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

Pharmacy Based

User Manual
IV Admixture

Version	**: 6th Edition**
Document ID	**: PB_U. MANUAL_ IV ADMIXTURE**

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1.0 Introduction

1.1 Overview of PhIS

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

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

1. Order Management
2. Inpatient Pharmacy
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 IV Dispensing sub-module and its key features and functionalities. The primary objective is to guide user through the process of completing PhIS application process.

User will understand the following activities in details:

- Record Prescription
- Screening & Verification
- Preparation
- Dispensing
- Release / Discard Batch

1.3 Organised Sections

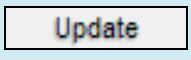
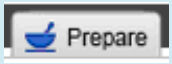
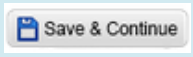
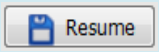
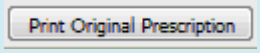
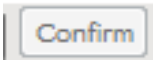
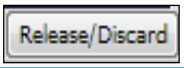
These are the sections within this document:

- Section 1 : Introduction
- Section 2 : Application Standard Features
- Section 3 : Infusion Order
- Section 4 : Acronyms
- Section 5 : Links to Clinical Modules

2.0 Application Standard Features

2.1 PhIS Legend

Standard Legend			
LOGIN	Login to PhIS	Logout	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 to Excel	Export Report From PDF file to Excel file	OK	OK Button
Yes	Yes Button	No	No Button
	Radio Button		Checkbox
SPUB56565698	System Automatic Generate Record No.	HPSF00088304	Automatically Display/Retrieve Box
	Reset Login Screen		Show Help
Home	Display Home Tab	Search	Search Record
	Cancel		Dropdown Box
	Search Icon	*	Mandatory Field
	Edit Record		Empty Text Box
Cancel	Cancel Button		

IV Dispensing Module Legend			
	Update Patient's Height and Weight		Print
	Acknowledge Prescription		Calendar
	Preparation		Save and Continue
	Edit Label		Dispense
	Resume		Print Original Prescription
	Hold		Verification
	Confirm		Release/Discard
	Re-Dispense		Delete

Note

To learn more about Login Information, kindly click Login Information module for descriptive steps.

3.0 Order Management-IV Admixture

Overview

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

User Group

This module is intended for pharmacist and assistant pharmacist (subject to user assign by the facility)

Functional Diagram

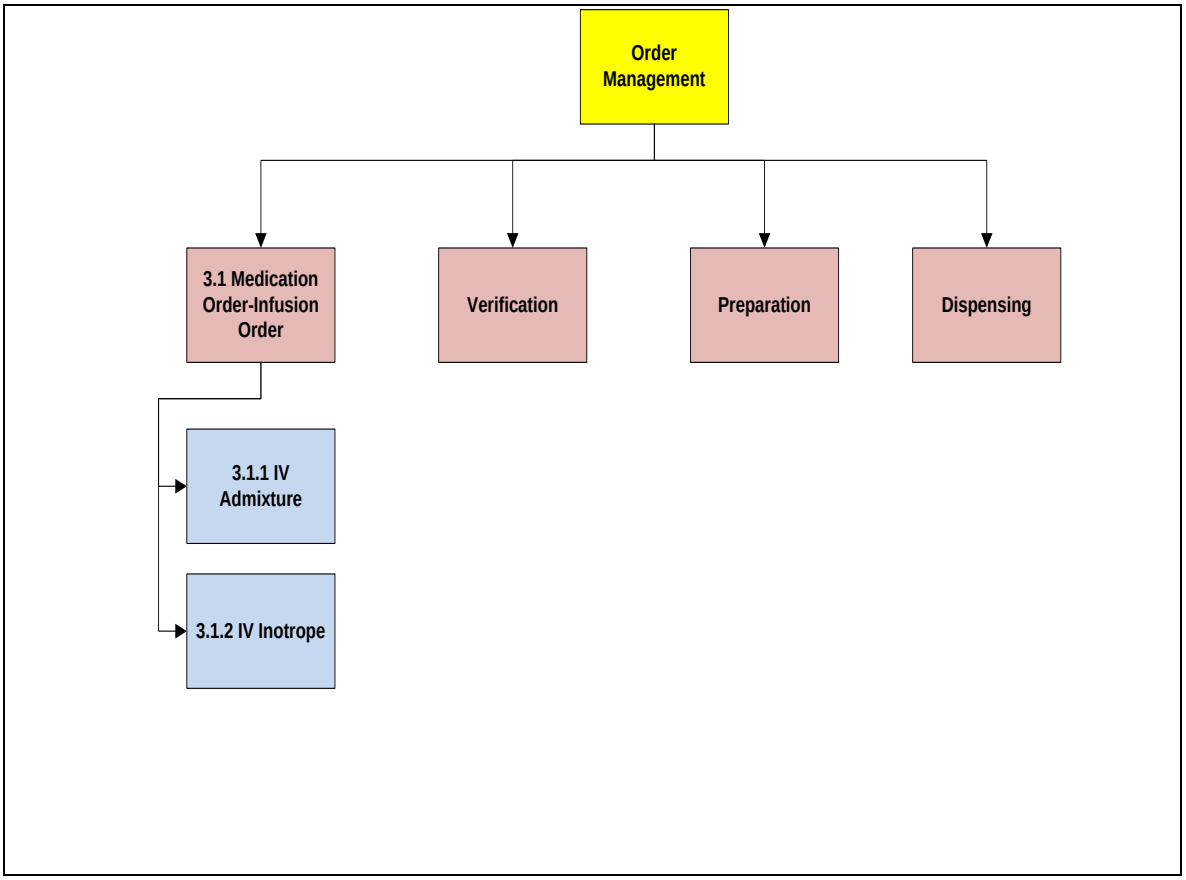


Figure 3.0-1

Functional Description

Admixture comprises of four (4) main functions:

- **Record Prescription- Infusion Order**

  To record: IV Admixture

- **Record Prescription & Verification**

  Record prescription function is used to transfer manual prescription to online prescription. All prescriptions are required to be key in into system in order to proceed with dispensing process such as patient demographic and order details. Record prescription is combination of 2 process which is ordering and dispensing which consist of record prescription, verification, preparation and dispensing in single workflow.

- **Preparation**

  The preparation function allow user to allocate drug quantity and batch to be dispense based on the recorded prescription. This function is integrated with inventory system where the stock will be auto deduct after dispensing process. Drug label can be generate and print based on the prepared drugs. Some of the sub-function is available in this screen like alternate, hold/resume and drug interaction (MIMS) is provided to help user with more effectively and efficiency during preparation process for patient safety purpose.

- **Dispensing**

  Dispensing functions is to record and save all the dispensed medication detail information. This function is the mandatory steps to complete the dispense medication process. At this screen, information related with the patient, prescription and prepared drug also is provided.

- **IV Release/Discard Batch**

  Release batch function will be used when user decide to un-packed the reserved/prepared drugs. All the release drugs such as tablets, capsule and other than liquid will be released (stocked back into inventory) or discarded (stock deducted from inventory)

3.1 Transcribe Infusion Order

Infusion order is used for recording medicine for Inpatient, Emergency and Day Care departments based on facility setup.

3.1.1 Search Registered Patient

To view an existing patient record, please perform the steps below.

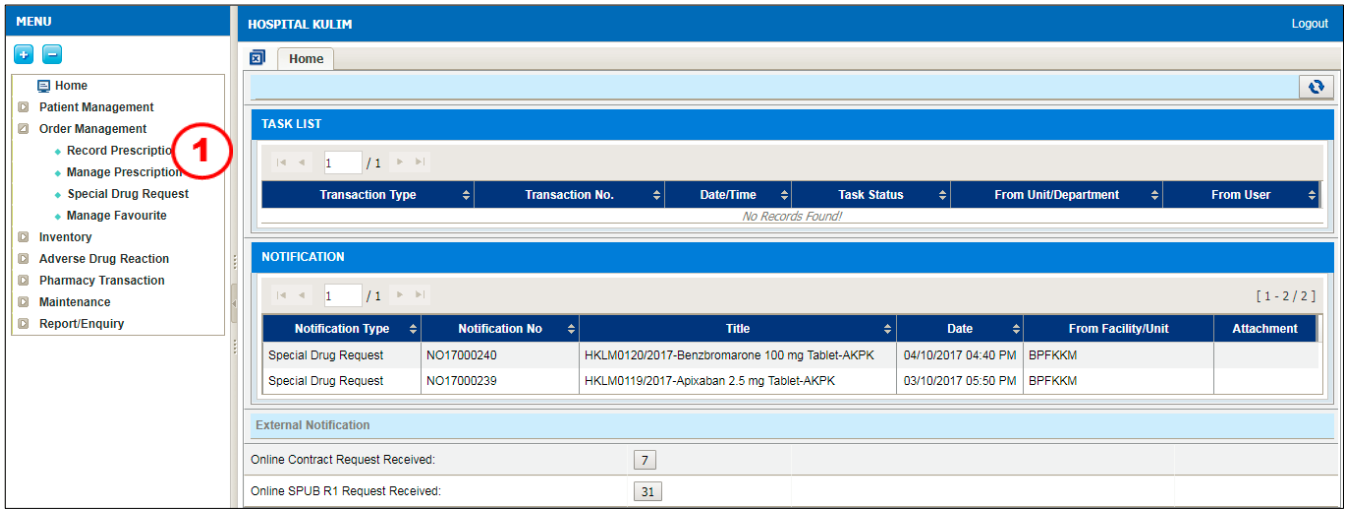


Figure 3.1-1 PhIS Home page

STEP 1
Click on 'Order Management' menu followed by 'Record Prescription' and screen will be displayed as per Figure 3.1.1-1

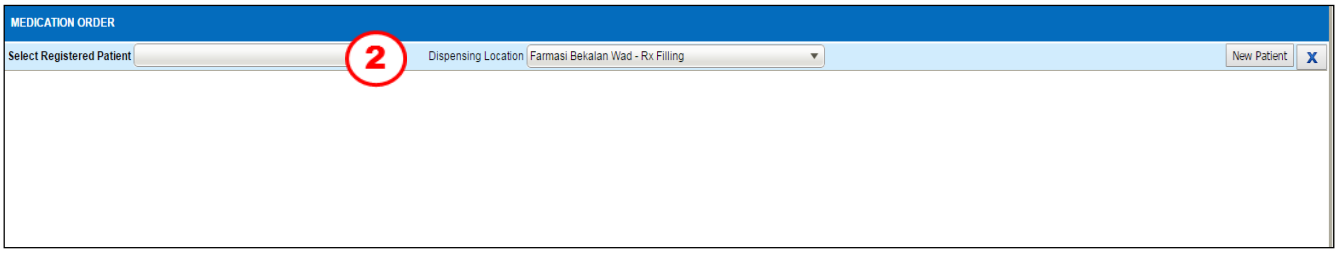


Figure 3.1.1-1 PhIS Home page

STEP 2
Search patient based on name or IC number or MRN patient

Note

If the patient is not registered, click on the New Patient *button and the Patient Registration screen will be displayed.*

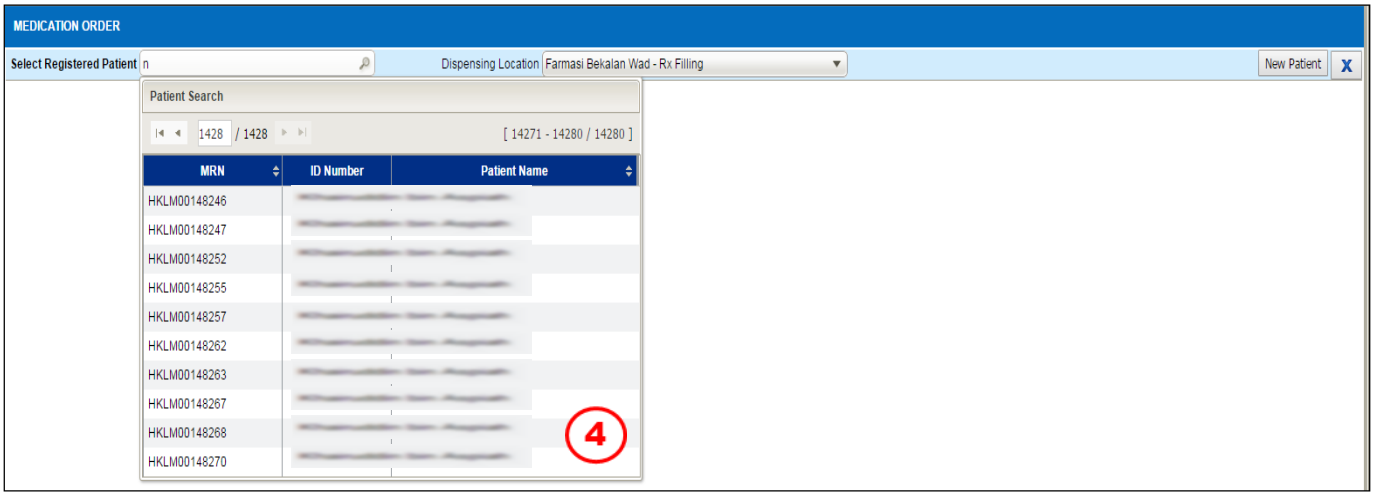


Figure 3.1.1-3 Medication Order

STEP 4
Double-click on the selected patient and the details will be displayed as per Figure 3.1.1-3

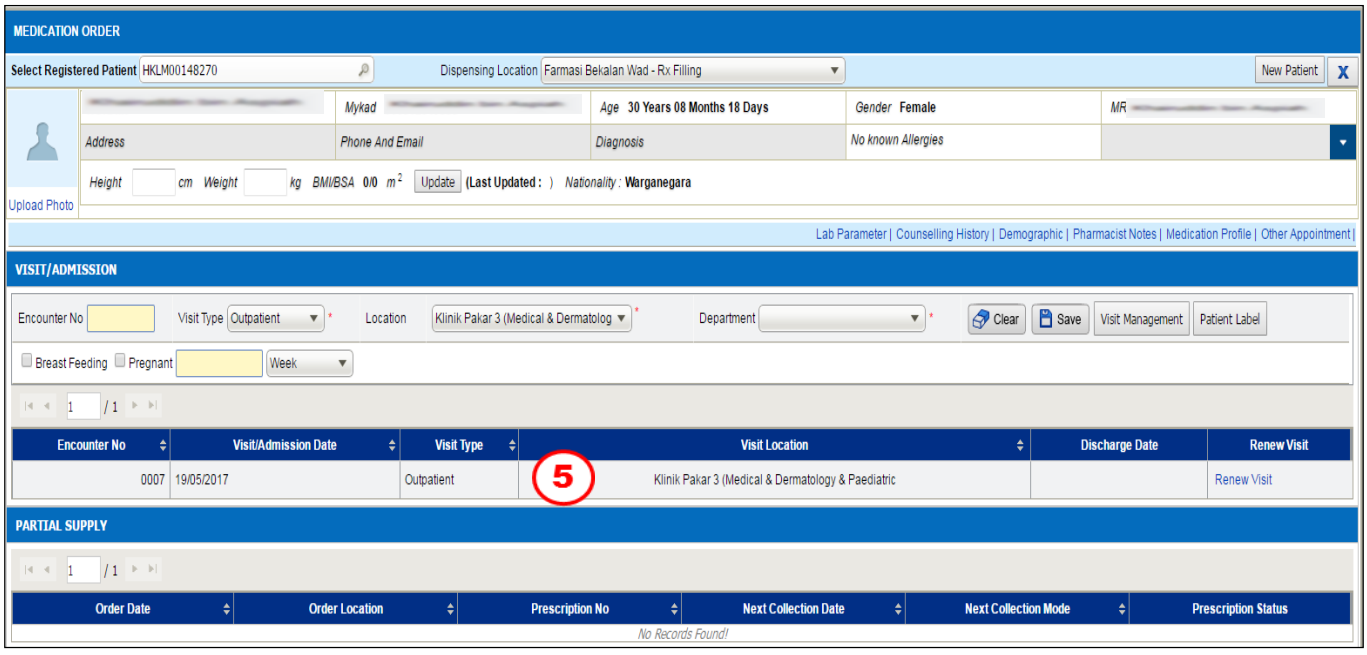


Figure 3.1.1-4 Medication Order

Note

- *Click on the 'Renew Visit' hyperlink to renew a visit for the same location.*
- *Select the 'Visit Type' and 'Location' to create a new visit.*
- *Click on the* Visit Management *to access 'Visit Management' Screen.*

STEP 5
Double-click on the selected visit and the details will be displayed as per Figure 3.1.1-5

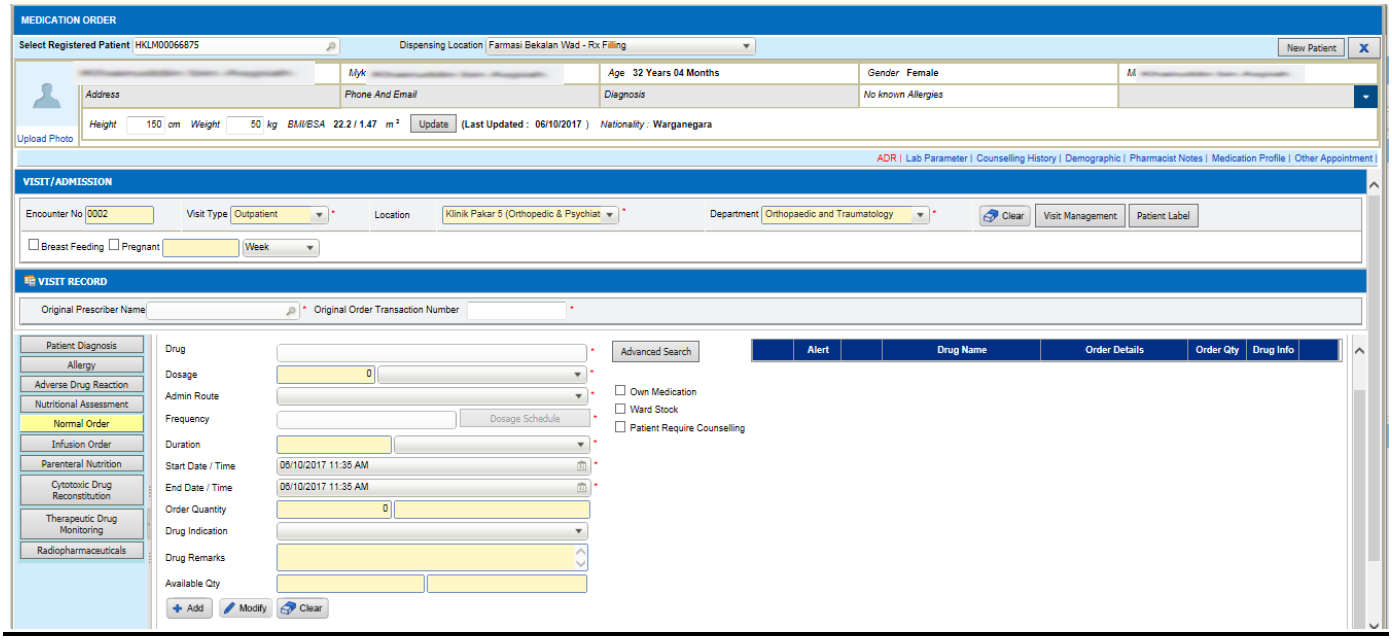


Figure 3.1.1-5 Medication Order

3.1.2 New Patient Registration

To register a new patient, please perform the steps below.

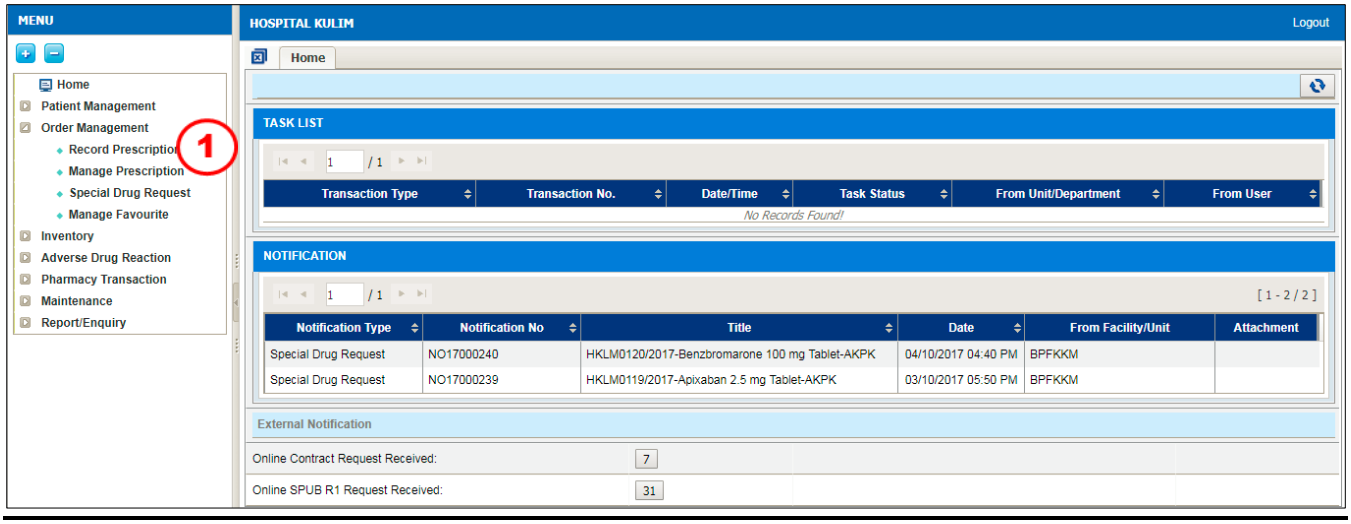


Figure 3.1.2-1 PhIS Home page

STEP 1

Click on 'Order Management' menu followed by 'Record Prescription' and screen will be displayed as per Figure 3.1.2-1

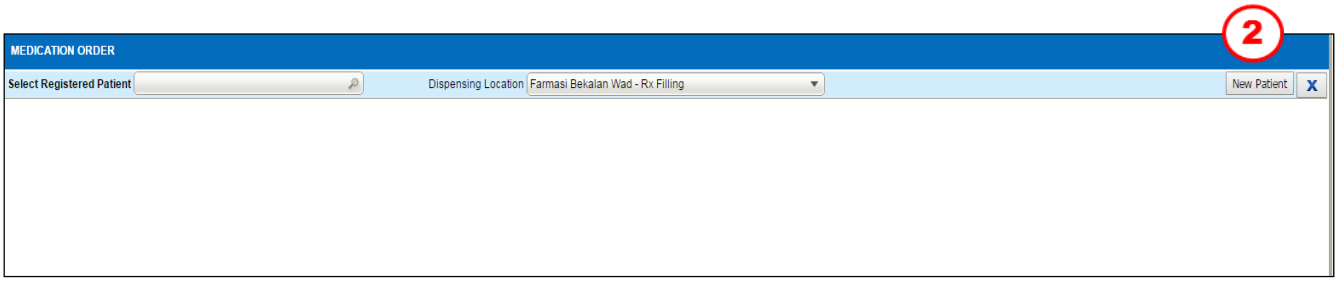


Figure 3.1.2-2 Transcribe Order Create New Patient

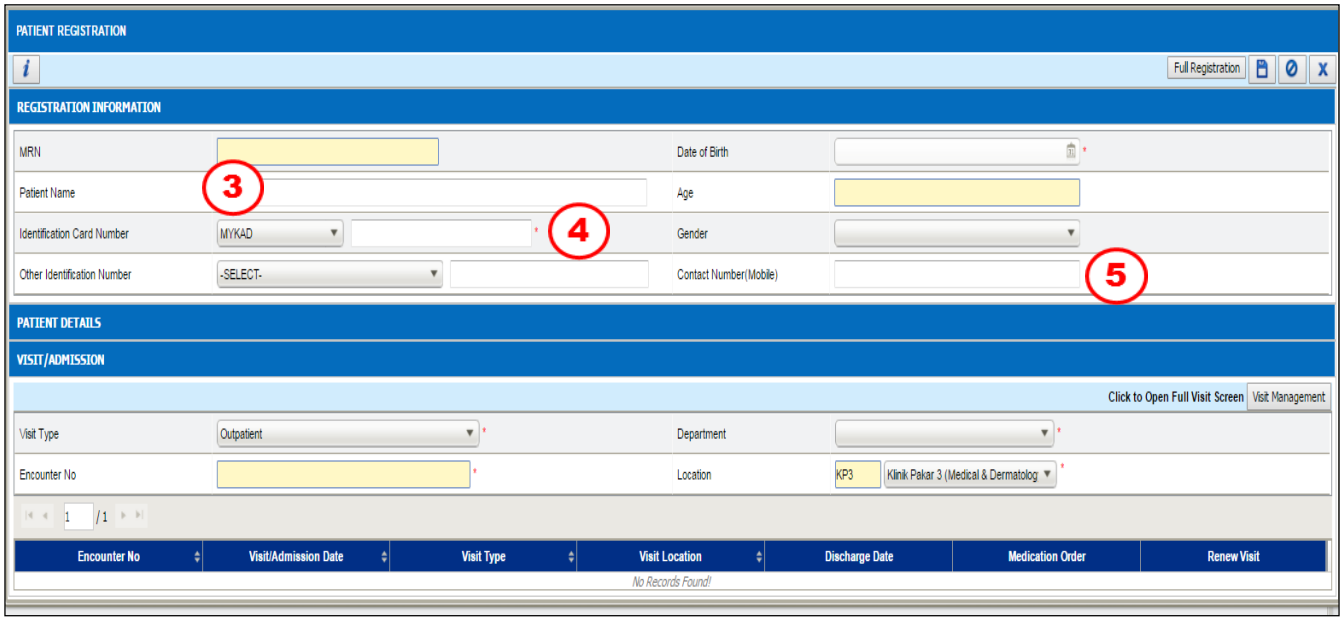


Figure 3.1.2-3 Registration Information

STEP 3
Enter ***Patient Name***

STEP 4
Select from ***Identification Card Number*** drop down box:
- MYKAD
- MYKID

and enter the relevant number

Note

- *After enter the **Identification Card Number** the below details will be displayed:*
  - *Date of Birth (dd/mm/yy)*
  - *Age (42Y 05M 21D)*
  - *Gender (Male/Female)*

- *If MYKAD/MYKID is unavailable, user is required to select the **Other Identification Number** dropdown box:*
  - *BIRTH CERTIFICATE*
  - *DRIVING LICENSE*
  - *FATHER IC*
  - *MILITARY CARD NUMBER*
  - *MOTHER IC*
  - *OLD IC*
  - *PASSPORT*
  - *PENSION CARD*
  - *POLICE CARD NUMBER*
  - *UNKNOWN PATIENT*
  - *WORK PERMIT*

  and enter the relevant number.

STEP 5
Enter ***Contact Number (Mobile)***

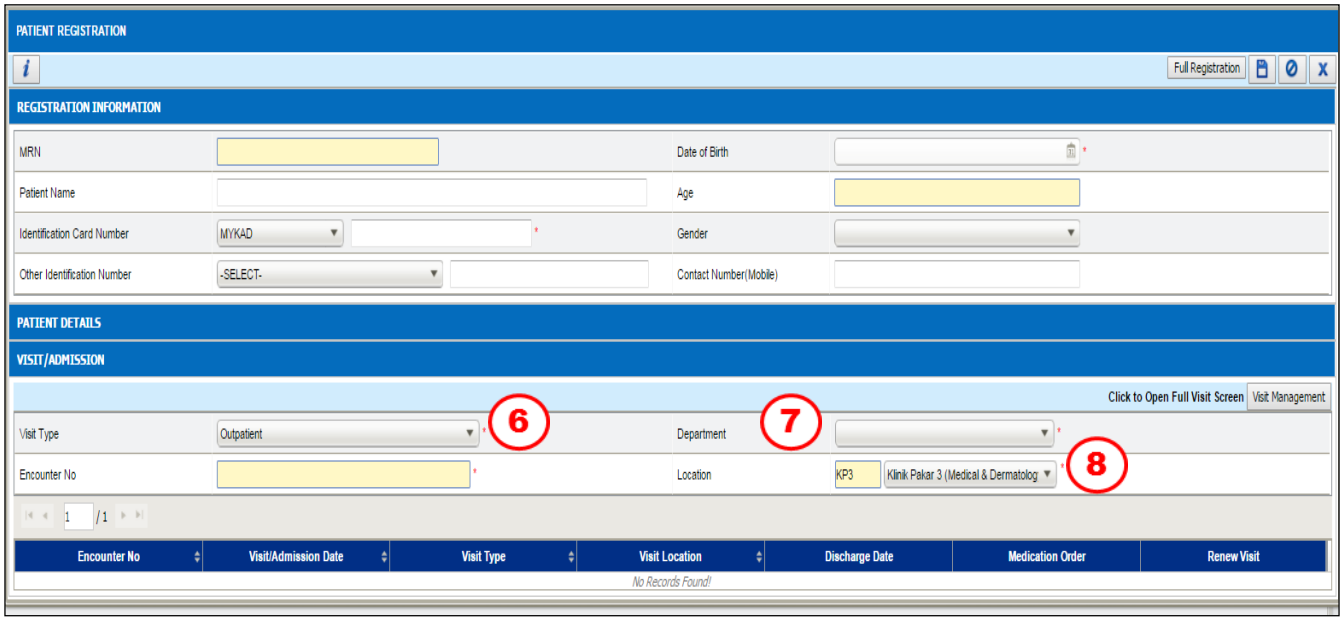


Figure 3.2-4 Visit/Admission

STEP 6
Select the ***Visit Type*** from dropdown box
STEP 7
Select the ***Department*** from dropdown box:

Note
Department *will tie to the selected visit type.*

STEP 8
Select ***Location*** from dropdown box

Note
Location *will tie to the selected Department.*

STEP 9
Click on the button to save the record

Note

- *After click the save button, system will automatically generate the* ***MRN*** *(Medical Record Number) and , and buttons will be enabled.*
- *Click on the* Full Registration *button to access 'full patient registration' Screen.*
- *Another option to register a new patient is to click on the* New Patient Registration *button located under Patient Quick Registration*

3.2 Infusion Record prescription, Verification, Prepare and Dispense

A function for a pharmacist to order injectable medication that required further dilution before administration. However, it only applicable for medication that are diluted by pharmacist department. If the dilution is prepared by nursing personnel, please use normal order function.

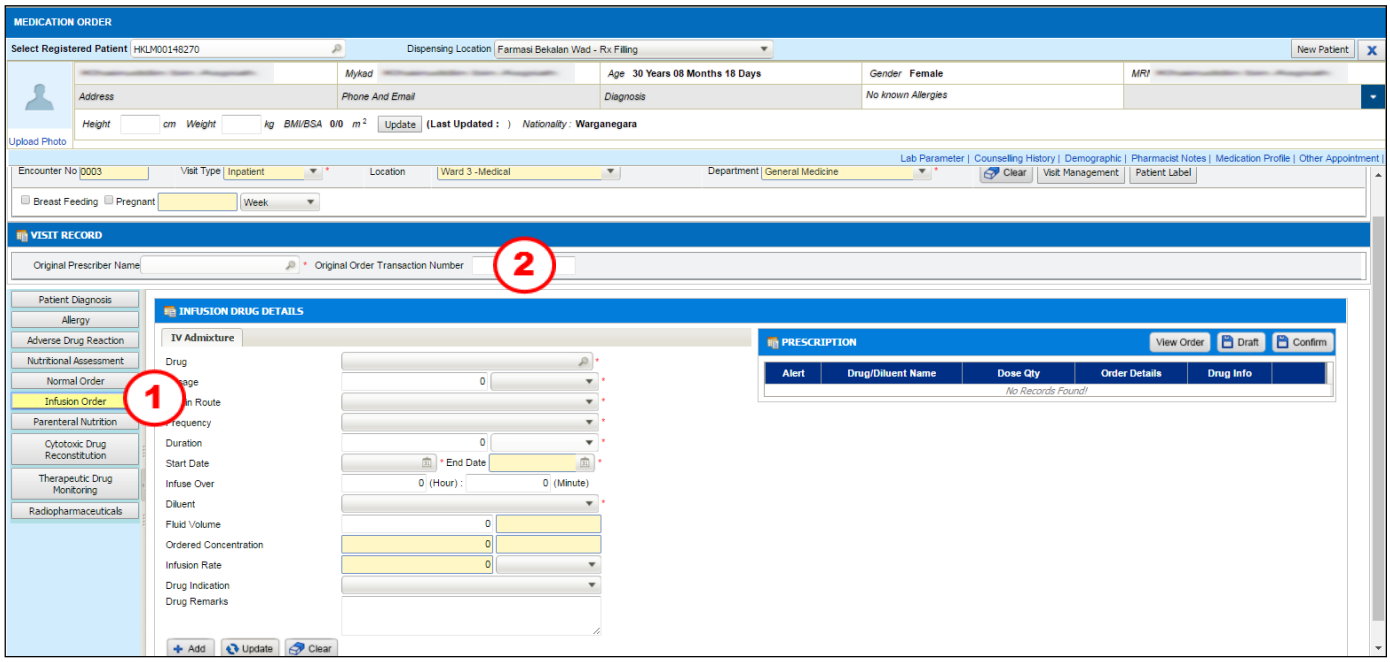


Figure 3.2-1 Medication Order

STEP 1
Click on the *Infusion Order* tab

STEP 2
Enter *Original Order Transaction Number*

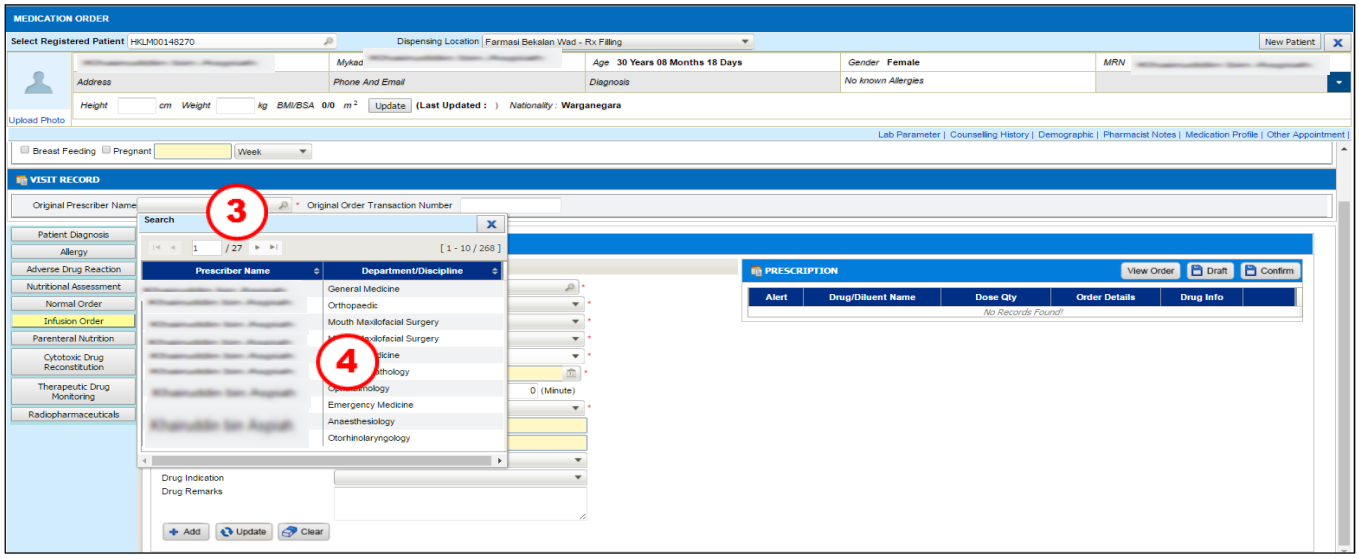


Figure 3.2-2 Medication Order

STEP 3

Click on the button to search ***Original Prescriber Name***

STEP 4

Double click on the selected prescriber

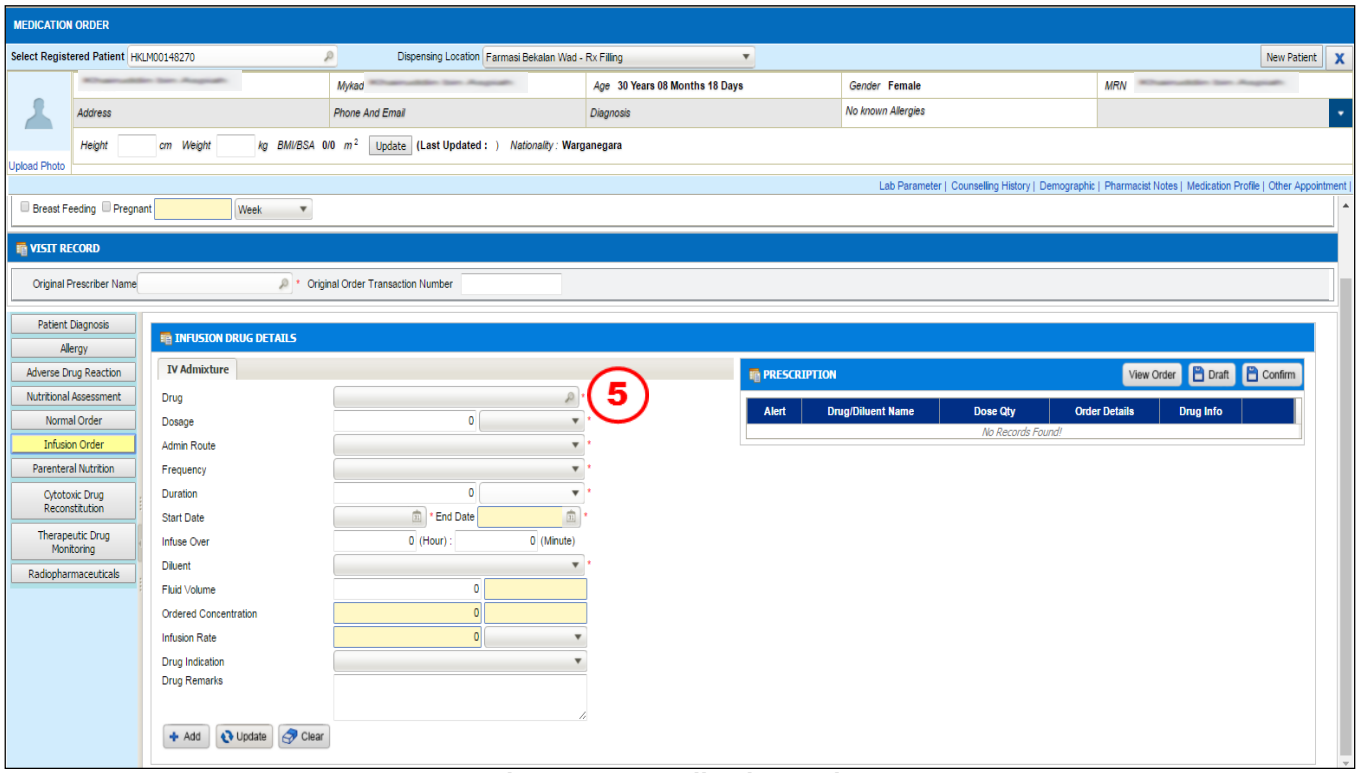


Figure 3.2-3 Medication Order

STEP 5

Click on the button new window will display as per Figure 3.2-4

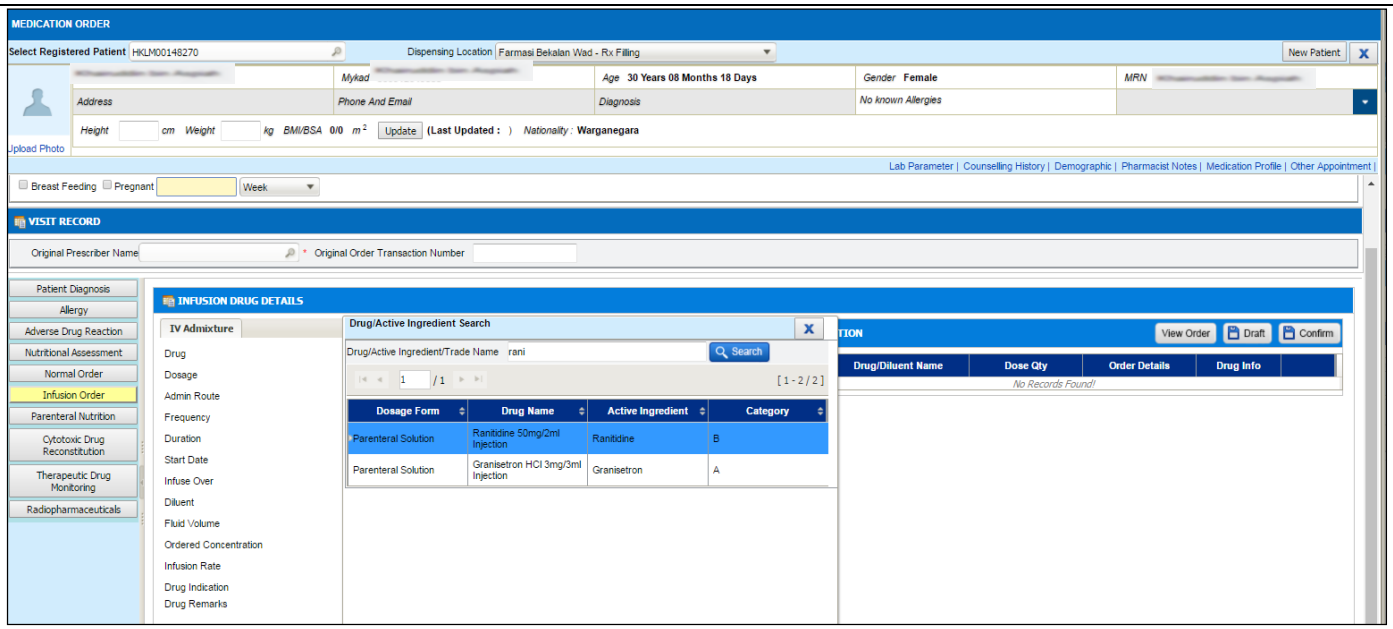


Figure 3.2-4 Drug/Active Ingredient Search

Note

Double click on the selected drug.

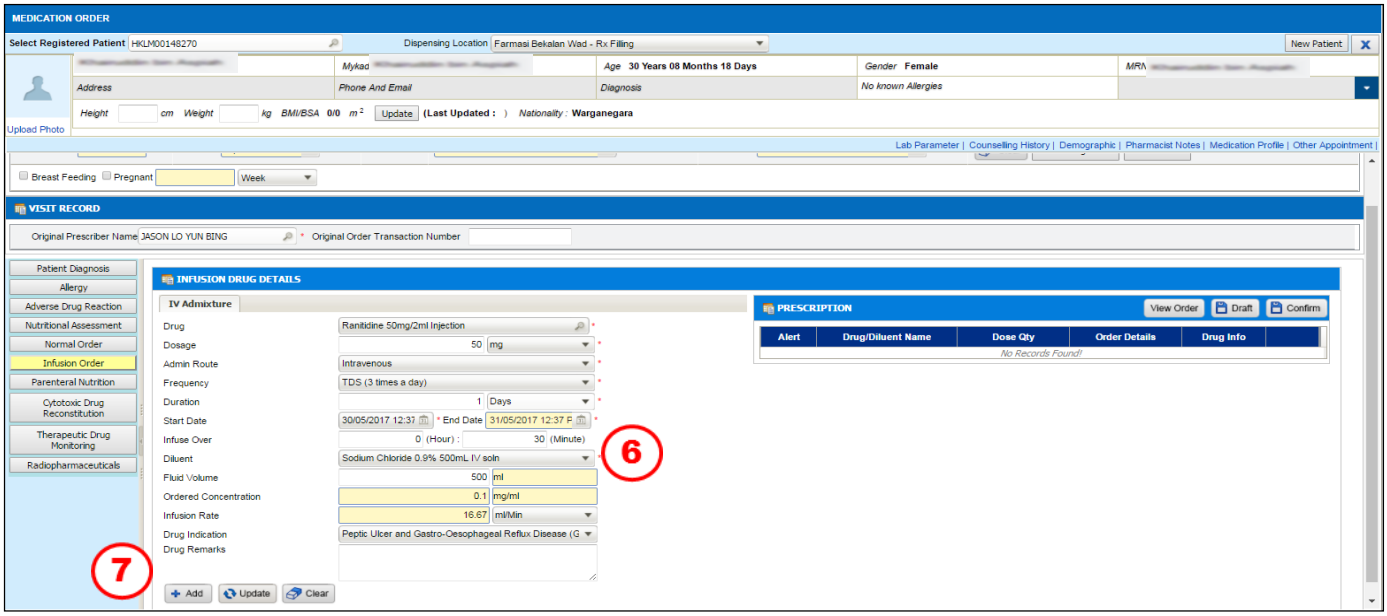


Figure 3.2-5 Infusion Drug Details

Note

- *End Date is defaulted by the system according to start date and duration.*
- *Information on IV Admixture screen will be automatically displayed and calculated based on the master setup.*
- *Infusion Rate = Fluid Volume/ Infuse Over*
- *Strength = Dosage / Fluid Volume.*

STEP 6

Select diluents from drop down menu

STEP 7

Click on the Add button to add drug in prescription section as per Figure 3.2-6

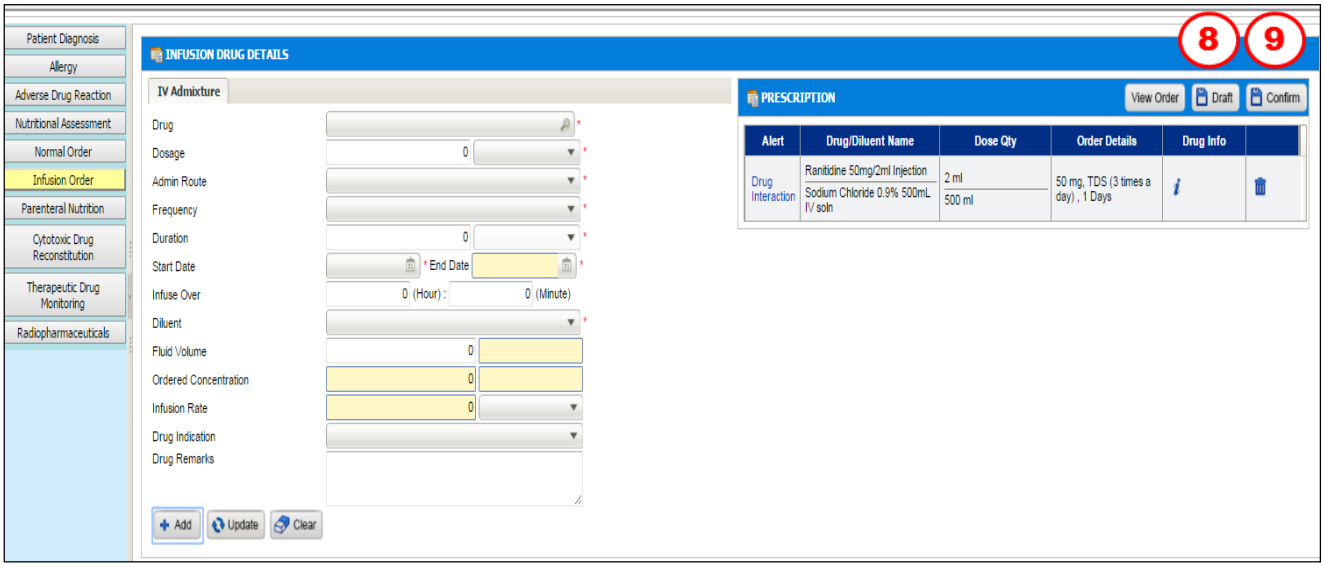


Figure 3.2-6 Infusion Drug Details

STEP 8

Click on the Draft button to save the prescription and screen will display one new button as per Figure 3.2-7

STEP 9

Click on the Confirm button to confirmed the prescription

Note

- *Click on the View Order button to view order details as per Figure 3.2-7.*

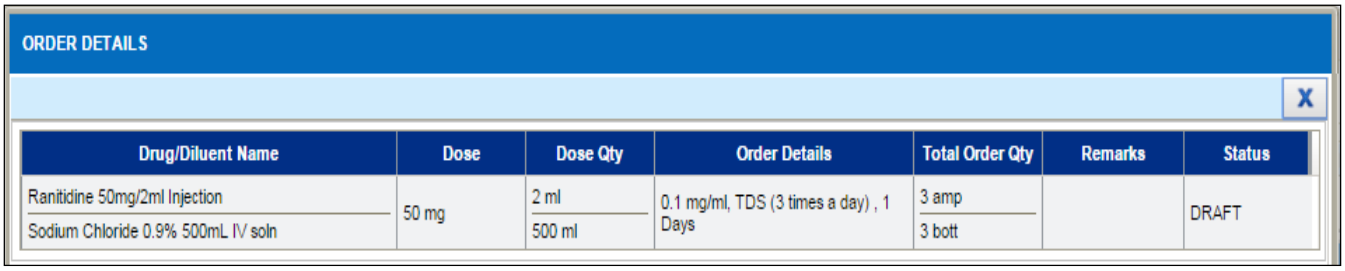
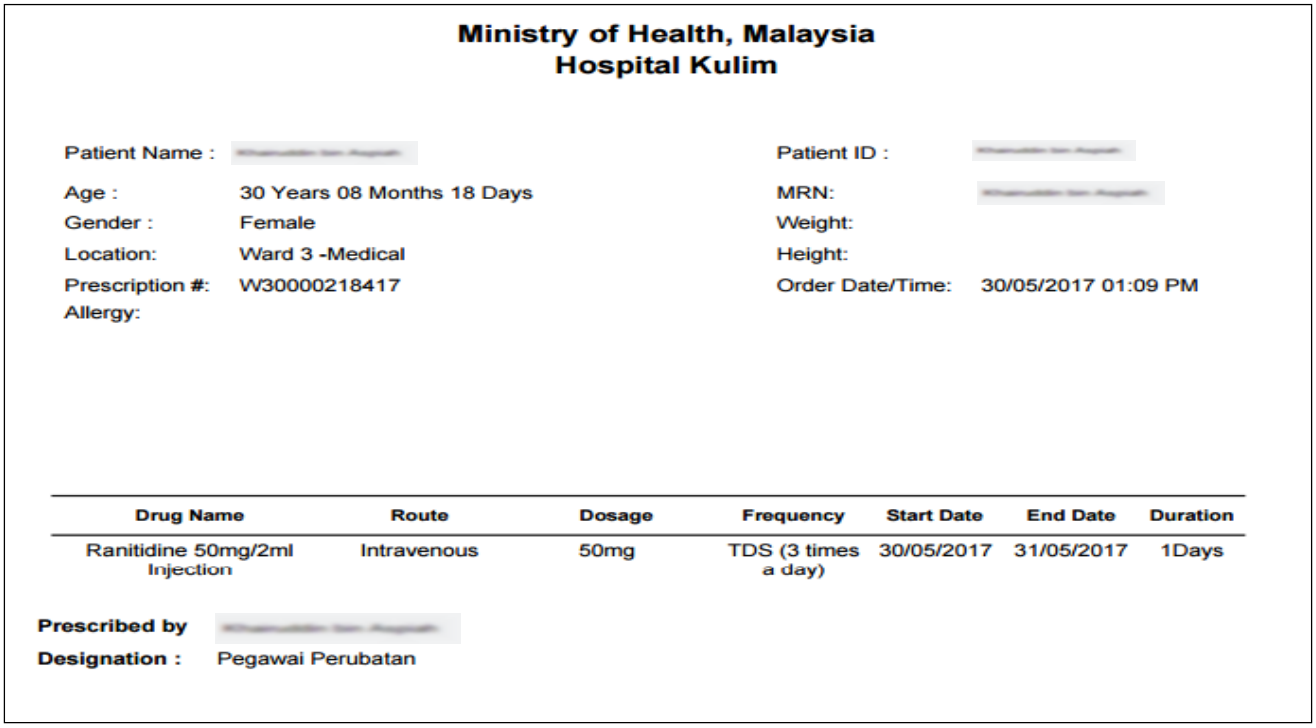


Figure 3.2-7 Order Details

- *Click on the Preview Prescription button to view prescription details as per Figure 3.2-8.*



Ministry of Health, Malaysia
Hospital Kulim

Patient Name : [redacted]
Patient ID : [redacted]
Age : 30 Years 08 Months 18 Days
MRN: [redacted]
Gender : Female
Weight:
Location: Ward 3 -Medical
Height:
Prescription #: W30000218417
Order Date/Time: 30/05/2017 01:09 PM
Allergy:

Drug Name	Route	Dosage	Frequency	Start Date	End Date	Duration
Ranitidine 50mg/2ml Injection	Intravenous	50mg	TDS (3 times a day)	30/05/2017	31/05/2017	1Days

Prescribed by [redacted]
Designation : Pegawai Perubatan

Figure 3.2-8 Prescription Details

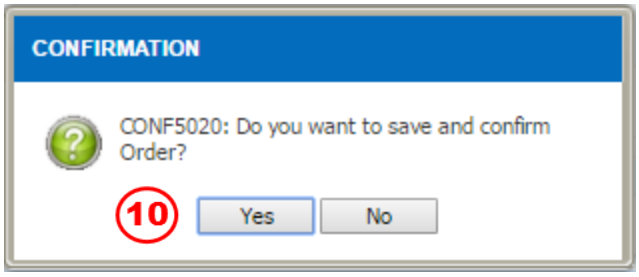


Figure 3.2-9 Confirmation

STEP 10
Click on the Yes button to save and confirm order and new screen will display as per Figure 3.2-9

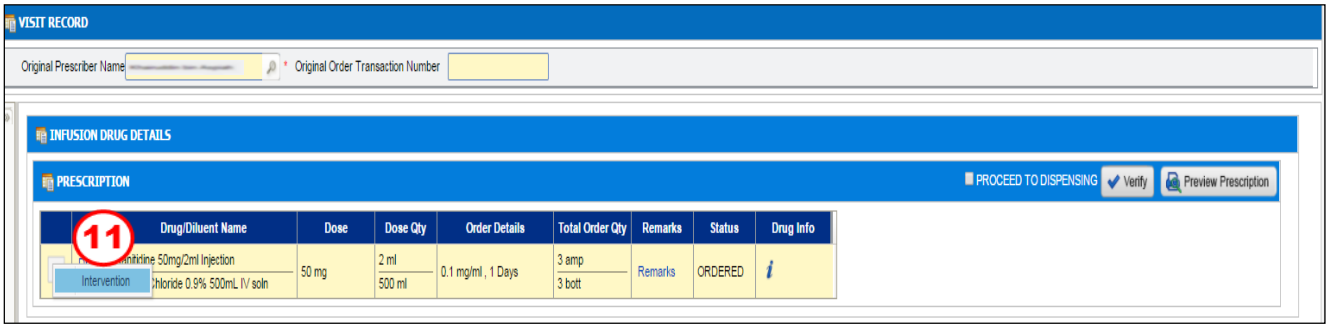


Figure 3.2-10 Infusion Drug Details

STEP 11

Right click on the button and select Intervention**.**

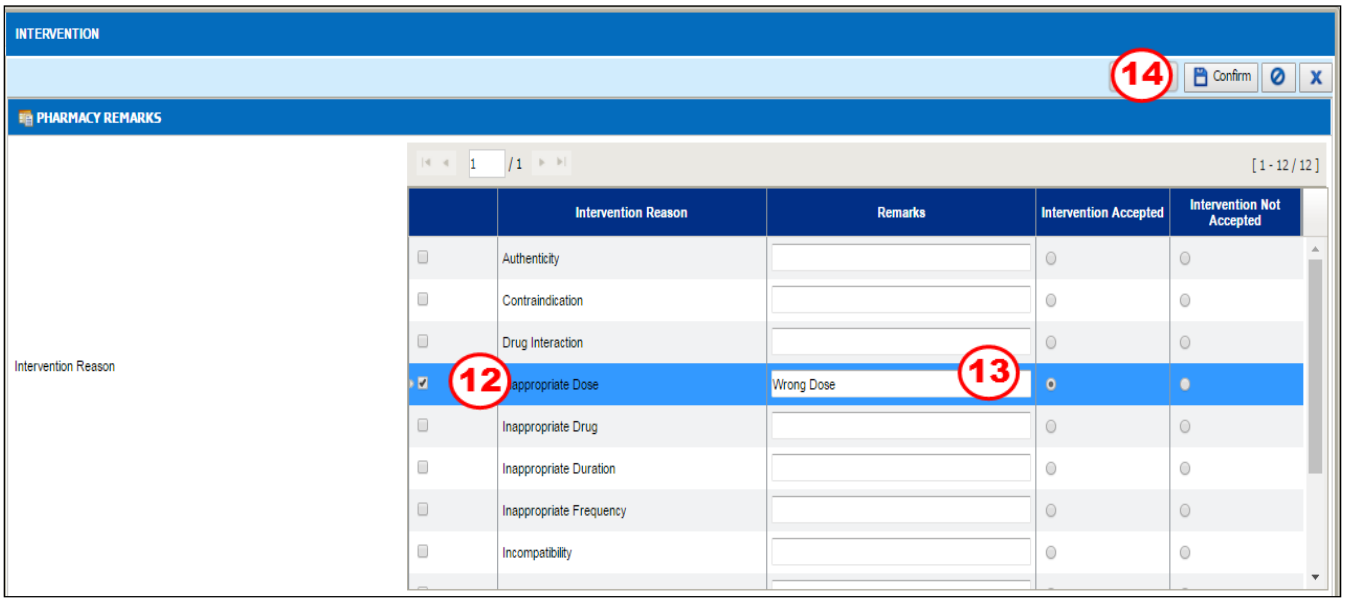


Figure 3.2-11 Intervention

STEP 12

Select ***Intervention Reason*** from the table

STEP 13

Select ***Intervention Status*** as follow:

a) Accepted
b) Not Accepted

STEP 14

Click on the

button to confirm ***Modify Order***

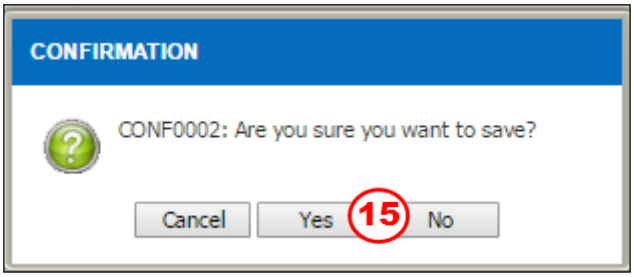


Figure 3.2-12 Confirmation Alert Message

STEP 15

Click on the Yes button to confirm the intervention

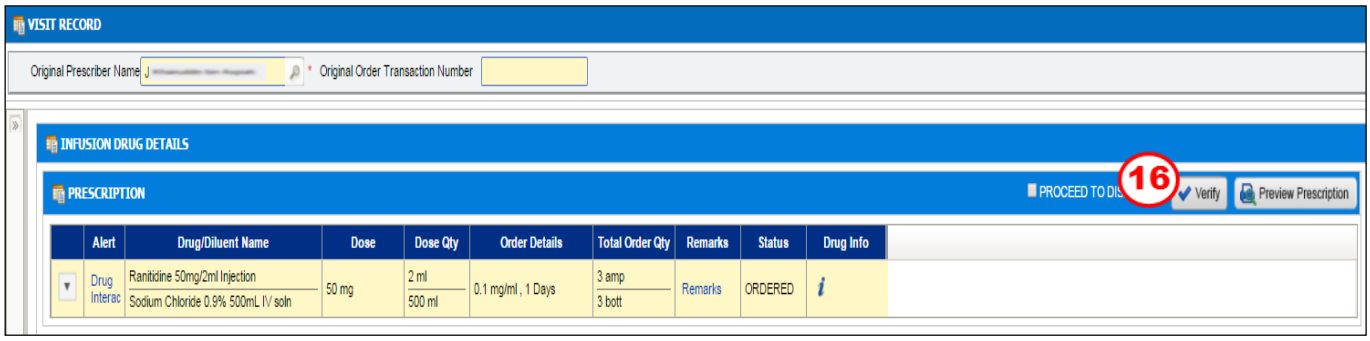


Figure 3.2-13 Medication Order : Verify

STEP 16

Click on the Verify button and will displayed alert message as per Figure 3.2-14

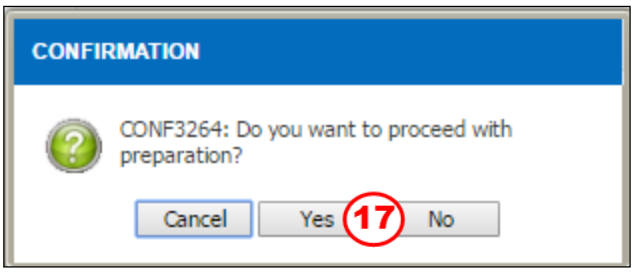


Figure 3.2-14 Alert Confirmation Message

STEP 17

Click on the Yes button to proceed verification and IV Preparation screen will be displayed as per Figure 3.2-15

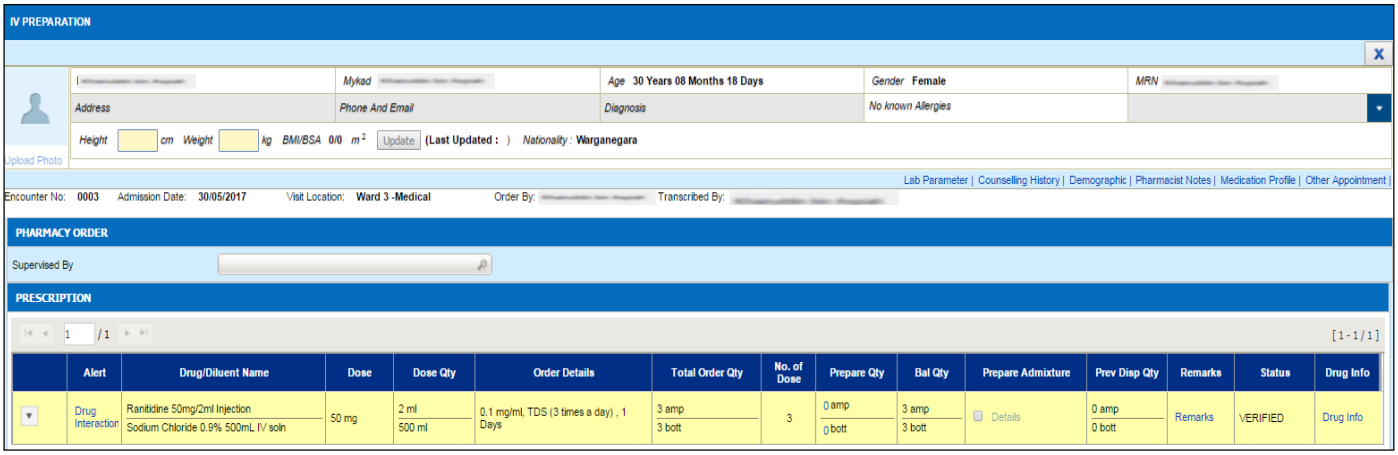


Figure 3.2-15 IV Preparation Screen

Note

Alternate Drug

- *This function allow user to select different drug with the same active ingredient and same administration route.*

  Click on the button to select ***Alternate Drug/ Intervention/Hold Order***

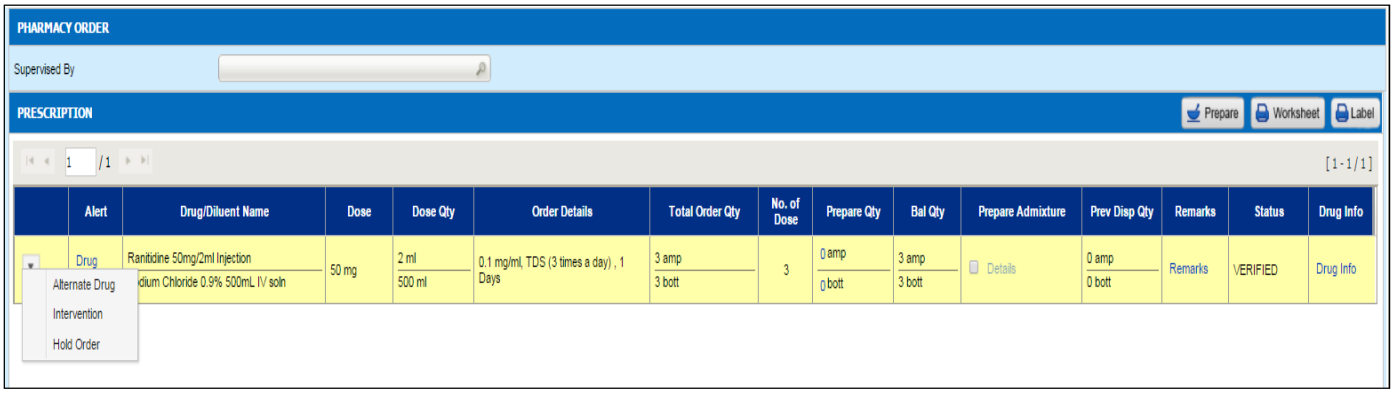


Figure 3.2-16 IV Preparation Screen

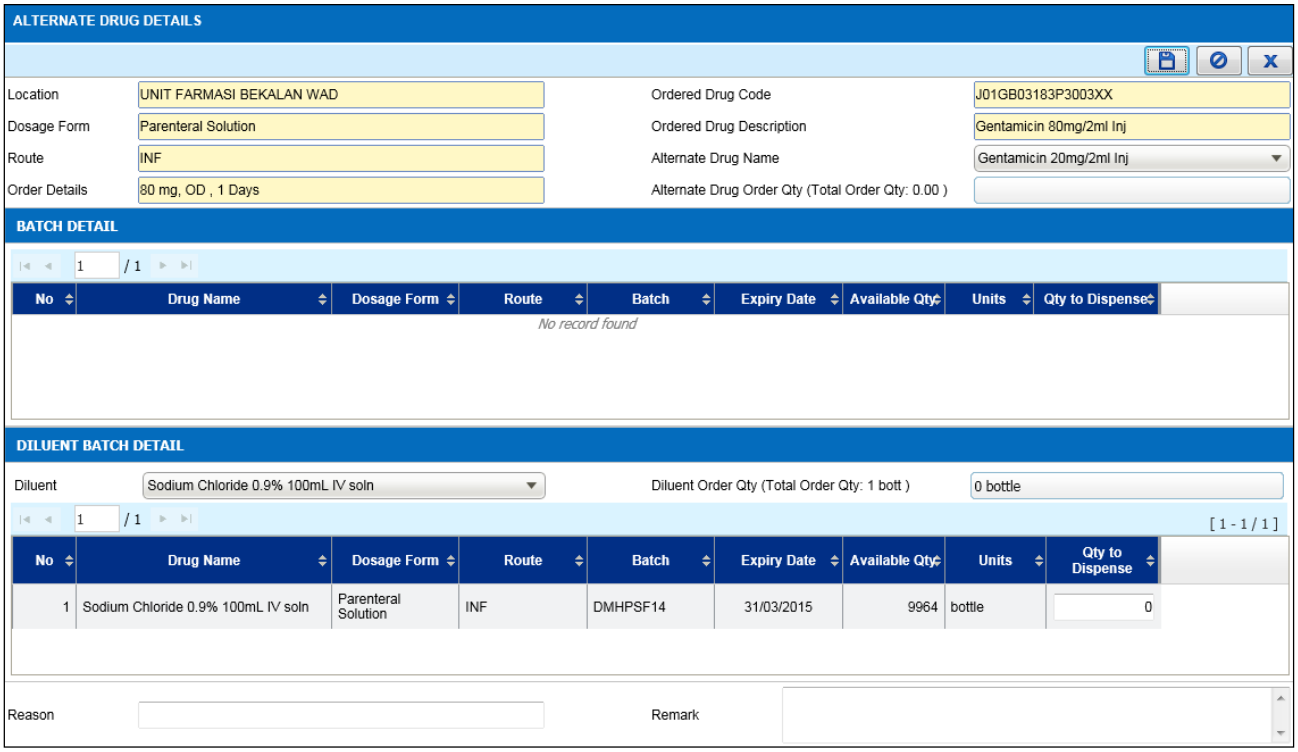


Figure 3.2-17 Alternate Drug Details

Note

- *Alternate drug screen consist of three (3) section which are:*

a) Alternate Drug Details

- ***Location, Dosage Form, Route, Order Details, Ordered Drug Code, Ordered Drug Description, Alternate Drug Name and Alternate Drug Order Qty(Total Order Qty: 0.00)*** *will be retrive from medication order and drug master setup.*
- *Select* ***Alternate Drug Name*** *from dropdown box.*

b) Batch Details

- *Selected drug name will be listed based on drug master setup.*

c) Diluent Batch Detail

- *Selected drug name will be listed based on drug master setup.*
- *Select* ***Diluent*** *from dropdown box.*
- *Type* ***Qty to Dispense***

- *Click on the* *button to confirm alternate.*
- *After did alternate, selected drug will be change to green colour as figure 3.2-18.*

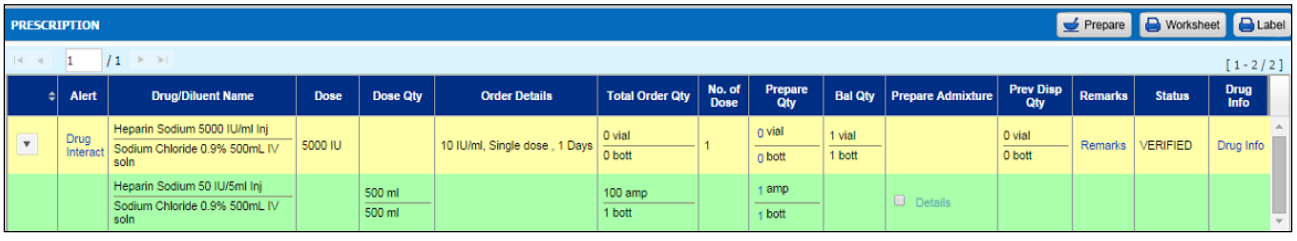


Figure 3.2-18 Alternate Drug Details

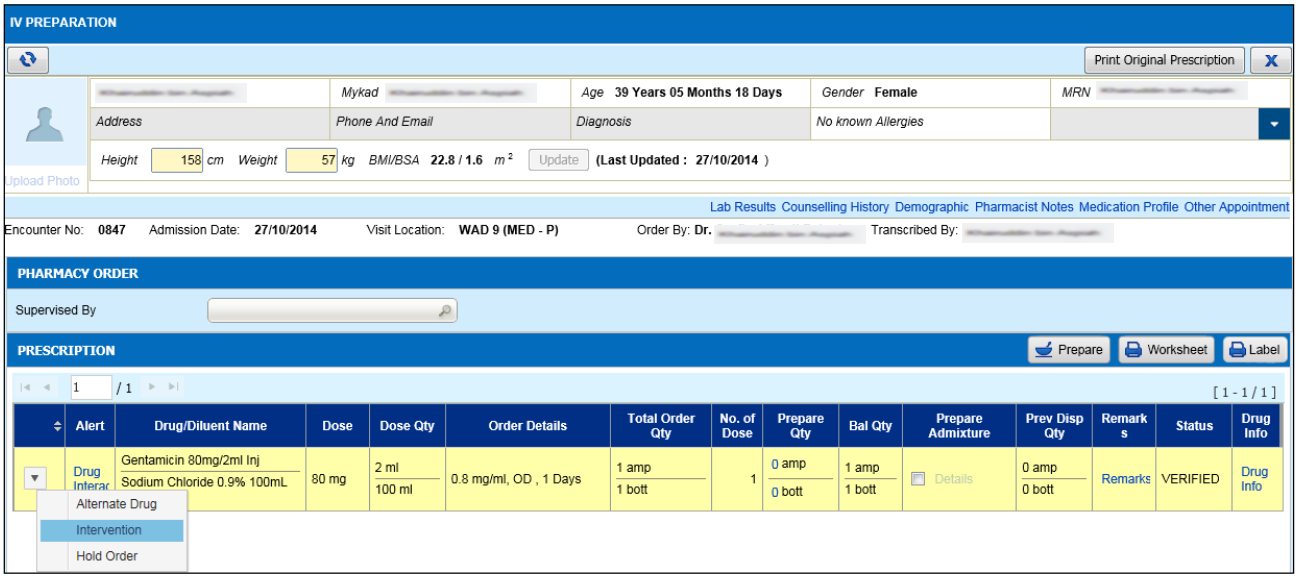


Figure 3.2-19 IV Preparation

Note

Intervention

- *This function allow user to modify drugs details frequency, duration and form. This function is available in verification screen and preparation screen.*

- *Right click on the* ▼ *button and select* ***Intervention***

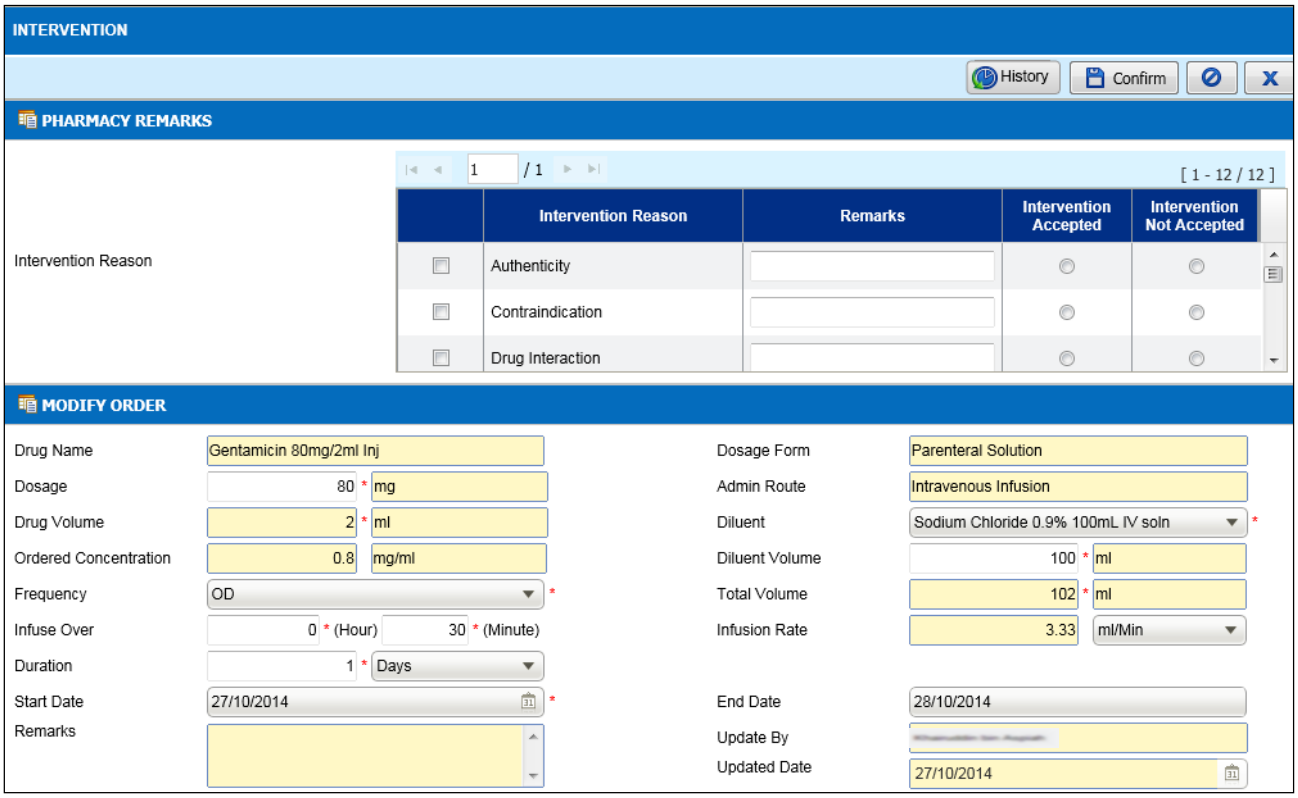


Figure 3.2-20 Intervention

Note

Select ***Invervention Reason*** *and enter remarks from the table*

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

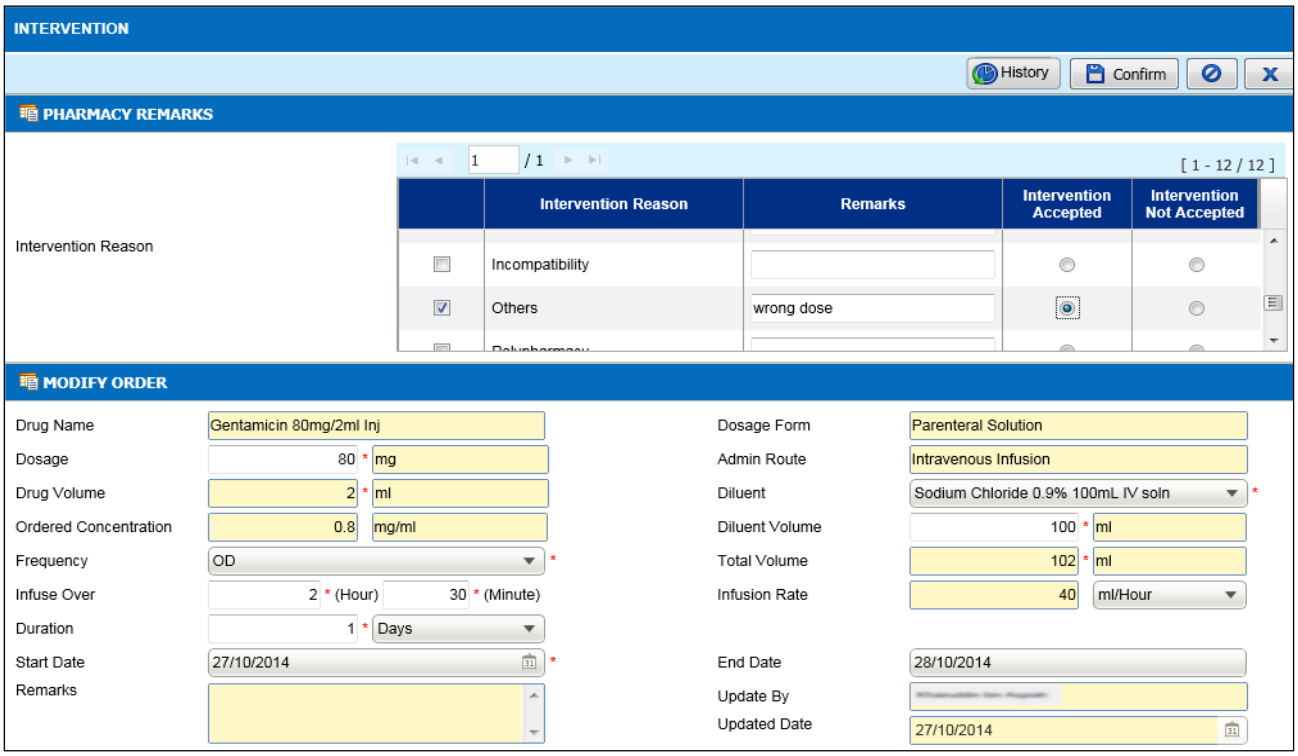


Figure 3.2-21 Intervention

Note

- *Select on* ***Accepted*** *radio button*
- *Pharmacist will select the* ***Intervention Status*** *radio button after confirming the intervention status from prescriber.*

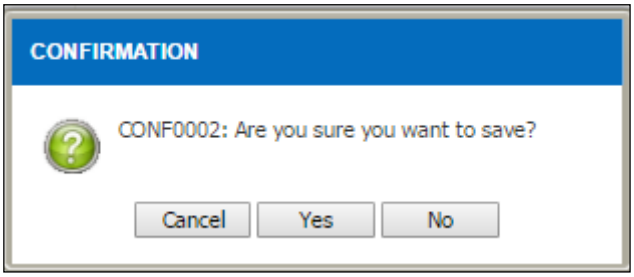


Figure 3.2-22 Alert Confirmation Message

- *Click on the* History *button to view intervention history listing.*

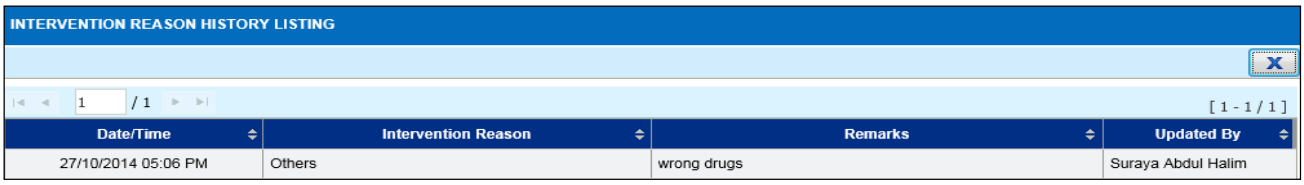


Figure 3.2-23 Intervention Reason History Listing

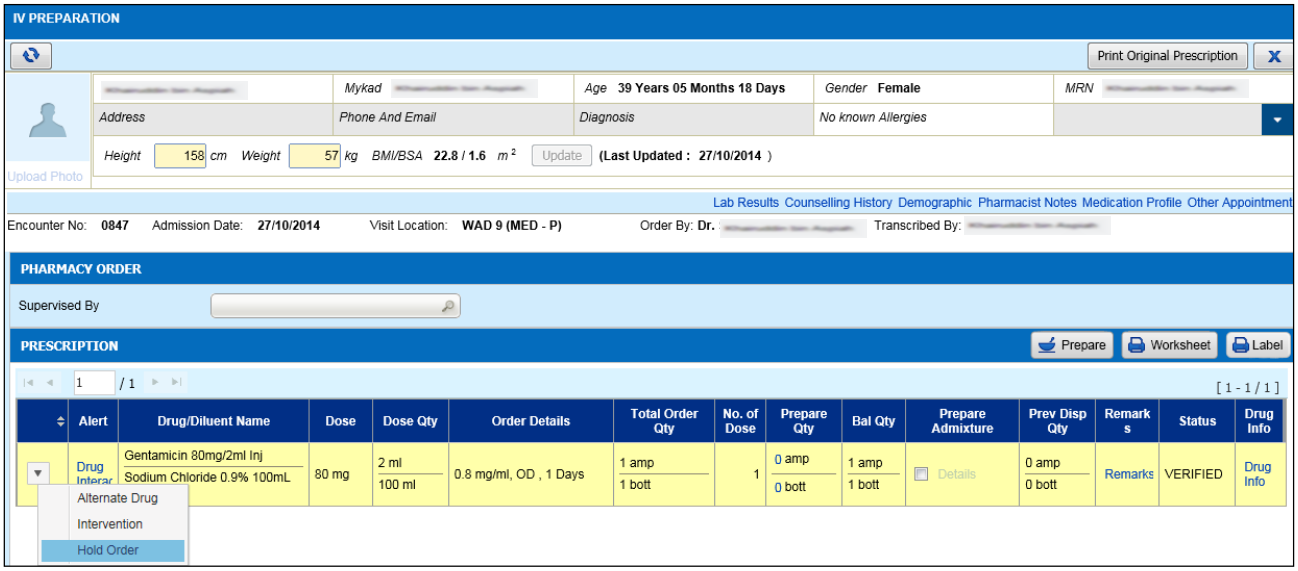


Figure 3.2-24 IV Preparation

Note

Hold Order

- *These functions allow Pharmacist to hold medication from being prepared or dispense; may resume the medication order to continue dispensing.*

- *Right click on the button and select* ***Hold Order*** *and new screen will be displayed as per Figure 3.2-27.*

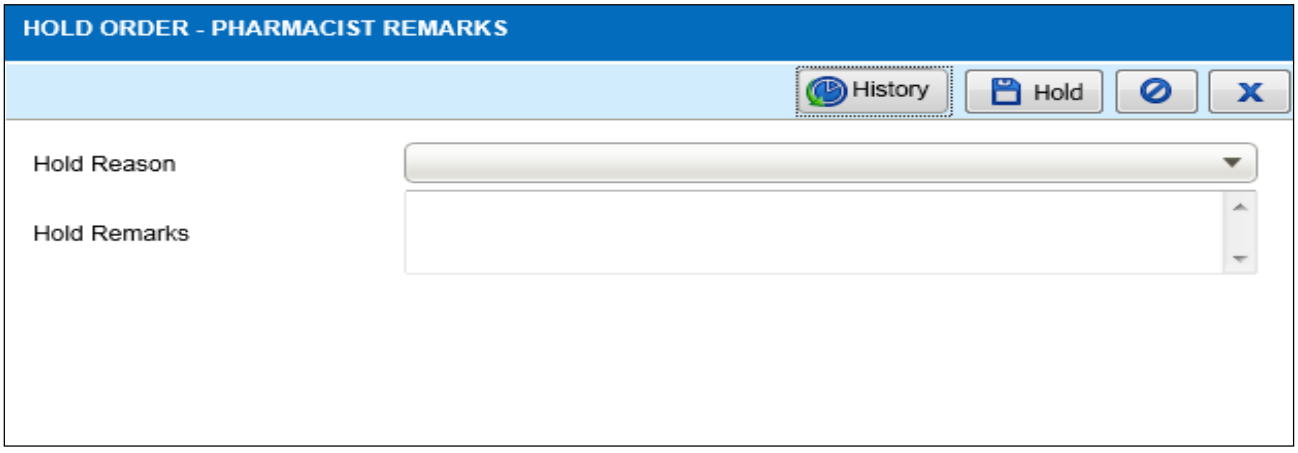


Figure 3.2-25 Hold Order-Pharmacist Remarks

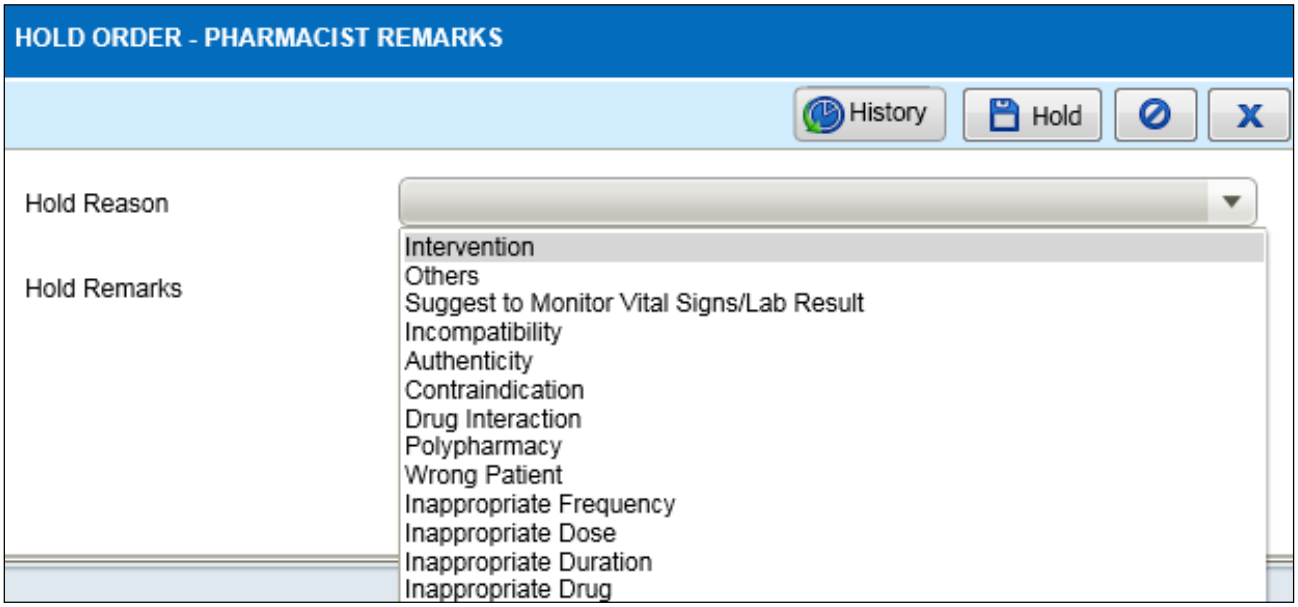


Figure 3.2-26 Hold Order-Pharmacist Remarks

Note

Select ***Hold Reason*** *from dr op down 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*

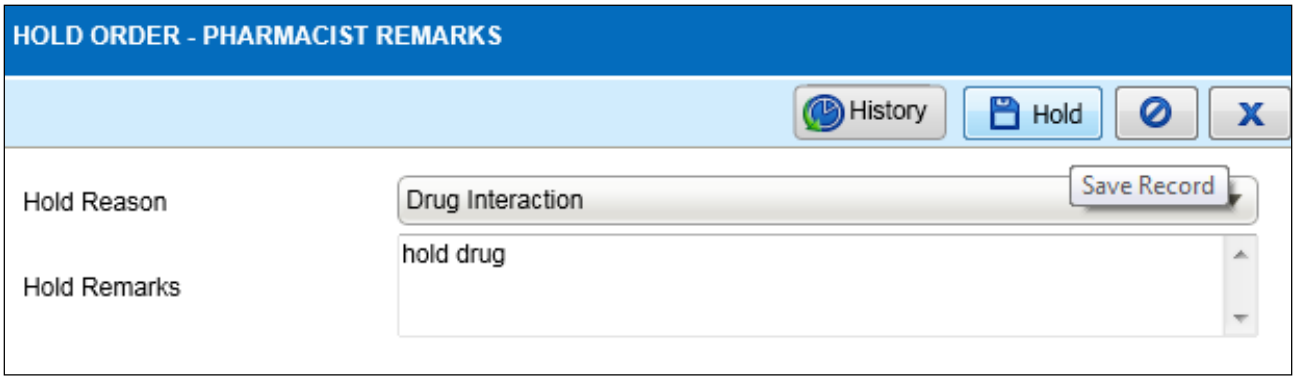


Figure 3.2-27 Hold Order-Pharmacist Remarks

Note

Click on the

button to proceed hold transaction

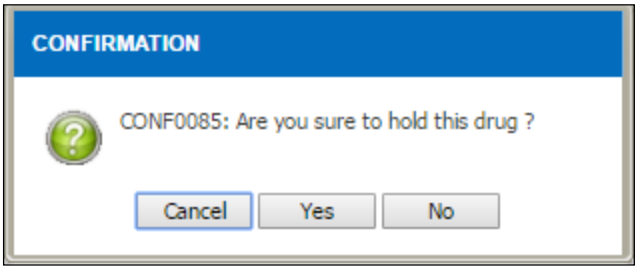


Figure 3.2-28 Alert Confirmation Message

- *Click on the* Yes *button to confirm the hold order.*

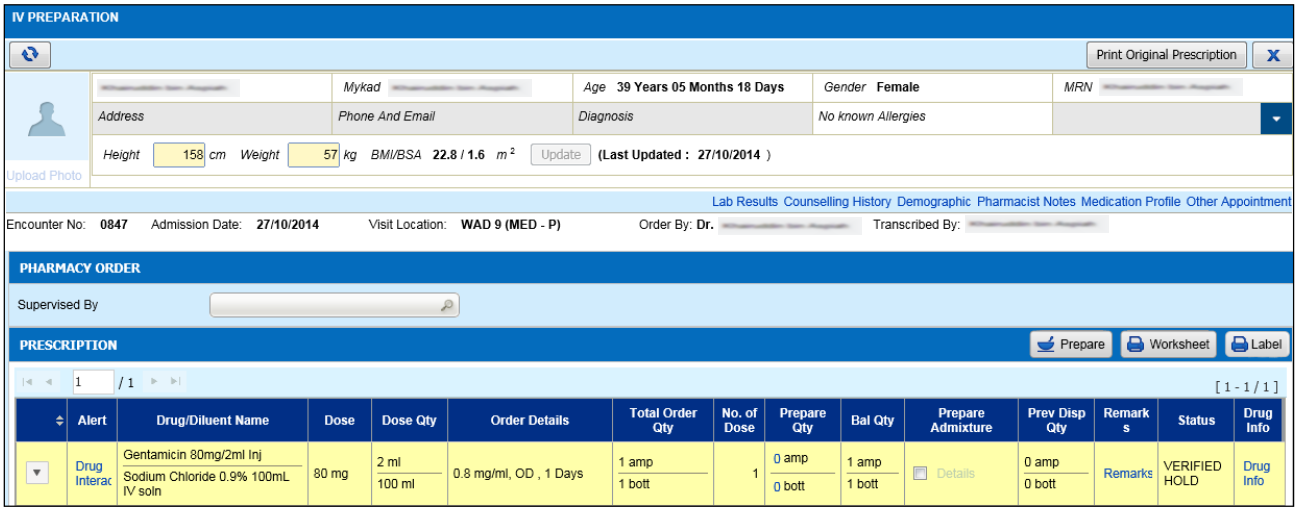


Figure 3.2-29 IV Preparation

Note

- *Status will be diaplayed as* ***VERIFIED HOLD****.*

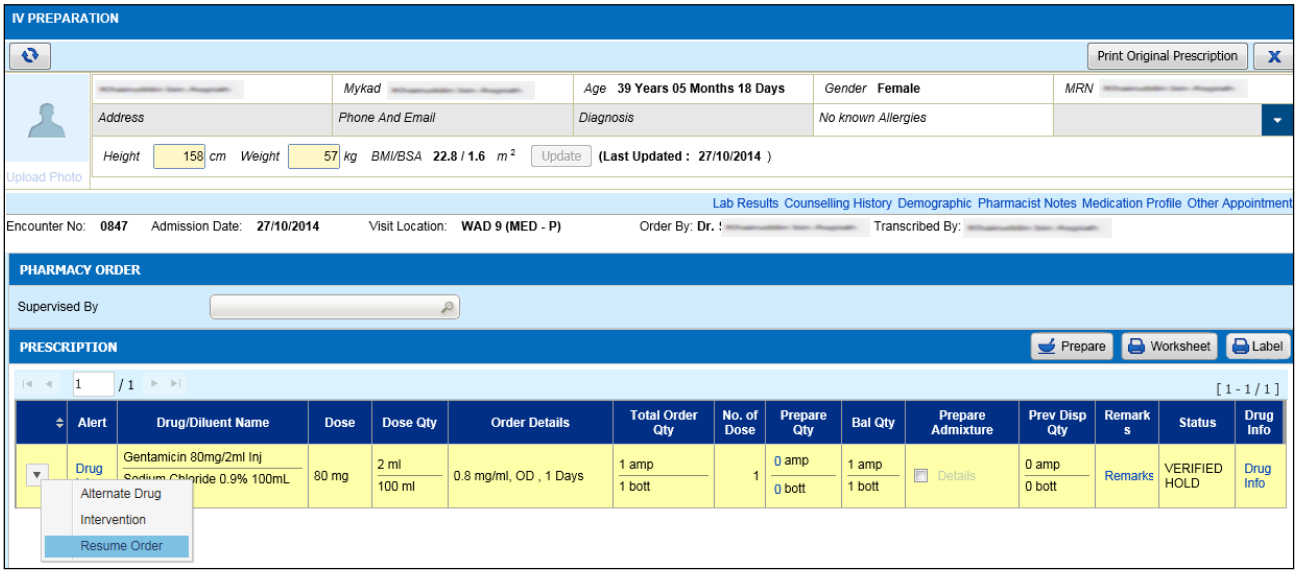


Figure 3.2-30 IV Preparation

Note

Resume Order

Click on the ▼ *button and select* ***Resume Order***

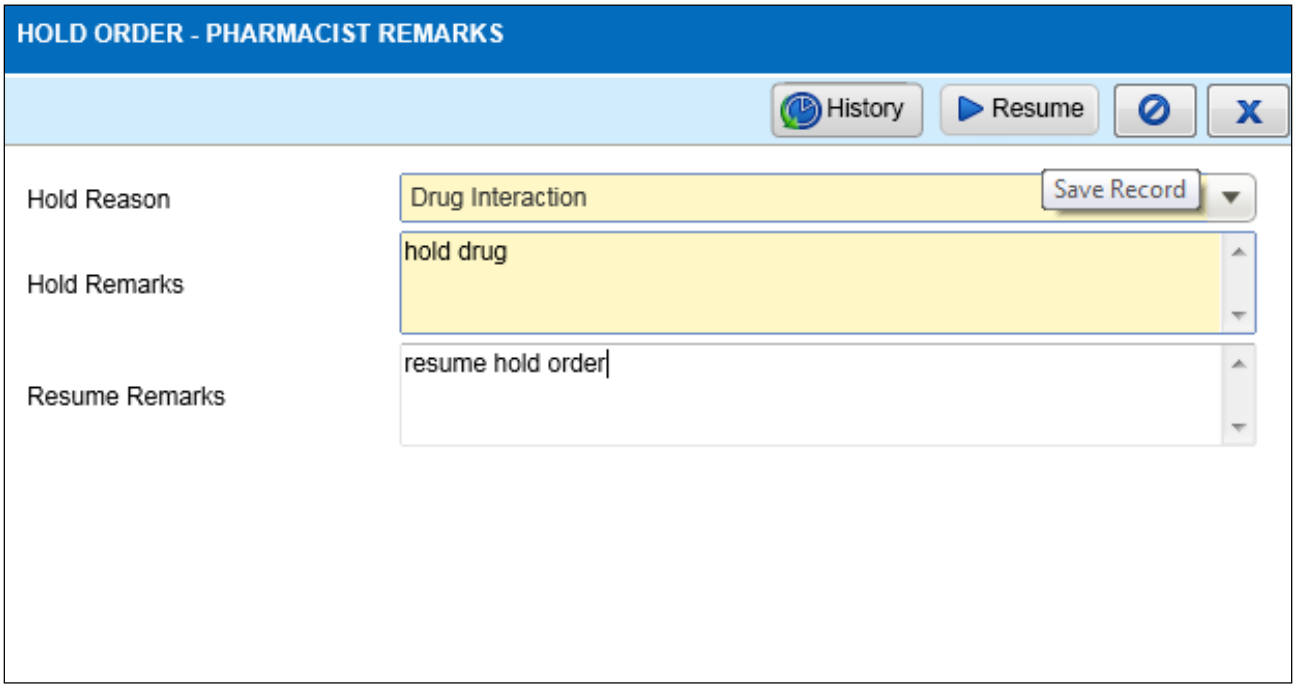


Figure 3.2-31 Hold Order-Pharmacist Remarks

Note

- *Click on the* Resume *button to resume hold order.*
- *Enter* ***Resume Remarks*** *if required.*

Click on the Yes *button to release drug from hold.*

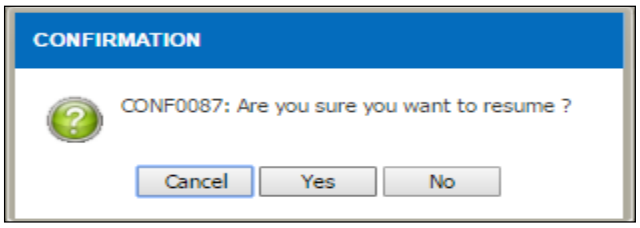


Figure 3.2-32 Alert Confirmation Message

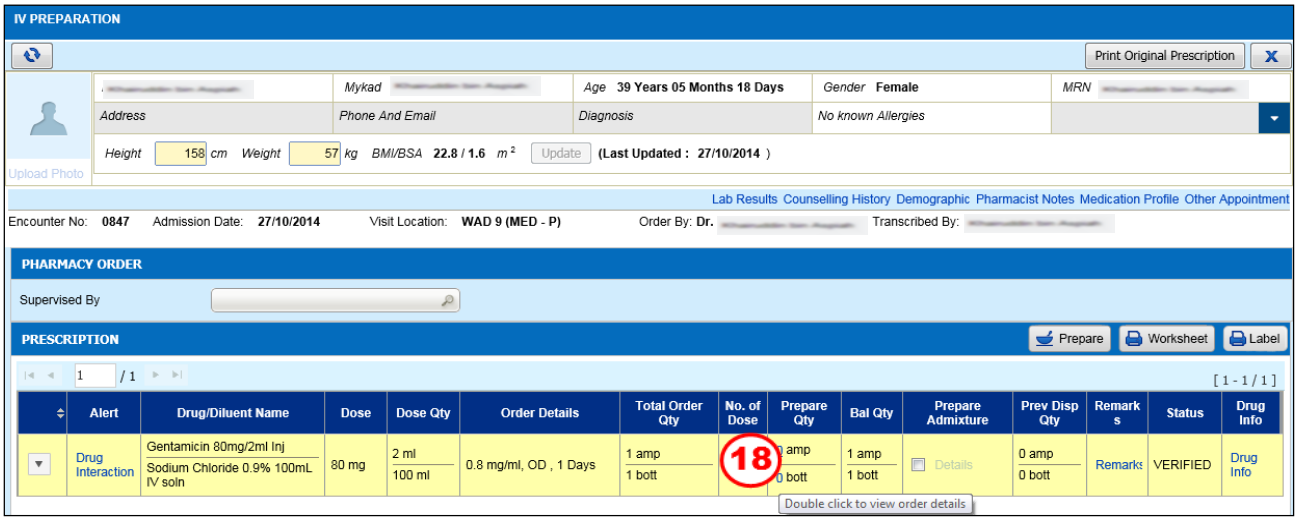


Figure 3.2-33 IV Preparation

STEP 18

Click on ***Prepare Qty*** "0" hyperlink to do allocation from displayed window as per figure 3.2-33

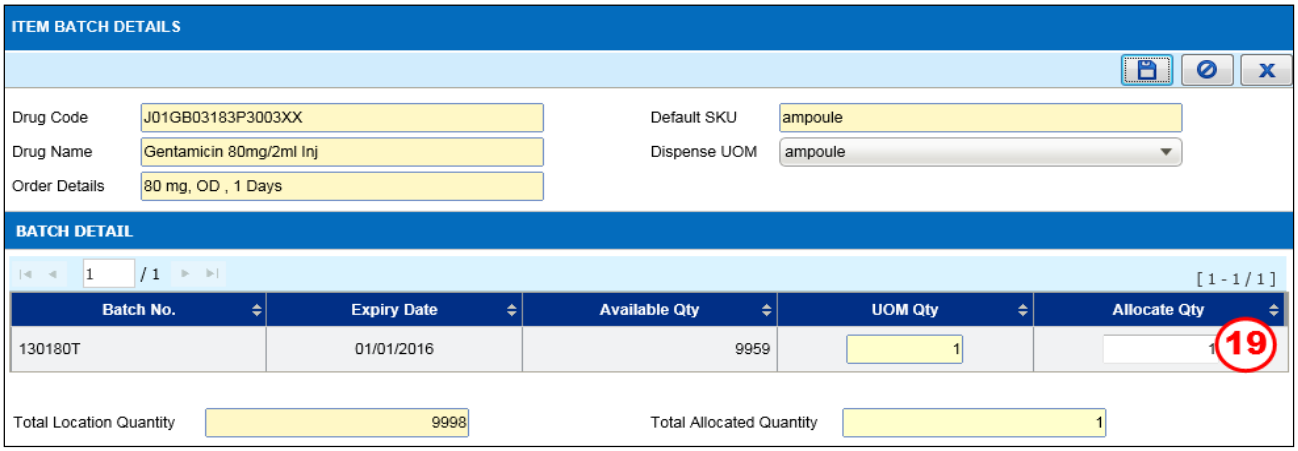


Figure 3.2-34 Item Batch Details

STEP 19

Click on selected Batch and enter ***Allocate Qty***

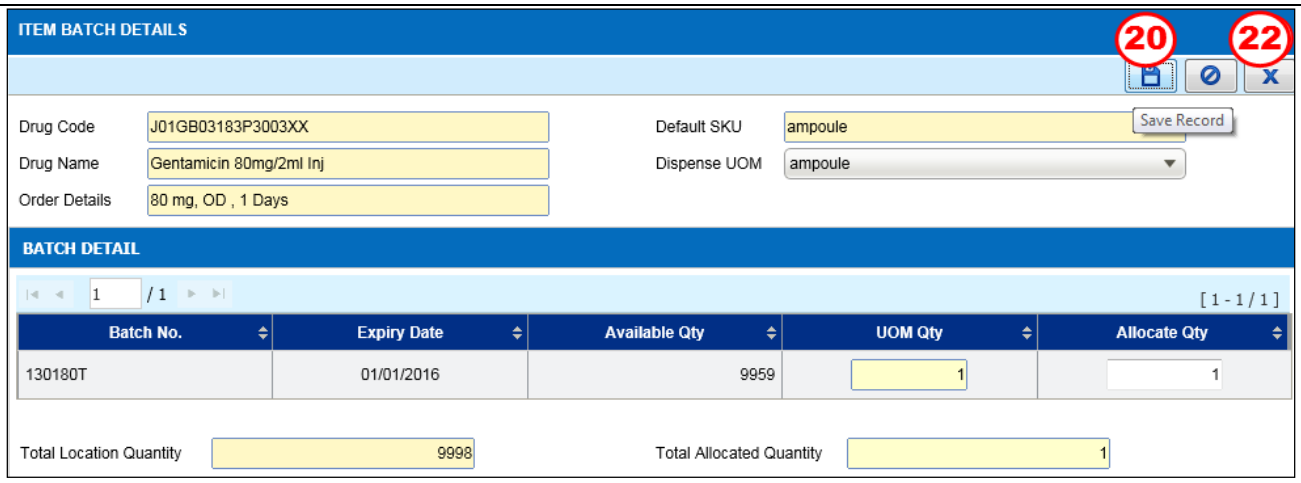


Figure 3.2-35 Item Batch Details

STEP 20

Click on the button to proceed allocation

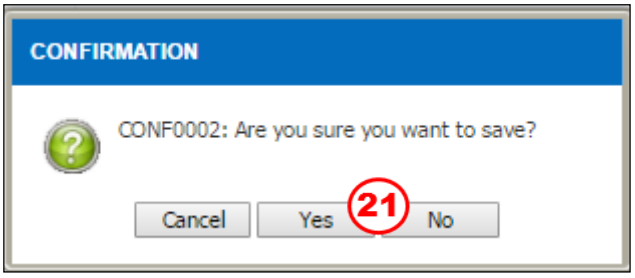


Figure 3.2-36 Alert Confirmation Message

STEP 21

Click on the button

STEP 22

Click on the button to close window

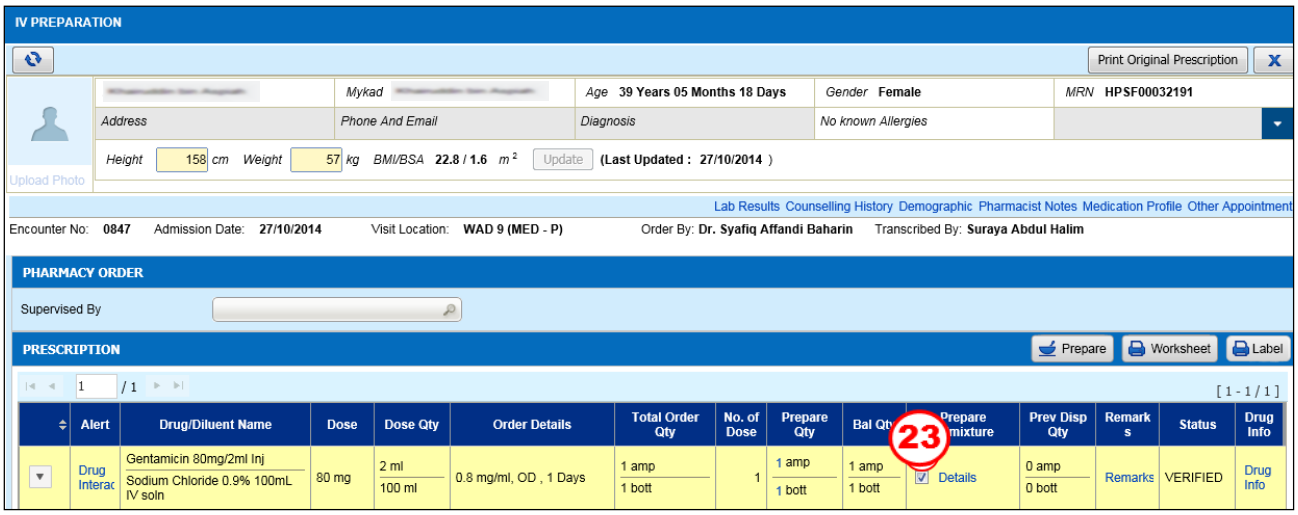


Figure 3.2-37 IV Preparation

STEP 23

Select on the ☑ ***Details*** checkbox on Prepare Admixture column

Note

After select the checkbox pop window will displayed as Figure 3.2-38

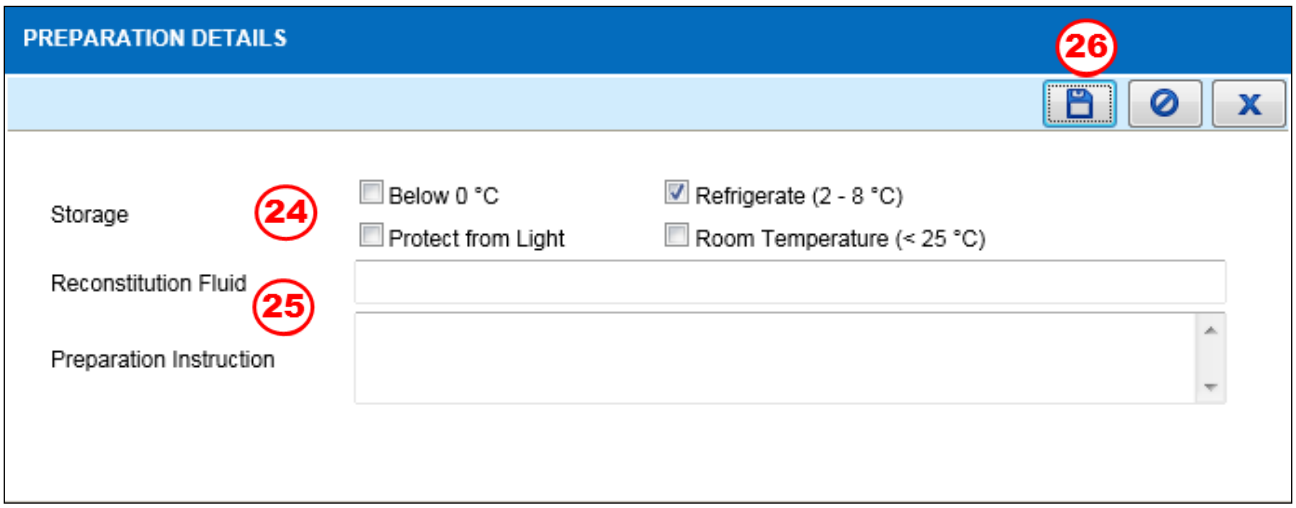


Figure 3.2-38 Preparation Details

STEP 24

Select **Storage** checkbox as ***Below/ Refrigerate/ Protected from Light or Room Temperature***

STEP 25

Enter ***Reconstitution Fluid*** & ***Preparation Instruction*** if applicable

STEP 26

Click on the 🖫 button to save record

Note

- *Storage condition and reconstitution fluid will default value as setup in Drug Master (if any).*
- *Preparation Instruction also can default in Drug Master.*

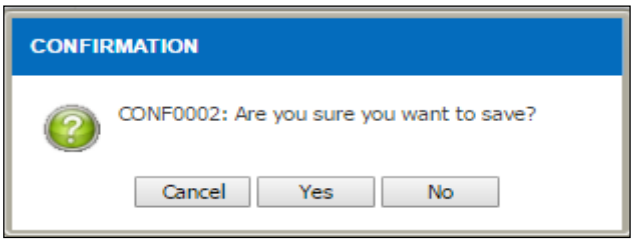


Figure 3.2-39 Alert Confirmation Details

STEP 27

Click on Yes button to proceed worksheet

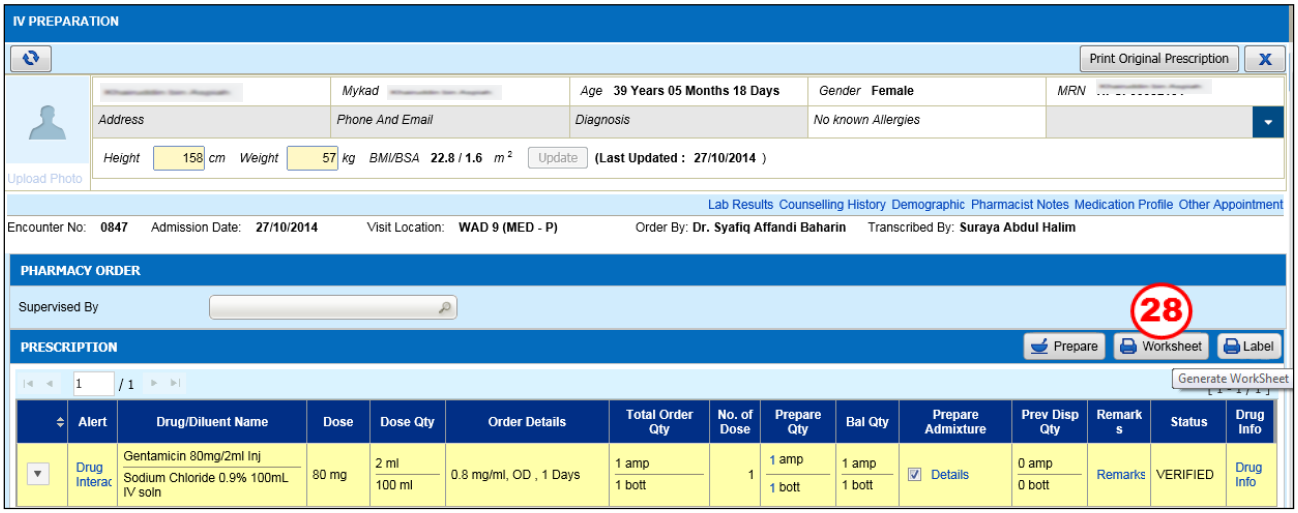
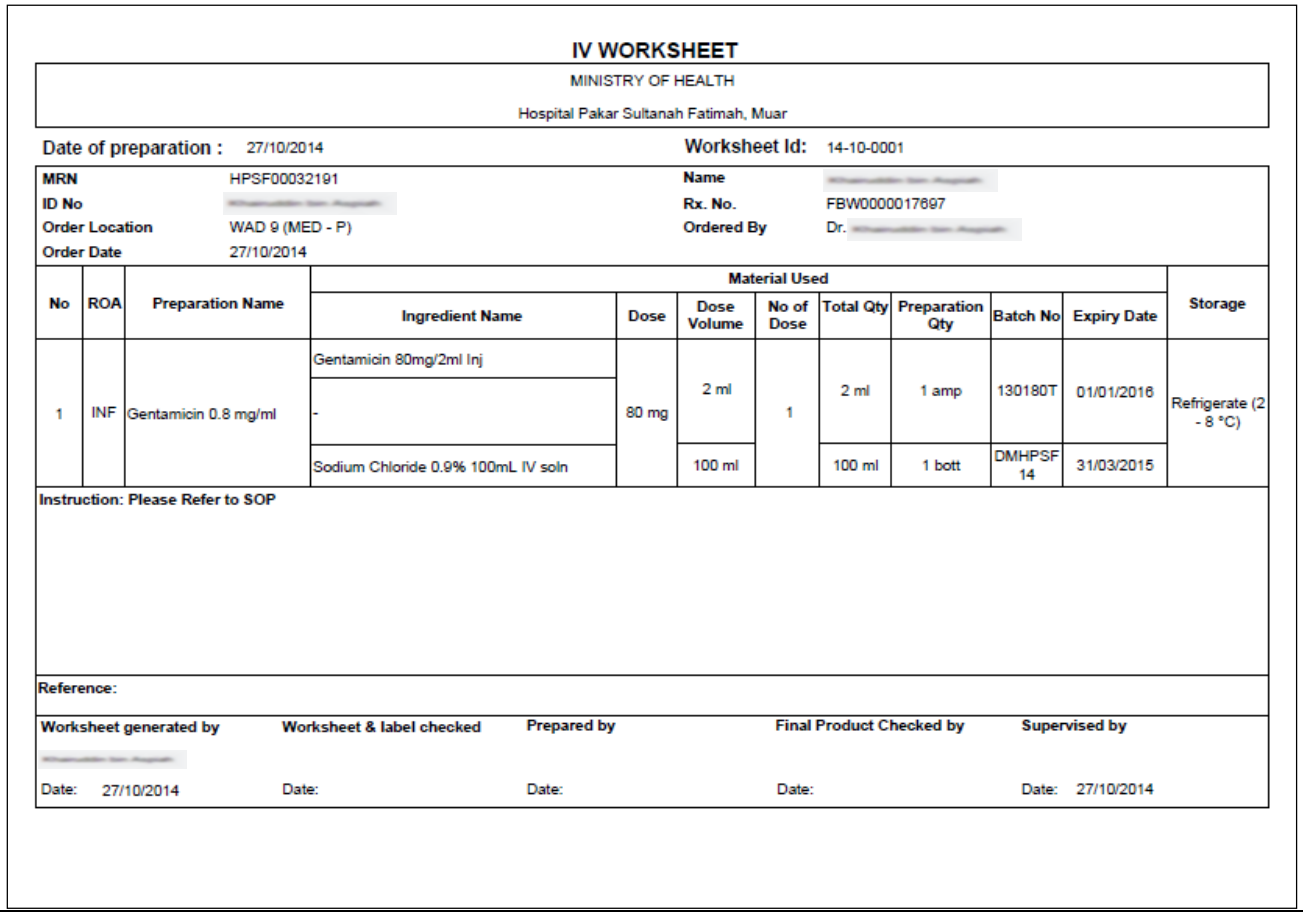


Figure 3.2-40 IV Preparation

STEP 28

Click on the Worksheet button to view and print



IV WORKSHEET

MINISTRY OF HEALTH

Hospital Pakar Sultanah Fatimah, Muar

Date of preparation : 27/10/2014 **Worksheet Id:** 14-10-0001

MRN	HPSF00032191	**Name**	
ID No		**Rx. No.**	FBW0000017697
Order Location	WAD 9 (MED - P)	**Ordered By**	Dr.
Order Date	27/10/2014		

No	ROA	Preparation Name	Material Used								Storage
			Ingredient Name	Dose	Dose Volume	No of Dose	Total Qty	Preparation Qty	Batch No	Expiry Date	
1	INF	Gentamicin 0.8 mg/ml	Gentamicin 80mg/2ml Inj	80 mg	2 ml	1	2 ml	1 amp	130180T	01/01/2016	Refrigerate (2 - 8 °C)
			-								
			Sodium Chloride 0.9% 100mL IV soln		100 ml		100 ml	1 bott	DMHPSF 14	31/03/2015	

Instruction: Please Refer to SOP

Reference:

Worksheet generated by	Worksheet & label checked	Prepared by	Final Product Checked by	Supervised by
Date: 27/10/2014	Date:	Date:	Date:	Date: 27/10/2014

Figure 3.2-41 Sample of IV Worksheet

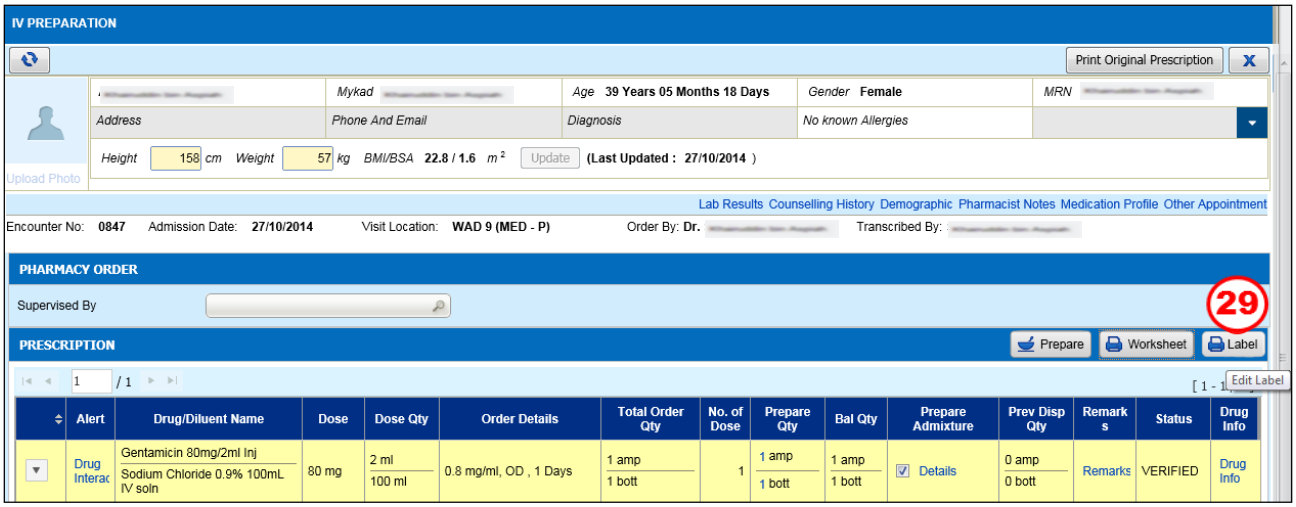


Figure 3.2-42 IV Preparation

STEP 29

Click on Label button and window will displayed as per Figure 3.2.43

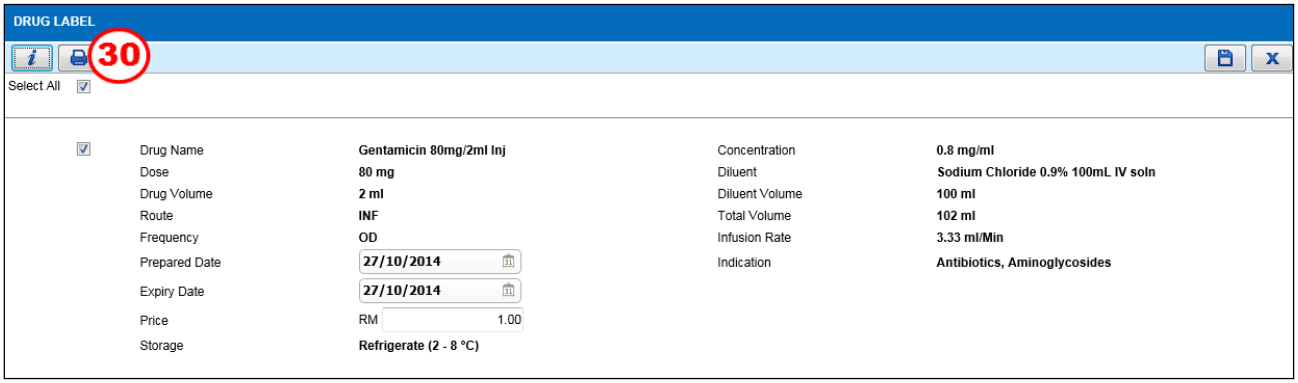


Figure 3.2-43 Drug Label

STEP 30

Click on the button to print drug label

Note

- *Select all checkbox will allow to print all drug label in the selected prescription.*
- ***Expiry date** can be default based on diluents in Drug Master.*
- *Click on the* OK button to save record.

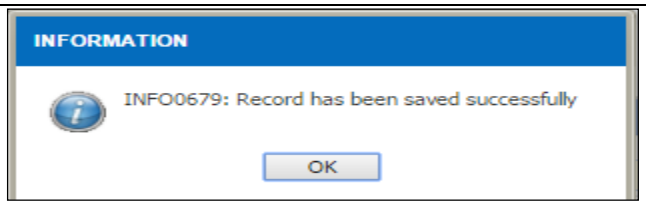


Figure 3.2-44 Alert Information Message

IV Admixture Pharmacy	
Hospital Pakar Sultanah Fatimah, Muar	
Patient Name:	
MRN:	WAD 9 (MED - P)
Drug Name: Gentamicin 80mg/2ml Inj	Bed No:
Dose: 80 mg / 2 ml (Conc: 0.8 mg/ml) in 100 ml Sodium Chloride 0.9% 100mL IV soln	
Route: INF Freq: OD	Infuse Rate: 3.33 ml/Min
Prepared Date: 27/10/2014	Exp Date: 27/10/2014
Indication: Antibiotics, Aminoglycosides	Price: RM 1.00
Storage: Refrigerate (2 - 8 °C)	

Figure 3.2-45 Sample of Drug Label

Note
Sample of IV Admixture Label as per Figure 3.2-46

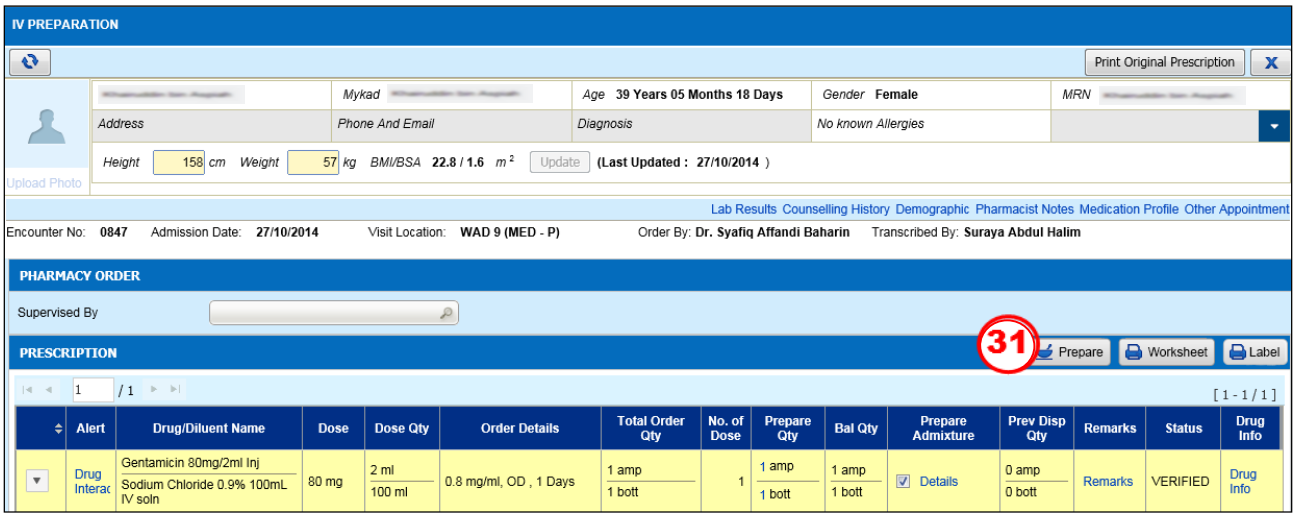


Figure 3.2-46 IV Preparation

STEP 31

Click on the button to proceed preparation

Note
*After allocate quantity **Prepare Qty** coloumn will be retrive reserved quantity from item batch.*

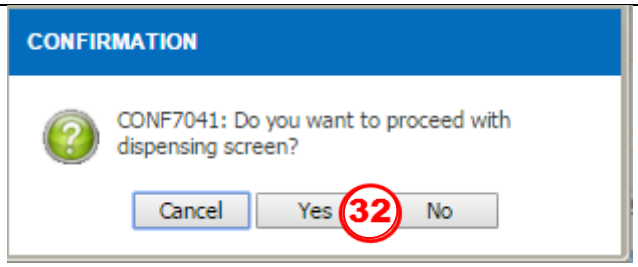


Figure 3.2-47 Alert Confirmation Message

STEP 32

Click on the Yes button to proceed dispensing and new screen will be displayed as per Figure 3.2-48

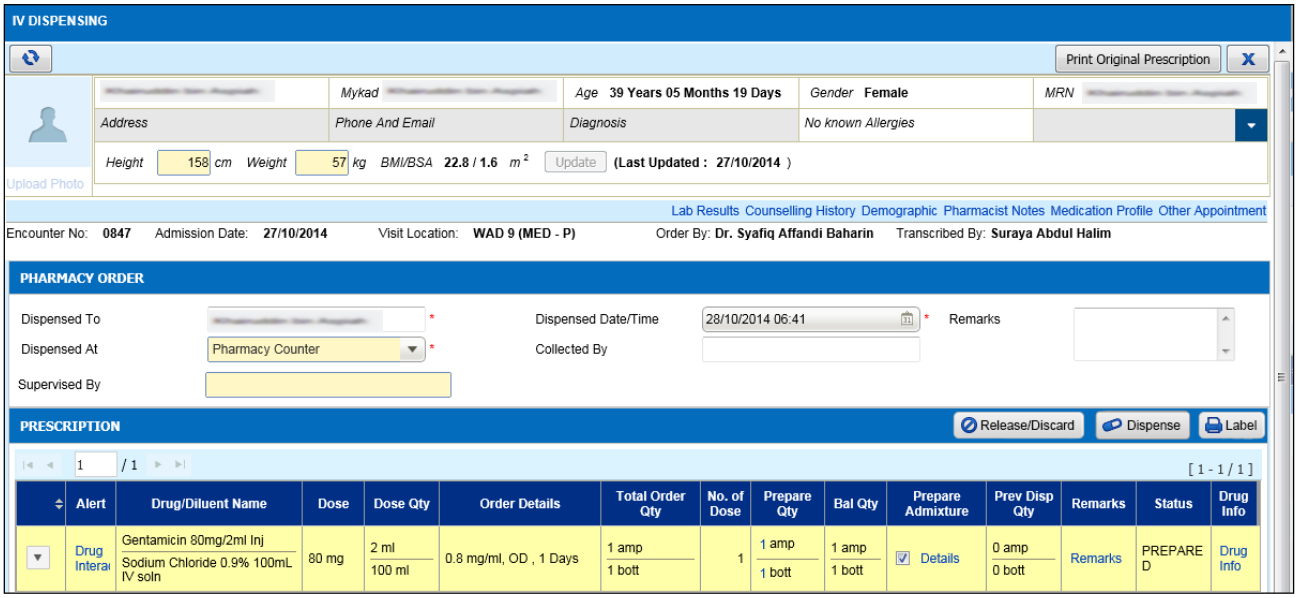


Figure 3.2-48 IV Dispensing

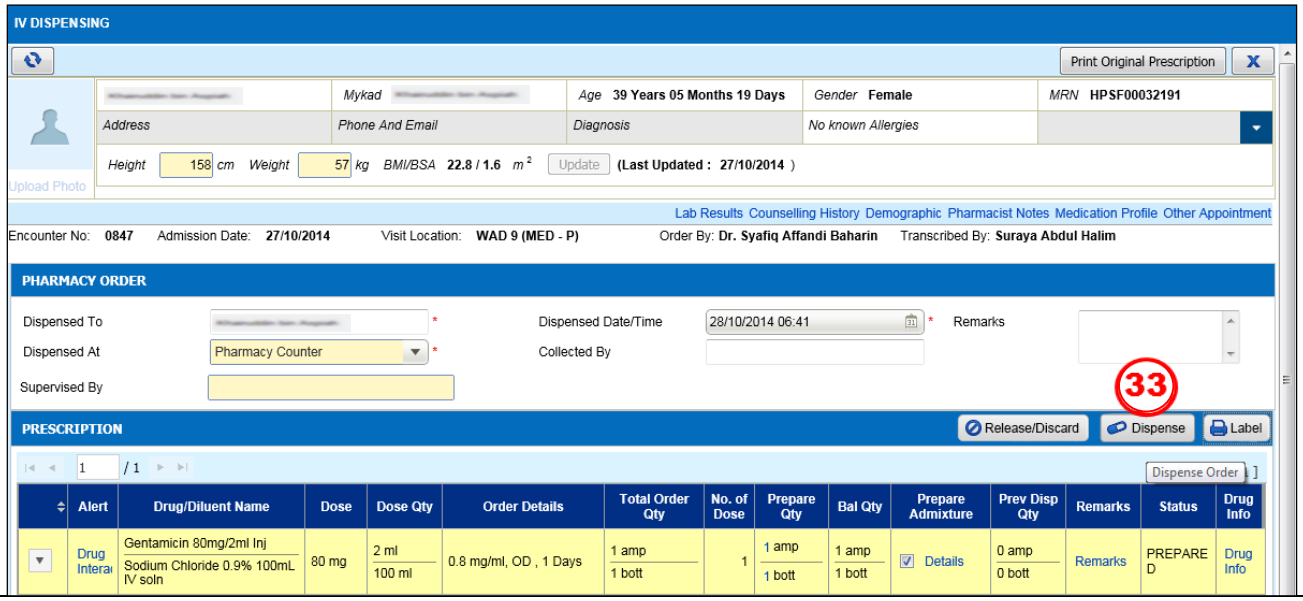


Figure 3.2-49 IV Dispensing

STEP 33

Click on the Dispense button and alert message will be displayed as per Figure 3.2-49

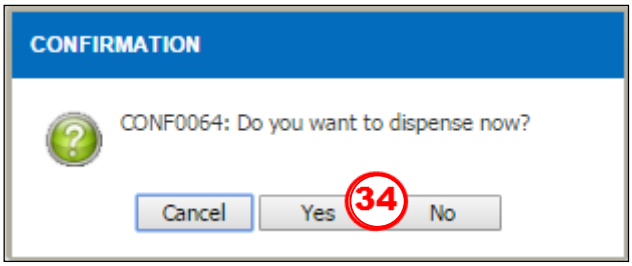


Figure 3.2-50 Alert Confirmation Message

STEP 34

Click on the Yes button to dispense

3.3 Release / Discard Batch

A function for pharmacist to release/discard the IV admixture that has been prepared back to Preparation stage. When release batch, drug and diluents quantity will be returned back to inventory. When discard batch, drug and diluents quantity will be deducted from inventory.

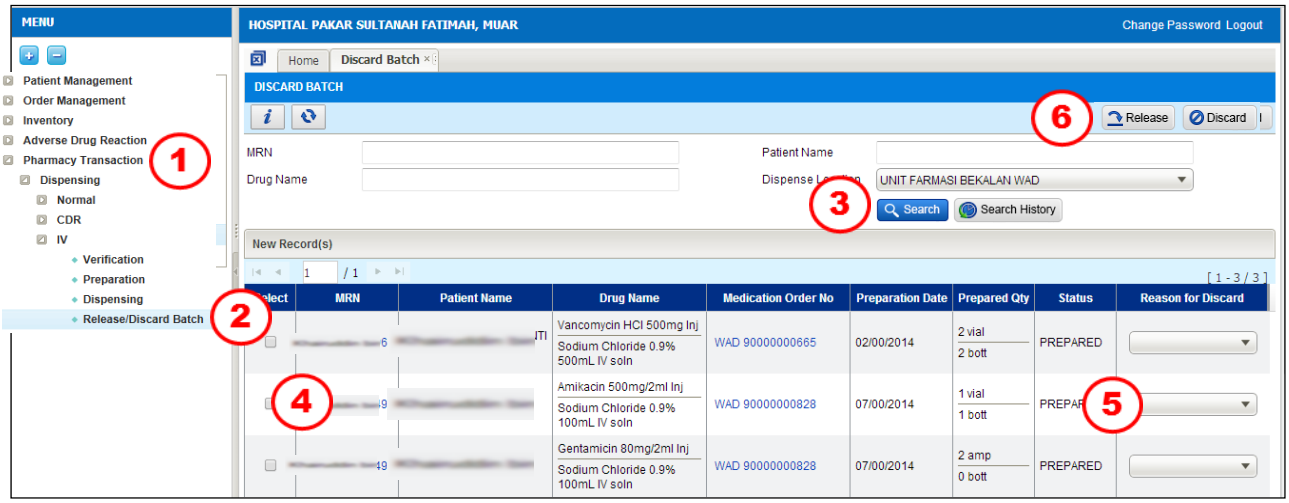


Figure 3.3-1 IV Dispensing : Release/Discard

STEP 1

Click on ***'Pharmacy Transaction'*** menu follow ***by ' Dispensing'*** and select ***'IV'*** sub-menu

Note

- *Various search criteria as provided as below:*

No	Field	Description	Remark
a)	MRN	Patient Medical Record Number	Search option: • Type the MRN either full or partial: *Example : HPSF00001234 or "1234"*
b)	Patient Name	Patient Name	Allow to search by patient full name or partial
C)	Drug Name	Drug Name	Allow to search by active ingredient
d)	Location	Patient visit location	Able to filter and search patient by visit location and prescriber's location.

Table 3.3.1

Note

Search result of patient record list will be displayed:

- *Select*
- *MRN*
- *Patient Name*
- *Drug Name*
- *Medication Order No*
- *Prescription Date*

- *Prepared Qty*
- *Status*
- *Reason For Release / Discard*

STEP 2
Click on ***"Release/Discard Batch"*** sub-menu

Note
Various search criteria is provided as below :

a) MRN
b) Patient Name
c) Drug Name
d) Dispense Location

STEP 3
Click on the

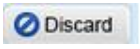
button

STEP 4
Select checkbox to discard from the listed drug

STEP 5
Select Reason for Discard from dropdown box. Select either one of these from discard reason drop down menu:-

- Uncollected
- Wrong Allocation
- Change of Regimen
- Patient Refused
- Intervention
- Faulty Product

STEP 6
Click on the

or 

button to proceed.

Note
Once drug already released or discarded, drug will be displayed back in Preparation screen for re-allocation of new batch qty.

4.0 Acronyms

Abbreviation	Definition
MOH	Ministry Of Health
PhIS	Pharmacy Information System
CPS	Clinical Pharmacy System
MRN	Medical Record Number
IV	Intravenous
HQ	Headquarters
INJ	Injection
QTY	Quantity
LAB	Laboratory

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*	*Radiopharmaceutical*	*Click Here*
7	*Galenical*	*Click Here*	*18*	*Outpatient*	*Click Here*
8	*MTAC*	*Click Here*	*19*	*Special Drug Request*	*Click Here*
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