



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

User Manual Cytotoxic Drug Reconstitution (CDR) Dispensing

Version	: 12th Edition
Document ID	: U. MANUAL_CDR_DISPENSING



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



© 2011-2021 Pharmacy Information System & Clinic Pharmacy System (PhIS & CPS) Project

CONFIDENTIAL COPYRIGHTED MATERIAL – The information includes all concepts, comments, recommendations, and material, contained herein shall remain the property of Pharmacy Information System & Clinic Pharmacy System (PhIS & CPS) Project. No portion of this document shall be disclosed, duplicated or used in whole or in part of any purpose other than the purpose of the Pharmacy Information System & Clinic Pharmacy System (PhIS & CPS) Project execution only

Reference ID : U. MANUAL_CDR_DISPENSING-12th E

Application reference: PhIS & CPS v2.5.1

Table of Contents

1.0	Introduction	1
1.1	Overview of PhIS.....	1
1.2	Purpose and Objectives	1
1.3	Organised Sections.....	1
2.0	Application Standard Features	2
2.1	PhIS Legend.....	2
3.0	Cytotoxic Drug Reconstitution (CDR) Dispensing.....	4
	Overview	4
	User Group.....	4
	Functional Diagram.....	4
	Functional Description	5
3.1	Cytotoxic Drug Reconstitution (CDR) Verification	6
3.1.1	Verify CDR Order.....	6
3.1.2	Intervention CDR Order	12
3.1.3	Hold/Resume CDR Order	18
3.2	CDR Preparation	22
3.2.1	Sending Outsource	31
3.2.2	Receive Outsource	35
3.2.3	Outsource Result Received.....	39
3.3	CDR Dispensing	42
3.4	Release/Discard Batch	47
4.0	Acronyms.....	51
5.0	Links to Clinical Modules.....	51

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

1.2 Purpose and Objectives

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

User will understand the following activities in details:

- Cytotoxic Drug Reconstitution (CDR) Verification Visit Management
- Verify CDR Order
- Intervention CDR Order
- Hold/Resume CDR Order

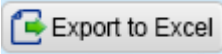
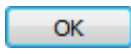
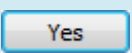
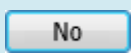
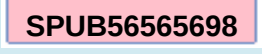
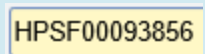
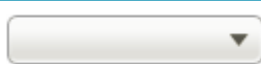
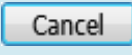
1.3 Organised Sections

These are the sections within this document:

- Section 1 : Introduction
- Section 2 : Application Standard Features
- Section 3 : Cytotoxic Drug Reconstitution (CDR) Dispensing
- Section 4 : Acronyms
- Section 5 : Link 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	Update Record	 Verify	Verify Prescription
 History	View History	 Hold	Hold Order
 Resume	Resume Order	 Worksheet	Print Worksheet
 Label	Print Label	 Prepare	Prepare Drug
 Dispense	Dispense Drug	 Search History	View History
 Release	Release Batch	 Discard	Discard Batch

Note

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

3.0 Cytotoxic Drug Reconstitution (CDR) Dispensing

Overview

The Cytotoxic Drug Reconstitution (CDR) Dispensing module aims to implement safe, organised, and efficient drug-dispensing systems essential for controlling costs and assuring that the medical prescription is safely followed as requested within the relevant deadline. An appropriate dispensing system is important for the prevention or reduction of medication errors by helping to minimize dispensing error opportunities in a pharmacy. At present there are various types of dispensing systems for medical prescriptions within a hospital.

User Group

This module is intended for Specialist, Doctor, Medical Officer, Medical Assistant and Authorised Pharmacist (subject to user assign by the facility)

Functional Diagram

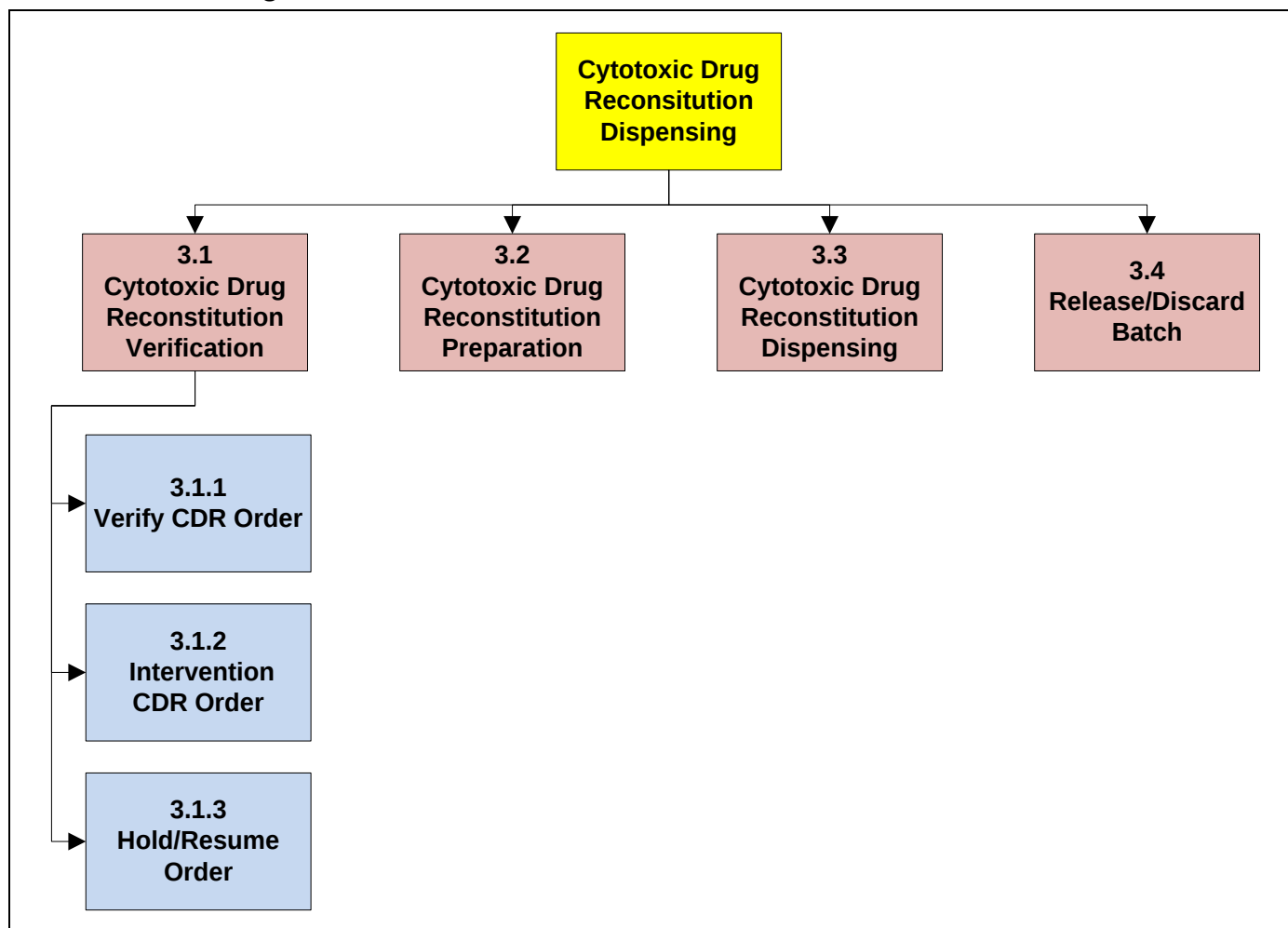


Table 3.0-1

Functional Description

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

- **Verification**

Verification is for pharmacist to verify the prescriptions received from order management. This process is mandatory for all prescriptions receive before the user can proceed with dispensing preparation.

- **Preparation**

The prescription and the drug preparation are made in the system that is integrated with the inventory system. Users access system data directly with no need to send files or manual drug labeling.

- **Dispensing**

The prescription and the dispensing report are made in the system that is integrated with the inventory system.

- **Release/Discard Batch**

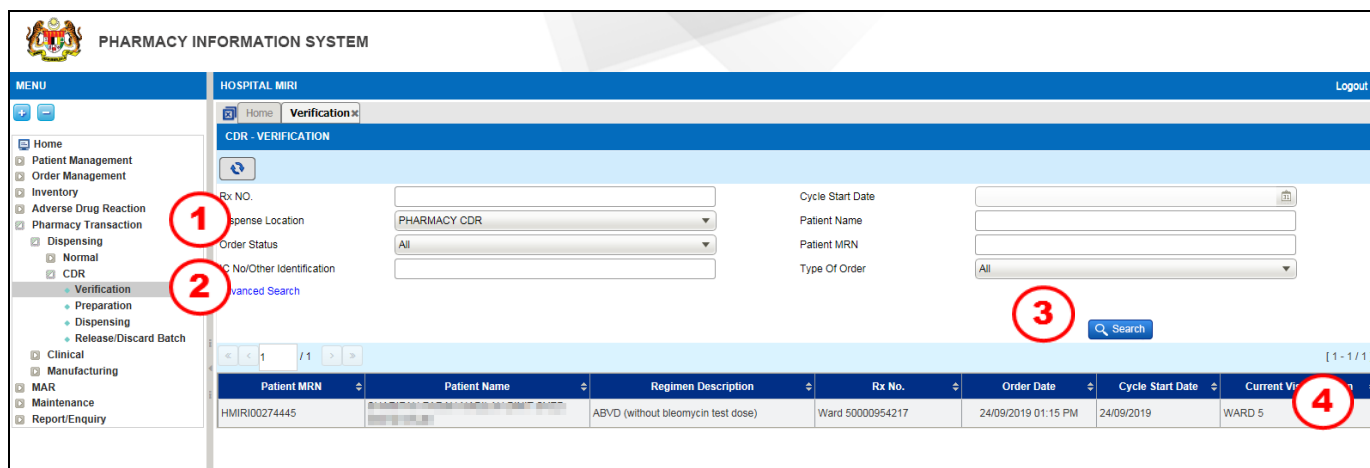
The Release function: allows user to return the allocated quantity of the CDR preparation back into the drug inventory list.

The Discard function: allows user to dispose the CDR product that has been prepared.

3.1 Cytotoxic Drug Reconstitution (CDR) Verification

Verification is for pharmacist to verify the prescriptions received from order management. At this stage, user has the option to do intervention and to hold/resume order.

3.1.1 Verify CDR Order



PHARMACY INFORMATION SYSTEM

HOSPITAL MIRI

CDR - VERIFICATION

Rx NO. Cycle Start Date

Dispense Location Patient Name

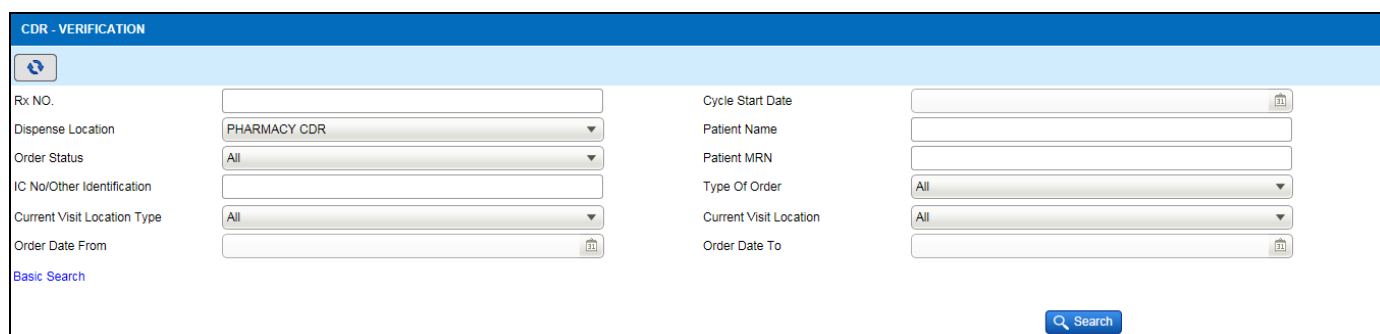
Order Status Patient MRN

IC No/Other Identification Type Of Order

[Advanced Search](#)

Patient MRN	Patient Name	Regimen Description	Rx No.	Order Date	Cycle Start Date	Current Visit Location
HMIRI00274445	[REDACTED]	ABVD (without bleomycin test dose)	Ward 50000954217	24/09/2019 01:15 PM	24/09/2019	WARD 5

Figure 3.1.1-1 CDR Verification Listing Page



CDR - VERIFICATION

Rx NO. Cycle Start Date

Dispense Location Patient Name

Order Status Patient MRN

IC No/Other Identification Type Of Order

Current Visit Location Type Current Visit Location

Order Date From Order Date To

[Basic Search](#)

Figure 3.1.1-2 Advance Search

STEP 1

Click on 'Pharmacy Transaction' menu followed by "Dispensing" sub menu and select 'CDR'

STEP 2

Click on the 'Verification' function

Note

Search patient records by below criteria:-

Basic Search			
No	Field	Description	Remark
a	Rx NO	Prescription number	Able to filter and search patient name by prescription number
b	Dispense Location	Dispensing location. (It will list down all active location)	Able to filter and search patient name by dispensing location
c	Order Status	Search by: - All - Discharge Medications	Able to filter and search patient name by order status

		- New Orders - Outsourced Orders	
d	Patient Name	Patient Name	Allow to search by fully or partially entered patient name
e	Patient MRN	Patient Medical Record Number	Search option: • Type the MRN either in full or partially: <i>Example: HPSF00001234 or "1234"</i>
f	Cycle start date	Cycle start date	Select from the date dropdown box
g	IC Number/Other Identification	Patients Identification number	Able to filter using patients identification number
h	Type of Order	Type of Order	To select from dropdown box option: • Approved • Future
Advance Search			
a	Current Visit Location Type	Search by: - All - Clinic - Day Care - ER - Nursing Unit - Pharmacy	Able to filter and search patient name by order location type
b	Current Visit Location	Current visit Location	Able to filter and search patient name by visit location
c	Order Date From	Order confirmed date	Allow to search by start date of order created
d	Order Date To	Order confirmed date	Allow to search by selected duration of order created

Table 3.1.1-1

STEP 3

Click on Search button  to search for patient

Note

Search result of patient record list will display:

- Patient MRN
- Patient Name
- Regimen Description
- Rx No
- Order Date
- Cycle Start Date
- Current Visit Location

STEP 4

Double click on the selected patient and the CDR Verification screen will be displayed as shown in Figure 3.1.1-3



Mykad 920728146224

Age 27 Years 01 Months 27 Days

Gender Female

MRN

Address

Phone And Email

Diagnosis

No known Allergies

Upload Photo

Height 165 cm Weight 55 kg BMI/BSA 20.2 / 1.59 m² (Last Updated : 24/09/2019) Nationality : Warganegara

Medication Profile | Counselling History | Pharmacist Notes | Demographic | Monitoring Parameter | Other Appointment |

Encounter No: 0001 Actual Admission Date: 24/09/2019 Attending Practitioner: Current Visit Location WARD 5 Rx No: Ward 50000954217 Order By: MD MAMUD MAMUD Cycle Start Date: 24/09/2019

PRESCRIPTION

CDR Cycle History Verify

1 / 1

[1 - 4 / 4]

	Regimen Code	Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	Remarks	Status
	CDRHE00002	Bleomycin HCl 15mg Injection	15.9 mg	5.3 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	4 vial	Remarks	ORDERED
	CDRHE00002	Sodium Chloride 0.9% 100mL IV soln		100 ml		2 bott		
	CDRHE00002	Dacarbazine 100mg/10ml Injection	596.25 mg	59.62 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	12 vial	Remarks	ORDERED
	CDRHE00002	Sodium Chloride 0.9% 500mL IV soln		240.38 ml		2 bott		
	CDRHE00002	Doxorubicin HCl 50mg/25ml Injection	39.75 mg	19.88 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED
	CDRHE00002	Vinblastine Sulphate 10mg Injection	9.54 mg	9.54 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED

Figure 3.1.1-3 CDR Verification

Note

- User can print prescription in verification screen.
- Click on the **Regimen Code** hyperlink to view Regimen Details.

REGIMEN DETAILS

Category Hematology - HL (Hodgkin's Lymphoma)

Regimen Code CDRHE00002

Regimen Description ABVD (without bleomycin test dose)

Cycle Duration 28

Remarks

Active Ingredient	Admin Route	Dosage	Frequency	Chemo day	Infuse Over	Diluent	Diluent Volume	Drug Remark	Status
Bleomycin	Intravenous Bolus	10 mg/m2	OD (once daily)	1,15	0 Hours 15 Minutes	Sodium Chloride 0.9% 100mL IV soln	100 ml	Over 15 minutes	Active
Dacarbazine	Intravenous Infusion	375 mg/m2	OD (once daily)	1,15	1 Hours 0 Minutes	Sodium Chloride 0.9% 500mL IV soln	300 ml	Over 1 hour	Active
Doxorubicin	Intravenous Bolus	25 mg/m2	OD (once daily)	1,15	0 Hours 10 Minutes			Over 10 minutes	Active
Vinblastine	Intravenous Infusion	6 mg/m2	OD (once daily)	1,15	0 Hours 0 Minutes				Active

Figure 3.1.1-4 Regimen Details

- Click on the **Schedule** hyperlink to view Dose Schedule.

DOSE SCHEDULE

Active Ingredient Bleomycin

To Prepare ☒ Daily ☐ Day(s) Before ☐ All Today

1 / 1

Chemo Day	Date	Total Dose/Day	Schedule Time	Preparation Date	Prepare	Dispense	Hold/Resume Dose
1	24/09/2019	15.9 mg	08:00	24/09/2019	☐	☐	☐
15	08/10/2019	15.9 mg	08:00	08/10/2019	☐	☐	☐

Figure 3.1.1-5 Dose Schedule

- Click on the **Remarks** hyperlink to enter Pharmacist Remark.

PHARMACIST REMARK	
  	
Prescriber Remark	
Order Stage	Over 15 minutes
Pharmacist Remark	
Verification Stage	
Preparation Stage	
Dispensing Stage	

Figure 3.1.1-6 Pharmacist Remark

- Pharmacist Remark will be mandatory if the drug under the regimen code need to be authorized.
- Enter remark on the **Verification Stage** field and click on the  button to save the record.
- Click on the **CDR Cycle History** button to view CDR Cycle History.

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)
	CDRHE00002	ABVD (without bleomycin test dose)	24/09/2019	21/10/2019	28 Days	6	1	165cm/55kg/1.59m²		ORDERED	☐	DR. ANAND K. SINGH	
		Drug Name	Dose	Frequency	Route	Chemo Day		Drug Remarks		Status			
		Bleomycin HCl 15mg Injection	15.9 mg Schedule	OD (once daily)	Intravenous Bolus	Day : 1,15		Over 15 minutes		ORDERED			
		Dacarbazine 100mg/10ml Injection	596.25 mg Schedule	OD (once daily)	Intravenous Infusion	Day : 1,15		Over 1 hour		ORDERED			
		Doxorubicin HCl 50mg/25ml Injection	39.75 mg Schedule	OD (once daily)	Intravenous Bolus	Day : 1,15		Over 10 minutes		ORDERED			
		Vinblastine Sulphate 10mg Injection	9.54 mg Schedule	OD (once daily)	Intravenous Infusion	Day : 1,15				ORDERED			

Figure 3.1.1-7 CDR Cycle History

- user is allowed to print CDR History Report by click on selection ☒ button and click  button to print

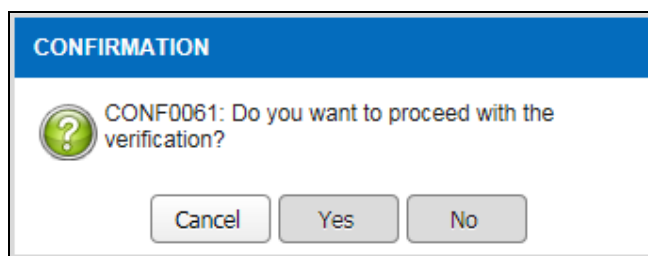
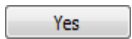
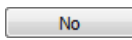


Figure 3.1.1-10 Alert Message

Note

- Click on the  button to confirm the verification.
- Click on the  button to cancel the verification.
- Verified order will flow to the preparation stage.

3.1.2 Intervention CDR Order

CDR VERIFICATION

Prescription

Mykad: 920728146224 | Age: 27 Years 01 Months 27 Days | Gender: Female | MRN: [REDACTED]

Address: [REDACTED] | Phone And Email: [REDACTED] | Diagnosis: [REDACTED] | No known Allergies

Height: 165 cm | Weight: 55 kg | BMI/BSA: 20.2 / 1.59 m² (Last Updated: 24/09/2019) | Nationality: Warganegara

Encounter No: 0001 | Actual Admission Date: 24/09/2019 | Attending Practitioner: [REDACTED] | Current Visit Location: WARD 5 | Rx No: Ward 50000954217 | Order By: [REDACTED] | Cycle Start Date: 24/09/2019

PRESCRIPTION

Regimen Code	Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	Remarks	Status
CDRHE00002	Bleomycin HCl 15mg Injection	15.9 mg	5.3 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	4 vial	Remarks	ORDERED
CDRHE00002	Sodium Chloride 0.9% 100mL IV soln		100 ml		2 bott	Remarks	ORDERED
CDRHE00002	Dacarbazine 100mg/10ml Injection	596.25 mg	59.62 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	12 vial	Remarks	ORDERED
CDRHE00002	Sodium Chloride 0.9% 500mL IV soln		240.38 ml		2 bott	Remarks	ORDERED
CDRHE00002	Doxorubicin HCl 50mg/25ml Injection	39.75 mg	19.88 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED
CDRHE00002	Vinblastine Sulphate 10mg Injection	9.54 mg	9.54 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED

Figure 3.1.2-1 CDR Verification

STEP 1

Right click on the  button and select **Intervention** function and the Intervention screen will be displayed as shown in Figure 3.1.2-2

INTERVENTION

History

INTERVENTION REASON

Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted
☐ Authenticity		☐	☐
☐ Contraindication		☐	☐
☐ Drug Interaction		☐	☐
☐ Inappropriate Dose		☐	☐
☐ Inappropriate Drug		☐	☐
☐ Inappropriate Duration		☐	☐
☐ Inappropriate Frequency		☐	☐
☐ Incompatibility		☐	☐
☐ Others		☐	☐
☐ Polypharmacy		☐	☐
☐ Suggest to Monitor Vital Signs/Lab Result		☐	☐
☐ Wrong Patient		☐	☐

MODIFY ORDER

Cycle Start Date: 24/09/2019 | Cycle End Date: 21/10/2019 | Cycle Duration: 28 Days | BSA: 1.59 m² | Actual Body Weight: 55 Kg

Calculate Dose Using: ☐ Actual Body Weight | ☐ BSA

Active Ingredient: Bleomycin | Drug Name: Bleomycin HCl 15mg Injection | Drug Category: A

Drug Indication: Antineoplastic, Cytotoxic Antibiotics | Dosage Form: Powder for IV Soln | Admin Route: Intravenous Bolus

Dosage: 10 mg / m2 | Total Dose: 15.9 mg | Drug Volume: 5.3 ml

Diluent: Sodium Chloride 0.9% 100mL IV soln | Diluent Volume: 100 ml | Total Volume: 105.3 ml

Frequency: OD (once daily) | Infuse Over: 0 (hh) : 15 (mm) | Infusion Rate: 7 ml/Min | Chemo Day: 1,15

Remarks: Over 15 minutes

Updated By: DR KOH KENG HEE | Updated Date: 24/09/2019

Figure 3.1.2-2 Intervention

STEP 2

Select **Intervention Reason** from *Intervention Reason* column:

- Authenticity
- Contraindication
- Drug Interaction
- Inappropriate Dose
- Inappropriate Drug
- Inappropriate Duration
- Inappropriate Frequency
- Incompatibility
- Others
- Polypharmacy
- Suggest to Monitor Vital Signs/Lab Result
- Wrong Patient

STEP 3

Select **Intervention Status** radio button

Note

Pharmacist will select ☒ **Accepted** after confirming status with prescriber.

STEP 4

Modify order details

STEP 5

Click on the  button to save the record and alert message will be displayed as shown in Figure 3.1.2-3

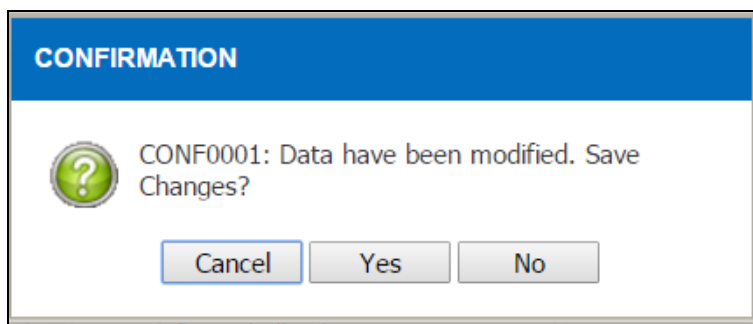
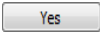


Figure 3.1.2-3 Alert Message

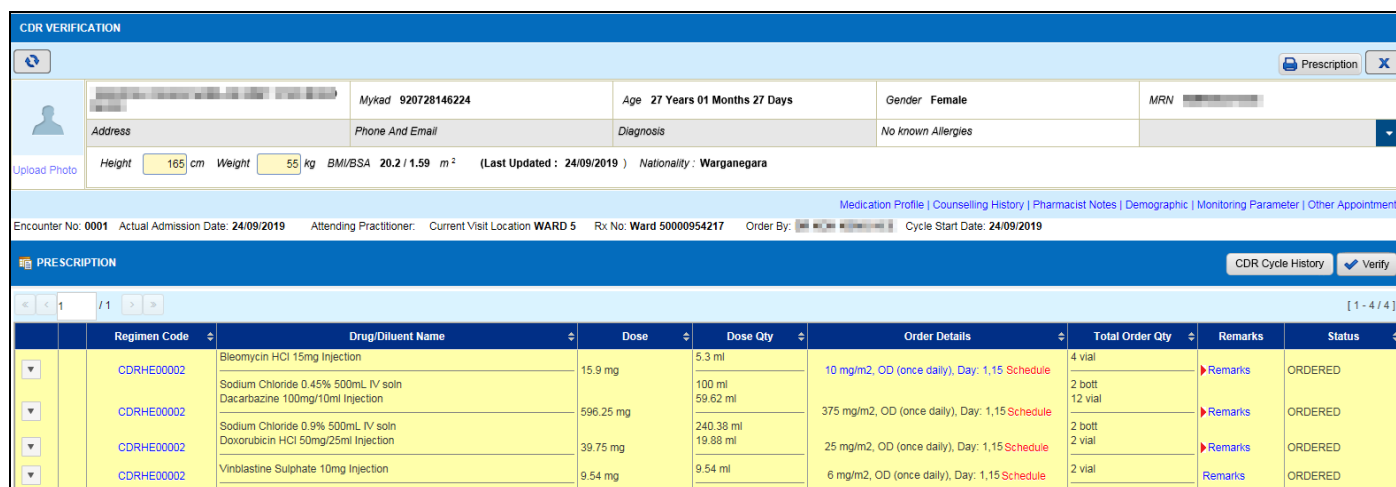
Note

- Click on the  button to confirm saving.
- To view the intervention history, user is allowed to click on the  button.

INTERVENTION REASON HISTORY LISTING			
			
<< < 1 > >> [1 - 1 / 1]			
Date/Time	Intervention Reason	Remarks	Updated By
24/09/2019 02:54:20 PM	Others		

Figure 3.1.2-4 Pharmacist Remark

- After intervention is made, Order Details column will change to a hyperlink as shown in Figure 3.1.2-5, and user is allowed to click to view the original order details.
- Order details will be displayed as shown in Figure 3.1.2-6.



CDR VERIFICATION

Prescription X

Mykad: 920728146224, Age: 27 Years 01 Months 27 Days, Gender: Female, MRN: [REDACTED]

Address: [REDACTED], Phone And Email: [REDACTED], Diagnosis: [REDACTED], No known Allergies

Height: 165 cm, Weight: 55 kg, BMI/BSA: 20.2 / 1.59 m² (Last Updated: 24/09/2019), Nationality: Warganegara

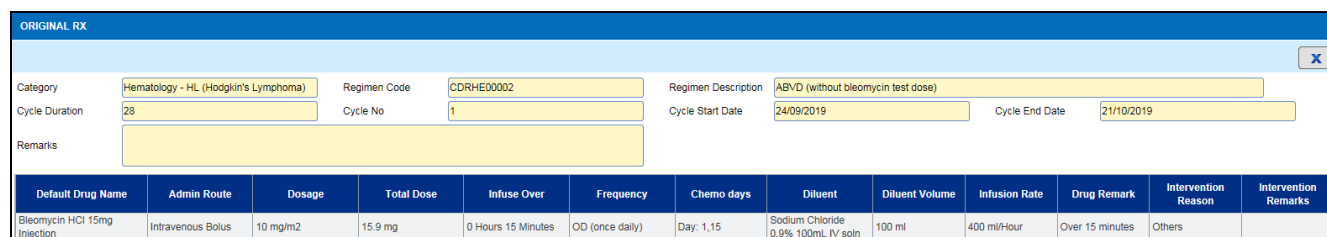
Encounter No: 0001, Actual Admission Date: 24/09/2019, Attending Practitioner: [REDACTED], Current Visit Location: WARD 5, Rx No: Ward 50000954217, Order By: [REDACTED], Cycle Start Date: 24/09/2019

PRESCRIPTION

CDR Cycle History Verify

Regimen Code	Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	Remarks	Status
CDRHE00002	Bleomycin HCl 15mg Injection	15.9 mg	5.3 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	4 vial	Remarks	ORDERED
CDRHE00002	Sodium Chloride 0.45% 500mL IV soln	596.25 mg	100 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	2 bott 12 vial	Remarks	ORDERED
CDRHE00002	Sodium Chloride 0.9% 500mL IV soln	39.75 mg	240.38 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 bott 2 vial	Remarks	ORDERED
CDRHE00002	Vinblastine Sulphate 10mg Injection	9.54 mg	9.54 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED

Figure 3.1.2-5 Prescription After Intervention



ORIGINAL RX

Category: Hematology - HL (Hodgkin's Lymphoma), Regimen Code: CDRHE00002, Regimen Description: ABVD (without bleomycin test dose)

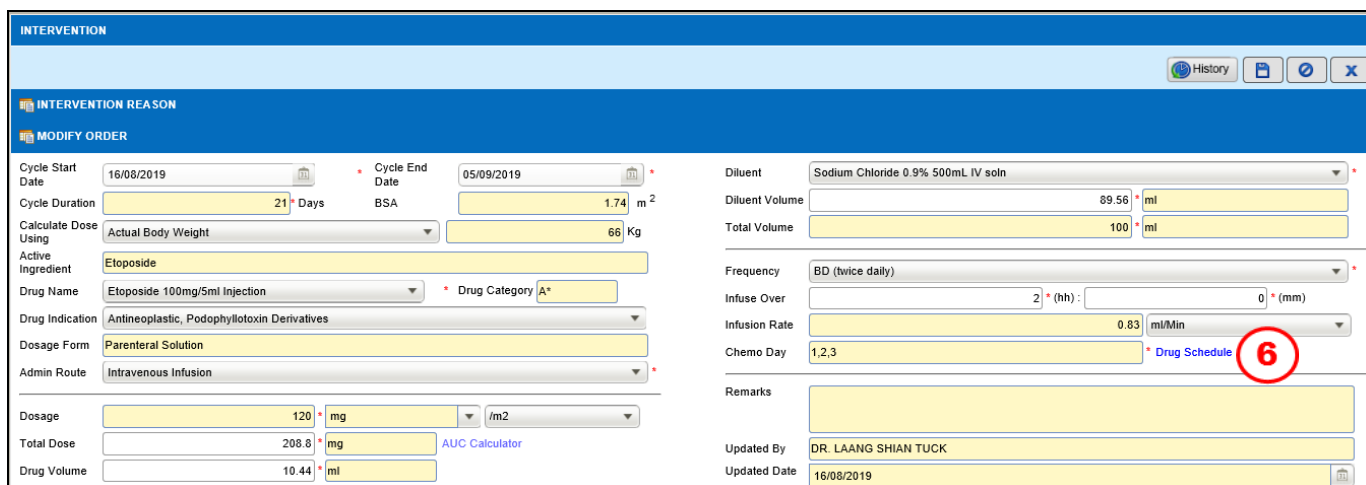
Cycle Duration: 28, Cycle No: 1, Cycle Start Date: 24/09/2019, Cycle End Date: 21/10/2019

Default Drug Name	Admin Route	Dosage	Total Dose	Infuse Over	Frequency	Chemo days	Diluent	Diluent Volume	Infusion Rate	Drug Remark	Intervention Reason	Intervention Remarks
Bleomycin HCl 15mg Injection	Intravenous Bolus	10 mg/m2	15.9 mg	0 Hours 15 Minutes	OD (once daily)	Day: 1,15	Sodium Chloride 0.9% 100mL IV soln	100 ml	400 ml/Hour	Over 15 minutes	Others	

Figure 3.1.2-6 Original Rx

Note

In intervention screen, user also is allowed to do a Hold function for selected dose as shown in Figure 3.1.2-7



INTERVENTION

History

INTERVENTION REASON

MODIFY ORDER

Cycle Start Date: 16/08/2019, Cycle End Date: 05/09/2019, Cycle Duration: 21 Days, BSA: 1.74 m²

Calculate Dose Using: Actual Body Weight, 66 Kg

Active Ingredient: Etoposide

Drug Name: Etoposide 100mg/5ml Injection, Drug Category: A*

Drug Indication: Antineoplastic, Podophylotoxin Derivatives

Dosage Form: Parenteral Solution

Admin Route: Intravenous Infusion

Dosage: 120 mg, Total Dose: 208.8 mg, Drug Volume: 10.44 ml

Diluent: Sodium Chloride 0.9% 500mL IV soln, Diluent Volume: 89.56 ml, Total Volume: 100 ml

Frequency: BD (twice daily), Infuse Over: 2 (hh) : 0 (mm), Infusion Rate: 0.83 ml/Min

Chemo Day: 1,2,3, Drug Schedule: 6

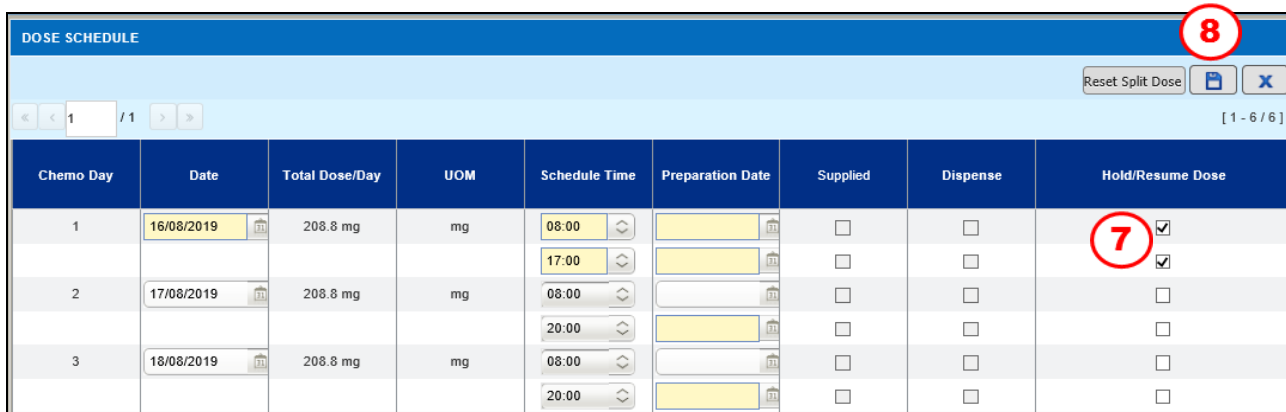
Remarks: [REDACTED]

Updated By: DR. LAANG SHIAN TUCK, Updated Date: 16/08/2019

Figure 3.1.2-7 Intervention

STEP 6

Click on the **Drug Schedule** hyperlink and dose schedule window will be display as Figure 3.1.2-8



The screenshot shows the 'DOSE SCHEDULE' window. At the top right, there is a 'Reset Split Dose' button and a close button (X). Below this is a navigation bar with '1 / 1' and '[1 - 6 / 6]'. The main table has the following columns: Chemo Day, Date, Total Dose/Day, UOM, Schedule Time, Preparation Date, Supplied, Dispense, and Hold/Resume Dose. The table contains three rows of data for Chemo Days 1, 2, and 3. In the first row, the 'Hold/Resume Dose' checkbox is checked, and it is circled with a red '7'. The window title bar is circled with a red '8'.

Chemo Day	Date	Total Dose/Day	UOM	Schedule Time	Preparation Date	Supplied	Dispense	Hold/Resume Dose
1	16/08/2019	208.8 mg	mg	08:00		☐	☐	☒
				17:00		☐	☐	☒
2	17/08/2019	208.8 mg	mg	08:00		☐	☐	☐
				20:00		☐	☐	☐
3	18/08/2019	208.8 mg	mg	08:00		☐	☐	☐
				20:00		☐	☐	☐

Figure 3.1.2-9 Dose Schedule

STEP 7

Click on the **Hold/Resume Dose** ☒ checkbox

Note

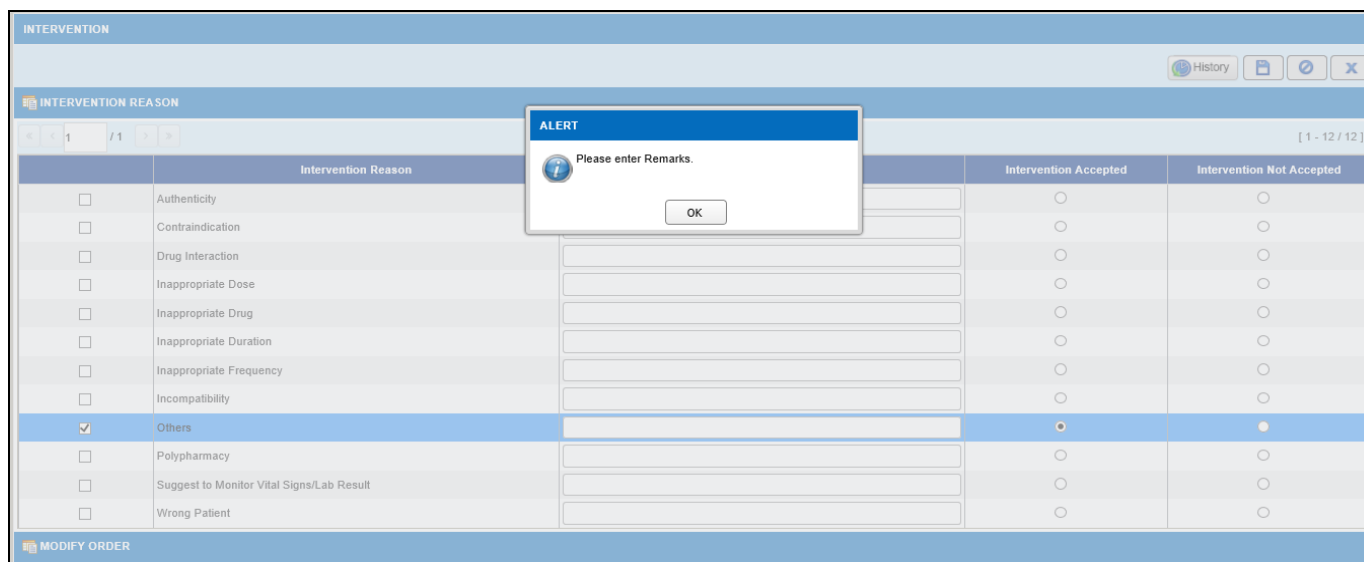
User is allowed to Hold only for Dose that does not yet check on the 'Supplied' or 'Dispense' checkbox

STEP 8

Click on the  button to save the record

Note

User is allowed to hold drug by dose only through Intervention screen. once user selected Hold dose and save the records, it is mandatory for user to enter **Intervention Reason - Remarks** before can proceed to save intervention records (Figure 3.1.2-10)



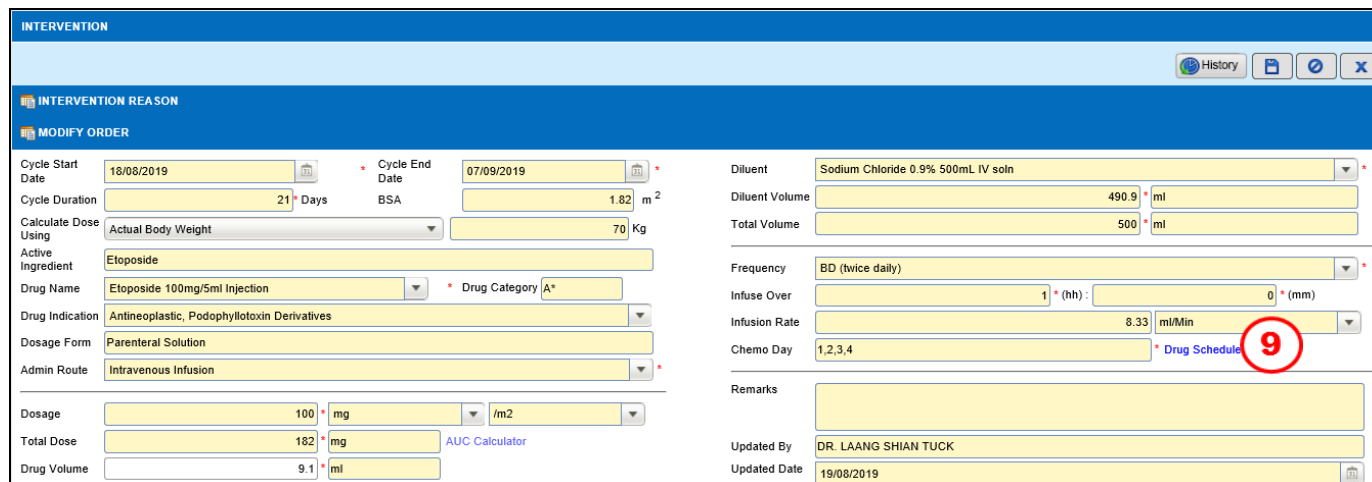
The screenshot shows the 'INTERVENTION' window. At the top right, there is a 'History' button and a close button (X). Below this is a navigation bar with '1 / 1' and '[1 - 12 / 12]'. The main table has the following columns: Intervention Reason, Intervention Accepted, and Intervention Not Accepted. The table contains several rows of data. An 'ALERT' dialog box is displayed in the center, asking the user to 'Please enter Remarks.' and has an 'OK' button. The 'Intervention Reason' column has a list of reasons, with 'Others' selected and highlighted in blue.

Intervention Reason	Intervention Accepted	Intervention Not Accepted
☐ Authenticity	☐	☐
☐ Contraindication	☐	☐
☐ Drug Interaction	☐	☐
☐ Inappropriate Dose	☐	☐
☐ Inappropriate Drug	☐	☐
☐ Inappropriate Duration	☐	☐
☐ Inappropriate Frequency	☐	☐
☐ Incompatibility	☐	☐
☒ Others	☒	☒
☐ Polypharmacy	☐	☐
☐ Suggest to Monitor Vital Signs/Lab Result	☐	☐
☐ Wrong Patient	☐	☐

Figure 3.1.2-10 Intervention

Note

For partially supply, user is allowed to modify Total Dose/Day as shown in Figure 3.1.2-11 and it is applicable only for Infusion/Injectable Drug.



INTERVENTION

History [Save] [Print] [Close]

INTERVENTION REASON

MODIFY ORDER

Cycle Start Date: 18/08/2019 Cycle End Date: 07/09/2019
 Cycle Duration: 21 Days BSA: 1.82 m²
 Calculate Dose Using: Actual Body Weight 70 Kg
 Active Ingredient: Etoposide
 Drug Name: Etoposide 100mg/5ml Injection Drug Category: A*
 Drug Indication: Antineoplastic, Podophyllotoxin Derivatives
 Dosage Form: Parenteral Solution
 Admin Route: Intravenous Infusion
 Dosage: 100 mg /m2
 Total Dose: 182 mg AUC Calculator
 Drug Volume: 9.1 ml

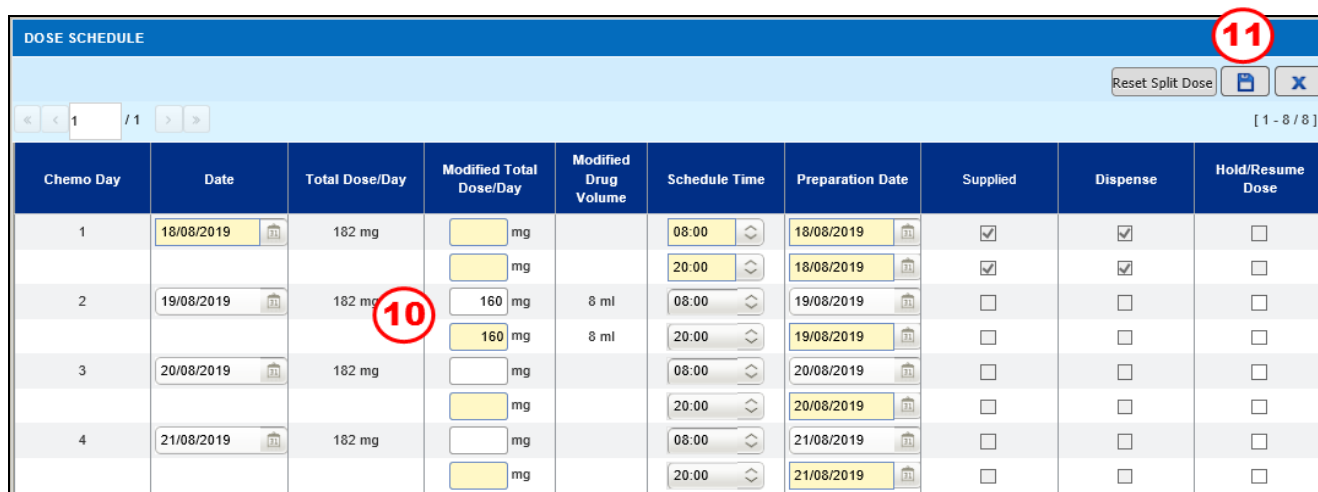
Diluent: Sodium Chloride 0.9% 500mL IV soln
 Diluent Volume: 490.9 ml
 Total Volume: 500 ml

Frequency: BD (twice daily)
 Infuse Over: 1 (hh) : 0 (mm)
 Infusion Rate: 8.33 ml/Min
 Chemo Day: 1,2,3,4 Drug Schedule: 9
 Remarks:
 Updated By: DR. LAANG SHIAN TUCK
 Updated Date: 19/08/2019

Figure 3.1.2-11 Intervention

STEP 9

Click on the **Drug Schedule** hyperlink and dose schedule window will be display as Figure 3.1.2-12



DOSE SCHEDULE

Reset Split Dose [Save] [Close]

[1 - 8 / 8]

Chemo Day	Date	Total Dose/Day	Modified Total Dose/Day	Modified Drug Volume	Schedule Time	Preparation Date	Supplied	Dispense	Hold/Resume Dose
1	18/08/2019	182 mg	mg		08:00	18/08/2019	☒	☒	☐
			mg		20:00	18/08/2019	☒	☒	☐
2	19/08/2019	182 mg	160 mg	8 ml	08:00	19/08/2019	☐	☐	☐
			160 mg	8 ml	20:00	19/08/2019	☐	☐	☐
3	20/08/2019	182 mg	mg		08:00	20/08/2019	☐	☐	☐
			mg		20:00	20/08/2019	☐	☐	☐
4	21/08/2019	182 mg	mg		08:00	21/08/2019	☐	☐	☐
			mg		20:00	21/08/2019	☐	☐	☐

Figure 3.1.2-12 Dose Schedule

STEP 10

Enter **Modified Total Dose/Day**

Note

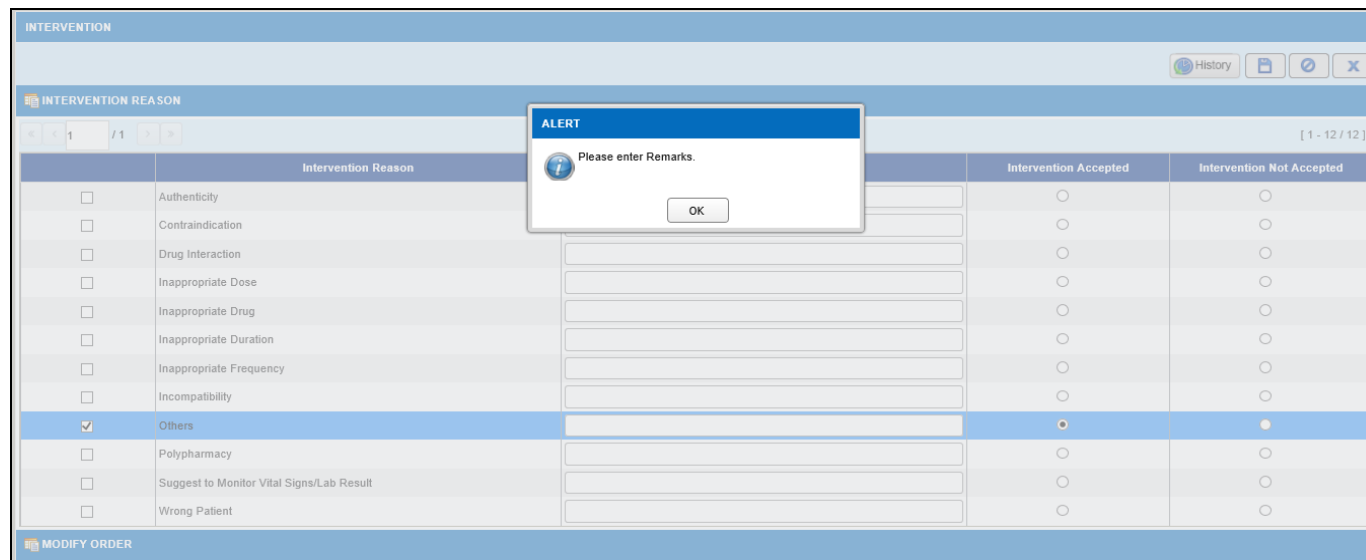
- Once users entered value for 'Modified Total Dose/Day', 'Modified Drug Volume' value will be auto calculated and display.
- If 1 chemo day/schedule date have multiple schedule time, only on first schedule time dose able to enter/edit 'Modified Total Dose/Day' value and the sequences of schedule time dose will follow the first schedule time dose.

STEP 11

Click on the  button to save the record

Note

After save the Dose Schedule with Modified Total Dose/Day value, 'Intervention Reason – Remarks' is mandatory for user to specify before can proceed to save intervention record as shown in Figure 3.1.2-13

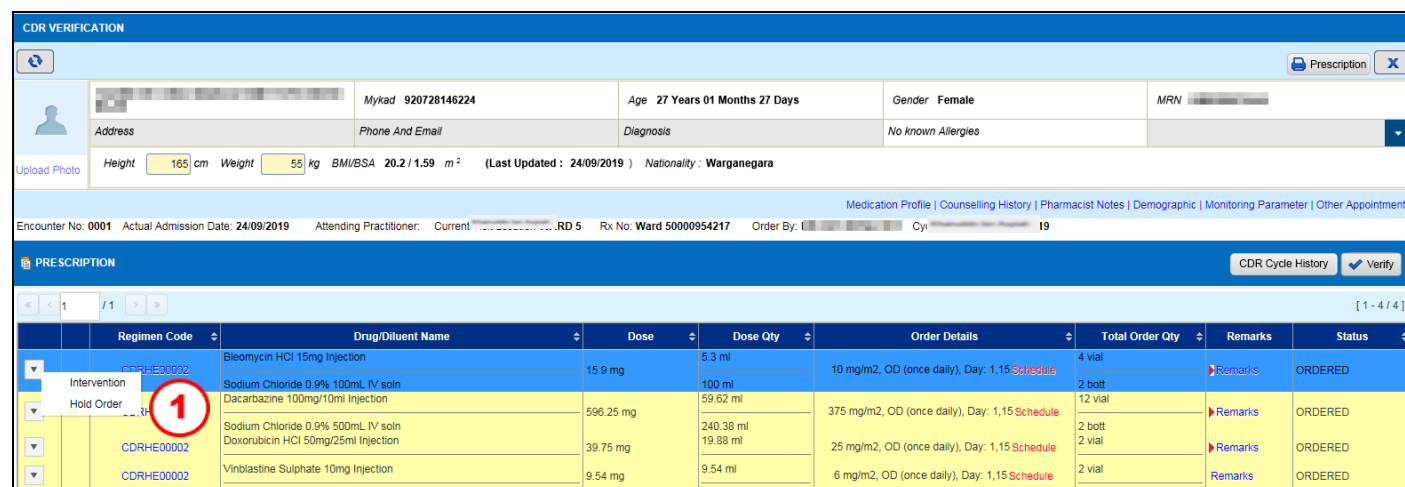


The screenshot displays the 'INTERVENTION' form in the PhIS system. At the top, there is a header bar with the title 'INTERVENTION' and a 'History' button. Below this is a section titled 'INTERVENTION REASON' with a pagination indicator showing '1 / 1'. The main area contains a table with the following columns: 'Intervention Reason', 'Intervention Accepted', and 'Intervention Not Accepted'. The table lists various reasons for intervention, each with a checkbox in the first column and radio buttons in the last two columns. An 'ALERT' dialog box is overlaid on the table, displaying the message 'Please enter Remarks.' and an 'OK' button. The 'Others' row is currently selected, and its 'Intervention Accepted' radio button is active. At the bottom of the form, there is a 'MODIFY ORDER' button.

	Intervention Reason	Intervention Accepted	Intervention Not Accepted
☐	Authenticity	☐	☐
☐	Contraindication	☐	☐
☐	Drug Interaction	☐	☐
☐	Inappropriate Dose	☐	☐
☐	Inappropriate Drug	☐	☐
☐	Inappropriate Duration	☐	☐
☐	Inappropriate Frequency	☐	☐
☐	Incompatibility	☐	☐
☒	Others	☒	☐
☐	Polypharmacy	☐	☐
☐	Suggest to Monitor Vital Signs/Lab Result	☐	☐
☐	Wrong Patient	☐	☐

Figure 3.1.2-13 Intervention

3.1.3 Hold/Resume CDR Order



CDR VERIFICATION

Prescription X

Mykad 920728146224 Age 27 Years 01 Months 27 Days Gender Female MRN

Address Phone And Email Diagnosis No known Allergies

Height 165 cm Weight 55 kg BMI/BSA 20.2 / 1.59 m² (Last Updated : 24/09/2019) Nationality : Warganegara

Medication Profile | Counselling History | Pharmacist Notes | Demographic | Monitoring Parameter | Other Appointment

Encounter No: 0001 Actual Admission Date: 24/09/2019 Attending Practitioner: Current RD 5 Rx No: Ward 50000954217 Order By: Cyl 19

PRESCRIPTION CDR Cycle History Verify

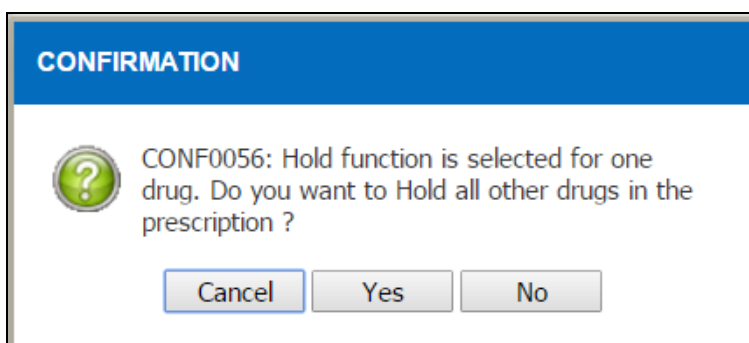
Regimen Code	Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	Remarks	Status
Intervention	Bleomycin HCl 15mg Injection	15.9 mg	5.3 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	4 vial	Remarks	ORDERED
Hold Order	Sodium Chloride 0.9% 100mL IV soln	596.25 mg	100 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	2 bott	Remarks	ORDERED
	Dacarbazine 100mg/10ml Injection	59.62 mg	59.62 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED
CDRHE00002	Sodium Chloride 0.9% 500mL IV soln	240.38 ml	240.38 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED
CDRHE00002	Doxorubicin HCl 50mg/25ml Injection	39.75 mg	19.88 ml				
	Vinblastine Sulphate 10mg Injection	9.54 mg	9.54 ml				

Figure 3.1.3-1 CDR Verification Screen

Hold Order

STEP 1

Right click on the  button and select **Hold Order** function and an alert message will be displayed as shown in Figure 3.1.3-2



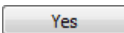
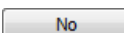
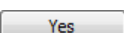
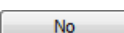
CONFIRMATION

CONF0056: Hold function is selected for one drug. Do you want to Hold all other drugs in the prescription ?

Cancel Yes No

Figure 3.1.3-2 Alert Message

Note

- Click on the  button and system will hold all the drugs in the prescription.
- Click on the  button and system will only hold the selected drug.
- Hold Order – Pharmacist Remarks window will be displayed after  or  button is clicked as shown in Figure 3.1.3-3.

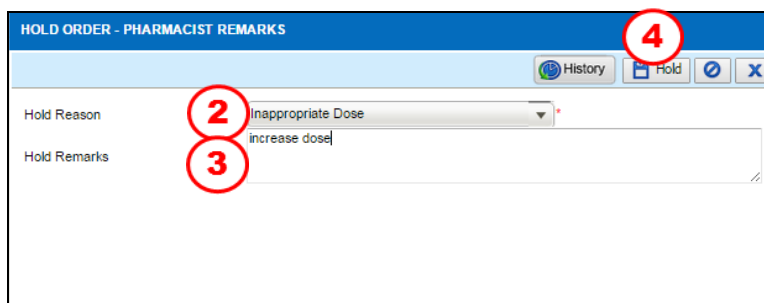


Figure 3.1.3-3 Hold Order – Pharmacist Remarks

STEP 2

Select **Hold Reason** from dropdown box:

- Authenticity
- Contraindication
- Drug Interaction
- Inappropriate Dose
- Inappropriate Drug
- Inappropriate Duration
- Inappropriate Frequency
- Incompatibility
- Others
- Polypharmacy
- Suggest to Monitor Vital Signs/Lab Result
- Wrong Patient

STEP 3

Enter **Hold Remarks** (if required)

STEP 4

Click on the  button to hold the order and an alert message will be displayed as shown in Figure 3.1.3-4

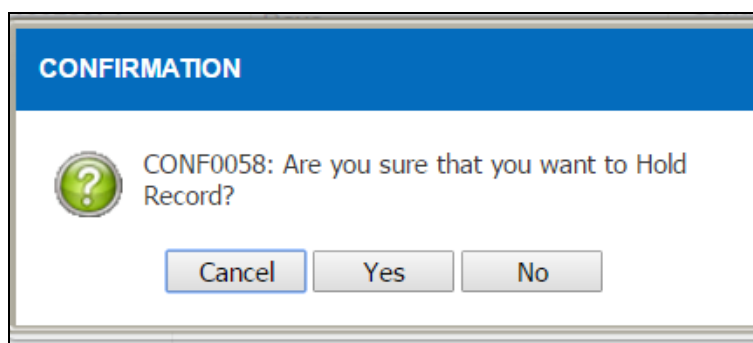
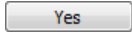


Figure 3.1.3-4 Alert Message

Note

- Click on the  button to confirm the hold record.
- **Status** will change to “Ordered Hold”.

CDR VERIFICATION

Prescription X

Mykad: 920728146224 Age: 27 Years 01 Months 27 Days Gender: Female MRN: [REDACTED]

Address: [REDACTED] Phone And Email: [REDACTED] Diagnosis: [REDACTED] No known Allergies

Height: 165 cm Weight: 55 kg BMI/BSA: 20.2 / 1.59 m² (Last Updated: 24/09/2019) Nationality: Warganegara

Encounter No: 0001 Actual Admission Date: 24/09/2019 Attending Practitioner: [REDACTED] Current Visit Location: WARD 5 Rx No: Ward 50000954217 Order By: [REDACTED] Cycle Start Date: 24/09/2019

PRESCRIPTION CDR Cycle History Verify

Regimen Code	Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	Remarks	Status
CDRHE00002	Bleomycin HCl 15mg Injection	15.9 mg	5.3 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	4 vial	Remarks	ORDERED
	Sodium Chloride 0.45% 500ml IV soln		100 ml		2 bott		
	Dacarbazine 100mg/10ml Injection	596.25 mg	59.62 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	12 vial	Remarks	ORDERED HOLD
	Sodium Chloride 0.9% 500ml IV soln		240.38 ml		2 bott		
	Etoposide HCl 50mg/25ml Injection	39.75 mg	19.88 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED
	Vinblastine Sulphate 10mg Injection	9.54 mg	9.54 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	Remarks	ORDERED

Figure 3.1.3-5 CDR Verification Screen

Resume Order

STEP 1

Right click on the  button and select **Resume Order** function and alert message will be displayed as shown in Figure 3.1.3-6

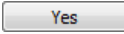
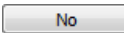
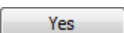
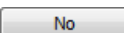
CONFIRMATION

CONF0057: Resume function is selected for one drug. Do you want to Resume all other drugs in the prescription ?

Cancel Yes No

Figure 3.1.3-6 Alert Message

Note

- Click on the  button and system will resume all the drugs in the prescription.
- Click on the  button and system will only resume the selected drug.
- Hold Order – Pharmacist Remarks window will be displayed after  or  button is clicked as Figure 3.1.3-7.

HOLD ORDER - PHARMACIST REMARKS

History Resume X

Hold Reason: Inappropriate Dose

Hold Remarks: increase dose

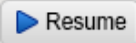
Resume Remarks:

Figure 3.1.3-7 Resume Hold Order

STEP 2

Enter **Resume Remarks** (if required)

STEP 3

Click on the  button to resume the hold order and an alert message will be displayed as shown in Figure 3.1.3-8

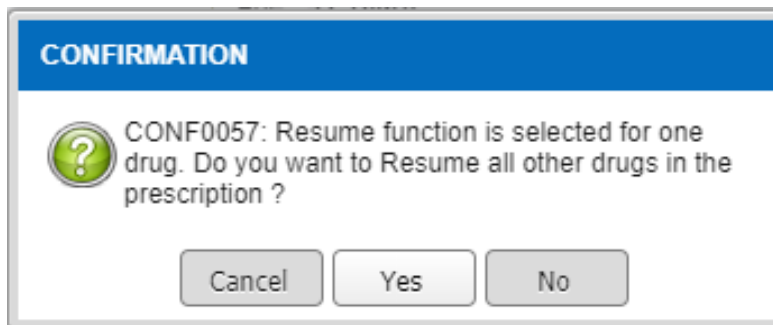
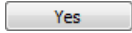


Figure 3.1.3-8 Alert Message

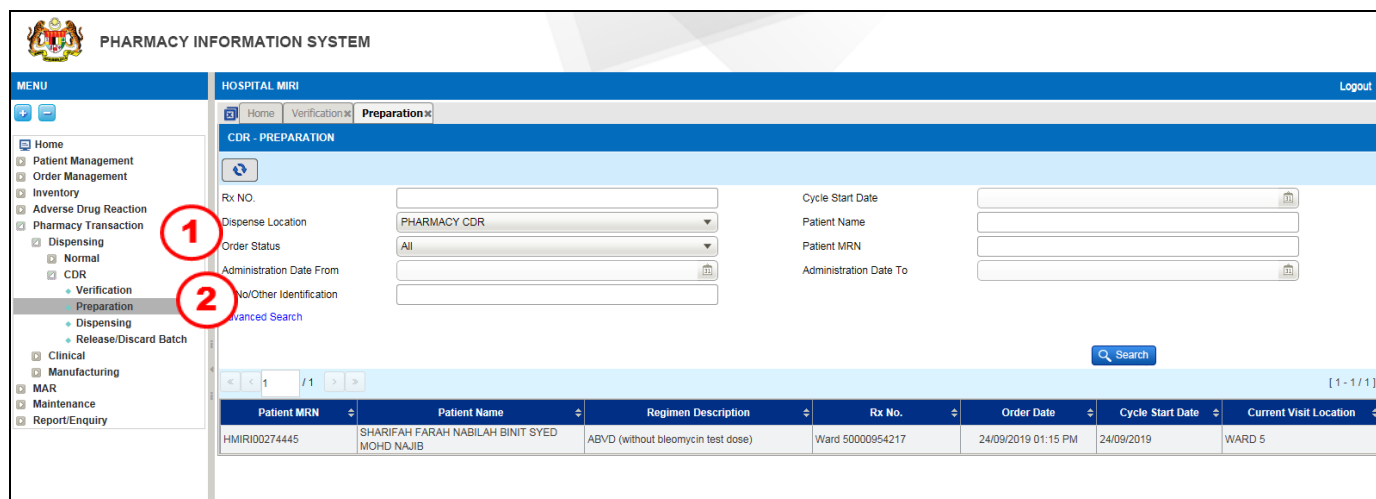
Note

- Click on the  button to confirm the Resume Record.
- Status** will change to "Ordered".
- To view the Hold Reason History Listing as shown in Figure 3.1.3-9, user is allowed to click on the  button.

HOLD REASON HISTORY LISTING					
					
					[1 - 1 / 1]
Date/Time	Screen	Hold Reason	Remarks	Resume Remarks	Updated By
24/09/2019 03:00:57 PM	Verification	Patient Refused	Patient Refused		Khairuddin bin Asyraf

Figure 3.1.3-9 Hold Reason History Listing

3.2 CDR Preparation



PHARMACY INFORMATION SYSTEM

MENU

- Home
- Patient Management
- Order Management
- Inventory
- Adverse Drug Reaction
- Pharmacy Transaction
 - Dispensing
 - Normal
 - CDR
 - Verification
 - Preparation
 - Dispensing
 - Release/Discard Batch
 - Clinical
 - Manufacturing
 - MAR
 - Maintenance
 - Report/Enquiry

HOSPITAL MIRI

Home | Verification | Preparation

CDR - PREPARATION

Rx NO. Cycle Start Date

Dispense Location Patient Name

Order Status Patient MRN

Administration Date From Administration Date To

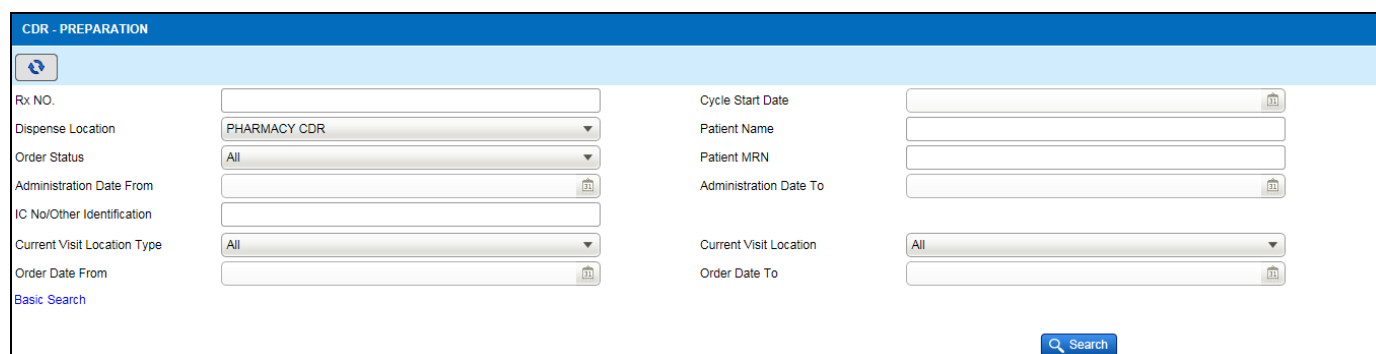
IC No/Other Identification

[Advanced Search](#)

[1 - 1 / 1]

Patient MRN	Patient Name	Regimen Description	Rx No.	Order Date	Cycle Start Date	Current Visit Location
HMIRI00274445	SHARIFAH FARAH NABILAH BINIT SYED MOHD NAJIB	ABVD (without bleomycin test dose)	Ward 50000954217	24/09/2019 01:15 PM	24/09/2019	WARD 5

Figure 3.2-1 CDR Preparation Listing Page



CDR - PREPARATION

Rx NO.

Dispense Location

Order Status

Administration Date From

IC No/Other Identification

Current Visit Location Type

Order Date From

Cycle Start Date

Patient Name

Patient MRN

Administration Date To

Current Visit Location

Order Date To

[Basic Search](#)

Figure 3.2-2 Advance Search

STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Dispensing' sub menu and select 'CDR'

STEP 2

Click on 'Preparation' function

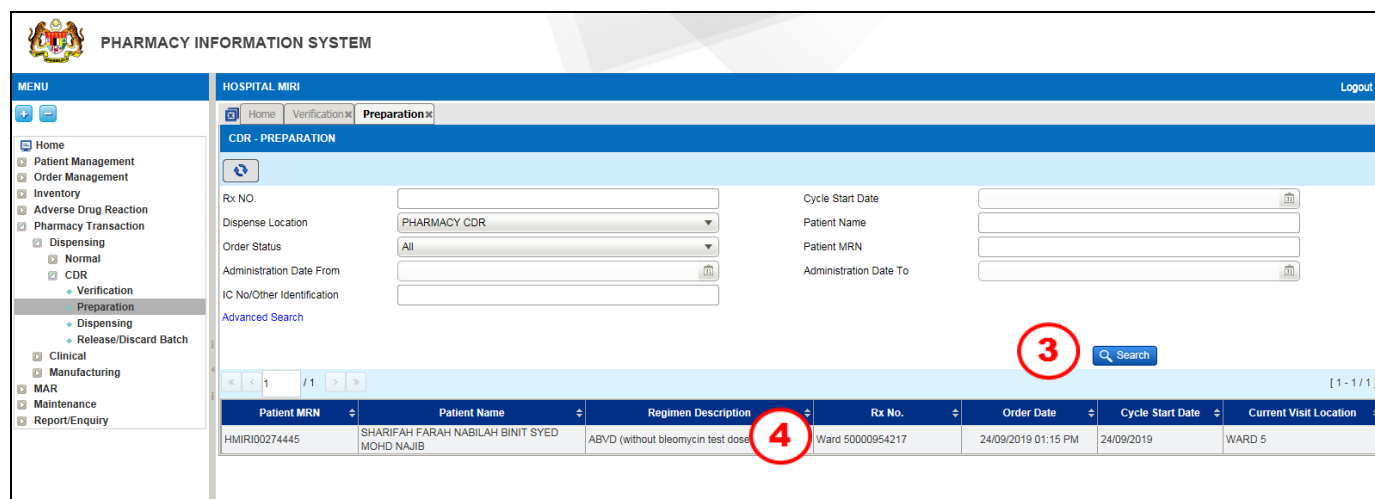
Note

Search patient record based :-

Basic Search			
No	Field	Description	Remark
a	Rx NO	Prescription number	Able to filter and search patient name by prescription number
b	Dispense Location	Dispensing location. (It will list down all active location)	Able to filter and search patient name by dispensing location
C	Order Status	Search by: - All - Verified - Verified Hold - Partial Supply Orders	Able to filter and search patient name by order status
D	Patient Name	Patient Name	Allow to search by full name or partially

			entered patient name
E	Patient MRN	Patient Medical Record Number	Search option: • Type the MRN either in full or partially: <i>Example: HPSF00001234 or "1234"</i>
F	Administration Date From	Administration confirmed date	Allow to search by start date of verification order
G	Administration Date To	Administration confirmed date	Allow to search by selected duration of verification order
f	Cycle start date	Cycle start date	Select from the date dropdown box
g	IC Number/Other Identification	Patients Identification number	Able to filter using patients identification number
Advance Search			
A	Current Visit Location Type	Current Visit Location Type	Search by: - All - Clinic - Day Care - ER - Nursing Unit - Pharmacy
B	Current Visit Location	Current visit Location	Able to filter and search patient name by visit location
C	Order Date From	Order confirmed date from	Allow to search by start date of order created
d	Order Date To	Order confirmed date to	Allow to search by selected duration of order created

Table 3.2-1



PHARMACY INFORMATION SYSTEM

HOSPITAL MIRI

Logout

Home Verification Preparation

CDR - PREPARATION

Rx NO.

Dispense Location

Order Status

Administration Date From

IC No/Other Identification

Cycle Start Date

Patient Name

Patient MRN

Administration Date To

Advanced Search

3 Search

[1 - 1 / 1]

Patient MRN	Patient Name	Regimen Description	Rx No.	Order Date	Cycle Start Date	Current Visit Location
HMIIRI00274445	SHARIFAH FARAH NABILAH BINIT SYED MOHD NAJIB	ABVD (without bleomycin test dose)	Ward 50000954217	24/09/2019 01:15 PM	24/09/2019	WARD 5

Figure 3.2-3 CDR Preparation Listing Page

STEP 3

Click on Search button  to search for patient

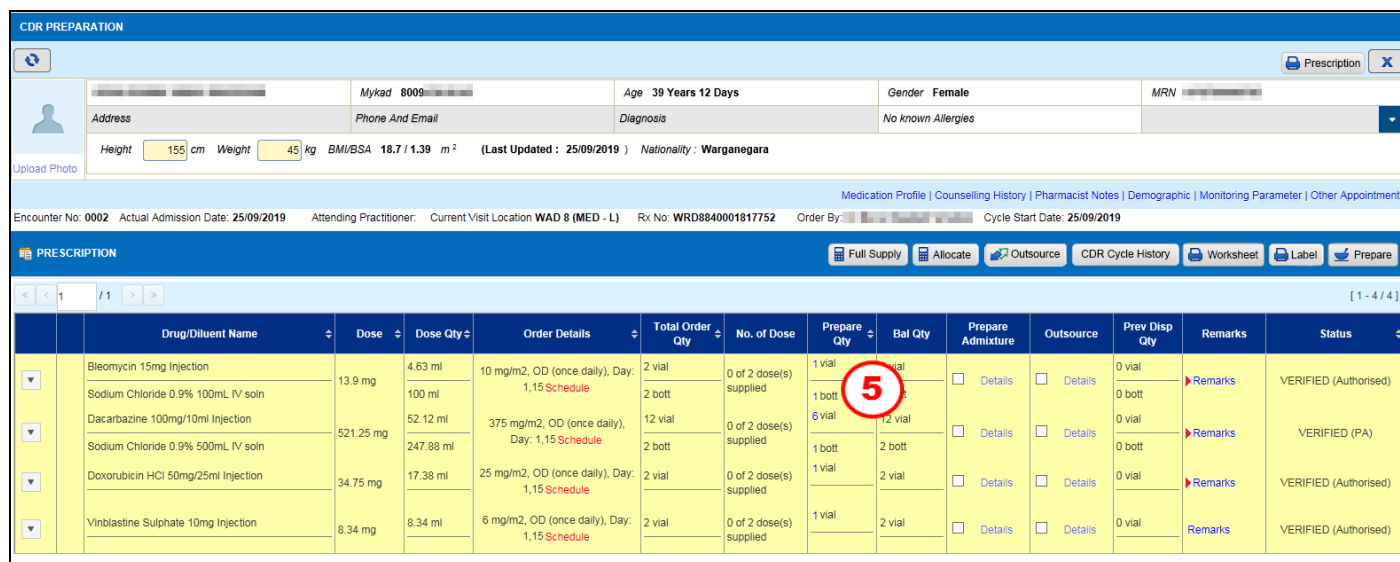
Note

Search results of patient record list will display:

- Patient MRN
- Patient Name
- Rx No
- Order Date/Time
- Current Visit Location

STEP 4

Double click on record and CDR Preparation screen will be displayed as shown in Figure 3.2-4



Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	No. of Dose	Prepare Qty	Bal Qty	Prepare Admixture	Outsource	Prev Disp Qty	Remarks	Status
Bleomycin 15mg Injection	13.9 mg	4.63 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	0 of 2 dose(s) supplied	1 vial	0 vial	☐	☐	0 vial	Remarks	VERIFIED (Authorised)
Sodium Chloride 0.9% 100mL IV soln	100 ml	52.12 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	2 bott	0 of 2 dose(s) supplied	1 bott	0 bott	☐	☐	0 bott	Remarks	VERIFIED (PA)
Dacarbazine 100mg/10ml Injection	521.25 mg	247.88 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 bott	0 of 2 dose(s) supplied	1 bott	0 bott	☐	☐	0 bott	Remarks	VERIFIED (Authorised)
Sodium Chloride 0.9% 500mL IV soln	34.75 mg	17.38 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	0 of 2 dose(s) supplied	1 vial	0 vial	☐	☐	0 vial	Remarks	VERIFIED (Authorised)
Doxorubicin HCl 50mg/25ml Injection	8.34 mg	8.34 ml										
Vinblastine Sulphate 10mg Injection												

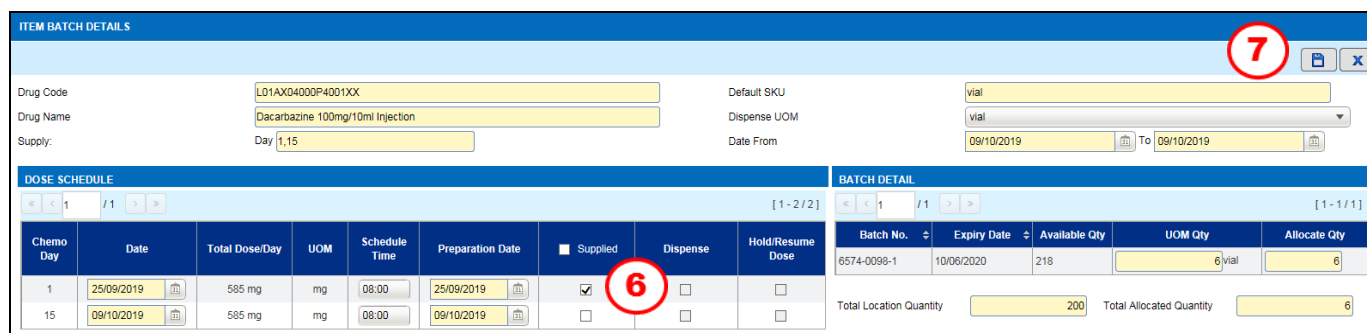
Figure 3.2-4 CDR Preparation

Note

- **Prepare Qty** will be auto allocate after verify the order in Verification Stage ([refer 3.1.1 CDR Verification - Step 5](#))
- **Allocate** button is where system will allocate batch based on the new 'Preparation Date' if user edit the 'Preparation Date' in 'Schedule' hyperlink.
- **Full Supply** button is where system will auto select all balance dose schedule which is not supplied.

STEP 5

Click on the **Prepare Qty** hyperlink and the Item Batch Details window will be displayed for user to allocate quantity



Chemo Day	Date	Total Dose/Day	UOM	Schedule Time	Preparation Date	Supplied	Dispense	Hold/Resume Dose
1	25/09/2019	585 mg	mg	08:00	25/09/2019	☒	☐	☐
15	09/10/2019	585 mg	mg	08:00	09/10/2019	☐	☐	☐

Batch No.	Expiry Date	Available Qty	UOM Qty	Allocate Qty
6574-0098-1	10/06/2020	218	6 vial	6

Total Location Quantity: 200 Total Allocated Quantity: 6

Figure 3.2-5 Item Batch Details

STEP 6

Click on the selected **Supplied** ☒ checkbox to select the dose to prepare

STEP 7

Click on the  button to save the record

CDR PREPARATION

Prescription

Mykad: [REDACTED] Age: 78 Years 11 Months 16 Days Gender: Male MRN: [REDACTED]

Address: [REDACTED] Phone And Email: [REDACTED] Diagnosis: [REDACTED] Known Allergies: [REDACTED]

Height: 160 cm Weight: 55 kg BMI/BSA: 21.5 / 1.56 m² (Last Updated: 25/09/2019) Nationality: Warganegara

Encounter No: 0003 Actual Admission Date: 25/09/2019 Attending Practitioner: [REDACTED] Current Visit Location: WAD 8 (MED - L) Rx No: WRD8840001817755 Order By: [REDACTED] Cycle Start Date: 25/09/2019

PRESCRIPTION Full Supply Allocate Outsource CDR Cycle History Worksheet Label Prepare

Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	No. of Dose	Prepare Qty	Bal Qty	Prepare Admixture	Outsource	Prev Disp Qty	Remarks	Status
Bleomycin 15mg Injection	15.6 mg	5.2 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	4 vial	0 of 2 dose(s) supplied	2 vial	4 vial	☒ Details	☐ Details	0 vial	Remarks	VERIFIED (Authorised)
Sodium Chloride 0.9% 100mL IV soln	100 ml	100 ml		2 bott	0 of 2 dose(s) supplied	1 bott	2 bott	☐ Details	☐ Details	0 bott	Remarks	VERIFIED (PA)
Dacarbazine 100mg/10ml Injection	58.5 mg	58.5 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	12 vial	0 of 2 dose(s) supplied	6 vial	12 vial	☐ Details	☐ Details	0 vial	Remarks	VERIFIED (Authorised)
Sodium Chloride 0.9% 500mL IV soln	241.5 ml	241.5 ml		2 bott	0 of 2 dose(s) supplied	1 bott	2 bott	☐ Details	☐ Details	0 bott	Remarks	VERIFIED (Authorised)
Doxorubicin HCl 50mg/25ml Injection	39 mg	19.5 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	0 of 2 dose(s) supplied	1 vial	2 vial	☐ Details	☐ Details	0 vial	Remarks	VERIFIED (Authorised)
Vinblastine Sulphate 10mg Injection	9.36 mg	9.36 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	0 of 2 dose(s) supplied	1 vial	2 vial	☐ Details	☐ Details	0 vial	Remarks	VERIFIED (Authorised)

Figure 3.2-6 CDR Preparation

STEP 8

Click on the selected **Prepared Admixture** ☒ checkbox to proceed with preparation

Note

- Prepare Admixture Screen will saved automatically upon clicking the checkbox.
- Users are not required to click save and no pop up screen.
- Click on the 'Details' hyperlink to edit or add information and Preparation Details screen will display as Figure 3.2-7

PREPARATION DETAILS

Preparation Using CSTD ☐

Split Preparation ☒ Split to 2 preparations

Storage ☐ Below 0 °C ☒ "Refrigerate (2 - 8 °C)" ☐ Protect from Light ☐ "Room Temperature (< 25 °C)"

Reconstitution Fluid: NS 5ml

Preparation Instruction

Figure 3.2-7 Preparation Details

- User can click on the **Using CSTD** ☒ checkbox to specify preparation using CSTD method.
- User can click on the **Split Preparation** ☒ checkbox to proceed with split preparation

STEP 10

Click on the  button to print drug label as shown in Figure 3.2-10

	HOSPITAL KUALA LUMPUR	1 of 2		HOSPITAL KUALA LUMPUR	2 of 2
CYTOTOXIC DRUG - Handle with care			CYTOTOXIC DRUG - Handle with care		
HKL00381413 Farmasi Bekalan Wad			HKL00381413 Farmasi Bekalan Wad		
Drug name : CISPLATIN ROA : IV INFUSION			Drug name : CISPLATIN ROA : IV INFUSION		
Dose : 48.5 MG Vol : 48.5 ML			Dose : 48.5 MG Vol : 48.5 ML		
IV Fluid : Sodium Chloride 0.9% 500mL IV soln			IV Fluid : Sodium Chloride 0.9% 500mL IV soln		
Inf. Rate : Inf. Over : Vol : 403.00 ml			Inf. Rate : Inf. Over : Vol : 403.00 ml		
Treatment Date : 02/11/2020 Total Vol : 48.5 ml			Treatment Date : 02/11/2020 Total Vol : 48.5 ml		
Prepared Date : 02/11/2020 Exp Date : 02/11/2020			Prepared Date : 02/11/2020 Exp Date : 02/11/2020		
Chemo Day : 1 Exp Time :			Chemo Day : 1 Exp Time :		
Storage : Refrigerate (2 - 8 ?C)			Storage : Refrigerate (2 - 8 ?C)		

Figure 3.2-10 Spilt Preparation Drug Label

	HOSPITAL KUALA LUMPUR	
CYTOTOXIC DRUG - Handle with care		
HKL00381413 Farmasi Bekalan Wad		
Drug Name : METHOTREXATE		
Dose : 104 MG Vol : 7.70 ML		
ROA : IV SLOW BOLUS		
Treatment Date : 02/11/2020		
Prepared Date : 02/11/2020 Exp Date : 03/11/2020		
Chemo Day : 1 Exp Time :		
Storage : Refrigerate (2 - 8 ?C)		

Figure 3.2-11 CDR Drug Label

Note

- When user tick on the multiple Supplied checkbox dose to supply (figure 3.2-12), CDR Edit Label will display drug according to the dose selected as Figure 3.2-13
- Volume will be round up in CDR label as per below conditions:
 - Drug's below 10ml will be round up to 1 decimal point volume. E.g.: 2.8ml becomes 3ml
 - Drugs above 10ml will be round up to 2 decimal point volume. E.g.: 80.8ml becomes 81ml

ITEM BATCH DETAILS

Drug Code
L01CB01000P3001XX

Drug Name
Etoposide 100mg/5ml Injection

Supply:
Day 1,1,2

Default SKU
vial

Dispense UOM
vial

Date From
19/03/2019 To 20/03/2019

DOSE SCHEDULE

Chemo Day	Date	Total Dose	Total Dose/Day	UOM	Schedule Time	Preparation Date	Supplied	Dispense
1	19/03/2019		173	mg	08:00	19/03/2019	☒	☐
					20:00	19/03/2019	☒	☐
2	20/03/2019		173	mg	20:00	20/03/2019	☒	☐
					08:00	20/03/2019	☐	☐
3	21/03/2019		173	mg	08:00	21/03/2019	☐	☐
					20:00	21/03/2019	☐	☐

BATCH DETAIL

Batch No.	Expiry Date	Available Qty	UOM Qty	Allocate Qty
t5t	30/11/2020	3320	6 vial	6

Total Location Quantity 3320
Total Allocated Quantity 6

Figure 3.2-12 Item Batch Details

CDR EDIT LABEL

☒ Select All

☒

Drug Name
Etoposide

Total Dose
173 mg

Drug Volume
8.65 ml

Route
Intravenous Infusion

Treatment Date
19/03/2019

Prepared Date
19/03/2019

Expire Date/Time
19/03/2019

Price(RM)
154.02

Storage

Diluent
Sodium Chloride 0.9% 500mL IV soln

Diluent Volume
491.35 ml

Total Volume
500 ml

Infusion Rate
8.33 ml/Min

Infusion Over
1 hr 0 m

No Of Label To Print
1

Split Preparation
Split to 1 labels

Figure 3.2-13 CDR Edit Label

CDR PREPARATION

Prescription

Mykad [REDACTED] Age 78 Years 11 Months 16 Days Gender Male MRN [REDACTED]

Address Phone And Email Diagnosis Known Allergies

Height 160 cm Weight 55 kg BMI/BSA 21.5 / 1.56 m² (Last Updated : 25/09/2019) Nationality : Warganegara

Upload Photo

Medication Profile | Counselling History | Pharmacist Notes | Demographic **11** Parameter | Other Information

Encounter No: 0003 Actual Admission Date: 25/09/2019 Attending Practitioner: Current Visit Location WAD 8 (MED - L) Rx No: WRD8840001817755 Order By: Cycle Start Date: 25/09/2019

PRESCRIPTION

Full Supply Allocate Outsource CDR Cycle History Worksheet Label Prepare

	Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	No. of Dose	Prepare Qty	Bal Qty	Prepare Admixture	Outsource	Prev Disp Qty	Remarks	Status
	Bleomycin 15mg Injection	15.6 mg	5.2 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	4 vial	0 of 2 dose(s) supplied	2 vial	4 vial	☒ Details	☐ Details	0 vial	Remarks	VERIFIED (Authorised)
	Sodium Chloride 0.9% 100mL IV soln		100 ml		2 bott		1 bott	2 bott			0 bott		
	Dacarbazine 100mg/10ml Injection	585 mg	58.5 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	12 vial	0 of 2 dose(s) supplied	6 vial	12 vial	☒ Details	☐ Details	0 vial	Remarks	VERIFIED (PA)
	Sodium Chloride 0.9% 500mL IV soln		241.5 ml		2 bott		1 bott	2 bott			0 bott		
	Doxorubicin HCl 50mg/25ml injection	39 mg	19.5 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	0 of 2 dose(s) supplied	1 vial	2 vial	☒ Details	☐ Details	0 vial	Remarks	VERIFIED (Authorised)
	Vinblastine Sulphate 10mg Injection	9.36 mg	9.36 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	0 of 2 dose(s) supplied	1 vial	2 vial	☒ Details	☐ Details	0 vial	Remarks	VERIFIED (Authorised)

Figure 3.2-14 CDR Preparation

STEP 11

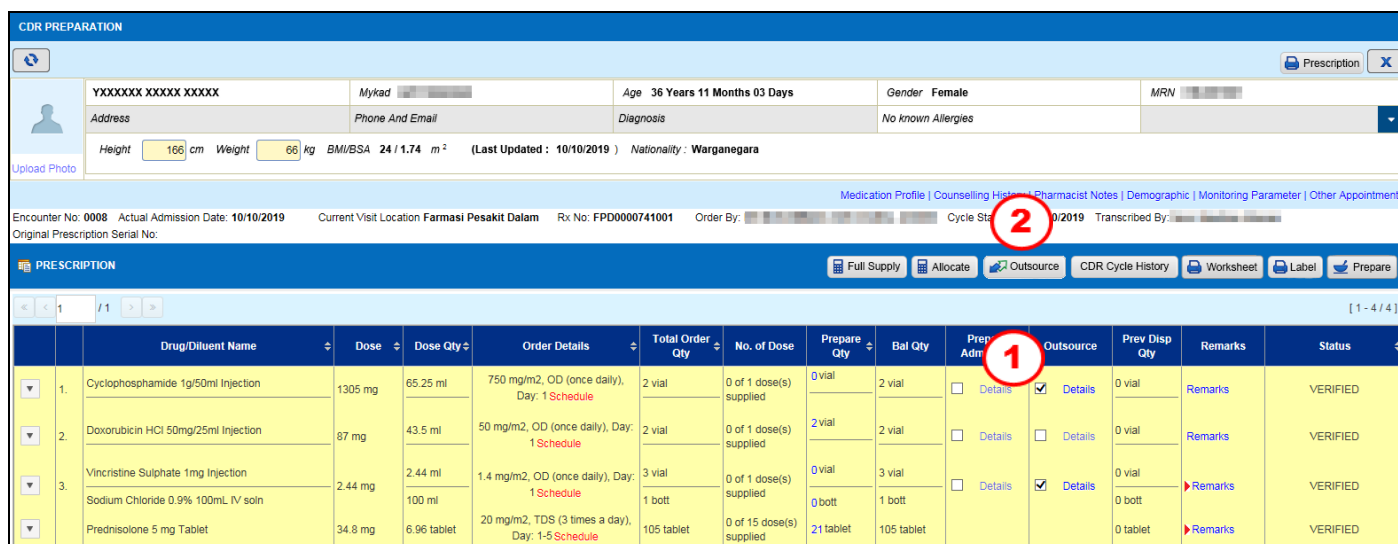
Click on the **Worksheet** button to view and print record as shown in Figure 3.2-15

CDR WORKSHEET												
MINISTRY OF HEALTH												
HOSPITAL KUALA LUMPUR												
Preparation Date : 02/11/2020				Worksheet ID: 20-11-0001								
Name : ██████████				Gender : Male				Rx. No. : BWFR00001526184				
MRN : HKL00381413				Height/Weight/BSA : 170 cm/80 kg/1.94 m²				Regimen : Cisplatin + Methotrexate(MTX)				
ID No : ██████████				Ordered By : Dr. Khor Phay Phay				Cycle No. : 1				
Age : 31Y 11M 10D				Current Visit Location : Farmasi Bekalan Wad Radioterapi &								
No	ROA	Preparation Name	Drug/Diluent Name	Material Used						Storage	Instruction	
				Total Dose	Drug / Diluent Vol	No of Dose	No of Pack	Allocated Qty	Batch No			Expiry Date
1	INF	Cisplatin	Cisplatin 50mg/50ml Injection	48.5 mg	48.5 ml	1 dose(s) to supply	2	2 vial	X9IF014A	31/08/2021	Refrigerate (2 - 8 °C)	
		Recons. Fluid:- Chemo Day:1	Sodium Chloride 0.9% 500mL IV soln		403.00 ml			1 bottle	P3106231	25/10/2021		
	INF	Cisplatin	Cisplatin 50mg/50ml Injection	48.5 mg	48.5 ml						Refrigerate (2 - 8 °C)	
		Recons. Fluid:- Chemo Day:1	Sodium Chloride 0.9% 500mL IV soln		403.00 ml							
2	IVSB	Methotrexate	Methotrexate 50mg/2ml Injection	194 mg	7.76 ml	1 dose(s) to supply	1	4 vial	bfjdjvtf	31/12/2020	Refrigerate (2 - 8 °C)	
		Recons. Fluid:- Chemo Day:1										

Worksheet generated by ██████████	Worksheet & label checked by	Prepared by	Final Product Checked by
Date: 02/11/2020	Date:	Date:	Date:

Figure 3.2-15 CDR Worksheets

3.2.1 Sending Outsource



Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	No. of Dose	Prepare Qty	Bal Qty	Prep Adm	Outsource	Prev Disp Qty	Remarks	Status
1. Cyclophosphamide 1g/50ml Injection	1305 mg	65.25 ml	750 mg/m2, OD (once daily), Day: 1 Schedule	2 vial	0 of 1 dose(s) supplied	0 vial	2 vial	☒	☒	0 vial	Remarks	VERIFIED
2. Doxorubicin HCl 50mg/25ml Injection	87 mg	43.5 ml	50 mg/m2, OD (once daily), Day: 1 Schedule	2 vial	0 of 1 dose(s) supplied	2 vial	2 vial	☐	☐	0 vial	Remarks	VERIFIED
3. Vincristine Sulphate 1mg Injection	2.44 mg	2.44 ml	1.4 mg/m2, OD (once daily), Day: 1 Schedule	3 vial	0 of 1 dose(s) supplied	0 vial	3 vial	☐	☒	0 vial	Remarks	VERIFIED
Sodium Chloride 0.9% 100ml IV soln		100 ml		1 bott		0 bott	1 bott			0 bott		
Prednisolone 5 mg Tablet	34.8 mg	6.96 tablet	20 mg/m2, TDS (3 times a day), Day: 1-5 Schedule	105 tablet	0 of 15 dose(s) supplied	21 tablet	105 tablet			0 tablet	Remarks	VERIFIED

Figure 3.2.1-1 CDR Preparation

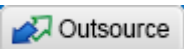
STEP 1

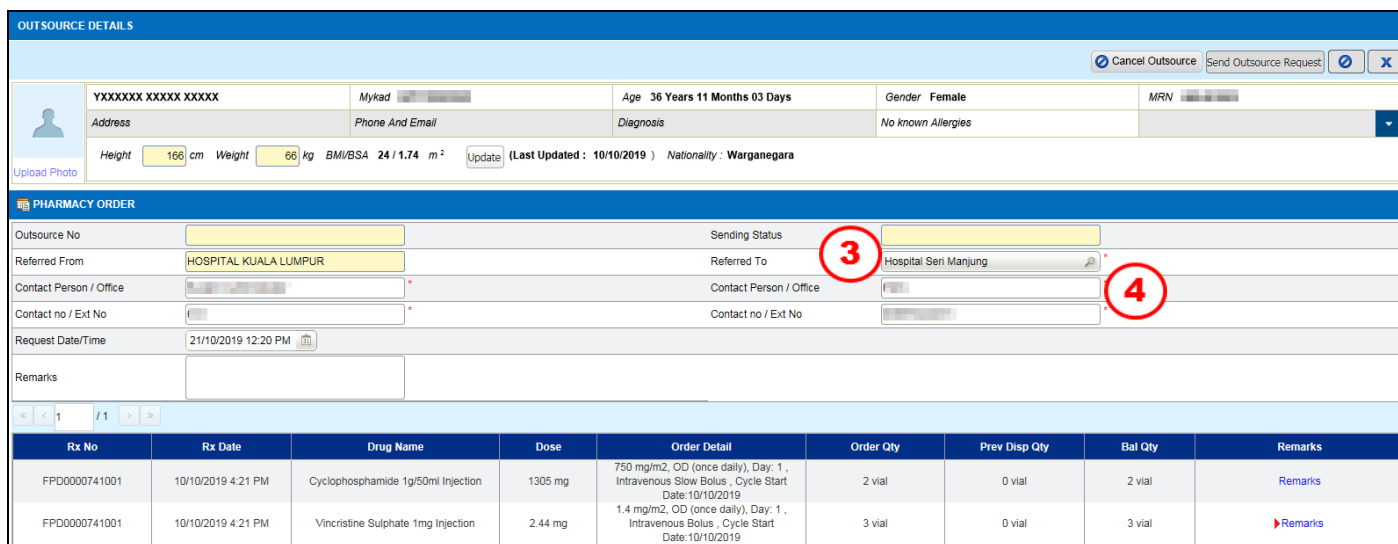
Select and click on the **Outsource** ☒ checkbox

Note

If **Prepare Qty** have been allocate, user need to de-allocate the drug first before can proceed for outsource

STEP 2

Click on the  button and Outsource Details window will be display as Figure 3.2.1-2



Rx No	Rx Date	Drug Name	Dose	Order Detail	Order Qty	Prev Disp Qty	Bal Qty	Remarks
FPD0000741001	10/10/2019 4:21 PM	Cyclophosphamide 1g/50ml Injection	1305 mg	750 mg/m2, OD (once daily), Day: 1, Intravenous Slow Bolus, Cycle Start Date:10/10/2019	2 vial	0 vial	2 vial	Remarks
FPD0000741001	10/10/2019 4:21 PM	Vincristine Sulphate 1mg Injection	2.44 mg	1.4 mg/m2, OD (once daily), Day: 1, Intravenous Bolus, Cycle Start Date:10/10/2019	3 vial	0 vial	3 vial	Remarks

Figure 3.2.1-2 Outsource Details

STEP 3

Select **Referred To** from  button

STEP 4

Enter **Contact Person / Office** and **Contact No / Ext No**

5

OUTSOURCE DETAILS



Upload Photo

YXXXXXX XXXXX XXXXX	Mykad	Age 36 Years 11 Months 03 Days	Gender Female	MRN
Address		Phone And Email		Diagnosis
Height 166 cm Weight 66 kg BMI/BSA 24 / 1.74 m ²		Update (Last Updated : 10/10/2019) Nationality : Warganegara		

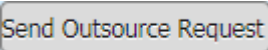
PHARMACY ORDER

Outsource No	Sending Status
Referred From HOSPITAL KUALA LUMPUR	Referred To Hospital Seri Manjung
Contact Person / Office	Contact Person / Office
Contact no / Ext No	Contact no / Ext No
Request Date/Time 21/10/2019 12:20 PM	
Remarks	

Rx No	Rx Date	Drug Name	Dose	Order Detail	Order Qty	Prev Disp Qty	Bal Qty	Remarks
FPD0000741001	10/10/2019 4:21 PM	Cyclophosphamide 1g/50ml Injection	1305 mg	750 mg/m ² , OD (once daily), Day: 1 , Intravenous Slow Bolus , Cycle Start Date:10/10/2019	2 vial	0 vial	2 vial	Remarks
FPD0000741001	10/10/2019 4:21 PM	Vincristine Sulphate 1mg Injection	2.44 mg	1.4 mg/m ² , OD (once daily), Day: 1 , Intravenous Bolus , Cycle Start Date:10/10/2019	3 vial	0 vial	3 vial	Remarks

Figure 3.2.1-3 Outsource Details

STEP 5

Click on the  button and Confirmation Message will be display as Figure 3.2.1-4

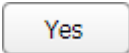
CONFIRMATION



CONF0110: Are you sure you want to send Outsource Request?

Figure 3.2.1-4 Confirmation Message

Note

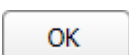
- Click on the  button to send the request and Information Message will be display as Figure 3.2.1-5

INFORMATION



INFO0306: Outsource Request has been submitted successfully.

Figure 3.2.1-5 Information Message

- Click on the  button and screen will be updated as shown in Figure 3.2.1-6

CDR PREPARATION

Prescription X

YXXXXX XXXXX XXXXX Mykad: [REDACTED] Age: 36 Years 11 Months 03 Days Gender: Female MRN: [REDACTED]

Address: [REDACTED] Phone And Email: [REDACTED] Diagnosis: [REDACTED] No known Allergies

Height: 166 cm Weight: 66 kg BMI/BSA: 24 / 1.74 m² (Last Updated: 10/10/2019) Nationality: Warganegara

Medication Profile | Counseling History | Pharmacist Notes | Demographic | Monitoring Parameter | Other Appointment

Encounter No: 0008 Actual Admission Date: 10/10/2019 Current Visit Location: Farmasi Pesakit Dalam Rx No: FPD0000741001 Order By: [REDACTED] Cycle Start Date: 10/10/2019 Transcribed By: [REDACTED]

Original Prescription Serial No:

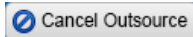
PRESCRIPTION Full Supply Allocate Outsource Cancel Outsource CDR Cycle History Worksheet Label Prepare

[1 - 4 / 4]

	Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	No. of Dose	Prepare Qty	Bal Qty	Prepare Admixture	Outsource	Prev Disp Qty	Remarks	Status
1.	Cyclophosphamide 1g/50ml Injection	1305 mg	65.25 ml	750 mg/m ² , OD (once daily), Day: 1 Schedule	2 vial	0 of 1 dose(s) supplied	0 vial	2 vial	☐ Details	☒ Details	0 vial	Remarks	OUTSOURCED
2.	Doxorubicin HCl 50mg/25ml Injection	87 mg	43.5 ml	50 mg/m ² , OD (once daily), Day: 1 Schedule	2 vial	0 of 1 dose(s) supplied	2 vial	2 vial	☐ Details	☐ Details	0 vial	Remarks	VERIFIED
3.	Vincristine Sulphate 1mg Injection	2.44 mg	2.44 ml	1.4 mg/m ² , OD (once daily), Day: 1 Schedule	3 vial	0 of 1 dose(s) supplied	0 vial	3 vial	☐ Details	☒ Details	0 vial	Remarks	OUTSOURCED
	Sodium Chloride 0.9% 100mL IV soln	100 ml	100 ml	20 mg/m ² , TDS (3 times a day), Day: 1-5 Schedule	1 bott	0 of 15 dose(s) supplied	0 bott	1 bott	☐ Details	☒ Details	0 bott	Remarks	VERIFIED
	Prednisolone 5 mg Tablet	34.8 mg	6.96 tablet		105 tablet		21 tablet	105 tablet			0 tablet	Remarks	

Figure 3.2.1-6 CDR Preparation

Note

- Status of the drug will change to **OUTSOURCED**
- User is allowed to cancel the Outsource by click on the  button and Outsource Details window will be display as Figure 3.2.1-7

OUTSOURCE DETAILS Cancel Outsource Send Outsource Request X

YXXXXX XXXXX XXXXX Mykad: [REDACTED] Age: 36 Years 11 Months 03 Days Gender: Female MRN: [REDACTED]

Address: [REDACTED] Phone And Email: [REDACTED] Diagnosis: [REDACTED] No known Allergies

Height: 166 cm Weight: 66 kg BMI/BSA: 24 / 1.74 m² Update (Last Updated: 10/10/2019) Nationality: Warganegara

PHARMACY ORDER

Outsource No: CDR-11-14010002211019-001 Sending Status: Successful

Referred From: HOSPITAL KUALA LUMPUR Referred To: Hospital Seri Manjung

Contact Person / Office: [REDACTED] Contact Person / Office: [REDACTED]

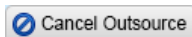
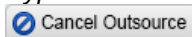
Contact no / Ext No: 012 Contact no / Ext No: 036675443231

Request Date/Time: 21/10/2019 12:20 PM

Remarks:

Rx No	Rx Date	Drug Name	Dose	Order Detail	Order Qty	Prev Disp Qty	Bal Qty	Remarks
FPD0000741001	10/10/2019 4:21 PM	Cyclophosphamide 1g/50ml Injection	1305 mg	750 mg/m ² , OD (once daily), Day: 1, Intravenous Slow Bolus, Cycle Start Date: 10/10/2019	2 vial	0 vial	2 vial	Remarks
FPD0000741001	10/10/2019 4:21 PM	Vincristine Sulphate 1mg Injection	2.44 mg	1.4 mg/m ² , OD (once daily), Day: 1, Intravenous Bolus, Cycle Start Date: 10/10/2019	3 vial	0 vial	3 vial	Remarks

Figure 3.2.1-7 Outsource Details

- Click on the  button to cancel the Outsource record and Confirmation Message will be displayed as Figure 3.2.1-8
- If there is more than one (1) Outsource Drug, to cancel only one (1) drug user need to click on the **Details** Hyperlink of the selected Drug and Outsource Details screen will be display as Figure 3.2.1-7 and click on the  button

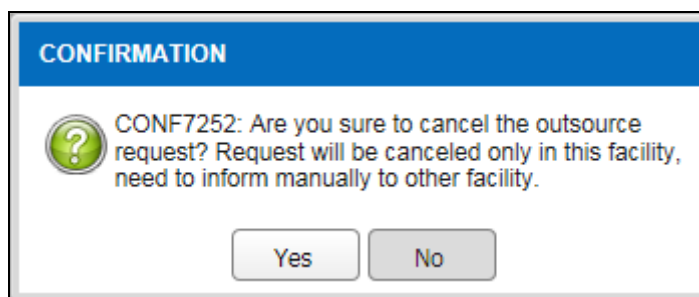
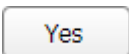


Figure 3.2.1-8 Confirmation Message

Note

- Click on the  button to cancel the request and Information Message will be display as Figure 3.2.1-9
- For cancel outsource, user need to inform the other facility manually

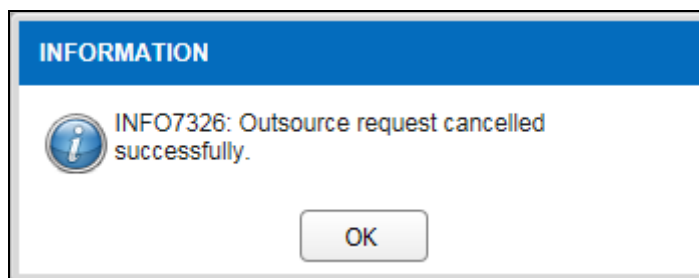
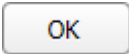
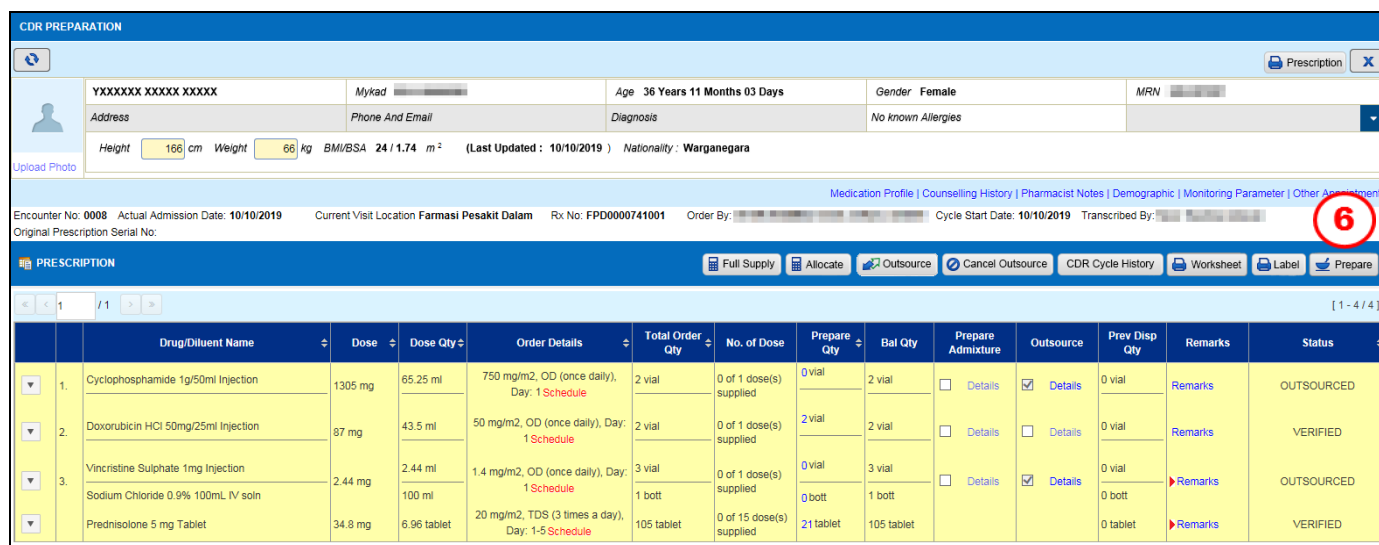


Figure 3.2.1-9 Information Message

- Click on the  button and status of the drug will change to **VERIFIED**



CDR PREPARATION

Prescription X

YXXXXXX XXXXX XXXXX Mykad Age 36 Years 11 Months 03 Days Gender Female MRN

Address Phone And Email Diagnosis No known Allergies

Height 166 cm Weight 66 kg BMI/BSA 24 / 1.74 m² (Last Updated : 10/10/2019) Nationality : Warganegara

Medication Profile | Counseling History | Pharmacist Notes | Demographic | Monitoring Parameter | Other Appointment

Encounter No: 0008 Actual Admission Date: 10/10/2019 Current Visit Location Farmasi Pesakit Dalam Rx No: FPD0000741001 Order By: Cycle Start Date: 10/10/2019 Transcribed By:

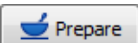
Original Prescription Serial No:

PRESCRIPTION Full Supply Allocate Outsource Cancel Outsource CDR Cycle History Worksheet Label Prepare

	Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	No. of Dose	Prepare Qty	Bal Qty	Prepare Admixture	Outsource	Prev Disp Qty	Remarks	Status
1.	Cyclophosphamide 1g/50ml Injection	1305 mg	65.25 ml	750 mg/m ² , OD (once daily), Day: 1 Schedule	2 vial	0 of 1 dose(s) supplied	0 vial	2 vial	☐ Details	☒ Details	0 vial	Remarks	OUTSOURCED
2.	Doxorubicin HCl 50mg/25ml Injection	87 mg	43.5 ml	50 mg/m ² , OD (once daily), Day: 1 Schedule	2 vial	0 of 1 dose(s) supplied	2 vial	2 vial	☐ Details	☐ Details	0 vial	Remarks	VERIFIED
3.	Vincristine Sulphate 1mg Injection	2.44 mg	2.44 ml	1.4 mg/m ² , OD (once daily), Day: 1 Schedule	3 vial	0 of 1 dose(s) supplied	0 vial	3 vial	☐ Details	☒ Details	0 vial	Remarks	OUTSOURCED
	Sodium Chloride 0.9% 100mL IV soln		100 ml	20 mg/m ² , TDS (3 times a day), Day: 1-5 Schedule	1 bott	0 of 1 dose(s) supplied	0 bott	1 bott	☐ Details	☒ Details	0 bott	Remarks	OUTSOURCED
	Prednisolone 5 mg Tablet	34.8 mg	6.96 tablet		105 tablet	0 of 15 dose(s) supplied	21 tablet	105 tablet	☐ Details	☒ Details	0 tablet	Remarks	VERIFIED

Figure 3.2.1-10 CDR Preparation

STEP 6

Click on the  button to proceed with preparation

3.2.2 Receive Outsource



PHARMACY INFORMATION SYSTEM

MENU

+

-

- Home
- Patient Management
- Order Management
- Inventory
- Adverse Drug Reaction
- Pharmacy Transaction
- MAR
- Maintenance
- Report/Enquiry

1

2

1

2

Notification Type	Notification No	Title	Date	From Facility/Unit	Attachment
Slow Moving Item	NO19000048		15/10/2019 03:10 PM	Hospital Seri Manjung	
Slow Moving Item	NO19000046		14/10/2019 11:32 AM	Hospital Seri Manjung	
Slow Moving Item	NO19000045		14/10/2019 10:38 AM	Hospital Seri Manjung	
Slow Moving Item	NO19000042		11/10/2019 11:19 AM	Hospital Seri Manjung	
Slow Moving Item	NO19000041		11/10/2019 10:59 AM	Hospital Seri Manjung	
Slow Moving Item	NO19000040		11/10/2019 10:39 AM	Hospital Seri Manjung	
Slow Moving Item	NO19000039		11/10/2019 10:35 AM	Hospital Seri Manjung	
Slow Moving Item	NO19000038		03/10/2019 03:37 PM	Hospital Seri Manjung	
Product Recall	NO19005132	Directive : Tetanus Toxoid Injection (10 doses)	11/06/2019 03:10 PM	BPFKKM	
Product Recall	NO19005131	Directive : Tetanus Toxoid Injection (10 doses)	11/06/2019 03:10 PM	BPFKKM	

External Notification

Online Indent Request Received:	0	Online Issue Request Received:	20
Online External CDR Request Received:	17	Online External CDR Result Received:	2
Online External PN Request Received:	3	Online External PN Result Received:	0
External Radio Order Request Received:	9	External Radio Order Result Received:	0
External TDM Request Received:	8	External TDM Result Received:	1
Online Contract Request Received:	127	Online Return Inter Facility Received:	0
Online SPUB R1 Request Received:	16		
Online Issue SPUB Request Received:	0		
Online Issue Manufacturing Received:	0		

Figure 3.2.2-1 External Notification

STEP 1

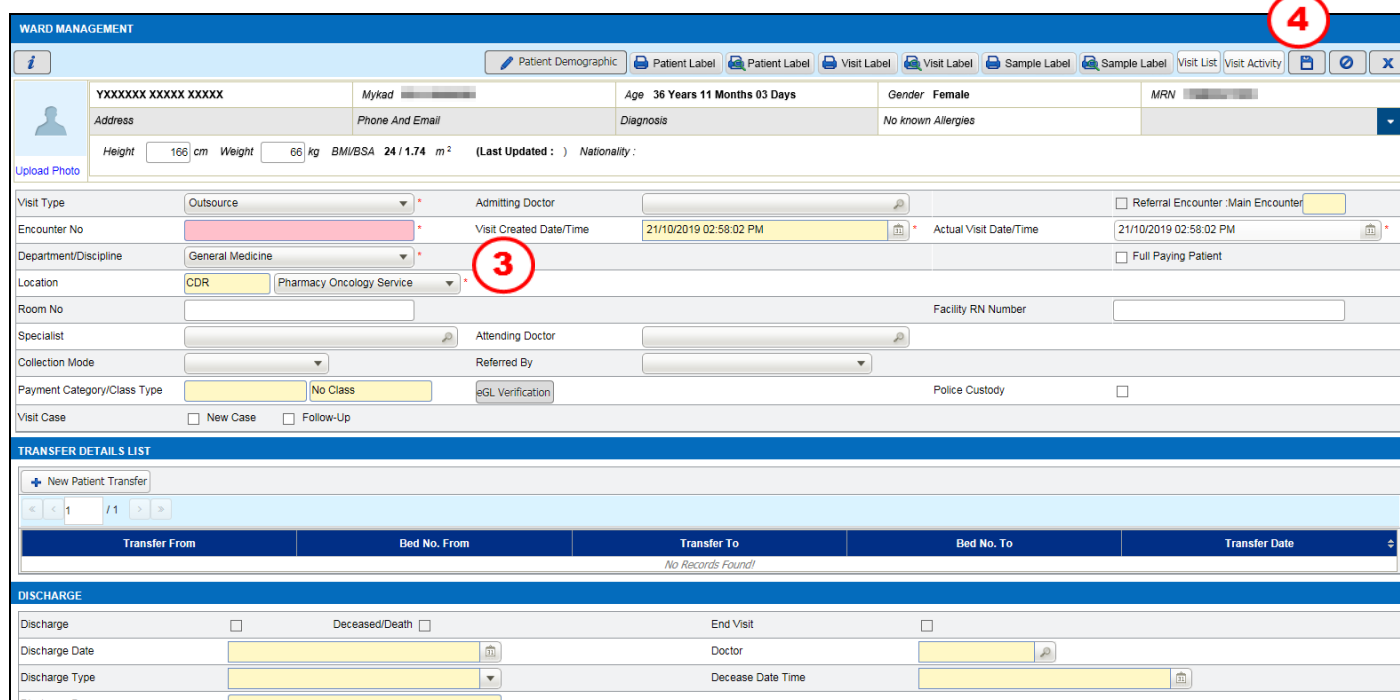
Click on the **Online External CDR Request Received** button and Outsource Listing window will be display as Figure 3.2.2-2

OUTSOURCE LISTING						
[1 - 10 / 17]						
Outsource No	Patient Name	Gender	From(Hospital/Clinic)	Request Date/Time	Register	
CDR-11-14010002110919-002	NXXXXXXXXXXXXX X/X XXXXXXXXXXXXXXXX	Female	Hospital Kuala Lumpur	11/09/2019 2:36 PM	Register	
CDR-11-14010002260819-001	HXXX XXXX XXX	Female	Hospital Kuala Lumpur	26/08/2019 10:06 AM	Register	
CDR-11-14010002260819-003	HXXX XXXX XXX	Female	Hospital Kuala Lumpur	26/08/2019 10:47 AM	Register	
CDR-11-14010002280819-001	NXXXXX X/X XXXXXXXXXXX	Female	Hospital Kuala Lumpur	28/08/2019 4:30 PM	Registered	
CDR-11-14010002040919-002	AXXXXX XXXXX XXXXX	Female	Hospital Kuala Lumpur	04/09/2019 5:05 PM	Registered	
CDR-11-14010002050919-001	TXX XXXX XXX @ XXXX XXXX XXX	Female	Hospital Kuala Lumpur	05/09/2019 12:18 PM	Register	
CDR-11-14010002050919-002	TXX XXXX XXX @ XXXX XXXX XXX	Female	Hospital Kuala Lumpur	05/09/2019 12:27 PM	Register	
CDR-11-14010002050919-003	TXX XXXX XXX @ XXXX XXXX XXX	Female	Hospital Kuala Lumpur	05/09/2019 12:43 PM	Register	
CDR-11-14010002050919-004	TXX XXXX XXX @ XXXX XXXX XXX	Female	Hospital Kuala Lumpur	05/09/2019 2:39 PM	Register	
CDR-11-14010002050919-005	TXX XXXX XXX @ XXXX XXXX XXX	Female	Hospital Kuala Lumpur	05/09/2019 2:51 PM	Register	

Figure 3.2.2-2 Outsource Listing

Note

Click on the Outsource No hyperlink to view Outsource Details as Figure 3.2.2-3



WARD MANAGEMENT

YXXXXXX XXXXX XXXXX Mykad [redacted] Age 36 Years 11 Months 03 Days Gender Female MRN [redacted]

Address [redacted] Phone And Email [redacted] Diagnosis [redacted] No known Allergies

Height 166 cm Weight 66 kg BMI/BSA 24 / 1.74 m² (Last Updated :) Nationality :

Visit Type Outsource Admitting Doctor [redacted] Referral Encounter : Main Encounter [redacted]

Encounter No [redacted] Visit Created Date/Time 21/10/2019 02:58:02 PM Actual Visit Date/Time 21/10/2019 02:58:02 PM

Department/Discipline General Medicine Location CDR Pharmacy Oncology Service

Room No [redacted] Facility RN Number [redacted]

Specialist [redacted] Attending Doctor [redacted]

Collection Mode [redacted] Referred By [redacted]

Payment Category/Class Type [redacted] No Class eGL Verification [redacted] Police Custody [redacted]

Visit Case [redacted] New Case [redacted] Follow-Up [redacted]

TRANSFER DETAILS LIST

+ New Patient Transfer

Transfer From	Bed No. From	Transfer To	Bed No. To	Transfer Date
No Records Found!				

DISCHARGE

Discharge [redacted] Deceased/Death [redacted] End Visit [redacted]

Discharge Date [redacted] Doctor [redacted]

Discharge Type [redacted] Discharge Date Time [redacted]

Discharge By [redacted]

Figure 3.2.2-5 Ward Management

STEP 3

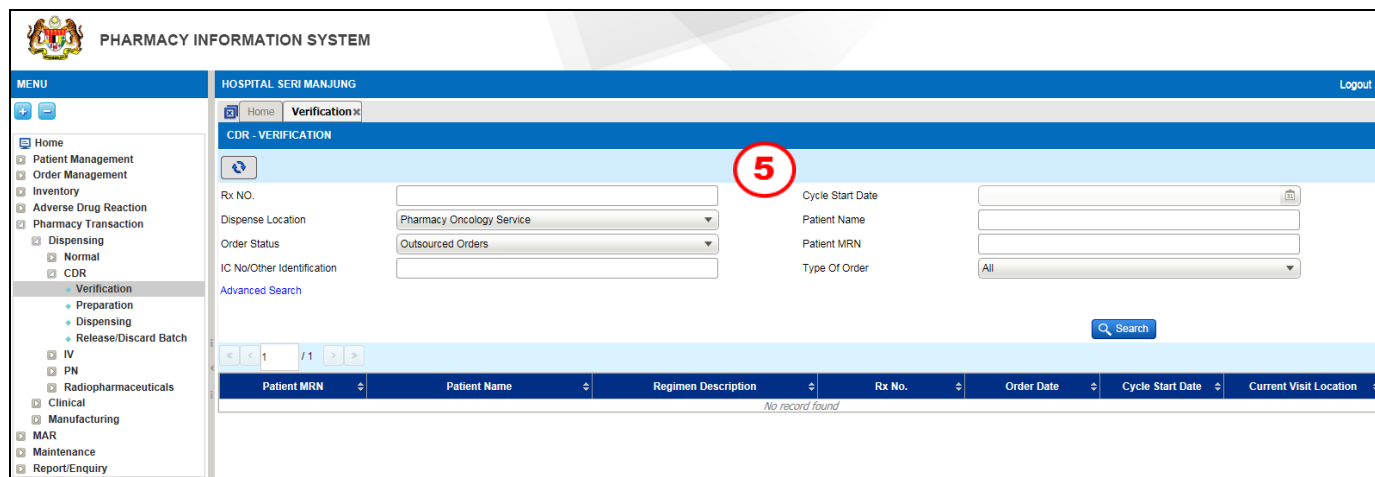
Select **Department/discipline** and **Location** from dropdown menu

STEP 4

Click on the  button to save the registered outsource patient

Note

After save, this record will flow to prescriber to proceed with prescribing for outsource patient. Once prescriber confirm the prescription, the information will flow to CDR dispensing to proceed with dispensing process as Figure 3.2.2-6



PHARMACY INFORMATION SYSTEM

HOSPITAL SERI MANJUNG Logout

Home Verification

CDR - VERIFICATION

Rx NO. [redacted] Cycle Start Date [redacted]

Dispense Location Pharmacy Oncology Service Patient Name [redacted]

Order Status Outsourced Orders Patient MRN [redacted]

IC No/Other Identification [redacted] Type Of Order All

Advanced Search

Search

Patient MRN	Patient Name	Regimen Description	Rx No.	Order Date	Cycle Start Date	Current Visit Location
No record found						

Figure 3.2.2-6 CDR Verification

STEP 5

Search for the outsourced order

Note

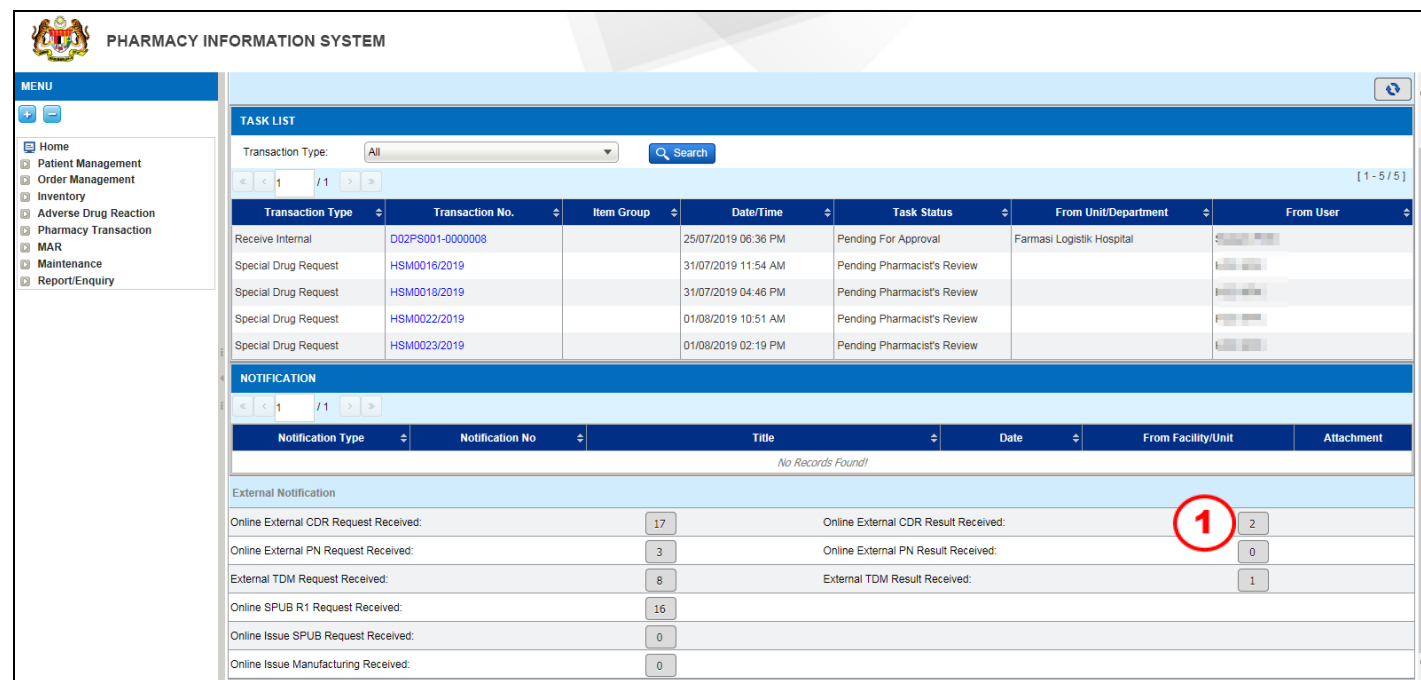
To proceed with CDR Dispensing process, please refer:

- i. Section [3.1 Cytotoxic Drug Reconstitution \(CDR\) Verification](#) : Verification Process
- ii. Section [3.2 CDR Preparation](#) : Preparation Process
- iii. Section [3.3 CDR Dispensing](#) : Dispensing Process

3.2.3 Outsource Result Received

Note

After receiving facility dispense outsource drug, sending facility will receive external notification for the outsource result



PHARMACY INFORMATION SYSTEM

MENU

- Home
- Patient Management
- Order Management
- Inventory
- Adverse Drug Reaction
- Pharmacy Transaction
- MAR
- Maintenance
- Report/Enquiry

TASK LIST

Transaction Type: All Search

[1 - 5 / 5]

Transaction Type	Transaction No.	Item Group	Date/Time	Task Status	From Unit/Department	From User
Receive Internal	D02PS001-0000008		25/07/2019 06:36 PM	Pending For Approval	Farmasi Logistik Hospital	
Special Drug Request	HSM0016/2019		31/07/2019 11:54 AM	Pending Pharmacist's Review		
Special Drug Request	HSM0018/2019		31/07/2019 04:46 PM	Pending Pharmacist's Review		
Special Drug Request	HSM0022/2019		01/08/2019 10:51 AM	Pending Pharmacist's Review		
Special Drug Request	HSM0023/2019		01/08/2019 02:19 PM	Pending Pharmacist's Review		

NOTIFICATION

[1 - 1 / 1]

Notification Type	Notification No	Title	Date	From Facility/Unit	Attachment
No Records Found!					

External Notification

Online External CDR Request Received:	17	Online External CDR Result Received:	2
Online External PN Request Received:	3	Online External PN Result Received:	0
External TDM Request Received:	8	External TDM Result Received:	1
Online SPUB R1 Request Received:	16		
Online Issue SPUB Request Received:	0		
Online Issue Manufacturing Received:	0		

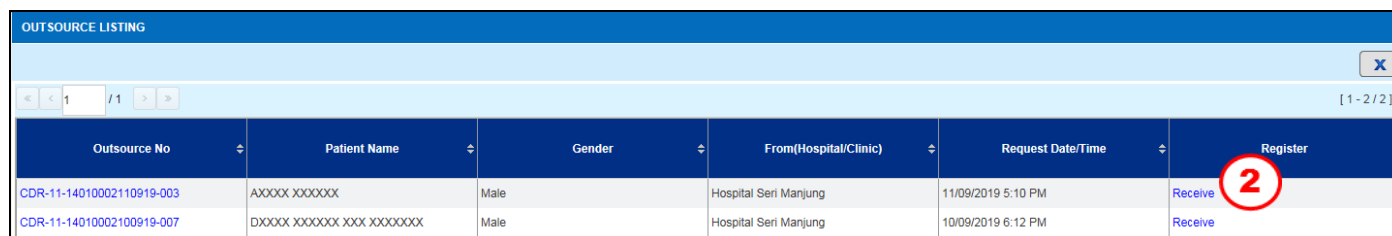
Figure 3.2.3-1 Online External CDR Result Received

STEP 1

Click on the **Online External CDR Result Received**  button

Note

System will display Outsource Listing screen as shown in Figure 3.2.3-2



OUTSOURCE LISTING

[1 - 2 / 2]

Outsource No	Patient Name	Gender	From(Hospital/Clinic)	Request Date/Time	Register
CDR-11-14010002110919-003	A0000 XXXXXX	Male	Hospital Seri Manjung	11/09/2019 5:10 PM	Receive
CDR-11-14010002100919-007	D0000 XXXXXX XXX XXXXXXXX	Male	Hospital Seri Manjung	10/09/2019 6:12 PM	Receive

Figure 3.2.3-2 Outsource Listing

STEP 2

Click on the [Receive](#) hyperlink and Outsource Details will display as Figure 3.2.3-3

OUTSOURCE DETAILS

4
📄 ⚙️ ✕

	XXXXX XXXXXX	Mykad : ██████████	Age : 79 Years 05 Months 04 Days	Gender : Male	MRN : ██████████
	Address	Phone And Email	Diagnosis	No known Allergies	

Upload Photo

Height cm Weight kg BMI/BSA 24.2 / 1.82 m² Update (Last Updated : 11/09/2019) Nationality : Warganegara

PHARMACY ORDER

RECEIVE DETAILS

Received By:

Date/Time: 🗑️

Remarks:

+ Add

No.	Received By	Received Date	Remarks
1	██████████	23/10/2019 17:20	Receive

Figure 3.2.3-4 Outsource Details

STEP 4



Click on the  button to save the record

3.3 CDR Dispensing

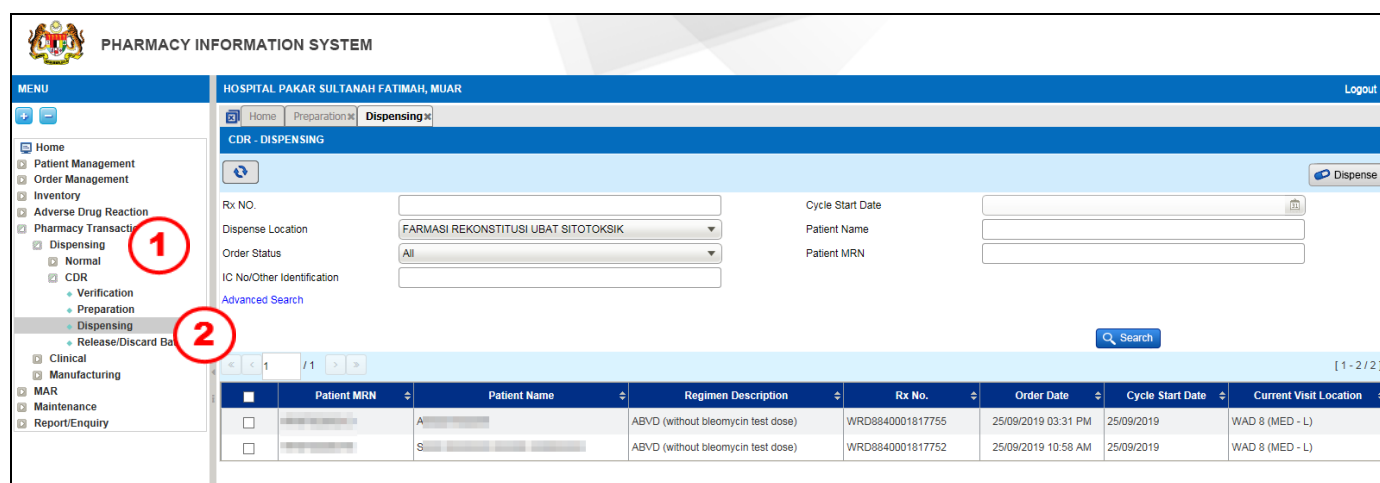


Figure 3.3-1 CDR Dispensing Listing Page

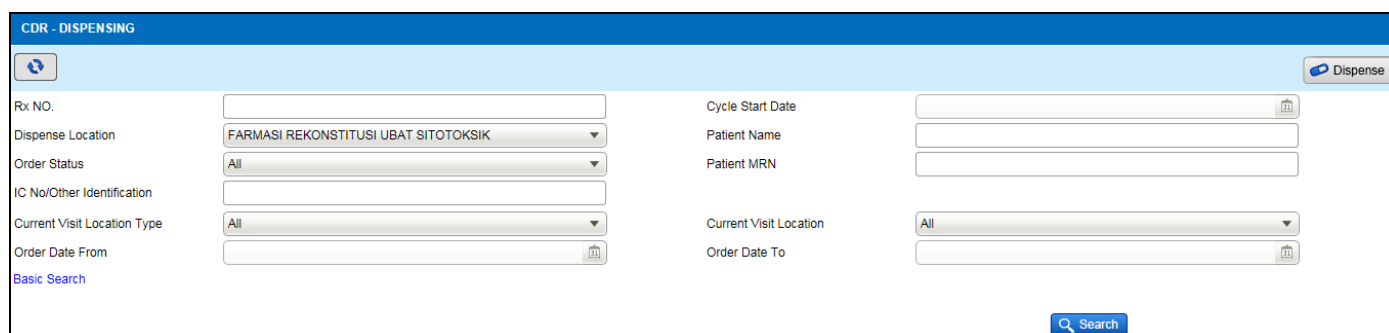


Figure 3.3-2 Advance Search

STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Dispensing' sub menu and select 'CDR'

STEP 2

Click on 'Dispensing' function

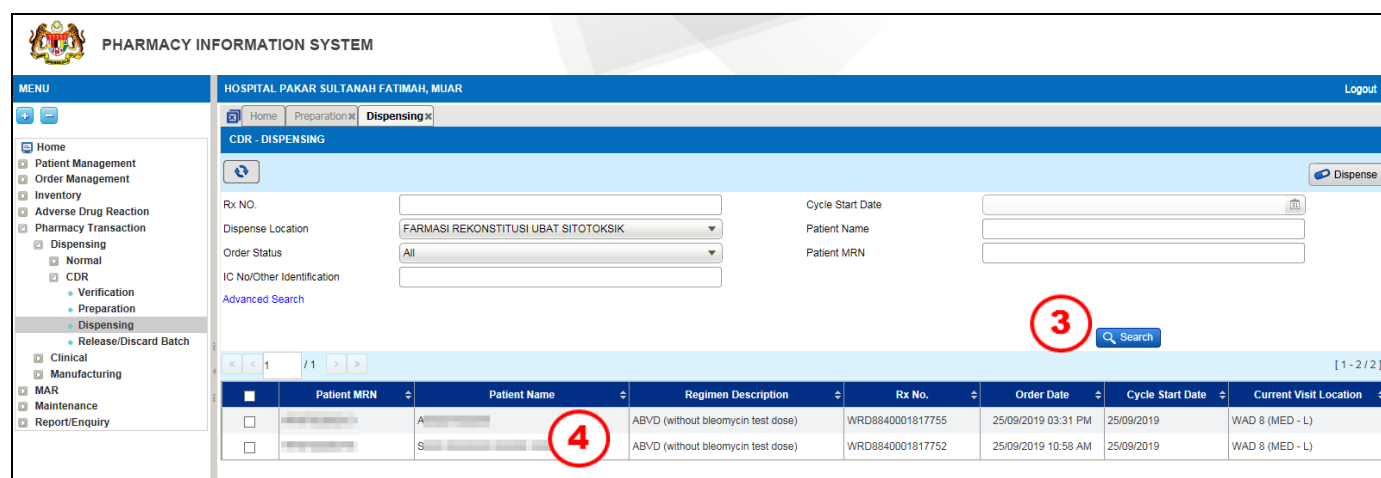
Note

Search patient records by below criteria:-

Basic Search			
No	Field	Description	Remark
a	Rx NO	Prescription number	Able to filter and search patient name by prescription number
b	Dispense Location	Dispensing location. (It will list down all active location)	Able to filter and search patient name by dispensing location
c	Order Status	Search by: - All - Prepared - Prepared hold	Able to filter and search patient name by order status
d	Patient Name	Patient Name	Allow to search by full or partially entered patient name
e	Patient MRN	Patient Medical Record Number	Search option: • Type the MRN either in full or

				partially: Example: HPSF00001234 or "1234"
f	Cycle start date	Cycle start date		Select from the date dropdown box
g	IC Number/Other Identification	Patients Identification number		Able to filter using patients identification number
Advance Search				
a	Current Visit Location Type	Search by: - All - Clinic - Day Care - ER - Nursing Unit - Pharmacy		Able to filter and search patient name by order location type
b	Current Visit Location	Current visit Location		Able to filter and search patient name by visit location
c	Order Date From	Order confirmed date		Allow to search by start date of order created
d	Order Date To	Order confirmed date		Allow to search by selected duration of order created

Table 3.3-1



PHARMACY INFORMATION SYSTEM

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR

Logout

Home Preparation Dispensing

CDR - DISPENSING

Dispense

Rx NO. Cycle Start Date

Dispense Location FARMASI REKONSTITUSI UBAT SITOTOKSIK Patient Name

Order Status All Patient MRN

IC No/Other Identification

Advanced Search

3 Search

1 / 1

[1 - 2 / 2]

	Patient MRN	Patient Name	Regimen Description	Rx No.	Order Date	Cycle Start Date	Current Visit Location
☐	A	ABVD (without bleomycin test dose)	WRD8840001817755	25/09/2019 03:31 PM	25/09/2019	WAD 8 (MED - L)	
☐	S	ABVD (without bleomycin test dose)	WRD8840001817752	25/09/2019 10:58 AM	25/09/2019	WAD 8 (MED - L)	

Figure 3.3-3 CDR Dispensing Listing Page

STEP 3

Click on Search button  to search for patient

Note

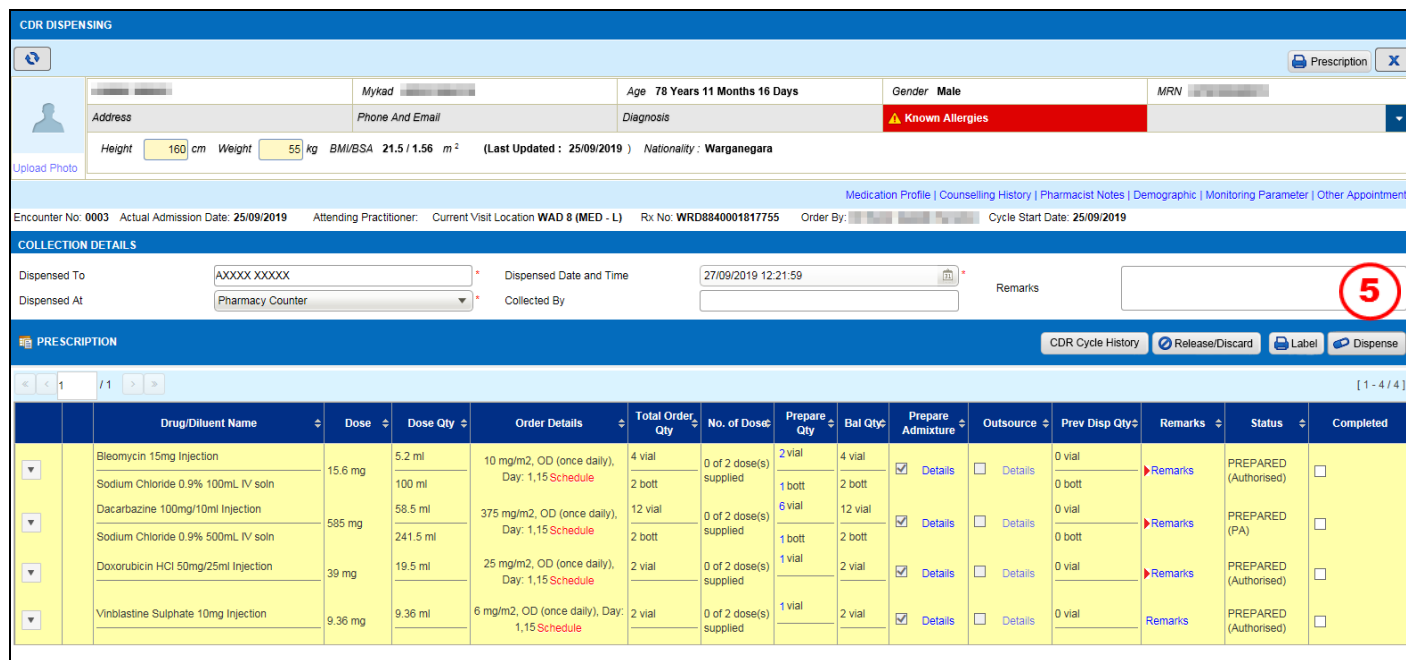
- Search result of patient record list will display:
 - Patient MRN
 - Patient Name
 - Regimen details
 - Rx No
 - Order Date
 - Cycle start date
 - Current Visit Location
- User have the option to dispense the medication by:
 - Dispense individual order
 - Dispense multiple patient order

Dispense Individual Order:

To dispense an individual order, perform the steps below:

STEP 4

Double click on the selected patient and CDR Dispensing screen will be displayed as shown in Figure 3.3-4



CDR DISPENSING

Prescription X

Mykad: [Redacted] Age: 78 Years 11 Months 16 Days Gender: Male MRN: [Redacted]

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

Height: 160 cm Weight: 55 kg BMI/BSA: 21.5 / 1.56 m² (Last Updated: 25/09/2019) Nationality: Warganegara

Medication Profile | Counselling History | Pharmacist Notes | Demographic | Monitoring Parameter | Other Appointment

Encounter No: 0003 Actual Admission Date: 25/09/2019 Attending Practitioner: Current Visit Location WAD 8 (MED - L) Rx No: WRD8840001817755 Order By: [Redacted] Cycle Start Date: 25/09/2019

COLLECTION DETAILS

Dispensed To: AXXXX XXXXX Dispensed Date and Time: 27/09/2019 12:21:59 Remarks: [Redacted]

Dispensed At: Pharmacy Counter Collected By: [Redacted]

PRESCRIPTION

CDR Cycle History Release/Discard Label Dispense

Drug/Diluent Name	Dose	Dose Qty	Order Details	Total Order Qty	No. of Dose(s)	Prepare Qty	Bal Qty	Prepare Admixture	Outsource	Prev Disp Qty	Remarks	Status	Completed
Bleomycin 15mg Injection	15.6 mg	5.2 ml	10 mg/m2, OD (once daily), Day: 1,15 Schedule	4 vial	0 of 2 dose(s) supplied	2 vial	4 vial	☒ Details	☐ Details	0 vial	Remarks	PREPARED (Authorised)	☐
Sodium Chloride 0.9% 100mL IV soln		100 ml		2 bott		1 bott	2 bott	☒ Details	☐ Details	0 bott			
Dacarbazine 100mg/10ml Injection	585 mg	58.5 ml	375 mg/m2, OD (once daily), Day: 1,15 Schedule	12 vial	0 of 2 dose(s) supplied	6 vial	12 vial	☒ Details	☐ Details	0 vial	Remarks	PREPARED (PA)	☐
Sodium Chloride 0.9% 500mL IV soln		241.5 ml		2 bott		1 bott	2 bott	☒ Details	☐ Details	0 bott			
Doxorubicin HCl 50mg/25ml Injection	39 mg	19.5 ml	25 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	0 of 2 dose(s) supplied	1 vial	2 vial	☒ Details	☐ Details	0 vial	Remarks	PREPARED (Authorised)	☐
Vinblastine Sulphate 10mg Injection	9.36 mg	9.36 ml	6 mg/m2, OD (once daily), Day: 1,15 Schedule	2 vial	0 of 2 dose(s) supplied	1 vial	2 vial	☒ Details	☐ Details	0 vial	Remarks	PREPARED (Authorised)	☐

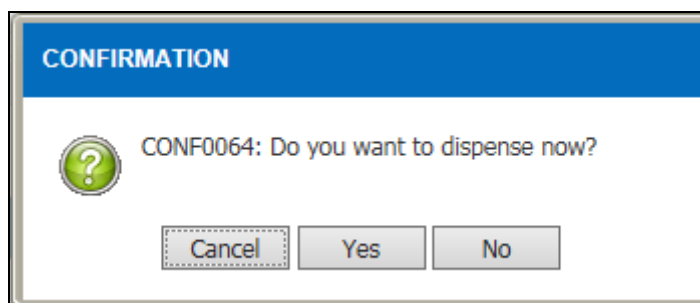
Figure 3.3-4 CDR Dispensing

Note

User is allowed to click on the Completed ☐ checkbox in the Prescription section to complete the drug

STEP 5

Click on the  button to dispense the medication and Confirmation Message window will be displayed as shown in Figure 3.3-5



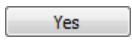
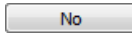
CONFIRMATION

CONF0064: Do you want to dispense now?

Cancel Yes No

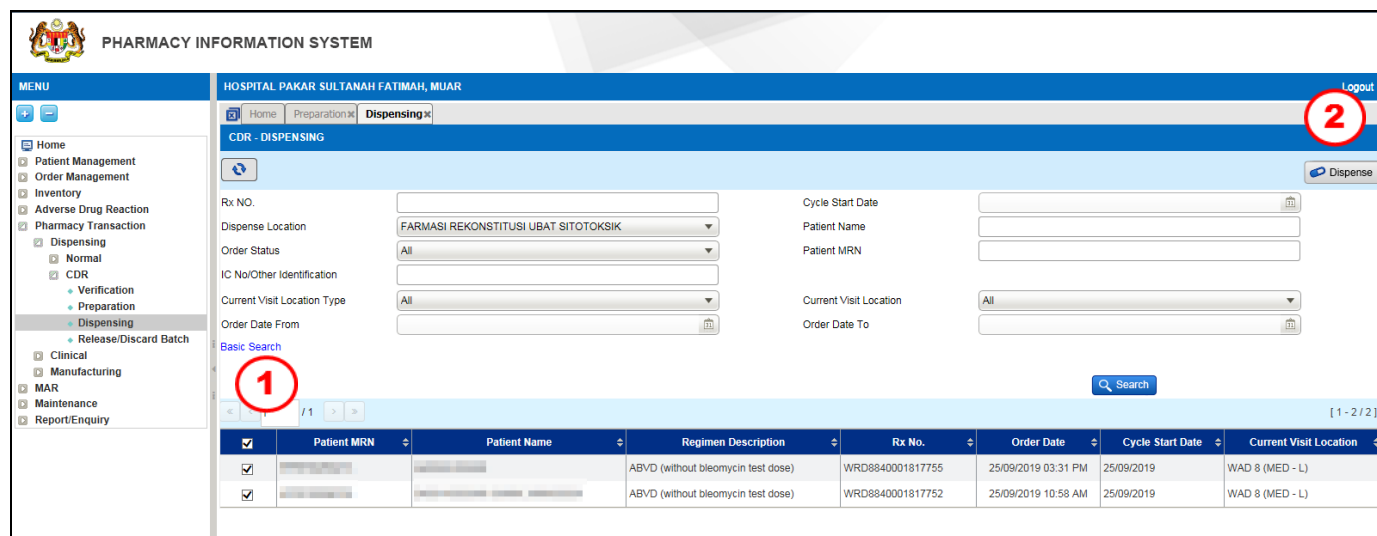
Figure 3.3-5 Confirmation Message

Note

- Click on the  button to confirm the dispensing.
- Click on the  button to cancel the dispensing.

Dispense Multiple Patient Order:

To dispense a multiple patient order, perform the steps below:



PHARMACY INFORMATION SYSTEM

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR

Logout

Home Preparation Dispensing

CDR - DISPENSING

Dispense

Rx NO. Cycle Start Date

Dispense Location FARMASI REKONSTITUSI UBAT SITOTOKSIK Patient Name

Order Status All Patient MRN

IC No/Other Identification

Current Visit Location Type All Current Visit Location

Order Date From Order Date To

Basic Search

Search

[1 - 2 / 2]

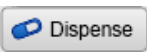
	Patient MRN	Patient Name	Regimen Description	Rx No.	Order Date	Cycle Start Date	Current Visit Location
☒			ABVD (without bleomycin test dose)	WRD8840001817755	25/09/2019 03:31 PM	25/09/2019	WAD 8 (MED - L)
☒			ABVD (without bleomycin test dose)	WRD8840001817752	25/09/2019 10:58 AM	25/09/2019	WAD 8 (MED - L)

Figure 3.3-6 CDR Dispensing Listing Page

STEP 1

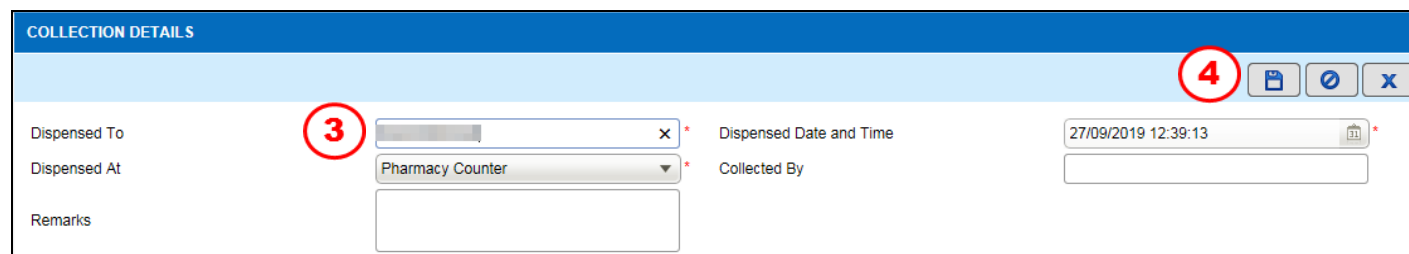
Click on the selected ☒ Patient MRN checkbox from the patient list

STEP 2

Click on the  button to dispense the medication and Collection Details windows will displayed as Figure 3.3-7

Note

Allocated stocks are based on dispensing location instead of login location selected by user.



COLLECTION DETAILS

4

3

Dispensed To

Dispensed At Pharmacy Counter

Remarks

Dispensed Date and Time 27/09/2019 12:39:13

Collected By

Figure 3.3-7 Collection Details

STEP 3

Enter **Dispensed To**

STEP 4

Click on the  button to save the record and Confirmation Message screen will be displayed as Figure 3.3-8

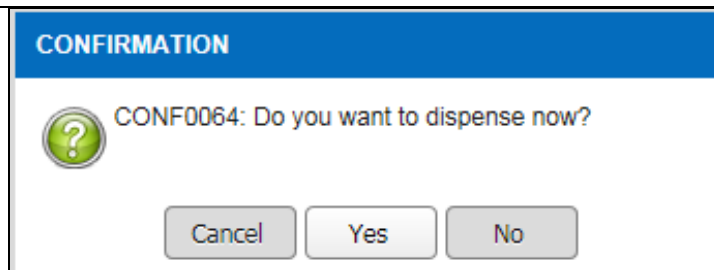
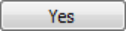
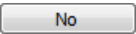
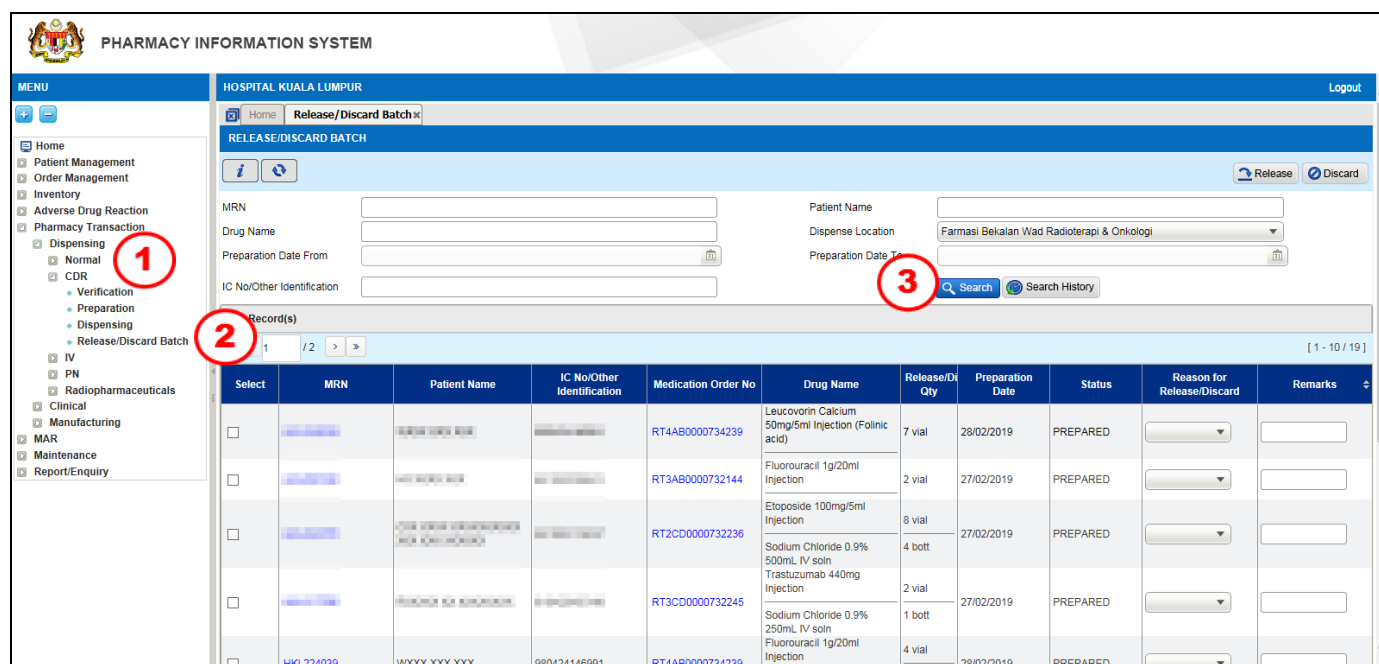


Figure 3.3-8 Confirmation Message

Note

- Click on the  button to confirm the dispensing.
- Click on the  button to cancel the dispensing.

3.4 Release/Discard Batch



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Release/Discard Batch

RELEASE/DISCARD BATCH

MRN: Patient Name:

Drug Name: Dispense Location:

Preparation Date From: Preparation Date To:

IC No/Other Identification:

Record(s)

Select	MRN	Patient Name	IC No/Other Identification	Medication Order No	Drug Name	Release/Di Qty	Preparation Date	Status	Reason for Release/Discard	Remarks
☐	HKL224039	XXXX XXX XXX	95042416991	RT4AB0000734239	Leucovorin Calcium 50mg/5ml Injection (Folinic acid)	7 vial	28/02/2019	PREPARED		
☐				RT3AB0000732144	Fluorouracil 1g/20ml Injection	2 vial	27/02/2019	PREPARED		
☐				RT2CD0000732236	Etoposide 100mg/5ml Injection	8 vial	27/02/2019	PREPARED		
☐				RT3CD0000732245	Sodium Chloride 0.9% 500mL IV soln	4 bott	27/02/2019	PREPARED		
☐					Trastuzumab 440mg Injection	2 vial	27/02/2019	PREPARED		
☐					Sodium Chloride 0.9% 250mL IV soln	1 bott	27/02/2019	PREPARED		
☐					Fluorouracil 1g/20ml Injection	4 vial	28/02/2019	PREPARED		

Figure 3.4-1 Release/Discard Batch Listing Page

STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Dispensing' sub menu and select 'CDR'

STEP 2

Click on 'Release/Discard Batch' function

Note

Search patient records by below criteria:-

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 full or partial patient name
C	Drug Name	Drug Name	Allow to search by full or partial drug name
D	Dispense Location	Dispensing location. (It will list down all active locations)	Able to filter and search patient name by dispensing location
E	IC Number/Other Identification	Patients Identification number	Able to filter using patients identification number

Table 3.4-1

STEP 3

Click on the  button to search for patient

Note

- Search results of patient record list will display:
- MRN

- Patient Name
- Drug Name
- Medication Order No
- Preparation Date
- IC number
- Prepared Qty
- Status
- Reason for Release/Discard
- Remarks

- Click on the **Medication Order No** hyperlink to view Order Details for the selected patient.

ORDER DETAILS

Mykad: [REDACTED] Age: 21 Years 05 Months 27 Days Gender: Male MRN: [REDACTED]

Address: [REDACTED] Phone And Email: [REDACTED] Diagnosis: [REDACTED] No known Allergies

Height: 49.9 cm Weight: 168 kg BMI/BSA: 674.7 / 1.53 m² (Last Updated: 28/02/2019) Nationality: Warganegara

Rx No: RT4AB0000734239 Order Type: CDR Order By: Dr MO Radioterapi & Onkologi

Order Date: 28/02/2019 03:36 PM Order Location: Wad Onkologi 4AB

Category: Oncology -- Regimen Code: CDRON00172 Regimen Description: FOLFOX - Bevacizumab

Cycle Duration: 14 Cycle No: 4 Cycle Start Date: 28/02/2019 Cycle End Date: 13/03/2019

Remarks: [REDACTED]

Active Ingredient	Default Drug Name	Admin Route	Dosage	Total Dose	Infuse Over	Frequency	Chemo day	Diluent	Diluent Volume	Total Volume	Infusion Rate	Drug Remark
Calcium Folate (Leucovorin calcium)	Leucovorin Calcium 50mg/5ml Injection (Folic acid)	Intravenous Bolus	200 mg/m ²	305 mg	2 Hours 0 Minutes	OD (once daily)	Day: 1			30.5 ml	125 ml/Hour	

Figure 3.4-2 Order Details

- Click on the **MRN** hyperlink to view Medication Profile for the selected patient.

MEDICATION PROFILE

WXXX XXX XXX Mykad: [REDACTED] Age: 21 Years 05 Months 27 Days Gender: Male MRN: [REDACTED]

Address: [REDACTED] Phone And Email: [REDACTED] Diagnosis: [REDACTED] No known Allergies

Height: 49.9 cm Weight: 168 kg BMI/BSA: 674.7 / 1.53 m² (Last Updated: 28/02/2019) Nationality: Warganegara

Drug Name: [REDACTED] Visit Type: All

Prescription Date From: [REDACTED] Prescription Date To: [REDACTED]

Prescription Status: All Location: All

Prescription Number: [REDACTED] Original Prescription Serial No: [REDACTED]

Search

NORMAL MEDICATION

Current Medication

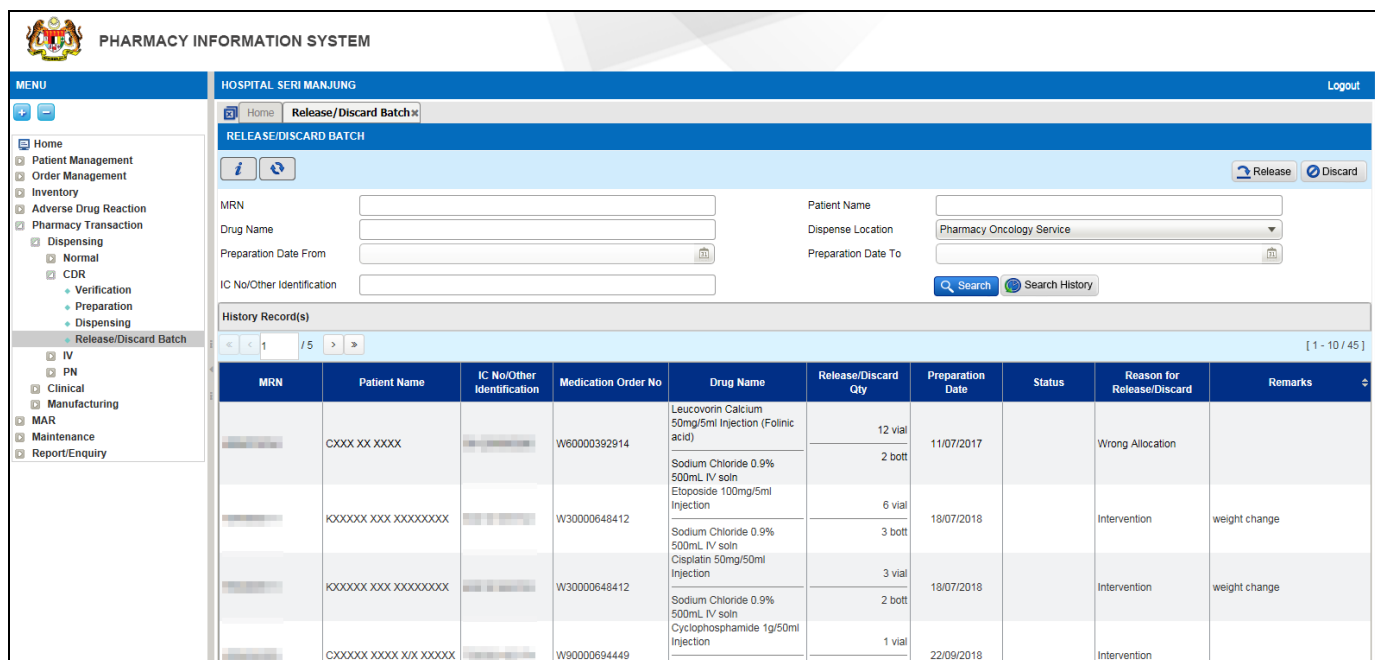
Rx No.	Original Prescription Serial Number	Discharge Medication	Drug Name	Dose	Route	Frequency	Duration	Start Date	End Date	Status	Order
RT4AB0000734416	fr1248609	Yes	Ranitidine 150 mg Tablet	150 mg	Oral	BD (twice daily)	3 Days	28/02/2019 04:12:49 PM	03/03/2019 04:12:49 PM	FULLY DISPENSED	[REDACTED]
RT4AB0000734416	fr1248609	Yes	Metoclopramide HCl 10 mg Tablet	10 mg	Oral	TDS PRN	3 Days	28/02/2019 04:12:49 PM	03/03/2019 04:12:49 PM	FULLY DISPENSED	[REDACTED]
RT4AB0000734416	fr1248609	Yes	Dexamethasone 4mg tablet	4 mg	Oral	BD (twice daily)	3 Days	28/02/2019 04:12:49 PM	03/03/2019 04:12:49 PM	FULLY DISPENSED	[REDACTED]

Previous Medication

Rx No.	Original Prescription Serial Number	Discharge Medication	Drug Name	Dose	Route	Frequency	Duration	Start Date	End Date	Status	Order
RT4AB0000734416	fr1248609	Yes	Ranitidine 150 mg Tablet	150 mg	Oral	BD (twice daily)	3 Days	28/02/2019 04:12:49 PM	03/03/2019 04:12:49 PM	FULLY DISPENSED	[REDACTED]
RT4AB0000734416	fr1248609	Yes	Metoclopramide HCl 10 mg Tablet	10 mg	Oral	TDS PRN	3 Days	28/02/2019 04:12:49 PM	03/03/2019 04:12:49 PM	FULLY DISPENSED	[REDACTED]
RT4AB0000734416	fr1248609	Yes	Dexamethasone 4mg tablet	4 mg	Oral	BD (twice daily)	3 Days	28/02/2019 04:12:49 PM	03/03/2019 04:12:49 PM	FULLY DISPENSED	[REDACTED]

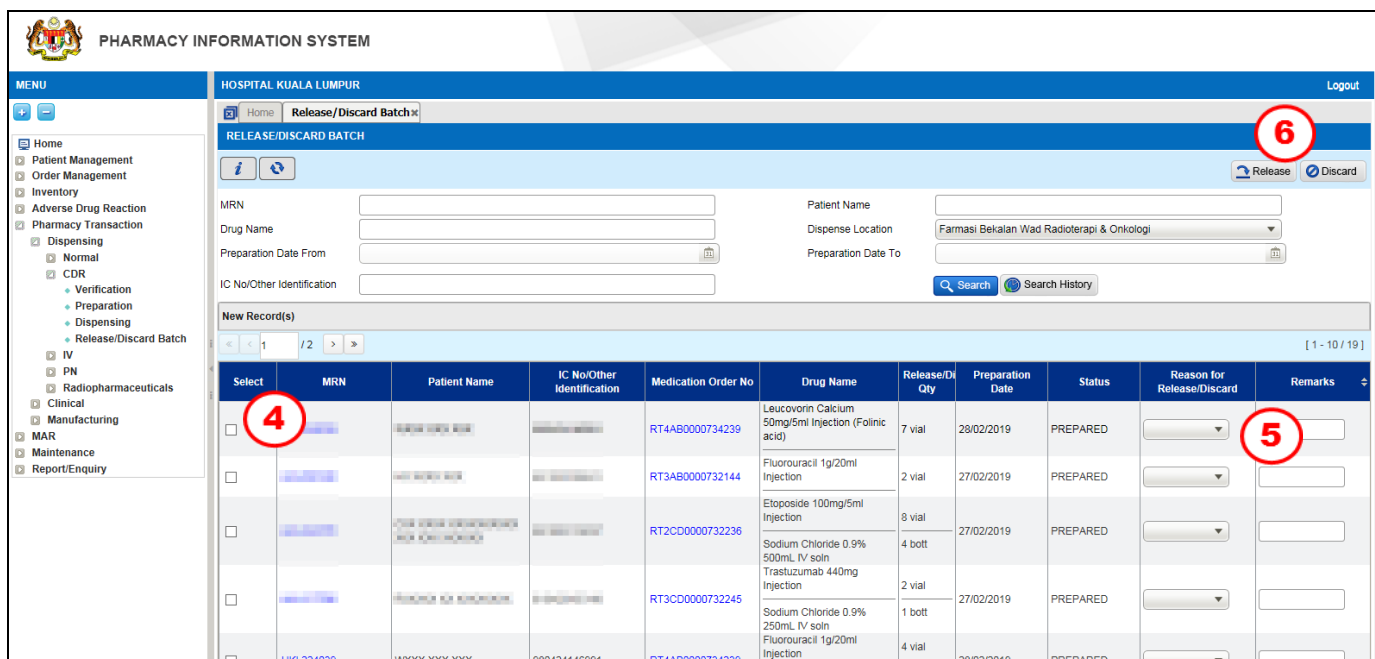
Figure 3.4-3 Medication Profile

- Click on the  Search History button to view release/discard history.



MRN	Patient Name	IC No/Other Identification	Medication Order No	Drug Name	Release/Discard Qty	Preparation Date	Status	Reason for Release/Discard	Remarks
CXXX XX XXXX			W60000392914	Leucovorin Calcium 50mg/5ml Injection (Folinic acid)	12 vial	11/07/2017		Wrong Allocation	
				Sodium Chloride 0.9% 500mL IV soln	2 bott				
X00000X XXX XXXXXXXXX			W30000648412	Etoposide 100mg/5ml Injection	6 vial	18/07/2018		Intervention	weight change
				Sodium Chloride 0.9% 500mL IV soln	3 bott				
X00000X XXX XXXXXXXXX			W30000648412	Cisplatin 50mg/50ml Injection	3 vial	18/07/2018		Intervention	weight change
				Sodium Chloride 0.9% 500mL IV soln	2 bott				
CXXXXX XXXX XX XXXXX			W90000694449	Cyclophosphamide 1g/50ml Injection	1 vial	22/09/2018		Intervention	

Figure 3.4-4 Release/Discard Batch History



Select	MRN	Patient Name	IC No/Other Identification	Medication Order No	Drug Name	Release/Discard Qty	Preparation Date	Status	Reason for Release/Discard	Remarks
☒				RT4AB0000734239	Leucovorin Calcium 50mg/5ml Injection (Folinic acid)	7 vial	28/02/2019	PREPARED		
☐				RT3AB0000732144	Fluorouracil 1g/20ml Injection	2 vial	27/02/2019	PREPARED		
☐				RT2CD0000732236	Etoposide 100mg/5ml Injection	8 vial	27/02/2019	PREPARED		
☐					Sodium Chloride 0.9% 500mL IV soln	4 bott				
☐				RT3CD0000732245	Trastuzumab 440mg Injection	2 vial	27/02/2019	PREPARED		
☐					Sodium Chloride 0.9% 250mL IV soln	1 bott				
☐	HKL224039	XXXX XXX XXX	980424146991	RT4AB0000734239	Fluorouracil 1g/20ml Injection	4 vial	28/02/2019	PREPARED		

Figure 3.4-5 Release/Discard Batch Listing Page

STEP 4

Click on the selected drug ☒ checkbox

STEP 5

Select **Reason for Discard** from dropdown box

- Change of Regimen

- Faulty Product
- Intervention
- Patient Refused
- Uncollected
- Wrong Allocation

STEP 6

Click on the  button to proceed release

Click on the  button to proceed discard

Note

When user click on the release function, the stock allocated for the regimen will be release back to inventory and if user click on discard function, system will discard the stock allocated for the regimen from inventory.

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	Inpatient	Click Here	12	CDR Dispensing	Click Here
2	CDR Order	Click Here	13	Methadone Dispensing	Click Here
3	TDM Order	Click Here	14	PN Dispensing	Click Here
4	PN Order	Click Here	15	Order Management	Click Here
5	IV Order	Click Here	16	Patient Management	Click Here
6	Prepacking	Click Here	17	Radiopharmaceuticals	Click Here
7	Galenical	Click Here	18	Outpatient	Click Here
8	MTAC	Click Here	19	Special Drug Request	Click Here
9	ADR & DAC	Click Here	20	MAR	Click Here
10	Medication Counselling	Click Here	21	DICE	Click Here
11	Ward Pharmacy	Click Here	22		