



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

---

**Full Based**

**User Manual**

**Order Management - Cytotoxic Drug Reconstitution  
(CDR)**

<b>Version</b>	<b>: 6<sup>th</sup> Edition</b>
<b>Document ID</b>	<b>: FB_U. MANUAL_OM CDR</b>



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



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Reference ID : FB\_U. MANUAL\_OM CDR-6<sup>th</sup> Edition

Application reference: PhIS & CPS v1.6.1



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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 Order
- Order Endorsement
- Order Authorisation

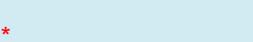
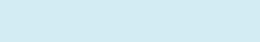
### 1.3 Organised Sections

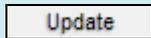
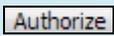
These are the sections within this document:

- 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		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 authorised 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

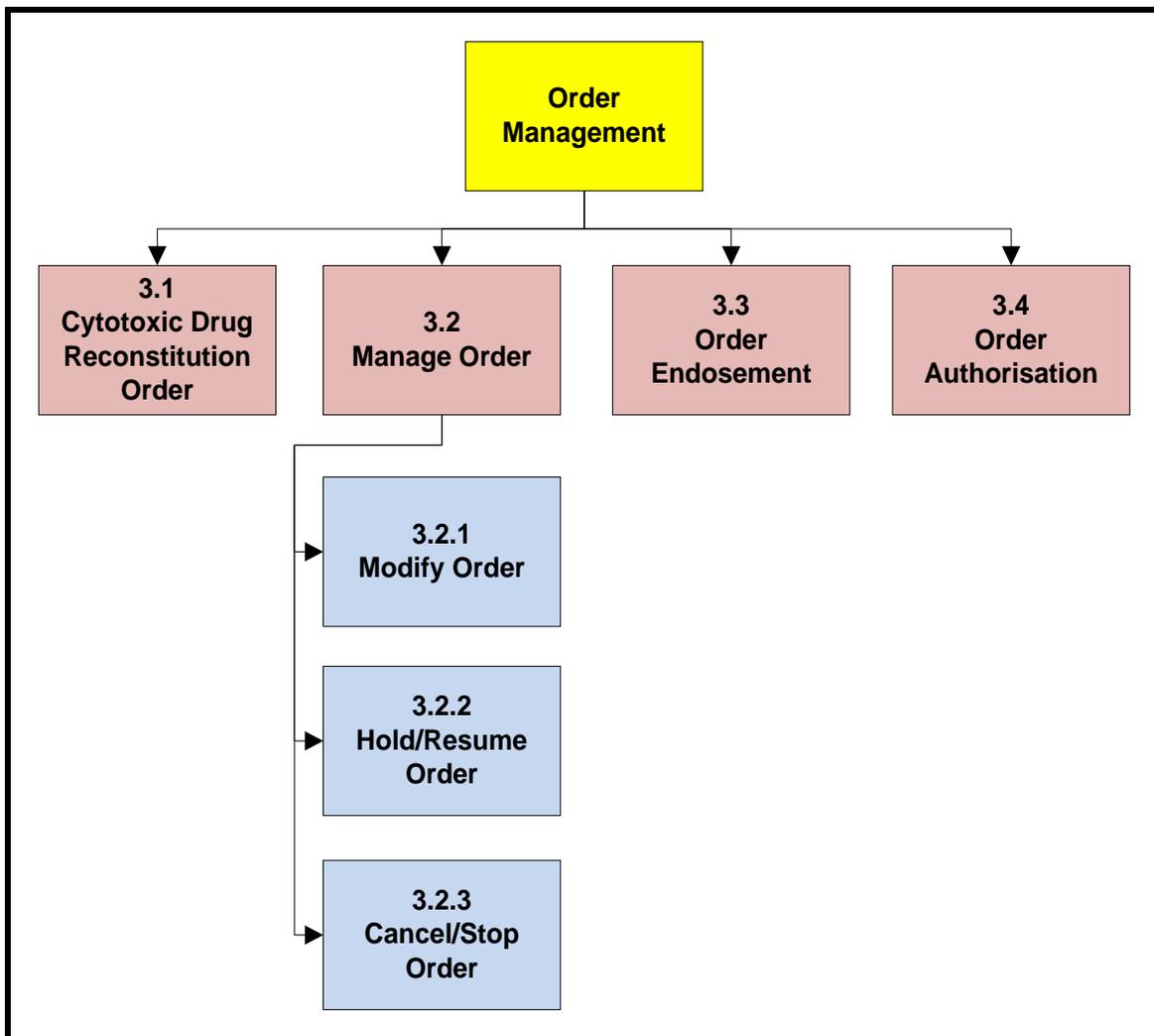


Figure 3.0



## 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 Order**  
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 authorisation

### 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.

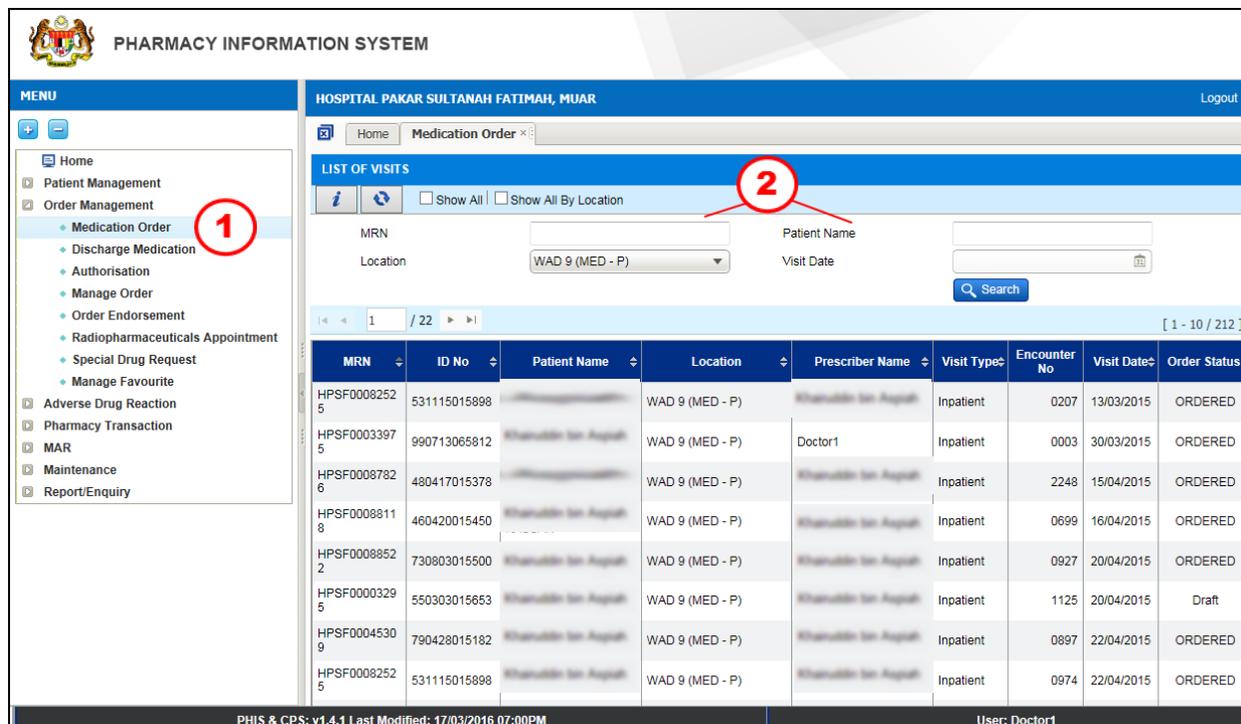


Figure 3.1-1 Medication Order Listing Page

#### STEP 1

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

#### STEP 2

Search patients record based on the fields below:

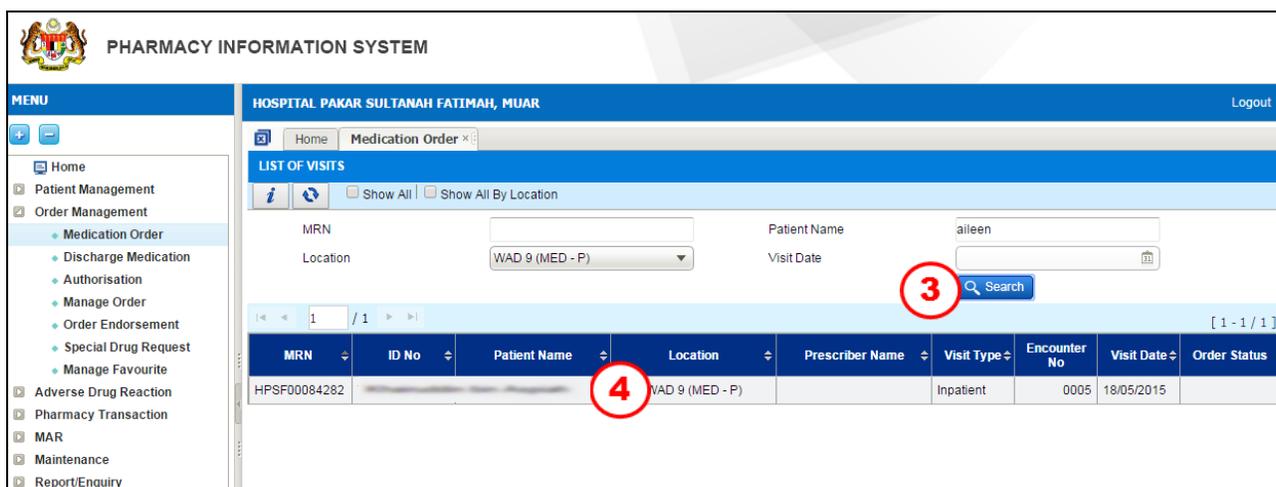
No	Field	Description	Remark
a	MRN	Patient Medical Record Number	Search option: <ul style="list-style-type: none"> <li>Type the MRN either in full or partially:  <i>Example : HPSF00001234 or "1234"</i> </li> </ul>
b	Patient Name	Patient Name	Allow to search by fully or partially entered patient name
c	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

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 PAKAR SULTANAH FATIMAH, MUAR

Home Medication Order x1 Logout

LIST OF VISITS

MRN Patient Name aileen

Location WAD 9 (MED - P) Visit Date

Search

MRN	ID No	Patient Name	Location	Prescriber Name	Visit Type	Encounter No	Visit Date	Order Status
HPSF00084282			WAD 9 (MED - P)		Inpatient	0005	18/05/2015	

Figure 3.1-2 Medication Order Listing Page

### STEP 3

Click on the  button to search for patient

#### Note

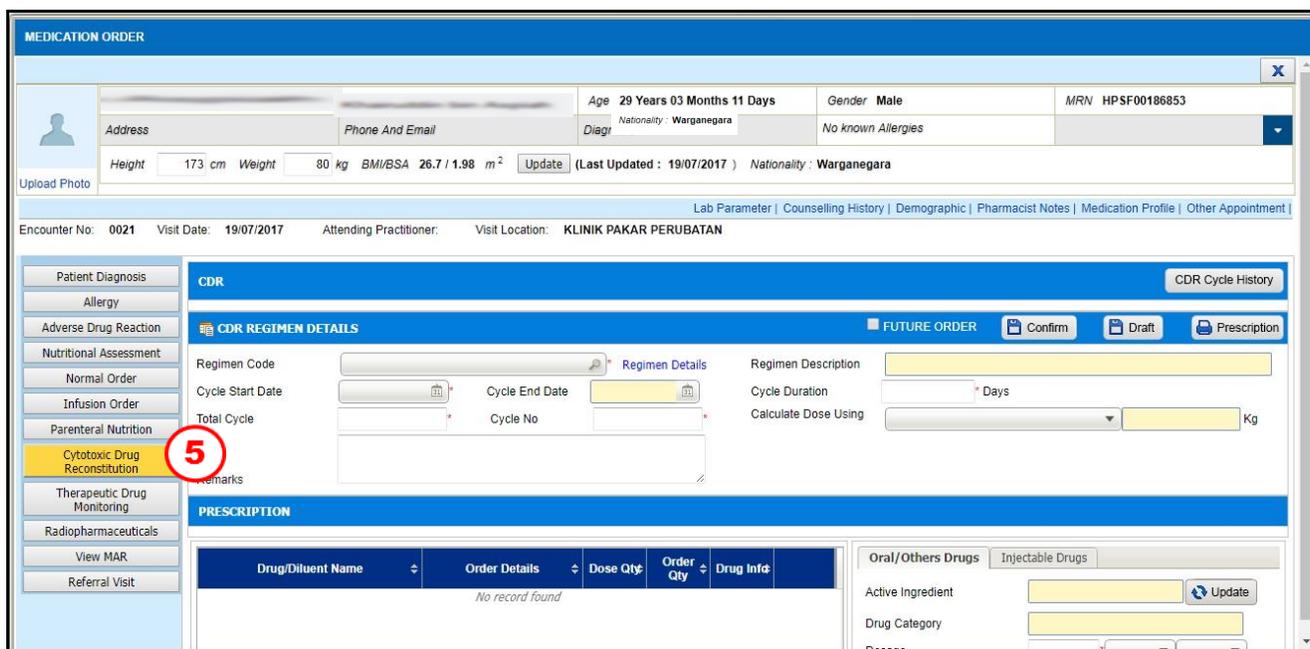
- Search results of patient record list will display:
  - MRN
  - ID No
  - Patient Name
  - Location
  - Prescriber Name
  - Visit Type
  - Encounter No
  - Visit Date
  - Order Status
- Order Status = 'Ordered', confirmed prescription.
- Order Status = 'Draft', prescription is saved but have not been 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 and Patient Allergies is mandatory for a newly registered patient.



**MEDICATION ORDER**

Age: 29 Years 03 Months 11 Days | Gender: Male | MRN: HPSF00186853

Address: [Redacted] | Phone And Email: [Redacted] | Nationality: Warganegara | No known Allergies

Height: 173 cm | Weight: 80 kg | BMI/BSA: 26.7 / 1.98 m<sup>2</sup> | Update (Last Updated: 19/07/2017) | Nationality: Warganegara

Encounter No: 0021 | Visit Date: 19/07/2017 | Attending Practitioner: [Redacted] | Visit Location: KLINIK PAKAR PERUBATAN

**CDR** | CDR Cycle History

**CDR REGIMEN DETAILS** | FUTURE ORDER | Confirm | Draft | Prescription

Regimen Code: [Redacted] | Regimen Details: [Redacted] | Regimen Description: [Redacted]

Cycle Start Date: [Redacted] | Cycle End Date: [Redacted] | Cycle Duration: [Redacted] Days

Total Cycle: [Redacted] | Cycle No: [Redacted] | Calculate Dose Using: [Redacted] Kg

**PRESCRIPTION**

Drug/Diluent Name	Order Details	Dose Qty	Order Qty	Drug Inf
No record found				

Oral/Others Drugs | Injectable Drugs

Active Ingredient: [Redacted] | Update

Drug Category: [Redacted]

**Figure 3.1-3 Medication Order**

**STEP 5**

Click on the Cytotoxic Drug Reconstitution button to display CDR Order screen

**Note**

CDR Order screen consist of:

**a) Patient's Banner**



**MEDICATION ORDER**

Age: 38 Years 09 Days | Gender: Female | MRN: HPSF00084282

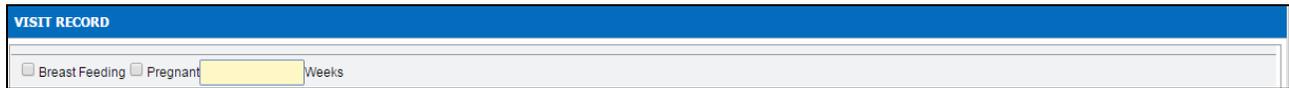
Address: [Redacted] | Phone And Email: [Redacted] | Diagnosis: [Redacted] | **Known Allergies**

Height: 158 cm | Weight: 56 kg | BMI/BSA: 22.4 / 1.59 m<sup>2</sup> | Update (Last Updated: 18/05/2015) | 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

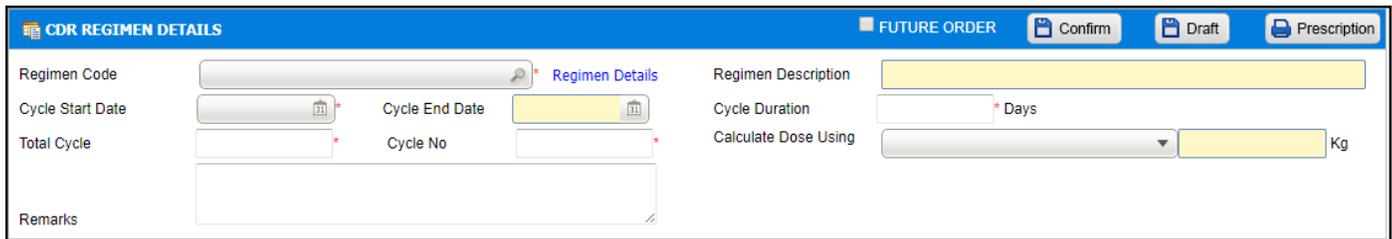
**b) Visit Record**



**Figure 3.1-5 Visit Record**

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

**c) 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
- Total Cycle
- Cycle No
- Calculate Dose Using
- Remarks

**d) Prescriptions**

Prescriptions consists of:

- Oral/Others Drugs
- Injectable Drugs
- Drug/Diluent Name
- Other Details
- Dose Qty (Quantity)
- Order Qty (Quantity)
- Drug Info

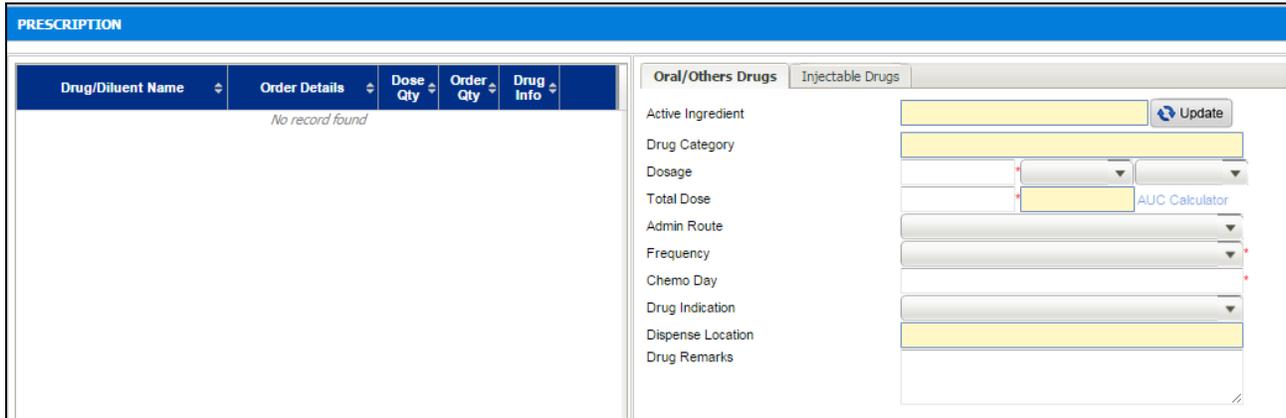


Figure 3.1-7 Prescriptions

e) *Regimen Drug Details*

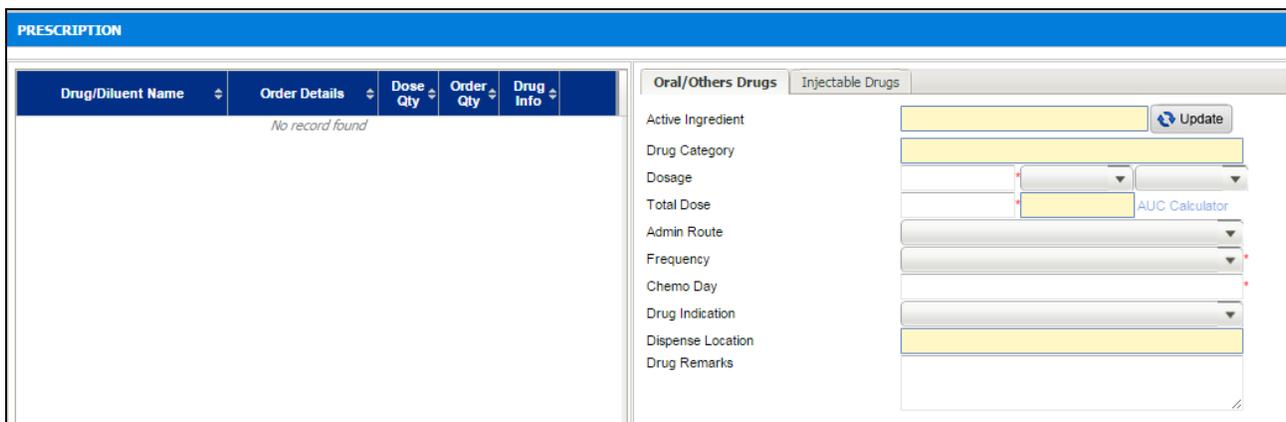


Figure 3.1-8 Regimen Drug Details : Oral/Others Drugs

- *Regimen Drug Details consists of two(2) tabs:*

I. *Oral/Others Drugs:*

- *Active Ingredient*
- *Drug Category*
- *Dosage*
- *Total Dose*
- *AUC Calculator*
- *Admin Route*
- *Frequency*
- *Chemo Day*
- *Drug Indication*
- *Dispense Location*
- *Drug Remarks*

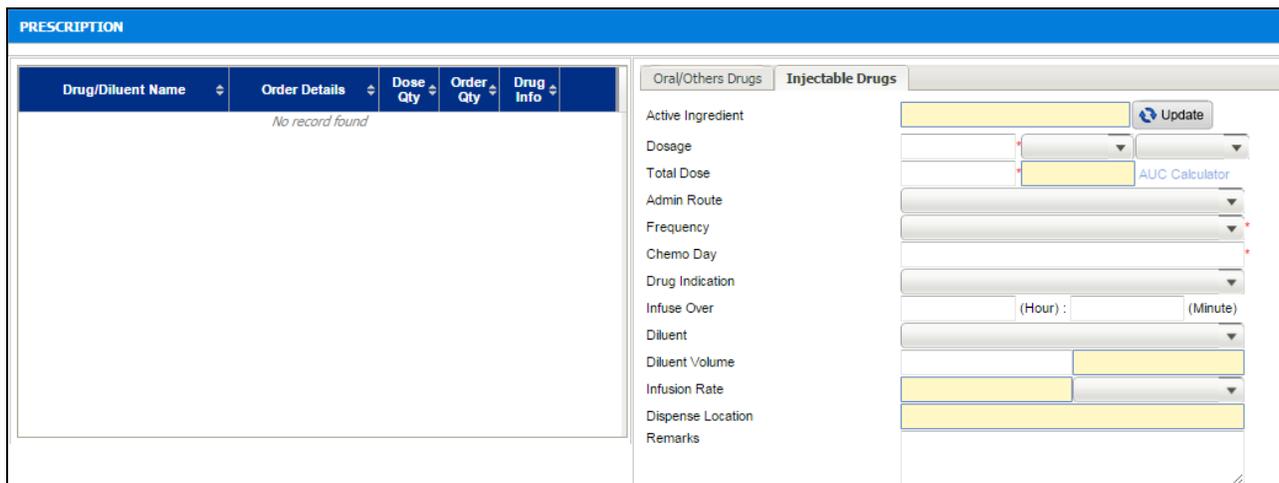


Figure 3.1-9 Regimen Drug Details: Injectable Drugs

II. *Injectable Drugs:*

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

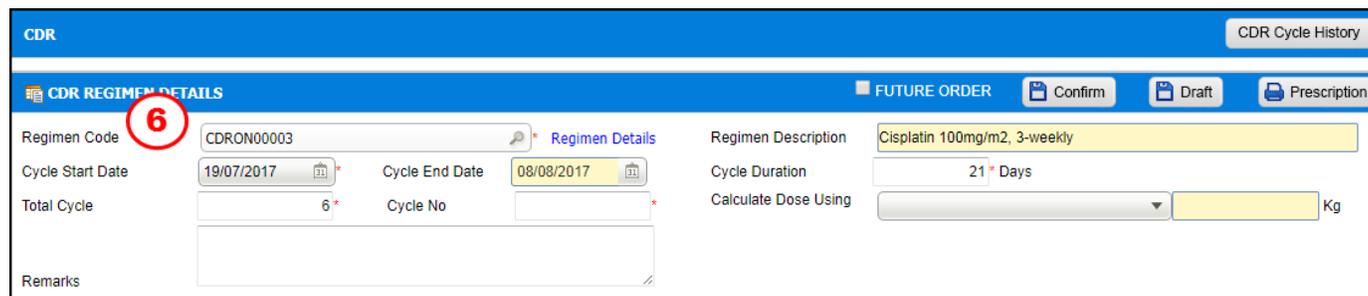


Figure 3.1-10 CDR Regimen Details

**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:

- Regimen Category
- Regimen Type
- Regimen Code
- Regimen Description

Search Regimen			
Regimen Category	<input type="text"/>		
Regimen Type	<input type="text"/>		
Regimen Code	<input type="text"/>		
Regimen Description	<input type="text"/> <input type="button" value="Search"/>		
1 / 16		[ 1 - 10 / 157 ]	
Regimen Code	Regimen Description	Regimen Type	Regimen Category
CDRON00003	Cisplatin	Head & Neck	Oncology
CDRON00005	MTX	Head & Neck	Oncology
CDRON00006	Carbo+5FU+FA	Head & Neck	Oncology
CDRON00007	Cisplatin (CCRT)	Nasopharynx (NPC)	Oncology
CDRON00008	Weekly Cisplatin	Nasopharynx (NPC)	Oncology
CDRON00004	Cisplatin+5FU+Docetaxel	Head & Neck	Oncology
CDRON00002	Cisplatin+5FU	Head & Neck	Oncology
CDRON00095	Cisplatin+MTX	Cervix	Oncology
CDRON00009	Weekly Carboplatin	Nasopharynx (NPC)	Oncology
CDRON00001	Carbo+5FU	Head & Neck	Oncology

Figure 3.1-11 CDR Search Regimen

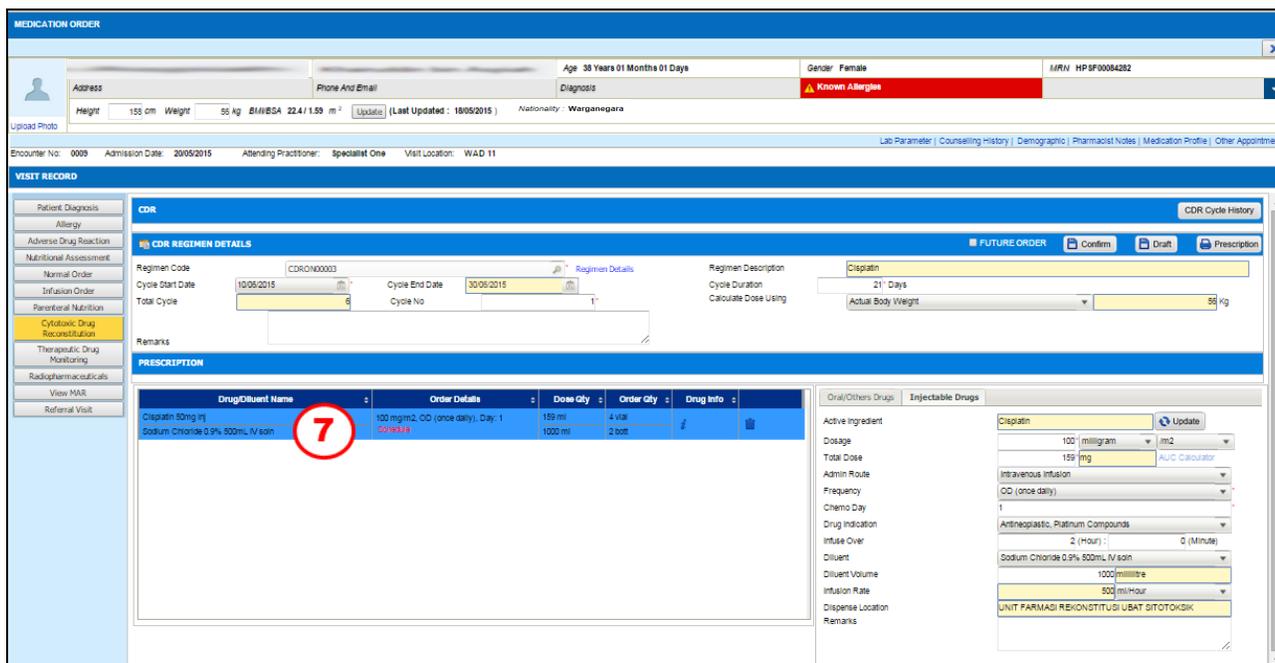
**Note**

- **Total Cycle** is defaulted to the Cycle History 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**.
- 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/m2	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.



**MEDICATION ORDER**

Age: 38 Years 01 Months 01 Days | Gender: Female | M/RN: HP9F00084282

Address: | Phone And Email: | Diagnosis: | Known Allergies: |

Height: 155 cm | Weight: 55 kg | BMI/BSA: 22.4 / 1.59 m<sup>2</sup> | Update (Last Updated: 18/05/2015) | Nationality: Warganegara

Encounter No: 0009 | Admission Date: 20/05/2015 | Attending Practitioner: Specialist One | Visit Location: WAD 11

**VISIT RECORD**

**CDR REGIMEN DETAILS**

Regimen Code: CDR0100003 | Regimen Description: Cisplatin | Cycle Start Date: 10/05/2015 | Cycle End Date: 30/05/2015 | Cycle Duration: 21 Days | Actual Body Weight: 55 kg

**PRESCRIPTION**

Drug/Diluent Name	Order Details	Dose Qty	Order Qty	Drug Info
Cisplatin 50mg inj	100 mg/m <sup>2</sup> , OD (once daily), Day 1	159 mg	4 via	
Sodium Chloride 0.9% 500mL IV soln	(Solusid)	1000 ml	2 botol	

7

**Figure 3.1-13 Prescriptions**

**Note**

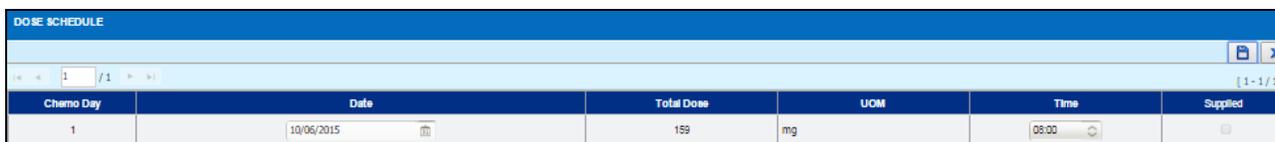
When the Regimen Code is selected, the Drug/Diluent Name of the prescription will be automatically display as shown in Figure 3.1-13.

**STEP 7**

Double click on the row of the prescription to edit regimen drug details

**Note**

- Click on the  button to delete information if necessary.
- Click on the Schedule hyperlink in red color, the Dose Schedule screen will be displayed as shown in Figure 3.1-14.

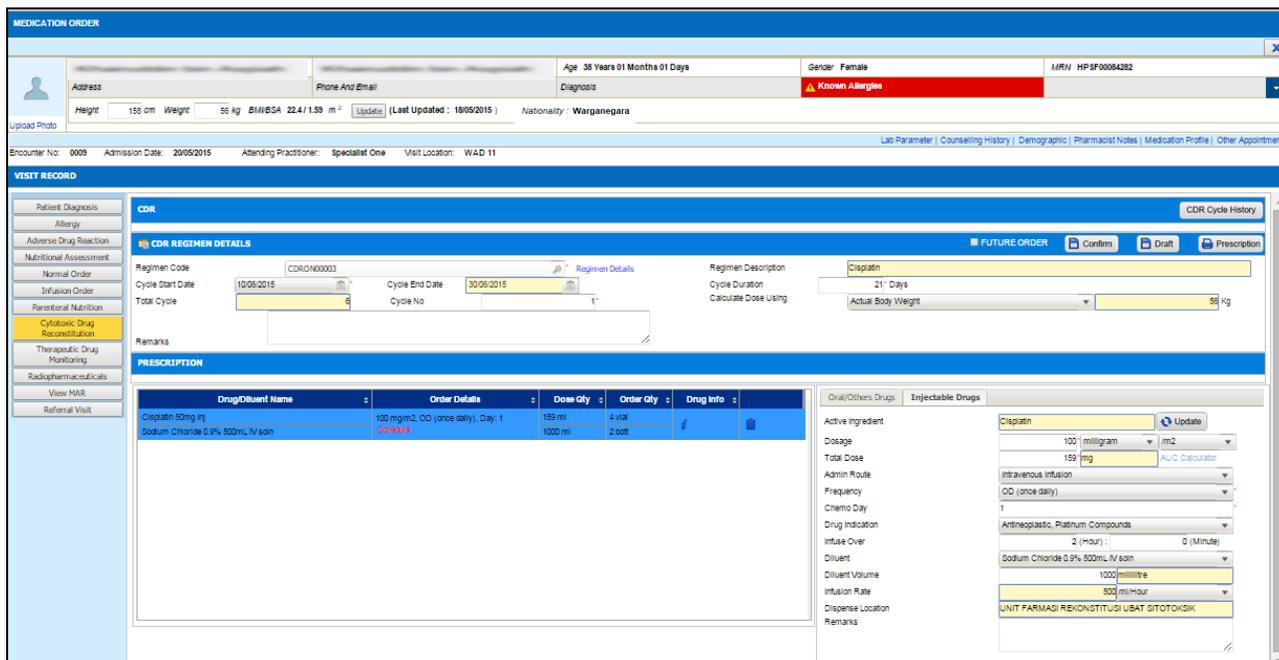


**DOSE SCHEDULE**

Chemo Day	Date	Total Dose	UOM	Time	Supplied
1	10/05/2015	159	mg	08:00	

**Figure 3.1-14 Dosage Schedule**

- System will display prescriptions based on **Regimen Code** selected in CDR Regimen Details.
- System will display Regimen Drug Details based on **Regimen Code** selected as shown in Figure 3.1-15.



**CDR REGIMEN DETAILS**

Regimen Code: CDRON0003  
 Cycle Start Date: 10/05/2015  
 Cycle End Date: 30/05/2015  
 Regimen Description: Cisplatin  
 Cycle Duration: 21 Days  
 Calculate Dose Using: Actual Body Weight (56 kg)

Drug/Diluent Name	Order Details	Dose Qty	Order Qty	Drug Info
Cisplatin 50mg inj	100 mg/m2, QD (once daily), Day: 1	159 mg	4 vial	
Sodium Chloride 0.9% 500mL IV soln		1000 ml	2 bott	

**PRESCRIPTION**

Active Ingredient: Cisplatin  
 Dosage: 100 milligram / m2  
 Total Dose: 159 mg  
 Admin Route: Intravenous Infusion  
 Frequency: QD (once daily)  
 Chemo Day: 1  
 Drug Indication: Antineoplastic, Platinum Compounds  
 Infuse Over: 2 (Hour); 0 (Minute)  
 Diluent: Sodium Chloride 0.9% 500mL IV soln  
 Diluent Volume: 1000 millilitre  
 Infusion Rate: 500 millilitre per hour  
 Dispense Location: UNIT FARMASI REKONSTITUSI UBAT SITOTOKSIK

**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
  - Drug 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.

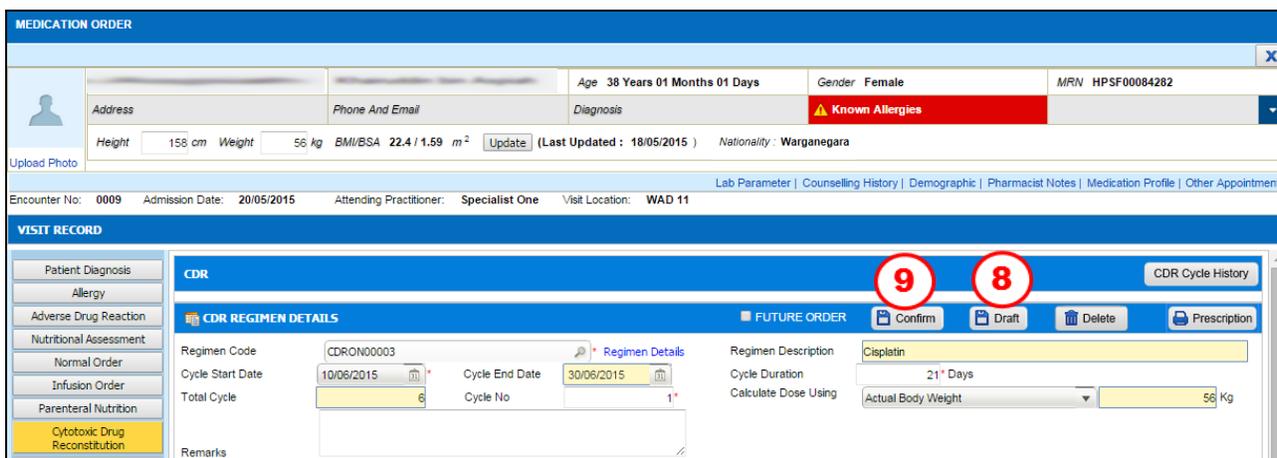
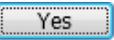


Figure 3.1-16 Medication Order

**STEP 8**

Click on the  button to save CDR order

**Note**

- Click on the  button to save order.

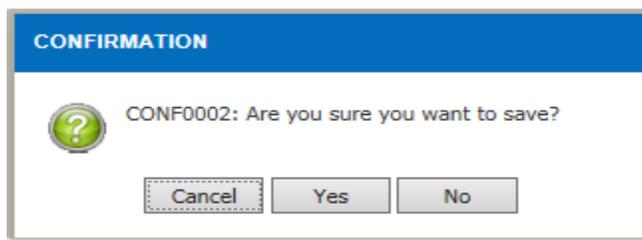


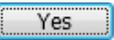
Figure 3.1-17 Confirm Record

- 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.

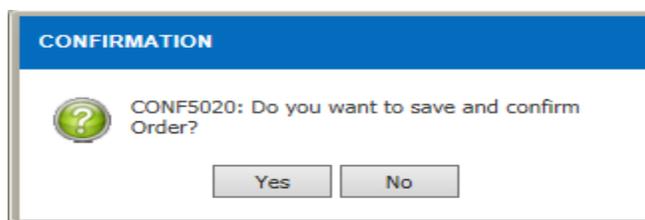


Figure 3.1-18 Confirm Record

- 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  button to delete record before order is confirmed.
- Click on the  button to print CDR prescription.

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

Patient Name :  Patient ID :   
 Age : 29 Y 3 M 11 D MRN : HPSF00186853  
 Gender : Male Prescription # : MOPC0000876280  
 Height/Weight/BSA : 173 cm / 80 kg / 1.98 m<sup>2</sup> Order Date/Time : 19/07/2017 04:06 PM  
 Allergy : Location : KLINIK PAKAR PERUBATAN

Diagnosis : good  
 Regimen Code : CDRON00003  
 Regimen Description : Cisplatin 100mg/m2, 3-weekly  
 Cycle Start Date : 19/07/2017      Cycle Duration : 21 Days      Total Cycle : 6      Current Cycle : 2

Route	Drug Name	Dosage	Total Dose	Diluent	Diluent Vol	Frequency	Chemo Day
INF	Cisplatin	100 mg/m2	198 mg	Sodium Chloride 0.9% 500mL IV soln	1000 ml	OD (once daily)	1

Prescribed By :   
 Designation : Pegawai Perubatan Pakar  
 Department : General Medicine

Figure 3.1-19 CDR Prescription



### Carboplatin AUC Calculator

**MEDICATION ORDER**

Mykad: [Redacted] Age: 61 Years 08 Months 18 Days Gender: Female MRN: [Redacted]  
 Address: [Redacted] Phone And Email: [Redacted] Diagnosis: [Redacted] No known Allergies  
 Height: 154 cm Weight: 54 kg BMI/BSA: 22.8 / 1.54 m<sup>2</sup> Update (Last Updated: 05/09/2017) Nationality: Warganegara

Encounter No: 0408 Admission Date: 17/03/2017 Attending Practitioner: [Redacted] Visit Location: WAD 5

**VISIT RECORD**

Breast Feeding  Pregnant [Redacted] Week [Redacted]

**CDR REGIMEN DETAILS**

Regimen Code: **10** DRON00009 Regimen Description: Carboplatin, weekly  
 Cycle Start Date: 05/09/2017 Cycle End Date: 11/09/2017 Cycle Duration: 7 Days  
 Total Cycle: 6 Cycle No: **11** Calculate Dose Using [Redacted] Kg

3.1-22 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 3.1-23

**PRESCRIPTION**

Drug/Diluent Name	Order Details	Dose Qty	Order Qty	Drug Info
Carboplatin 450mg/45ml Inject	100 mg/m <sup>2</sup> , OD (once daily), Day: 1 Schedule	15.4 ml	1 vial	<i>i</i>
Dextrose 5% 500ml IV soln		250 ml	1 bott	<i>i</i>

**Oral/Others Drugs** | **Injectable Drugs**

Active Ingredient: [Redacted] Update  
 Drug Category: [Redacted]  
 Dosage: [Redacted]  
 Total Dose: [Redacted] AUC Calculator  
 Admin Route: [Redacted]  
 Frequency: [Redacted]  
 Chemo Day: [Redacted]  
 Drug Indication: [Redacted]  
 Dispense Location: [Redacted]  
 Drug Remarks: [Redacted]

Figure 3.1-23 CDR Regimen Prescription

#### STEP 12

Double click on the row of the prescription to view the drug details as Figure 3.1-24

PRESCRIPTION				
Drug/Diluent Name	Order Details	Dose Qty	Order Qty	Drug Info
Carboplatin 450mg/45ml Injection	100 mg/m2, OD (once daily), Day: 1 <b>Schedule</b>	15.4 ml	1 vial	 
Dextrose 5% 500ml IV soln		250 ml	1 bott	

Oral/Others Drugs	Injectable Drugs
Active Ingredient	Carboplatin <span>Update</span>
Dosage	100 * mg /m2
Total Dose	154 * mg <span>AUC Calculator</span> <b>13</b>
Admin Route	Intravenous Infusion
Frequency	OD (once daily)
Chemo Day	1
Drug Indication	
Infuse Over	0 (Hour) : 30 (Minute)
Diluent	Dextrose 5% 500ml IV soln
Diluent Volume	250 ml
Infusion Rate	500 ml/Hour

Figure 3.1-24 CDR Regimen Drug Details

**STEP 13**

Click on the **AUC Calculator** hyperlink and AUC Calculator window will be display as Figure 3.1-25

AUC CALCULATOR			
Serum Creatinine	<b>14</b> 20 micromol/L	Gender Factor	1.05
$\{ [( 140 - 61 \text{ Years} ) \times 54 \text{ Kg} ] / 20 \text{ micromol/L} \} \times 1.05$			
( CrCl	223.97 ml/min + 25 )	X AUC No.	<b>15</b> 2
Total Dose =	497.93 mg	References : Calvert Formula	

Figure 3.1-25 AUC Calculator

**STEP 14**

Enter **Serum Creatinine**

**STEP 15**

Select **AUC No.** from dropdown box

**Note**

- System will automatically update the new **Total Dose** based on the input in STEP 14 and STEP 15.
- The updated **Total Dose** will be update on the Order Screen as Figure 3.1-26.
- Click on the button to close the **AUC Calculator** window

Oral/Others Drugs	Injectable Drugs
Active Ingredient	Carboplatin <input type="button" value="Update"/>
Dosage	100 * mg /m2
Total Dose	497.93 * mg <a href="#">AUC Calculator</a>
Admin Route	Intravenous Infusion
Frequency	OD (once daily) *
Chemo Day	1 *
Drug Indication	
Infuse Over	0 (Hour) : 30 (Minute)
Diluent	Dextrose 5% 500ml IV soln
Diluent Volume	250 ml
Infusion Rate	500 ml/Hour

Figure 3.1-26 Updated AUC Calculator

### 3.2 Manage Order

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.

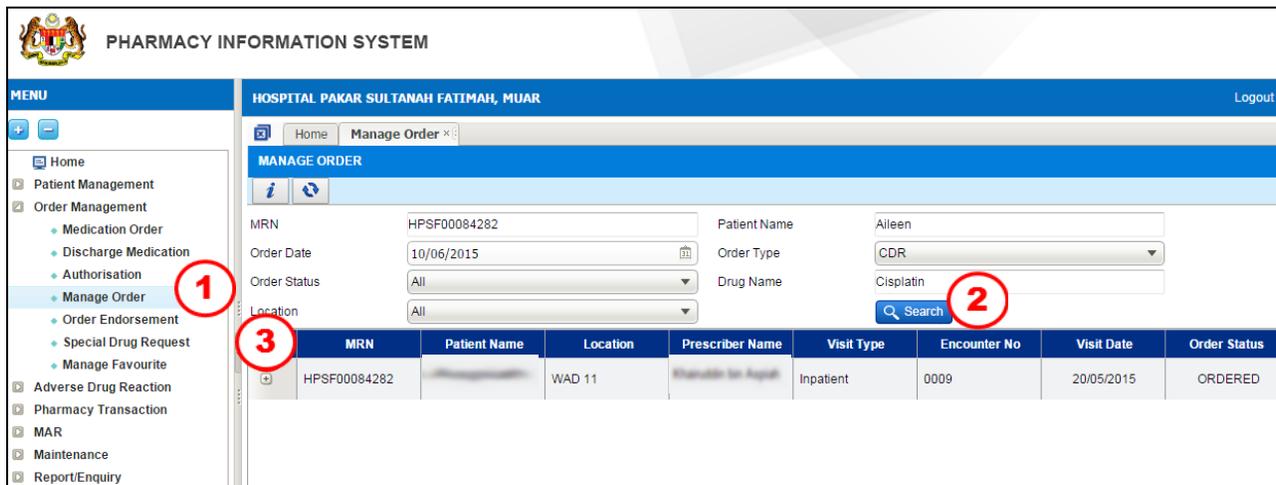


Figure 3.2.1-1 Manage Order Listing Page

#### STEP 1

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

#### Note

Search patient record based :-

No	Field	Description	Remark
a	MRN	Patient Medical Record Number	Search option: • Scan the MRN using barcode scanner. • Type the MRN either in fully or partially. <i>Example: HPSF00001234 or "1234"</i>
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	Order Type	Search patient by: - Normal - CDR - IV - PN - Radiopharmaceuticals	Allow to search by order type
g	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

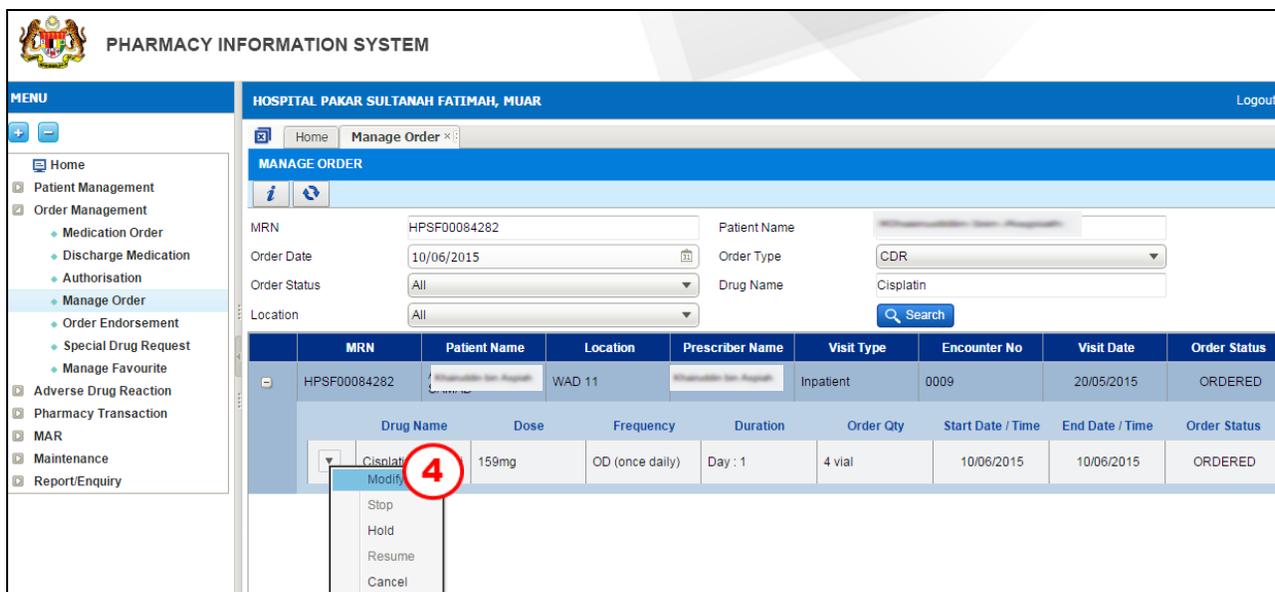
#### Note

- Search results of patient record list will display:
  - MRN
  - Patient Name
  - Location

- Prescriber Name
- Visit Type
- Encounter No
- Visit Date
- Order Status

**STEP 3**

Click on  button to view selected patient's prescription



**PHARMACY INFORMATION SYSTEM**

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR Logout

Home Manage Order x1

**MANAGE ORDER**

MRN: HPSF00084282 Patient Name: [Redacted]  
 Order Date: 10/06/2015 Order Type: CDR  
 Order Status: All Drug Name: Cisplatin  
 Location: All Search

MRN	Patient Name	Location	Prescriber Name	Visit Type	Encounter No	Visit Date	Order Status
HPSF00084282	[Redacted]	WAD 11	[Redacted]	Inpatient	0009	20/05/2015	ORDERED

Drug Name	Dose	Frequency	Duration	Order Qty	Start Date / Time	End Date / Time	Order Status
Cisplatin	159mg	OD (once daily)	Day : 1	4 vial	10/06/2015	10/06/2015	ORDERED

Dropdown menu for Cisplatin: **4** Modify, Stop, Hold, Resume, Cancel

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

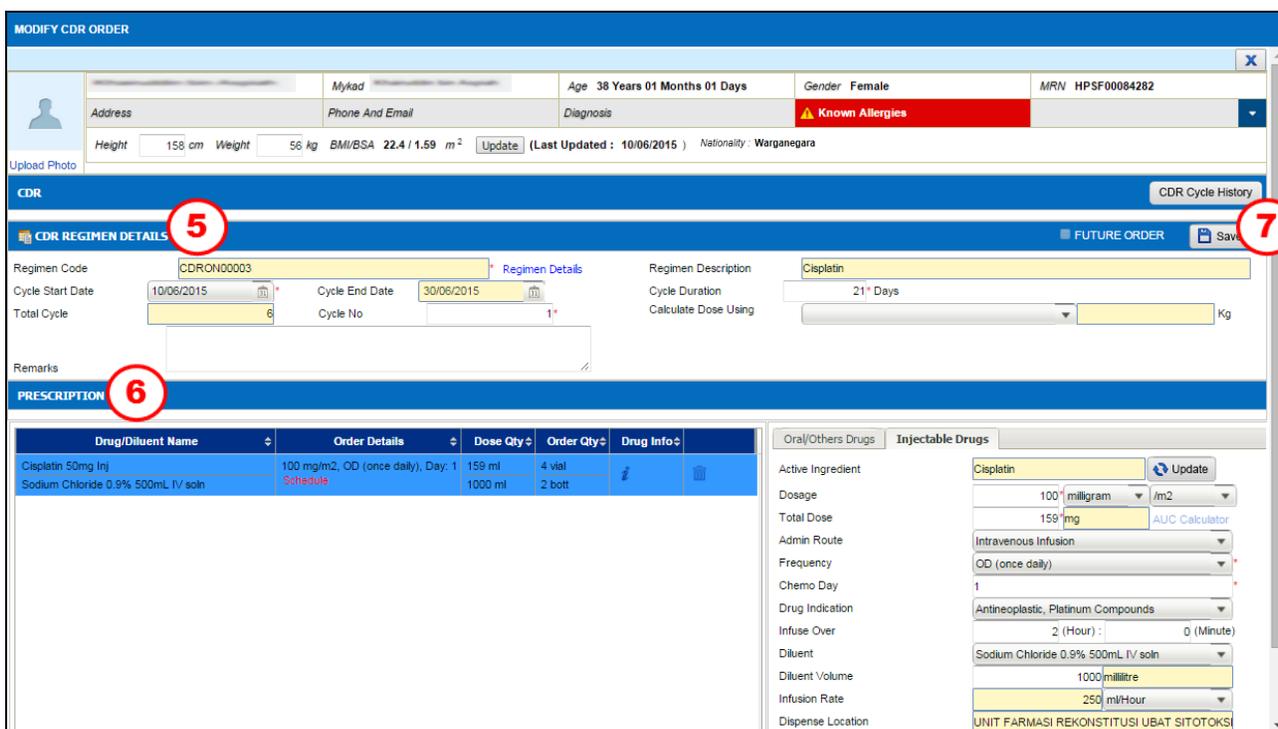
**STEP 4**

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



**MODIFY CDR ORDER**

Mykad: [Redacted] Age: 38 Years 01 Months 01 Days Gender: Female MRN: HPSF00084282

Address: [Redacted] Phone And Email: [Redacted] Diagnosis: [Redacted] **Known Allergies**

Height: 158 cm Weight: 56 kg BMI/BSA: 22.4 / 1.59 m<sup>2</sup> (Last Updated: 10/06/2015) Nationality: Warganegara

**CDR REGIMEN DETAILS** (5)

Regimen Code: CDRON00003 Regimen Description: Cisplatin

Cycle Start Date: 10/06/2015 Cycle End Date: 30/06/2015 Cycle Duration: 21\* Days

Total Cycle: 6 Cycle No: 1\* Calculate Dose Using: [Dropdown]

Remarks: [Text Area]

**PRESCRIPTION** (6)

Drug/Diluent Name	Order Details	Dose Qty	Order Qty	Drug Info
Cisplatin 50mg Inj	100 mg/m2, OD (once daily), Day: 1	159 ml	4 vial	[Info Icon]
Sodium Chloride 0.9% 500mL IV soln	Schedule	1000 ml	2 bott	[Info Icon]

**Injectable Drugs**

Active Ingredient: Cisplatin (Update)

Dosage: 100 milligram / m2

Total Dose: 159 mg (AUC Calculator)

Admin Route: Intravenous Infusion

Frequency: OD (once daily)

Chemo Day: 1

Drug Indication: Antineoplastic, Platinum Compounds

Infuse Over: 2 (Hour) : 0 (Minute)

Diluent: Sodium Chloride 0.9% 500mL IV soln

Diluent Volume: 1000 millilitre

Infusion Rate: 250 ml/Hour

Dispense Location: UNIT FARMASI REKONSTITUSI UBAT SITOTOKS

**Save** (7)

**Figure 3.2.1-3 Modify CDR Order**

### STEP 5

Information under CDR Regimen Details section which user can modify:

- a) **Cycle Start Date**
- b) **Cycle Duration**
- c) **Cycle No**
- d) **Calculate Dose Using**
- e) **Remarks**

### STEP 6

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

- a) **Dosage**
- b) **Total Dose**
- c) **Frequency**
- d) **Chemo Day**
- e) **Admin Route**
- f) **Drug Indication**
- g) **Infuse Over**
- h) **Diluent**
- i) **Diluent volume**

### STEP 7

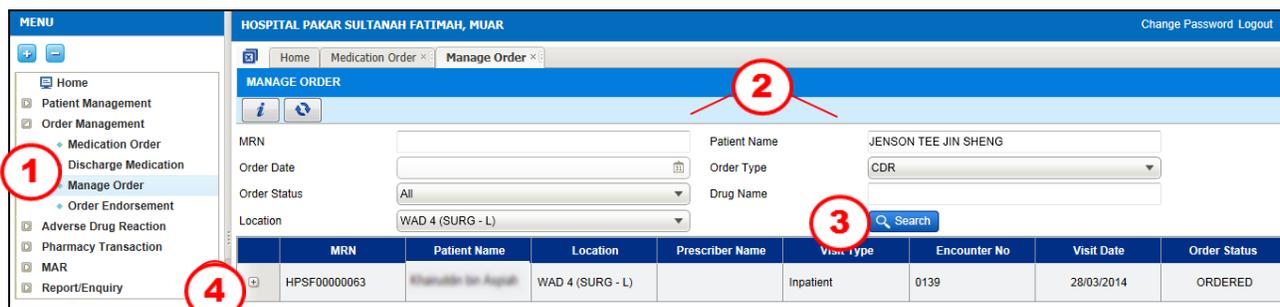
Click on the  button to save the modified record

### 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.



MRN	Patient Name	Location	Prescriber Name	Visit type	Encounter No	Visit Date	Order Status
HPSF00000063	Wong Sze Lin Aqilah	WAD 4 (SURG - L)		Inpatient	0139	28/03/2014	ORDERED

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 Order' submodule

#### STEP 2

Search patient's record either by:

- MRN
- Patient Name
- Order Date
- Order Type
- Order Status
- Drug Name
- Location

#### Note

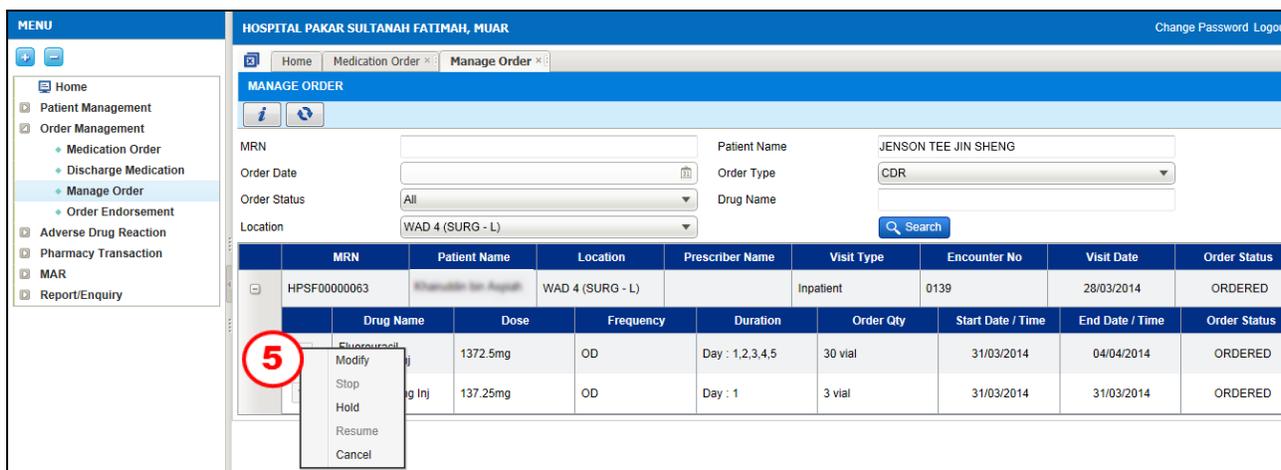
User need to select order type as 'CDR' to search CDR order record.

#### STEP 3

Click on the  to search patient's record

#### STEP 4

Click on the  button to display order detail



MRN	Patient Name	Location	Prescriber Name	Visit Type	Encounter No	Visit Date	Order Status
HPSF00000063	JENSON TEE JIN SHENG	WAD 4 (SURG - L)		Inpatient	0139	28/03/2014	ORDERED

Drug Name	Dose	Frequency	Duration	Order Qty	Start Date / Time	End Date / Time	Order Status
Fluorouracil Inj	1372.5mg	OD	Day : 1,2,3,4,5	30 vial	31/03/2014	04/04/2014	ORDERED
Fluorouracil Inj	137.25mg	OD	Day : 1	3 vial	31/03/2014	31/03/2014	ORDERED

### STEP 5

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

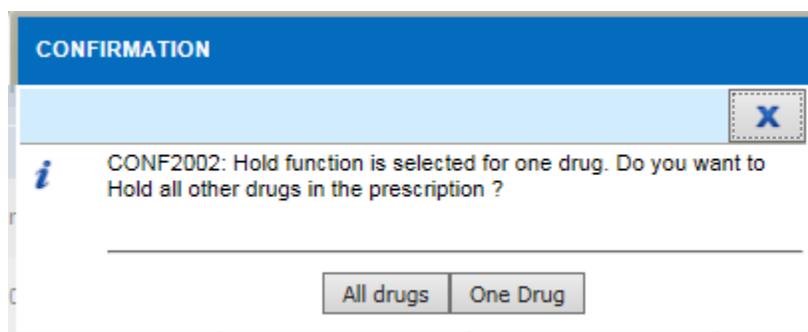
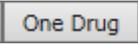
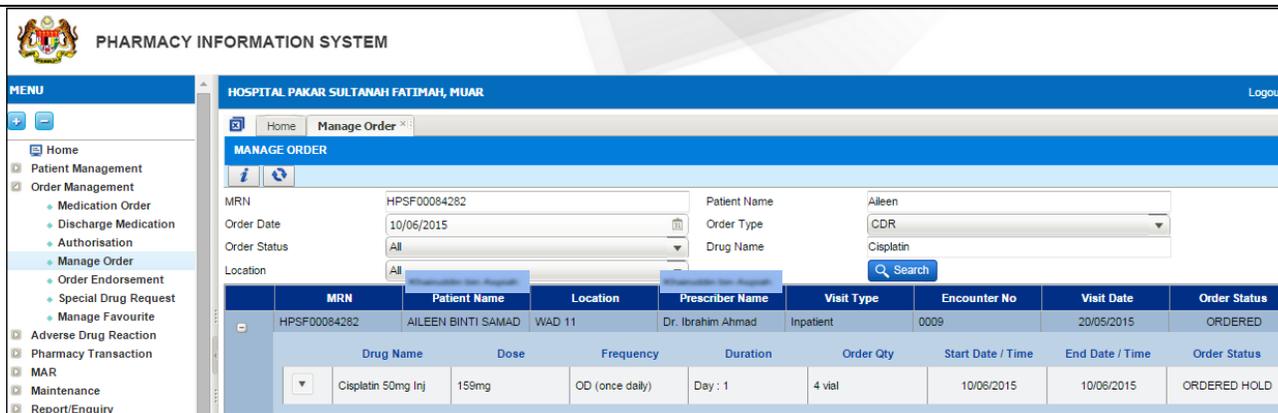


Figure 3.2.2-2 Alert Message

### Note

- Alert Message will be displayed after selecting **Hold** as figure 3.2.2-2
- 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 3.2.2-3.



**PHARMACY INFORMATION SYSTEM**

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR

Home Management Order

MANAGE ORDER

MRN: HPSF00084282 Patient Name: Aileen  
 Order Date: 10/06/2015 Order Type: CDR  
 Order Status: All Drug Name: Cisplatin  
 Location: All

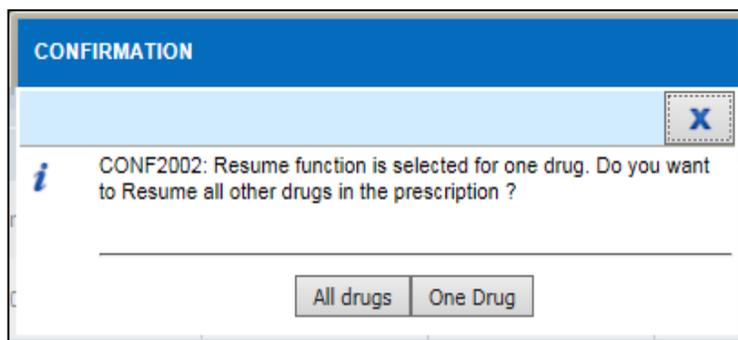
MRN	Patient Name	Location	Prescriber Name	Visit Type	Encounter No	Visit Date	Order Status
HPSF00084282	AILEEN BINTI SAMAD	WAD 11	Dr. Ibrahim Ahmad	Inpatient	0009	20/05/2015	ORDERED

Drug Name	Dose	Frequency	Duration	Order Qty	Start Date / Time	End Date / Time	Order Status
Cisplatin 50mg Inj	150mg	OD (once daily)	Day : 1	4 vial	10/06/2015	10/06/2015	ORDERED HOLD

Figure 3.2.2-3 Manage Order – Hold

**Resume CDR Order**

- Right click on the  button and select **Resume**
- Alert Message will be displayed after selecting **Resume**



**CONFIRMATION**

CONF2002: Resume function is selected for one drug. Do you want to Resume all other drugs in the prescription ?

All drugs One Drug

Figure 3.2.2-4 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.

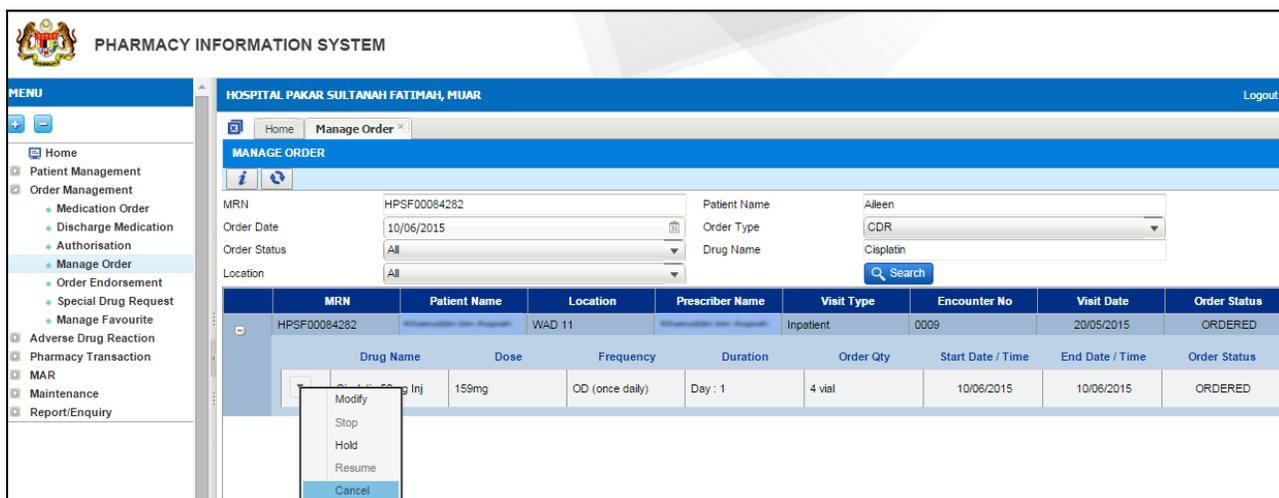


Figure 3.2.3-1 Manage Order – Cancel

**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**
- Alert Message will be displayed after selecting **Cancel**

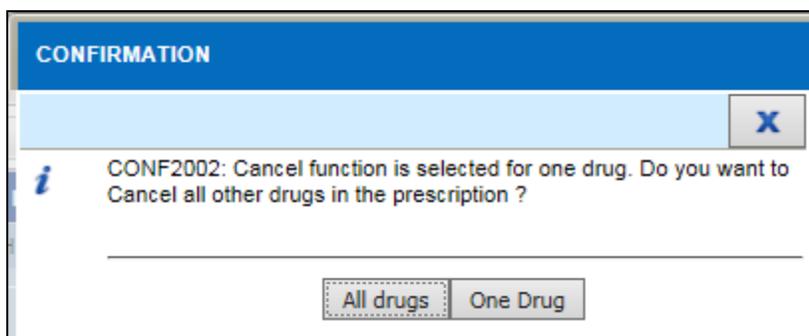


Figure 3.2.3-2 Alert Message

**Note**

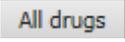
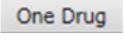
- Click on the  button to cancel all other drugs in the prescription.
- Click on the  button to cancel only the selected drugs in the prescription.
- After is clicked, user is required to fill **Cancel Reason** as shown in figure 3.2.3-3.
- Click on the  button to save the CDR Drug cancellation.
- If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

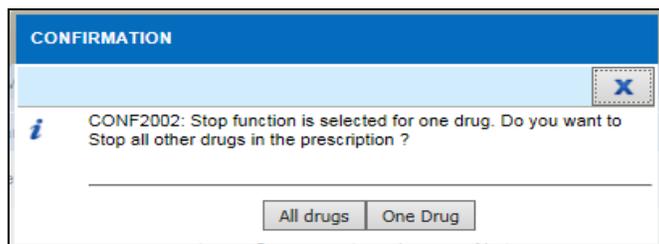
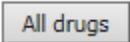


Figure 3.2.3-4 Alert Message

Click  to stop all drug at current perscription or  to stop only selected drug

### 3.3 Order Endorsement

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

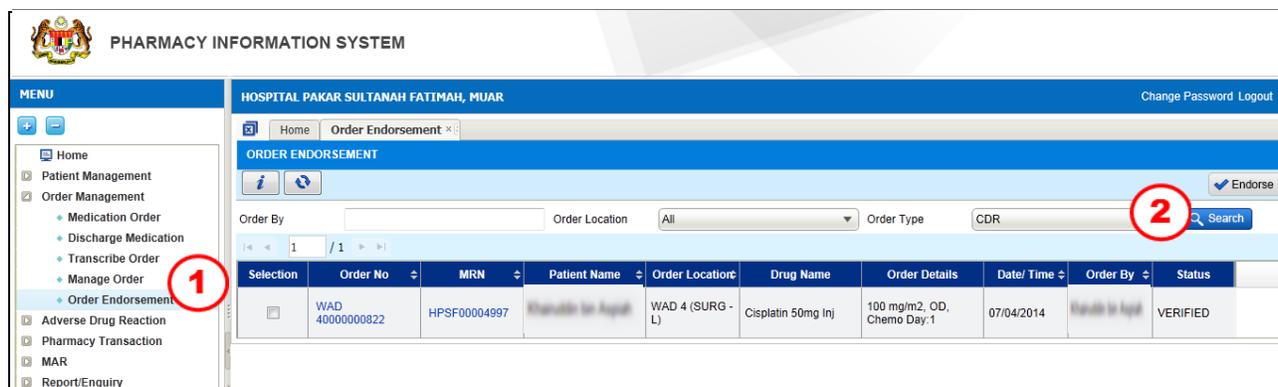


Figure 3.3-1 Order Endorsement

#### 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										
REGIMEN DETAILS										
Ordered Cycle Start Date	Modified Cycle Start Date	Ordered Cycle End Date	Modified Cycle End Date							
04/04/2017	-	24/04/2017	-							
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
Epirubicin 10mg/5ml Injection	86.4 mg	OD (once daily)	-	Day: 1	Intravenous Slow Bolus	04/04/2017	04/04/2017	ORDERED		Hande Isyaz
Drug Name	Modified Dose	Modified Frequency	Modified Infuse Over	Modified Chemo Day	Modified Route	Modified Start Date	End Date	Status	Remarks	Modified By
Epirubicin 10mg/5ml Injection	-	Single Dose		-	-	-	04/04/2017	ORDERED		SITI FAIRUZ BINTI SELBI
DOSE SCHEDULE										
Chemo Day	Ordered Date	Modified Date								
1	04/04/2017	-								

**Figure 3.3-2 Order Details**

MEDICATION PROFILE											
											Administration Dispensing
Drug Name	<input type="text"/>	Visit Type	<input type="text" value="All"/>								
Prescription Date From	<input type="text"/>	Prescription Date To	<input type="text"/>								
Prescription Status	<input type="text" value="All"/>	Location	<input type="text" value="All"/>								
Order Type	<input type="text" value="Normal"/>	<input type="button" value="Search"/>									
Current Medication											
											Encounter No
Previous Medication											
											Encounter No
											0036
Rx No.	Drug Name	Dose	Route	Frequency	Status	Visit Type	Visit Date	Duration	Prescribed Qty	Start Date	End Date
WAD 80000000751	Amikacin 500mg/2ml Inj	2000 mg	Intravenous Infusion	BD	ORDERED	Inpatient	24/03/2014	2 Days	4000	03/04/2014	05/04/2014
WAD 80000000235	nifEDipine 10 mg Tablet	5 mg	Oral	TDS	PARTIALLY DISPENSED	Inpatient	24/03/2014	2 Days	3	24/03/2014	26/03/2014
WAD 80000000235	Allopurinol 300 mg Tablet	150 mg	Oral	OD	FULLY DISPENSED	Inpatient	24/03/2014	2 Days	1	24/03/2014	26/03/2014
WAD 80000000147	Ofloxacin 100 mg Tablet	100 mg	Oral	STAT	ORDERED	Inpatient	24/03/2014	1 Days	1	27/03/2014	28/03/2014
WAD 80000000121	Paracetamol 500 mg Tablet	500 mg	Oral	PRN	ORDERED	Inpatient	24/03/2014	2 Days	0	27/03/2014	29/03/2014
WAD 80000000113	Insulin glargine (Lantus) 100 IU/ml Pre-filled Pen	1 IU , 2 IU , 1 IU	Subcutaneous	TDS	ORDERED	Inpatient	24/03/2014	2 Days	1	27/03/2014	29/03/2014
WAD 80000000099	Insulin regular (Actrapid) 100 IU/mL Penfil	4 IU	Subcutaneous	OM	ORDERED	Inpatient	24/03/2014	2 Days	1	27/03/2014	29/03/2014
WAD 80000000096	Amlodipine 10 mg Tablet	10 mg	Oral	OD	ORDERED	Inpatient	24/03/2014	2 Days	2	26/03/2014	28/03/2014

**Figure 3.3-3 Medication Profile**

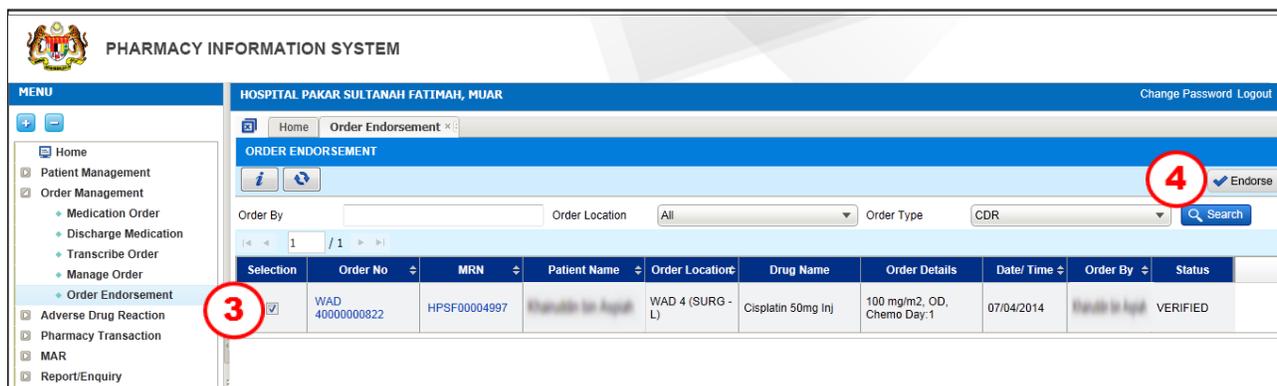


Figure 3.3-4 Order Endorsement

**STEP 3**

Click on the selected  Patient Name checkbox

**STEP 4**

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

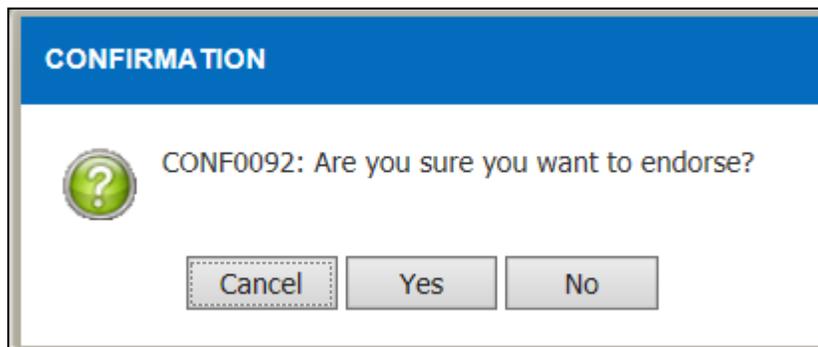


Figure 3.3-5 Alert Message

**Note**

Click on the **Yes** button to confirm the endorsement.

Click on the **No** button to cancel the endorsement.

### 3.4 Authorisation

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

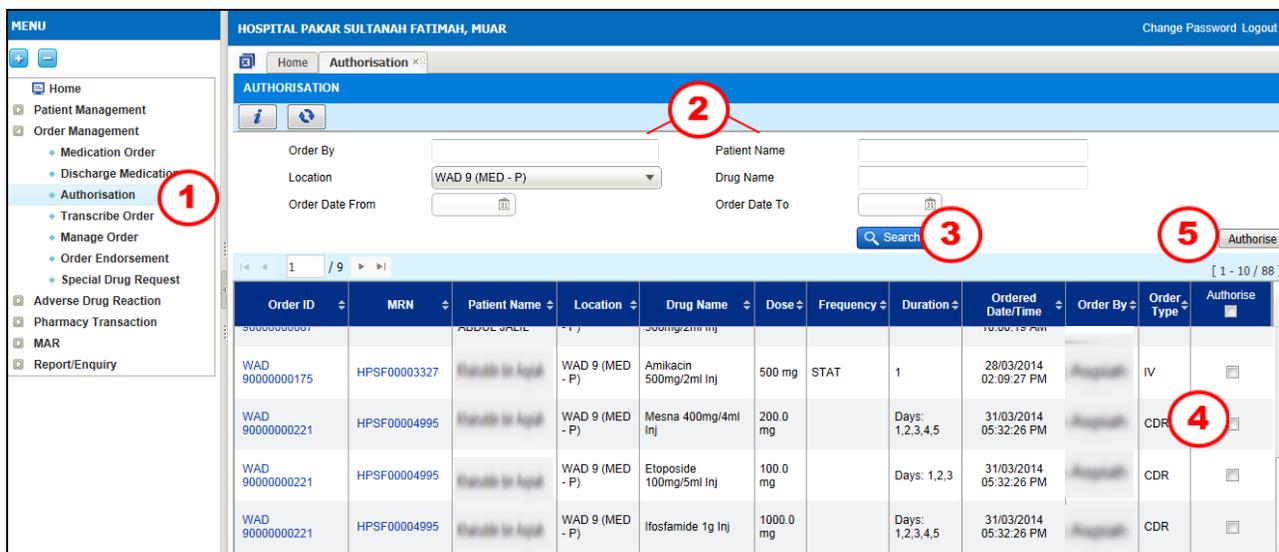


Figure 3.4-1 Authorisation

#### 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

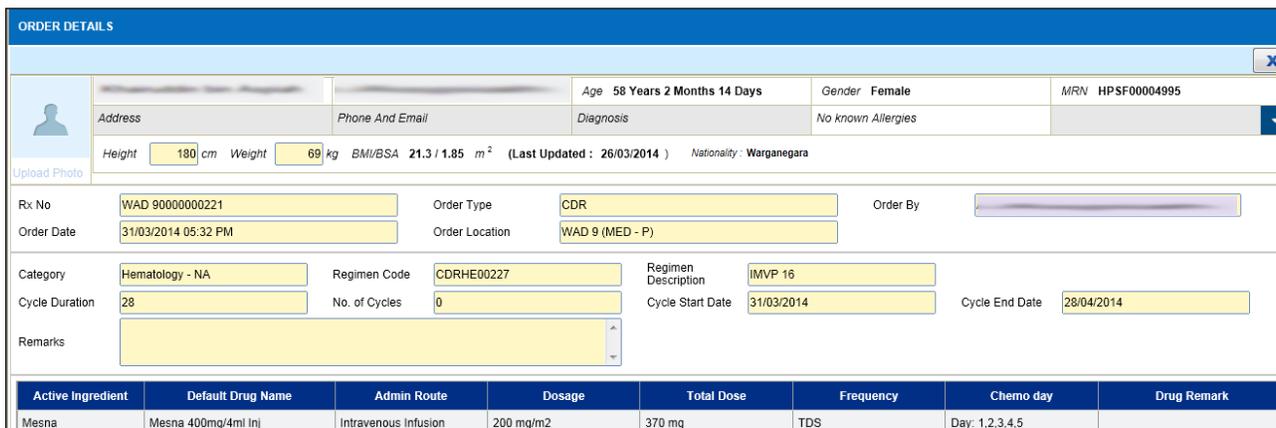
Click on  button to search for patient

**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.



**ORDER DETAILS**

Age 58 Years 2 Months 14 Days | Gender Female | MRN HPSF0004995

Address | Phone And Email | Diagnosis | No known Allergies

Height 180 cm | Weight 69 kg | BMI/BSA 21.3 / 1.85 m<sup>2</sup> (Last Updated : 26/03/2014) | Nationality: Warganegara

Rx No: WAD 9000000221 | Order Type: CDR | Order By: [User Name]

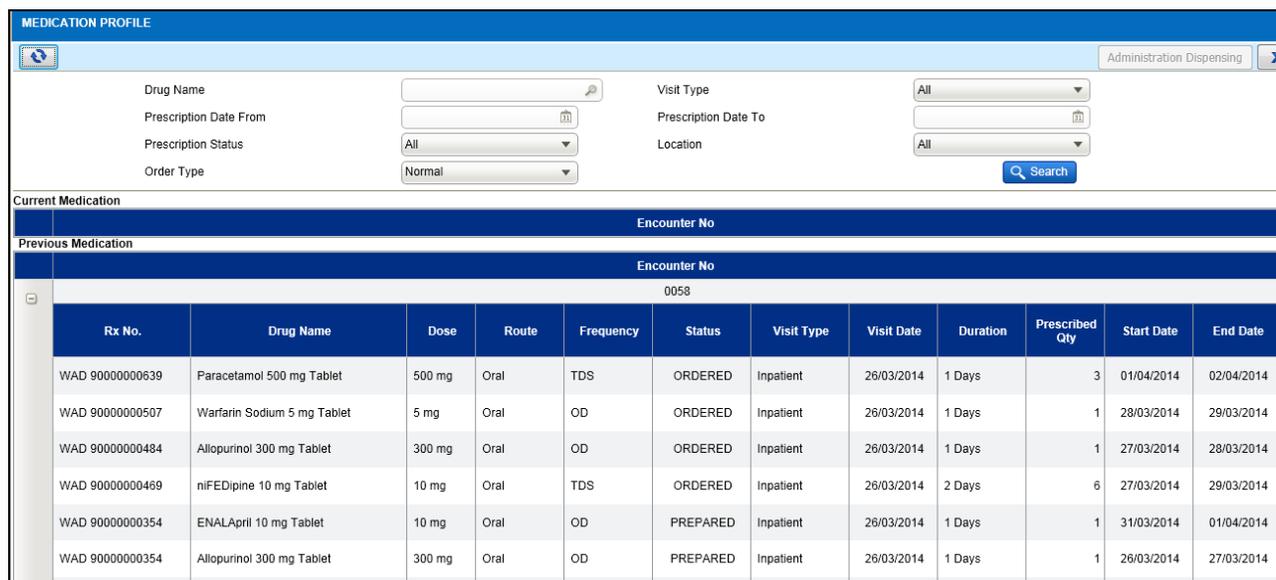
Order Date: 31/03/2014 05:32 PM | Order Location: WAD 9 (MED - P)

Category: Hematology - NA | Regimen Code: CDRHE00227 | Regimen Description: IMVP 16

Cycle Duration: 28 | No. of Cycles: 0 | Cycle Start Date: 31/03/2014 | Cycle End Date: 28/04/2014

Active Ingredient	Default Drug Name	Admin Route	Dosage	Total Dose	Frequency	Chemo day	Drug Remark
Mesna	Mesna 400mg/4ml Inj	Intravenous Infusion	200 mg/m <sup>2</sup>	370 mg	TDS	Day: 1,2,3,4,5	

**Figure 3.4-2 Order Details**



**MEDICATION PROFILE**

Drug Name | Visit Type | Prescription Date From | Prescription Date To | Prescription Status | Location | Order Type

Administration Dispensing

Search

Current Medication

Encounter No

Previous Medication

Encounter No: 0058

Rx No.	Drug Name	Dose	Route	Frequency	Status	Visit Type	Visit Date	Duration	Prescribed Qty	Start Date	End Date
WAD 90000000639	Paracetamol 500 mg Tablet	500 mg	Oral	TDS	ORDERED	Inpatient	26/03/2014	1 Days	3	01/04/2014	02/04/2014
WAD 90000000507	Warfarin Sodium 5 mg Tablet	5 mg	Oral	OD	ORDERED	Inpatient	26/03/2014	1 Days	1	28/03/2014	29/03/2014
WAD 90000000484	Allopurinol 300 mg Tablet	300 mg	Oral	OD	ORDERED	Inpatient	26/03/2014	1 Days	1	27/03/2014	28/03/2014
WAD 90000000469	nIFEDipine 10 mg Tablet	10 mg	Oral	TDS	ORDERED	Inpatient	26/03/2014	2 Days	6	27/03/2014	29/03/2014
WAD 90000000354	ENALApril 10 mg Tablet	10 mg	Oral	OD	PREPARED	Inpatient	26/03/2014	1 Days	1	31/03/2014	01/04/2014
WAD 90000000354	Allopurinol 300 mg Tablet	300 mg	Oral	OD	PREPARED	Inpatient	26/03/2014	1 Days	1	26/03/2014	27/03/2014

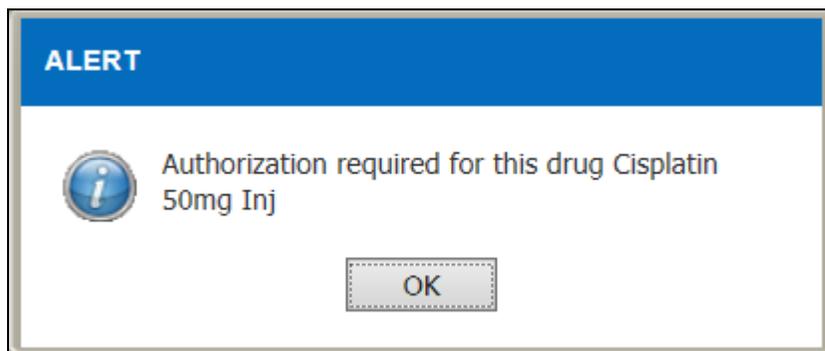
**Figure3.4-3 Medication Profile**

### STEP 3

Click on the selected  **Patient Name** checkbox

### STEP 4

Click on  the 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.

## 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		