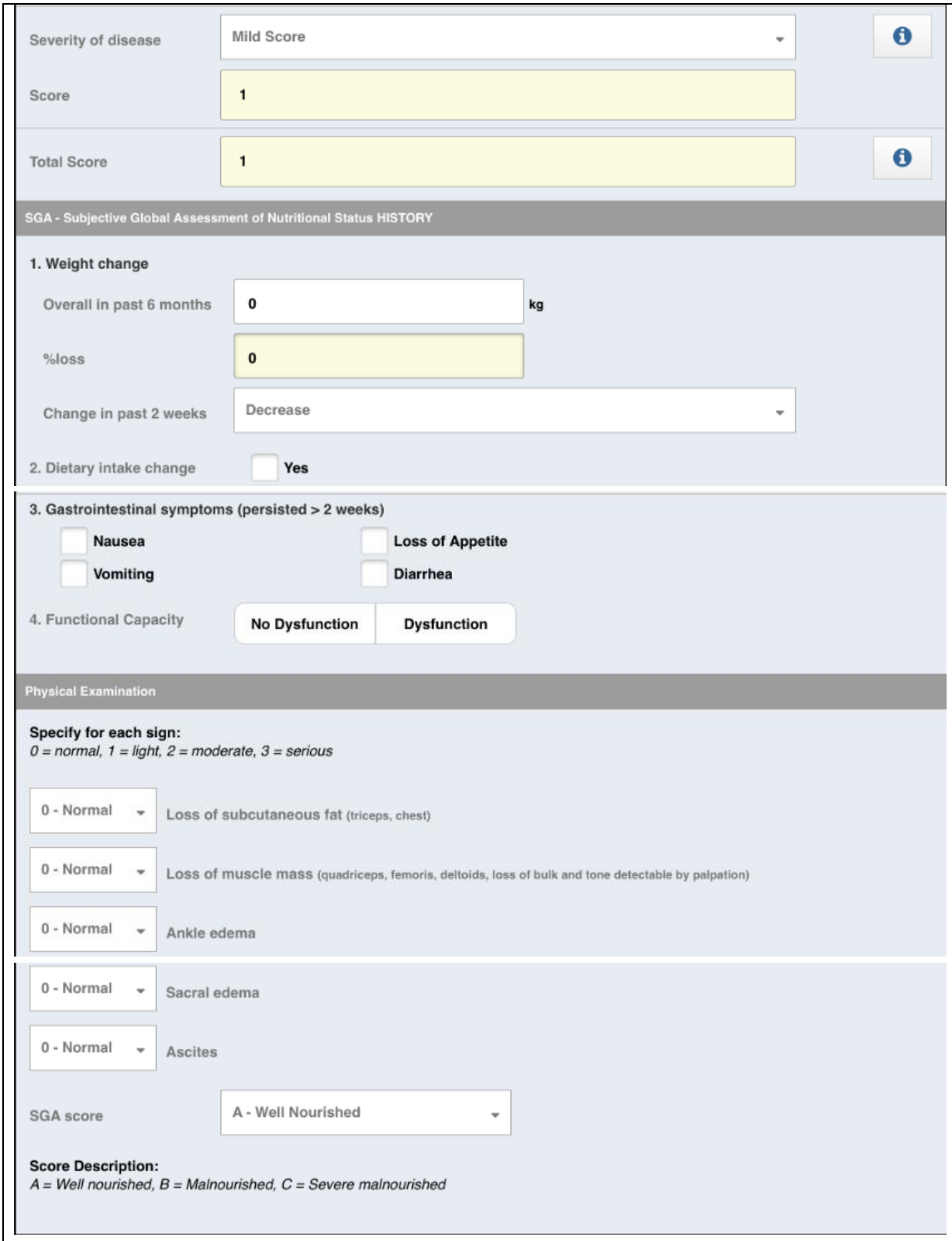

iii. Modify Nutritional Assesment

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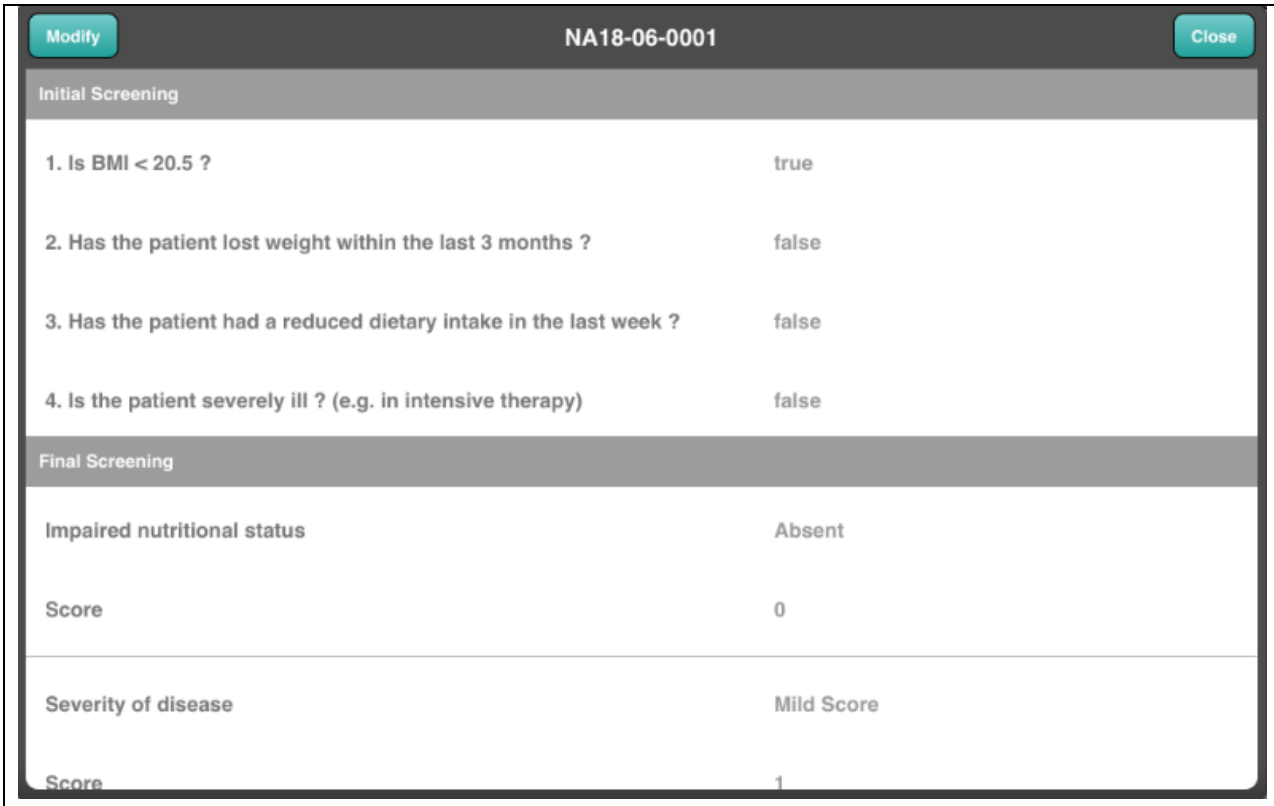

Notes	• Tap on 'Back' button in Nutritional Assessment page will bring back user to Medication Order mobile page. • Tap on 'Add Nutritional Assessment' button will open add screen. • Tap on 'Cancel' button will close the add nutritional assessment page. • Tap on 'Save' button will save the new nutritional assessment report. • Tap on 'Modify' button will open back Nutritional Assessment edit page. • Tap on 'Close' button will close the nutritional assessment report.
Cross References	OMM.SD1 – Medication Order mobile PhIS_CPS_SDD_PN_v1.0 – details on Nutritional Assessment flow and field.

3.4.5.6.2 Application Business Rules

Refer to SDD document PhIS_CPS_SDD_PN_v1.0 for application business rules on Nutritional Assessment.

3.4.5.6.3 Input Validation Rules

Refer to SDD document PhIS_CPS_SDD_PN_v1.0 for input validation rules on Nutritional Assessment.

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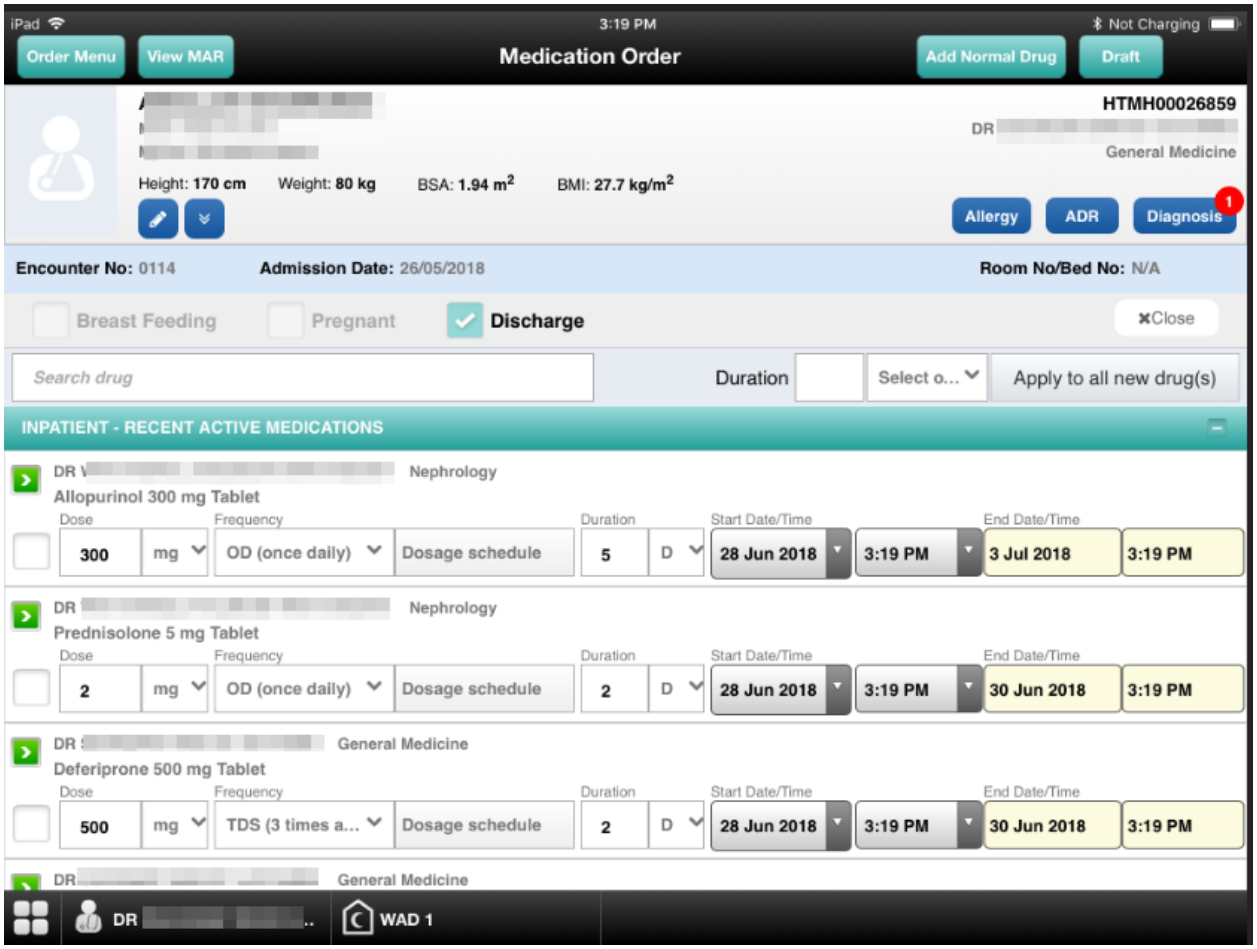
3.4.5.7 Discharge Order (mobile)

3.4.5.7.1 Screen Design

ID	OMM.SD7
Description	Discharge Order (mobile)
Diagram	
Notes	• Tap on 'Order Menu' button to go back to Order Menu page. • Tap on 'View MAR' button to open view MAR page. • Tap on 'Add Normal Drug' button to add normal discharge order. • Tap on 'Draft' button to save the discharge order into draft list. • Tap on 'Close' button to close the discharge medication order page.
Cross References	OMM.SD1 – Medication Order mobile

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3.4.5.7.2 Application Business Rules

No.	Name	Description
1.	Discharge Order page	• User able to open this page only once Discharge checkbox is being ticked for inpatient record. • Once user ticked on Discharge, system will auto populated all inpatient recent medication order which are still active and user able to draft new medication form the list. • From the list of inpatient recent active medication, the Dose, Frequency, Dosage Schedule, Duration, and Start Date field will be enable for user to edit. • User able to add other drug from the recent active medication by tap on Add Normal Drug button. • User able to search on specific drug name form the listing by enter drug name in this field Search drug. • User also shall be able to set the same duration for the selected drugs in the list using this field Duration Select o... . Once set the number of duration, tap on 'Apply to all new drug(s)' button. All selected drugs will be changed to the duration set from this field.
2.	Discharge Order	Allow doctor to create order for discharge medication (normal order only). Applicable for visit type inpatient, emergency and day care. For discharge medication, order rules will follow outpatient (duration can more than 7 days). For discharge medication, order will follow outpatient rules i.e: maximum order duration is 365 days.

3.4.5.7.3 Input Validation Rules

No.	Name	Description	Mandatory	Format
Discharge Drug				
1.	Dose	Dosage of the drug required (per administration). Value will be defaulted to selected drug strength. If drug without strength, value will be defaulted to quantity value from drug master.	Yes	Text field with drop down on UOM
2.	Frequency	Display the frequency of the selected drug. User able to change frequency value.	Yes	Drop down
3.	Duration	Duration of the order. Calculated in days. Formula: *Duration = End date - Start date.* On change of this value, order end date will be updated. Unit value refer to reference code. Default to 'Day(s)' however user can select specific value: • Day(s) • Weeks	Yes	Text field

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No.	Name	Description	Mandatory	Format
		• Year		
4.	Administration Time	In Dosage Schedule: show the default serving time based on maintenance table. User able to change the admin time when do split dose.	Yes	Time (format: 00:00AM / 00:00PM)
5.	Dose	In Dosage Schedule: display the default dose for the selected drug. User able to change the dose accordingly for split dose order. It will be disable for frequency type = STAT, PRN, Interval frequency)	Yes	Text field
6.	Start Date	To be selected from calendar control. Default value is the start date of the current order.	Yes	Calendar in dd/mm/yyyy format.
Filter Section				
7.	Search Drug	User able to search on the drug name from the list. Minimum character to search on the drugs is by 3 letters.	No	Search field
8.	Duration	User able to set the same duration to all selected drugs. Enter the duration value and then tap on 'Apply to selected drug(s)' button. Changes on duration will automatically apply to the selected drug from the list.	No	Search field

3.4.6 Integration

No.	Name	Description
1.	MIMS	1. To display popup for Doctor or Pharmacist attention on: i. Drug Interaction by checking **Severity = "Severe"**. ii. Drug Allergy Interaction by checking **Count of Allergy Alerts > "0"**. iii. Duplicate Therapy Interaction by checking **Level = "1" and "2"** iv. Lactation interaction by checking **Severity = "Contraindicated".** v. Drug Pregnancy & Women of Childbearing Age Interaction by checking **FDA Category = "D" or "X"** vi. Dosage Interaction by checking **ID = IDS_DOSE_MAX_<value>** Normal interaction message, by clicking on icon to display the MIMS reply message (inclusive all interaction message that meet MIMS criteria.)

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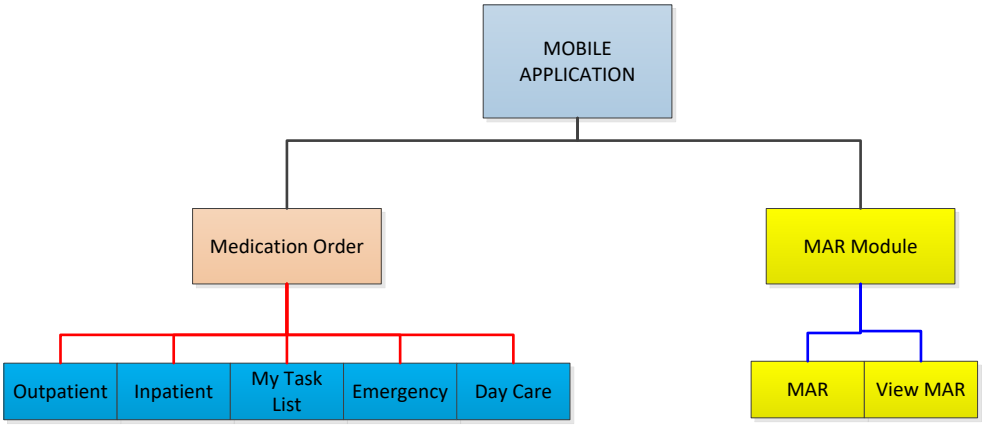
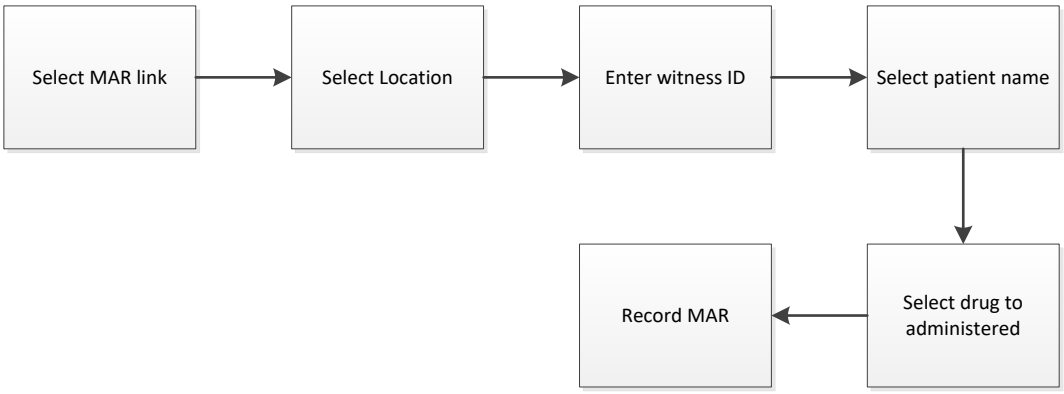
3.5 MAR Module

3.5.1 Overview



MAR.OV1: MAR Module Overview

3.5.2 Block Diagram



MAR.BD1: MAR Module diagram

3.5.3 Purpose

MAR Mobile is another PhIS application for MAR using Ipad. It was mainly used by nurse and doctors who do workaround in ward since they need to move in mobile. Medication Administration Record screen allows Nurses to administer patient based on drug and time. The patient name will appear based on granted location of the nurse ID. MAR screen is used for inpatient order only. For MAR mobile application, user can record or admin the drug but cannot do printing of medication chart.

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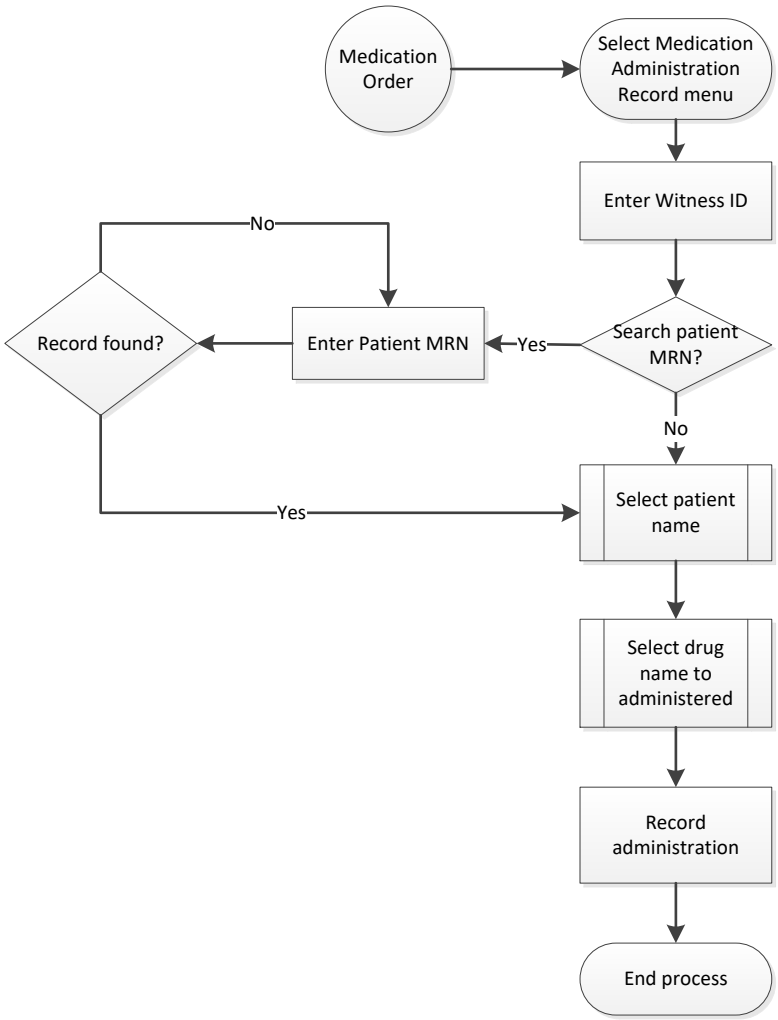
3.5.4 Screen Navigation Diagram



MAR.SND1: MAR Module flow

3.5.5 Detail Functionality and Screen

Refer to details document PhIS_CPS_SDD_MAR_Mobile_v1.0 for details on functionality, application business rules and input validation rules.

3.5.6 Integration

None.

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4. References

Document	Description/ Expansion
PhIS_CPS_SDD_OPIP_v1.0	System Design Document (SDD) for Outpatient Inpatient Pharmacy Module
PhIS_CPS_SDD_Clinical_v1.0	System Design Document (SDD) for Clinical module
PhIS_CPS_SDD_OM_FB_v1.0	System Design Document (SDD) for Order Management module for Full Based
PhIS_CPS_SDD_OM_Mobile_v1.0	System Design Document (SDD) for Order Management Module of mobile
PhIS_CPS_SDD_MAR_Mobile_v1.0	System Design Document (SDD) for MAR Module of mobile

5. Acronyms

Item	Description
URS	User Requirement Specification
SDD	System Design Documentation
SPUB	*Sistem Pendispensan Ubat-Ubatan Bersepadu* (Integrated Drug Dispensing System)
IWP	Integration Web Portal
KPK	*Ketua Penolong Pengarah*
IV	Intravenous
CDR	Cytotoxic Drug Reconstitution
MTAC	Medication Therapy Adherence Clinic
PN	Parenteral Nutrition
TDM	Therapeutic Drug Monitoring
MAR	Medication Administration Record

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6. Appendix

[i] Drug Category - Prescriber category who is allowed to start the medication:

Category	Definition
A*	Consultant/Specialists for specific Indications only
A	Consultant/Specialists
A/KK	Consultant/Specialists/Family Physician Specialists
B	Medical Officer/House Officer
C	Paramedical staff
C+	Paramedical Staff doing midwifery

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