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

System Design Document
(SDD)

Manufacturing

Cytotoxic Drug Reconstitution

Version	**: 1.0**
Document ID	**: PhIS_CPS/SDD/MANF/CDR**

REVISION HISTORY

Version No	Date of Release	Prepared by	Reviewed by	List of changes from Previous Version
1.0	09/07/2018	Ilya Syarah	Chew Ming Ping	Document baseline

Table of Content

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.

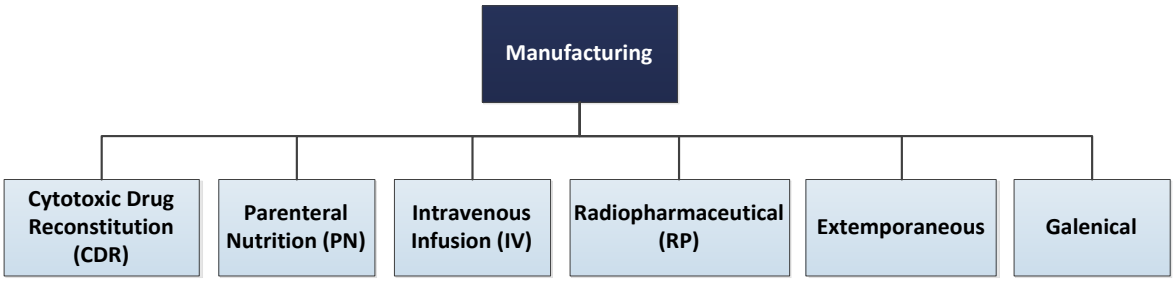
This process is to ensure both user requirements and software requirements of the projects developments are gathered appropriately from stakeholders and are documented in User Requirements Specification (URS) and System Design Documentation (SDD) specifically.

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.

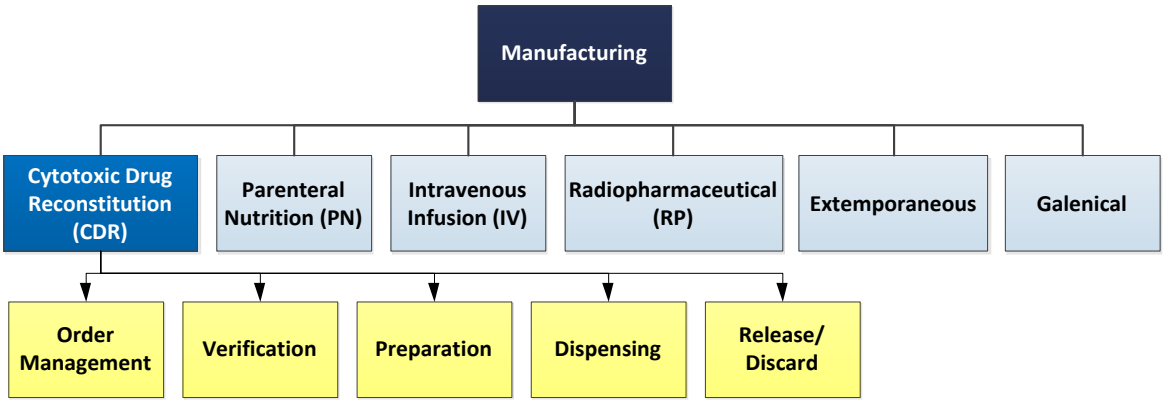
3. Detailed System Design

3.1 Manufacturing Overview



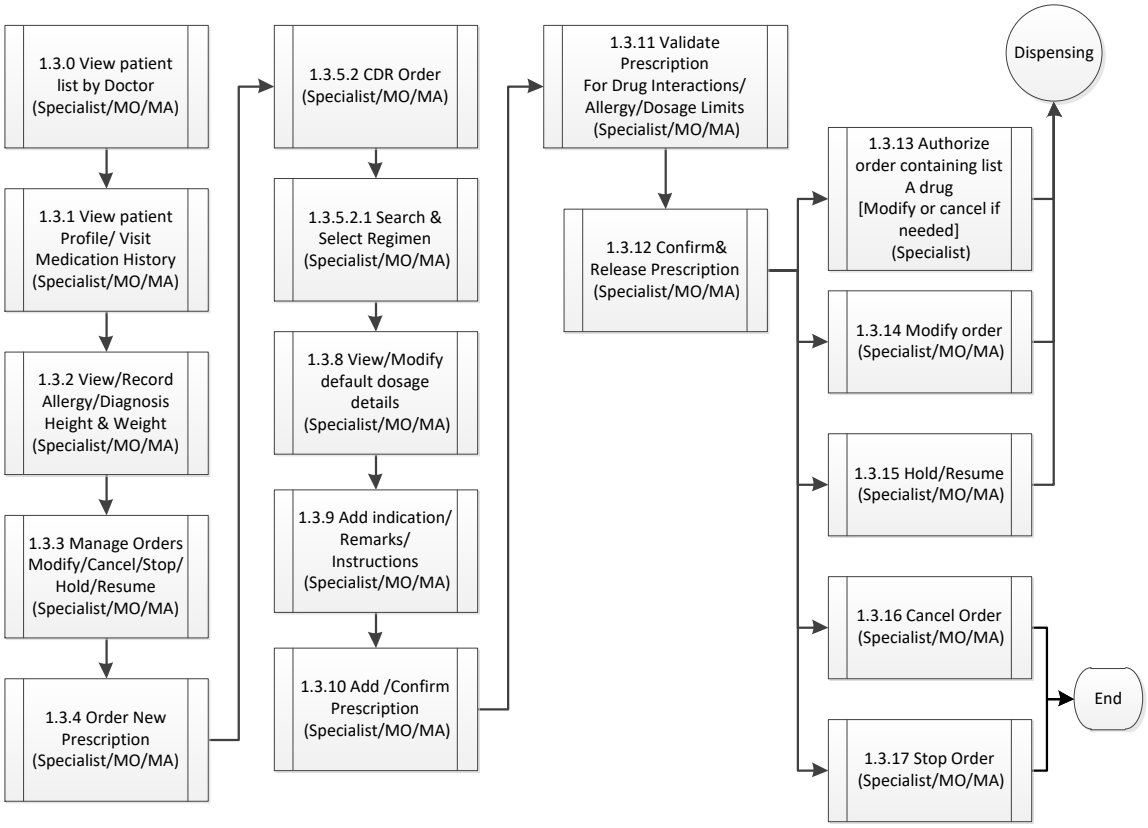
3.2 CDR

3.2.1 Overview

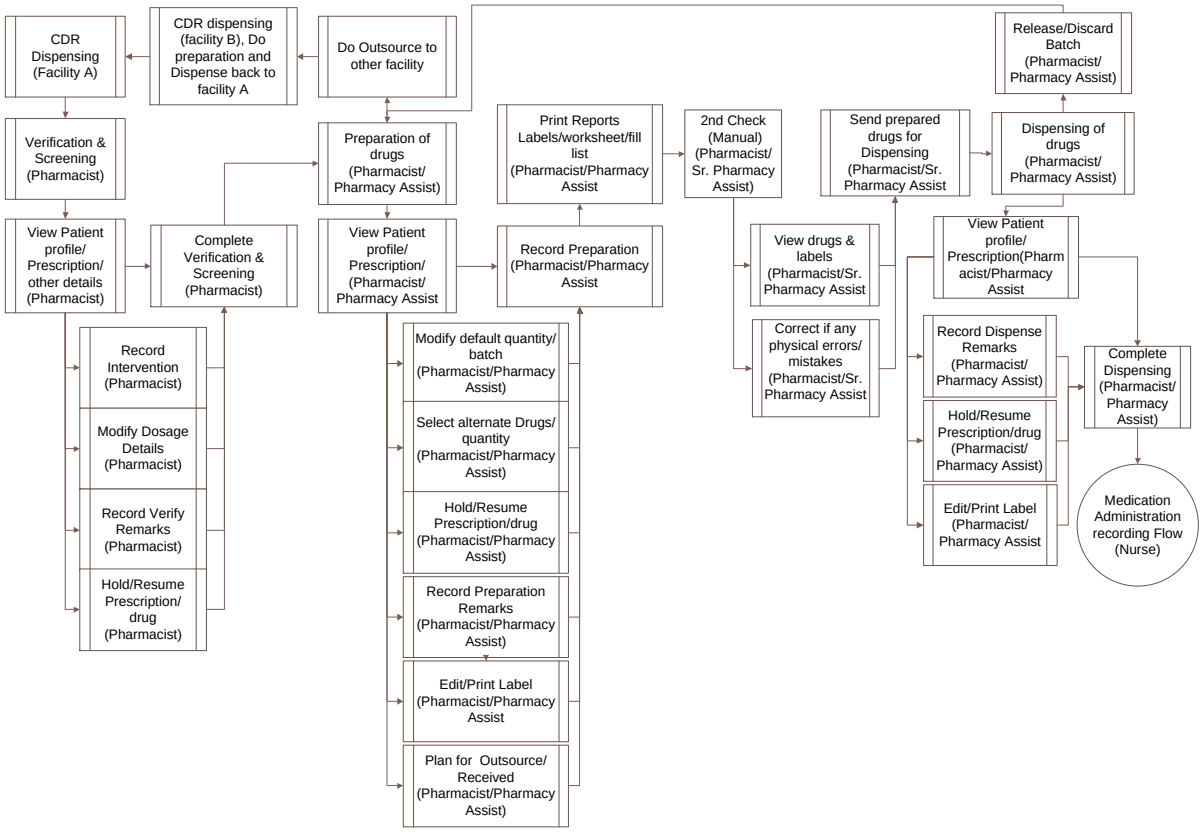


3.2.2 Block Diagram

3.2.2.1 Order Management - CDR



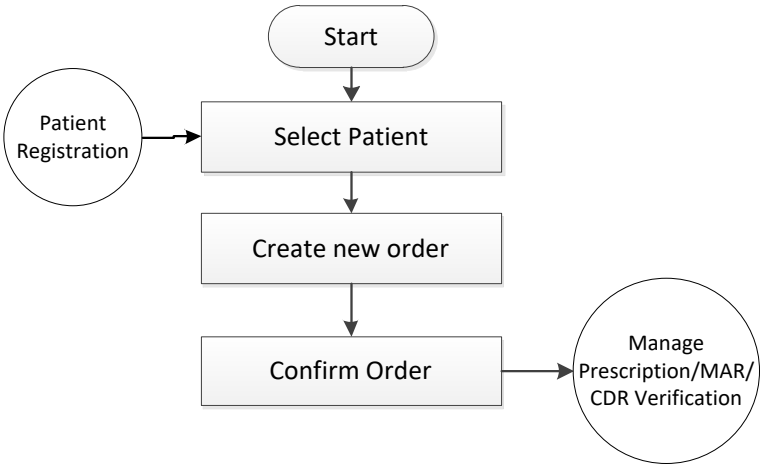
3.2.2.2 CDR Verification/Preparation/Dispensing/Release/Discard Batch



3.2.3 CDR Medication Order

CDR Medication Order screen allows prescribers to place cytotoxic drug order for patient with valid visit record. This screen is used by full based facilities. Confirmed order will be sent to pharmacists for the process of Verification, Preparation and Dispensing.

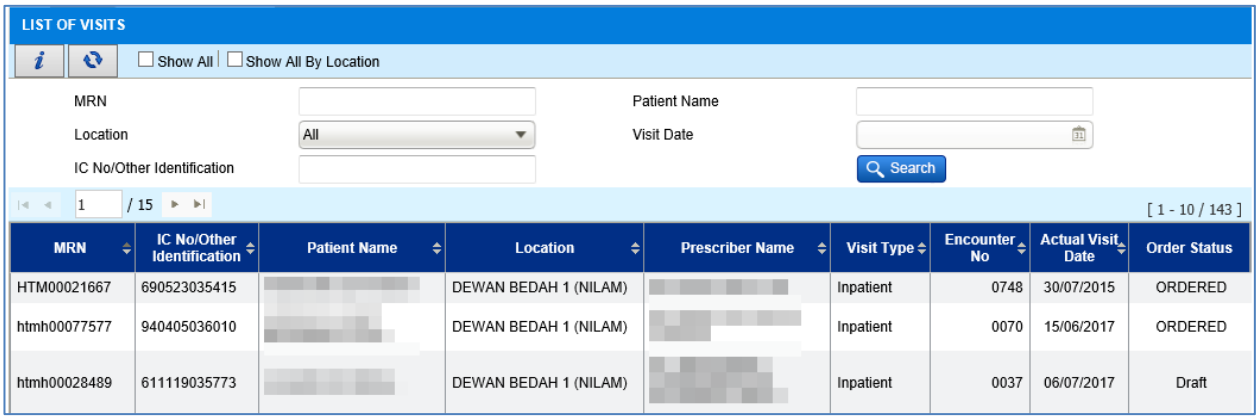
3.2.3.1 Screen Navigation Diagram



3.2.3.2 Detail Functionality and Screen

3.2.3.2.1 *Medication Order Listing*

3.2.3.2.1.1 ***Screen Design***

ID	CDROR.SD1
Description	To search patient with valid visit based on the visit location.
Diagram	

Notes	• Click on search button to search for the patient. • Click on patient record to add new medication order. • Click Show All checkbox to display patient records assigned to the login user. • Click Show All by Location to display patients records assigned to user's login location.
Cross References	None

3.2.3.2.1.2 ***Application Business Rules***

Refer #3.2.6.1 Medication Order Listing section in document PhIS_CPS_SDD_OM_FB_v1.0.

3.2.3.2.1.3 ***Input Validation Rules***

Refer #3.2.6.1 Medication Order Listing section in document PhIS_CPS_SDD_OM_FB_v1.0.

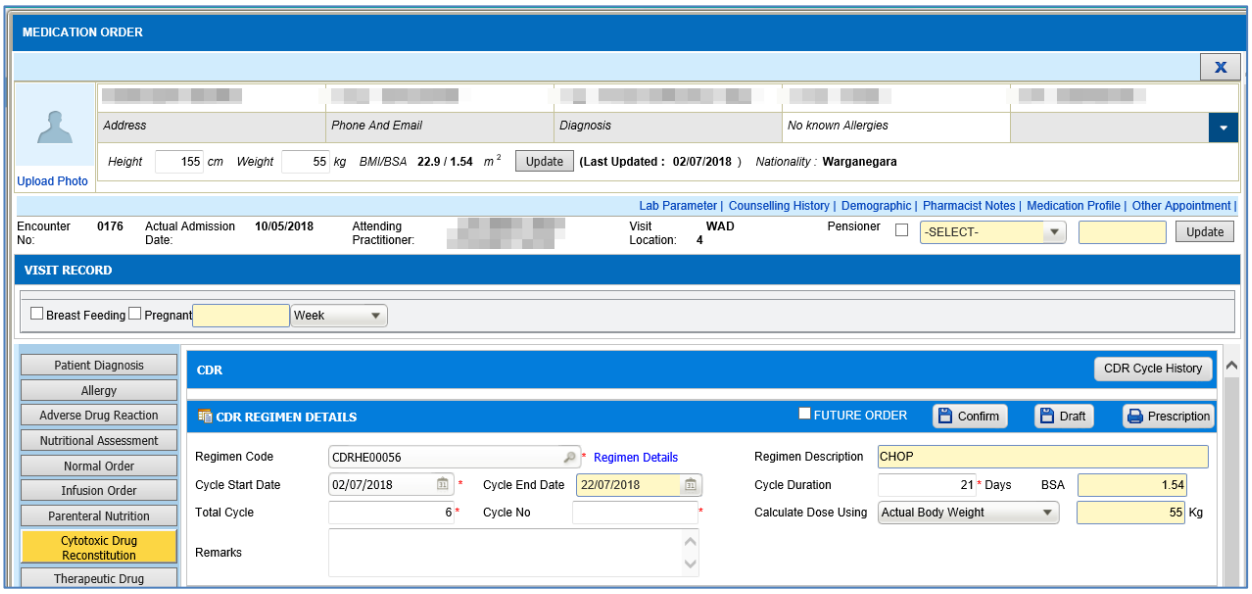
3.2.3.2.2 *New CDR Medication Order*

3.2.3.2.2.1 ***Screen Design***

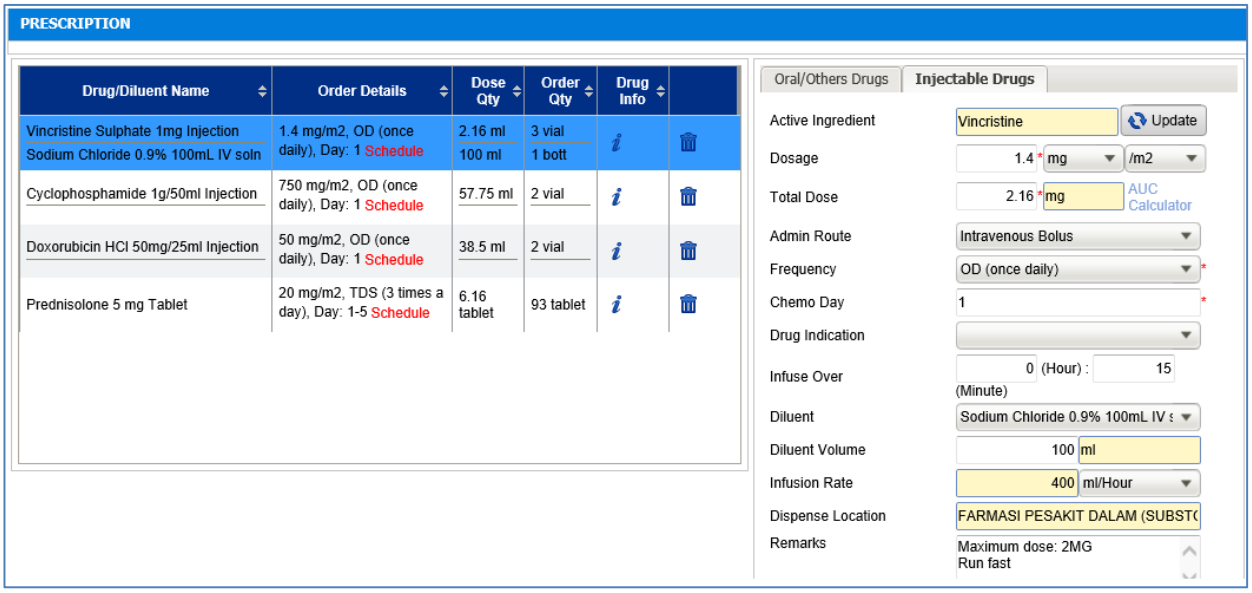
ID	CDROR.SD2
Description	To create new CDR medication order record.

Diagram

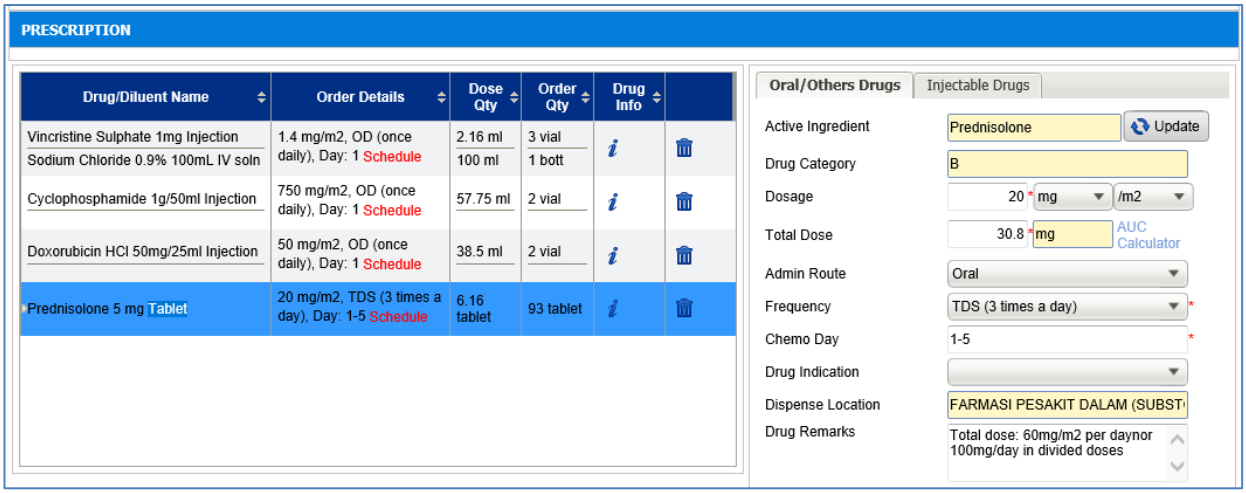
i. Create new record



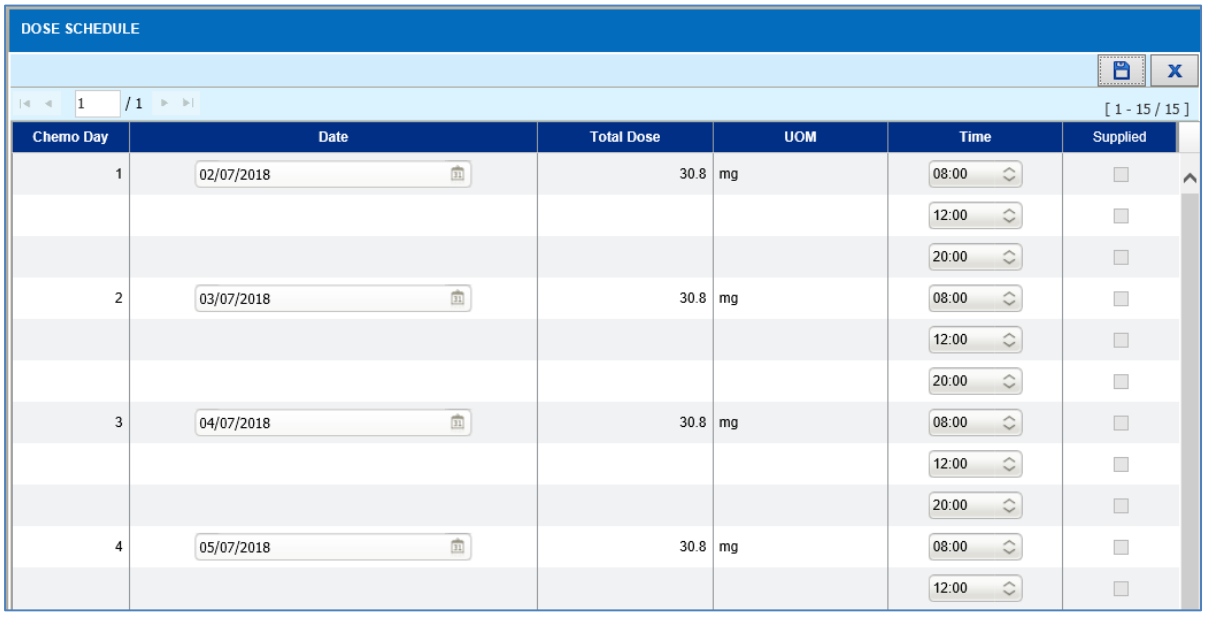
ii. Prescription section for Infusion drugs



iii. Prescription section for Oral/Others Drugs



iv. Click on the 'Schedule' hyperlink



Notes	• Click on 'Save' button to save the record. • Click on 'Print' button to print the prescription. • Click on 'Delete' button to delete order or drug. • Click on 'Update' button to update order information.
Cross References	

3.2.3.2.2.2 ***Application Business Rules***

No.	Name	Description
1.	Patient record	Patient Registration and Visit must already be created upon creating a new medication order record.
2.	New order	During creation of new order: i. After user selects which regimen to order, regimen data will be populated into the prescription list. ii. Regimen selected is based on the record in CDR Regimen Master maintenance screen. iii. Regimen Drug is categorized into 2 categories; Injectable Drugs and Oral/Others Drugs, based on the setup in Drug Master (IV Drug flag). iv. When IV Drug flag is selected, the drug is displayed in Injectable Drugs section, and if IV Drug flag is not selected, the drug is displayed in Oral/Others Drugs section. v. Dose Schedule records are created based on the drug chemo day and administration frequency. These records will then be used as a reference in drug preparation and administration. vi. Drug Authorization function is applicable for the ordering of upper category drugs by lower category prescribers. vii. Patient Allergy record is mandatory for each patient. If no allergy specified, 'Unknown Allergy' flag must be set as true. User is not allowed to confirm order without entering this record. viii. Patient Diagnosis record is mandatory for each patient visit. User is not allowed to confirm order without entering this record. ix. User to create order as 'Future Order' when ordering medication for patient's next cycle where the patient visit is not yet confirmed. No MAR record will be created for this order type. Order will flow to pharmacist screen (CDR Verification) however pharmacist is able to view only the record, unable to proceed to next stage. When valid patient visit record is created for this order, prescriber to approve the order then system will update the order as non-future order, visit location will update to current visit location and MAR record will be created based on the current visit location.
3.	Save order record	On click of Save button: i. Order status is updated to 'Draft'. ii. User is not allowed to change the Regimen Code, field is disabled. iii. Order information will be displayed in the Prescription section. iv. Delete, Confirm Order and Print button is enabled after saving the record.
4.	Drug Order Quantity Calculation	On saving the record, system will auto-calculate the drugs order quantity. Please refer appendix for detailed calculation.
5.	Update order record	User can edit the selected regimen drug by clicking on the data from the prescription list. Data will be populated into the regimen drug details section and update button will be enabled. On click of Update button, modification on the Drug Details will be updated in order record and prescription list.

No.	Name	Description
6.	Delete order record	On click of Delete button: i. Confirmation message will be displayed before user proceeds to delete the drug ii. Once user confirms to delete the record, system will delete order and all drugs record. i. Screen will refresh and user is allowed to create new CDR order.
7.	Print Prescription	On click of Print button: i. Prescription with all the ordered drugs is displayed in PDF format. User able to print the displayed prescription.
8.	Delete drug record	Select any drug and click on Delete button: i. Confirmation message will be displayed before user proceeds to delete the drug. ii. Once user confirms to delete the record, system will delete the selected drug record. Once user clicks on Delete button without selecting any drug record, system will display an alert to select any drug record to delete.
9.	Confirm order record	On click of Confirm button: i. Alert message is displayed to ask user confirmation to confirm the order record. ii. Once user confirms the record, system will update the status to 'Ordered' and all fields and buttons are disabled. Order will then proceed to CDR Verification screen. iii. MAR (Medication Administration Chart) record is created. iv. Able to update record in Manage Prescription screen.
10.	User access	All user is allowed to create record however limited to the given user access role.

3.2.3.2.2.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
CDR Regimen Details				
1.	Regimen Code	This field will show list of regimens in a combo box based on the values configured in 'CDR Regimen Master' master table, where facility active flag is 'Y'.	Yes	Searching field
2.	Regimen Description	This field will display the Regimen Description value based on Regimen Code field selection.	No	Read-only
3.	Cycle Start Date	Cycle Start Date is to be selected from calendar control. It will be in dd/mm/yyyy format. Default value is current system date.	Yes	Calendar
4.	Cycle End Date	Cycle End Date is to be selected from calendar control. It will be in dd/mm/yyyy format. This field is read-only and auto-generated based on Cycle Start Date and Cycle Duration values.	No	Read-only
5.	Cycle Duration	Cycle Duration is to be entered in the textbox. Maximum of 8 integer capacity. Default value is displayed based on the Regimen Code selection from 'CDR Regimen Master'.	Yes	Text field
6.	BSA	By default 'Calculate Dose Using' = 'Actual Body Weight' and BSA display value directly from patient banner BSA value. When 'Calculate Dose Using' = 'Adjusted Body Weight' or 'Ideal Body Weight', to recalculate BSA value using the calculated patient weight value. BSA calculation is using same formula as patient banner (Mosteller formula: BSA (m2) = SQRT([Height(cm) x Weight(kg)]/ 3600)).	No	Read-only
7.	Total Cycle	User to enter value in the textbox. Maximum of 8 integer capacity. Default value is displayed based on the Regimen Code selection from 'CDR Regimen Master', 'No of Cycles' field.	Yes	Text field
8.	Cycle No	User to enter the value. Maximum of 8 integer capacity.	Yes	Text field
9.	Calculate Dose Using	By default 'Calculate Dose Using' = 'Actual Body Weight'. User able to change the value. Dropdown will be populated from reference codes where domain = 'Body Weight Category'. The selected value calculate the patient's weight based on the calculation below: i. Actual Body Weight: Directly take the patient actual body weight (no calculation). ii. Ideal Body Weight: Male= {[(Height(cm)-150)/30] x 12 x 2.3} + 50 Female= {[(Height(cm)-150)/30] x 12 x 2.3} + 45.5 iii. Adjusted Body Weight: Ideal Body Weight + [0.4 x (Actual Body Weight – Ideal Body Weight)] Fields required to calculate the above value are based on	No	Drop down list

No.	Name	Description	Mandatory	Format
		the values entered in Patient Visit Management screen.		
10.	Remarks	Default value is displayed based on the selected CDR Regimen. User able to edit the value with maximum 250 characters allowed.	No	Text field
Prescription section				
11.	Active Ingredient	This field will display the Active Ingredient value based on selected drug from prescription list.	No	Read-only
12.	Drug Category	This field will display the Drug Category as setup in Drug Master based on the selected drug from prescription list.	No	Read-only
13.	Dosage	Dosage field will display the value as setup in Regimen Master based on the selected drug from prescription list. This field is numeric only with up to 2 decimal values. This field is mandatory, but 0 is allowed since some drugs don't have dosage value.	Yes	Text field
14.	Dosage UOM	Dosage UOM is to be selected from the drop down list. By default, values from Regimen Master are displayed. There are 2 types of Dosage UOM for CDR: i. Strength or Quantity UOM value from Drug Master for the selected drug. ii. BSA (/m2) or Body Weight (/kg) value to calculate the 'Total Dose' value. Dropdown will be populated from reference codes where domain = 'CDR_UOM'.	Yes	Drop down list
15.	Total Dose	Total Dose value is calculated based on the options below: i. Selection of /m2 for Dosage UOM will multiply the Dosage value with patient's BSA value from CDR Regimen Details section. ii. Selection of /kg for Dosage UOM will multiply the Dosage value with patient's Body Weight value from CDR Regimen Details section. iii. Using AUC Calculator to calculate the total dose value. Please refer to 3.2.3.2.4 AUC Calculator for detailed function. This field is numeric only with up to 2 decimal values.	Yes	Text field
16.	Total Dose UOM	Total Dose UOM will display the same value as selected in Dosage UOM (Drug strength or quantity UOM value) field. This field is read-only.	No	Read-only
17.	Admin Route	Admin Route is to be selected from the drop down list. This field will display the Admin Route as setup in Regimen Master based on the selected drug from prescription list. User is allowed to change the drug Admin Route based on the list populated from Drug Master – Admin Route section.	No	Drop down list
18.	Frequency	Frequency is to be selected from the drop down list. This field will display the Frequency as setup in Regimen	Yes	Drop down list

No.	Name	Description	Mandatory	Format
		Master based on the selected drug from prescription list. User is allowed to change the drug Frequency based on the list populated from Drug Master – Frequency section. This field is mandatory. Value in this field is used to calculate the Order Qty value.		
19.	Chemo Day	Chemo Day will display the value as setup in Regimen Master based on the selected drug from prescription list. Value is based on the format as below: i. Separated by comma (,) 'Order Duration' and 'Dose Schedule' date will be auto-generated according to specific date entered. For example; if Chemo Day = 1,3,5 Order Duration is 3 days. Please refer CDR Dose Schedule – Input Validation for detailed function for dose schedule and chemo day. ii. Separated by dash (-) 'Order Duration' and 'Dose Schedule' date will be auto-generated according to specific date entered. For example; if Chemo Day = 1-5 Order Duration is 5 days. Please refer CDR Dose Schedule – Input Validation for detailed function for dose schedule and chemo day. The calculated Duration value is used to calculate the Order Quantity value.	Yes	Text field
20.	Drug Indication	This field will display the Drug Indication values as setup in Drug Master based on the selected drug from prescription list. This field is not mandatory.	No	Drop down list
21.	Dispense Location	Dispense Location will display the values as setup in Order Routing based on the order type or the selected drug from prescription list.	No	Read-only
22.	Drug Remarks	Drug Remarks is to be entered in the textbox. Maximum of 250 characters capacity. Default value is displayed based on Drug Remarks field on Regimen Master screen.	No	Text field
23.	Infuse Over	Infuse Over is to be entered in the textbox separated by Hours and Minutes values. Maximum of 8 integer capacity for each field. Default value is displayed based on the Regimen drug selection from 'CDR Regimen Master'. User is allowed to change the value. '0' value is allowed if no Hours or Minutes value. Values in these fields will be used to calculate the Infusion Rate value.	No	Text field
24.	Diluent	This field will display the drug identified as the compatible fluid for the ordered drug as setup in Drug Master – IV	No	Drop down list

No.	Name	Description	Mandatory	Format
		Characteristics section. User is allowed to change the value during ordering based on the compatible fluid list. Default value is displayed based on the Diluent field on Regimen Master screen. If no value stated in Regimen Master, system should refer the Drug Master for the default value. When no Diluent value selected, fields Infuse Over, Fluid Volume, and Infusion Rate should be empty as these values are dependent on the Diluent value.		
25.	Diluent Volume	Diluent Volume will display the diluent volume as specified in the Regimen Master. User is allowed to change the value. If no value stated in Regimen Master, system should display the diluent Drug Quantity value from Drug Master. This field is mandatory only if Diluent value is selected. Value in this field is used to calculate the Order Quantity value for diluent drug.	No	Text field
26.	Fluid Volume UOM	Fluid Volume UOM will display the diluent Drug Quantity UOM value from Drug Master.	No	Read-only
27.	Infusion Rate	Infusion Rate will display the calculated value based on the formula and Infusion Rate UOM as below: i. If ml/Hour is selected: Infusion Rate = Fluid Volume / Infuse Over (in Hour) ii. If ml/Min is selected: Infusion Rate = Fluid Volume / Infuse Over (in Minutes)	No	Read-only
28.	Infusion Rate UOM	Infusion Rate UOM is to be selected from the drop down list. Dropdown will be populated from reference codes where domain = 'Infuse Rate Unit'. Default value is ml/Hour.	No	Drop down list
Dose Schedule				
29.	Chemo Day	Chemo Day is displayed based on the entered value on order screen. System will list each chemo day value into separate row to be referred during drug preparation and administration. This field is read-only. Changes for Chemo Day, Cycle Start Date and Frequency field will update the Dose Schedule columns.	No	Read-only
30.	Date	Date is auto-generated based on the Chemo Day and Cycle Start Date value. This field is mandatory. User is allowed to change the date value.	Yes	Calendar
31.	Total Dose & UOM	Total Dose and UOM is displayed based on the calculated Total Dose value on order screen.	No	Read-only
32.	Time	Time value and column is auto-generated based on the selected Frequency administration number and time from Frequency Master screen.	Yes	Calendar

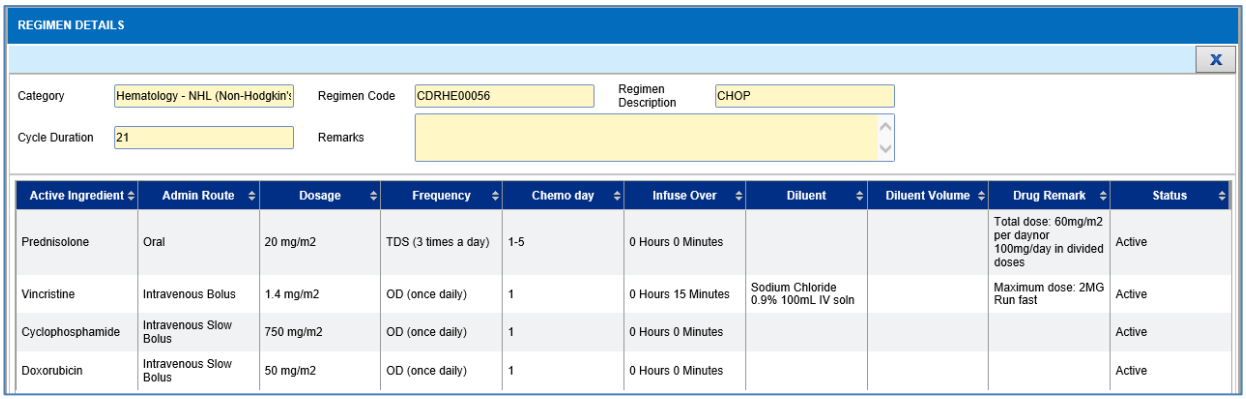
No.	Name	Description	Mandatory	Format
		This field is mandatory and user is allowed to change the value.		

3.2.3.2.3 *CDR Regimen Details*

3.2.3.2.3.1 ***Screen Design***

ID	CDROR.SD3
Description	To view CDR Regimen Details screen

Diagram



Active Ingredient	Admin Route	Dosage	Frequency	Chemo day	Infuse Over	Diluent	Diluent Volume	Drug Remark	Status
Prednisolone	Oral	20 mg/m2	TDS (3 times a day)	1-5	0 Hours 0 Minutes			Total dose: 60mg/m2 per daynor 100mg/day in divided doses	Active
Vincristine	Intravenous Bolus	1.4 mg/m2	OD (once daily)	1	0 Hours 15 Minutes	Sodium Chloride 0.9% 100mL IV soln		Maximum dose: 2MG Run fast	Active
Cyclophosphamide	Intravenous Slow Bolus	750 mg/m2	OD (once daily)	1	0 Hours 0 Minutes				Active
Doxorubicin	Intravenous Slow Bolus	50 mg/m2	OD (once daily)	1	0 Hours 0 Minutes				Active

Notes	• Click on 'Regimen Details' hyperlink to view the Regimen Master record.
Cross References	

3.2.3.2.3.2 ***Application Business Rules***

No.	Name	Description
1.	View Regimen Details	Regimen Details screen is displayed once user already selected any Regimen in Regimen Code field and click on the Regimen Details hyperlink. This screen will display records from Regimen Master based on the selected Regimen Code. All fields are read-only.

3.2.3.2.3.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
1.	Category	Category value is displayed based on the value as setup in Regimen Master (Regimen Category and Type fields) based on the regimen selected in Regimen Code field.	No	Read-only
2.	Regimen Code	Regimen Code value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
3.	Regimen Description	Regimen Description value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
4.	Cycle Duration	Cycle Duration value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
5.	No of Cycles	No of Cycles value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
6.	Remarks	Remarks value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
7.	Active Ingredient	Active Ingredient value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
8.	Admin Route	Admin Route value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
9.	Dosage	Dosage value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
10.	Frequency	Frequency value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
11.	Chemo Day	Chemo Day value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
12.	Infuse Over	Infuse Over value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only

No.	Name	Description	Mandatory	Format
13.	Diluent	Diluent value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
14.	Fluid Volume	Fluid Volume value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
15.	Drug Remarks	Drug Remarks value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only
16.	Status	Status value is displayed based on the value setup in Regimen Master based on the regimen selected in Regimen Code field.	No	Read-only

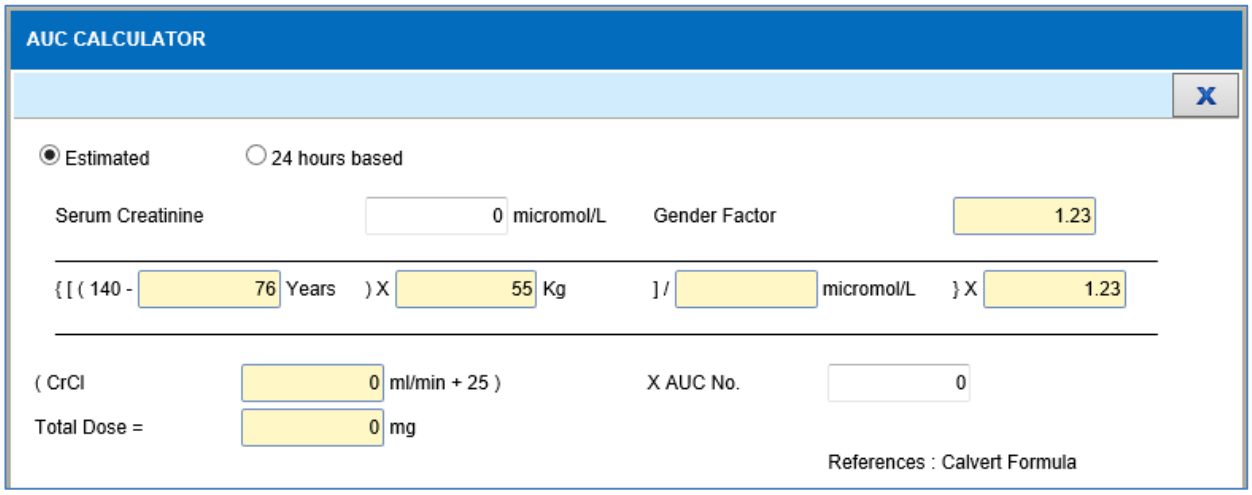
3.2.3.2.4 *AUC Calculator*

3.2.3.2.4.1 ***Screen Design***

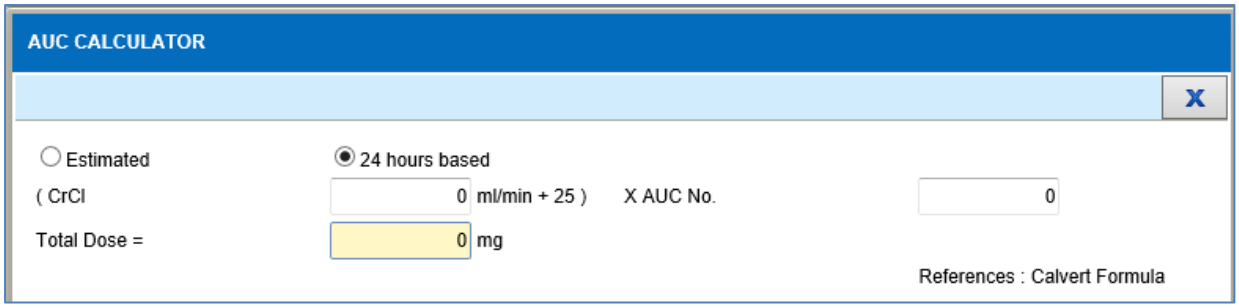
ID	CDROR.SD4
Description	To view AUC Calculator screen

Diagram

i. Estimated



i. 24 hours based



Notes	• Click on 'AUC Calculator' hyperlink for each drug to view the AUC Calculator screen.
Cross References	

3.2.3.2.4.2 ***Application Business Rules***

No.	Name	Description
1.	View AUC Calculator screen	AUC Calculator screen is enabled only for drug setup as AUC Calculator Applicable is true in Drug Master. The calculated Total Dose value is auto-displayed in Total Dose field on order screen once user closed the AUC Calculator screen.

3.2.3.2.4.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
1.	Serum Creatinine	User to enter value in the text box. Maximum of 20 integer capacity.	No	Text field
2.	Gender Factor	Gender Factor is displayed based on the Patient's gender as specified in the patient's record. Value is categorized as below: i. Female: Gender Factor = 1.04 ii. Male: Gender Factor = 1.23	No	Read-only
3.	Patient Age	Patient Age is displayed based on patient's date of birth in patient's record. Value displayed should only consider the Years value and ignore the Months and Days values.	No	Read-only
4.	Patient Weight	Patient Weight is displayed based on the patient's actual body weight in patient's visit record.	No	Read-only
5.	CrCl	For calculator type 'Estimated': CrCl value is auto-calculated based on formula below: { [(140 - Patient's Age in Years) X Patient's Weight in Kg] / Serum Creatinine in micromol/L } X Gender Factor. For calculator type '24 hour based': User to enter value manually instead of calculated by system.	No	Read-only

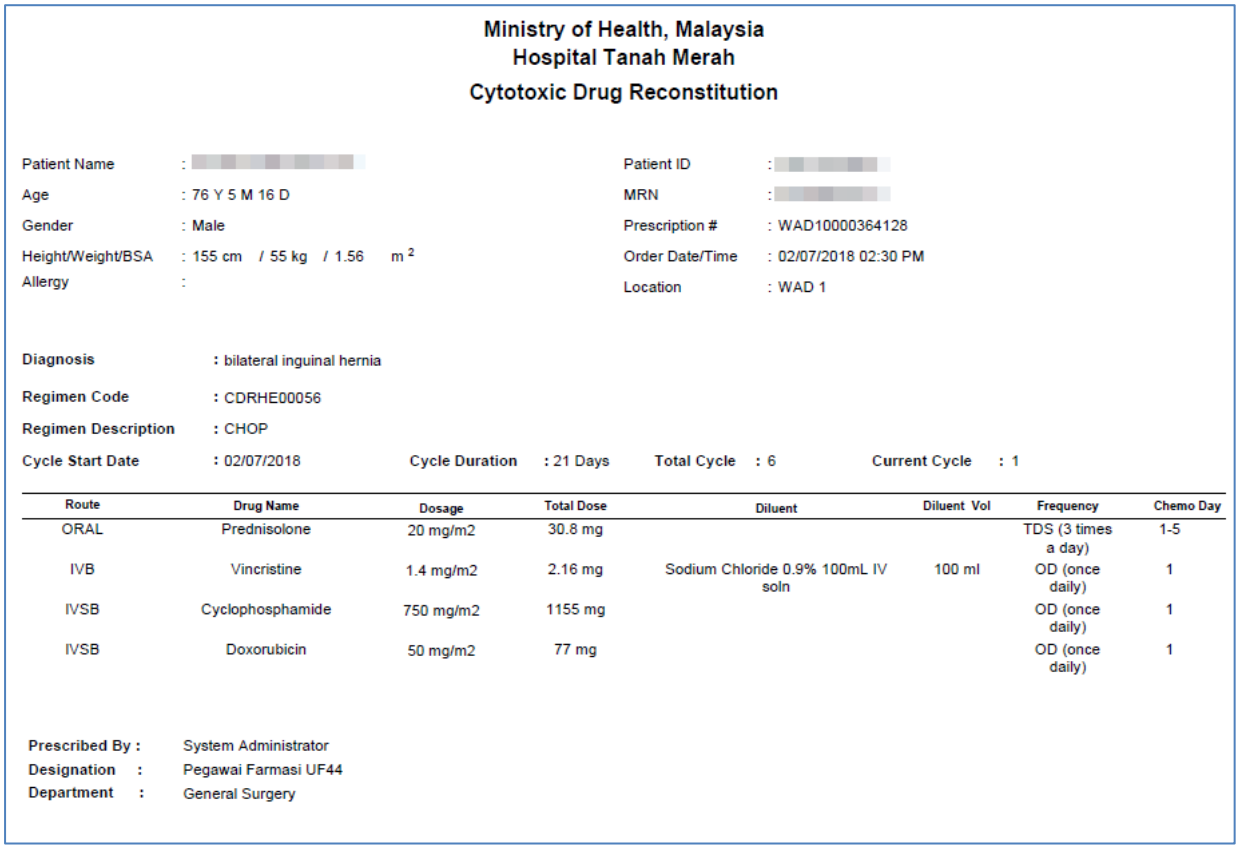
No.	Name	Description	Mandatory	Format
6.	AUC No.	AUC No. is to be entered in the text field. Numeric value with 1 decimal place.	No	Text field
7.	Total Dose	Total Dose value is auto-calculated based on formula below: (Calculated CrCl value in ml/min + 25) X Selected AUC No.	No	Read-only

3.2.3.2.5 *Print Prescription*

3.2.3.2.5.1 ***Screen Design***

ID	CDROR.SD5
Description	To view and print CDR Prescription

Diagram



Ministry of Health, Malaysia
Hospital Tanah Merah
Cytotoxic Drug Reconstitution

Patient Name : [redacted]
Age : 76 Y 5 M 16 D
Gender : Male
Height/Weight/BSA : 155 cm / 55 kg / 1.56 m^2
Allergy :

Patient ID : [redacted]
MRN : [redacted]
Prescription # : WAD10000364128
Order Date/Time : 02/07/2018 02:30 PM
Location : WAD 1

Diagnosis : bilateral inguinal hernia
Regimen Code : CDRHE00056
Regimen Description : CHOP
Cycle Start Date : 02/07/2018 **Cycle Duration** : 21 Days **Total Cycle** : 6 **Current Cycle** : 1

Route	Drug Name	Dosage	Total Dose	Diluent	Diluent Vol	Frequency	Chemo Day
ORAL	Prednisolone	20 mg/m2	30.8 mg			TDS (3 times a day)	1-5
IVB	Vincristine	1.4 mg/m2	2.16 mg	Sodium Chloride 0.9% 100mL IV soln	100 ml	OD (once daily)	1
IVSB	Cyclophosphamide	750 mg/m2	1155 mg			OD (once daily)	1
IVSB	Doxorubicin	50 mg/m2	77 mg			OD (once daily)	1

Prescribed By : System Administrator
Designation : Pegawai Farmasi UF44
Department : General Surgery

Notes	• Click on the Print button to view and print the prescription.
Cross References	

3.2.3.2.5.2 ***Application Business Rules***

No.	Name	Description
1.	View and Print Prescription	Prescription can only be printed after user saves the order record. If no order record saved, system will display alert message once user click on the print button. Once user save the order record and click on the print button, prescription containing all the order information is displayed in PDF format. User can print the prescription using the browser print function.
2.	Hospital Name	Hospital Name is displayed based on the Facility Information details.
3.	Patient Name	Patient Name is displayed based on the patient's record.
4.	Patient ID	Patient ID is displayed based on the patient's record.
5.	Age	Age will be auto calculated based on DOB *Age = Current date - DOB* Age format 999Y 99M 99D (E.g. 24Y 11M 25D, 02M 13D)
6.	MRN	MRN is displayed based on the patient's record.
7.	Gender	Gender is displayed based on the patient's record.
8.	Prescription #	Prescription Number is displayed based on the medication orders record. Value is auto-generated by system once order record is saved.
9.	Height/Weight/ BSA	Height and Weight is displayed based on patient's visit record. BSA (Body Surface Area) is displayed based on the CDR order record.
10.	Order Date/Time	Order Date/Time is displayed based on the order confirmed date/time value.
11.	Allergy	Allergy is displayed based on the patient's allergies record.
12.	Order Location	Order Location is displayed based on the patient's visit location.
13.	Diagnosis	Diagnosis is displayed based on patient's diagnosis record for the CDR order record.
14.	Regimen Code	Regimen Code is displayed based on the CDR order header information.
15.	Regimen Description	Regimen Description is displayed based on the CDR order header information.
16.	Cycle Start Date	Value is displayed based on the CDR order header information.
17.	Cycle Duration	Value is displayed based on the CDR order header information.
18.	Total Cycle	Value is displayed based on the CDR order header information.
19.	Current Cycle	Value is displayed based on the CDR order header information.
20.	Route	Route is displayed based on the CDR order details information. Administration Route Code value is displayed.
21.	Drug Name	Drug Name is based on the CDR order details information. Active Ingredient of the ordered drugs is displayed.
22.	Dosage	Dosage is displayed based on the CDR order details information.
23.	Total Dose	Total Dosage is displayed based on the CDR order details information.

No.	Name	Description
24.	Diluent	Diluent is displayed based on the CDR order details information.
25.	Diluent Vol	Diluent Volume is displayed based on the CDR order details information.
26.	Frequency	Frequency is displayed based on the CDR order details information. Frequency Code value is displayed
27.	Chemo Day	Chemo Day is displayed based on the CDR order details information.
28.	Prescribed By	Prescribed By is displayed based on the order created by value.
29.	Designation	Designation is displayed based on the prescriber's user profile information.
30.	Department	Department is displayed based on the prescriber's user profile information.

3.2.3.2.5.3 ***Input Validation Rules***

None.

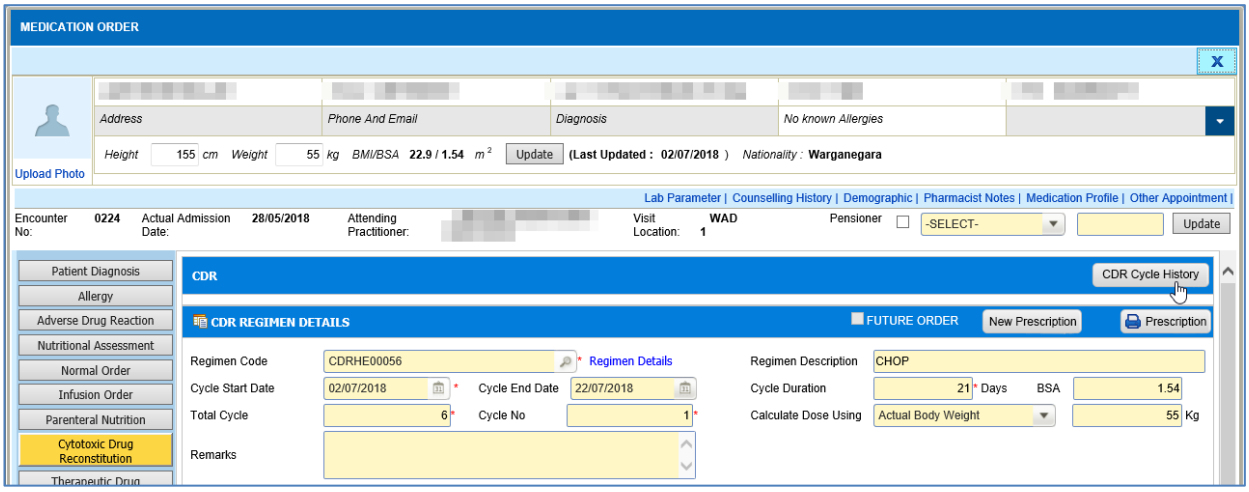
3.2.3.2.6 *CDR Cycle History*

3.2.3.2.6.1 ***Screen Design***

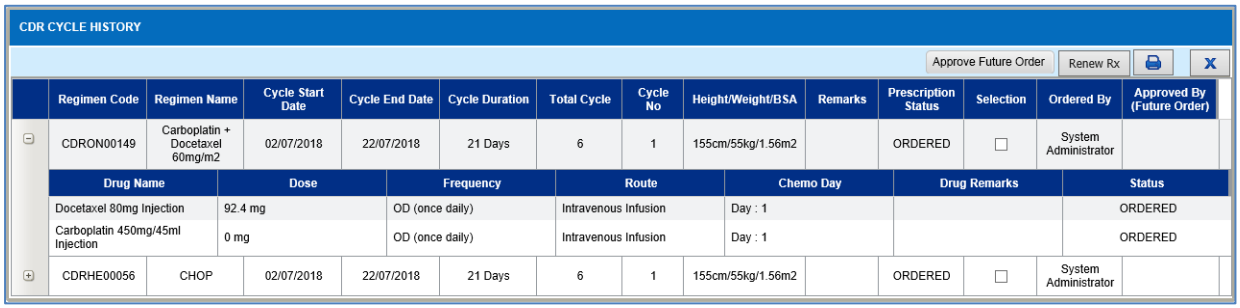
ID	CDROR.SD6
Description	To view CDR Cycle History screen. To renew CDR order. To print Cycle History. To approve future order record.

Diagram

i. CDR Cycle History button



ii. Cycle History screen



iii. Print Cycle History

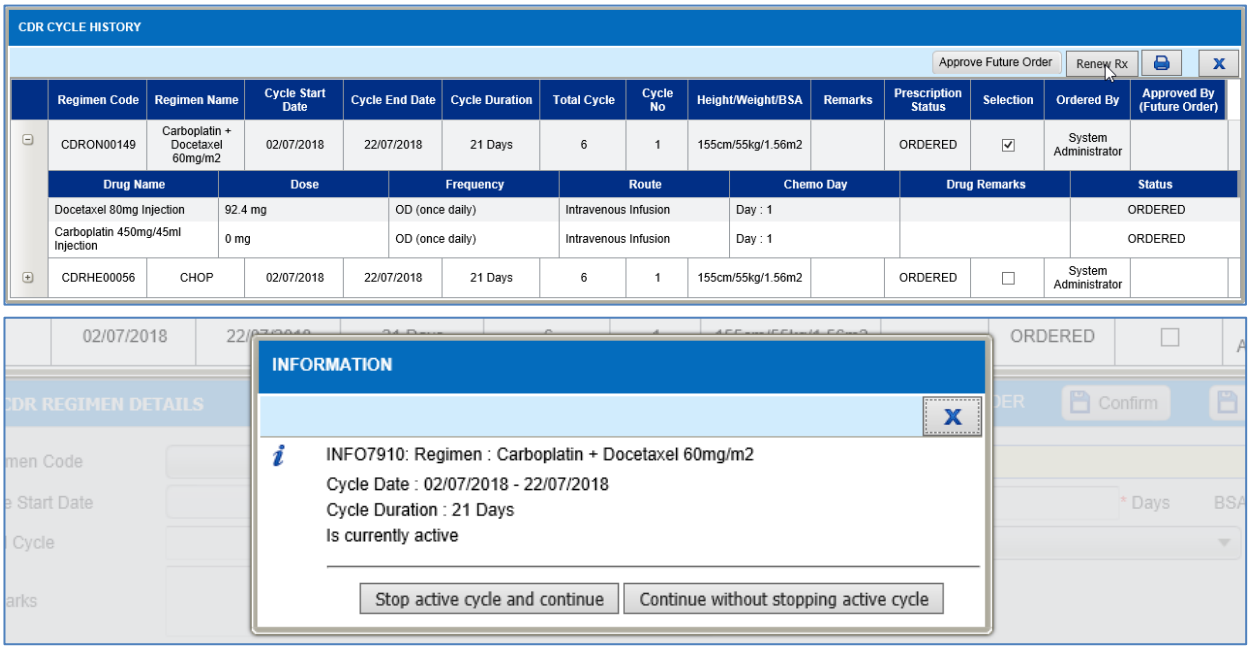
Ministry of Health, Malaysia
Hospital Tanah Merah
Cytotoxic Drug Reconstitution : Cycle History

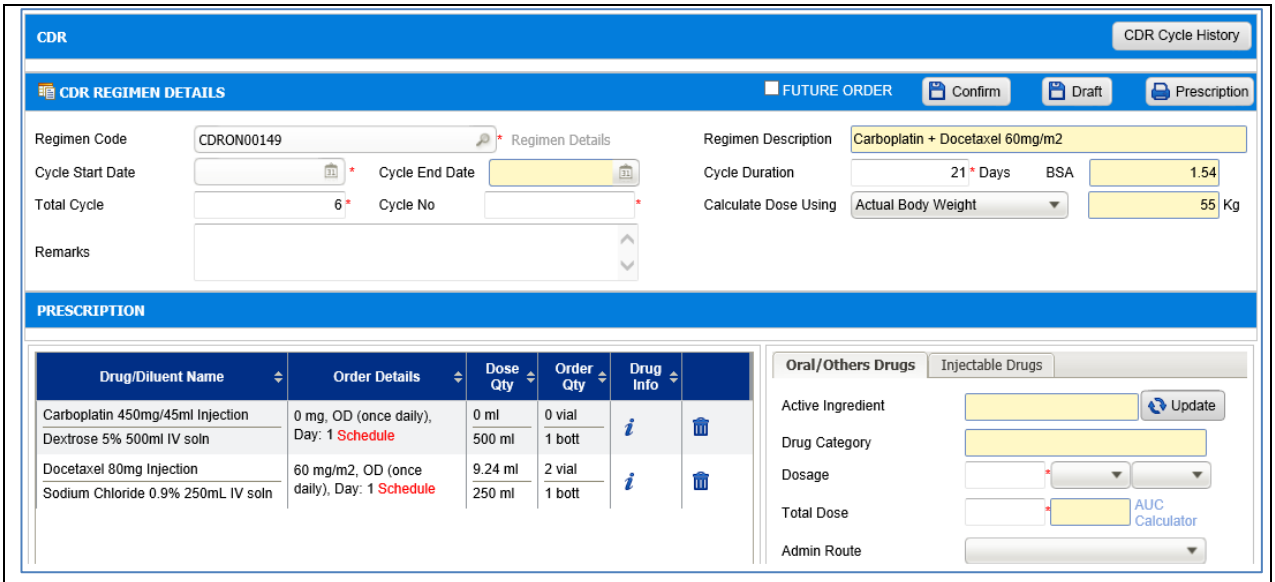
Patient Name : [redacted]
Age / Gender : 76 Y 5 M 16 / Male
Patient ID : [redacted]
MRN : [redacted]

Regimen Code	Regimen Name	Drug Name	Dose	Freq	Route	Chemo day	Drug Remarks	Drug status	Cycle Date	Total Cycle	Cycle No	Remarks	Height/Weight/BSA	Order By	Approved By
CDRON00149	Carboplatin + Docetaxel 60mg/m2	Carboplatin	0 mg	OD (once daily)	INF	1		ORDERED	02/07/2018 - 22/07/2018 (21 Days)	6	1		155cm/55kg/1.56m2	System Administrator	
		Docetaxel	92.4 mg	OD (once daily)	INF	1		ORDERED							

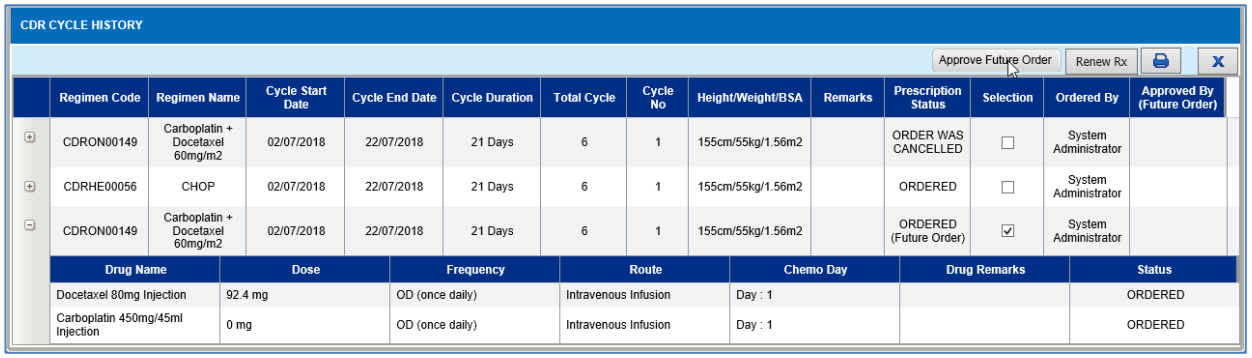
Printed Date : 02/07/2018
Printed By : System Administrator
Source : PhIS

iv. Renew Rx





v. Approve Future Order



Notes	• Click on 'CDR Cycle History' to view the screen • Click on 'Print' button to print Cycle History • Click on 'Renew Rx' to renew medication • Click on 'Approve Future Order' to approve record
Cross References	

3.2.3.2.6.2 *Application Business Rules*

No.	Name	Description
1.	Cycle History screen	Click on the 'Cycle History' button to view the patient's CDR cycle history. Cycle history list will list all CDR cycle prescribed for the current patient. In medication order/record prescription screen, able to 'Renew Rx', 'Approve Future Order' and print cycle history. For other screens, able to print cycle history only.

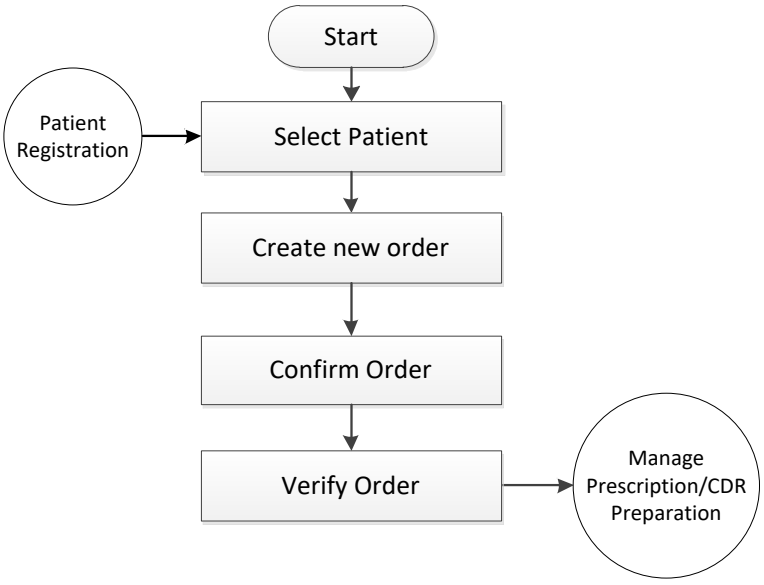
3.2.3.2.6.3 *Input Validation Rules*

None.

3.2.4 CDR Record Prescription

CDR Medication Order screen allows prescribers to place cytotoxic drug order for patient with valid visit record. This screen is used by full based facilities. Confirmed order will be sent to pharmacists for the process of Verification, Preparation and Dispensing.

3.2.4.1 Screen Navigation Diagram



3.2.4.2 Detail Functionality and Screen

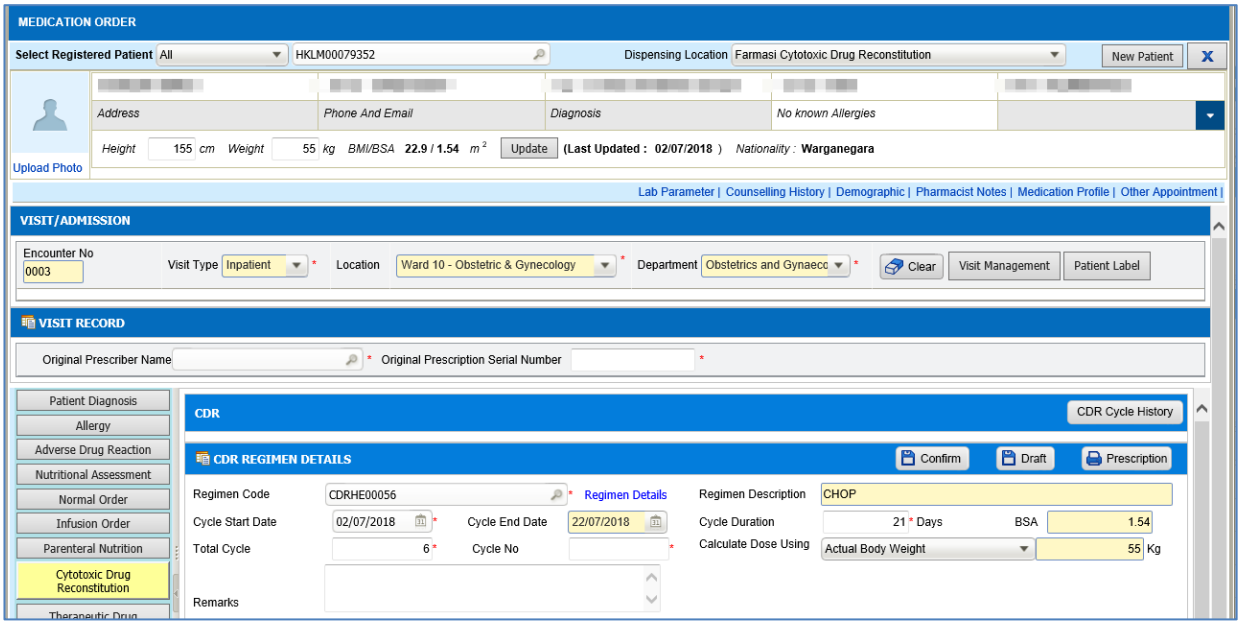
3.2.4.2.1 *New CDR Record Prescription*

3.2.4.2.1.1 ***Screen Design***

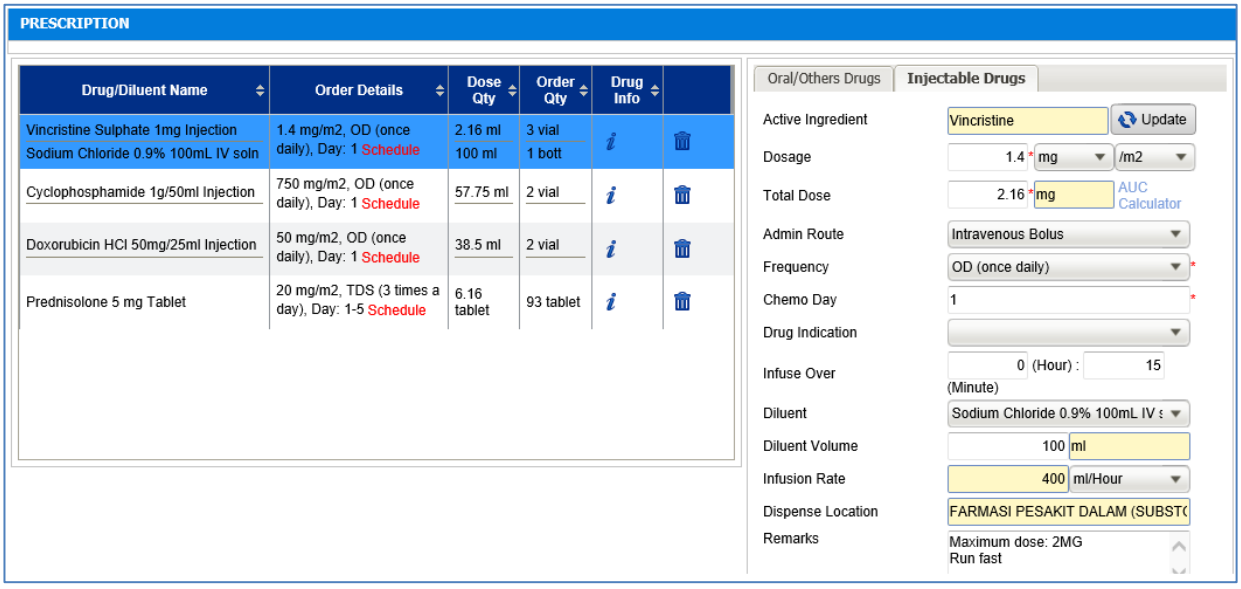
ID	CDR-RP.SD1
Description	To create new CDR 'Record Prescription' record.

Diagram

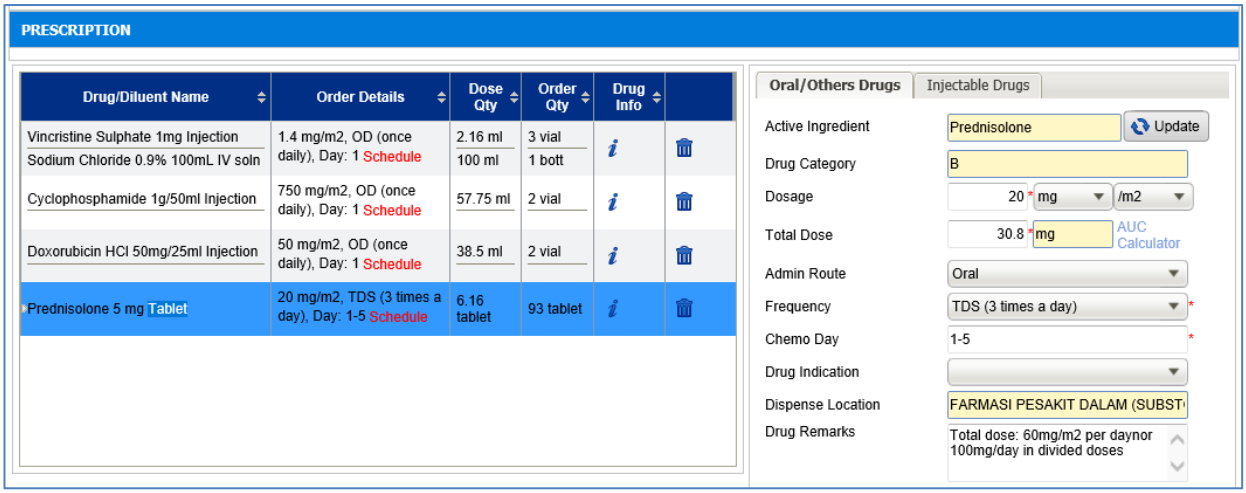
i. Create new record



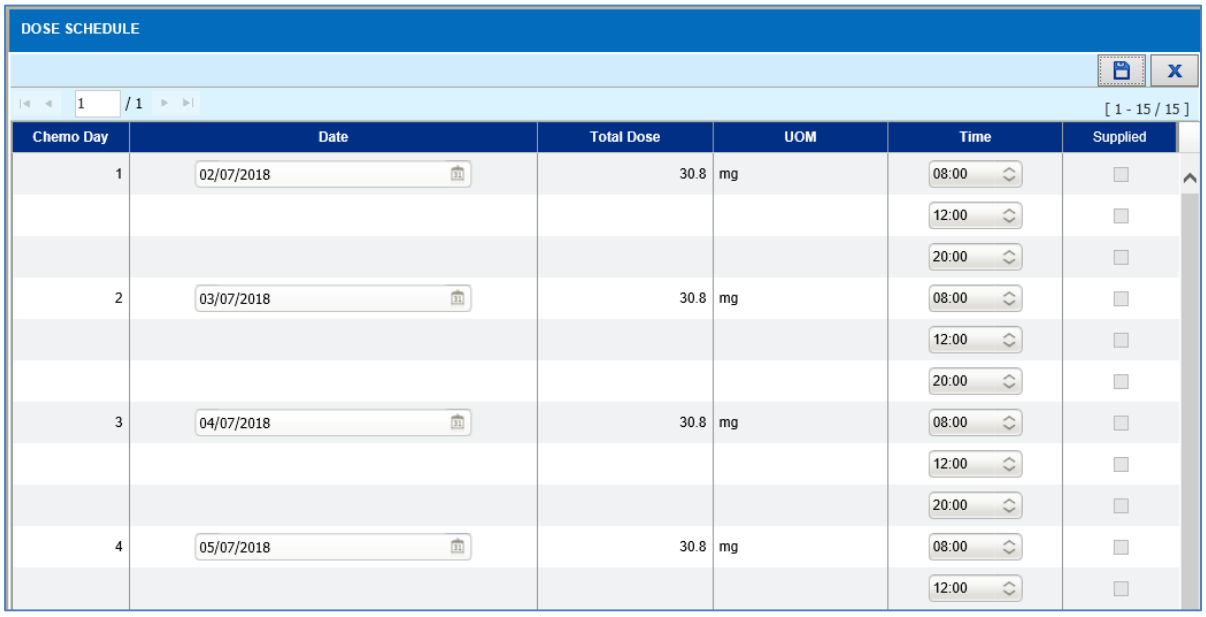
ii. Prescription section for Infusion drugs



iii. Prescription section for Oral/Others Drugs



iv. Click on the 'Schedule' hyperlink



Notes	• Click on 'Save' button to save the record. • Click on 'Print' button to print the prescription. • Click on 'Delete' button to delete order or drug. • Click on 'Update' button to update order information.
Cross References	

3.2.4.2.1.2 ***Application Business Rules***

No.	Name	Description
1.	Patient record	Patient Registration and Visit must already be created upon creating a new transaction for Record Prescription screen.
2.	New order	During creation of new order: i. After user selects which regimen to order, regimen data will be populated into the prescription list. ii. Regimen selected is based on the record in CDR Regimen Master maintenance screen. iii. Regimen Drug is categorized into 2 categories; Injectable Drugs and Oral/Others Drugs, based on the setup in Drug Master (IV Drug flag). iv. When IV Drug flag is selected, the drug is displayed in Injectable Drugs section, and if IV Drug flag is not selected, the drug is displayed in Oral/Others Drugs section. v. Dose Schedule records are created based on the drug chemo day and administration frequency. These records will then be used as a reference in drug preparation and administration. vi. Patient Allergy record is mandatory for each patient. If no allergy specified, 'Unknown Allergy' flag must be set as true. User is not allowed to confirm order without entering this record. vii. Patient Diagnosis record is mandatory for each patient visit. User is not allowed to confirm order without entering this record. viii. Future order scenario is not applicable for pharmacy based environment due to pharmacist will transcribe the order when patient visit record already confirm and pharmacist confirms to dispense the drug to patient.
3.	Save order record	On click of Save button: i. Order status is updated to 'Draft'. ii. User is not allowed to change the Regimen Code, field is disabled. iii. Order information will be displayed in the Prescription section. iv. Delete, Confirm Order and Print button is enabled after saving the record.
4.	Drug Order Quantity Calculation	On saving the record, system will auto-calculate the drugs order quantity. Please refer appendix for detailed calculation.
5.	Update order record	User can edit the selected regimen drug by clicking on the data from the prescription list. Data will be populated into the regimen drug details section and update button will be enabled. On click of Update button, modification on the Drug Details will be updated in order record and prescription list.
6.	Delete order record	On click of Delete button: i. Confirmation message will be displayed before user proceeds to delete the drug ii. Once user confirms to delete the record, system will delete order and all drugs record. ii. Screen will refresh and user is allowed to create new CDR order.
7.	Print Prescription	On click of Print button:

No.	Name	Description
		i. Prescription with all the ordered drugs is displayed in PDF format. User able to print the displayed prescription.
8.	Delete drug record	Select any drug and click on Delete button: i. Confirmation message will be displayed before user proceeds to delete the drug. ii. Once user confirms to delete the record, system will delete the selected drug record. Once user clicks on Delete button without selecting any drug record, system will display an alert to select any drug record to delete.
9.	Confirm order record	On click of Confirm button: i. Alert message is displayed to ask user confirmation to confirm the order record. ii. Once user confirms the record, system will update the status to 'Ordered' and order will then proceed to CDR Verification screen. Verify button is displayed. iii. MAR (Medication Administration Chart) record is NOT created. iv. Able to update record in Manage Prescription screen.
10.	User access	All user is allowed to create record however limited to the given user access role.

3.2.4.2.1.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
1.	Original Prescriber Name	This field will show list of active prescribers in a combo box based on the values configured in 'Prescriber' master table.	Yes	Searching field
2.	Original Prescription Serial Number	User to enter the original prescription number based on the received physical prescription.	No	Text field
CDR Regimen Details				
3.	Regimen Code	This field will show list of regimens in a combo box based on the values configured in 'CDR Regimen Master' master table, where facility active flag is 'Y'.	Yes	Searching field
4.	Regimen Description	This field will display the Regimen Description value based on Regimen Code field selection.	No	Read-only
5.	Cycle Start Date	Cycle Start Date is to be selected from calendar control. It will be in dd/mm/yyyy format. Default value is current system date.	Yes	Calendar
6.	Cycle End Date	Cycle End Date is to be selected from calendar control. It will be in dd/mm/yyyy format. This field is read-only and auto-generated based on Cycle Start Date and Cycle Duration values.	No	Read-only
7.	Cycle Duration	Cycle Duration is to be entered in the textbox. Maximum of 8 integer capacity. Default value is displayed based on the Regimen Code selection from 'CDR Regimen Master'.	Yes	Text field
8.	BSA	By default 'Calculate Dose Using' = 'Actual Body Weight' and BSA display value directly from patient banner BSA value. When 'Calculate Dose Using' = 'Adjusted Body Weight' or 'Ideal Body Weight', to recalculate BSA value using the calculated patient weight value. BSA calculation is using same formula as patient banner (Mosteller formula: BSA (m2) = SQRT([Height(cm) x Weight(kg)]/ 3600)).	No	Read-only
9.	Total Cycle	User to enter value in the textbox. Maximum of 8 integer capacity. Default value is displayed based on the Regimen Code selection from 'CDR Regimen Master', 'No of Cycles' field.	Yes	Text field
10.	Cycle No	User to enter the value. Maximum of 8 integer capacity.	Yes	Text field
11.	Calculate Dose Using	By default 'Calculate Dose Using' = 'Actual Body Weight'. User able to change the value. Dropdown will be populated from reference codes where domain = 'Body Weight Category'. The selected value calculate the patient's weight based on the calculation below: iv. Actual Body Weight: Directly take the patient actual body weight (no calculation).	No	Drop down list

No.	Name	Description	Mandatory	Format
		v. Ideal Body Weight: Male= {[(Height(cm)-150)/30] x 12 x 2.3} + 50 Female= {[(Height(cm)-150)/30] x 12 x 2.3} + 45.5 vi. Adjusted Body Weight: Ideal Body Weight + [0.4 x (Actual Body Weight – Ideal Body Weight)] Fields required to calculate the above value are based on the values entered in Patient Visit Management screen.		
12.	Remarks	Default value is displayed based on the selected CDR Regimen. User able to edit the value with maximum 250 characters allowed.	No	Text field
Prescription section				
13.	Active Ingredient	This field will display the Active Ingredient value based on selected drug from prescription list.	No	Read-only
14.	Drug Category	This field will display the Drug Category as setup in Drug Master based on the selected drug from prescription list.	No	Read-only
15.	Dosage	Dosage field will display the value as setup in Regimen Master based on the selected drug from prescription list. This field is numeric only with up to 2 decimal values. This field is mandatory, but 0 is allowed since some drugs don't have dosage value.	Yes	Text field
16.	Dosage UOM	Dosage UOM is to be selected from the drop down list. By default, values from Regimen Master are displayed. There are 2 types of Dosage UOM for CDR: iii. Strength or Quantity UOM value from Drug Master for the selected drug. iv. BSA (/m2) or Body Weight (/kg) value to calculate the 'Total Dose' value. Dropdown will be populated from reference codes where domain = 'CDR_UOM'.	Yes	Drop down list
17.	Total Dose	Total Dose value is calculated based on the options below: iv. Selection of /m2 for Dosage UOM will multiply the Dosage value with patient's BSA value from CDR Regimen Details section. v. Selection of /kg for Dosage UOM will multiply the Dosage value with patient's Body Weight value from CDR Regimen Details section. vi. Using AUC Calculator to calculate the total dose value. Please refer to 3.2.3.2.4 AUC Calculator for detailed function. This field is numeric only with up to 2 decimal values.	Yes	Text field
18.	Total Dose	Total Dose UOM will display the same value as selected in Dosage UOM (Drug strength or quantity UOM value)	No	Read-only

No.	Name	Description	Mandatory	Format
	UOM	field. This field is read-only.		
19.	Admin Route	Admin Route is to be selected from the drop down list. This field will display the Admin Route as setup in Regimen Master based on the selected drug from prescription list. User is allowed to change the drug Admin Route based on the list populated from Drug Master – Admin Route section.	No	Drop down list
20.	Frequency	Frequency is to be selected from the drop down list. This field will display the Frequency as setup in Regimen Master based on the selected drug from prescription list. User is allowed to change the drug Frequency based on the list populated from Drug Master – Frequency section. This field is mandatory. Value in this field is used to calculate the Order Qty value.	Yes	Drop down list
21.	Chemo Day	Chemo Day will display the value as setup in Regimen Master based on the selected drug from prescription list. Value is based on the format as below: iii. Separated by comma (,) 'Order Duration' and 'Dose Schedule' date will be auto-generated according to specific date entered. For example; if Chemo Day = 1,3,5 Order Duration is 3 days. Please refer CDR Dose Schedule – Input Validation for detailed function for dose schedule and chemo day. iv. Separated by dash (-) 'Order Duration' and 'Dose Schedule' date will be auto-generated according to specific date entered. For example; if Chemo Day = 1-5 Order Duration is 5 days. Please refer CDR Dose Schedule – Input Validation for detailed function for dose schedule and chemo day. The calculated Duration value is used to calculate the Order Quantity value.	Yes	Text field
22.	Drug Indication	This field will display the Drug Indication values as setup in Drug Master based on the selected drug from	No	Drop down list

No.	Name	Description	Mandatory	Format
		prescription list. This field is not mandatory.		
23.	Dispense Location	Dispense Location will display the values as setup in Order Routing based on the order type or the selected drug from prescription list.	No	Read-only
24.	Drug Remarks	Drug Remarks is to be entered in the textbox. Maximum of 250 characters capacity. Default value is displayed based on Drug Remarks field on Regimen Master screen.	No	Text field
25.	Infuse Over	Infuse Over is to be entered in the textbox separated by Hours and Minutes values. Maximum of 8 integer capacity for each field. Default value is displayed based on the Regimen drug selection from 'CDR Regimen Master'. User is allowed to change the value. '0' value is allowed if no Hours or Minutes value. Values in these fields will be used to calculate the Infusion Rate value.	No	Text field
26.	Diluent	This field will display the drug identified as the compatible fluid for the ordered drug as setup in Drug Master – IV Characteristics section. User is allowed to change the value during ordering based on the compatible fluid list. Default value is displayed based on the Diluent field on Regimen Master screen. If no value stated in Regimen Master, system should refer the Drug Master for the default value. When no Diluent value selected, fields Infuse Over, Fluid Volume, and Infusion Rate should be empty as these values are dependent on the Diluent value.	No	Drop down list
27.	Diluent Volume	Diluent Volume will display the diluent volume as specified in the Regimen Master. User is allowed to change the value. If no value stated in Regimen Master, system should display the diluent Drug Quantity value from Drug Master. This field is mandatory only if Diluent value is selected. Value in this field is used to calculate the Order Quantity value for diluent drug.	No	Text field
28.	Fluid Volume UOM	Fluid Volume UOM will display the diluent Drug Quantity UOM value from Drug Master.	No	Read-only
29.	Infusion Rate	Infusion Rate will display the calculated value based on the formula and Infusion Rate UOM as below: iii. If ml/Hour is selected: Infusion Rate = Fluid Volume / Infuse Over (in Hour) iv. If ml/Min is selected: Infusion Rate = Fluid Volume / Infuse Over (in Minutes)	No	Read-only
30.	Infusion Rate UOM	Infusion Rate UOM is to be selected from the drop down list. Dropdown will be populated from reference codes where domain = 'Infuse Rate Unit'. Default value is	No	Drop down list

No.	Name	Description	Mandatory	Format
		ml/Hour.		
Dose Schedule				
31.	Chemo Day	Chemo Day is displayed based on the entered value on order screen. System will list each chemo day value into separate row to be referred during drug preparation and administration. This field is read-only. Changes for Chemo Day, Cycle Start Date and Frequency field will update the Dose Schedule columns.	No	Read-only
32.	Date	Date is auto-generated based on the Chemo Day and Cycle Start Date value. This field is mandatory. User is allowed to change the date value.	Yes	Calendar
33.	Total Dose & UOM	Total Dose and UOM is displayed based on the calculated Total Dose value on order screen.	No	Read-only
34.	Time	Time value and column is auto-generated based on the selected Frequency administration number and time from Frequency Master screen. This field is mandatory and user is allowed to change the value.	Yes	Calendar

3.2.4.2.2 *CDR Regimen Details*

Refer section #3.2.3.2.3 CDR Regimen Details for further details.

3.2.4.2.3 *AUC Calculator*

Refer section #3.2.3.2.4 AUC Calculator for further details.

3.2.4.2.4 *Print Prescription*

Refer section #3.2.3.2.5 Print Prescription for further details.

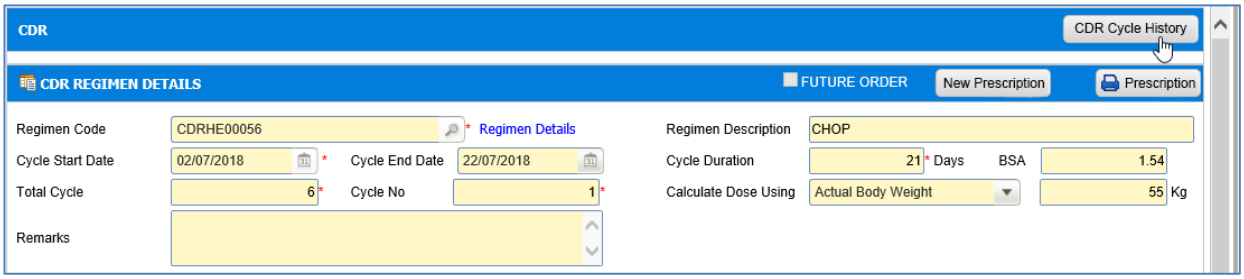
3.2.4.2.5 *CDR Cycle History*

3.2.4.2.5.1 ***Screen Design***

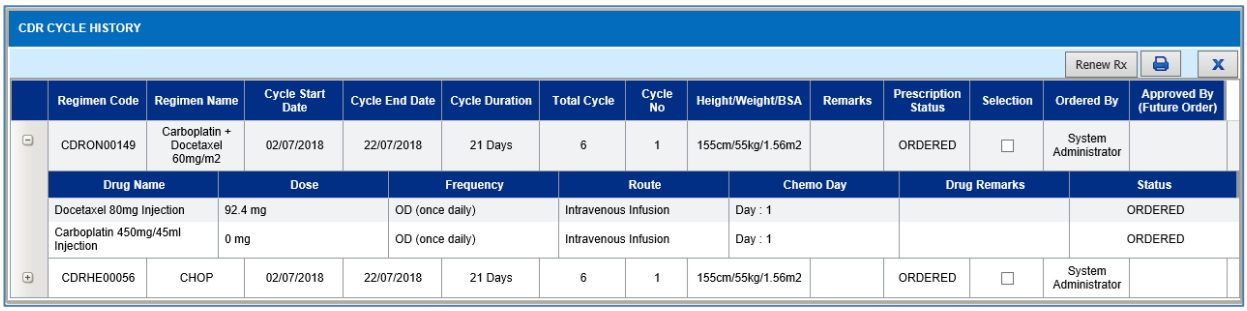
ID	CDROR.SD6
Description	To view CDR Cycle History screen. To renew CDR order. To print Cycle History.

Diagram

i. CDR Cycle History button



ii. Cycle History screen



iii. Print Cycle History

Ministry of Health, Malaysia
Hospital Tanah Merah

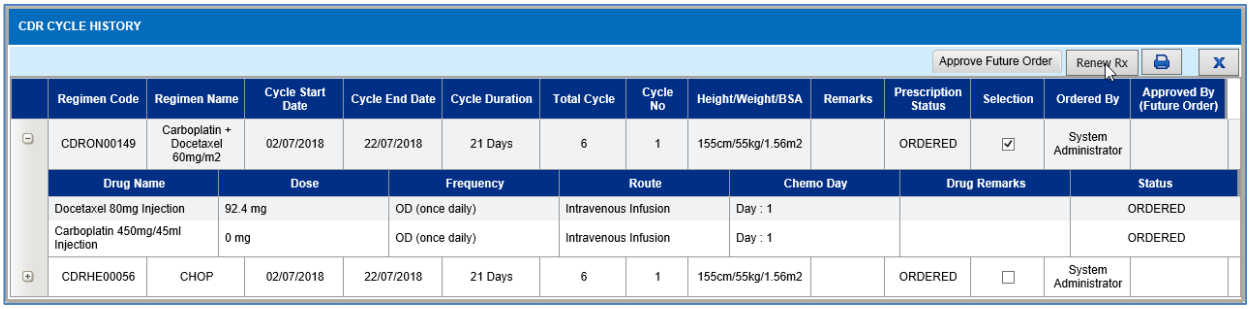
Cytotoxic Drug Reconstitution : Cycle History

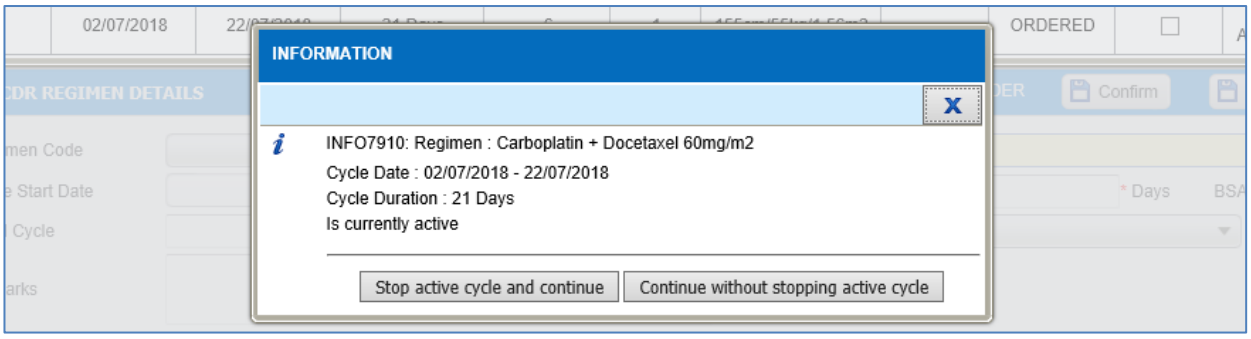
Patient Name : [redacted] Patient ID : [redacted]
Age / Gender : 76 Y 5 M 16 / Male MRN : [redacted]

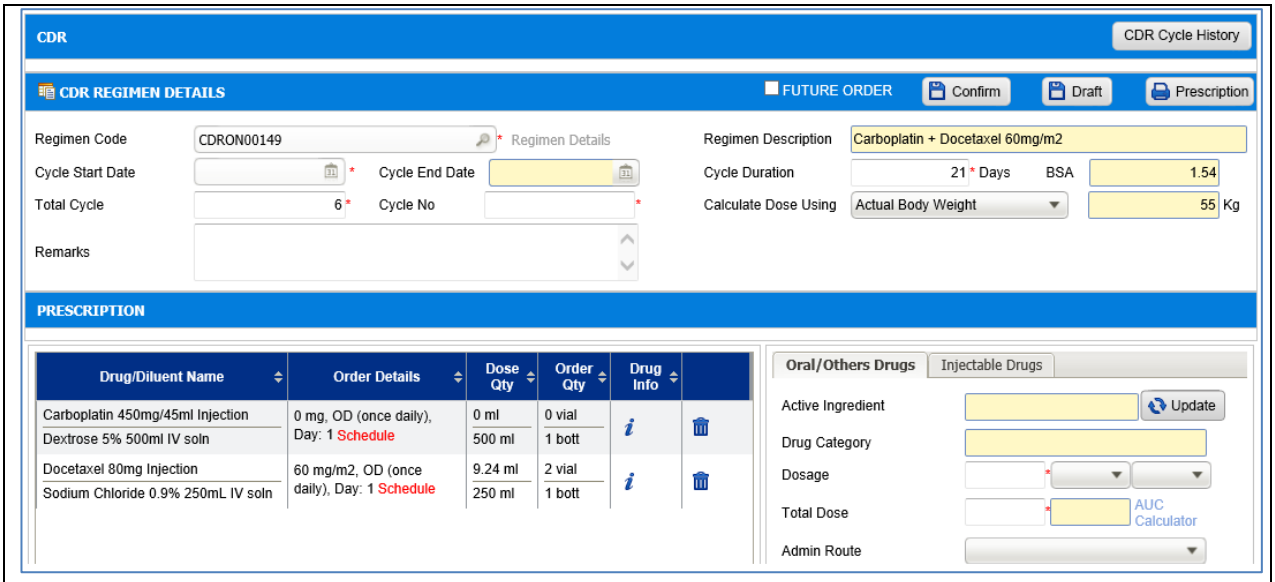
Regimen Code	Regimen Name	Drug Name	Dose	Freq	Route	Chemo day	Drug Remarks	Drug status	Cycle Date	Total Cycle	Cycle No	Remarks	Height/Weight/BSA	Order By	Approved By
CDRON00149	Carboplatin + Docetaxel 60mg/m2	Carboplatin	0 mg	OD (once daily)	INF	1		ORDERED	02/07/2018 - 22/07/2018 (21 Days)	6	1		155cm/55kg/ 1.56m2	System Administrator	
		Docetaxel	92.4 mg	OD (once daily)	INF	1		ORDERED							

Printed Date : 02/07/2018
Printed By : System Administrator
Source : PhIS

iv. Renew Rx







Notes	• Click on 'CDR Cycle History' to view the screen • Click on 'Print' button to print Cycle History • Click on 'Renew Rx' to renew medication
Cross References	

3.2.4.2.5.2 *Application Business Rules*

No.	Name	Description
1.	Cycle History screen	Click on the 'Cycle History' button to view the patient's CDR cycle history. Cycle history list will list all CDR cycle prescribed for the current patient. In medication order/record prescription screen, able to 'Renew Rx', 'Approve Future Order' and print cycle history. For other screens, able to print cycle history only.

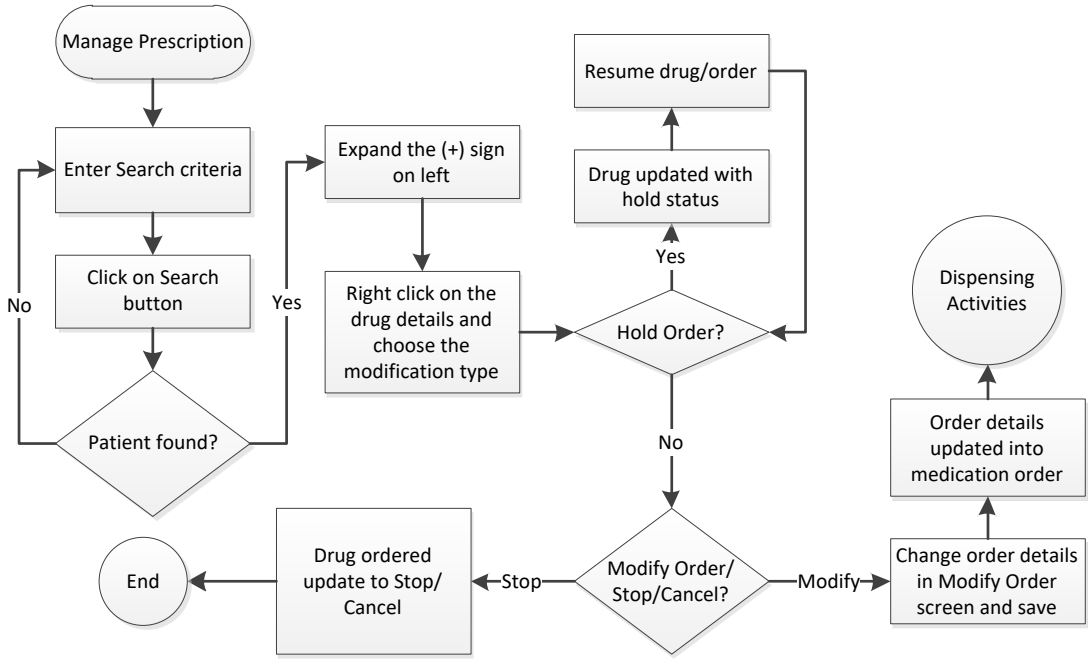
3.2.4.2.5.3 *Input Validation Rules*

None.

3.2.5 CDR Manage Prescription

Once Medication Order/Record Prescription transaction already confirm, prescriber (full based) able to modify, hold/resume, cancel or stop order. While for transcriber (pharmacy based), able to cancel or stop order.

3.2.5.1 Screen Navigation Diagram



3.2.5.2 Detail Functionality and Screen

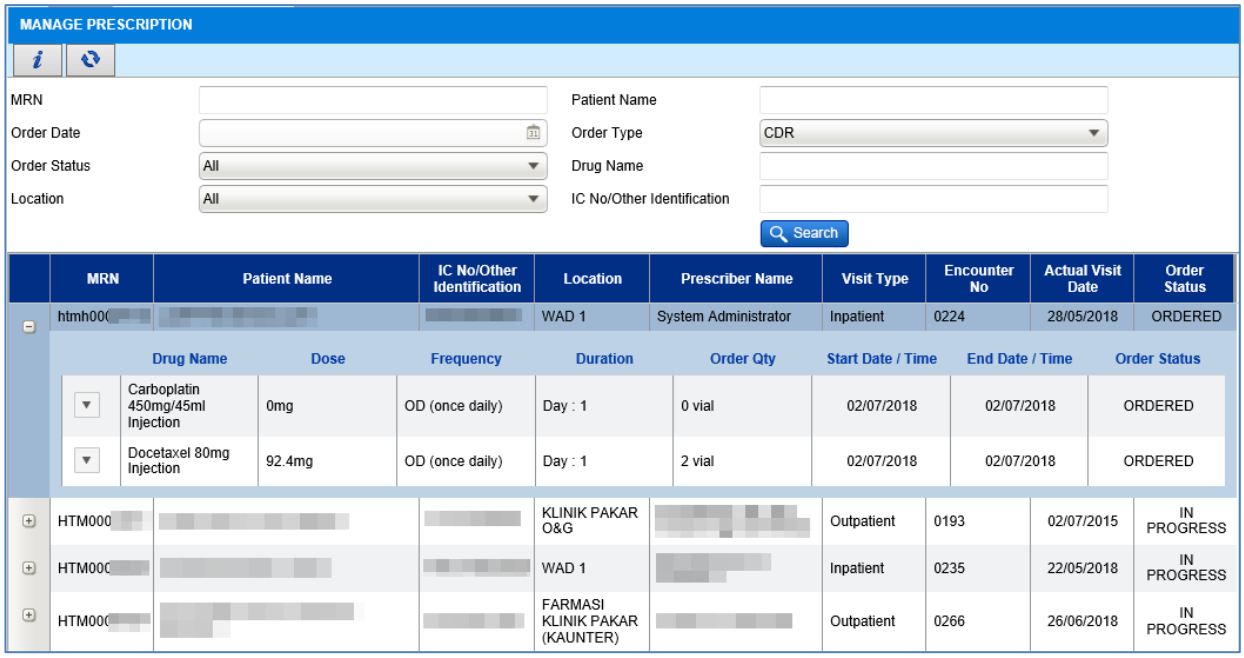
3.2.5.2.1 *Manage Prescription*

3.2.5.2.1.1 ***Screen Design***

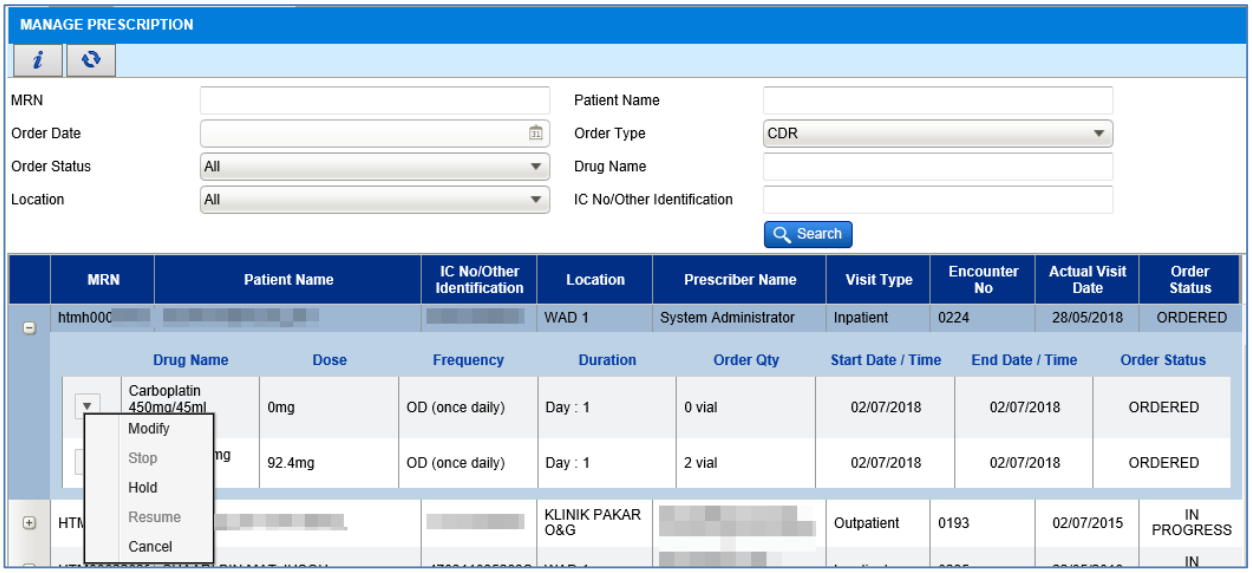
ID	CDR-MP.SD1
Description	Manage Prescription screen

Diagram

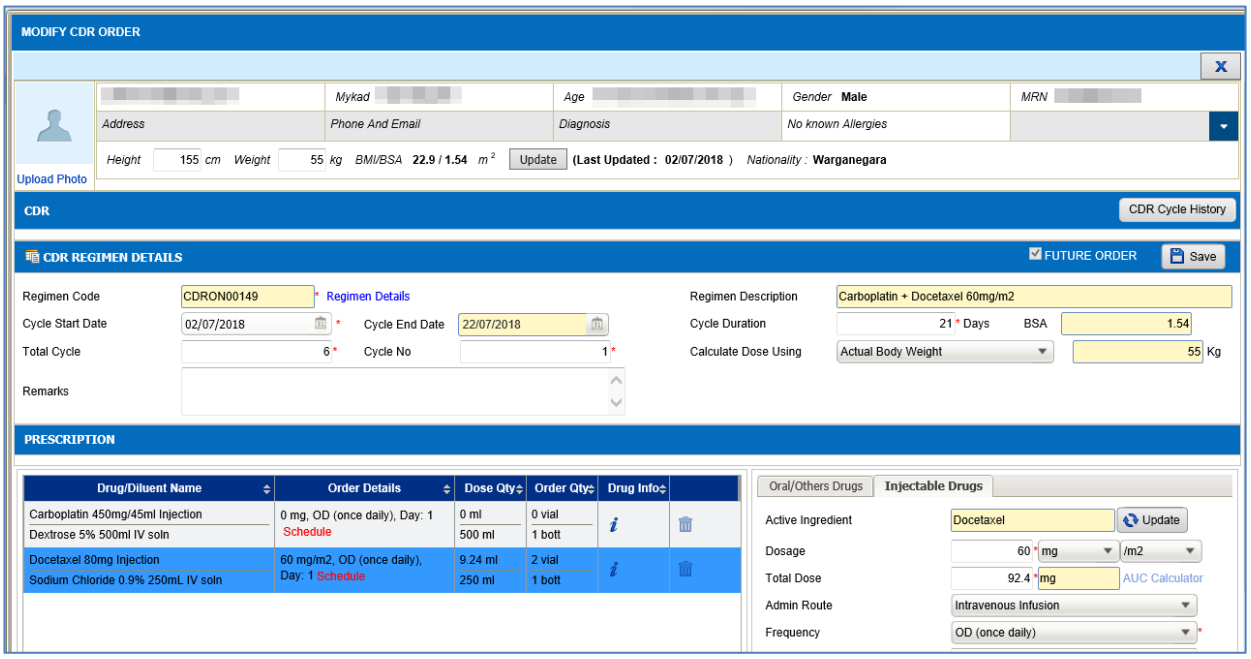
1. Manage Prescription listing page



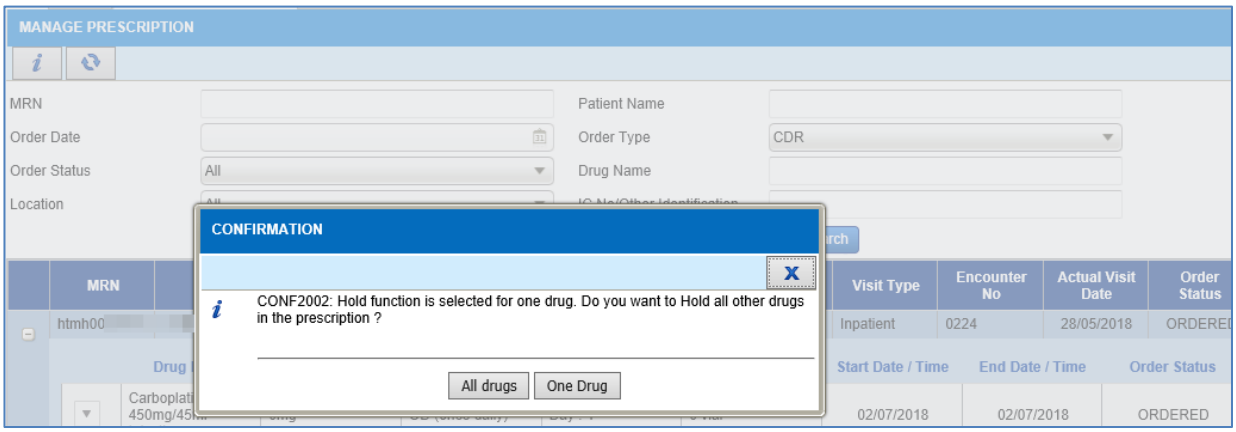
2. Manage Prescription: Context Menu



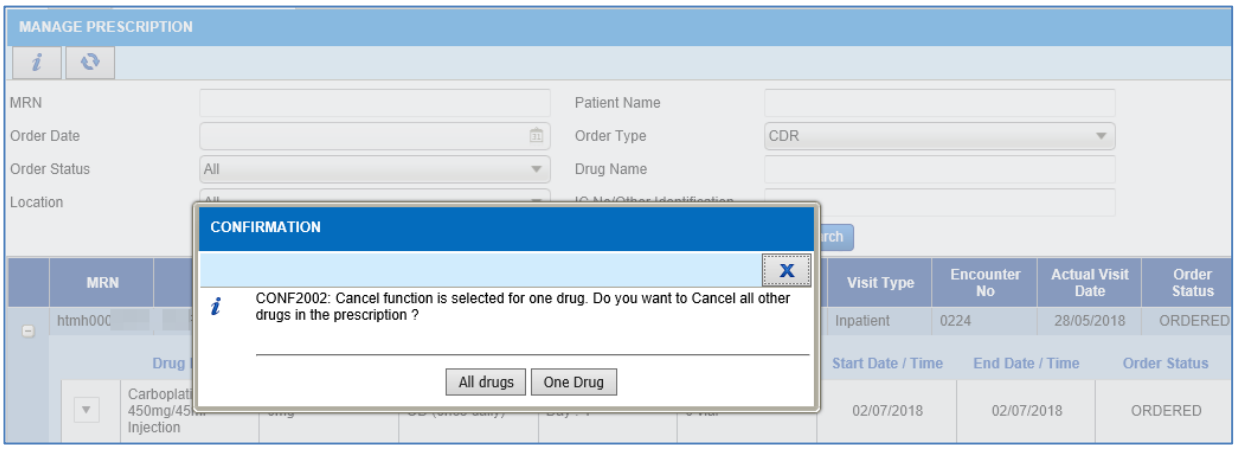
3. Manage Prescription: Modify order



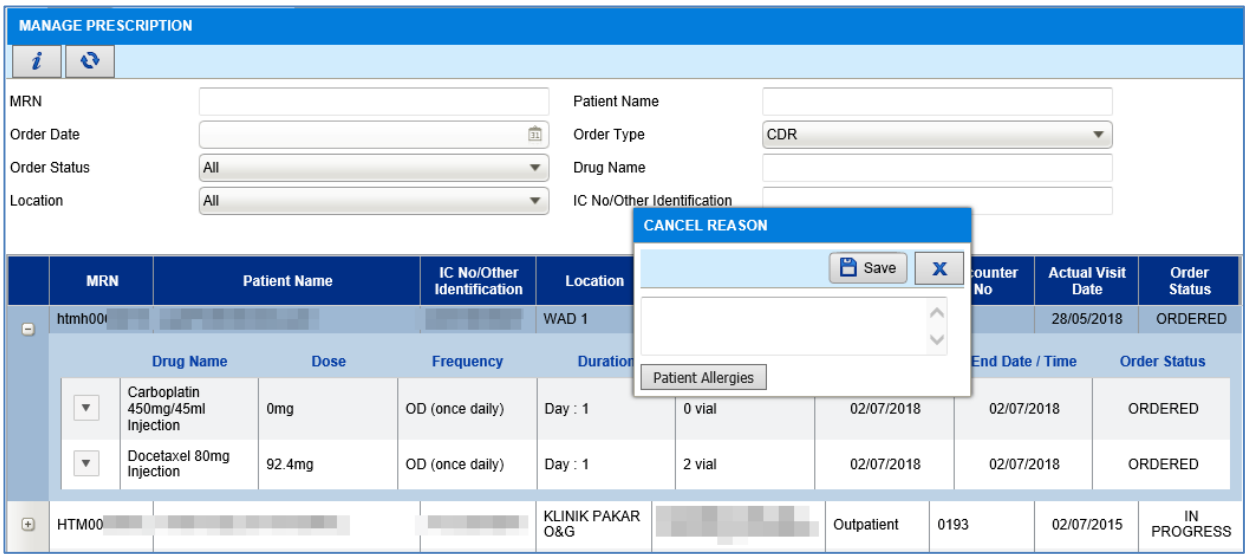
4. Manage Prescription: Hold order



5. Manage Prescription: Cancel order



6. Manage Prescription: Stop order



Notes	• Click on 'Search' button to search for the existing CDR medication order record. • Click on Modify Order menu to display modify CDR order screen. • Click on Hold Order menu to hold the CDR order record. • Click on Resume Order menu to resume the CDR order record. • Click on Cancel menu to cancel the CDR order record. • Click on the Stop menu to discontinue the CDR order record.
Cross References	None

3.2.5.2.1.2 ***Application Business Rules***

No.	Name	Description
1.	Search Order	Manage Order listing screen is displayed for user to select confirmed orders based on user's granted location, patient's visit location and order status. Only prescription with order status Ordered, In Progress, and Partially Dispensed is displayed in this listing. This screen will allow user to search by the following criteria: i. MRN – Manage order listing shall be retrieved from the database based on matching MRN. ii. Patient Name – Manage order listing shall be retrieved from the database based on matching Patient Name. iii. Order Date – Manage order listing shall be retrieved from the database based on matching order date. iv. Order Type – Manage order listing shall be retrieved from the database based on matching order type. v. Order Status – Manage order listing shall be retrieved from the database based on matching order status. vi. Drug Name – Manage order listing shall be retrieved from database based on matching drug name.

No.	Name	Description
		vii. Location – By default, location is default to user's login location. The listed location values are based on the user's granted location as setup in User Profile screen. viii. IC No/Other Identification - Manage order listing shall be retrieved from the database based on matching Patient ID No. The orders are displayed based on the order type as below: i. Normal: Medication orders created using Normal order screen. ii. CDR: Medication orders created using CDR order screen. iii. IV: Medication orders created using Infusion order screen. iv. PN: Medication orders created using PN order screen. v. Radiopharmaceuticals: Medication orders created using Radiopharma order screen.
2.	Patient List	Results of the search will listed below the search criteria section. The patient list will contain the following information: i. MRN ii. Patient Name iii. IC No/Other Identification iv. Location v. Prescriber Name vi. Visit Type vii. Encounter Number viii. Actual Visit Date ix. Order Status
3.	Refresh Listing	Click on the Refresh button to reset all searched records and searching criteria to default value.
4.	Modify Order	Modify order is allowed only when the drug status is Ordered. Once the drug status is in Verified onward, prescriber is not allowed to modify the order. On click of Modify Order menu, modify order screen is displayed based on the drug as below: i. Injectable Drugs Only Regimen Code is not editable, other field functions remain as in CDR order screen. ii. Oral/Others Drugs Only Regimen Code is not editable, other field functions remain as in CDR order screen.
5.	Save Modify Order record	On click of Save button on Modify Order screen: i. System will update all order information and the latest prescription is displayed on the Manage Order listing screen. ii. No changes on the drug status.
6.	Hold Order	Hold order is allowed for drug status Ordered, Verified, and Prepared only. Hold function will update the drug status to Hold. Prescriber and pharmacist are not allowed to do any transaction once the drug is in Hold status. On click of Hold Order menu, alert message is displayed with options to

No.	Name	Description
		hold all the drugs in the prescription: i. Click 'Yes' to hold all the drugs in the prescription. ii. Click 'No' to hold only the selected drug. iii. Click 'Cancel' to cancel hold for all drugs. Hold function will update the drug status to [Current status]/Hold. Prescriber and pharmacist are not allowed to do any transaction once the drug is in Hold status.
7.	Resume Order	Resume order is enabled only when the drug status is Hold. Resume order function will update the drug status back to the previous status before hold. On click of Hold Order menu, alert message is displayed with options to hold all the drugs in the prescription: i. Click 'Yes' to hold all the drugs in the prescription. ii. Click 'No' to hold only the selected drug. iii. Click 'Cancel' to cancel hold for all drugs. Resume order is enabled only when the drug status is Hold. Resume order function will update the drug status back to the previous status before hold. Pharmacist is not allowed to resume order hold by prescriber and vice versa.
8.	Cancel Order	Cancel order is allowed only when the drug status is Ordered, Verified and Prepared. This function will update the drug status to Cancelled and will remove the drug from the Manage Order listing screen. No transaction allowed for the cancelled drug. On click of Cancel Order menu, alert message is displayed with options to cancel all the drugs in the prescription: i. Click 'Yes' to cancel all the drugs in the prescription. ii. Click 'No' to cancel only the selected drug. iii. Click 'Cancel' to not cancel any drugs. Cancelling the drugs will update the drug status to Cancelled and remove the drug from the Manage Order screen. Once all of the drugs in the prescription are cancelled, system will update the order status to Cancelled and remove the patient name from the Manage Order screen.
9.	Stop Order	Stop order is allowed only when the drug status is Partial Dispensed. This function will update the drug status to Discontinued and will remove the drug from the Manage Order listing screen. No transaction allowed for the discontinued drug. On click of Stop Order menu, alert message is displayed with options to discontinue all the drugs in the prescription: i. Click 'Yes' to discontinue all the drugs in the prescription. ii. Click 'No' to discontinue only the selected drug. iii. Click 'Cancel' to not discontinue any drugs. Discontinue the drugs will update the drug status to Discontinue and remove the drug from the Manage Order screen.

No.	Name	Description
		Once all of the drugs in the prescription are discontinued, system will update the order status to Discontinue and remove the patient name from the Manage Order screen.

3.2.5.2.1.3 *Input Validation Rules*

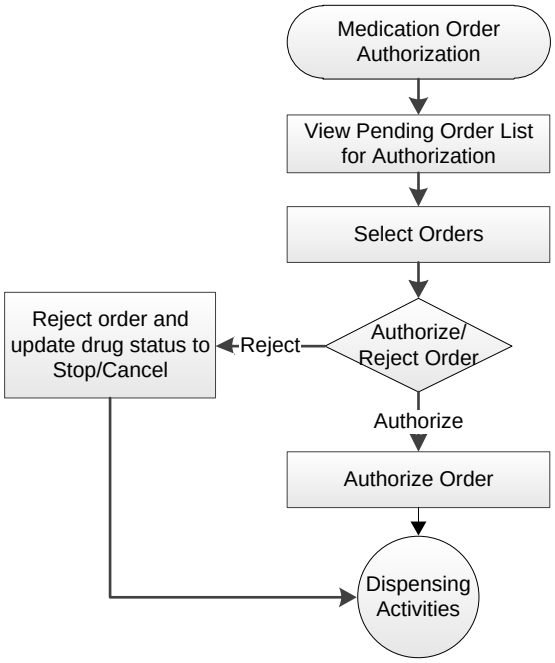
Refer #3.3.5.1 Manage Prescription Listing section in document PhIS_CPS_SDD_OM_FB_v1.0.

3.2.6 CDR Authorization

Once medication order record created and the order involves drugs which the user is not authorized to prescribe then the order has to be authorized. Authorization of order will be done on this screen.

Authorization process is applicable for full based facility only, where by for pharmacy based the authorization process is conducted manually and pharmacist will record authorized prescription only into PhIS.

3.2.6.1 Screen Navigation Diagram



3.2.6.2 Detail Functionality and Screen

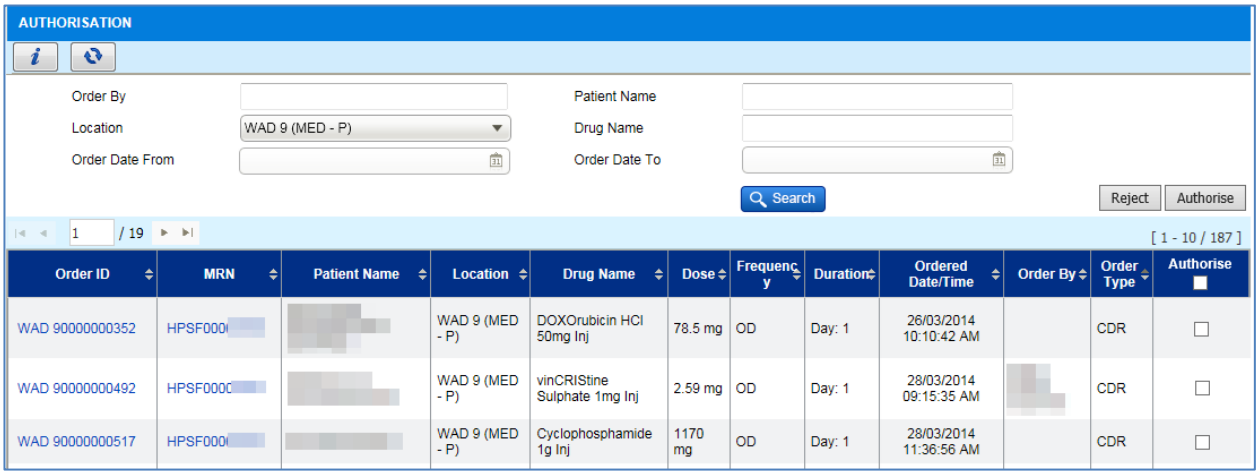
3.2.6.2.1 *Drug Authorization*

3.2.6.2.1.1 ***Screen Design***

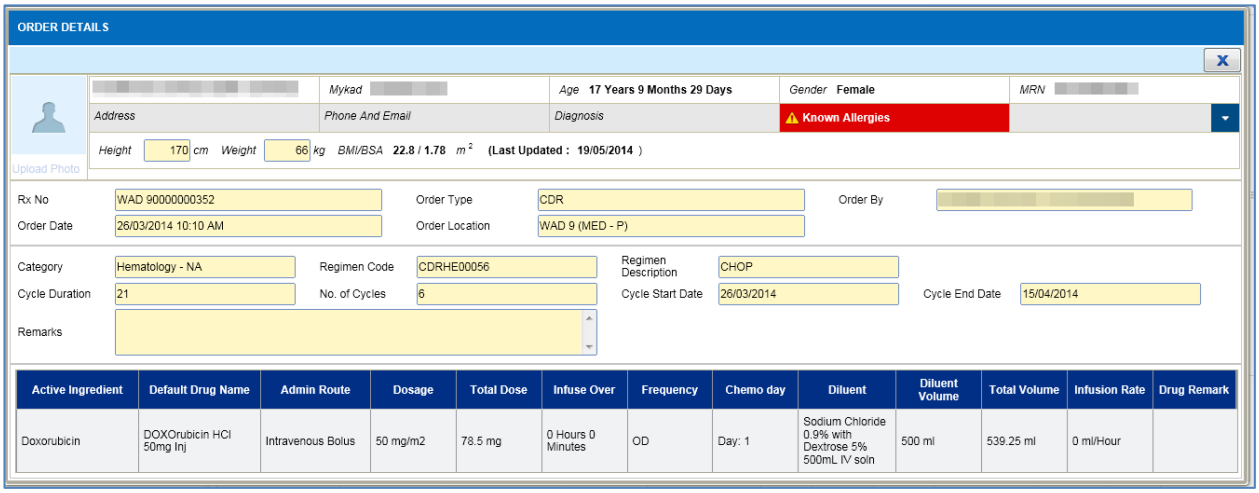
ID	CDR-DA.SD1
Description	Authorization screen

Diagram

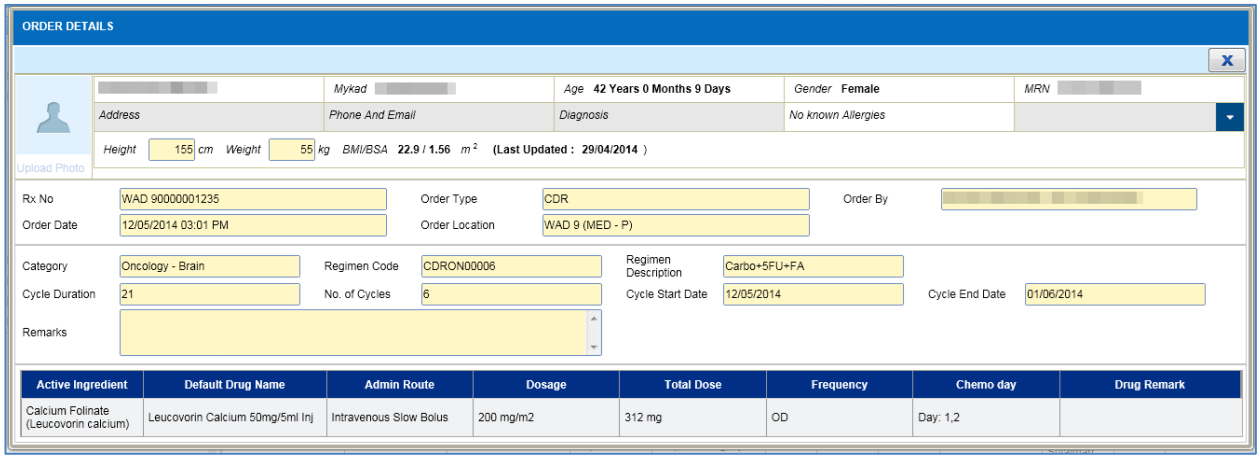
1. Order Authorisation screen



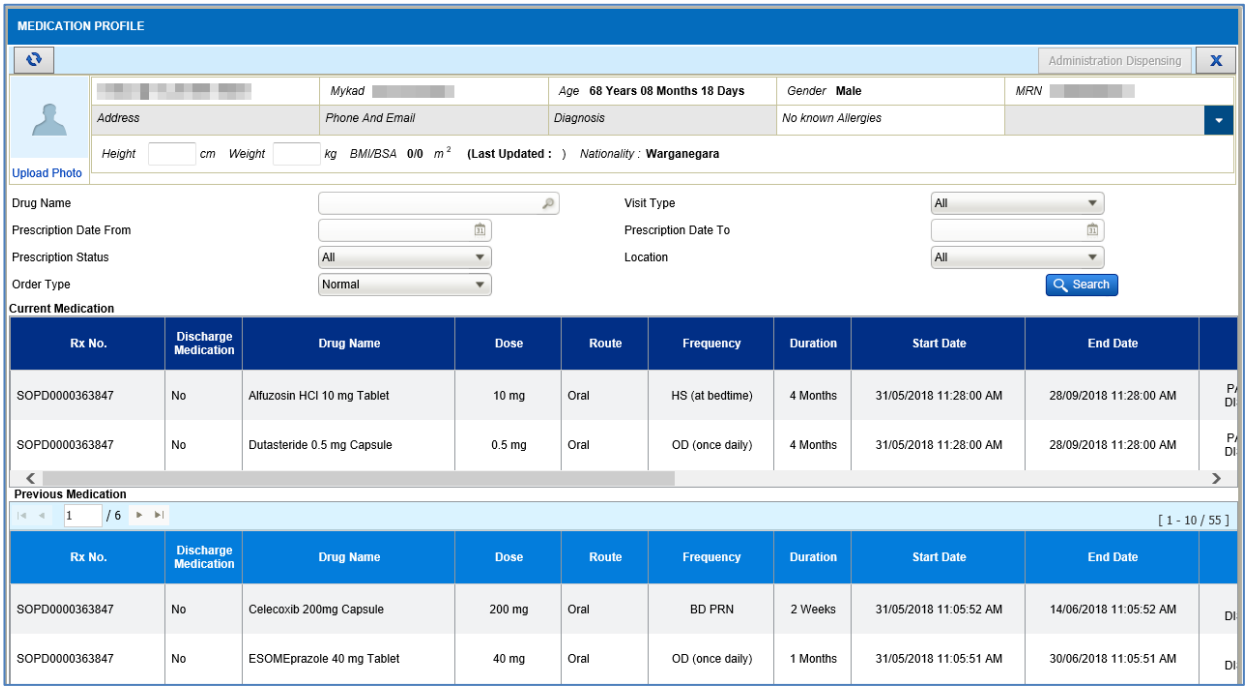
2. Injectable drug details



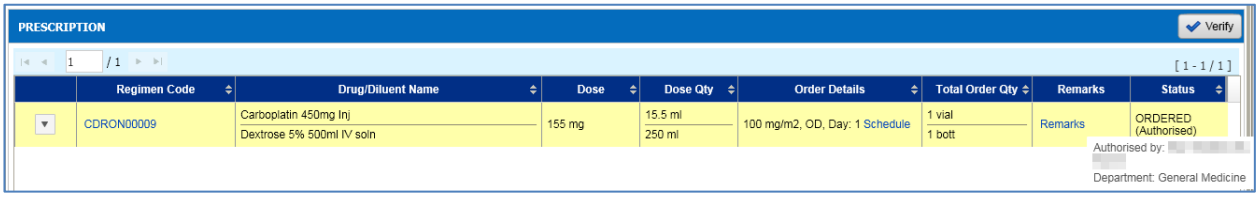
3. Oral/Others drug details



4. Patient Medication Profile



5. Example of Authorised order in CDR Verification



Notes	• Click on the search button to search for the confirmed order that needs authorization. • Click on Order ID hyperlink to view drug details. Injectable or Oral/Others drug details. • Click on MRN hyperlink to view patient medication profile.

	• Select which drug to authorize and click Authorize button to authorize the drug. • Select which drug to reject and click Reject button.
Cross References	None

3.2.6.2.1.2 ***Application Business Rules***

No.	Name	Description
1.	Search Order	Order Authorisation listing screen is displayed based on user's granted location and patient's visit location. This screen will allow user to search by the following criteria: i. Order By – Authorisation listing shall be retrieved from the database based on order by value. ii. Patient Name – Authorisation listing shall be retrieved from the database based on matching Patient Name. iii. Location – By default, location is default to user's login location. The listed location values are based on the user's granted location as setup in User Profile screen. iv. Drug Name – Authorisation listing shall be retrieved from database based on matching drug name. v. Order Date range – Authorisation listing shall be retrieved from database where order date within the selected range. The confirmed orders are displayed based on the order type as below: i. Normal: Medication orders created using Normal order screen. ii. CDR: Medication orders created using CDR order screen. iii. IV: Medication orders created using Infusion order screen. iv. PN: Medication orders created using PN order screen. vi. Radiopharmaceuticals: Medication orders created using Radiopharma order screen.
2.	Authorize Order	Once a medication order is placed and the order involves drugs which the user is not authorized to prescribe then the Order has to be authorized. Authorization of order will be done on this screen. It will involve: ***i. Criteria 1*** • Order of all category A/KK, A and A* • Order of all category B drugs ***ii. Criteria 2*** • This only applies for first order of the drug with same active ingredient. No authorization required for subsequent orders of the same active ingredient. • No limit on duration to allow repeating orders of the same active ingredient except as below: a. Authorization given for a particular admission/visit and expired once the patient is discharged/checkout. (Drug Authorization Category = A#). b. If patient is admitted/visit again and the same active

No.	Name	Description
		ingredient is used, a new authorization is required for that same active ingredient. ***iii. Criteria 3*** • Not Outsource order (pharmacist transcribe Outsource order or drug comes from Online Outsource, no authorizations required for any type of drugs). Lower category of prescriber are allowed to prescribe higher level of drugs but it requires authorization from higher category of prescriber (with authorization to access medication authorization screen) before the status is updated to 'Authorized'. e.g.: i. 'Category B of prescriber' can prescribe 'Category A*,A, A/KK of drugs' but it requires authorization from 'Category A*,A, A/KK of prescriber'. ii. 'Category C of prescriber' can prescribe 'Category A*,A, A/KK or B of drugs' but it requires authorization from 'Category A*,A, A/KK or B of prescriber'. iii. Authorization is not required for drug category C and below even prescribes by lower category of prescriber. Only authorized user will be allowed to authorize the medication order. Patient encounters (visit) are unique by encounter number and encounter date. Select which drug to authorize and click Authorize button to authorize the drug. All ordered drugs required authorization will flow to pharmacy (for dispensing) with status Ordered (PA). To differentiate whether this drug needs authorization or not, and already been authorized or not is based on authorization_status in Order CDR (Normal or Infusion Drug) tables. i. Authorization Status is 'Y', when the order requires authorization. ii. Authorization Status is 'N', when authorization is not required. iii. Authorization Status is 'A', when order already authorized by upper level prescriber. Pharmacist can proceed to dispense the drug. Status of pending authorization the drug will be same with other drug that not require authorization (ordered, verified, and prepared) but with additional 'PA' (Pending Authorization) status.
3.	Reject Order	Once order is rejected, drug status will change status to Stop/Cancel. Record will be removed from the pending list and no more status PA (Pending Authorisation) appear at dispensing screen.
4.	Refresh Listing	Click on the Refresh button to reset all searched records and searching criterias to default value.

3.2.6.2.1.3 ***Input Validation Rules***

No.	Name	Description	Manda	Format

			tory	
1.	Order By	Order By can be search through user ID by name. It can filter any username based on input value as minimum as 1 character.	No	Text field
2.	Location	Default value was set to All. Location will be listed in a drop down format and display based on user granted location.	No	Drop down
3.	Patient Name	Medication order listing shall be retrieved from the database for all registered patients with visit based on matching Patient Name.	No	Text field
4.	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
5.	Order Date From	To be selected from calendar control. It will be in dd/mm/yyyy format. Search criteria for start order from which date.	No	Calendar
6.	Order Date To	To be selected from calendar control. It will be in dd/mm/yyyy format. Search criteria for start order to what date.	No	Calendar

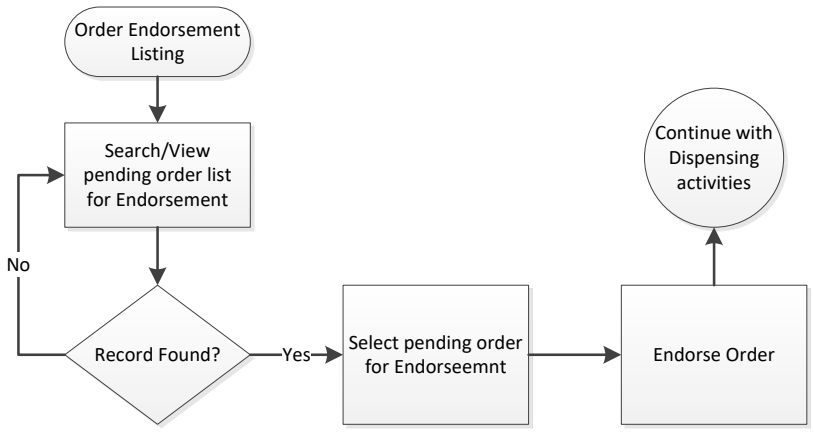
.

3.2.7 CDR Endorsement

All orders modified by Pharmacists or Pharmacy Assistants after consulting the prescriber must be endorsed by the prescriber. Endorsement of order will be done on this Order Endorsement screen.

Only authorized user will be allowed to endorse the medication order. Pharmacist can continue to dispense the order even without endorsement.

3.2.7.1 Screen Navigation Diagram



3.2.7.2 Detail Functionality and Screen

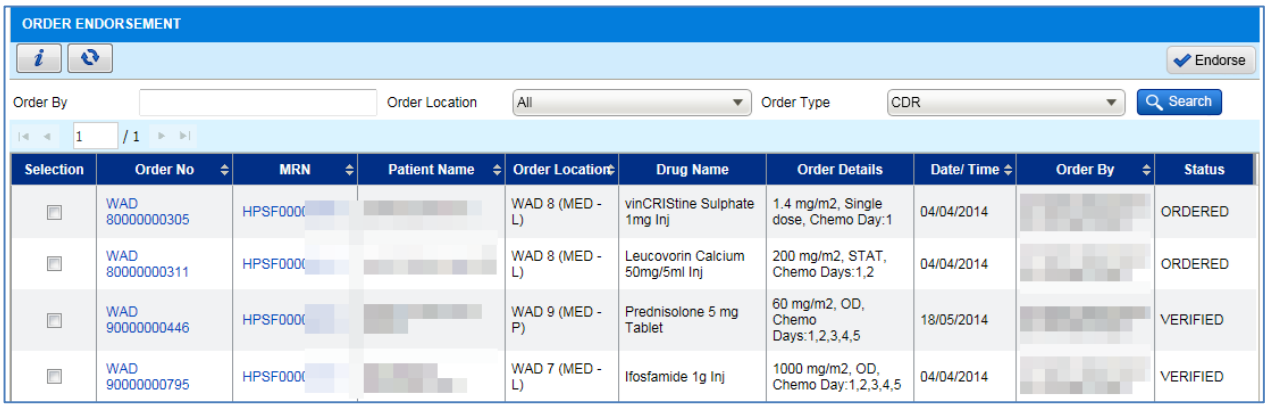
3.2.7.2.1 *Order Endorsement*

3.2.7.2.1.1 ***Screen Design***

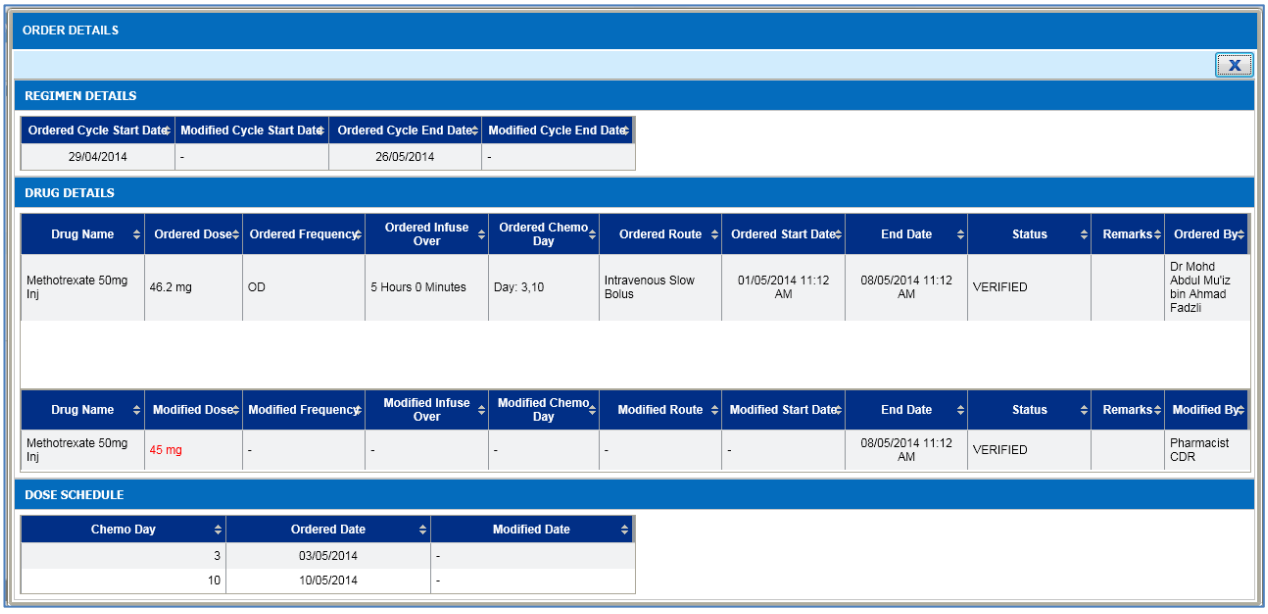
ID	CDR-OE.SD1
Description	Order Endorsement screen

Diagram

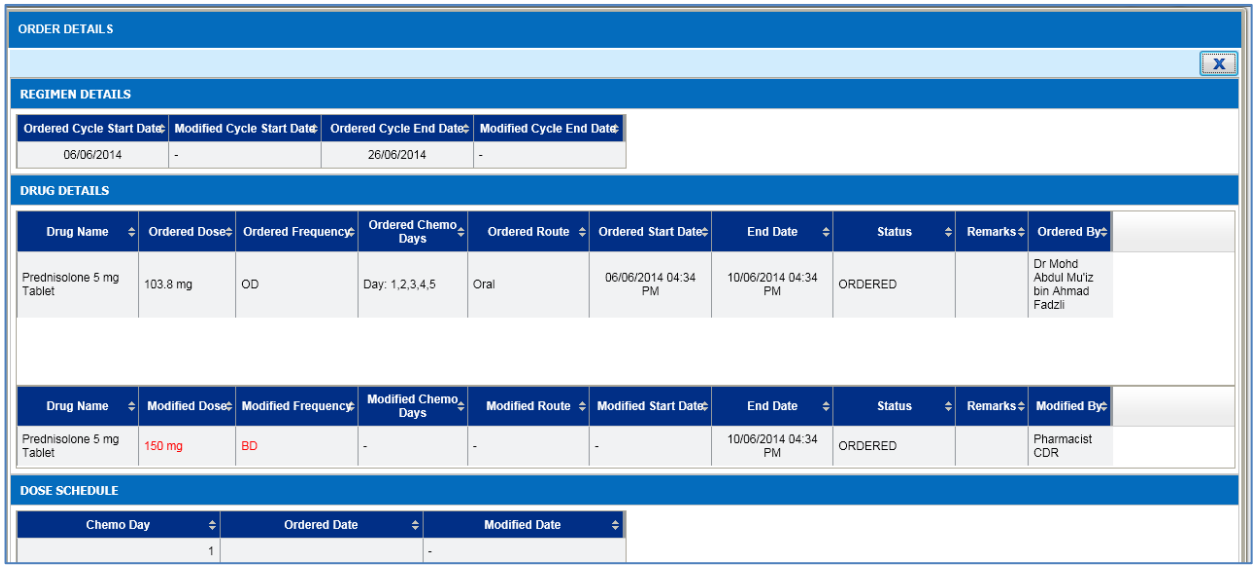
1. Order Endorsement screen



2. Injectable Drugs



3. Oral/Others Drugs



Notes	• Click on the search button to search for the order that needs prescriber endorsement. • Click on MRN hyperlink to display patient medication profile. • Select which drug to endorse and click Endorse button to endorse the order. • Click on Order No hyperlink to display the Order Details screen • Order Details screen is displayed based on Injectable or Oral/Others Drugs.
Cross References	None

3.2.7.2.1.2 ***Application Business Rules***

No.	Name	Description
1.	Search Order	Order Endorsement listing screen is displayed based on user's granted location and patient's visit location. This screen will allow user to search by the following criteria: i. Order By – Order endorsement listing shall be retrieved from the database based on order by value. ii. Order Location – By default, location is default to 'All'. The listed location values are based on the user's granted location as setup in User Profile screen. iii. Order Type – Order endorsement listing shall be retrieved from the database based on matching order type.

No.	Name	Description
		The orders that needs endorsement are displayed based on the order type as below: i. Normal: Medication orders created using Normal order screen. ii. CDR: Medication orders created using CDR order screen. iii. IV: Medication orders created using Infusion order screen. iv. PN: Medication orders created using PN order screen. v. Radiopharmaceuticals: Medication orders created using Radiopharma order screen.
2.	Endorse Order	Select which drug to endorse and click Endorse button to endorse the order. All orders required endorsement will flow to pharmacy for dispensing. Pharmacist is allowed to modify order (intervention) in Verification and Preparation screen. Only modification to below fields will sent the order to endorsement screen: i. Cycle Start Date and Cycle End Date ii. Admin Route iii. Total Dose iv. Frequency v. Infuse Over vi. Drug Schedule – Schedule Date Pharmacist can proceed to dispense the drug. Status of pending endorsement orders will be same with other orders that not require endorsement (ordered, verified, and prepared).
3.	Order Details	Order details are displayed based on Injectable or Oral/Others Drugs. Ordered fields will display the original value ordered by prescriber. Modified fields will display the modification done by pharmacist during order intervention in CDR Verification or Preparation screen.
4.	Refresh Listing	Click on the Refresh button to reset all searched records and searching criteria to default value.

3.2.7.2.1.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
1.	Order By	Order By can be search through user ID by name. It can filter any username based on input value as minimum as 1 character.	No	Text field
2.	Order Location	Default value was set to All. Location will be listed in a drop down format and display based on user granted location.	No	Drop down
3.	Order Type	Default value set to Normal. Order Type will be listed in a drop down menu and consists of data (CDR, IV, Normal, PN, and Radiopharmaceutical).	No	Drop down

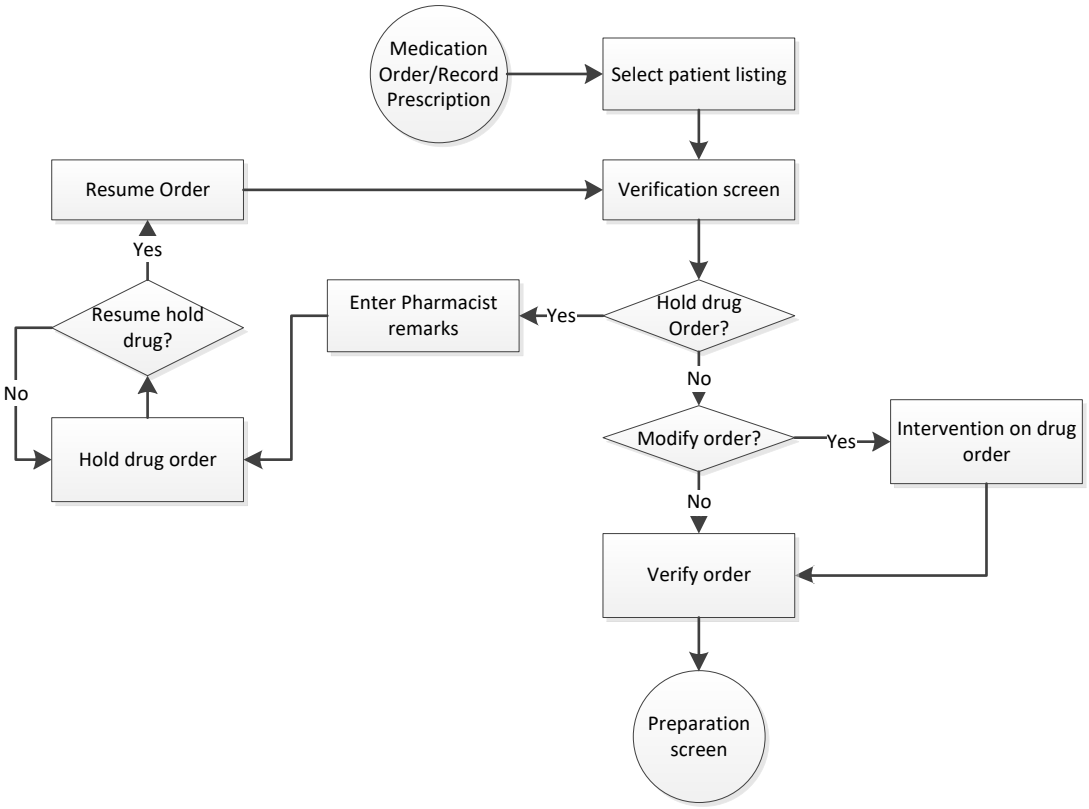
.

3.2.8 CDR Verification

All confirmed CDR orders from Medication Order screen will flow to CDR Verification. Pharmacist will screen and verify the order to proceed to CDR Preparation screen. This screen is applicable for full based facility only, for pharmacy based, verification screen is included in Record Prescription screen.

Pharmacist is allowed to intervene / modify order, or hold order in CDR Verification screen. Intervention details will be displayed in Order Endorsement screen for doctor to endorse the order.

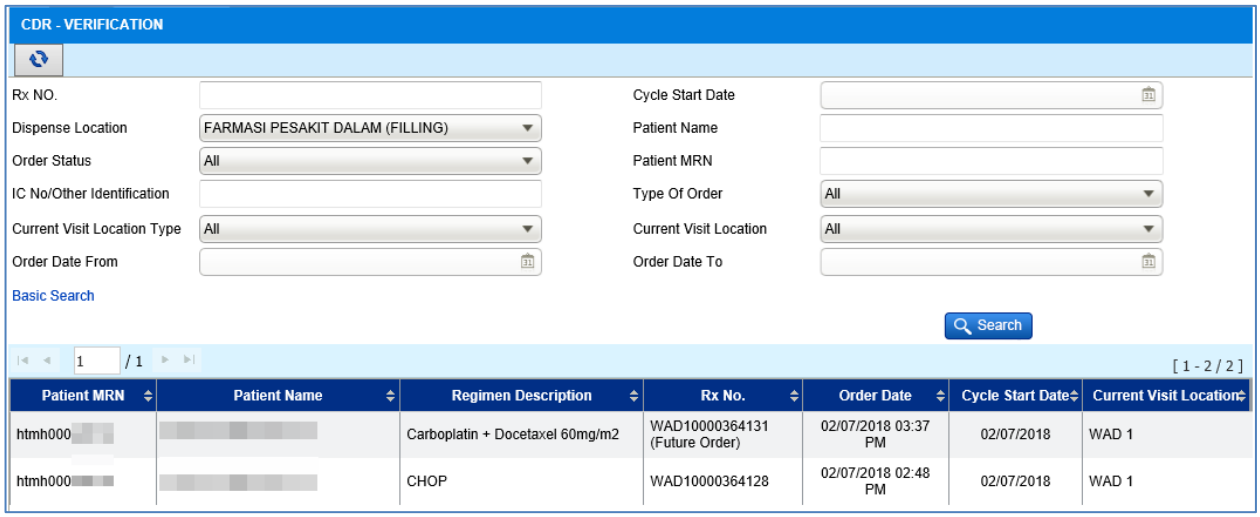
3.2.8.1 Screen Navigation Diagram



3.2.8.2 Detail Functionality and Screen

3.2.8.2.1 *CDR Verification Listing*

3.2.8.2.1.1 ***Screen Design***

ID	CDRVER.SD1
Description	CDR Verification Listing
Diagram	
Notes	• Click on the search button to search confirmed order for pharmacist to screen and verify. • Double click which order to verify and view the order details.
Cross References	None

3.2.8.2.1.2 ***Application Business Rules***

No.	Name	Description
1.	Search Order	CDR Verification listing screen is displayed based on all CDR confirmed orders and user's login location. This screen will allow user to search by the following criteria: i. Rx No – Verification listing shall be retrieved from the database based on Rx number value. ii. Cycle Start Date - Verification listing shall be retrieved from database where Cycle Start Date is within the selected range. iii. Dispense Location – By default, dispense location is default to user's login location. The listed location values are based on the user's granted location as setup in User Profile screen and location specified as dispense location in Location Setup screen. iv. Order Status – Verification listing shall be retrieved from the database based on matching order status. By default, value is default to 'All'. Values are from lookup table, domain 'CDR Order

No.	Name	Description
		Status'. v. Patient Name – Verification listing shall be retrieved from the database based on matching Patient Name. vi. Patient MRN – Verification listing shall be retrieved from the database based on matching Patient MRN. vii. IC No/Other Identification - Verification listing shall be retrieved from the database based on matching Patient ID No. viii. Type of Order – Verification listing shall be retrieved from the database based on matching Type of Order which is 'Approved' or 'Future'. By default, value is default to 'All'. ix. Current Visit Location Type – Verification listing shall be retrieved from the database based on matching location type. By default, value is default to 'All'. Values are from lookup table, domain 'Loc Type'. x. Current Visit Location – Verification listing shall be retrieved from the database based on matching location. By default, value is default to 'All'. Values are from location setup maintenance screen. xi. Order Date range – Verification listing shall be retrieved from database where order date within the selected range. Specify search criteria and click on the Search button to search the orders.
2.	Refresh Listing	Click on the Refresh button to reset all searched records and searching criteria to default value.

3.2.8.2.1.3 ***Input Validation Rules***

None.

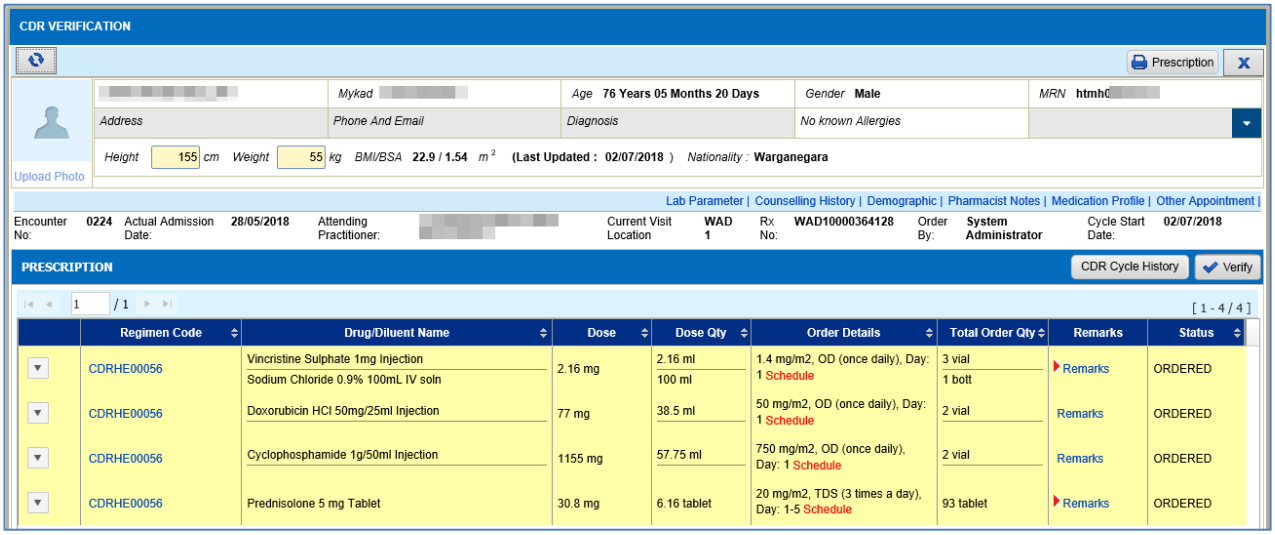
3.2.8.2.2 *CDR Verification*

3.2.8.2.2.1 ***Screen Design***

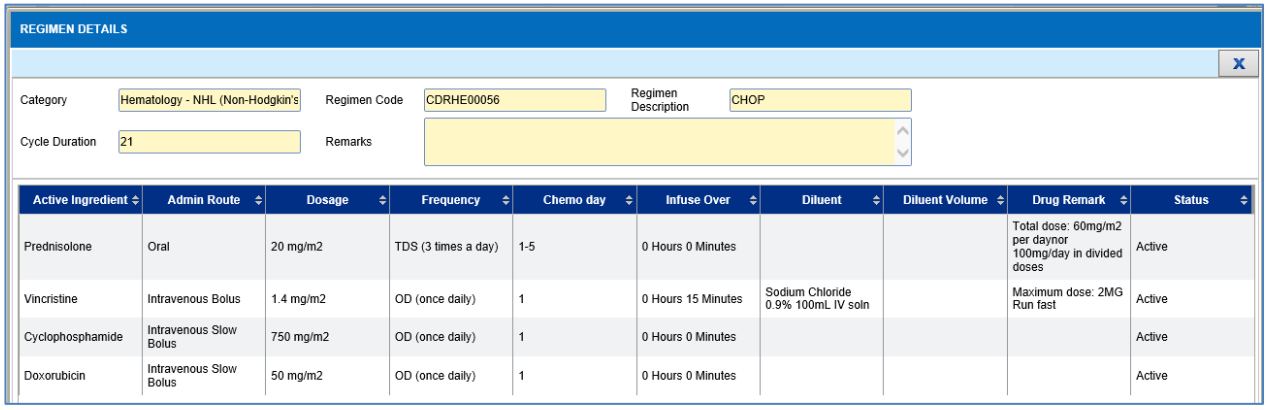
ID	CDRVER.SD2
Description	CDR Verification screen

Diagram

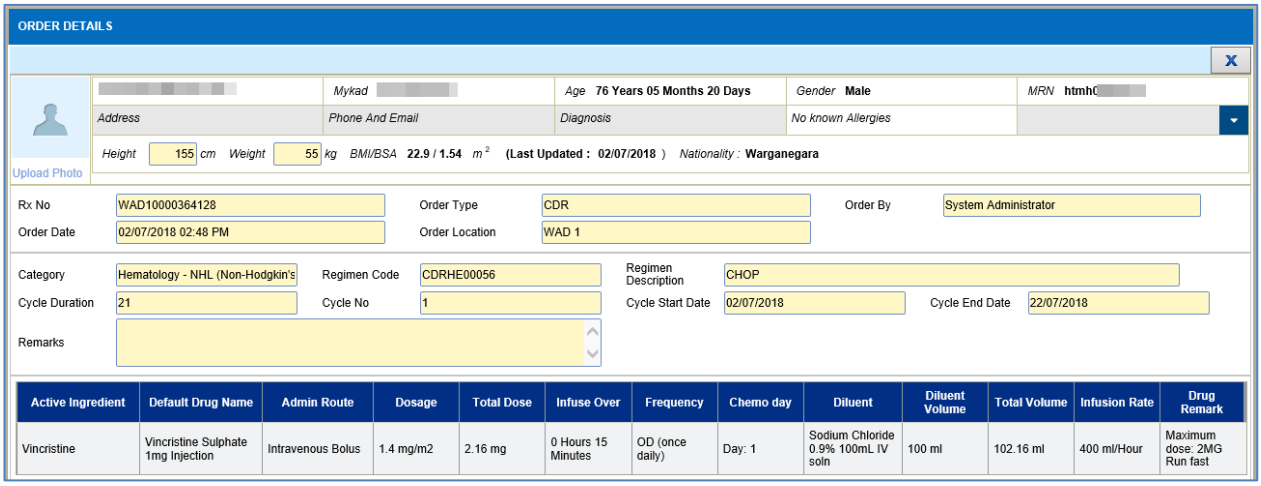
1. CDR Verification screen



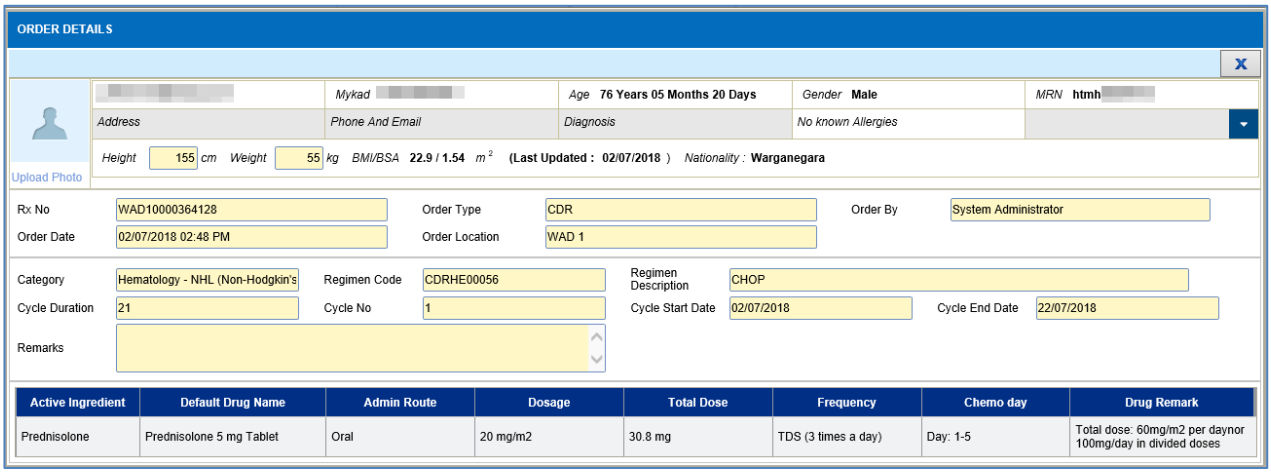
2. Regimen Details: On click of Regimen Code hyperlink



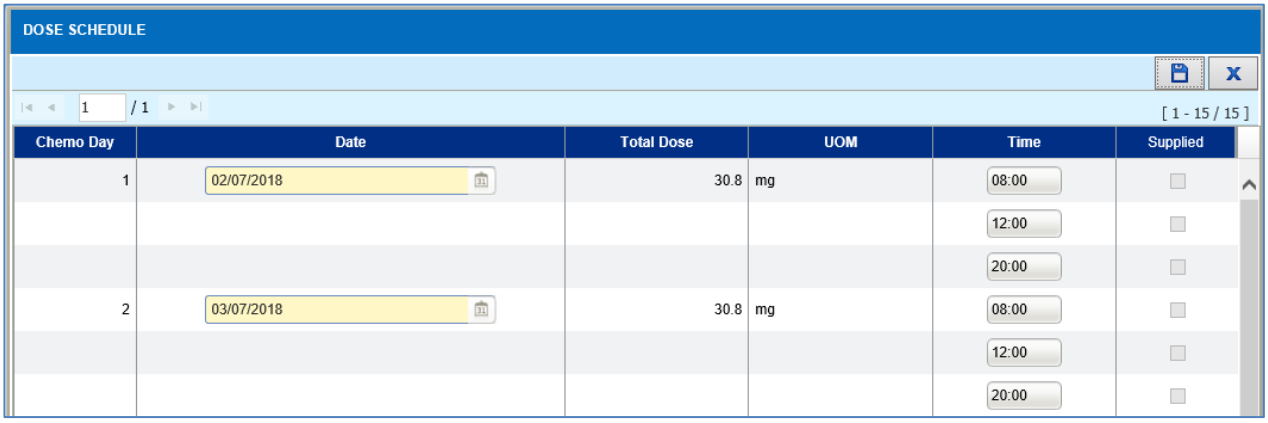
3. Order details: Injectable drugs (On double click of drug row)



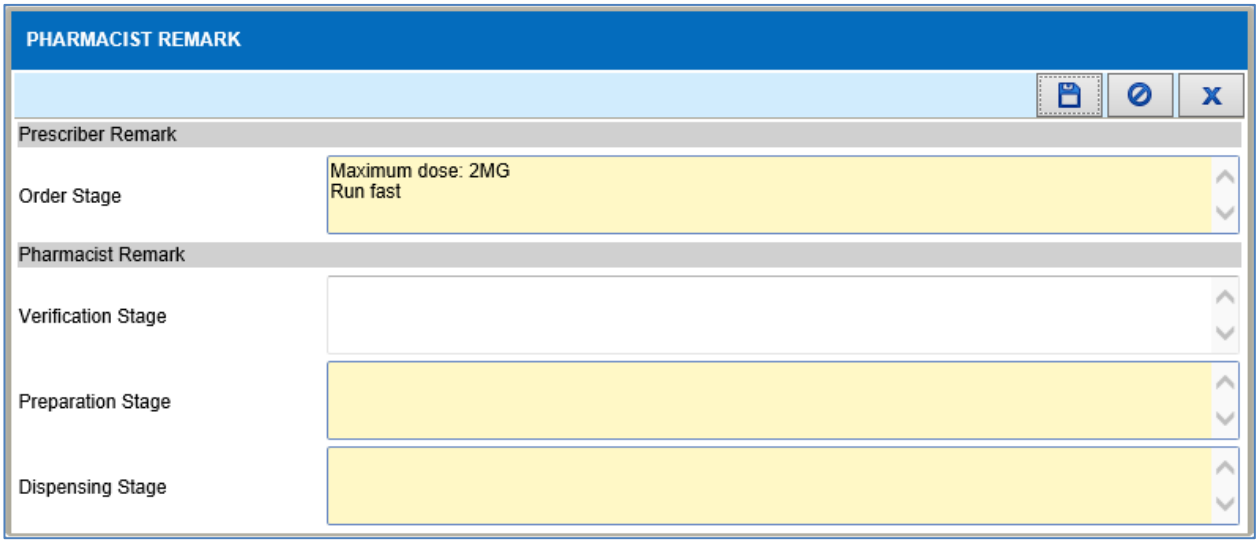
4. Order details: Oral/Others drugs (On double click of drug row)



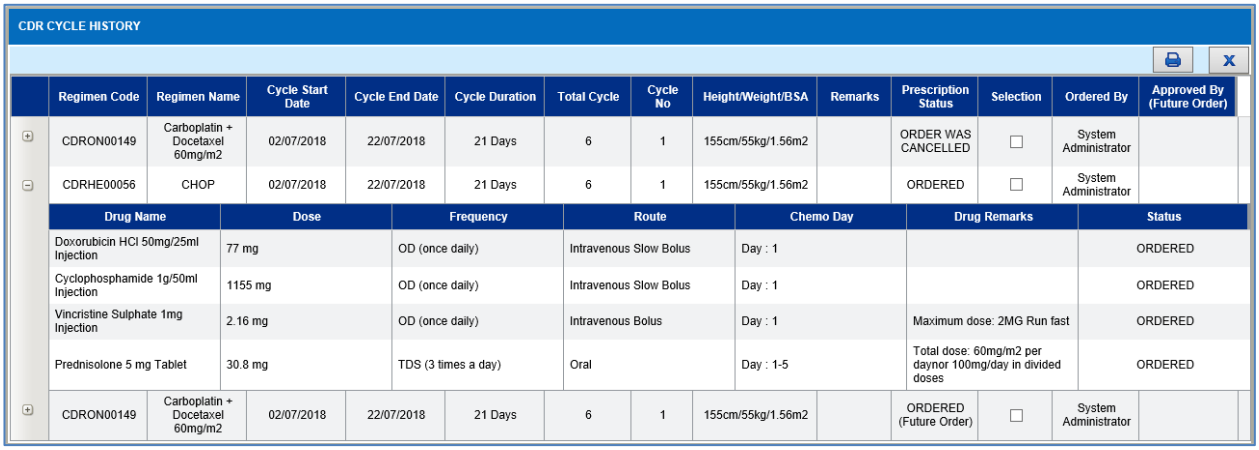
5. Dose Schedule details (On click of 'Schedule' hyperlink)



6. Pharmacist Remarks (On click of 'Remarks' hyperlink)



7. Cycle History screen (On click of 'Cycle History' button)



Notes	• Click on Regimen Code hyperlink to view Regimen Details screen. • Double click on order row to view Order Details screen for each drugs. • Click on Schedule hyperlink to view Schedule screen. • Click on Remarks hyperlink to view remarks screen • Click on Cycle History button to view the Cycle History screen • Click on Verify button to verify order.
Cross References	None

3.2.8.2.2.2 ***Application Business Rules***

No.	Name	Description
Prescription/Drug List section		
1.	Regimen Code	Regimen details will list all drugs setup in Regimen maintenance screen. Please refer to 3.2.3.2.3 CDR Regimen Details for detailed description.
2.	Drug/Diluent Name	Ordered drug is displayed on the first row separated by line with the ordered diluent drug on the second row. Drug name is displayed based on the default drug as setup in Regimen maintenance screen.
3.	Dose	Dose column displays the ordered Total Dose value. Value is displayed up to 2 decimal places.
4.	Dose Qty	Dose Qty column displays the calculated value based on the ordered dosage with calculation as below: Drug Qty (Drug) = (Ordered dosage/drug strength value) * drug quantity value. Drug Qty (Diluent) = Ordered fluid volume. Value is displayed up to 2 decimal places.
5.	Order Details	Order details column displays the ordered or modified value as below: i. Dosage, Dosage UOM ii. Frequency iii. Chemo day Schedule hyperlink: Drug schedule details display the chemo day, total dose, administration date/time and supplied flag to indicate drug has been allocated or supplied to patient. Values displayed are based on the order and screen is view-only.
6.	Total Order Qty	Total Order Qty column displays the calculated order quantity value for both drug and diluent.
7.	Remarks	Pharmacist remarks screen displays the remarks by both prescriber and pharmacist. Order stage remarks will display value if any drug remarks entered during order by prescriber. In verification screen, only verification stage remark field is enabled, other remarks are view-only.
8.	Status	Status column displays the drug status. Only drug with Ordered or Ordered/Hold status will be displayed in verification screen.
9.	Verify order	Click on Verify button to verify order and drug status will be updated 'Verified' and record will display in Preparation listing screen. System will also update the verified date and verified by values in database.
Order details (On double click of drug row)		
10.	Order Details	Double click on order row to view Order Details screen for each drugs. Order Details screen is displayed according to Injectable drugs or Oral/Others drugs. Screen will display the latest order details if any modification done by pharmacist during intervention.
Cycle History (On click of 'Cycle History' button)		
11.	Cycle History screen	Click on the Cycle History button, able to view the cycle history for the current patient.
Prescription (On click of 'Prescription' button)		
12.	Print Prescription	On click of the Prescription button, able to print the prescription.

3.2.8.2.2.3 *Input Validation Rules*

No.	Name	Description	Mandatory	Format
1.	Verification Stage	Verification stage remark is to be entered in the text box. Maximum of 250 characters capacity.	No	Text field

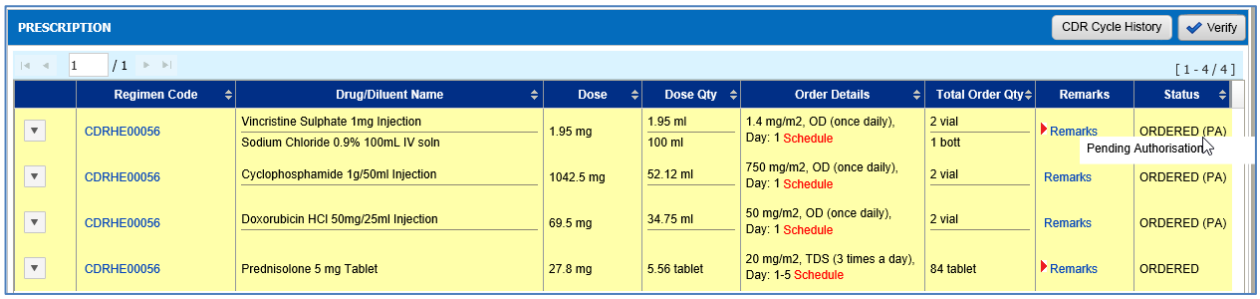
3.2.8.2.3 *CDR Verification – Pending Authorization*

3.2.8.2.3.1 *Screen Design*

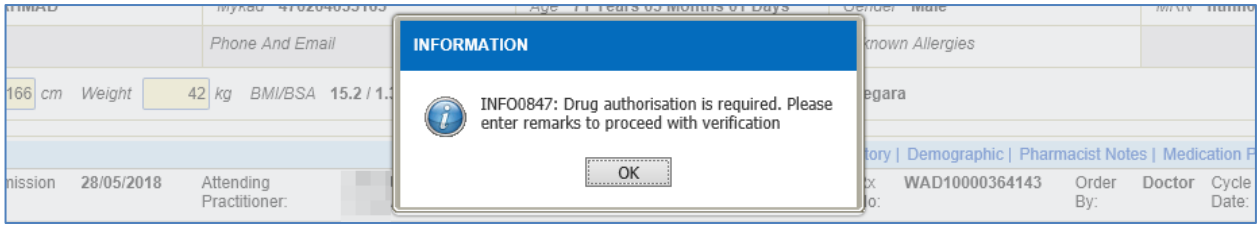
ID	CDRVER.SD3
Description	CDR Verification – Pending Authorization

Diagram

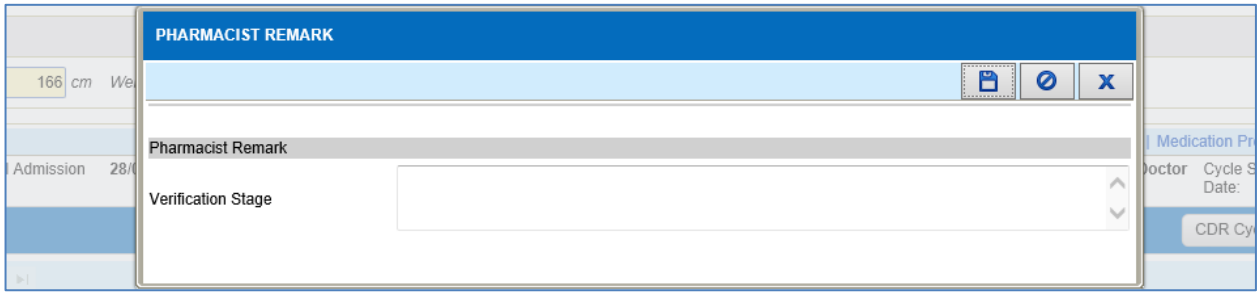
1. Pending Authorization Drug



2. Authorisation alert after click Verify button



3. Verification Remarks



Notes	• Click on Verify button. Authorisation alert is displayed if any of the drugs in the prescription is pending authorization from specialist.
Cross References	None

3.2.8.2.3.2 *Application Business Rules*

No.	Name	Description
1.	Pending Authorisation remarks	Once user clicks on Verify button, alert message will be displayed if any of the drugs in the prescription is pending authorization from specialist and verification remarks is mandatory to proceed to CDR Preparation screen. Once user saves the verification remarks, system will append the remarks for all pending authorization drug. If verification remarks already entered before user clicks Verify button, alert message will not be displayed. This process is applicable only for full based facility.

3.2.8.2.3.3 *Input Validation Rules*

None.

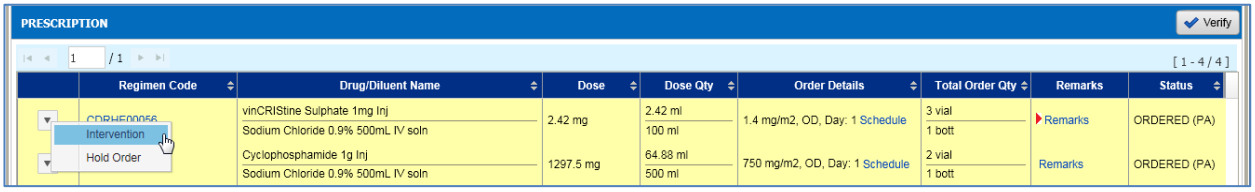
3.2.8.2.4 *CDR Verification – Intervention*

3.2.8.2.4.1 ***Screen Design***

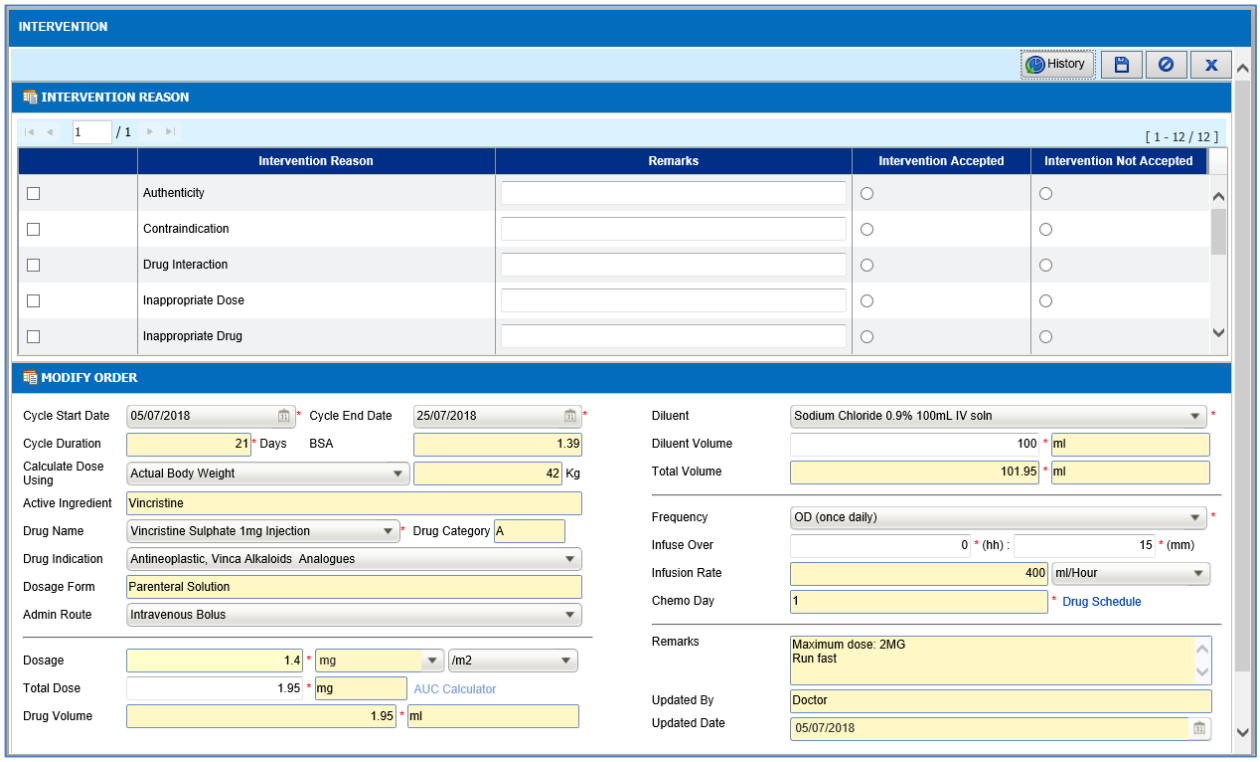
ID	CDRVER.SD3
Description	CDR Verification – Pending Authorization

Diagram

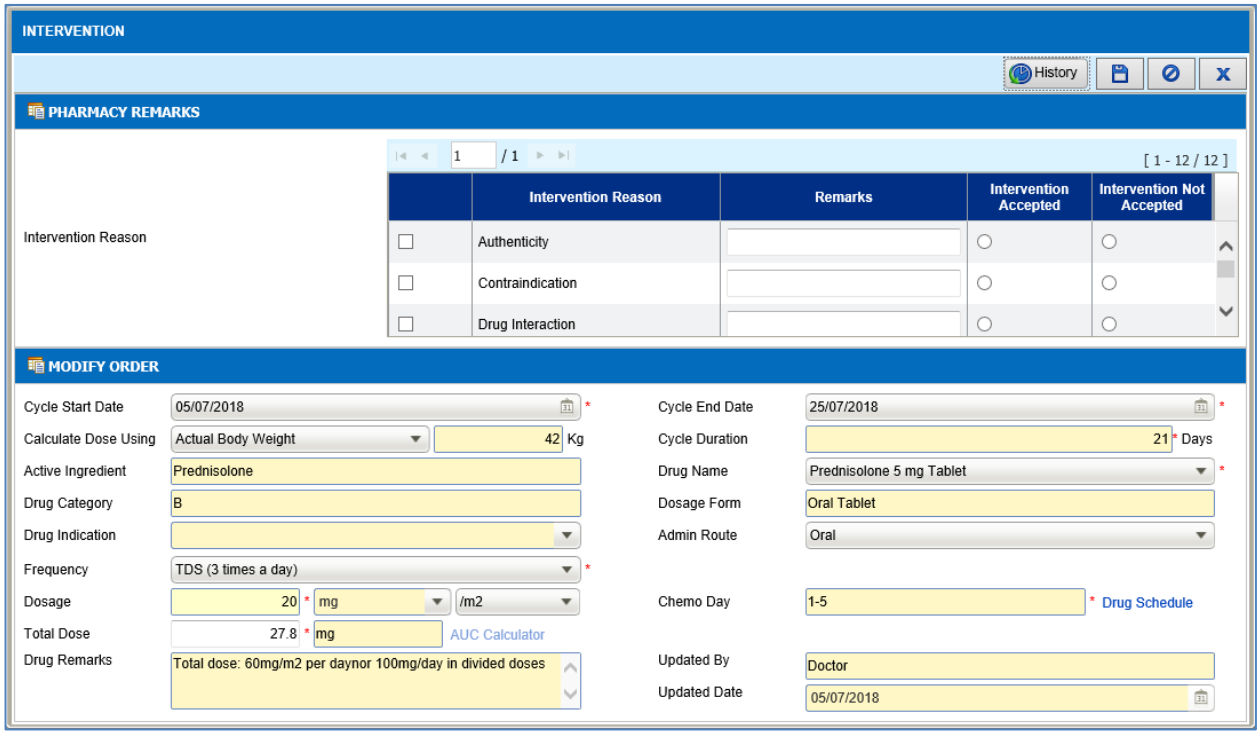
1. Intervention menu



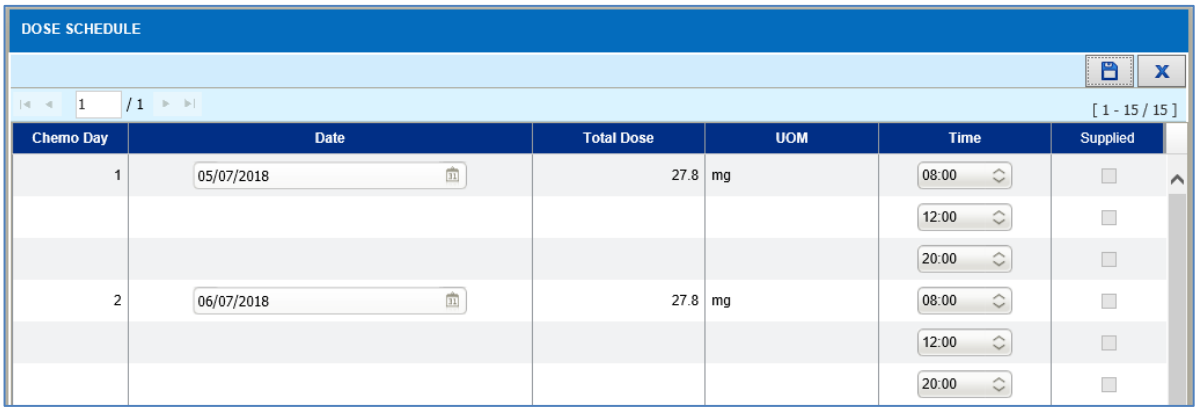
2. Intervention screen: Injectable drug



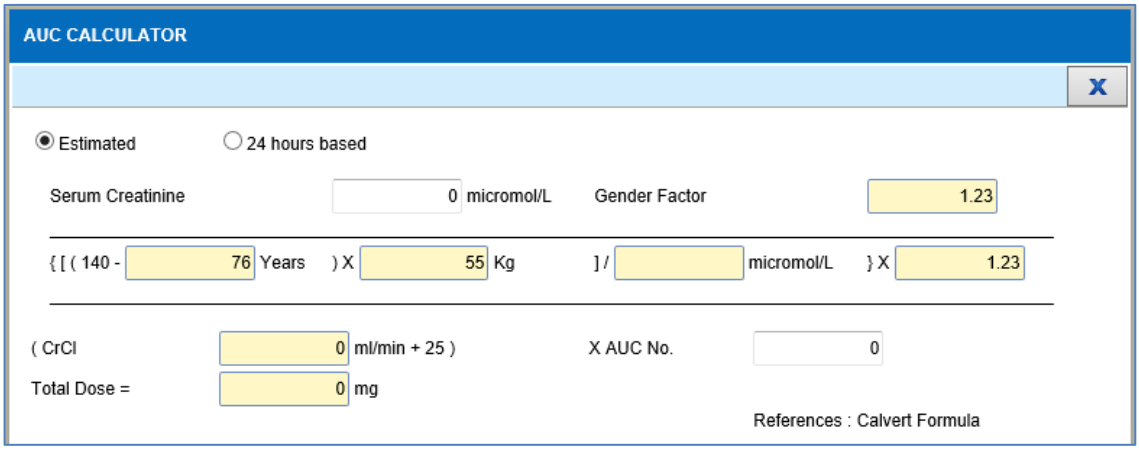
3. Intervention screen: Oral/Others drug



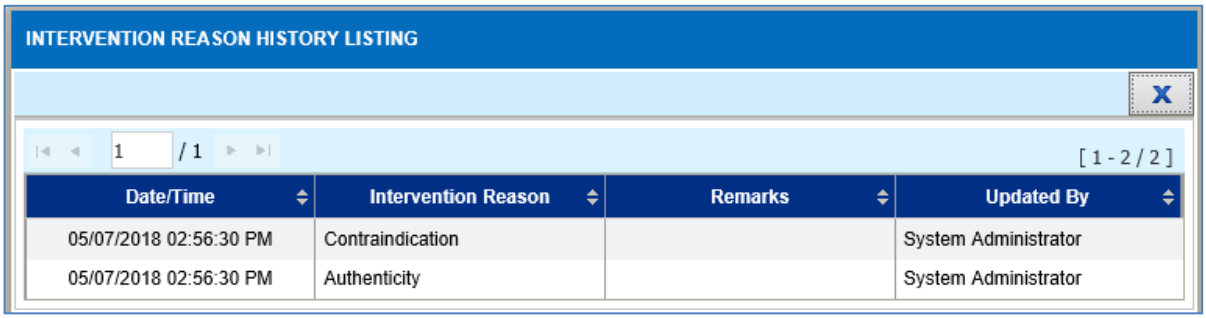
4. Drug Schedule screen



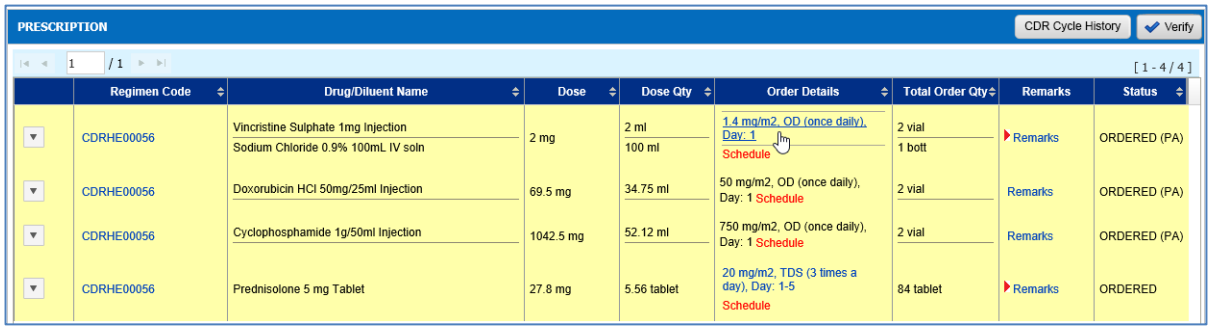
5. AUC Calculator



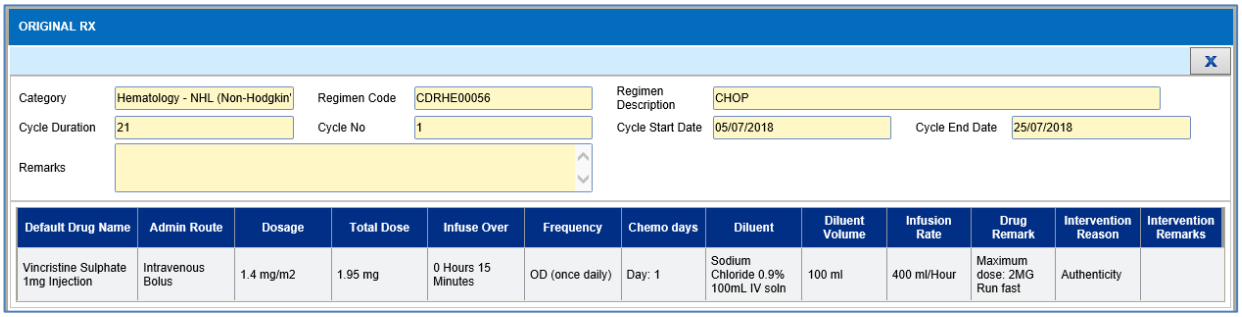
6. Intervention History screen



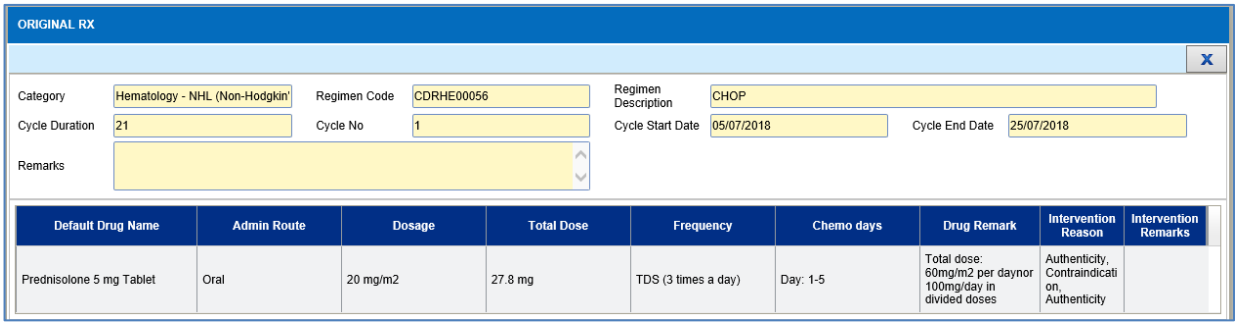
7. Original Rx hyperlink (enable after done intervention)



8. Original Rx screen: Injectable drug



9. Original Rx screen: Oral/Others drug



Notes	• Click on the Intervention menu to view Intervention and modify order screen. • Intervention screen is displayed according to Injectable drugs or Oral/Others drugs. • Click on Drug Schedule hyperlink to display schedule details. • Click on AUC Calculator link to display AUC Calculator screen. • Click on History button to display Intervention History screen. • Click on the Order Details hyperlink to view Original Rx details.
Cross References	None

3.2.8.2.4.2 ***Application Business Rules***

No.	Name	Description
1.	Intervention screen.	Intervention screen is displayed according to Injectable drugs or Oral/Others drugs. Order modification is allowed but not mandatory for intervention. Only fields listed below are allowed to be modified by pharmacist: i. Cycle Start Date and Cycle End Date ii. Calculate Dose Using iii. Drug Name iv. Drug Indication v. Admin Route vi. Dosage UOM (/kg, /m^2, or none) vii. Total Dose viii. AUC Calculator ix. Diluent and Diluent Volume x. Frequency xi. Infuse Over xii. Infusion Rate UOM xiii. Drug Schedule Date Modification for drug name, total dose, diluent, diluent volume and frequency will update the dose quantity and total order quantity in prescription listing of verification. Order modification will send record to Endorsement screen only for fields as below: i. Cycle Start Date and Cycle End Date

No.	Name	Description
		ii. Admin Route iii. Total Dose iv. Frequency v. Infuse Over vi. Drug Schedule – Schedule Date and Time No need endorsement if pharmacist didn't modify the fields above.
2.	Drug schedule	Drug schedule details displays the chemo day, total dose, administration date/time and supplied flag to indicate drug has been allocated or supplied to patient. User only allowed to edit the date and time value, other fields will remain view-only.
3.	AUC calculator	AUC Calculator hyperlink is enabled only for drug setup as AUC Calculator Applicable is true in Drug Master. Please refer 3.2.3.2.4 AUC Calculator for detailed description.
4.	Save intervention record	Click on Save button to save intervention record. User is required to select intervention reason and accepted/not accepted by prescriber before saving the intervention record. Alert message will be displayed if no reason selected or accepted/not accepted not selected.
5.	Cancel intervention record	Click on Cancel button to reset the entered data back to original values before editing.
6.	View intervention history	Click on History button to view intervention history. Record is displayed after user saves the intervention record. The same record will also be displayed in patient's medication profile.
7.	Original Rx screen.	Original Rx hyperlink is displayed only after user do intervention and modifies order. Original Rx screen is displayed according to Injectable drugs or Oral/Others drugs. Values displayed are from the original order before intervention.

3.2.8.2.4.3 *Input Validation Rules*

No.	Name	Description	Mandatory	Format
1.	Intervention Reason	Intervention reason values are populated from reason maintenance screen where reason type = M. User to select any reason to proceed save intervention.	Yes	Checkbox
2.	Remarks	Remark is to be entered in the textbox. Maximum of 300 characters capacity.	No	Text field
3.	Intervention Accepted or Not Accepted	For each selected intervention reason, to select either accepted or not accepted radio button. This field is for reporting/statistics purposes.	Yes	Radio button
4.	Drug Volume	Drug Volume will display auto calculated value as calculated in Drug Qty column on prescription listing. Value is calculated based on formula as below: Drug Qty (Drug) = (Ordered dosage/drug strength value) * drug quantity value.	No	Read-only
5.	Diluent Volume & UOM	Diluent Volume will display the fluid volume as entered in order screen. User is allowed to change the value. This field is numeric only with up to 2 decimal values	No	Text field

No.	Name	Description	Mandatory	Format
		and mandatory if diluent drug is selected. Field will display 0 values if diluent drug is not selected. Diluent Volume UOM is displayed based on the order screen, from the diluent drug quantity UOM. Field is read-only.		
6.	Total Volume & UOM	Total Volume displays the auto calculated value based on formula as below: Total Volume = Diluent Volume + Drug Volume Field is read-only. Total Volume UOM is displayed based on the Diluent UOM. Field is read-only.	No	Read-only
7.	Updated By	Updated by is displayed based on the order updated by value.	No	Read-only
8.	Updated Date	Updated date is displayed based on the order updated date value.	No	Read-only

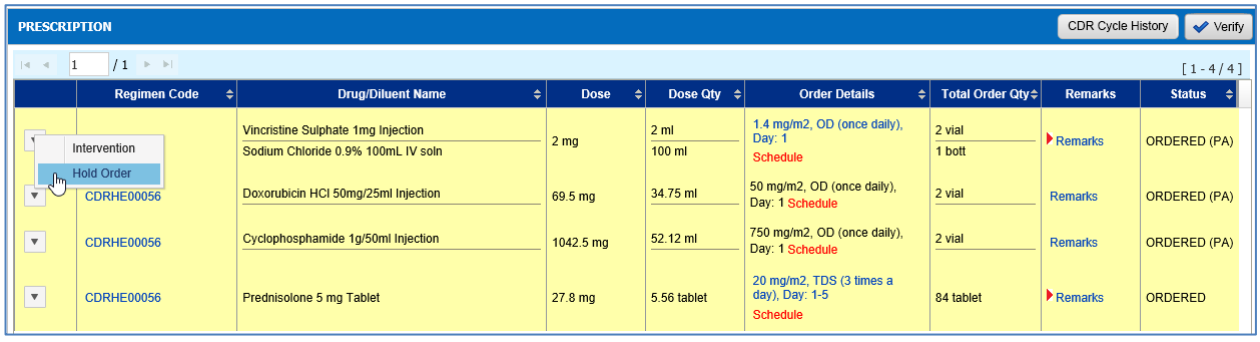
3.2.8.2.5 *CDR Verification – Hold/Resume*

3.2.8.2.5.1 ***Screen Design***

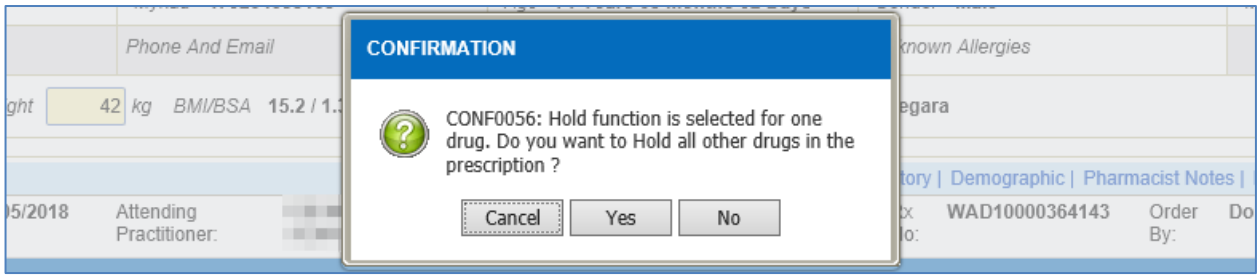
ID	CDRVER.SD5
Description	CDR Verification – Hold/Resume screen

Diagram

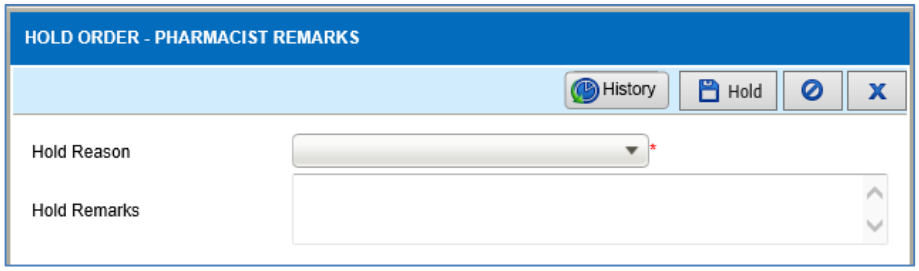
1. Hold order menu



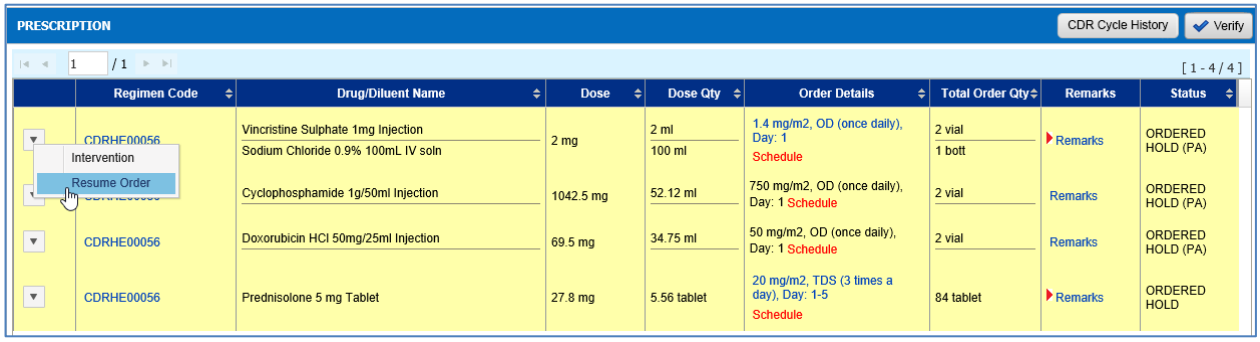
2. Hold order options



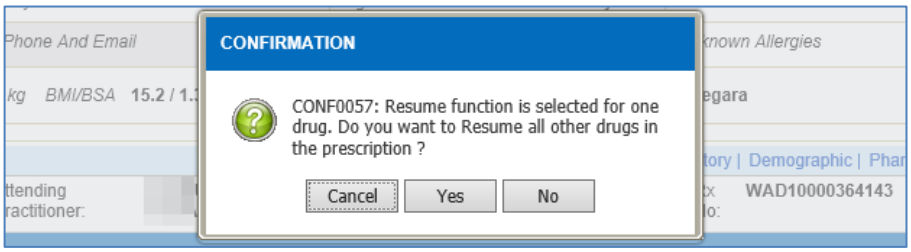
3. Hold order screen



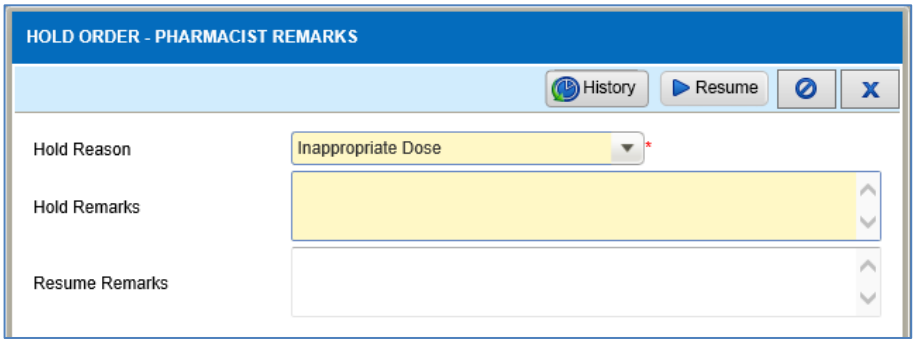
4. Resume order menu



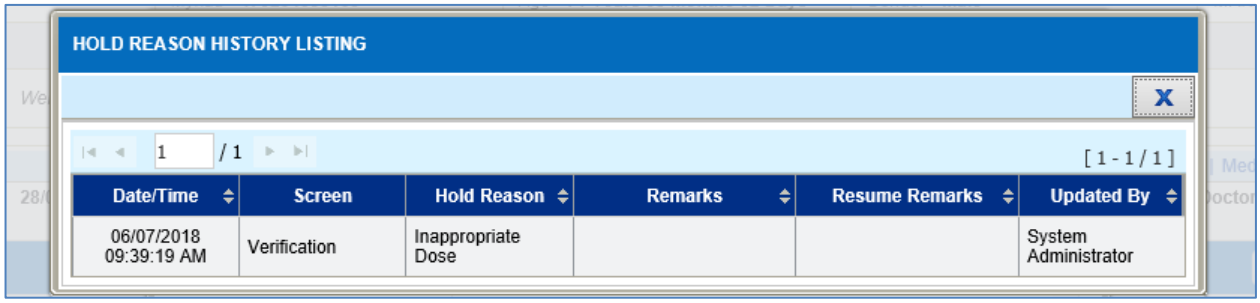
5. Resume order options



6. Resume order screen



7. Hold/Resume history listing



Notes	• Click on Hold Order menu to view hold order options and screen. • Click on Resume Order menu to view resume order options and screen. • Click on History button to view Hold and Resume history.
Cross References	None

3.2.8.2.5.2 ***Application Business Rules***

No.	Name	Description
1.	Hold order	On click of Hold Order menu, alert message is displayed with options to hold all the drugs in the prescription: i. Click 'Yes' to hold all the drugs in the prescription. ii. Click 'No' to hold only the selected drug. iii. Click 'Cancel' to cancel hold for all drugs. Click on Hold button to hold record. User is required to select hold reason before saving record. Alert message will be displayed if no reason selected. Hold function will update the drug status to [Current status]/Hold. Prescriber and pharmacist are not allowed to do any transaction once the drug is in Hold status.
2.	Resume order	On click of Hold Order menu, alert message is displayed with options to hold all the drugs in the prescription: i. Click 'Yes' to hold all the drugs in the prescription. ii. Click 'No' to hold only the selected drug. iii. Click 'Cancel' to cancel hold for all drugs. Resume order is enabled only when the drug status is Hold. Click on Resume button to resume record. Hold reason and remarks is disabled in resume order screen. Resume order function will update the drug status back to the previous status before hold. Prescriber is not allowed to resume order hold by pharmacist and vice versa.
3.	Cancel hold/resume record	Click on Cancel button to reset the entered data back to original values before editing.
4.	View Hold/Resume order history	Click on History button to view hold/resume history. Record is displayed after user hold/resume record. The same record will also be displayed in patient's medication profile. Please refer appendix for detailed description for Medication Profile screen.

3.2.8.2.5.3 ***Input Validation Rules***

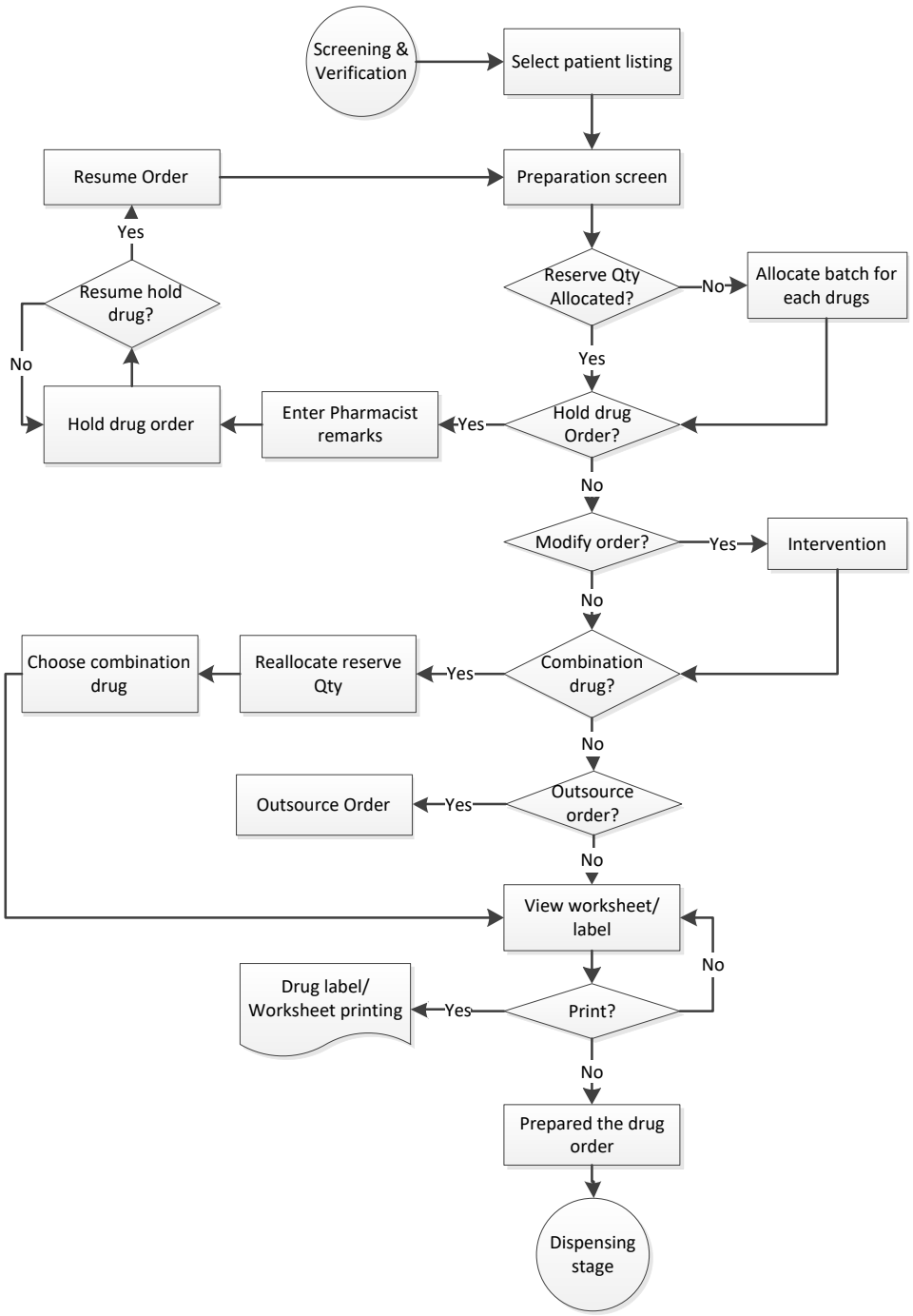
No.	Name	Description	Mandatory	Format
1.	Hold Reason	Hold reason is to be selected from the drop down list. Values are populated from reason maintenance screen where reason type = H. Field is disabled when user wants to resume the record.	Yes	Drop down list
2.	Hold Remarks	Hold remark is to be entered in the textbox. Maximum of 300 characters capacity. This field is optional to be entered. Field is disabled when user wants to resume the record.	No	Text field
3.	Resume Remarks	Resume remark is to be entered in the textbox. Maximum of 300 characters capacity. This field is optional to be entered. Field is displayed only when user wants to resume the record.	No	Text field

3.2.9 CDR Preparation

All verified CDR orders from CDR Verification screen will flow to CDR Preparation screen. Pharmacist will generate worksheet, print label and prepare the order to proceed to CDR Dispensing screen.

Pharmacist is allowed to intervene / modify order, hold order, allocate item batch quantity, or combine drugs to prepare in CDR Preparation screen.

3.2.9.1 Screen Navigation Diagram



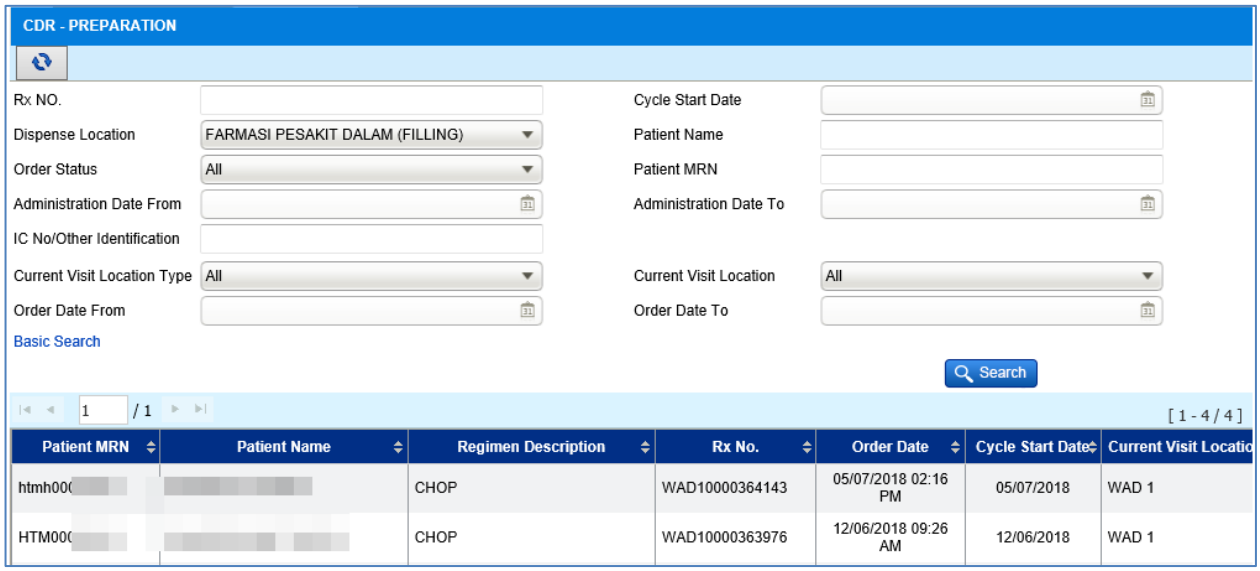
3.2.9.2 Detail Functionality and Screen

3.2.9.2.1 *CDR Preparation Listing*

3.2.9.2.1.1 ***Screen Design***

ID	CDRPRE.SD1
Description	CDR Preparation Listing

Diagram



Notes	• Click on the search button to search verified order for pharmacist to proceed with drug preparation. • Double click which order to prepare and view the order details.
Cross References	None

3.2.9.2.1.2 ***Application Business Rules***

No.	Name	Description
1.	Search Order	CDR Preparation listing screen is displayed based on all CDR verified orders and user's login location. This screen will allow user to search by the following criteria: i. Rx No – Preparation listing shall be retrieved from the database based on Rx number value. ii. Cycle Start Date – Preparation listing shall be retrieved from database where Cycle Start Date is within the selected range. iii. Dispense Location – By default, dispense location is default to user's login location. The listed location values are based on the user's granted location as setup in User Profile screen and location specified as dispense location in Location Setup screen. iv. Order Status – Preparation listing shall be retrieved from the database based on matching order status. By default, value is

No.	Name	Description
		default to 'All'. Values are from lookup table, domain 'CDR Order Status'. v. Patient Name – Preparation listing shall be retrieved from the database based on matching Patient Name. vi. Patient MRN – Preparation listing shall be retrieved from the database based on matching Patient MRN. vii. Administration Date range – Preparation listing shall be retrieved from database where administration/schedule date within the selected range. viii. IC No/Other Identification – Preparation listing shall be retrieved from the database based on matching Patient ID No. ix. Current Visit Location Type – Preparation listing shall be retrieved from the database based on matching location type. By default, value is default to 'All'. Values are from lookup table, domain 'Loc Type'. x. Current Visit Location – Preparation listing shall be retrieved from the database based on matching location. By default, value is default to 'All'. Values are from location setup maintenance screen. xi. Order Date range – Preparation listing shall be retrieved from database where order date within the selected range. Specify search criteria and click on the Search button to search the orders.
2.	Refresh Order Listing	Click on the Refresh button to reset all searched records and searching criteria to default value.

3.2.9.2.1.3 ***Input Validation Rules***

None.

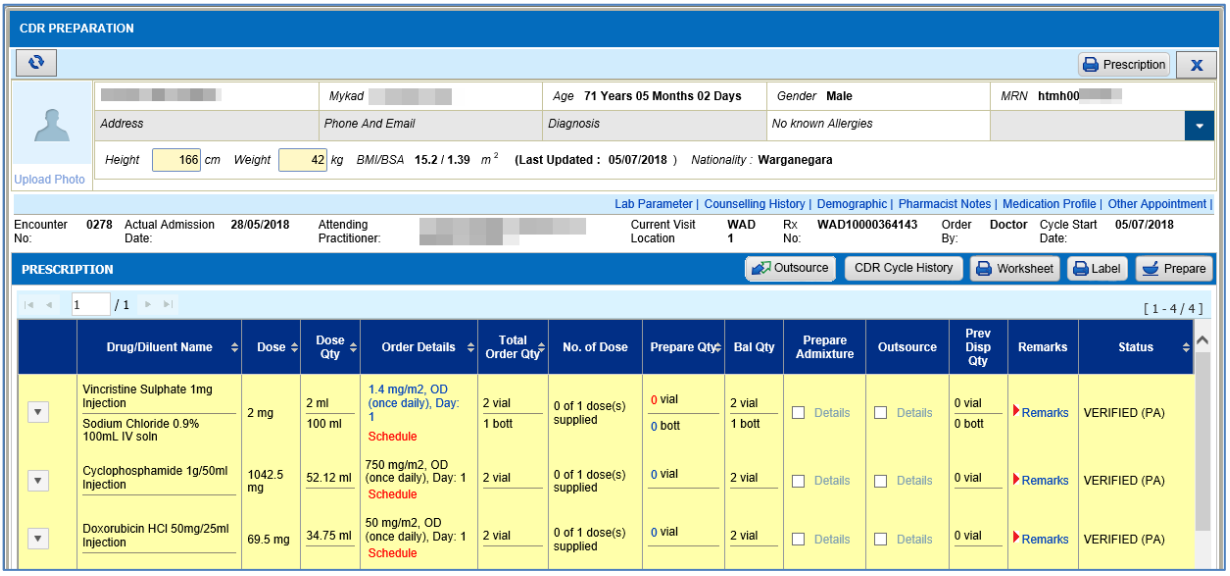
3.2.9.2.2 *CDR Preparation*

3.2.9.2.2.1 ***Screen Design***

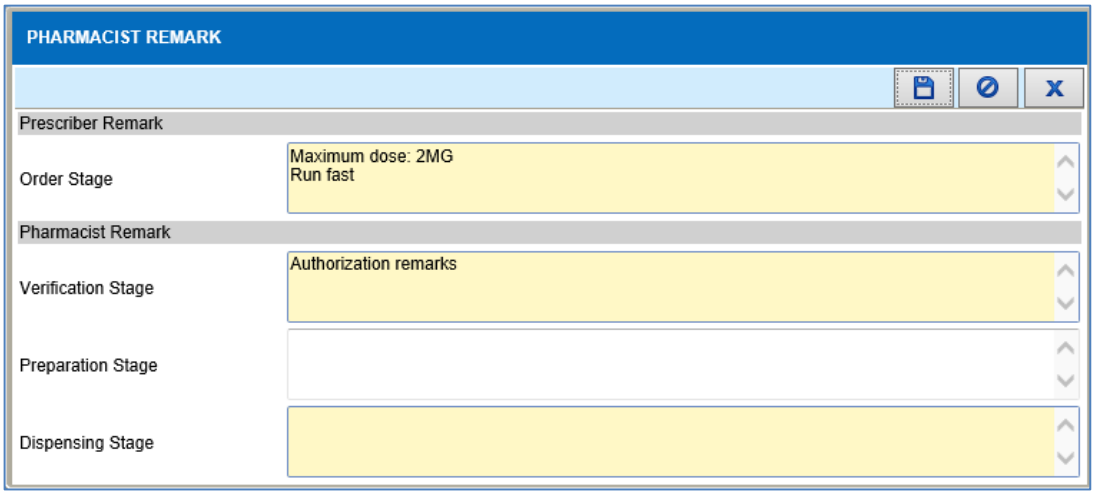
ID	CDRPRE.SD2
Description	CDR Preparation screen

Diagram

1. CDR Preparation screen



2. Pharmacist Remarks (On click of ‘Remarks’ hyperlink)



Notes	• Click on Regimen Code hyperlink to view Regimen Details screen. • Double click on order row to view Order Details screen for each drugs. • Click on Schedule hyperlink to view Schedule screen. • Click on Remarks hyperlink to view remarks screen

	• Click on Cycle History button to view the Cycle History screen • Click on Schedule hyperlink to view Schedule screen. • Click on Prepare button to prepare order.
Cross References	None

3.2.9.2.2.2 ***Application Business Rules***

No.	Name	Description
1.	Current Visit Location	Current visit location displays value based on the latest patient visit details. Once patient discharge, the current patient's partial order will remain and once user have new visit, user can continue the existing medication. If the new visit is in different location than the order location, the current visit location will display the latest location.
2.	No of dose	No of dose column displays value based on the format as below: '**X** of **Y** Dose(s) Supplied' i. **Y** = Duration / Frequency interval value) * Frequency no of admin. Before calculate the Y value above, duration value needs to be converted to the same UOM as interval duration type and round up to the next integer. ii. **X** referring to the record amount in CDR dose frequency, supply_status = Closed (C) Supply status is updated after user allocate (Open), click prepare button (Pending) and dispense button (Closed).
3.	Prepare Qty	Prepare quantity column displays 0 values by default for both drug and diluent, user able to click on the hyperlink to allocate batch quantity. To refer 3.2.9.2.3 CDR Preparation – Batch Allocation for drug and diluent allocation details.
4.	Balance Qty	Balance quantity column displays calculated values based on Total Order Qty – Previous Dispense Qty. Column will update after user dispense the drug and diluent partially.
5.	Previous Dispense Qty	Previous dispense quantity column displays the previous dispense qty updated after user dispense the drug and diluent partially.
6.	View prescriber and pharmacist remarks	Pharmacist remarks screen displays the remarks by both prescriber and pharmacist. Order stage remarks will display value if any drug remarks entered during order by prescriber. In preparation screen, only preparation stage remark field is enabled, other remarks are view-only.
7.	Status	Status column displays the drug status. Only drug with Verified or Verified/Hold status will be displayed in verification screen.
8.	View Order Details/Dose Schedule/Cycle History/Print Prescription	Please refer 3.2.8.2.2 CDR Verification section for the details.

No.	Name	Description
9.	Order intervention and view Original Rx details	Please refer 3.2.8.2.4 CDR Verification – Intervention section for the details.
10.	Hold/Resume Order	Please refer 3.2.8.2.5 CDR Verification – Hold/Resume Order
11.	Outsource Order	Select which drug to outsource for other facility to prepare the drug.
12.	Prepare order	Click on Prepare button to proceed to Dispensing and drug status will be updated 'Prepared' and record will display in Dispensing listing screen. Supply status for the allocated dose schedule will be updated to P (Pending). System will also update the prepared date and prepared by values in database.

3.2.9.2.2.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
1.	Preparation Stage	Preparation stage remark is to be entered in the text box. Maximum of 250 characters capacity.	No	Text field

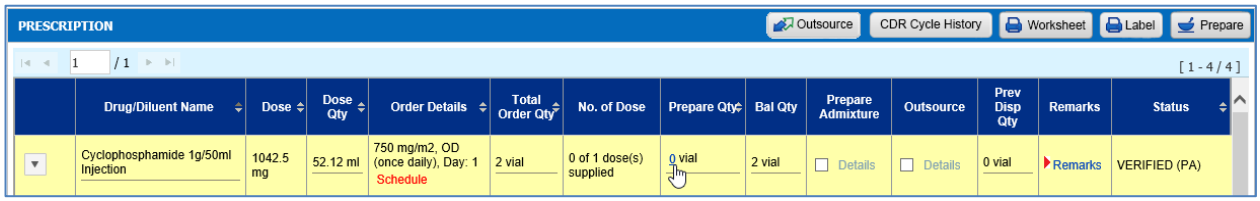
3.2.9.2.3 *CDR Preparation – Batch Allocation*

3.2.9.2.3.1 ***Screen Design***

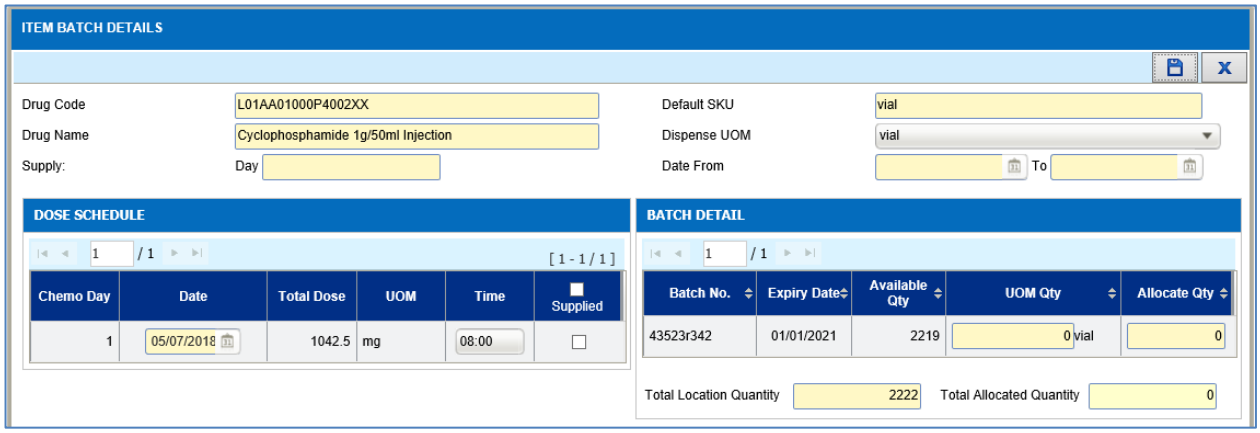
ID	CDRPRE.SD3
Description	CDR Preparation – Batch Allocation

Diagram

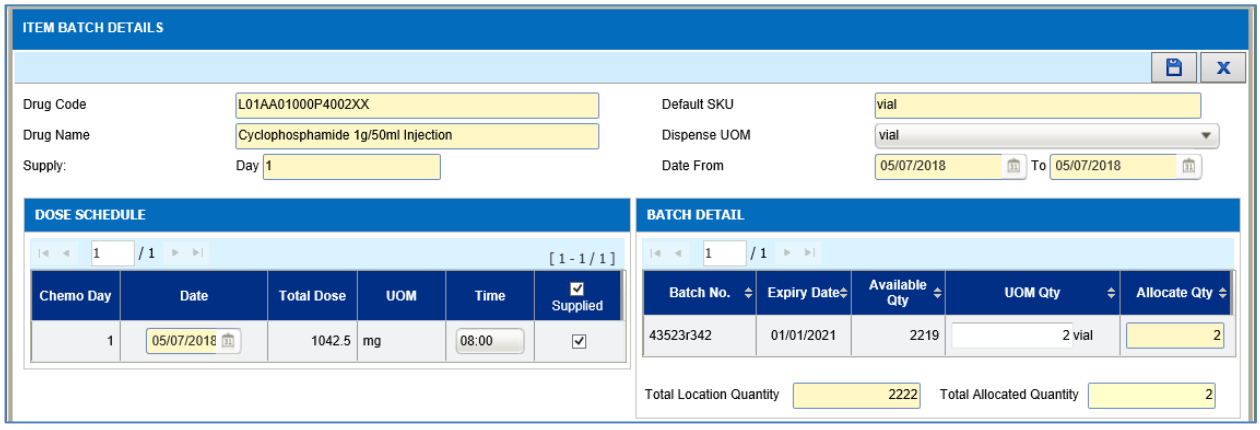
1. Prepare Quantity hyperlink



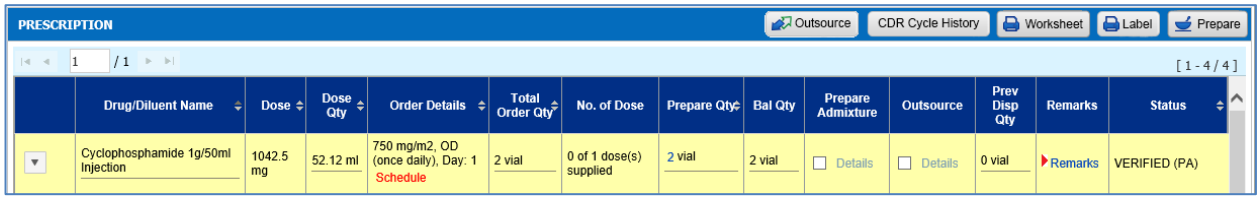
2. Item Batch Details screen



3. Item Batch Details screen (After Supply Dose selection)



4. Prescription listing after batch allocation



Notes	• Click on Prepare Qty hyperlink to view Item Batch Details screen and allocate batch quantity to prepare drug.
Cross References	None

3.2.9.2.3.2 ***Application Business Rules***

No.	Name	Description
1.	Item Batch Details screen	Item batch details screen will allow user to allocate quantity to prepare according to the selected dose. User is required to select which dose to supply in Dose Schedule section. Dose schedule section is displayed based on the administration date and drug frequency. User can only selects dose to supply, other details is read-only.
2.	Supply Date From and To	Date from and to field will be updated after user selects the dose to supply based on the selected administration date.
3.	Batch Details	Batch details column display the stock information based on user's unit location. Only stock available in user's current unit location will be displayed. The displayed batch number must also not an expired batch and available stock quantity must be greater than 0.
4.	UOM Qty	Once user already selects the dose to supply and save the dose schedule record, system will auto calculate the UOM quantity values. Batch number selection after dose selection is automatic by system based on first expiry first out concept. UOM displayed is according to the value defaulted or selected in Dispense UOM field. UOM Qty value is mandatory once user already selects the supply dose.
5.	Allocate Qty and Dispense UOM	Allocate quantity column displays the calculated value based on the UOM Qty value and the selected Dispense UOM as below: Allocate Qty = UOM Qty * (Dispense UOM: Conversion to primary SKU [Based on the selected Dispense UOM]) Total allocation quantity cannot exceed the selected supply dose quantity. Once total allocate quantity is more/less than selected supply dose quantity, system will display alert message.
6.	Total Location Quantity	Total location quantity field displays the total available quantity in user's unit location for all batches.
7.	Total Allocated Quantity	Total location quantity field displays the total allocated quantity for all selected batches.
8.	Save Allocation Details	Click on Save button to save the allocation record. System will display the allocated quantity on the prescription for both drug and diluent. System will auto allocate for drug or diluent based on the formula as below: i. Once user allocate for drug and system will auto allocate for diluent: Diluent Allocate Qty = (Diluent Order Qty / Drug Order Qty) * Drug Allocated Qty ii. Once user allocate for diluent and system will auto allocate for drug:

No.	Name	Description
		Drug Allocate Qty = (Drug Order Qty / Diluent Order Qty) * Diluent Allocated Qty User is still allowed to change the allocation by clicking on Prepare Qty hyperlink again. The dose schedule supply status is updated to O (Open).

3.2.9.2.3.3 *Input Validation Rules*

No.	Name	Description	Mandatory	Format
1.	Supplied checkbox	Supplied checkboxes are displayed in Dose Schedule section. Field is enabled only when the schedule status is empty or open status. When the schedule status is pending or closed, the supplied checkboxes is disabled.	No	Checkbox
2.	Dispense UOM	Dispense UOM is to be selected from the drop down list. Dropdown will be populated based on the ordered drug dispense UOM as setup in Drug Master. Field is mandatory to be selected and value selected will affect the UOM Qty and Allocate Qty value.	No	Drop down list
3.	UOM Qty	UOM Qty is to be entered in the textbox. Maximum of 8 integer capacity. Default value is displayed based on the selected dose schedule. Field is mandatory only if user already selected the dose schedule. If no schedule date selected, 0 values is allowed to be saved.	No	Text field

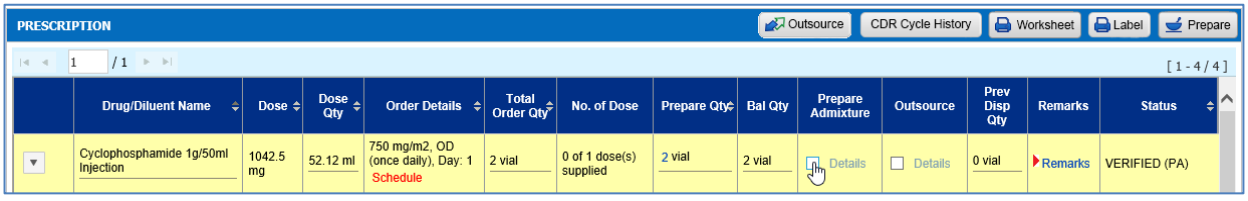
3.2.9.2.4 *CDR Preparation – Worksheet*

3.2.9.2.4.1 *Screen Design*

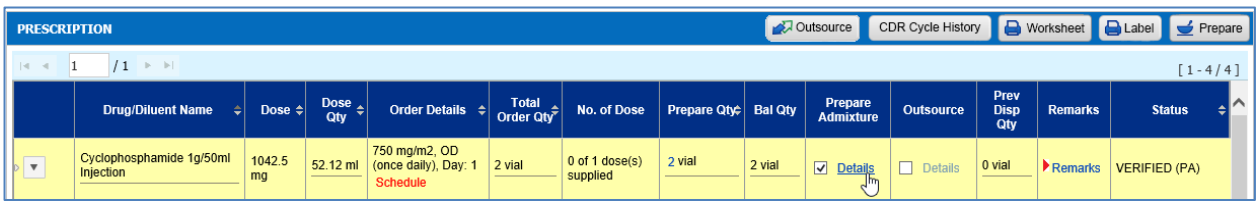
ID	CDRPRE.SD4
Description	CDR Preparation – Worksheet

Diagram

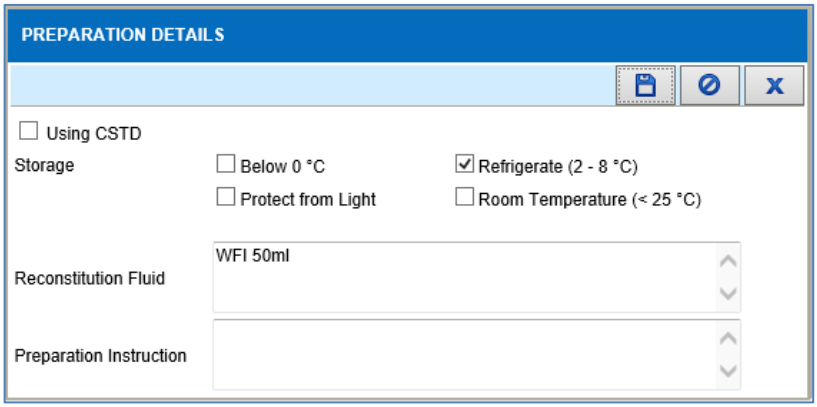
1. Prepare Admixture checkbox



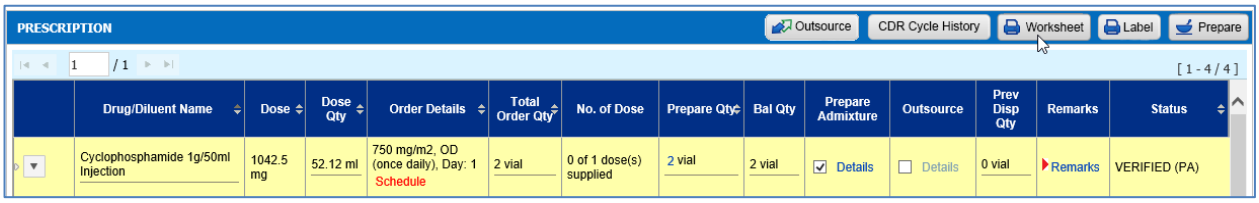
2. Prepare Admixture details



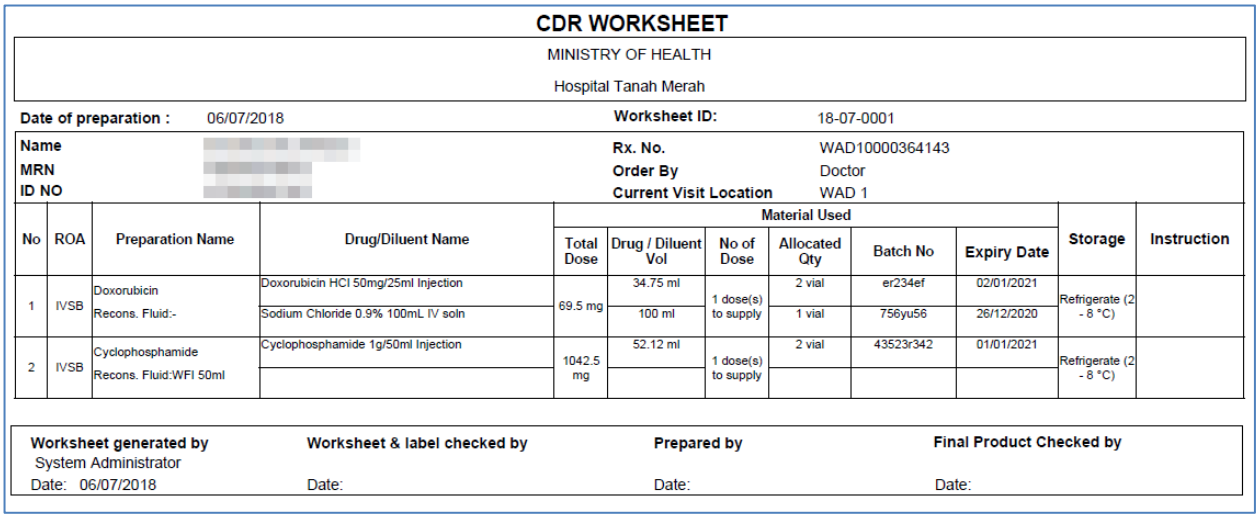
3. Preparation Details screen



4. Prepare Admixture and Generate Worksheet



5. Worksheet



CDR WORKSHEET

MINISTRY OF HEALTH

Hospital Tanah Merah

Date of preparation : 06/07/2018 **Worksheet ID:** 18-07-0001

Name **Rx. No.** WAD10000364143

MRN **Order By** Doctor

ID NO **Current Visit Location** WAD 1

No	ROA	Preparation Name	Drug/Diluent Name	Material Used						Storage	Instruction
				Total Dose	Drug / Diluent Vol	No of Dose	Allocated Qty	Batch No	Expiry Date		
1	IVSB	Doxorubicin Recons. Fluid:-	Doxorubicin HCl 50mg/25ml Injection Sodium Chloride 0.9% 100mL IV soln	69.5 mg	34.75 ml 100 ml	1 dose(s) to supply	2 vial 1 vial	er234ef 756yu56	02/01/2021 26/12/2020	Refrigerate (2 - 8 °C)	
2	IVSB	Cyclophosphamide Recons. Fluid:WFI 50ml	Cyclophosphamide 1g/50ml Injection	1042.5 mg	52.12 ml	1 dose(s) to supply	2 vial	43523r342	01/01/2021	Refrigerate (2 - 8 °C)	

Worksheet generated by	Worksheet & label checked by	Prepared by	Final Product Checked by
System Administrator Date: 06/07/2018	Date:	Date:	Date:

Notes	• Click on Prepare Admixture checkbox to save Preparation Details and generate the worksheet.
Cross References	None

3.2.9.2.4.2 ***Application Business Rules***

No.	Name	Description
1.	Preparation Details	Prepare Admixture checkbox is displayed only for injectable drugs. Click on prepare admixture checkbox and able to proceed print Worksheet. On click of 'Details' hyperlink system will display the Preparation Details screen. Only drugs with the prepare admixture checkbox checked will be able to generate and print worksheet.

No.	Name	Description
2.	Cancel Preparation Details record	Click on Cancel button to reset the entered data back to original values before editing.
3.	Worksheet	Worksheet can only be displayed only if any prepare admixture flag is selected in the prescription. Alert message is displayed if user has not selected any prepare admixture checkbox.
4.	Date of Preparation	Date of Preparation is displayed based on the Preparation Date in Edit Label screen. If no value saved in Edit Label screen, system will display system current date as the date of preparation in worksheet.
5.	Worksheet ID	Worksheet ID is displayed based on the format as below: YY-MM-Running number. Example: 14-02-0001. Running number is auto reset by system scheduler on monthly basis.
6.	Patient Details	Patient details are displayed based on the patient's details, patient's visit details and order details.
7.	ROA	Route of Administration is displayed based on the the order details.
8.	Preparation Name	Preparation name is displayed based on the ordered drug active ingredient. Reconstitution fluid is displayed if any value is entered in the Preparation Details screen.
9.	Drug/Diluent Name	Drug/diluent name is displayed based on the ordered drug and diluent name.
10.	Total Dose	Total dose is displayed based on the ordered total dose value. Value displayed is numeric only with up to 2 decimal values.
11.	Drug/Diluent Vol	Drug/diluent volume is displayed based on the drug and diluent quantity value as in the prescription listing screen (Dose Qty column). Value displayed is numeric only with up to 2 decimal values.
12.	No of Dose	Number of Dose value is displayed based on the format below: '**X** dose(s) to supply' **X** referring to record amount in CDR dose frequency where supply status = Open (O) and Pending (P) For example, 2 dose(s) to supply. Value will only be updated after user done batch allocation for both drug and diluent.
13.	Allocated Qty	Allocated Qty value is displayed based on the value as allocated in item batch details screen for both drug and diluent.
14.	Batch No & Expiry Date	Batch Number and Expiry Date are displayed based on the selected batch details.
15.	Storage & Instruction	Storage and Instruction is displayed based on the entered values in Preparation Details screen.
16.	Worksheet Generated By	Worksheet generated by is displayed based on the current user first name and last name as setup in user profile.
17.	Worksheet & label checked by, Prepared by, Final product checked by	These values are to be manually signed by user.

3.2.9.2.4.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
1.	Using CSTD	User to select the checkbox if preparation is done using CSTD. This value is captured for PF 6.4 BI report purposes only.	No	Checkbox
2.	Storage	Storage is displayed by default based on the drug master setup in IV characteristics section. User is allowed to edit the value and value is not mandatory.	No	Checkbox
3.	Reconstitution Fluid	Reconstitution fluid is displayed by default based on the drug master setup in iv characteristics section. User is allowed to edit the value up to 60 characters capacity.	No	Text field
4.	Preparation Instruction	Preparation Instruction is to be entered in the text box. Maximum of 250 characters capacity. Value is not mandatory.	No	Text field

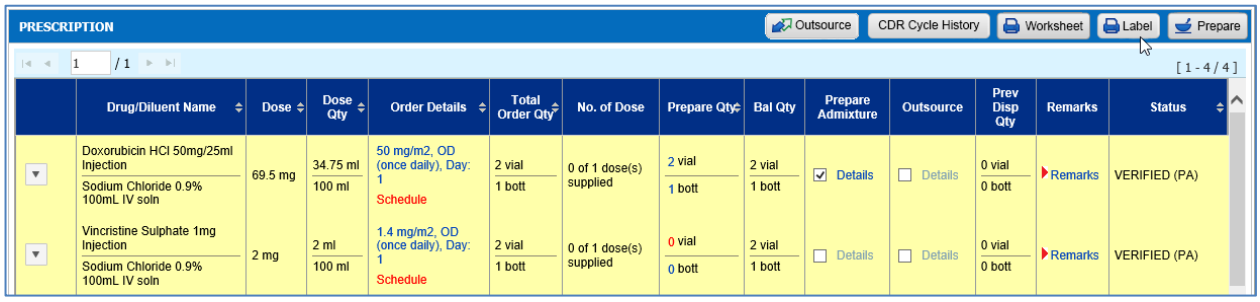
3.2.9.2.5 *CDR Preparation – Label*

3.2.9.2.5.1 ***Screen Design***

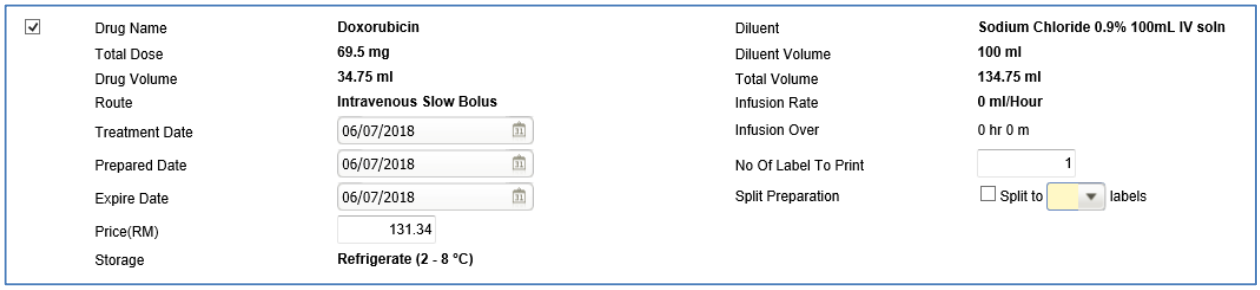
ID	CDRPRE.SD5
Description	CDR Preparation – Print Label

Diagram

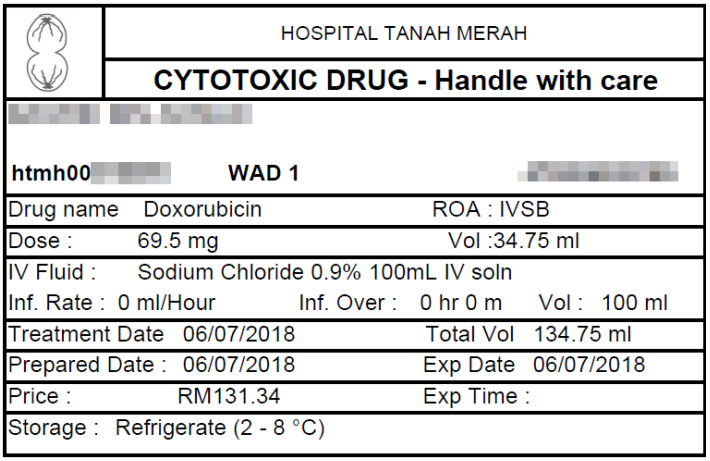
1. Label



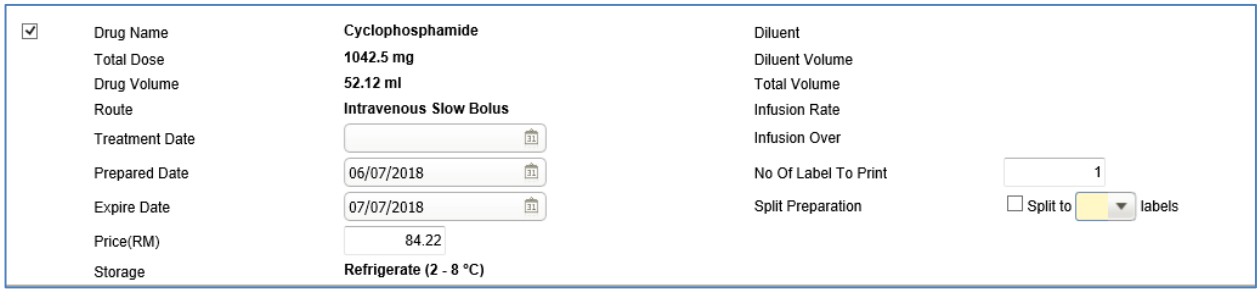
2. Edit Label screen (Injectable Drug)



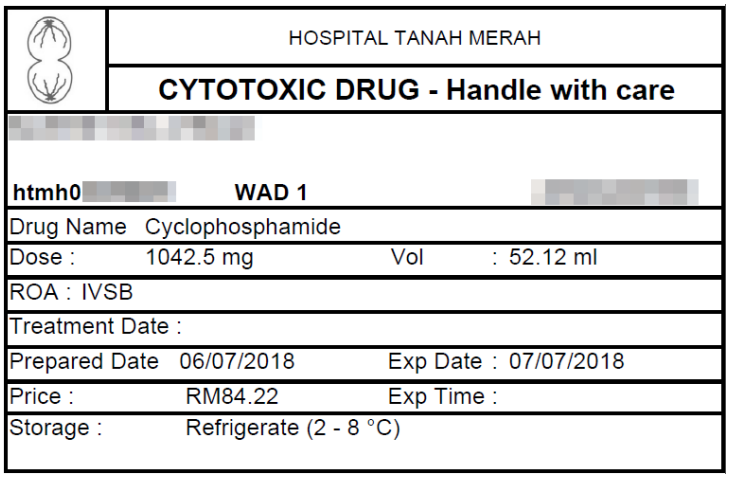
3. Injectable drug label



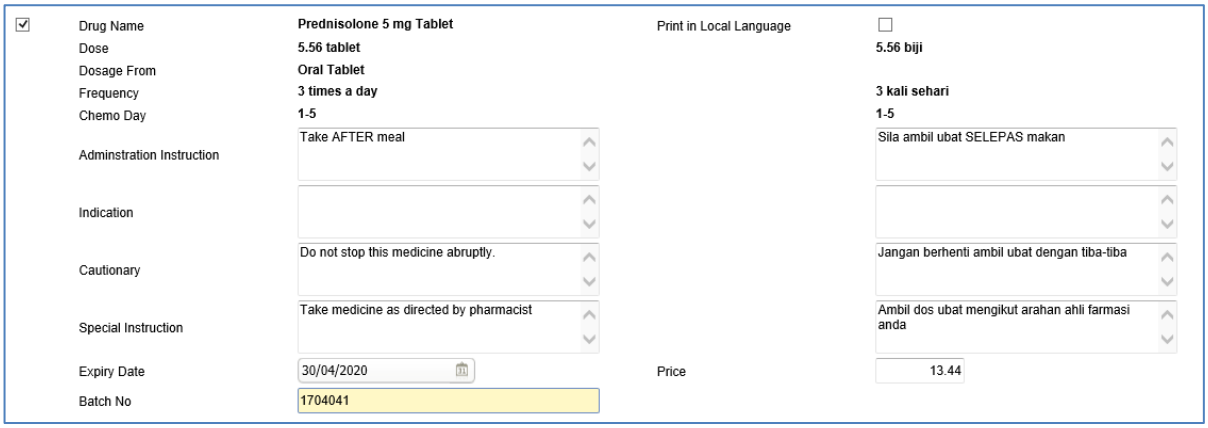
4. Edit label screen (Injectable drug) – no Diluent drug



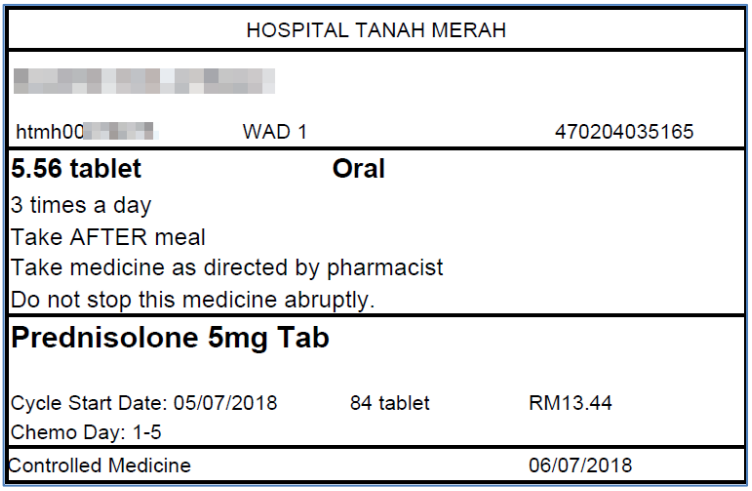
5. Injectable drug label – no Diluent drug



6. Edit Label screen (Oral/Others drug)



7. Oral/Others drug label



Notes	• Click on Label button to edit and print label. • CDR label is categorized in 3 types: Injectable Drug, Injectable Drug – without Diluent, and Oral/Others drug.
Cross References	None

3.2.9.2.5.2 ***Application Business Rules***

No.	Name	Description
1.	Edit label screen	Edit label screen is displayed when user allocated batch quantity for at least one drug and click on the Label button. Screen is displayed according to the category as below: i. Injectable drug: Label format is for injectable drugs with diluent drug. ii. Injectable drug (No diluent drug): Label format is for injectable drugs with no diluent drug. iii. Oral/Others drug: Label format for Oral/Others drug. Screen is also displayed based on the allocated batch. Multiple batch allocation will display multiple labels for the same drug. Click on Print button to view the label in PDF format.
2.	Price	Price field value is displayed based on the Dispense UOM selection and calculation as below: i. Injectable drug: Label Price = **Drug Price** + **Diluent Price** **Drug/Diluent Price** = Dispense UOM: Unit Price * ([Round Up] Drug/Diluent allocated_qty / Dispense UOM: Conversion to Primary SKU) ii. Injectable drug (No diluent drug): **Label** Price = Dispense UOM: Unit Price * ([Round Up] Drug/Diluent allocated_qty / Dispense UOM: Conversion to Primary SKU) iii. Oral/Others drug: **Label** Price = Dispense UOM: Unit Price * ([Round Up] Drug/Diluent allocated_qty / Dispense UOM: Conversion to Primary SKU)

No.	Name	Description
3.	Select All	Select All checkbox is for user to select/unselect all label to be printed. Only selected label will be displayed in PDF format for printing.
4.	Save label record	Click on Save button to save the label record. Once user click on Print button, system will display the updated label on the PDF print preview.
5.	Cancel label record	Click on Cancel button to reset the entered data back to original values before editing.

3.2.9.2.5.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
Edit Label screen – Injectable drug				
1.	Drug Name	Drug name is displayed based on the ordered drug active ingredient.	No	Read-only
2.	Total Dose	Total dose is displayed based on the order information. Value is displayed up to 2 decimal places.	No	Read-only
3.	Drug Volume	Drug volume is displayed based on the drug dose quantity as displayed on the preparation screen. Value is displayed up to 2 decimal places.	No	Read-only
4.	Route	Route is displayed based on the order information.	No	Read-only
5.	Diluent	Diluent is displayed based on the ordered diluent drug.	No	Read-only
6.	Diluent Volume	Diluent volume is displayed based on ordered diluent volume as displayed on the preparation screen in dose quantity column for diluent.	No	Read-only
7.	Total Volume	Total volume is displayed based on the total of both drug volume and diluent volume values.	No	Read-only
8.	Infusion Rate	Infusion rate and UOM value is displayed based on the ordered infusion rate value.	No	Read-only
9.	Treatment Date	Treatment date is to be selected by user. By default value is based on the allocated dose schedule date but editable by user.	No	Calendar
10.	Prepared Date	Prepared date is to be selected by user. By default value is based on current system date but editable by user.	No	Calendar
11.	Expire Date	Expire date is to be selected by user. By default value is based on current system date + 1 day but editable by user. However if user set diluent shelf life in Drug Master (IV Characteristics section), expiry date will follow the shelf life value.	No	Calendar
12.	Price (RM)	Price is displayed based on the calculated price value with format up to 2 decimal places (currency format). Price = Price based on selected dispense UOM * allocated batch quantity.	No	Text field

No.	Name	Description	Mandatory	Format
13.	Storage	Storage is displayed based on the selected storage value in Preparation Details screen.	No	Read-only
Edit Label screen – Injectable (no Diluent drug)				
14.	Drug Name	Drug name is displayed based on the ordered drug active ingredient.	No	Read-only
15.	Total Dose	Total dose is displayed based on the order information. Value is displayed up to 2 decimal places.	No	Read-only
16.	Drug Volume	Drug volume is displayed based on the drug dose quantity as displayed on the preparation screen. Value is displayed up to 2 decimal places.	No	Read-only
17.	Route	Route is displayed based on the order information.	No	Read-only
18.	Treatment Date	Treatment date is to be selected by user. By default value is based on the allocated dose schedule date but editable by user.	No	Calendar
19.	Prepared Date	Prepared date is to be selected by user. By default value is based on current system date but editable by user.	No	Calendar
20.	Expire Date	Expire date is to be selected by user. By default value is based on current system date + 1 day but editable by user.	No	Calendar
21.	Price (RM)	Price is displayed based on the calculated price value with format up to 2 decimal places (currency format). Price = Price based on selected dispense UOM * allocated batch quantity.	No	Text field
22.	Storage	Storage is displayed based on the selected storage value in Preparation Details screen.	No	Read-only
Edit Label screen – Oral/Others drug				
23.	Drug Name	Drug name is displayed based on the ordered drug active ingredient.	No	Read-only
24.	Dose	Dose value is displayed based on the total dose value in order information. Dose UOM value is displayed based on drug master setting. Condition to display the UOM is based on 'Value to be Displayed on Label' flag. By drug 'Strength UOM', 'Quantity UOM' or both values. i. Strength – will display strength value on label(e.g. 500 mg, 250 mg) ii. Quantity - will display quantity value on label(e.g. 1 capsule, 2 tablet, 5 ml, 1 drop) Both - will display strength and quantity value on label (e.g. 250mg/5ml)	No	Read-only
25.	Dosage Form	Dosage Form is displayed based on the ordered drug dosage form.	No	Read-only

No.	Name	Description	Mandatory	Format
26.	Frequency	Frequency is displayed based on the order details. Field is available in local language based on the frequency master setup.	No	Read-only
27.	Chemo Day	Chemo day value is displayed based on the order details.	No	Read-only
28.	Administration Instruction	Administration instruction value is displayed based on the drug master screen and available in local language. Field is editable and not mandatory with maximum of 100 characters capacity.	No	Text field
29.	Indication	Indication value is displayed based on the drug master screen and available in local language. Field is editable and not mandatory with maximum of 100 characters capacity.	No	Text field
30.	Cautionary	Cautionary value is displayed based on the drug master screen and available in local language. Field is editable and not mandatory with maximum of 100 characters capacity.	No	Text field
31.	Special Instruction	Special instruction value is displayed based on the drug master screen and available in local language. Field is editable and not mandatory with maximum of 100 characters capacity.	No	Text field
32.	Expiry Date	Expire date is to be selected by user. By default value is based on current system date + 1 day but editable by user.	No	Calendar
33.	Batch No	Batch number value is displayed based on the allocated batch quantity.	No	Read-only
34.	Price	Price is displayed based on the calculated price value with format up to 2 decimal places (currency format). Price = Price based on selected dispense UOM * allocated batch quantity.	No	Text field
35.	Print in Local Language	Select checkbox to print Oral/Others drug label in local language applicable to fields described as above only. Frequency, Administration Instruction, Indication, Cautionary	No	Checkbox

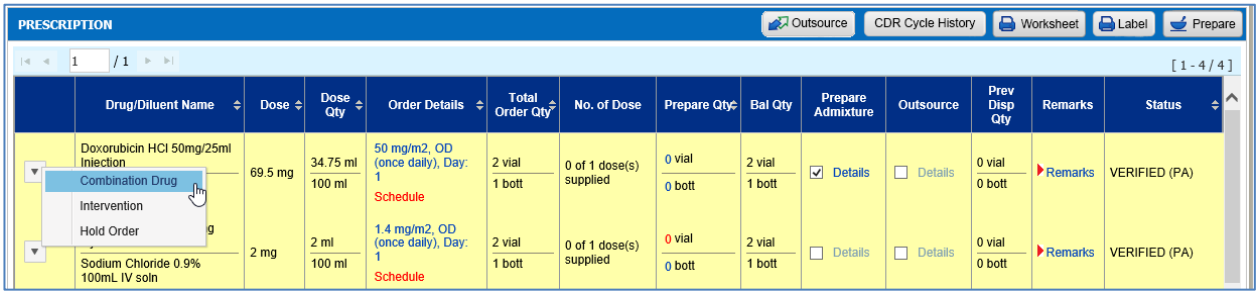
3.2.9.2.6 *CDR Preparation – Combination Drug*

3.2.9.2.6.1 ***Screen Design***

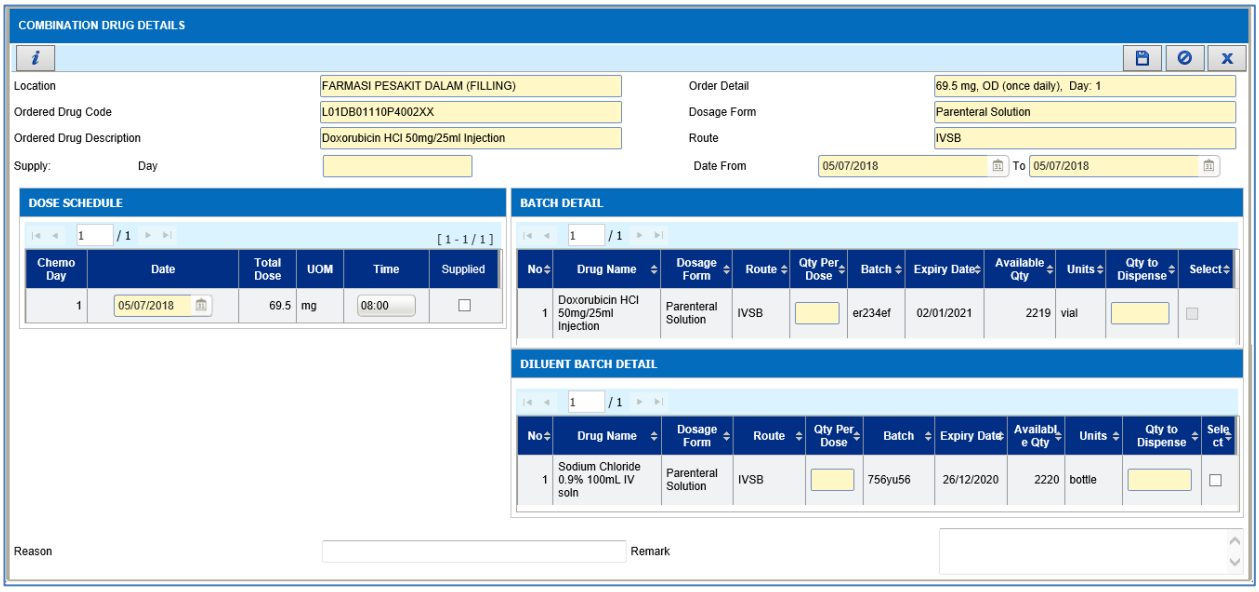
ID	CDRPRE.SD6
Description	CDR Preparation – Combination Drug

Diagram

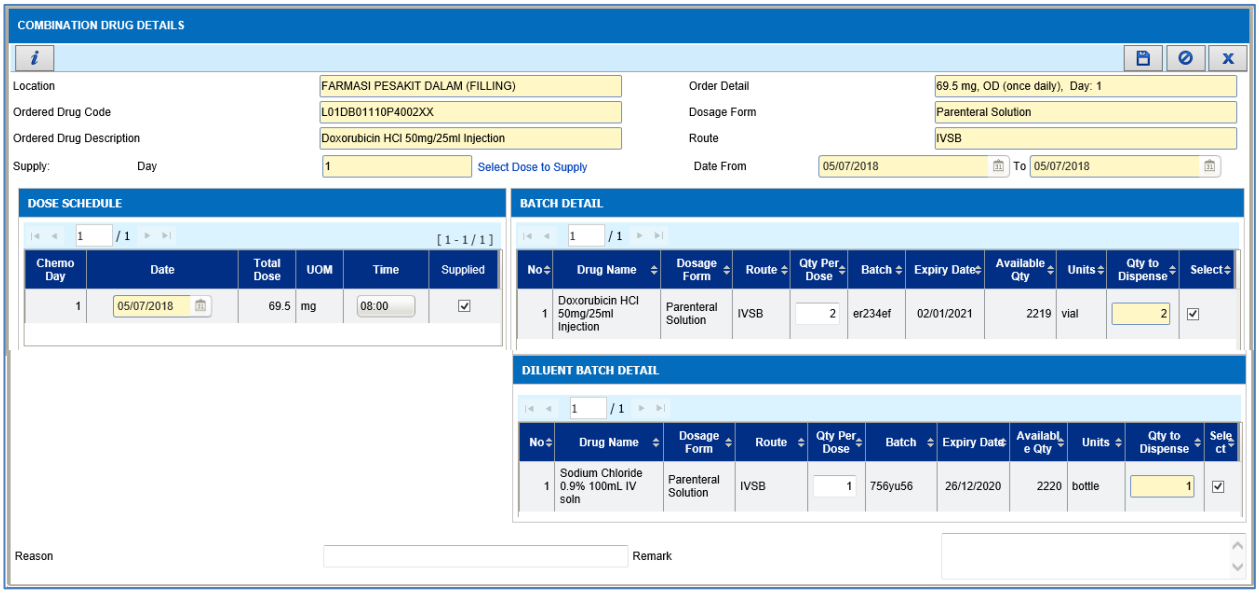
1. Combination Drug menu



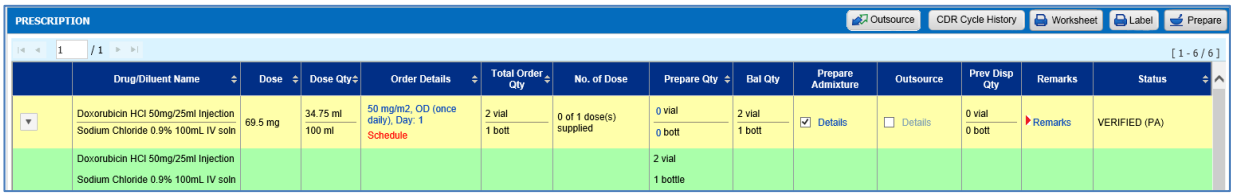
2. Combination Drug screen



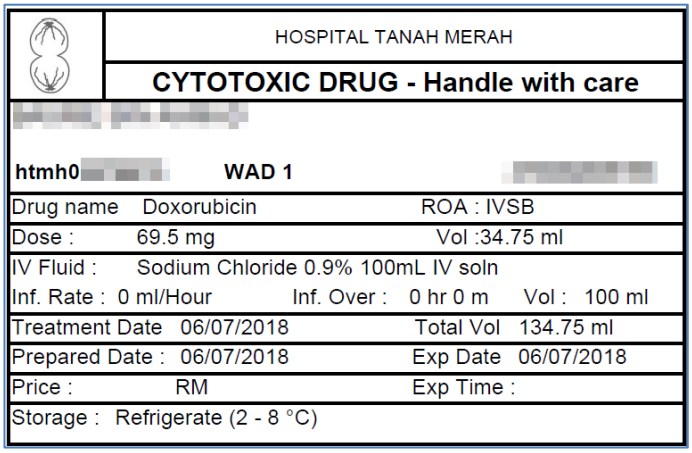
3. Combination Drug screen – After Supply Dose selection and Batch Allocation



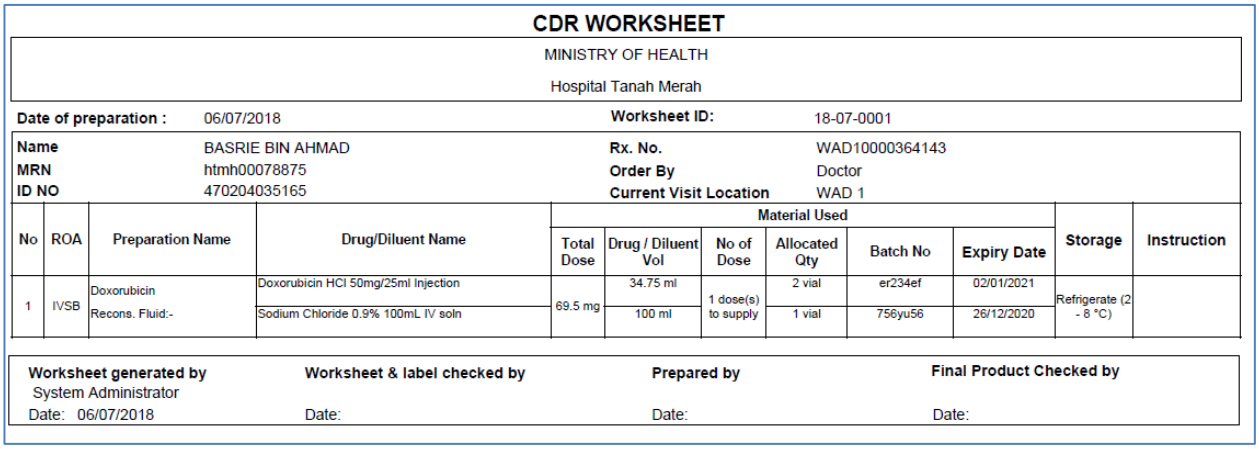
4. Prescription List – After Combination Drug



5. Label after Combination Drug



6. Worksheet after Combination Drug



CDR WORKSHEET

MINISTRY OF HEALTH

Hospital Tanah Merah

Date of preparation :	06/07/2018	**Worksheet ID:**	18-07-0001
Name	BASRIE BIN AHMAD	**Rx. No.**	WAD10000364143
MRN	htmh00078875	**Order By**	Doctor
ID NO	470204035165	**Current Visit Location**	WAD 1

No	ROA	Preparation Name	Drug/Diluent Name	Material Used						Storage	Instruction
				Total Dose	Drug / Diluent Vol	No of Dose	Allocated Qty	Batch No	Expiry Date		
1	IVSB	Doxorubicin	Doxorubicin HCl 50mg/25ml Injection	69.5 mg	34.75 ml	1 dose(s) to supply	2 vial	er234ef	02/01/2021	Refrigerate (2 - 8 °C)	
		Recons. Fluid:-	Sodium Chloride 0.9% 100mL IV soln		100 ml		1 vial	756yu56	26/12/2020		

Worksheet generated by	Worksheet & label checked by	Prepared by	Final Product Checked by
System Administrator			
Date: 06/07/2018	Date:	Date:	Date:

Notes	• Click on the Combination Drug menu to view the Combination Drug screen.
Cross References	None

3.2.9.2.6.2 ***Application Business Rules***

No.	Name	Description
1.	Combination drug screen	Combination drug menu is displayed only when the ordered drug already specified as combination drug applicable in drug master maintenance screen. Combination drug screen allow user to allocate multiple drug for one preparation. Condition to display the drug (as compared with the ordered drug) in combination drug list are: i. Drug: Same active ingredient, same dosage form and same administration route. ii. Diluent: Within the drug compatible fluid list as setup in drug master maintenance screen.
2.	Batch Details	Batch details column display the stock information based on user's unit location. Only stock available in user's current unit location will be displayed. The displayed batch number must also not an expired batch and available stock quantity must be greater than 0.
3.	Supply dose and batch allocation	By default, all fields on combination drug screen are not editable. User needs to select the dose to supply and system will display the supply day and supply date range on the combination drug screen. To allocate batch quantity, enter value in Qty per Dose column based on the drug SKU. System will then auto-select the batch checkbox and update the allocation quantity value based on the calculation as below: Allocation Quantity = 'Quantity per dose' x Total of selected 'Dose to Supply' where Dose frequency: Supply_status = O (Open). Validation involved are: i. Drug: User is not allowed to select multiple batches for the same selected drug. ii. Diluent: User is not allowed to select multiple diluent and batches

No.	Name	Description
4.	Save combination drug record	Click on Save button to save combination drug record. System will update the preparation prescription listing with additional combination drug row.
5.	Combination drug label and worksheet.	User will be able to print the label and worksheet with the updated combination drug details. Total dose, drug and diluent volume values will still remain as per original ordered drug.
6.	Cancel combination drug record	User is able to cancel/delete the saved combination drug record by clicking on Prepare Qty hyperlink of the original drug. System will then display alert message whether user wants to cancel the combination drug record. Once cancelled, combination drug row will be removed from screen and user able to allocate new batches for the ordered drug.

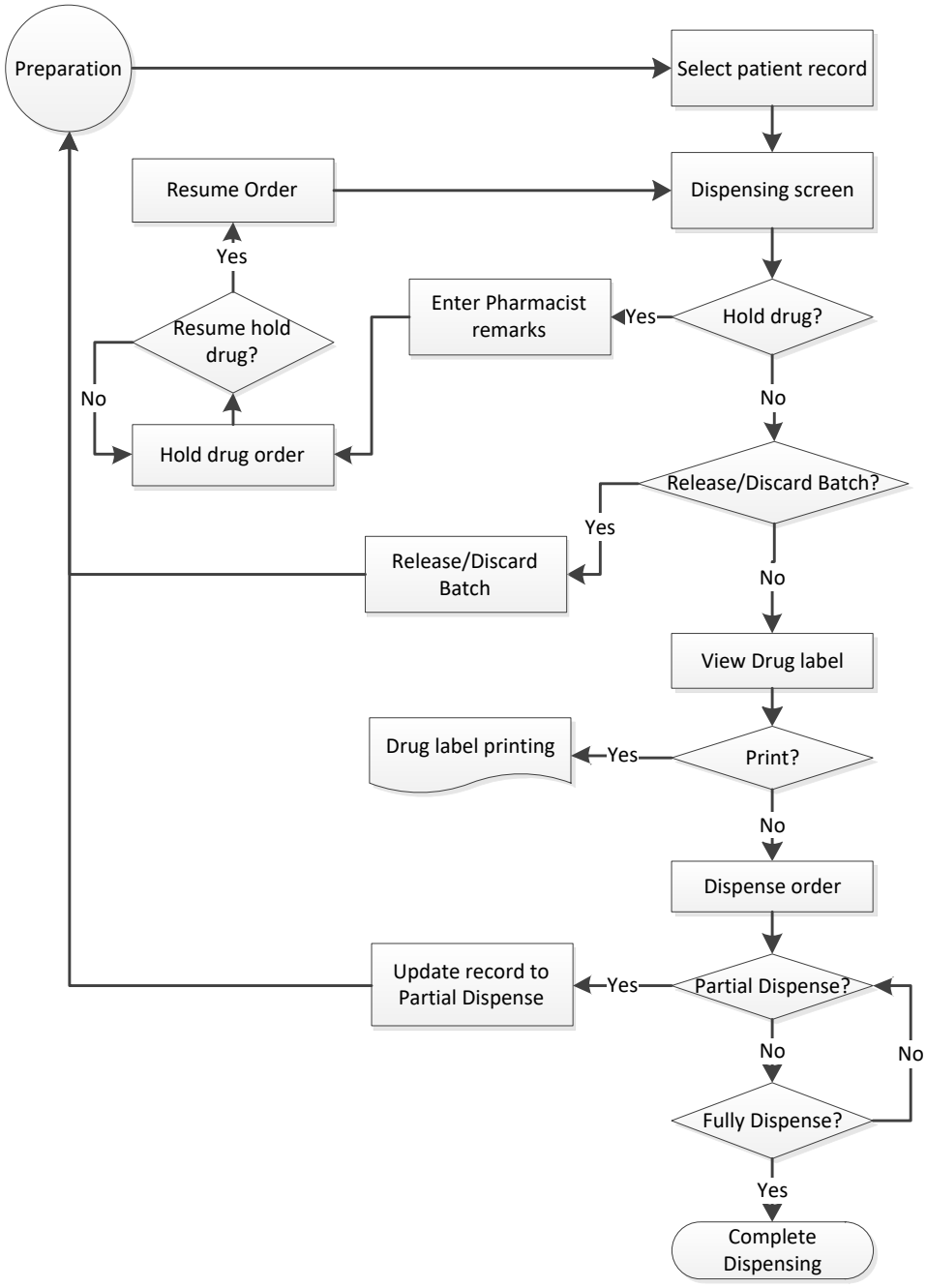
3.2.9.2.6.3 ***Input Validation Rules***

No.	Name	Description	Mandatory	Format
1.	Qty per Dose	Qty per Dose is to be entered in the textbox. Maximum of 8 integer capacity. Field is mandatory only if user already selected the dose schedule. If no schedule date selected, field is disabled.	No	Text field
2.	Reason	Reason is to be entered in the text box. Maximum of 300 characters capacity.	No	Text field
3.	Remark	Remark is to be entered in the text box. Maximum of 300 characters capacity.	No	Text field

3.2.10 CDR Dispensing

All prepared CDR orders from CDR Preparation screen will flow to CDR Dispensing screen. Pharmacist able to re-print label and prescription if needed then proceed with drug dispensing.

3.2.10.1 Screen Navigation Diagram



3.2.10.2 Detail Functionality and Screen

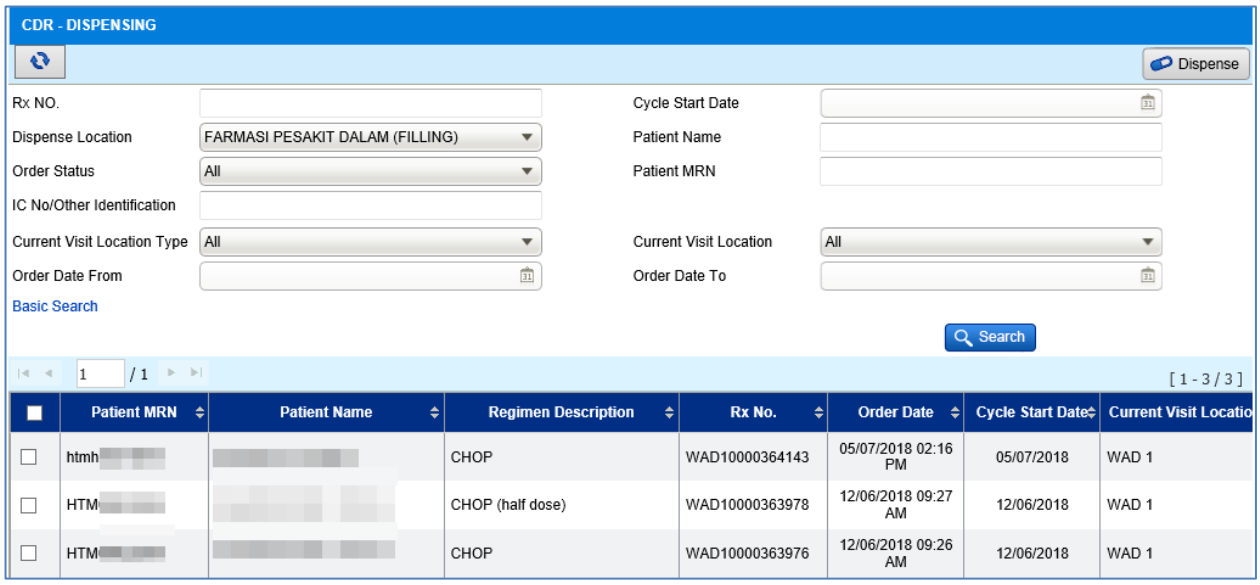
3.2.10.2.1 *CDR Dispensing Listing*

3.2.10.2.1.1 ***Screen Design***

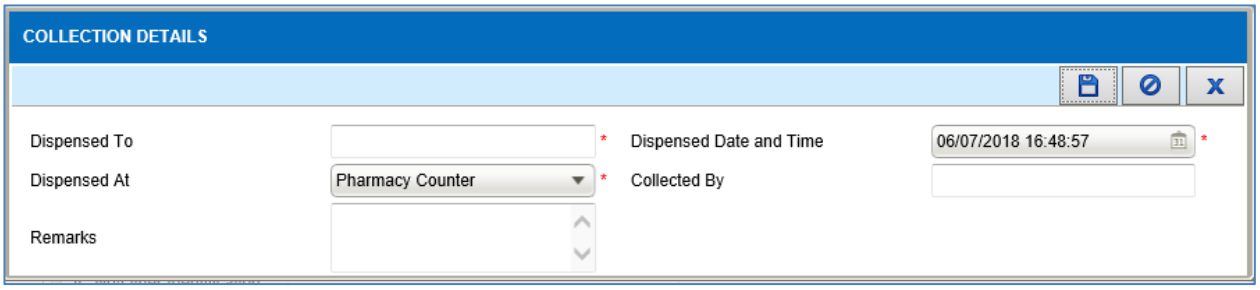
ID	CDRDISP.SD1
Description	CDR Dispensing Listing

Diagram

1. CDR Dispensing Listing



2. Collection Details screen after Dispense button is clicked



Notes	• Click on the search button to search the prepared order for pharmacist to proceed with drug dispensing. • Double click which order to dispense and view the order details or select (checkbox) which order to dispense and click on Dispense button.
Cross References	None

3.2.10.2.1.2 ***Application Business Rules***

No.	Name	Description
1.	Search Order	CDR Dispensing listing screen is displayed based on all CDR prepared orders and user's login location. This screen will allow user to search by the following criteria: i. Rx No – Dispensing listing shall be retrieved from the database based on Rx number value. ii. Cycle Start Date – Dispensing listing shall be retrieved from database where Cycle Start Date is within the selected range. iii. Dispense Location – By default, dispense location is default to user's login location. The listed location values are based on the user's granted location as setup in User Profile screen and location specified as dispense location in Location Setup screen. iv. Order Status – Dispensing listing shall be retrieved from the database based on matching order status. By default, value is default to 'All'. Values are from lookup table, domain 'CDR Order Status'. v. Patient Name – Dispensing listing shall be retrieved from the database based on matching Patient Name. vi. Patient MRN – Dispensing listing shall be retrieved from the database based on matching Patient MRN. xii. IC No/Other Identification – Dispensing listing shall be retrieved from the database based on matching Patient ID No. vii. Current Visit Location Type – Dispensing listing shall be retrieved from the database based on matching location type. By default, value is default to 'All'. Values are from lookup table, domain 'Loc Type'. viii. Current Visit Location – Dispensing listing shall be retrieved from the database based on matching location. By default, value is default to 'All'. Values are from location setup maintenance screen. ix. Order Date range – Dispensing listing shall be retrieved from database where order date within the selected range. Specify search criteria and click on the Search button to search the orders.
2.	Refresh Order Listing	Click on the Refresh button to reset all searched records and searching criteria to default value.
3.	Dispense Order	Dispensing listing screen allows user to dispense order by selecting which order and click on the Dispense button. By clicking the Dispense button, system will display the Collection Details screen. Dispense To field will display value only if Current Visit Location value is selected. By default, system will display empty value for Dispense To and user need to manually enter the value. Once user saved the Collection Details screen, system will update the selected order and drug status to 'Dispensed' and remove the order from the Dispensing listing.

3.2.10.2.1.3 ***Input Validation Rules***

None.

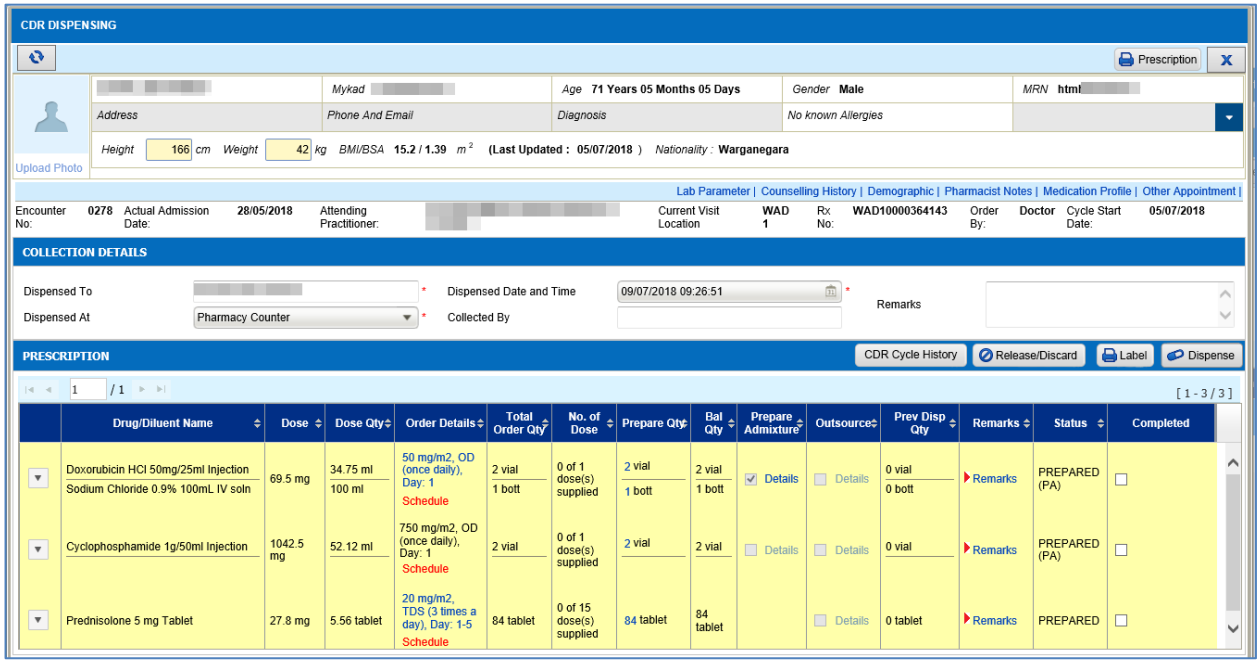
3.2.10.2.2 *CDR Dispensing*

3.2.10.2.2.1 ***Screen Design***

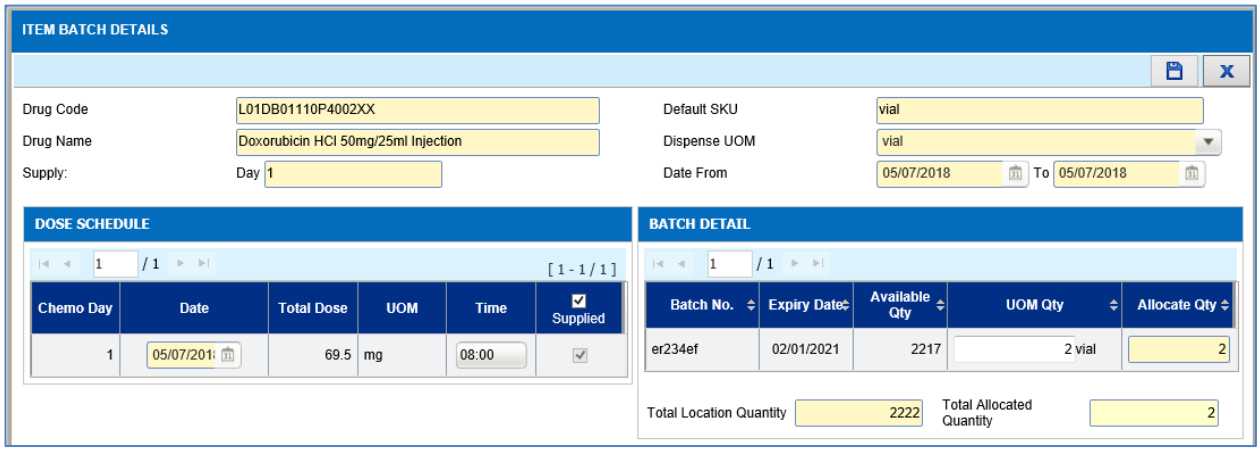
ID	CDRDISP.SD2
Description	CDR Dispensing screen

Diagram

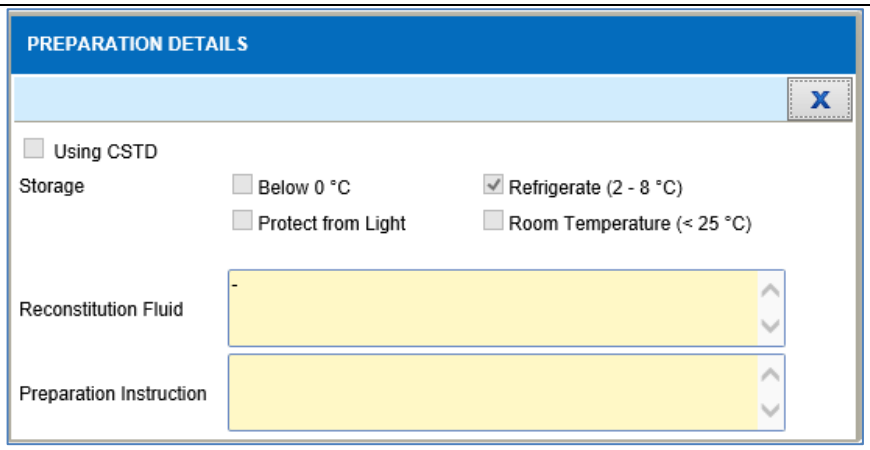
1. CDR Dispensing screen



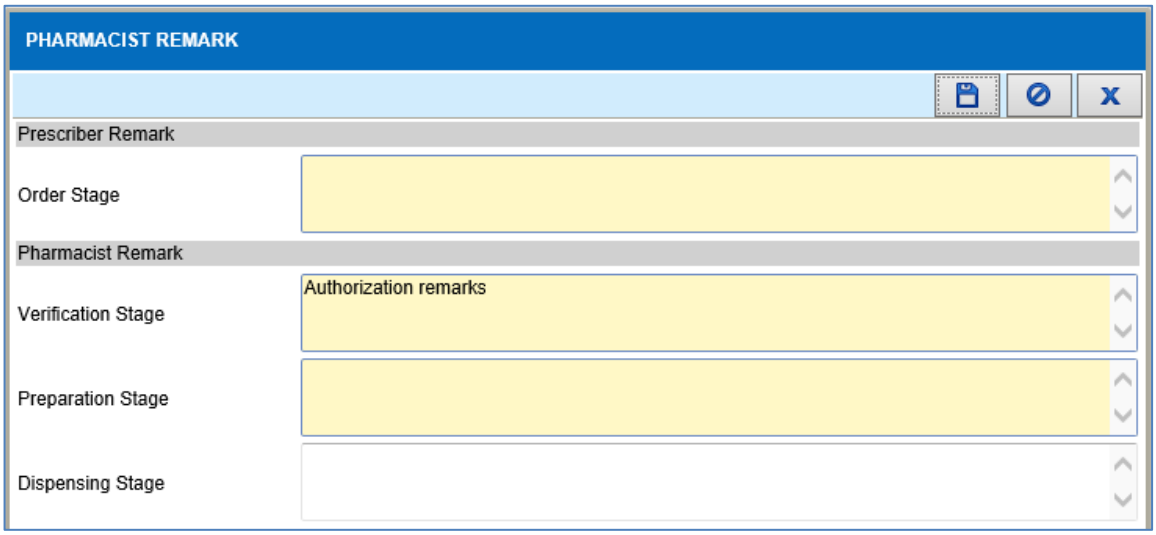
2. Item Batch Details screen



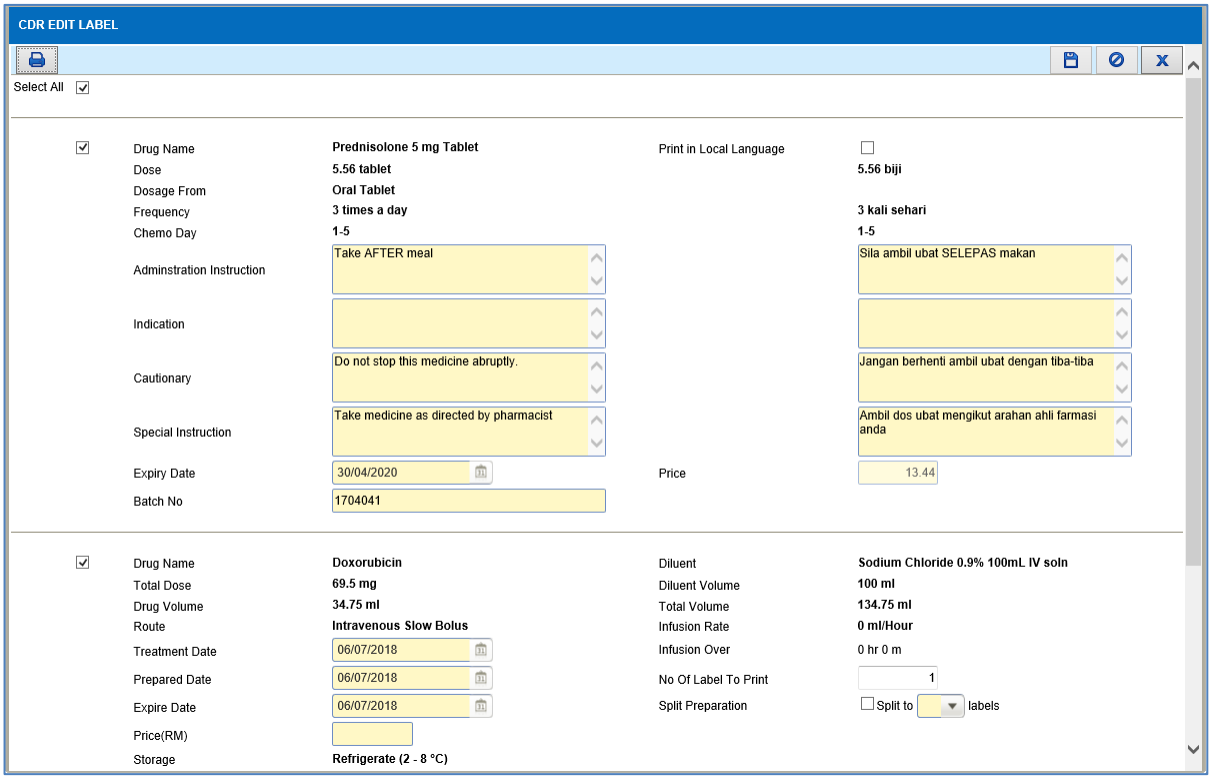
3. Preparation Details screen



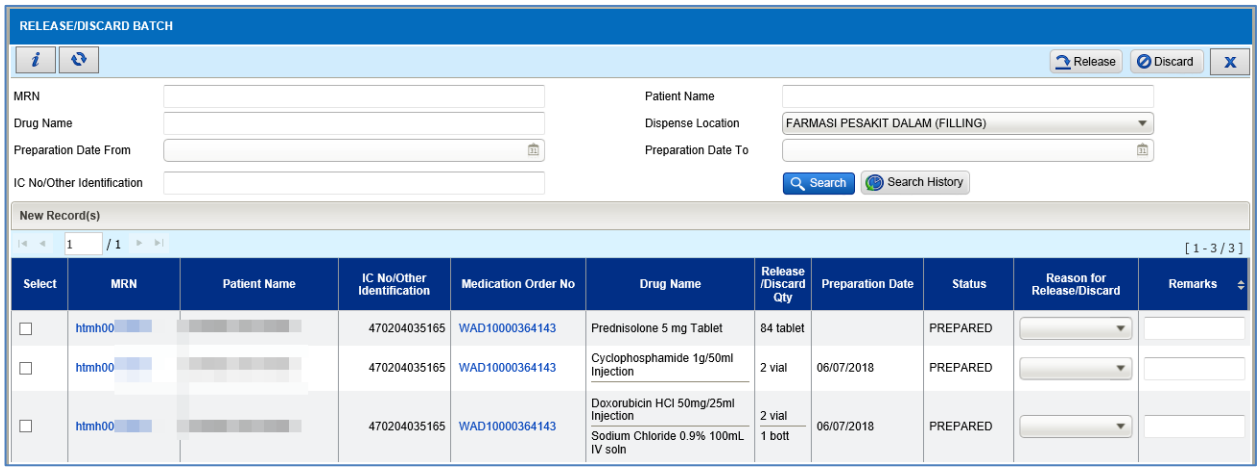
4. Pharmacist Remarks screen



5. Re-print label



6. Release/Discard screen after Release/Discard button is clicked



Notes	
	• View order details, item batch details and preparation details. • Click on Label button to view edit label screen and print label. Fields are read-only. • Click on Remarks hyperlink to view Pharmacist Remark screen. • Click on Cycle History button to view cycle history details. • Click on print Prescription button to reprint prescription. • Click on Release/Discard button to release/discard batch. • Click on Dispense button to dispense order.

Cross References	None

3.2.10.2.2.2 ***Application Business Rules***

No.	Name	Description
1.	View Order Details/Dose Schedule/Cycle History/Print Prescription	Please refer 3.2.8.2.2 CDR Verification section for the details.
2.	View original Rx details	Please refer 8.5.4.9 CDR Verification – Original Rx
3.	Item batch details	Click on Prepare Quantity hyperlink to display the Item Batch Details screen. All fields are read-only.
4.	Preparation details	Click on Prepare Admixture details link to display the Preparation Details screen. All fields are read-only.
5.	View prescriber and pharmacist remarks	Pharmacist remarks screen displays the remarks by both prescriber and pharmacist. Order stage, verification stage and preparation stage remarks will display value if any drug remarks entered by prescriber or pharmacist. In dispensing screen, only dispensing stage remark field is enabled, other remarks are view-only.
6.	View edit label screen	Edit label screen is read-only in Dispensing screen, user only able to reprint the label.
7.	Release Batch	Release batch function is for user to return back allocated stock into user's unit location in the case of drug already proceed to dispensing stage but cannot dispense to patient due to several reasons and drug is not yet prepared (still in raw material form). Select which drug to release and the release reason then click on Release Batch button to release/update the drug allocated quantity to 0. Drug will then flow back to Preparation screen for user to re-allocate the batch quantity for new preparation.
8.	Discard Batch	Discard batch function is for user to remove/discard the allocated stock into user's unit location in the case of drug already proceed to dispensing stage but cannot dispense to patient due to several reasons and drug already prepared or in final product form. Select which drug to discard and the discard reason then click on Discard Batch button to discard/update the drug allocated quantity to 0 and minus the stock in current stock available quantity. Drug will then flow back to Preparation screen for user to re-allocate the batch quantity for new preparation.
9.	Dispense Order	Click on the Dispense button, system will display the Collection Details screen. By default, system will display Patient's Name for Dispense To but editable by user. Once user saved the Collection Details screen, system will update the selected order and drug status to 'Dispensed' and remove the order from the Dispensing listing.

3.2.10.2.2.3 *Input Validation Rules*

No.	Name	Description	Mandatory	Format
1.	Dispense To	Dispense To is to be entered in the textbox. Maximum of 130 characters capacity. Default value is displayed based on the patient's name. This field is mandatory.	Yes	Text field
2.	Dispense Date and Time	Dispense Date and Time is to be selected from calendar control. It will be in dd/mm/yyyy hh:mm AM/PM format. Default value is current system date. This field is mandatory.	Yes	Calendar
3.	Dispense At	Dispense At is to be selected from the drop down list. Dropdown will be populated from lookup table where domain = 'Collection At'. This field is mandatory.	Yes	Drop down list
4.	Collected By	Collected By is to be entered in the textbox. Maximum of 130 characters capacity. This field is not mandatory.	No	Text field
5.	Remarks	Remark is to be entered in the textbox. Maximum of 100 characters capacity. This field is not mandatory.	No	Text field
6.	Dispensing Stage	Dispensing stage remark is to be entered in the text box. Maximum of 250 characters capacity.	No	Text field

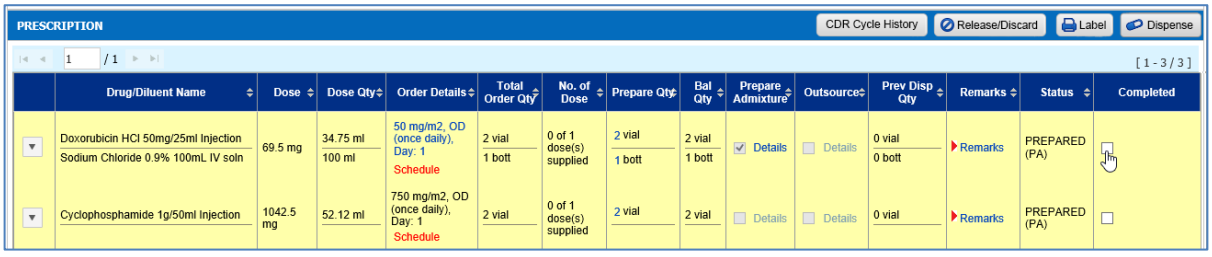
3.2.10.2.3 *CDR Dispensing – Force Close Order*

3.2.10.2.3.1 *Screen Design*

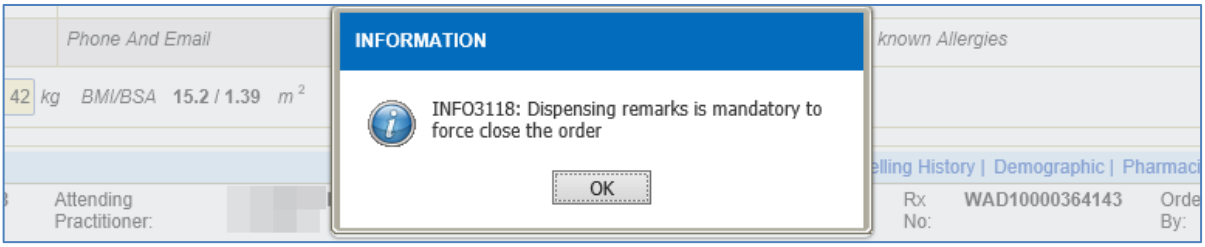
ID	CDRDISP.SD3
Description	CDR Dispensing – Force Close Order

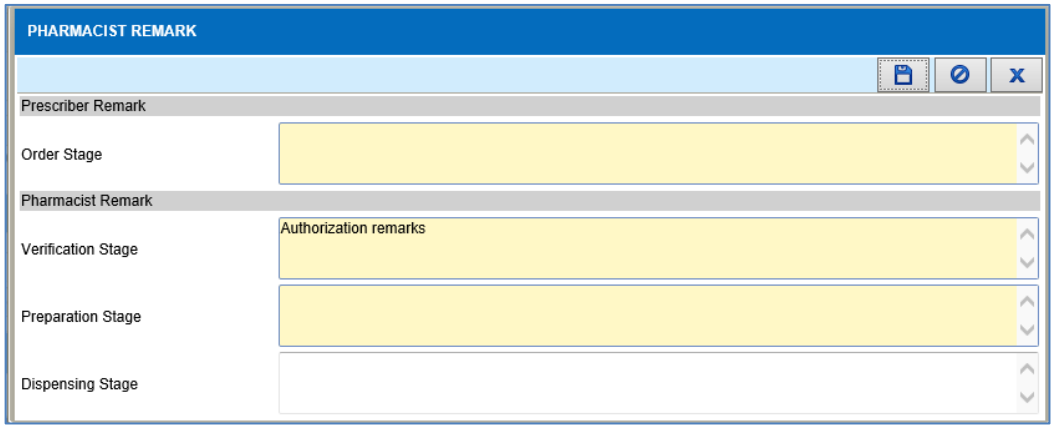
Diagram

1. Completed checkbox



2. Alert message displayed when user click on Complete checkbox



3. Dispensing stage remarks 

Notes	• Click on completed checkbox to force close order and user is required to enter remarks to proceed.
Cross References	None

3.2.10.2.3.2 *Application Business Rules*

No.	Name	Description
1.	Force close order	Click on Completed checkbox to close the order. Once user clicks on completed checkbox, system will check if no value entered in Dispensing stage remarks, alert message will be displayed for user to enter the dispensing remarks value. After dispensing remarks has been entered and user save the record. System will update the drug balance quantity to 0. Once user dispense the order, drug will be fully dispensed not partial dispensed.

3.2.10.2.3.3 *Input Validation Rules*

None.

3.2.11 Integration

No.	Name	Type	Description
1.	Drug Info	External	MIMS

4. References

List out the documents in which the stated procedures in this document refer to.

Document	Description/ Expansion

5. Acronyms

Item	Description
UOM	Unit of Measurement
BPF	Bahagian Perkhidmatan Farmasi
HQ	Headquarters

6. Appendix