



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

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## **User Manual Order Management - Cytotoxic Drug Reconstitution (CDR)**

<b>Version</b>	<b>: 11<sup>th</sup> E</b>
<b>Document ID</b>	<b>: U. MANUAL_OM CDR</b>



PhIS & CPS Project  
User Manual – Order Management Cytotoxic Drug Reconstitution  
(CDR)



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Application reference: PhIS & CPS v2.3



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## 1.0 Introduction

### 1.1 Overview of PhIS

Pharmacy Information System or better known as PhIS, is a complete and comprehensive system that integrates pharmacy related services geared towards pharmacy excellence. PhIS implementation would transform most of current manual process to electronic system to benefit facility end user in the health care sector.

There are 12 modules to assist services delivery by the health care sector which comprises of:

1. Order Management
2. Inpatient Pharmacy / Outpatient Pharmacy
3. Medication Counselling
4. Ward Pharmacy
5. Pharmacy Inventory
6. Manufacturing of Cytotoxic Drug Reconstitution, Parenteral Nutrition, IV Admixture & Eye Drop, Radiopharmaceuticals and Extemporaneous
7. Adverse Drug Reaction & Drug Allergic (ADR & DAC)
8. Clinical Pharmacokinetics Services (TDM)
9. Drug Information & Consumer Education (DICE)
10. Medication Therapy Adherence Clinic (MTAC)
11. Data Mining (PhARM)

### 1.2 Purpose and Objectives

This user manual outlines the Cytotoxic Drug Reconstitution sub-module and its key features and functionalities. The primary objective is to guide user through the process of completing PhIS application process.

User will understand the following activities in details:

- Cytotoxic Drug Reconstitution Order
- Manage Prescription
- Order Endorsement
- Order Authorisation

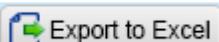
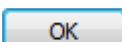
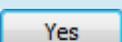
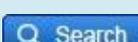
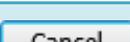
### 1.3 Organised Sections

These are the sections within this document:

- Section 1 : Introduction
- Section 2 : Application Standard Features
- Section 3 : Cytotoxic Drug Reconstitution
- Section 4 : Acronyms
- Section 5 : Links to Clinical Modules

## 2.0 Application Standard Features

### 2.1 PhIS Legend

Standard Legend			
	Login to PhIS		Logout from PhIS
	Close All Open Tabs		Refresh Screen
	Expand Menu		Collapse Menu
	Expand Module		Collapse Module
	Add/Create New Record		Save
	Close Window		Calendar Icon
	Save Transaction		Delete Record
	Export Report From PDF file to Excel file		OK Button
	Yes Button		No Button
	Radio Button	<input type="checkbox"/>	Checkbox
	System Automatic Generate Record No.		Automatically Display/Retrieve Box
	Reset Login Screen		Show Help
	Display Home Tab		Search Record
	Cancel		Dropdown Box
	Search Icon	*	Mandatory Field
	Edit Record		Empty Text Box
	Cancel Button		



Module Legend			
	Update Patient's Height and Weight	<a href="#">Regimen Details</a>	Display Regimen Details
	Update Sampling Details		Confirm Order
<a href="#">AUC Calculator</a>	AUC Calculator		Save Record
<a href="#">Basic Search</a>	Basic Search	<a href="#">Advanced Search</a>	Advanced Search
	Display CDR Order Screen		Authorize Order
	Endorse Order		

**Note**

To learn more about Login Information, kindly click [Login Information](#) module for descriptive steps.

## 3.0 Cytotoxic Drug Reconstitution (CDR)

### Overview

The Order Management – Cytotoxic Drug Reconstitution (CDR) module handles all the information to specify the items as per local drug formulary, MOH and non-MOH including registered and non-registered drugs. This function is to enable data mining. All medication orders must be prescribed by authorized personnel only and be in compliance with guidelines on prescribing in the drug formulary (drug category, discipline / specialty) as defined by MOH.

### User Group

This module is intended for Specialist, Doctor, Medical Officer and Medical Assistant.

### Functional Diagram

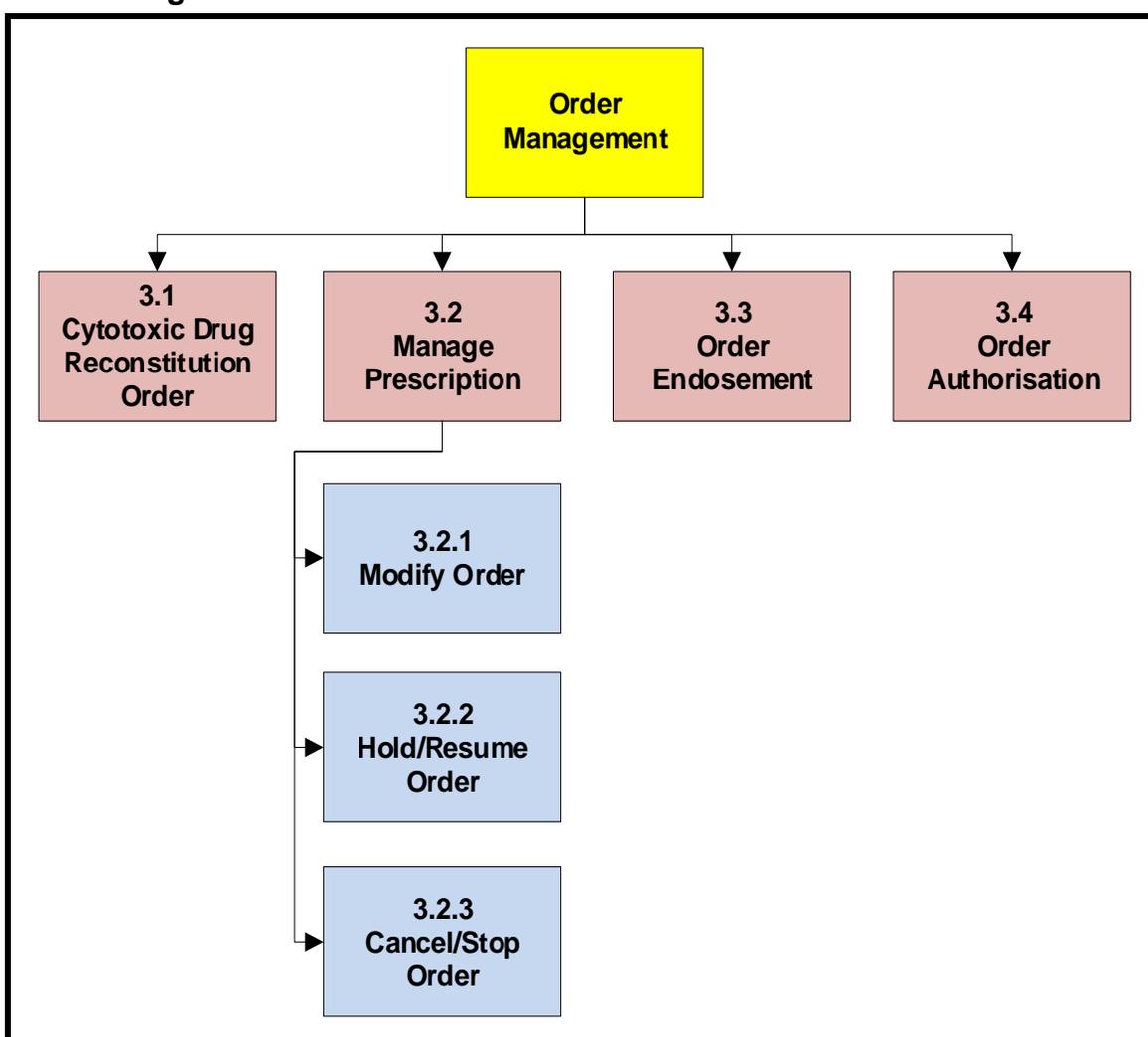


Figure 3.0

### Functional Description

Cytotoxic Drug Reconstitution (CDR) comprises of four (4) main functions:



- **Cytotoxic Drug Reconstitution (CDR) Order**  
CDR Order is used to prescribe Chemotherapy Drug.
- **Manage Prescription**  
This function to monitor patient's prescription including modify order, hold/resume order- and cancel/stop order.
- **Order Endorsement**  
Order endorsement is used to notify the prescriber of prescription changes made by the pharmacist.  
The prescriber may endorse the intervention made by the pharmacist.
- **Order Authorisation**  
This function is used to approve list A/ A\*/ A/KK drugs that require authorization

### 3.1 Cytotoxic Drug Reconstitution Order

CDR Order allows Prescriber to place a cytotoxic order. Order will be sent to Pharmacist for the process of verification, preparation and dispensing.

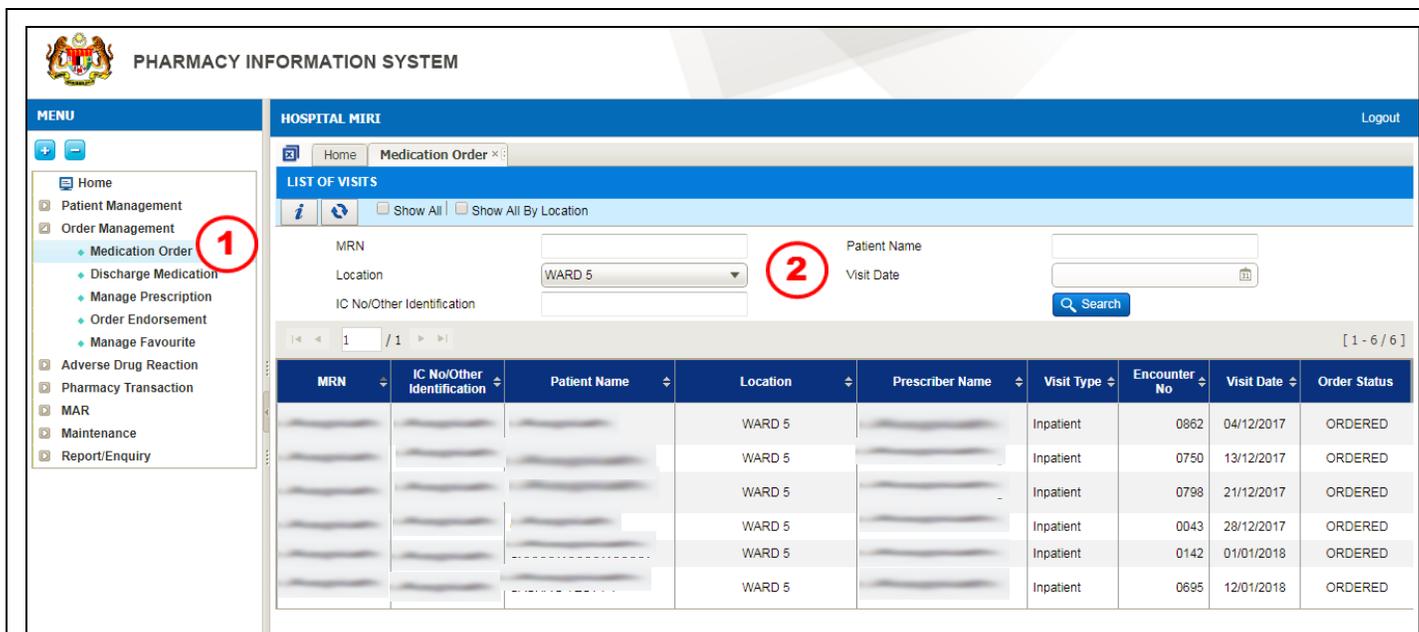


Figure 3.1-1 Medication Order Listing Page

#### STEP 1

Click on the 'Order Management' menu followed by 'Medication Order' sub menu

#### STEP 2

Search patients record based on the fields below:

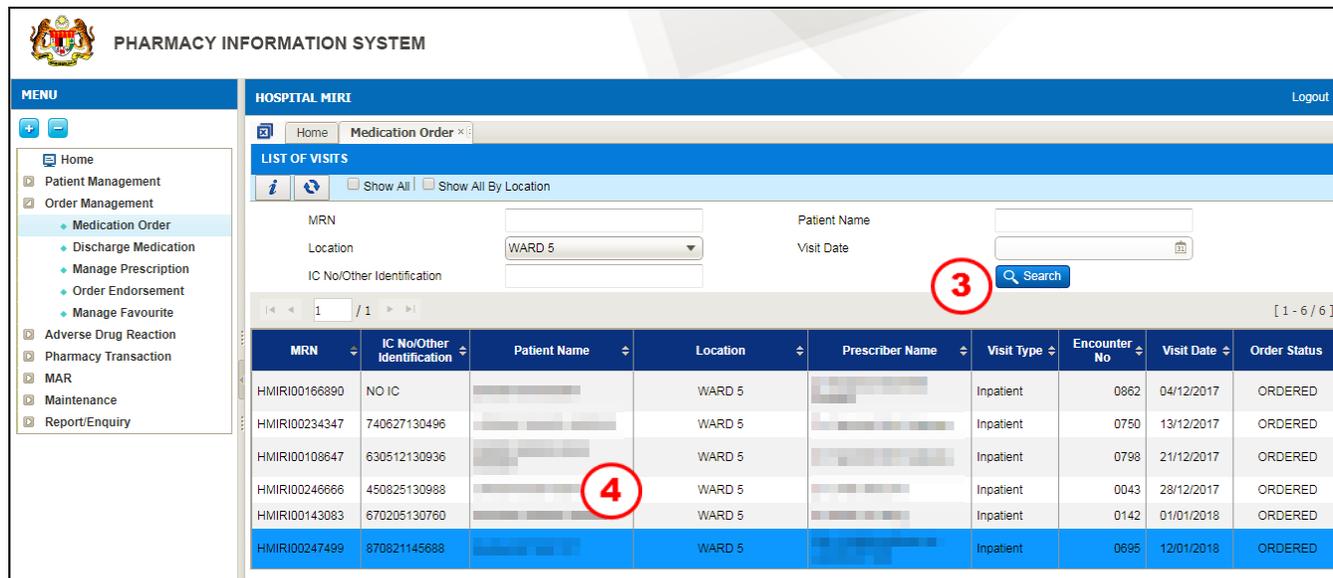
No	Field	Description	Remark
a	MRN	Patient Medical Record Number	Search option: • Type the MRN either in full or partially: <i>Example : HPSF00001234 or "1234"</i>
b	Patient Name	Patient Name	Allow to search by fully or partially entered patient name
c	Location	Patient Visit Location	Able to filter and search patient by visit location and prescriber's location
d	Visit Date	Visit Date	Able to filter and search by visit date
e	IC No/Other Identification	Patient Identification No	Allow to search by fully or partially entered patient ID no

Table 3.1-1

#### Note

Prescriber have the options to view patient by clicking on the checkbox:

- Show All - click on the checkbox to view all patients based on prescriber login.
- Show All By Location - click on the checkbox to view patients by location assigned based on prescriber login



**PHARMACY INFORMATION SYSTEM**

HOSPITAL MIRI Logout

Home Medication Order

LIST OF VISITS

MRN:  Patient Name:

Location:  Visit Date:

IC No/Other Identification:

MRN	IC No/Other Identification	Patient Name	Location	Prescriber Name	Visit Type	Encounter No	Visit Date	Order Status
HMIRI00166890	NO IC	[REDACTED]	WARD 5	[REDACTED]	Inpatient	0862	04/12/2017	ORDERED
HMIRI00234347	740627130496	[REDACTED]	WARD 5	[REDACTED]	Inpatient	0750	13/12/2017	ORDERED
HMIRI00108647	630512130936	[REDACTED]	WARD 5	[REDACTED]	Inpatient	0798	21/12/2017	ORDERED
HMIRI00246686	450825130988	[REDACTED]	WARD 5	[REDACTED]	Inpatient	0043	28/12/2017	ORDERED
HMIRI00143083	670205130760	[REDACTED]	WARD 5	[REDACTED]	Inpatient	0142	01/01/2018	ORDERED
HMIRI00247499	870821145688	[REDACTED]	WARD 5	[REDACTED]	Inpatient	0895	12/01/2018	ORDERED

Figure 3.1-2 Medication Order Listing Page

**STEP 3**

Click on the  button to search for patient

**Note**

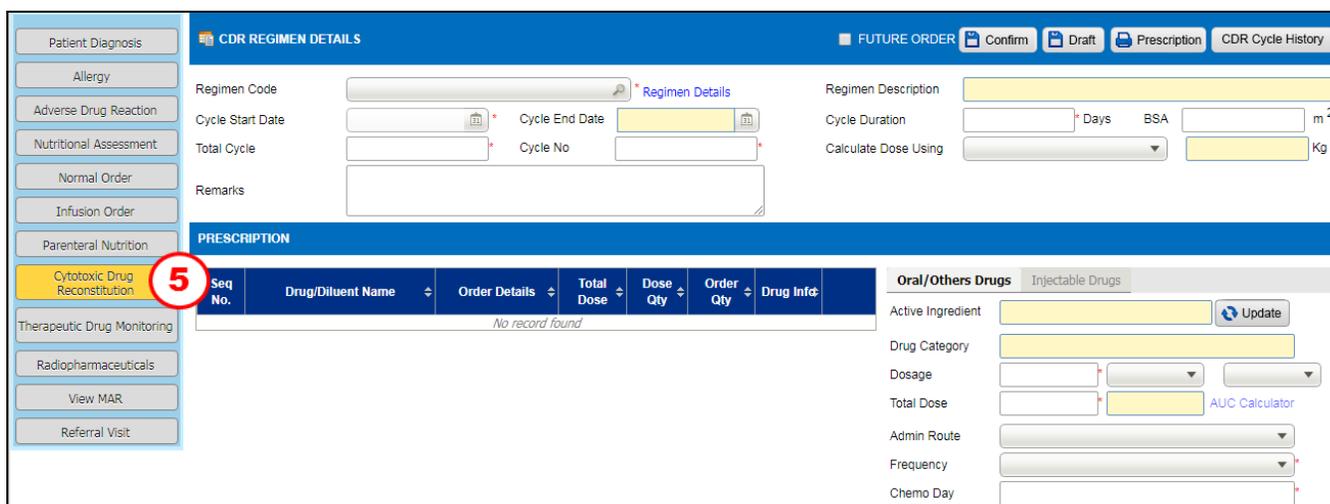
- Search results of patient record list will display:
  - MRN
  - IC No/Other Identification
  - Patient Name
  - Location
  - Prescriber Name
  - Visit Type
  - Encounter No
  - Visit Date
  - Order Status
- Order Status = 'Ordered', confirmed prescription.
- Order Status = 'Draft', prescription is saved but have not been confirmed.

**STEP 4**

Double click on the selected patient record and Medication Order screen will display as shown in Figure 3.1-3

**Note**

Patient Diagnosis is mandatory for each patient visit.



**CDR REGIMEN DETAILS**

FUTURE ORDER

Regimen Code:  \* [Regimen Details](#)

Regimen Description:

Cycle Start Date:  \* Cycle End Date:

Cycle Duration:  Days BSA:  m<sup>2</sup>

Total Cycle:  Cycle No:

Calculate Dose Using:  Kg

Remarks:

**PRESCRIPTION**

Seq No.	Drug/Diluent Name	Order Details	Total Dose	Dose Qty	Order Qty	Drug Info
No record found						

**Oral/Others Drugs**

Active Ingredient:

Drug Category:

Dosage:

Total Dose:

Admin Route:

Frequency:

Chemo Day:

Figure 3.1-3 Medication Order

**STEP 5**

Click on the  button to display CDR Order screen

**Note**

CDR Order screen consist of:

- **Patient's Banner**



**MEDICATION ORDER**

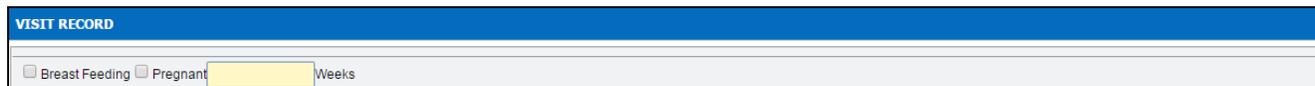
	<input type="text"/>	<input type="text"/>	Age 36 Years 06 Months 22 Days	Gender Male	MRN HPSF00034883
<input type="text"/>	<input type="text"/>	<input type="text"/>	Diagnosis	No known Allergies	<input type="text"/>

Height  cm Weight  kg BMI/BSA 24.2 / 1.82 m<sup>2</sup> G6PD   (Last Updated : 17/10/2019 Nationality : Warganegara)

Figure 3.1-4 Patient's Banner

- Patient's banner will be displayed at the specific screen with required patient information. User can update patient's height and weight. Below is the list of patient information:
- Patient Name
- Patient IC Number
- Patient Diagnosis
- Patient Age
- Patient Allergy
- Patient Gender
- Patient MRN
- Patient Address
- Patient Phone and Email
- Height and Weight
- G6PD
- Nationality

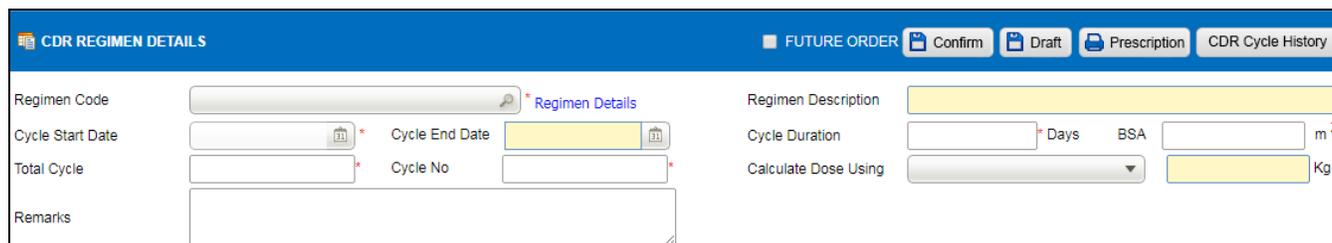
- **Visit Record**



**Figure 3.1-5 Visit Record**

- *Visit Record will display **Breast Feeding** and **Pregnant**  checkboxes only if the patient is a female.*

- **CDR Regimen Details**



**Figure 3.1-6 CDR Regimen Details**

- *CDR Regimen Details consists of:*

- *Regimen Code*
- *Regimen Details Hyperlink*
- *Regimen Description*
- *Cycle Start Date*
- *Cycle End date*
- *Cycle Duration*
- *BSA*
- *Total Cycle*
- *Cycle No*
- *Calculate Dose Using*
- *Remarks*

- **Prescriptions**

Prescriptions consists of:

- Oral/Others Drugs
- Injectable Drugs
- Seq No.
- Drug/Diluent Name
- Other Details
- Total Dose
- Dose Qty (Quantity)
- Order Qty (Quantity)
- Drug Info

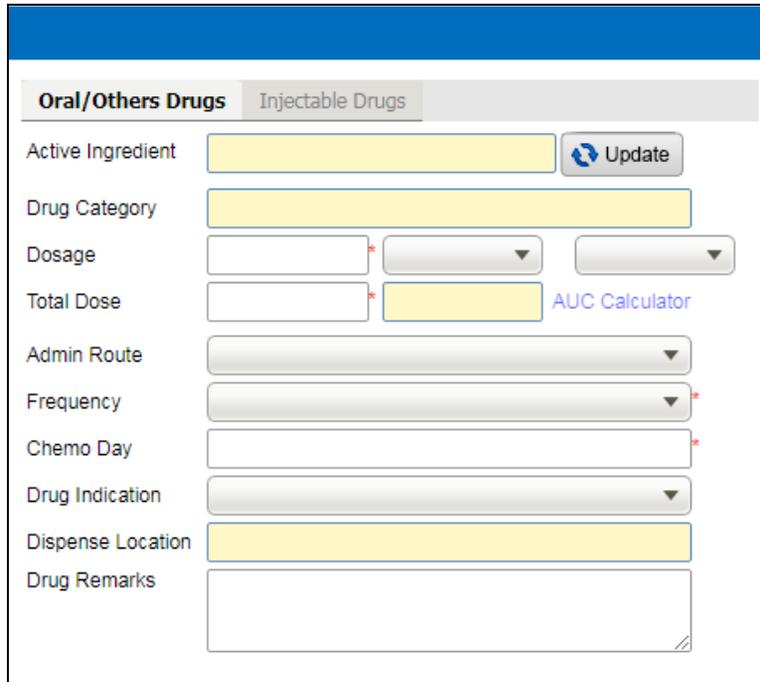
PRESCRIPTION						
Seq No.	Drug/Diluent Name	Order Details	Total Dose	Dose Qty	Order Qty	Drug Info
<i>No record found</i>						

<b>Oral/Others Drugs</b>		Injectable Drugs	
Active Ingredient	<input type="text"/>	<input type="button" value="Update"/>	
Drug Category	<input type="text"/>		
Dosage	<input type="text"/>	<input type="text"/>	<input type="text"/>
Total Dose	<input type="text"/>	<input type="text"/>	<input type="button" value="AUC Calculator"/>
Admin Route	<input type="text"/>		
Frequency	<input type="text"/>		
Chemo Day	<input type="text"/>		
Drug Indication	<input type="text"/>		
Dispense Location	<input type="text"/>		
Drug Remarks	<input type="text"/>		

Figure 3.1-7 Prescriptions

- **Regimen Drug Details**



**Figure 3.1-8 Regimen Drug Details : Oral/Other Drugs**

- *Regimen Drug Details consists of two(2) tabs:*
- *Oral/Other Drugs:*
  - *Active Ingredient*
  - *Drug Category*
  - *Dosage*
  - *Total Dose*
  - *AUC Calculator*
  - *Admin Route*
  - *Frequency*
  - *Chemo Day*
  - *Drug Indication*
  - *Dispense Location*
  - *Drug Remarks*

Oral/Others Drugs	Injectable Drugs	
Active Ingredient	<input type="text"/>	<input type="button" value="Update"/>
Dosage	<input type="text"/> *	<input type="button" value="v"/> <input type="button" value="v"/>
Total Dose	<input type="text"/> *	<input type="text"/> <a href="#">AUC Calculator</a>
Admin Route	<input type="button" value="v"/>	
Frequency	<input type="button" value="v"/> *	
Chemo Day	<input type="text"/> *	
Drug Indication	<input type="button" value="v"/>	
Infuse Over	<input type="text"/> (Hour) :	<input type="text"/> (Minute)
Diluent	<input type="button" value="v"/>	
Diluent Volume	<input type="text"/>	<input type="text"/>
Total Volume	<input type="text"/>	<input type="text"/>
Infusion Rate	<input type="text"/>	<input type="button" value="v"/>
Dispense Location	<input type="text"/>	
Remarks	<input type="text"/>	

**Figure 3.1-9 Regimen Drug Details: Injectable Drugs**

- *Injectable Drugs:*
- *Active Ingredient*
- *Dosage*
- *Total Dose*
- *AUC Calculator*
- *Admin Route*
- *Frequency*
- *Chemo Day*
- *Drug Indication*
- *Infuse Over*
- *Diluent*
- *Diluent Volume*
- *Total Volume*
- *Infusion Rate*
- *Dispense Location*
- *Remarks*

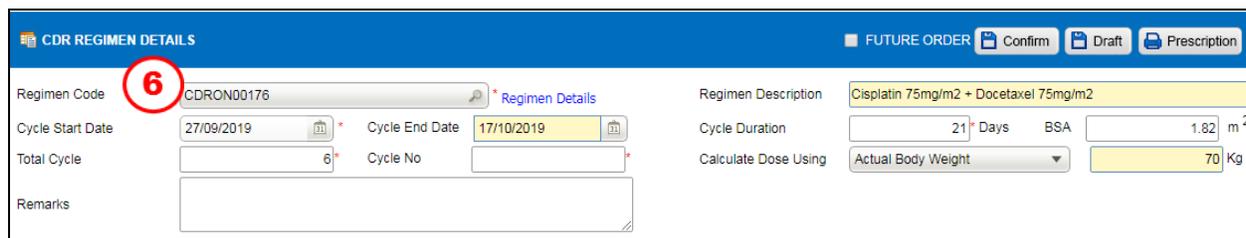
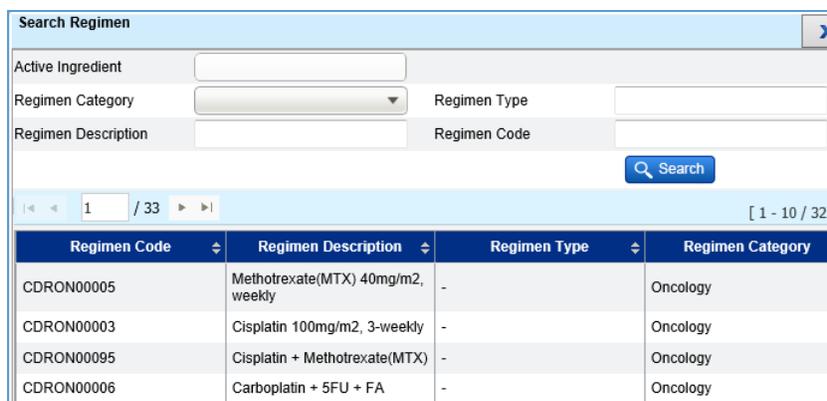


Figure 3.1-10 CDR Regimen Details

**STEP 6**

Search and select **Regimen Code** from dropdown box to display CDR regimen details (refer to Figure 3.1-11: Search Regimen screen) based on:

- Active Ingredient
- Regimen Category
- Regimen Type
- Regimen Code
- Regimen Description



Regimen Code	Regimen Description	Regimen Type	Regimen Category
CDRON00005	Methotrexate(MTX) 40mg/m2, weekly	-	Oncology
CDRON00003	Cisplatin 100mg/m2, 3-weekly	-	Oncology
CDRON00095	Cisplatin + Methotrexate(MTX)	-	Oncology
CDRON00006	Carboplatin + 5FU + FA	-	Oncology

Figure 3.1-11 CDR Search Regimen

**Note**

- **Total Cycle** is defaulted to the value of No of cycle setup in CDR Regimen Category and it is editable
- **Cycle No** field need to be entered by user.
- **Cycle Duration** is defaulted to the value setup in CDR Regimen Category and it is editable.
- **Cycle Start Date** is defaulted to the current system date and it is editable.
- **Cycle End Date** will be automatically displayed based on the **Cycle Start Date** and **Cycle Duration**.
- **BSA** is defaulted to the BSA value calculated in Patient banner and it is editable too.
- Total Dose will be auto calculated from BSA value if user selects Dosage by per m<sup>2</sup>
- Click on the **Regimen Details** hyperlink to view the Regimen Details as shown in Figure 3.1-12.

REGIMEN DETAILS									
Category	Oncology - Head & Neck	Regimen Code	CDRON00003	Regimen Description	Cisplatin				
Cycle Duration	21	Remarks							
Active Ingredient	Admin Route	Dosage	Frequency	Chemo day	Infuse Over	Diluent	Diluent Volume	Drug Remark	Status
Cisplatin	Intravenous Infusion	100 mg/m <sup>2</sup>	OD (once daily)	1	2 Hours 0 Minutes	Sodium Chloride 0.9% 500mL IV soln	1000 ml		Active

Figure 3.1-12 Regimen Details

- Select **Calculate Dose Using** from dropdown box:
  - Actual Body Weight
  - Adjusted Body Weight
  - Ideal Body Weight
- Double click on the **Oral/Others Drugs** or **Injectable Drugs** information row.
- System will automatically calculate the weight (kg) according to Calculate Dosage Using selected. It will give effect on Total Dose if user selects Dosage by per kg.

Mykad	Age 26 Years 01 Months 04 Days	Gender Male	M/RN HPSF00011596				
Address	Phone And Email	Diagnosis	Known Allergies				
Height 170 cm	Weight 70 kg	BMI/BSA 24.2 / 1.82 m <sup>2</sup>	G6PD <input checked="" type="checkbox"/>				
Update (Last Updated : 27/09/2019) Nationality : Warganegara							
Encounter No. 1179	Actual Admission Date: 23/05/2017	Attending Practitioner:	Visit Location: WAD 2 L (MED/SURG/ORTO)				
CDR REGIMEN DETAILS		FUTURE ORDER Confirm Draft Prescription					
Regimen Code	CDRON00176	Regimen Description	Cisplatin 75mg/m <sup>2</sup> + Docetaxel 75mg/m <sup>2</sup>				
Cycle Start Date	27/09/2019	Cycle End Date	17/10/2019				
Total Cycle	6	Cycle No					
Calculate Dose Using		Actual Body Weight	70 Kg				
PRESCRIPTION							
Seq No.	Drug/Diluent Name	Order Details	Total Dose	Dose Qty	Order Qty	Drug Info	
7	Cisplatin 50mg/50ml Injection	75 mg/m <sup>2</sup> , OD (once daily), Day: 1	136.5 mg	136.5 ml	3 vial		
	Sodium Chloride 0.9% 500mL IV soln	Schedule		363.5 ml	1 bott		
	Docetaxel 80mg Injection	75 mg/m <sup>2</sup> , OD (once daily), Day: 1	136.5 mg	13.65 ml	2 vial		
	Sodium Chloride 0.9% 250mL IV	Schedule		236.35 ml	1 bott		
Oral/Others Drugs		Injectable Drugs					
Active Ingredient		Update					
Drug Category							
Dosage							
Total Dose		AUC Calculator					

Figure 3.1-13 Prescriptions

**Note**

When the Regimen Code is selected, the Drug/Diluent Name of the prescription will be automatically display as shown in Figure 3.1-13.

**STEP 7**

Double click on the row of the prescription to edit regimen drug details as per Figure 3.1-15

- Click on the button to delete information if necessary.
- Click on the **Schedule** hyperlink, the Dose Schedule screen will be displayed ad user can key in total dose in split dose column as shown in Figure 3.1-14.
- Split dose only applicable on normal oral/others drug

DOSE SCHEDULE					
Chemo Day	Date	Total Dose	Total Dose/Day	UOM	Schedule Time
1	18/10/2019		10 mg	mg	08:00 20:00
2	19/10/2019		10 mg	mg	08:00 20:00
3	20/10/2019		10 mg	mg	08:00 20:00
4	21/10/2019		10 mg	mg	08:00 20:00
5	22/10/2019		10 mg	mg	08:00 20:00
6	23/10/2019		10 mg	mg	08:00

Figure 3.1-14 Dosage Schedule

- System will display prescriptions based on **Regimen Code** selected in CDR Regimen Details.
- Click **Reset Split Dose** if want to reset split dose
- System will display Regimen Drug Details based on **Regimen Code** selected as shown in Figure 3.1-15.

PRESCRIPTION		Injectable Drugs	
Seq No.	Drug/Diluent Name	Order Details	Drug Info
	Cisplatin 50mg/50ml Injection	75 mg/m2, OD (once daily), Day: 1	136.5 mg, 136.5 ml, 3 vial
	Sodium Chloride 0.9% 500mL IV soln	Schedule	363.5 ml, 1 bott
	Docetaxel 80mg Injection	75 mg/m2, OD (once daily), Day: 1	136.5 mg, 13.65 ml, 2 vial
	Sodium Chloride 0.9% 250mL IV soln	Schedule	236.35 ml, 1 bott

Active Ingredient	Cisplatin	<input type="button" value="Update"/>
Dosage	75 mg /m2	
Total Dose	136.5 mg	<input type="button" value="AUC Calculator"/>
Admin Route	Intravenous Infusion	
Frequency	OD (once daily)	
Chemo Day	1	
Drug Indication		
Infuse Over	2 (Hour) : 0 (Minute)	
Diluent	Sodium Chloride 0.9% 500mL IV soln	
Diluent Volume	363.5 ml	
Total Volume	500 ml	
Infusion Rate	4.17 ml/Min	
Dispense Location	FARMASI REKONSTITUSI UBAT SITOTOKSIK	
Remarks		

Figure 3.1-15 Regimen Drug Details : Injectable Drugs

**Note**

- User is allowed to edit or update Regimen Drug Details:
  - Dosage
  - Total Dose
  - Admin Route
  - Frequency
  - Chemo Day
  - Drug Indication
  - Infuse Over
  - Diluent
  - Diluent Volume

- **Remarks**
- If select **Dosage** '/kg' from dropdown menu, **Total Dose** will have displayed based on Calculate Dose Using selected previously in CDR Regimen Detail (Refer to Step 6).
- Click on the button to save updated Regimen Drug Details.
- Able to do split dose once total dose finalized and clicked button as shown in Figure 3.1-15
- Upon saving the split dose, updated dose will appear in highlighted yellow as shown in Figure 3.1-16

**CDR REGIMEN DETAILS** FUTURE ORDER    CDR Cycle History

Regimen Code: CDRON00106 Regimen Description: **9** - Pre **8**

Cycle Start Date: 18/10/2019 Cycle End Date: 07/11/2019

Total Cycle: 6 Cycle Duration: 21 Days BSA: 1.82 m<sup>2</sup>

Cycle No: 1 Calculate Dose Using: Actual Body Weight 70 Kg

Remarks:

---

**PRESCRIPTION**

Seq No.	Drug/Diluent Name	Order Details	Total Dose	Dose Qty	Order Qty	Drug Info
	Docetaxel 80mg Injection	75 mg/m <sup>2</sup> , OD (once daily), Day: 1	136.5 mg	13.65 ml	2 vial	
	Sodium Chloride 0.9% 250mL IV soln	Schedule	236.35 ml		1 bott	
	Prednisolone 5 mg Tablet	5 mg, 5 mg, OD (once daily), Day: 1-21 Schedule	10 mg	2 tablet	42 tablet	

**Oral/Others Drugs** Injectable Drugs

Active Ingredient: Prednisolone

Drug Category: B

Dosage: 10 mg /m<sup>2</sup>

Total Dose: 10 mg AUC Calculator

Admin Route: Oral

Frequency: BD (twice daily)

Chemo Day: 1-21

Figure 3.1-16 Medication Order

**STEP 8**

Click on the button to save CDR order

**Note**

- Click on the button to save order.

**CONFIRMATION**

CONF0002: Are you sure you want to save?

Figure 3.1-17 Confirm Record

- CDR order status will be set as "Draft".
- User is allowed to edit or modify order using this screen.

**STEP 9**

Click on the button to confirm CDR order

**Note**

- Click on the button to confirm order.

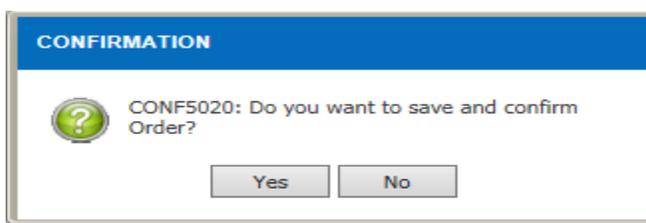
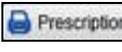


Figure 3.1-18 Confirm Record

- CDR order status will change to “Ordered” and user is not allowed to make changes.
- System will notify user if the CDR drug requires an authorisation before proceeding to CDR Admixture.
- The  FUTURE ORDER check box is to allow user to create a future order and when patient arrive for chemo, the doctor/pharmacist will approve the order. If the future order is without approval, Pharmacist will not allow any transaction for it
- Click on the  Delete button to delete record before order is confirmed.
- Click on the  Prescription button to print CDR prescription.
- Split dose will appear in the CDR preparation under **Total Dose** column

**Ministry of Health, Malaysia  
Hospital Pakar Sultanah Fatimah, Muar  
Cytotoxic Drug Reconstitution**

Patient Name : [REDACTED] Patient ID : [REDACTED]  
 Age : 36 Y 6 M 22 D MRN : HPSF00034883  
 Gender : Male Prescription # : WRDB800001817803  
 Height/Weight/BSA : 170 cm / 70 kg / 1.82 m<sup>2</sup> Order Date/Time : 18/10/2019 10:25 AM  
 Allergy : Location : WAD 4 (SURG - L)

Diagnosis : chemo  
 Regimen Code : CDRON00106  
 Regimen Description : Docetaxel + Prednisolone  
 Cycle Start Date : 18/10/2019 Cycle Duration : 21 Days Total Cycle : 6 Current Cycle : 1

Route	Drug Name	Dosage	Total Dose	Diluent	Diluent Vol	Frequency	Chemo Day
INF	Docetaxel	75 mg/m <sup>2</sup>	136.5 mg	Sodium Chloride 0.9% 250mL IV soln	236.35 ml	OD (once daily)	1
ORAL	Prednisolone	10 mg	5 mg, 5 mg			OD (once daily)	1-21

Prescribed By : [REDACTED]  
 Designation : Pegawai Perubatan Pakar  
 Department : General Surgery

Figure 3.1-19 CDR Prescription

**CDR Cycle History**

**Note**

- Click on the **CDR Cycle History** button to display CDR Cycle History screen. System will display cycle history as per Figure 3.1-20

CDR CYCLE HISTORY																
													Approve Future Order	Renew Rx		
	Regimen Code	Regimen Name	Cycle Start Date	Cycle End Date	Cycle Duration	Total Cycle	Cycle No	Height/Weight/BSA	Remarks	Prescription Status	Selection	Ordered By	Approved By(Future Order)			
	CDRON00176	Cisplatin 75mg/m2 + Docetaxel 75mg/m2	17/10/2019	06/11/2019	21 Days	6	1	170cm/70kg/1.82m <sup>2</sup>		ORDERED	<input type="checkbox"/>	System Administrator				
	CDRON00006	Carboplatin + 5FU + FA	19/10/2019	08/11/2019	21 Days	6	1	170cm/70kg/1.82m <sup>2</sup>		ORDERED (Future Order)	<input checked="" type="checkbox"/>	System Administrator				

**Figure 3.1-20 CDR Cycle History**

- Doctor/Pharmacist will approve a future order by clicking on the **Approve Future Order** button.
- If the future order is without approval, Pharmacist will not allow any transaction.
- For Carboplatin use AUC calculator instead of BSA. Example of AUC calculator click [Carboplatin AUC calculator](#)
- Pop up will appear to confirm Approve Future order as per Figure 3.1-21
- Click  button to print CDR Cycle History as shown in Figure 3.1-22



**Figure 3.1-21 Confirmation Order**



**Ministry of Health, Malaysia**  
**Hospital Pakar Sultanah Fatimah, Muar**  
**Cytotoxic Drug Reconstitution : Cycle History**

Patient Name : ██████████ Patient ID : ██████████  
 Age / Gender : 36 Y 6 M 21 / Male MRN : HPSF00034883

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
CDRON00176	Cisplatin 75mg/m <sup>2</sup> + Docetaxel 75mg/m <sup>2</sup>	Cisplatin	136.5 mg	OD (once daily)	INF	1		ORDERED	17/10/2019 - 06/11/2019 ( 21 Days )	6	1		170cm/70kg /1.82m <sup>2</sup>	██████████	██████████
		Docetaxel	136.5 mg	OD (once daily)	INF	1		ORDERED							
CDRON00006	Carboplatin + 5FU + FA	Carboplatin	546 mg	OD (once daily)	INF	2		ORDERED	19/10/2019 - 08/11/2019 ( 21 Days )	6	1		170cm/70kg /1.82m <sup>2</sup>	██████████	██████████
		Fluorouracil	910 mg	OD (once daily)	INF	1,2		ORDERED							
		Fluorouracil	910 mg	OD (once daily)	IVSB	1,2		ORDERED							
		Calcium Folate (Leucovorin calcium)	364 mg	BD (twice daily)	IVSB	1,2		ORDERED							

Printed Date : 17/10/2019  
 Printed By : ██████████  
 Source : PhIS

**Figure 3.1-22 CDR Cycle History**

### Carboplatin AUC Calculator

Figure 3.1-23 CDR Order

#### STEP 10

Search and select **Regimen Code**

#### STEP 11

Enter **Cycle No**

#### Note

System will display the Regimen details in the prescription section as Figure 3.1-24

PRESCRIPTION							Oral/Others Drugs		Injectable Drugs	
Seq No.	Drug/Diluent Name	Order Details	Total Dose	Dose Qty	Order Qty	Drug Info	Active Ingredient			
	Carboplatin 450mg/45ml Injection	70 mg/m <sup>2</sup> , OD (once daily), Day: 1,2,3,4	127.4 mg	12.74 ml	4 vial	<i>i</i>				
	Dextrose 5% 500ml IV soln	Schedule		487.26 ml	4 bott	<i>i</i>				
	Fluorouracil 1g/20ml Injection	600 mg/m <sup>2</sup> , OD (once daily), Day: 2,3,4	1092 mg	21.84 ml	8 vial	<i>i</i>				
	Sodium Chloride 0.9% 500ml soln	Schedule		1000 ml	8 bott	<i>i</i>				

Update	
Dosage	
Total Dose	AUC Calculator
Admin Route	
Frequency	
Chemo Day	
Drug Indication	

Figure 3.1-24 CDR Regimen Prescription

#### STEP 12

Double click on the row of the prescription to view the drug details as Figure 3.1-25

PRESCRIPTION							
Seq No.	Drug/Diluent Name	Order Details	Total Dose	Dose Qty	Order Qty	Drug Info	
	Carboplatin 450mg/45ml Injection	70 mg/m <sup>2</sup> , OD (once daily), Day: 1,2,3,4	127.4 mg	12.74 ml	4 vial		
	Dextrose 5% 500ml IV soln	<span style="color: red;">Schedule</span>		487.26 ml	4 bott		
	Fluorouracil 1g/20ml Injection	600 mg/m <sup>2</sup> , OD (once daily), Day: 1,2,3,4	1092 mg	21.84 ml	8 vial		
	Sodium Chloride 0.9% 500mL IV soln	<span style="color: red;">Schedule</span>		1000 ml	8 bott		

Oral/Others Drugs	Injectable Drugs
Active Ingredient	Carboplatin <span style="float: right;">Update</span>
Dosage	70 mg /m <sup>2</sup>
Total Dose	127.4 mg <span style="float: right;">AUC Calculator</span>
Admin Route	Intravenous Infusion <span style="float: right; color: red; font-weight: bold;">13</span>
Frequency	OD (once daily)
Chemo Day	1,2,3,4
Drug Indication	
Infuse Over	1 (Hour) : 0 (Minute)
Diluent	Dextrose 5% 500ml IV soln
Diluent Volume	487.26 ml
Total Volume	500 ml
Infusion Rate	8.33 ml/Min
Dispense Location	FARMASI REKONSTITUSI UBAT SITOTOKSIK
Remarks	

**Figure 3.1-25 CDR Regimen Drug Details**

### STEP 13

Click on the **AUC Calculator** hyperlink and AUC Calculator window will be display as Figure 3.1-26

**AUC CALCULATOR** X

**Estimated** 14
     
  24 hours based

Serum Creatinine  micromol/L      Gender Factor

---

$\{ [ ( 140 - 36 \text{ Years} ) \times 70 \text{ Kg} ] / 125 \text{ micromol/L} \} \times 1.23$

---

( CrCl  ml/min + 25 )      X AUC No. 15

Total Dose =  mg

References : Calvert Formula

**Figure 3.1-26 Estimated AUC Calculator**

### STEP 14

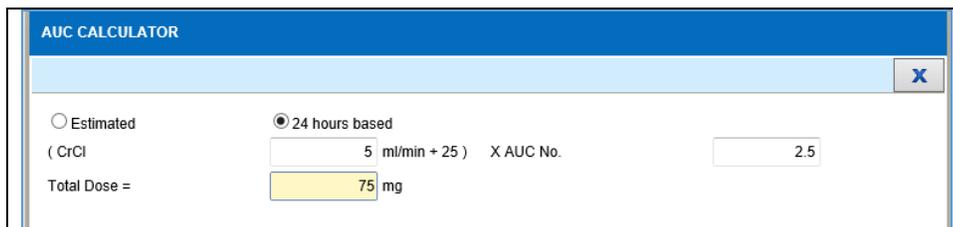
Options of 'Estimated' or '24 hour based'. Default to 'Estimated'. When 'Estimated' selected and patient gender = Male, 'Gender Factor'= 1.23. When patient gender = Female, gender factor = 1.04

### STEP 15

Key in **AUC No** value manually. User is allowed to enter any numeric value of maximum 1 decimal only.

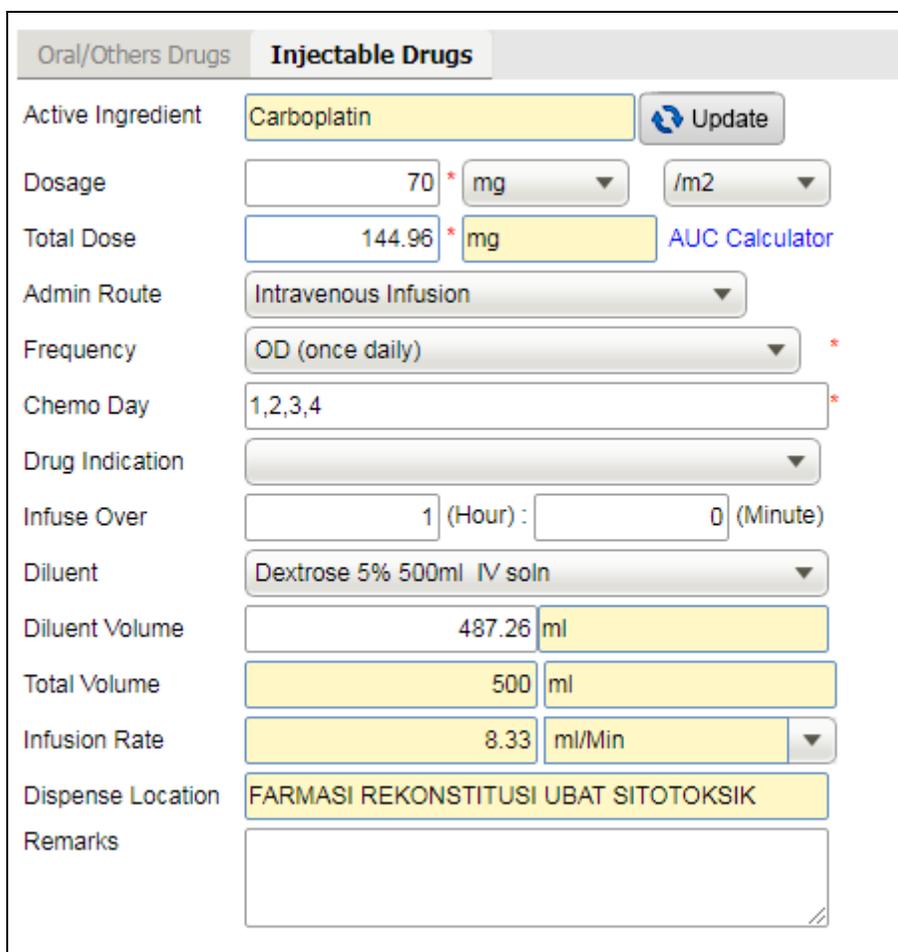
**Note**

- System will automatically update the new **Total Dose** based on the input in STEP 14 and STEP 15.
- Once '24 hour based' selected, to display screen as Figure 3.1-27.



**Figure 3.1-27 24 hours based AUC Calculator**

- User need to enter CrCl value manually instead of calculated by system.
- The updated **Total Dose** will be update on the Order Screen as Figure 3.1-28.



**Figure 3.1-28 Updated AUC Calculator**

### 3.2 Manage Prescription

Prescriber is allowed to manage the order made after they confirm the order.

#### 3.2.1 Modify Order

Prescriber is allowed to modify the prescription if the **Order Status** is ORDERED.

Figure 3.2.1-1 Manage Prescription Listing Page

#### STEP 1

Click on the 'Order Management' menu followed by 'Manage Prescription' sub menu

#### Note

Search patient record based :-

No	Field	Description	Remark
a	MRN	Patient Medical Record Number	Search option: <ul style="list-style-type: none"> <li>Scan the MRN using barcode scanner.</li> <li>Type the MRN either in fully or partially.  <i>Example: HPSF00001234 or "1234"</i> </li> </ul>
b	Order Date	Order date	Allow to search by ordered date
c	Order Status	According to Order in which stage	Able to filter by order status
d	Location	Patient visit location	Able to filter and search patient name by visit location
e	Patient Name	Patient Name	Allow to search by patient name –in fully or partially
f	IC No/Other Identification	Patient IC No/Other Identification	Allow to search by patient IC No/Other Identification
g	Order Type	Search patient by: <ul style="list-style-type: none"> <li>Normal</li> <li>CDR</li> <li>IV</li> <li>PN</li> <li>Radiopharmaceuticals</li> </ul>	Allow to search by order type
h	Drug Name	Drug Name	Allow to search by fully or partially entered drug name

Table 3.2.1-1

#### STEP 2

Click on the  button to search for patient

**Note**

- List of Patients will display as in Figure 3.2.1-1
- Search results of patient record list will display:
  - MRN
  - Patient Name
  - Order Date
  - Order Type
  - Order Status
  - Drug Name
  - Location
  - IC No/Other Identification

**STEP 3**

Click on  button to view list of all prescription

MRN	Patient Name	IC No/Other Identification				
HPSF00034883						
Rx Number		Actual Visit Date				
WRD8800001817803		31/05/2019				
		Visit Details				
		0249, Inpatient, WAD 4 (SURG - L)				
Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
 Docetaxel 80mg Injection	136.5 mg	18/10/2019	18/10/2019	2 vial	ORDERED	System Administrator
 Prednisolone 5 mg Tablet	5 mg, 5 mg	18/10/2019	07/11/2019	42 tablet	ORDERED	System Administrator
<div style="border: 1px solid black; padding: 2px;">           Modify            Hold 00            Cancel         </div>						
Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
 Carboplatin 450mg/45ml Injection	127.4 mg	18/10/2019	21/10/2019	4 vial	ORDERED	System Administrator
 Fluorouracil 1g/20ml Injection	1092 mg	18/10/2019	21/10/2019	8 vial	ORDERED	System Administrator
WRD8800001817798		31/05/2019		0249, Inpatient, WAD 4 (SURG - L)		
WRD8800001817794		31/05/2019		0249, Inpatient, WAD 4 (SURG - L)		

**Figure 3.2.1-2 Manage Order – Modify**

**STEP 4**

Click on  button to view selected patient's prescription

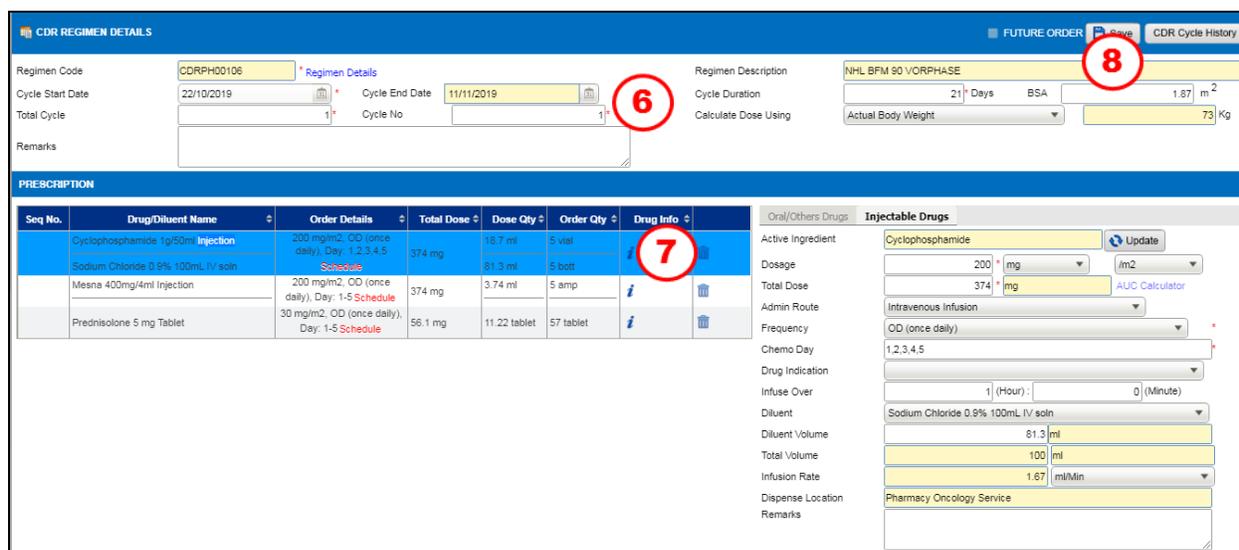
**STEP 5**

Right click on the  button and select **Modify** function

**Note**

Modify CDR Order screen will be displayed as shown in Figure 3.2.1-3 and consist of two (2) sections which are:

- CDR Regimen Details section
- Prescription section : Regimen Drug Details



**CDR REGIMEN DETAILS**

Regimen Code: CDRPH00106 \* Regimen Details

Cycle Start Date: 22/10/2019 \* Cycle End Date: 11/11/2019 (6)

Total Cycle: 1 \* Cycle No: 1 \* (6)

Remarks:

Regimen Description: NHL BFM 90 VORPHASE (8)

Cycle Duration: 21 Days BSA: 1.87 m<sup>2</sup>

Calculate Dose Using: Actual Body Weight 73 Kg

---

**PRESCRIPTION**

Seq No.	Drug/Diluent Name	Order Details	Total Dose	Dose Qty	Order Qty	Drug Info
	Cyclophosphamide 1g/50ml Injection	200 mg/m <sup>2</sup> , OD (once daily), Day: 1-2,3,4-5 Schedule	374 mg	18.7 ml	5 vial	(7)
	Sodium Chloride 0.9% 100mL IV soln			81.3 ml	5 bott	
	Mesna 400mg/4ml Injection	200 mg/m <sup>2</sup> , OD (once daily), Day: 1-5 Schedule	374 mg	3.74 ml	5 amp	
	Prednisolone 5 mg Tablet	30 mg/m <sup>2</sup> , OD (once daily), Day: 1-5 Schedule	56.1 mg	11.22 tablet	57 tablet	

**Injectable Drugs**

Active Ingredient: Cyclophosphamide (Update)

Dosage: 200 mg (m2)

Total Dose: 374 mg (AUC Calculator)

Admin Route: Intravenous Infusion

Frequency: OD (once daily)

Chemo Day: 1,2,3,4,5

Drug Indication:

Infuse Over: 1 (Hour) : 0 (Minute)

Diluent: Sodium Chloride 0.9% 100mL IV soln

Diluent Volume: 81.3 ml

Total Volume: 100 ml

Infusion Rate: 1.67 ml/Min

Dispense Location: Pharmacy Oncology Service

Remarks:

Figure 3.2.1-3 Modify CDR Order

### STEP 6

Information under CDR Regimen Details section which user can modify:

- Cycle Start Date
- Total Cycle
- Cycle No
- Cycle Duration
- BSA
- Calculate Dose Using
- Remarks
- Infusion Rate UOM

### STEP 7

Information under Prescription section: Regimen Drug Details which user can modify:

- Dosage
- Total Dose
- Frequency
- Chemo Day
- Admin Route
- Drug Indication
- Infuse Over
- Diluent
- Diluent volume
- Remarks

### STEP 8

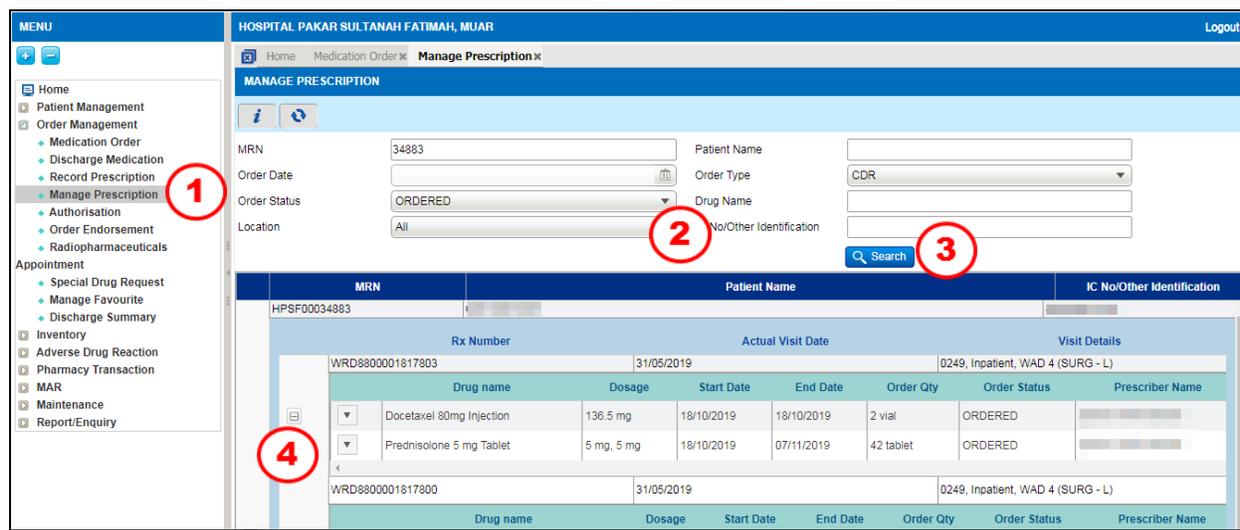
Click on the  button to save the modified record

### 3.2.2 Hold/Resume Order

Prescriber is allowed to hold medication order from being administered or dispense to the patient and may resume the hold order to continue the medication order.

**Note**

Repeat **Step 1 to Step 3** section 3.2.1 Modify Order to proceed with Hold/Resume order.



The screenshot shows the 'MANAGE PRESCRIPTION' interface. Callout 1 points to the 'Manage Prescription' menu item. Callout 2 points to the 'Order Status' dropdown menu. Callout 3 points to the 'Search' button. Callout 4 points to the '+' button next to a medication row in the table.

MRN	Patient Name	IC No/Other Identification
HPSF00034883		

Rx Number	Actual Visit Date	Visit Details
WRD8800001817803	31/05/2019	0249, Inpatient, WAD 4 (SURG - L)

Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
Docetaxel 80mg Injection	136.5 mg	18/10/2019	18/10/2019	2 vial	ORDERED	
Prednisolone 5 mg Tablet	5 mg, 5 mg	18/10/2019	07/11/2019	42 tablet	ORDERED	

MRN	Patient Name	IC No/Other Identification
WRD8800001817800		0249, Inpatient, WAD 4 (SURG - L)

Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name

Figure 3.2.2-1 Manage Order – Hold

Hold/Resume order function in manage order module is for prescriber to hold or resume an order from dispensing

**STEP 1**

Click on 'Order Management' module and click on 'Manage Prescription' submodule

**STEP 2**

Search patient's record either by:

- MRN
- Patient Name
- IC no/other identification
- Order Date
- Order Type
- Order Status
- Drug Name
- Location

**Note**

User need to select order type as 'CDR' to search CDR order record.

**STEP 3**

Click on the  to search patient's record

**STEP 4**

Click on the  button to display order detail

MRN	Patient Name	IC No/Other Identification				
HPSF00034883						
Rx Number		Actual Visit Date				
WRD8800001817803		31/05/2019				
		Visit Details				
		0249, Inpatient, WAD 4 (SURG - L)				
Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
Docetaxel 80mg Injection	136.5 mg	18/10/2019	18/10/2019	2 vial	ORDERED	System Administrator
Prednisolone 5 mg Tablet	5 mg, 5 mg	18/10/2019	07/11/2019	42 tablet	ORDERED	System Administrator
WF		31/05/2019	0249, Inpatient, WAD 4 (SURG - L)			
Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
Carboplatin 450mg/45ml Injection	127.4 mg	18/10/2019	21/10/2019	4 vial	ORDERED	System Administrator
Fluorouracil 1a/20ml Injection	1092 mg	18/10/2019	21/10/2019	8 vial	ORDERED	System Administrator
WRD8800001817798	31/05/2019	0249, Inpatient, WAD 4 (SURG - L)				
WRD8800001817794	31/05/2019	0249, Inpatient, WAD 4 (SURG - L)				

Figure 3.2.2-2 Manage Prescription Screen

**STEP 5**

Right click on the  content menu and select Hold function to hold the order

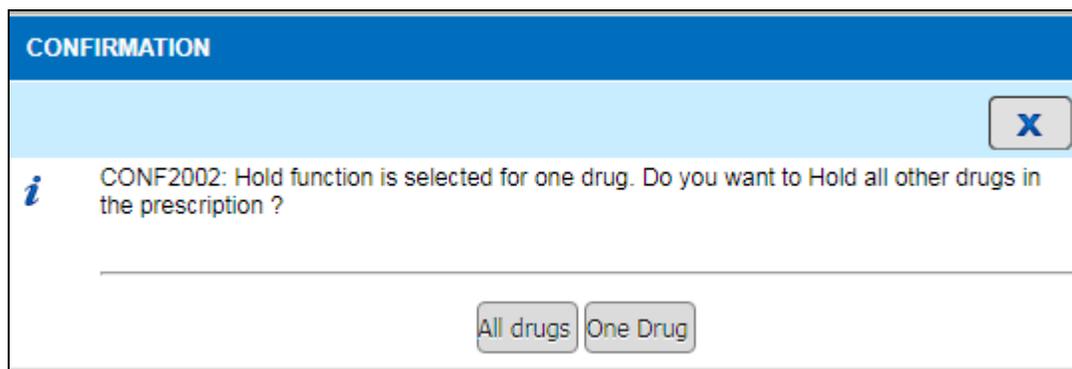
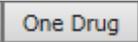


Figure 3.2.2-3 Alert Message

**Note**

- Alert Message will be displayed after selecting **Hold** as figure 3.2.2-3
- Click on the  button to hold all other drugs in the prescription.
- Click on  the button to hold only the selected drugs in the prescription.
- Order Status will change to 'Ordered Hold' as shown in Figure 3.2.2-4.

MRN	Patient Name	IC No/Other Identification				
HPSF00034883						
Rx Number	Actual Visit Date	Visit Details				
WRD8800001817803	31/05/2019	0249, Inpatient, WAD 4 (SURG - L)				
Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
Docetaxel 80mg Injection	136.5 mg	18/10/2019	18/10/2019	2 vial	ORDERED	System Administrator
Prednisolone 5 mg Tablet	5 mg, 5 mg	18/10/2019	07/11/2019	42 tablet	ORDERED HOLD	System Administrator
Resume						
WRD8800001817800	31/05/2019	0249, Inpatient, WAD 4 (SURG - L)				
Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
Carboplatin 450mg/45ml Injection	127.4 mg	18/10/2019	21/10/2019	4 vial	ORDERED	System Administrator
Fluorouracil 1g/20ml Injection	1092 mg	18/10/2019	21/10/2019	8 vial	ORDERED	System Administrator
WRD8800001817798	31/05/2019	0249, Inpatient, WAD 4 (SURG - L)				
WRD8800001817794	31/05/2019	0249, Inpatient, WAD 4 (SURG - L)				

Figure 3.2.2-4 Manage Order – Hold

### Resume CDR Order

- Right click on the  button and select **Resume** as shown in Figure 3.2.2-4
- Alert Message will be displayed after selecting **Resume**

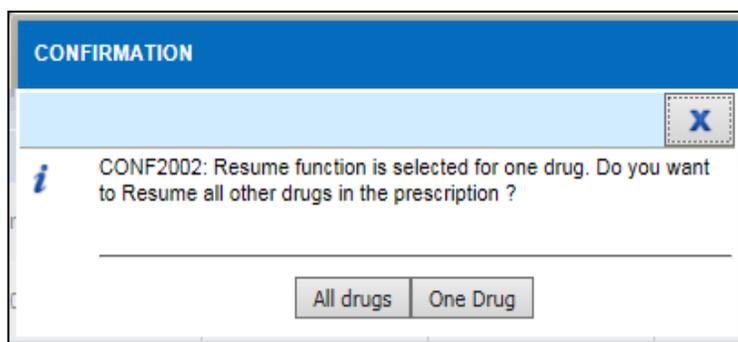
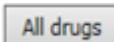


Figure 3.2.2-5 Alert Message

### Note

- Click on the  button to resume all other drugs in the prescription.
- Click on the  button to resume only the selected drugs in the prescription.
- Order Status will change to 'Ordered'.

### 3.2.3 Cancel/Stop Order

Prescriber is allowed to cancel or stop prescribed medication order from being administered or dispensed.

MRN	Patient Name		IC No/Other Identification			
HPSF00034883						
Rx Number		Actual Visit Date		Visit Details		
WRD8800001817803		31/05/2019		0249, Inpatient, WAD 4 (SURG - L)		
Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
Docetaxel 80mg Injection	136.5 mg	18/10/2019	18/10/2019	2 vial	ORDERED	System Administrator
Prednisolone 5 mg Tablet	5 mg, 5 mg	18/10/2019	07/11/2019	42 tablet	ORDERED	System Administrator
WF Hold 00		31/05/2019		0249, Inpatient, WAD 4 (SURG - L)		
Drug name	Dosage	Start Date	End Date	Order Qty	Order Status	Prescriber Name
Carboplatin 450mg/45ml Injection	127.4 mg	18/10/2019	21/10/2019	4 vial	ORDERED	System Administrator
Fluorouracil 1g/20ml Injection	1092 mg	18/10/2019	21/10/2019	8 vial	ORDERED	System Administrator
WRD8800001817798		31/05/2019		0249, Inpatient, WAD 4 (SURG - L)		
WRD8800001817794		31/05/2019		0249, Inpatient, WAD 4 (SURG - L)		

Figure 3.2.3-1 Manage Order – Cancel

**Note**

Repeat **Step 1 to Step 3** section 3.2.1 Modify Order to proceed with Cancel/Stop order.

**Cancel CDR Order**

- Right click on the button and select **Cancel** as shown in Figure 3.2.3-1
- Alert Message will be displayed after selecting **Cancel**

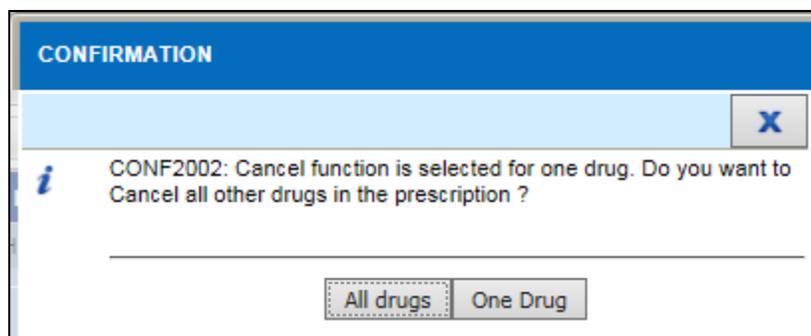


Figure 3.2.3-2 Alert Message

**Note**

- Click on the button to cancel all other drugs in the prescription.
- Click on the button to cancel only the selected drugs in the prescription.
- After is clicked, user is required to fill **Cancel Reason** as shown in figure 3.2.3-3.
- Click on the button to save the CDR Drug cancellation.
- If prescriber found that prescription is required to be cancelled due to patient allergies, prescriber is allowed to click

on the **Patient Allergies** button to record the allergies.



Figure 3.2.3-3 Cancel Reason

### Stop CDR Order

#### Note

- Only orders with Status “Partially Dispense” can be used to stopped.
  - Right click on the  button and select **Stop**
  - Alert Message will be displayed after selecting **Stop**

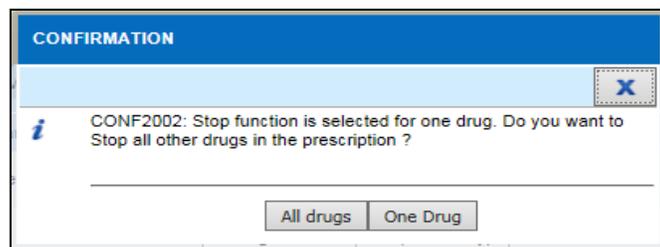


Figure 3.2.3-4 Alert Message

Click **All drugs** to stop all drug at current perscription or **One Drug** to stop only selected drug

### 3.2.4 Renew Rx

Prescriber is allowed to renew medication order

**Note**

Repeat **Step 1 to Step 5** section 3.1 CDR Order to proceed with renew Rx

Figure 3.2.4-1 CDR Regimen

**STEP 1**

Click at the button

**Note**

System will appear screen as shown in Figure 3.2.4-2

CDR CYCLE HISTORY													
Regimen Code	Regimen Name	Cycle Start Date	Cycle End Date	Cycle Duration	Total Cycle	Cycle No	Height/Weight/BSA	Remarks	Prescription Status	Selection	Ordered By	Approved By (Future Order)	
CDRON00071	FOLFOLX (85/200/400/800)	04/09/2019	17/09/2019	14 Days	12	1	173cm/73kg/1.87m <sup>2</sup>	-	ORDER WAS DISCONTINUED	<input type="checkbox"/>			
CDRPH00108	NHL_BFM 90 VORPHASE	22/10/2019	11/11/2019	21 Days	1	1	173cm/73kg/1.87m <sup>2</sup>		ORDERED	<input type="checkbox"/>			

Figure 3.2.4-2 CDR Cycle History

**STEP 2**

Click at the  selection and click to Renew Rx

CDR CYCLE HISTORY																																																
Regimen Code	Regimen Name	Cycle Start Date	Cycle End Date	Cycle Duration	Total Cycle	Cycle No	Height/Weight/BSA	Remarks	Prescription Status	Selection	Ordered By	Approved By (Future Order)																																				
CDRON00071	FOLFOLX (85/200/400/800)	04/09/2019	17/09/2019	14 Days	12	1	173cm/73kg/1.87m <sup>2</sup>	-	ORDER WAS DISCONTINUED	<input checked="" type="checkbox"/>	System PhIS																																					
<table border="1"> <thead> <tr> <th>Drug Name</th> <th>Dose</th> <th>Frequency</th> <th>Route</th> <th>Chemo Day</th> <th>Drug Remarks</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>Fluorouracil 1g/20ml Injection</td> <td>748 mg Schedule</td> <td>OD (once daily)</td> <td>Intravenous Slow Bolus</td> <td>Day : 1,2</td> <td></td> <td>DISCONTINUED</td> </tr> <tr> <td>Fluorouracil 1g/20ml Injection</td> <td>1122 mg Schedule</td> <td>OD (once daily)</td> <td>Intravenous Infusion</td> <td>Day : 1,2</td> <td></td> <td>DISCONTINUED</td> </tr> <tr> <td>Leucovorin Calcium 50mg/5ml Injection (Folinic acid)</td> <td>374 mg Schedule</td> <td>OD (once daily)</td> <td>Intravenous Infusion</td> <td>Day : 1,2</td> <td></td> <td>DISCONTINUED</td> </tr> <tr> <td>Oxaliplatin 50mg/10ml Injection</td> <td>158.95 mg Schedule</td> <td>OD (once daily)</td> <td>Intravenous Infusion</td> <td>Day : 1</td> <td></td> <td>DISCONTINUED</td> </tr> </tbody> </table>														Drug Name	Dose	Frequency	Route	Chemo Day	Drug Remarks	Status	Fluorouracil 1g/20ml Injection	748 mg Schedule	OD (once daily)	Intravenous Slow Bolus	Day : 1,2		DISCONTINUED	Fluorouracil 1g/20ml Injection	1122 mg Schedule	OD (once daily)	Intravenous Infusion	Day : 1,2		DISCONTINUED	Leucovorin Calcium 50mg/5ml Injection (Folinic acid)	374 mg Schedule	OD (once daily)	Intravenous Infusion	Day : 1,2		DISCONTINUED	Oxaliplatin 50mg/10ml Injection	158.95 mg Schedule	OD (once daily)	Intravenous Infusion	Day : 1		DISCONTINUED
Drug Name	Dose	Frequency	Route	Chemo Day	Drug Remarks	Status																																										
Fluorouracil 1g/20ml Injection	748 mg Schedule	OD (once daily)	Intravenous Slow Bolus	Day : 1,2		DISCONTINUED																																										
Fluorouracil 1g/20ml Injection	1122 mg Schedule	OD (once daily)	Intravenous Infusion	Day : 1,2		DISCONTINUED																																										
Leucovorin Calcium 50mg/5ml Injection (Folinic acid)	374 mg Schedule	OD (once daily)	Intravenous Infusion	Day : 1,2		DISCONTINUED																																										
Oxaliplatin 50mg/10ml Injection	158.95 mg Schedule	OD (once daily)	Intravenous Infusion	Day : 1		DISCONTINUED																																										
CDRPH00108	NHL_BFM 90 VORPHASE	22/10/2019	11/11/2019	21 Days	1	1	173cm/73kg/1.87m <sup>2</sup>		ORDERED	<input type="checkbox"/>	System PhIS																																					

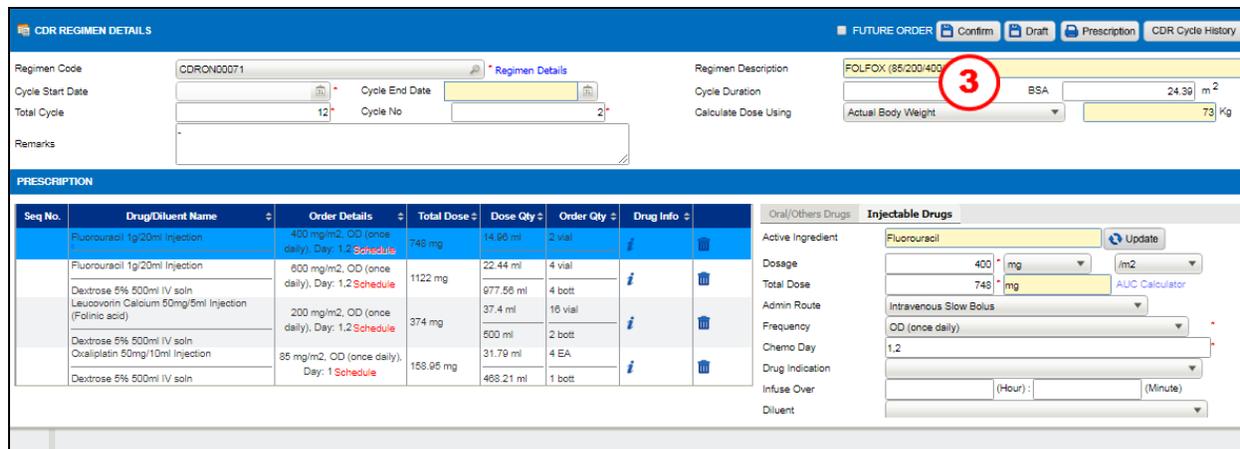
Figure 3.2.4-3 CDR Cycle History

**Note**

Fill in the CDR Regimen details and prescription details

**STEP 3**

Click  button to confirm renew Rx order



Seq No.	Drug/Diluent Name	Order Details	Total Dose	Dose Qty	Order Qty	Drug Info
	Fluorouracil 1g/20ml Injection	400 mg/m <sup>2</sup> , OD (once daily), Day: 1.2 Schedule	748 mg	14.95 ml	2 vial	
	Fluorouracil 1g/20ml Injection	600 mg/m <sup>2</sup> , OD (once daily), Day: 1.2 Schedule	1122 mg	22.44 ml	4 vial	
	Dextrose 5% 500ml IV soln			977.55 ml	4 bott	
	Leucovorin Calcium 50mg/5ml Injection (Folinic acid)	200 mg/m <sup>2</sup> , OD (once daily), Day: 1.2 Schedule	374 mg	37.4 ml	16 vial	
	Dextrose 5% 500ml IV soln			500 ml	2 bott	
	Oxaliplatin 50mg/10ml Injection	85 mg/m <sup>2</sup> , OD (once daily), Day: 1 Schedule	158.95 mg	31.79 ml	4 EA	
	Dextrose 5% 500ml IV soln			468.21 ml	1 bott	

Figure 3.2.4-4 CDR Regimen

**Note**

System will pop up alert to confirm order as shown in Figure 3.2.4-5

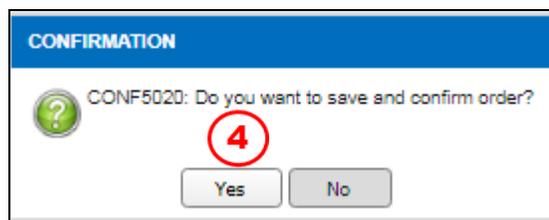


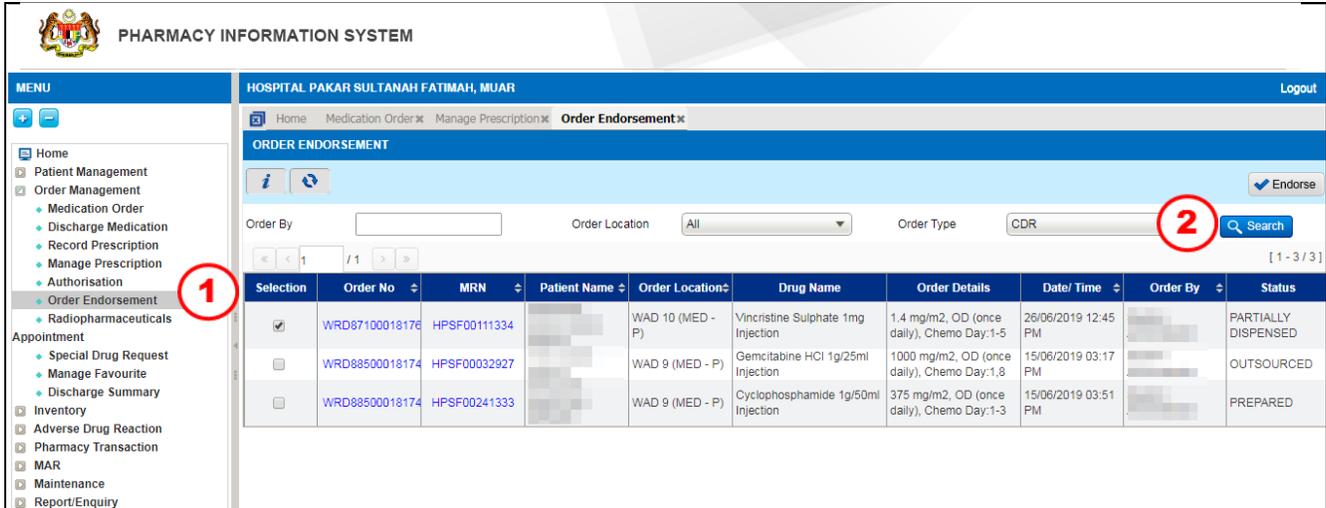
Figure 3.2.4-5 Alert Message

**STEP 4**

Click  button to save and confirm order

### 3.3 Order Endorsement

Order endorsement is to notify the prescriber on prescription changes made by pharmacist.



**PHARMACY INFORMATION SYSTEM**

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR Logout

Home Medication Order Manage Prescription **Order Endorsement**

**ORDER ENDORSEMENT**

Order By:  Order Location: All Order Type: CDR Endorse

Order By:  / 1 [ 1 - 3 / 3 ]

Selection	Order No	MRN	Patient Name	Order Location	Drug Name	Order Details	Date/ Time	Order By	Status
<input checked="" type="checkbox"/>	WRD87100018176	HPSF00111334	[REDACTED]	WAD 10 (MED - P)	Vincristine Sulphate 1mg Injection	1.4 mg/m2, OD (once daily), Chemo Day:1-5	26/06/2019 12:45 PM	[REDACTED]	PARTIALLY DISPENSED
<input type="checkbox"/>	WRD88500018174	HPSF00032927	[REDACTED]	WAD 9 (MED - P)	Gemcitabine HCl 1g/25ml Injection	1000 mg/m2, OD (once daily), Chemo Day:1,8	15/06/2019 03:17 PM	[REDACTED]	OUTSOURCED
<input type="checkbox"/>	WRD88500018174	HPSF00241333	[REDACTED]	WAD 9 (MED - P)	Cyclophosphamide 1g/50ml Injection	375 mg/m2, OD (once daily), Chemo Day:1-3	15/06/2019 03:51 PM	[REDACTED]	PREPARED

Figure 3.3-1 Order Endorsement

**STEP 1**

Click on the 'Order Management' menu followed by 'Order Endorsement' sub menu

**Note**

Search patient records by below criteria: -

No	Field	Description	Remark
a	Order By	Prescriber Name	Allow to search by fully or partially entered prescriber name
b	Order Location	Patient visit location	Able to filter and search patient name by visit location
c	Order type	Search By: - Normal - CDR - IV - PN - Radiopharmaceuticals	Allow to search by order type

Table 3.3-1

**STEP 2**

Click on the  button to search for patient

**Note**

- Search result of patient record list will display:
  - Order Number
  - MRN
  - Patient Name
  - Order Location
  - Drug Name
  - Order Details
  - Date/Time
  - Order By
  - Status

**Note**

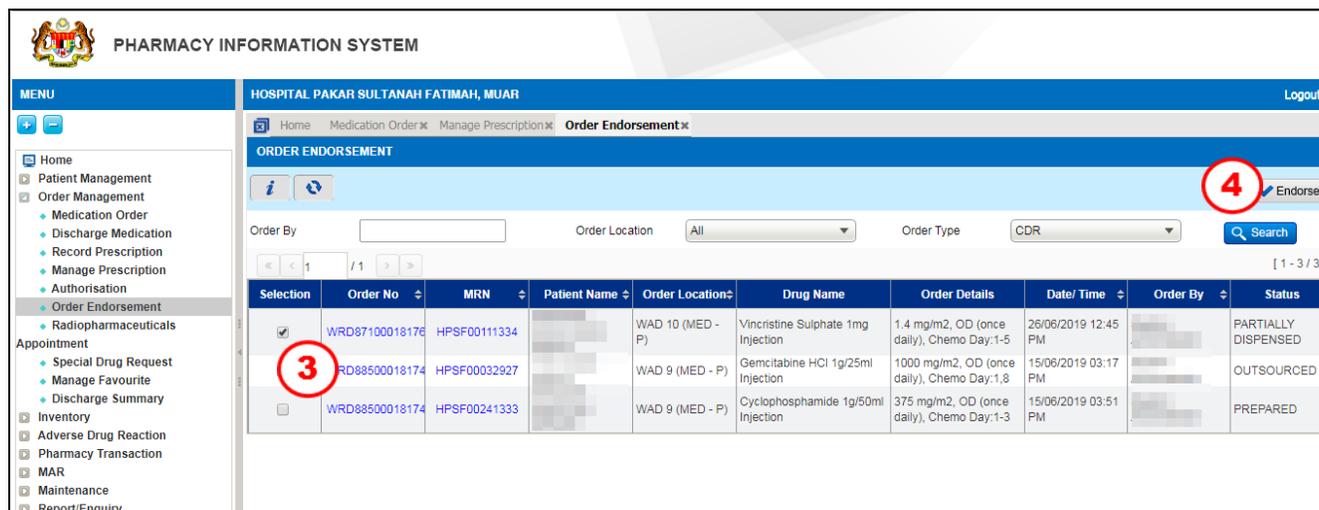
- Click on the **Order No** hyperlink to view Order Details as shown in Figure 3.3-2.
- Click on the **MRN** hyperlink to view patient Medication Profile as shown in Figure 3.3-3.

ORDER DETAILS											
<a href="#">X</a>											
REGIMEN DETAILS											
Ordered Cycle Start Date:	Modified Cycle Start Date:	Ordered Cycle End Date:	Modified Cycle End Date:								
26/06/2019	-	16/07/2019	-								
DRUG DETAILS											
Drug Name	Ordered Dose	Ordered Frequency	Ordered Infuse Over	Ordered Chemo Day	Ordered Route	Ordered Start Date	End Date	Status	Remarks	Ordered By	
Vincristine Sulphate 1mg Injection	2.23 mg	OD (once daily)	0 Hours 15 Minutes	Day: 1-5	Intravenous Bolus	26/06/2019	30/06/2019	PARTIALLY DISPENSED	Maximum dose: 2MG Run fast		
Drug Name	Modified Dose	Modified Frequency	Modified Infuse Over	Modified Chemo Day	Modified Route	Modified Start Date	End Date	Status	Remarks	Modified By	
Vincristine Sulphate 1mg Injection	-	-	-	-	-	-	30/06/2019	PARTIALLY DISPENSED	Maximum dose: 2MG Run fast		
DOSE SCHEDULE											
Chemo Day	Ordered Date	Modified Date									
1	26/06/2019	-									
2	27/06/2019	-									
3	28/06/2019	-									
4	29/06/2019	-									
5	30/06/2019	-									

**Figure 3.3-2 Order Details**

Administration Dispensing <a href="#">X</a>											
	Mykad	Age 59 Years 08 Months 20 Days	Gender Female	MRN HPSF00241333							
Address	Phone And Email	Diagnosis	No known Allergies								
Height 165 cm	Weight 56 kg	BMI/BSA 20.6 / 1.6 m <sup>2</sup>	(Last Updated : 15/06/2019)	Nationality : Warganegara							
Drug Name	Vincristine Sulphate 1mg Injection	Visit Type	All								
Prescription Date From		Prescription Date To									
Prescription Status	All	Location	All								
Prescription Number		<a href="#">Search</a>									
NORMAL MEDICATION											
CDR DRUG LIST											
<a href="#">CDR Cycle History</a>											
Current Medication											
Rx No.	Regimen Code	Dosage Form	Drug Name	Dose	Route	Frequency	Status	Order By	Prescribed Qty	Visit Type	
Previous Medication											
<input type="checkbox"/>	WRD8850001817472	CDRHE00057	Powder for IV Soln	Cyclophosphamide 1g/50ml Injection	600 mg	Intravenous Infusion	OD (once daily)	PREPARED	System Administrator	3 Inpatient	
<input type="checkbox"/>	WRD8850001817472	CDRHE00057	Parenteral Solution	Doxorubicin HCl 50mg/25ml Injection	40 mg	Intravenous Bolus	OD (once daily)	PREPARED	System Administrator	3 Inpatient	

**Figure 3.3-3 Medication Profile**



**PHARMACY INFORMATION SYSTEM**

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR Logout

Home Medication Order Manage Prescription **Order Endorsement**

**ORDER ENDORSEMENT**

Order By: [ ] Order Location: All Order Type: CDR Endorse

Selection	Order No	MRN	Patient Name	Order Location	Drug Name	Order Details	Date/Time	Order By	Status
<input checked="" type="checkbox"/>	WRD87100018176	HPSF00111334	[REDACTED]	WAD 10 (MED - P)	Vincristine Sulphate 1mg Injection	1.4 mg/m2, OD (once daily), Chemo Day:1-5	26/06/2019 12:45 PM	[REDACTED]	PARTIALLY DISPENSED
<input checked="" type="checkbox"/>	RD88500018174	HPSF00032927	[REDACTED]	WAD 9 (MED - P)	Gemcitabine HCl 1g/25ml Injection	1000 mg/m2, OD (once daily), Chemo Day:1.8	15/06/2019 03:17 PM	[REDACTED]	OUTSOURCED
<input type="checkbox"/>	WRD88500018174	HPSF00241333	[REDACTED]	WAD 9 (MED - P)	Cyclophosphamide 1g/50ml Injection	375 mg/m2, OD (once daily), Chemo Day:1-3	15/06/2019 03:51 PM	[REDACTED]	PREPARED

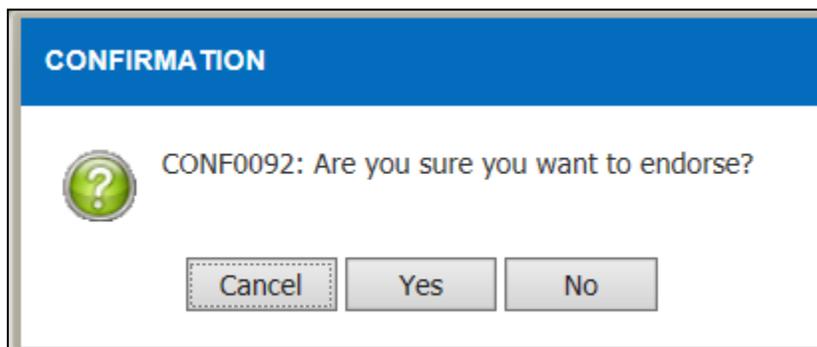
**Figure 3.3-4 Order Endorsement**

**STEP 3**

Click on the selected  Patient Name checkbox

**STEP 4**

Click on the  button to endorse the drug and alert message will be displayed as in Figure 3.3-5



**CONFIRMATION**

CONF0092: Are you sure you want to endorse?

**Figure 3.3-5 Alert Message**

**Note**

Click on the  button to confirm the endorsement.

Click on the  button to cancel the endorsement.

### 3.4 Authorisation

This function is used by specialist or authorised person to approve list A/ A\*/ A/KK drug that requires authorisation.

**PHARMACY INFORMATION SYSTEM**

**HOSPITAL** Logout

Home **Authorisation**

**AUTHORISATION**

Order By:  Patient Name:   
 Location: All  Drug Name:   
 Order Date From:  Order Date To:   
 HOD Authorisation: All

[ 1 - 10 / 3226 ]

Order ID	MRN	Patient Name	Location	Drug Name	Dose	Frequency	Duration	Ordered Date	Order By	Order Type	Diagnosis	Authorise
PSYC0000043817	HAWK00113212	DR. JIHET CHENG MING MING	CLINIC PSYCHIATRIC	Rivastigmine 3 mg Capsule	3 mg , 4.5 mg	BID	59 Days	10/11/2015	DR. JIHET CHENG MING MING	Normal	Diagnosis	<input type="checkbox"/>
PSY0000043536	HAWK00113212	DR. JIHET CHENG MING MING	WARD PSYCHIATRIC AND MENTAL HEALTH	Quetiapine Fumarate 100mg IR Tablet	50 mg , 100 mg	BID	8 Days	10/11/2015	DR. JIHET CHENG MING MING	Normal	Diagnosis	<input type="checkbox"/>
PSYC0000044618	HAWK00113212	DR. JIHET CHENG MING MING	CLINIC PSYCHIATRIC	Olanzapine 5 mg Tablet	5 mg	ON	86 Days	11/11/2015	DR. JIHET CHENG MING MING	Normal	Diagnosis	<input type="checkbox"/>

**Figure 3.4-1 Authorisation**

#### STEP 1

Click on the 'Order Management' menu and followed by 'Authorisation' sub menu

#### Note

Search patients record by below criteria:-

No	Field	Description	Remark
a	Order By	Prescriber Name	Allow to search by fully or partially entered prescriber name
b	Patient Name	Patient Name	Allow to search by fully or partially entered prescriber name
c	Location	Patient Visit Location	Able to filter and search patient by visit location and prescriber's location
d	Drug Name	Drug Name	Allow to search by fully or partially entered drug name
e	Order Date From	Order confirmed date	Allow to search by start date of order created
f	Order Date To	Order confirmed date	Allow to search by selected duration of order created

**Table 3.4-1**

#### STEP 2

Click on  button to search for patient

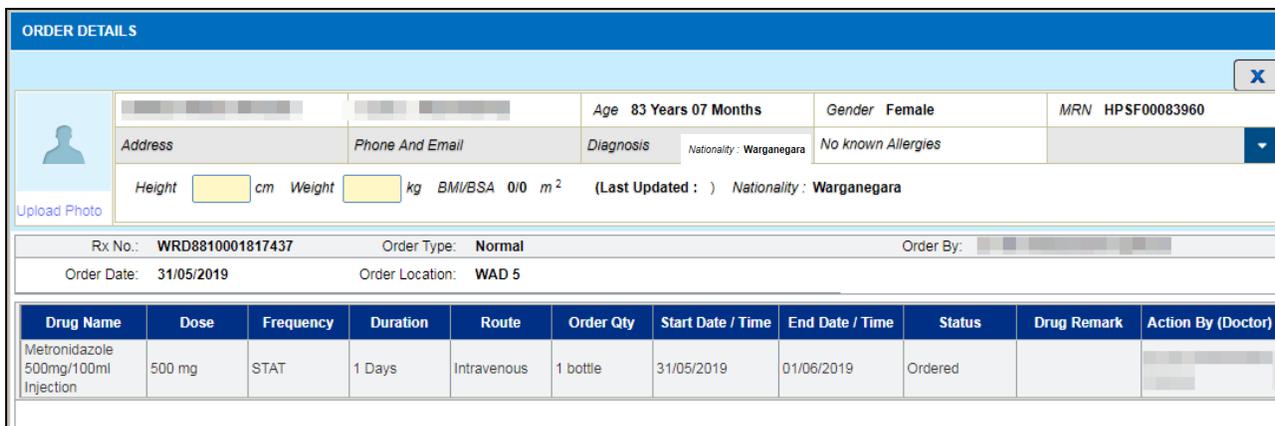
#### Note

- Search results of patient record list will display:
  - Order ID
  - MRN
  - Patient Name
  - Location
  - Drug Name
  - Dose

- Frequency
- Duration
- Ordered Date/Time
- Order By
- Order Type
- Authorise

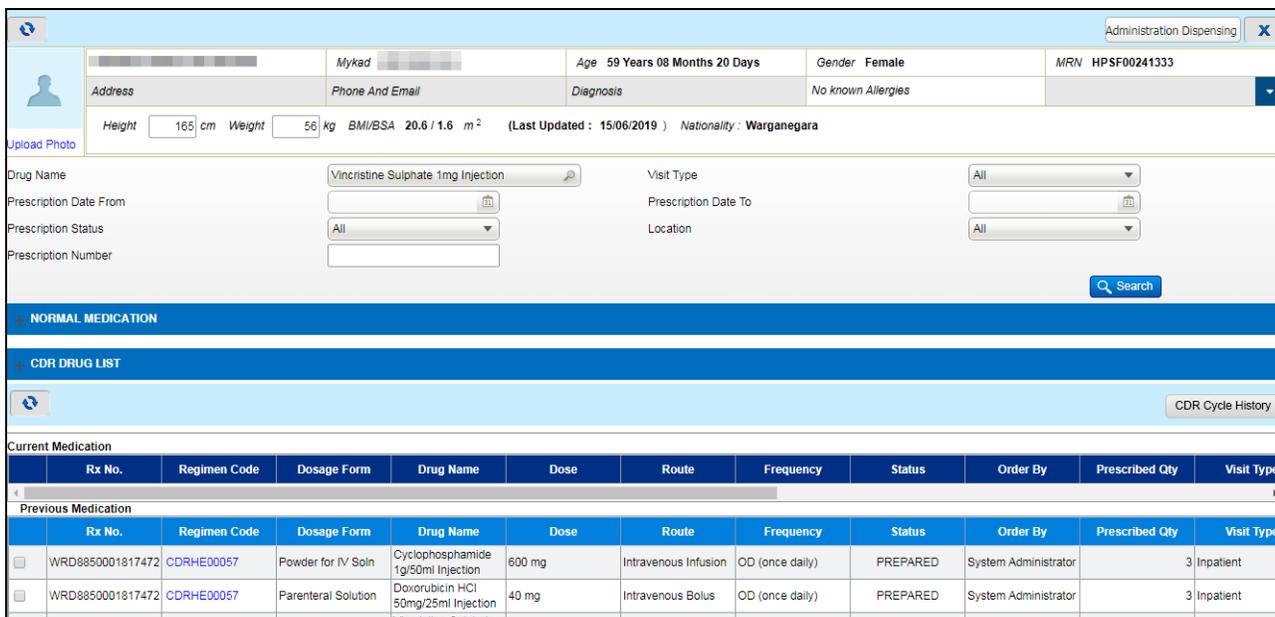
**Note**

- Click on the **Order ID** hyperlink to view Order Details as shown in Figure 3.4-2.
- Click on the **MRN** hyperlink to view patient Medication Profile as shown in Figure 3.4-3.



Drug Name	Dose	Frequency	Duration	Route	Order Qty	Start Date / Time	End Date / Time	Status	Drug Remark	Action By (Doctor)
Metronidazole 500mg/100ml Injection	500 mg	STAT	1 Days	Intravenous	1 bottle	31/05/2019	01/06/2019	Ordered		

Figure 3.4-2 Order Details



Current Medication	Rx No.	Regimen Code	Dosage Form	Drug Name	Dose	Route	Frequency	Status	Order By	Prescribed Qty	Visit Type
Previous Medication	WRD8850001817472	CDRHE00057	Powder for IV Soln	Cyclophosphamide 1g/50ml Injection	600 mg	Intravenous Infusion	OD (once daily)	PREPARED	System Administrator	3	Inpatient
	WRD8850001817472	CDRHE00057	Parenteral Solution	Doxorubicin HCl 50mg/25ml Injection	40 mg	Intravenous Bolus	OD (once daily)	PREPARED	System Administrator	3	Inpatient

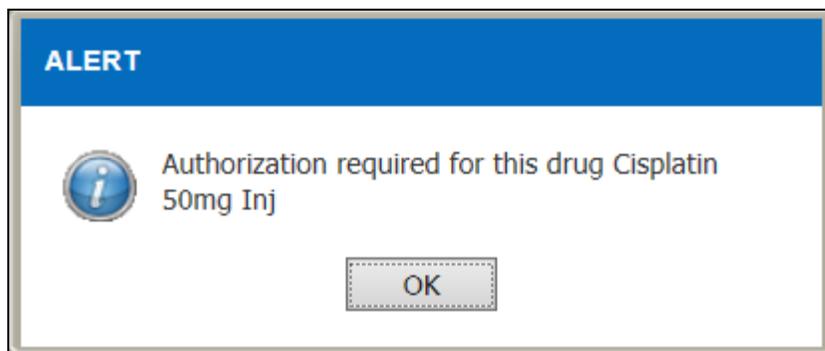
Figure 3.4-3 Medication Profile

**STEP 3**

Click on the selected  **Patient Name** checkbox

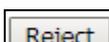
#### STEP4

Click on  button to authorise the drug and an alert message will be displayed as shown in Figure 3.4-4



**Figure 3.4-4 Alert Message**

#### Note

- Click on the  button to confirm the authorisation.
- Click on  button to reject the authorisation.

## 4.0 Acronyms

Abbreviation	Definition
PhIS	Pharmacy Information System
CPS	Clinical Pharmacy System
MOH	Ministry Of Health
HQ	Headquarters
CDR	Cytotoxic Drug Reconstitution

## 5.0 Links to Clinical Modules

No	Module	PDF Links	No	Module	PDF Links
1	<i>Inpatient</i>	<a href="#">Click Here</a>	12	<i>CDR Dispensing</i>	<a href="#">Click Here</a>
2	<i>CDR Order</i>	<a href="#">Click Here</a>	13	<i>Methadone Dispensing</i>	<a href="#">Click Here</a>
3	<i>TDM Order</i>	<a href="#">Click Here</a>	14	<i>PN Dispensing</i>	<a href="#">Click Here</a>
4	<i>PN Order</i>	<a href="#">Click Here</a>	15	<i>Order Management</i>	<a href="#">Click Here</a>
5	<i>IV Order</i>	<a href="#">Click Here</a>	16	<i>Patient Management</i>	<a href="#">Click Here</a>
6	<i>Prepacking</i>	<a href="#">Click Here</a>	17	<i>Radiopharmaceutical</i>	<a href="#">Click Here</a>
7	<i>Galenical</i>	<a href="#">Click Here</a>	18	<i>Outpatient</i>	<a href="#">Click Here</a>
8	<i>MTAC</i>	<a href="#">Click Here</a>	19	<i>Special Drug Request</i>	<a href="#">Click Here</a>
9	<i>ADR &amp; DAC</i>	<a href="#">Click Here</a>	20	<i>MAR</i>	<a href="#">Click Here</a>
10	<i>Medication Counselling</i>	<a href="#">Click Here</a>	21	<i>DICE</i>	<a href="#">Click Here</a>
11	<i>Ward Pharmacy</i>	<a href="#">Click Here</a>	22		