



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

Full Based User Manual IV Dispensing

| | |
|--------------------|-------------------------------------|
| Version | : 8th EDITION |
| Document ID | : FB_U. MANUAL_IV DISPENSING |



PhIS & CPS Project
User Manual – IV Dispensing



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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 | Order Management-IV Admixture | 4 |
| | Overview | 4 |
| | User Group..... | 4 |
| | Functional Diagram | 4 |
| | Functional Description | 5 |
| 3.1 | IV Admixture Verification | 6 |
| 3.1.1 | Hold/Resume Order | 9 |
| 3.1.2 | Alternate Drug | 12 |
| 3.1.3 | Intervention | 16 |
| 3.2 | IV Admixture Preparation | 19 |
| 3.3 | IV Admixture Dispensing | 27 |
| 3.4 | IV Discard Batch..... | 30 |
| 4.0 | Acronyms..... | 32 |
| 5.0 | Links to Clinical Modules..... | 32 |

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:

- Acknowledgement
- Screening & Verification
- Preparation
- Dispensing
- Release/Discard Medication

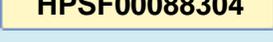
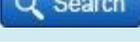
1.3 Organised Sections

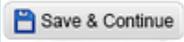
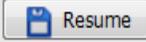
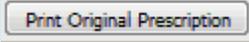
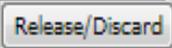
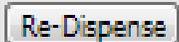
These are the sections within this document:

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

2.0 Application Standard Features

2.1 PhIS Legend

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

| 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 IV dispensing module includes implementing safe, organized, and efficient drug-dispensing systems is essential for controlling costs and assuring that the medical prescription is safely followed as requested within the appropriate deadline. An appropriate dispensing system is an important all 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 pharmacist and assistant pharmacist (subject to user assign by the facility)

Functional Diagram

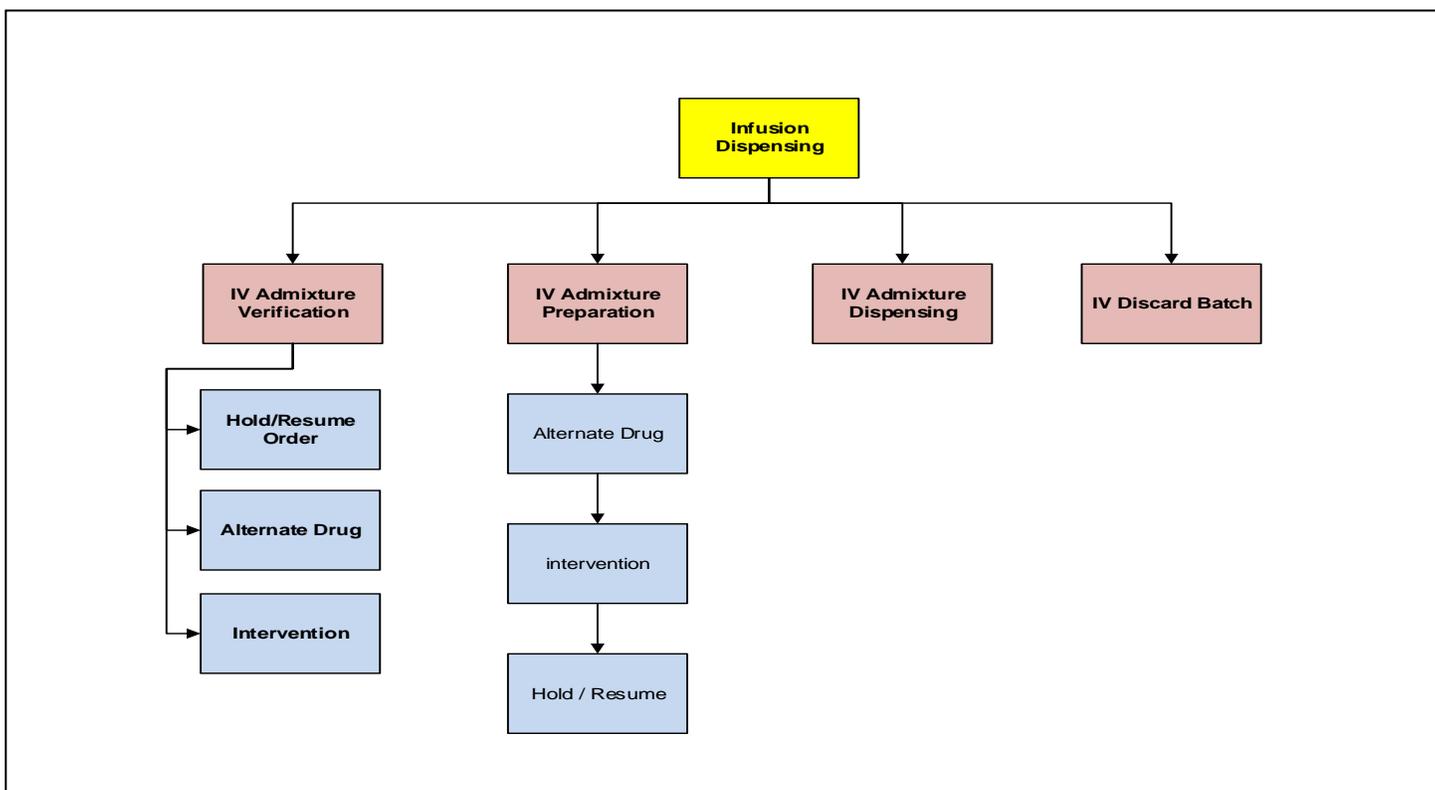


Figure 3.0-1

Functional Description

Admixture comprises of four (4) main functions:

- **Verification**

Verification is for the pharmacist to verify the prescriptions received from order management. This process is mandatory for all prescriptions receive before the user can proceed with dispensing and preparation. There are also safety systems that warn against toxic doses, allergic and cross-reactions, drug interactions, duplication of therapeutic classes, contraindications, and adverse effects.

- **Preparation**

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

- **Dispensing**

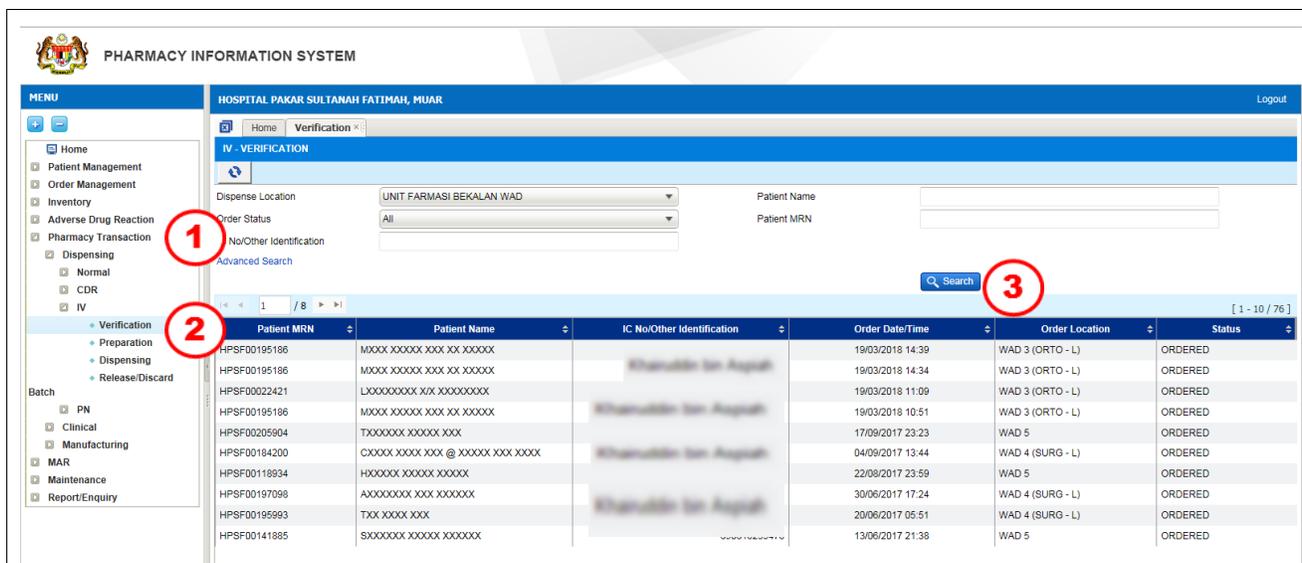
The prescription and the dispensing report are made in the system which is integrate with the inventory system.

- **IV Release / Discard Batch**

The function allows the user to release or discard the drug reserved for the patient from inventory. User able to release or discard the prepared drug when unable to dispense to patient due to several reasons and pharmacist to perform the preparation again after release or discard.

3.1 IV Admixture Verification

This function is used to verify the prescription before preparation and dispensing stage.



PHARMACY INFORMATION SYSTEM

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR

Home Verification

IV - VERIFICATION

Dispense Location: UNIT FARMASI BEKALAN WAD

Patient Name: []

Order Status: All

Patient MRN: []

Advanced Search

Search

| Patient MRN | Patient Name | IC No/Other Identification | Order Date/Time | Order Location | Status |
|--------------|---------------------------------|----------------------------|------------------|------------------|---------|
| HPSF00195186 | M000 XXXXX XXX XX XXXXX | [Redacted] | 19/03/2018 14:39 | WAD 3 (ORTO - L) | ORDERED |
| HPSF00195186 | M000 XXXXX XXX XX XXXXX | [Redacted] | 19/03/2018 14:34 | WAD 3 (ORTO - L) | ORDERED |
| HPSF00022421 | L00000000 XXX XXXXXXXXX | [Redacted] | 19/03/2018 11:09 | WAD 3 (ORTO - L) | ORDERED |
| HPSF00195186 | M000 XXXXX XXX XX XXXXX | [Redacted] | 19/03/2018 10:51 | WAD 3 (ORTO - L) | ORDERED |
| HPSF00205904 | T0000000 XXXX XXX | [Redacted] | 17/09/2017 23:23 | WAD 5 | ORDERED |
| HPSF00184200 | C0000 XXXX XXX @ XXXXX XXX XXXX | [Redacted] | 04/09/2017 13:44 | WAD 4 (SURG - L) | ORDERED |
| HPSF00118934 | H000000 XXXXXXX XXXXX | [Redacted] | 22/08/2017 23:59 | WAD 5 | ORDERED |
| HPSF00197098 | A0000000 XXX XXXXXXX | [Redacted] | 30/06/2017 17:24 | WAD 4 (SURG - L) | ORDERED |
| HPSF00195993 | TX0 XXXX XXX | [Redacted] | 20/06/2017 05:51 | WAD 4 (SURG - L) | ORDERED |
| HPSF00141885 | S000000 XXXXX XXXXXXX | [Redacted] | 13/06/2017 21:38 | WAD 5 | ORDERED |

Figure 3.1-1 Verification Listing Screen

STEP 1

Click on the 'Pharmacy Transaction' menu followed by 'Dispensing' and select 'IV' sub-menu

STEP 2

Click on 'Verification' sub-menu

STEP 3

Click on the  button to search for patient

Note

Various search criteria are provided as below:

- Basic search
- Advance search

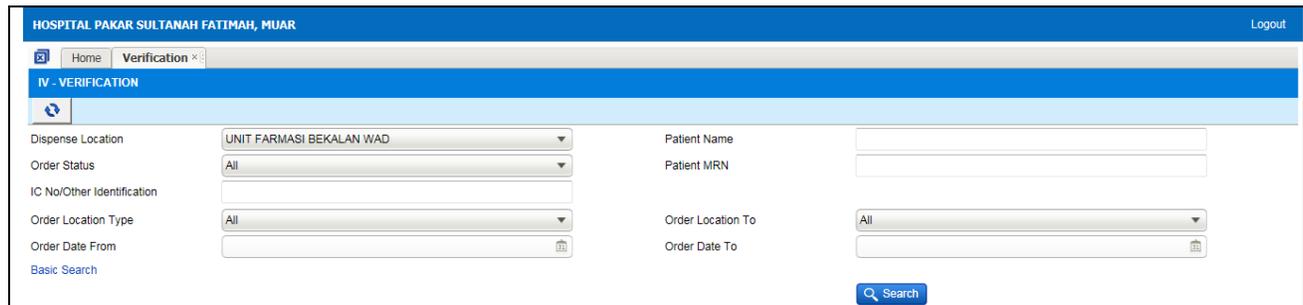


Figure 3.1-2 Advance Search

| Basic Search | | | |
|----------------|----------------------------|---|--|
| No | Field | Description | Remark |
| a) | Dispense Location | Dispensing location. (It will list down all active locations) | Able to filter and search patient name by dispensing location |
| b) | Order Status | - All - New Orders - Outsourced Orders | |
| c) | IC No/Other Identification | IC No/Other Identification | Able to search patient based on MYKAD/MYKID and others identification. |
| d) | Patient Name | Patient Name | Allow to search by full or partial patient name |
| e) | Patient MRN | Patient Medical Record Number | Search option: <ul style="list-style-type: none"> Type the MRN either in full or partially: Example : HPSF00001234 or "1234" |
| Advance Search | | | |
| f) | Order Location Type | - Order location type (It will list down all active location types) | Able to filter and search patient name by order location type |
| g) | Order Date from | Order confirmed date | Allow to search by start date of order created |
| h) | Order Location To | It will list down all active locations | Able to filter and search patient name by order location |
| i) | Order Date To | It will list down all active location | Able to filter and search patient name by order location. |

Table 3.1-1

Note

Search results of patient record list will display:

- Patient MRN
- Patient Name
- IC No/Other Identification
- Order Date
- Status

| Patient MRN | Patient Name | IC No/Other Identification | Order Date/Time | Order Location | Status |
|--------------|---------------------------------|----------------------------|------------------|------------------|---------|
| HPSF00195186 | MXXX XXXXX XXX XX XXXXX | XXXXXXXXXXXXXXXXXXXX | 19/03/2018 14:39 | WAD 3 (ORTO - L) | ORDERED |
| HPSF00195186 | MXXX XXXXX XXX XX XXXXX | XXXXXXXXXXXXXXXXXXXX | 19/03/2018 14:34 | WAD 3 (ORTO - L) | ORDERED |
| HPSF00022421 | LXXXXXXXX XX XXXXXXXX | XXXXXXXXXXXXXXXXXXXX | 19/03/2018 11:09 | WAD 3 (ORTO - L) | ORDERED |
| HPSF00195186 | MXXX XXXXX XXX XX XXXXX | XXXXXXXXXXXXXXXXXXXX | 19/03/2018 10:51 | WAD 3 (ORTO - L) | ORDERED |
| HPSF00205904 | TXXXXXX XXXXX XXX | XXXXXXXXXXXXXXXXXXXX | 17/09/2017 23:23 | WAD 5 | ORDERED |
| HPSF00184200 | CXXXX XXXX XXX @ XXXXX XXX XXXX | XXXXXXXXXXXXXXXXXXXX | 04/09/2017 13:44 | WAD 4 (SURG - L) | ORDERED |
| HPSF00118934 | HXXXXX XXXXX XXXXX | XXXXXXXXXXXXXXXXXXXX | 22/08/2017 23:59 | WAD 5 | ORDERED |
| HPSF00197098 | AXXXXXXXX XXX XXXXXXX | XXXXXXXXXXXXXXXXXXXX | 30/06/2017 17:24 | WAD 4 (SURG - L) | ORDERED |
| HPSF00195993 | TXX XXXX XXX | XXXXXXXXXXXXXXXXXXXX | 20/06/2017 05:51 | WAD 4 (SURG - L) | ORDERED |
| HPSF00141885 | SXXXXXXXX XXXXX XXXXXXX | XXXXXXXXXXXXXXXXXXXX | 13/06/2017 21:38 | WAD 5 | ORDERED |

Figure 3.1-3 Verification Listing Screen

STEP 4

Double click on the selected patient

| | | | | | | | | |
|--|--|--|--------------------------------|--|------------------|---------|--------------|-----------|
| | Passport | Age 43 Years 02 Months 28 Days | Gender Male | MRN HPSF00018710 | | | | |
| Address | Phone And Email | Diagnosis | No known Allergies | | | | | |
| Height <input type="text"/> cm | Weight <input type="text"/> kg | BM/BSA <input type="text"/> m ² | Nationality: Bukan Warganegara | | | | | |
| Lab Parameter Counseling History Demographic Pharmacist Notes Medication Profile Other Appointment | | | | | | | | |
| Encounter No: 0014 Admission Date: 14/03/2017 Attending Practitioner: Visit Location: WAD 9 (MED - P) Order By: Dr Priya Naraynen | | | | | | | | |
| PRESCRIPTION | | | | <input checked="" type="button" value="Verify"/> | | | | |
| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | Remarks | Status | Drug Info |
| Drug Interaction | Acyclovir 250mg/10ml Injection Sodium Chloride 0.9% 500mL IV soln | 250 mg | 10 ml 500 ml | 0.5 mg/ml, Q8H, 1 Days | 3 vial 3 bott | Remarks | ORDERED (PA) | Drug Info |

Figure 3.1-4 Verification Listing Screen

STEP 5

Click on the button and system will display alert message as show in per Figure 3.1-5

Note

- User have the option to
- Double click on the selected drug to view order details.

| CONFIRMATION | |
|---------------------------------------|---|
| | CONF0062: This order has been successfully updated. Do you want to proceed with the verification? |
| <input type="button" value="Cancel"/> | <input checked="" type="button" value="Yes"/> <input type="button" value="No"/> |

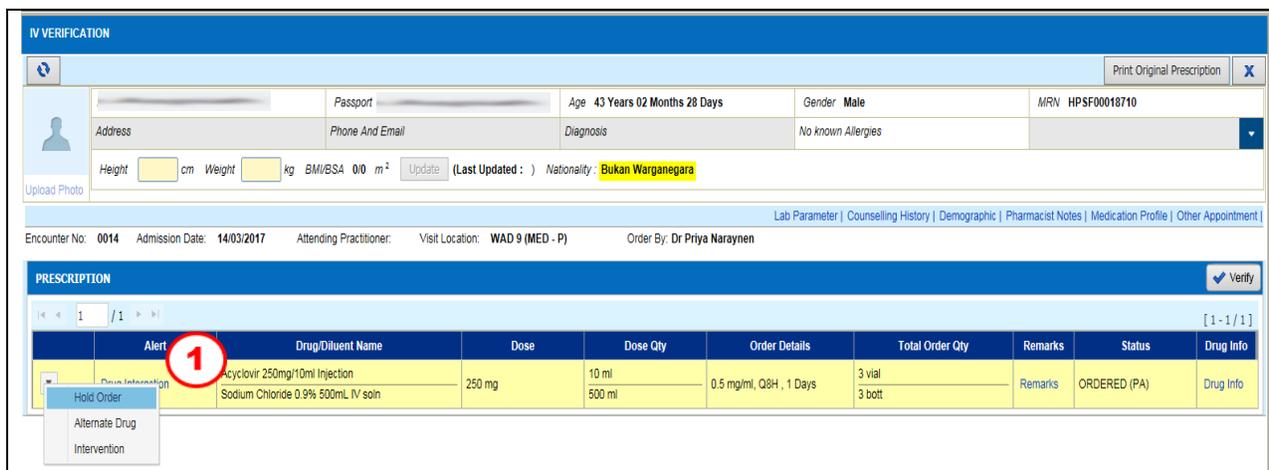
Figure 3.1-5 Verification Alert Message

STEP 6

Click on the button to proceed with verification

3.1.1 Hold/Resume Order

This function allows Pharmacist to hold medication from being prepared or dispense; the user may resume the medication order to continue dispensing.



| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | Remarks | Status | Drug Info |
|-------|------------------------------------|--------|----------|------------------------|-----------------|---------|--------------|-----------|
| | Acyclovir 250mg/10ml Injection | 250 mg | 10 ml | 0.5 mg/ml, Q8H, 1 Days | 3 vial | Remarks | ORDERED (PA) | Drug Info |
| | Sodium Chloride 0.9% 500mL IV soln | | 500 ml | | 3 bott | | | |

Figure 3.1.1-1 Prescription Listing Screen

Note

To Hold/Resume order, repeat as in Verification process from **Step 1** to **4**.

Hold Order

STEP 1

Right click on the  button and select **Hold Order**

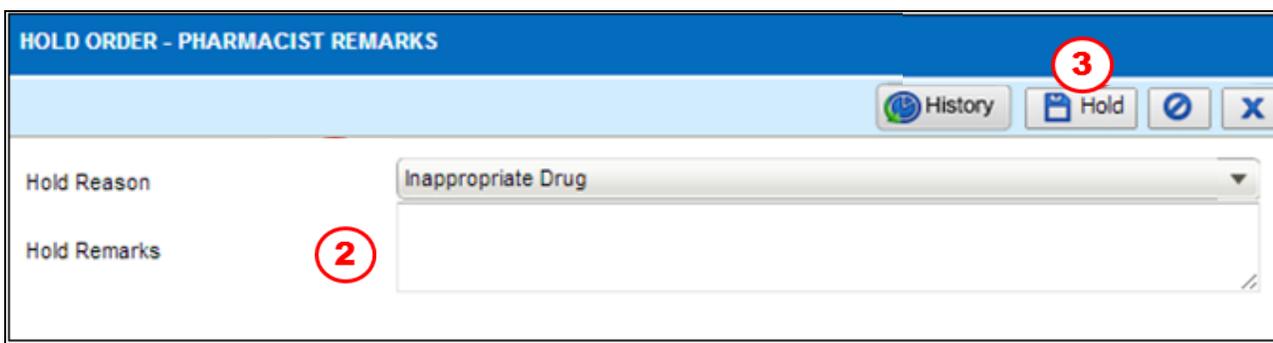


Figure 3.1.1-2 Hold Order Screen

STEP 2

Select **Hold Reason** from drop 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

STEP 3

Click on the  button to proceed with hold transaction

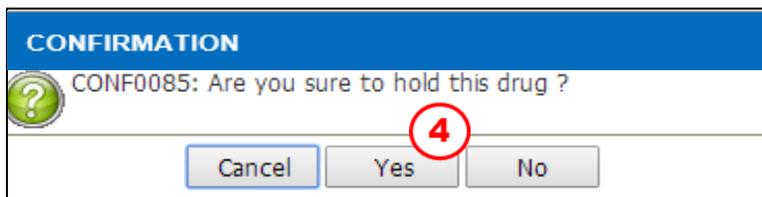
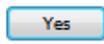
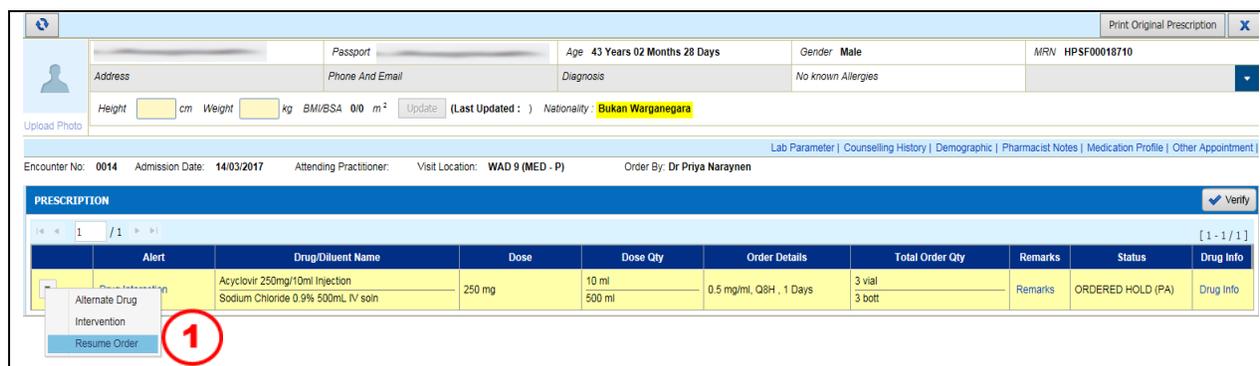


Figure 3.1.1-3 Hold Order Screen

STEP 4

Click on the  button to confirm the hold order



The screenshot shows a patient profile at the top with fields for Passport, Age (43 Years 02 Months 28 Days), Gender (Male), and MRN (HPSF00018710). Below this is a 'PRESCRIPTION' table. The table has columns for Alert, Drug/Diluent Name, Dose, Dose Qty, Order Details, Total Order Qty, Remarks, Status, and Drug Info. The first row shows 'Acyclovir 250mg/10ml Injection' with a dose of 250 mg and 10 ml. The second row shows 'Sodium Chloride 0.9% 500mL IV soln' with a dose of 500 ml. A context menu is open over the first row, with 'Resume Order' highlighted and circled in red with the number '1'.

| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | Remarks | Status | Drug Info |
|-------|------------------------------------|--------|----------|-------------------------|-----------------|---------|-------------------|-----------|
| | Acyclovir 250mg/10ml Injection | 250 mg | 10 ml | 0.5 mg/ml, Q8H , 1 Days | 3 vial | Remarks | ORDERED HOLD (PA) | Drug Info |
| | Sodium Chloride 0.9% 500mL IV soln | | 500 ml | | 3 bott | | | |

Figure 3.1.1-4 Prescription Listing Screen

Resume Order

STEP 1

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

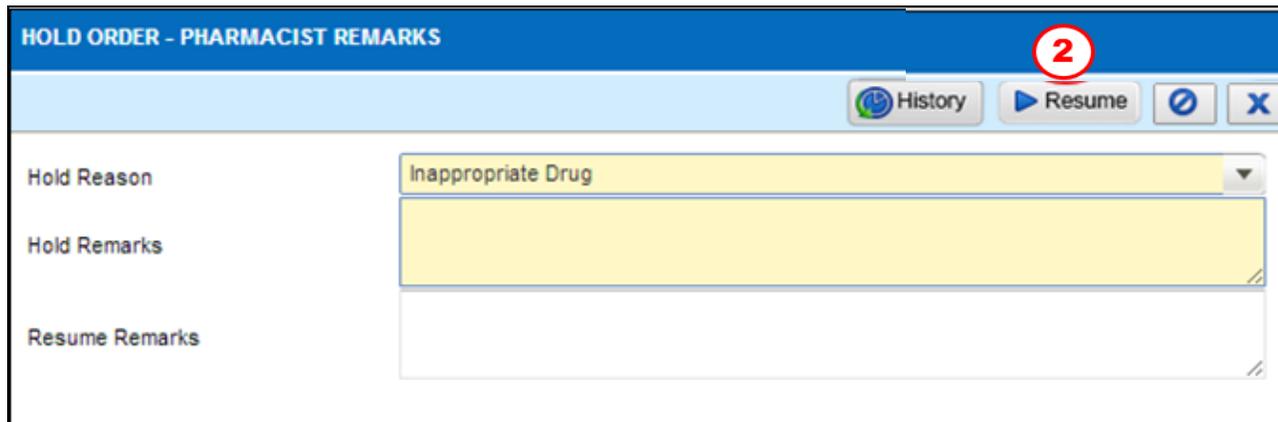


Figure 3.1.1-5 Hold Order Screen

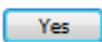
STEP 2

Click on the  button to resume hold order



Figure 3.1.1-6 Hold Order Screen

STEP 3

Click on the  button to release drug from hold

3.1.2 Alternate Drug

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



| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | No. of Dose | Prepare Qty | Bal Qty | Prepare Admixture | Prev Disp Qty | Remarks | Status | Drug Info |
|-------|---------------------------------|---------|-----------------|-----------------------|--------------------|-------------|------------------|--------------------|----------------------------------|------------------|---------|----------|-----------|
| Drug | Meropenem 1000mg Injection (1g) | 1000 mg | 20 ml 100 ml | 10 mg/ml, Q8H, 7 Days | 21 vial 21 bott | 21 | 0 vial 0 bott | 21 vial 21 bott | <input type="checkbox"/> Details | 0 vial 0 bott | Remarks | VERIFIED | Drug Info |

Figure 3.1.2-1 Prescription Listing Screen

Note

To create Alternate drug record repeat as Verification process from **Step 1** to **4**.

STEP 1

Right click on the  button and select Alternate Drug

Note

Alternate drug screen consist of three (3) sections:

a) Alternate Drug Detail

- **Location, Dosage Form, Route, ordered drug Code, Ordered Drug Description, Alternate Drug Name** will be retrieved from medication order and drug master setup.

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.

ALTERNATE DRUG DETAILS

| | | | |
|---------------|--|---|------------------------------|
| Location | UNIT FARMASI PENGELUARAN FARMASEUTIKAL | Ordered Drug Code | J01GB06183P3002XX |
| Dosage Form | Parenteral Solution | Ordered Drug Description | Amikacin 500mg/2ml Injection |
| Route | IV | Alternate Drug Name | Amikacin 250mg/2ml Injection |
| Order Details | 500 mg, Single Dose , 1 Days | Alternate Drug Order Qty (Total Order Qty: 2 vial) | 0 vial |

BATCH DETAIL

| No | Drug Name | Dosage Form | Route | Batch | Expiry Date | Available Qty | Units | Qty to Dispense |
|----|------------------------------|---------------------|-------|-------|-------------|---------------|-------|-----------------|
| 1 | Amikacin 250mg/2ml Injection | Parenteral Solution | IV | 12 | 23/11/2017 | 11110 | vial | 0 |

DILUENT BATCH DETAIL

| | | | |
|---------|------------------------------------|--|----------|
| Diluent | Sodium Chloride 0.9% 500mL IV soln | Diluent Order Qty (Total Order Qty: 1 bott) | 0 bottle |
|---------|------------------------------------|--|----------|

| No | Drug Name | Dosage Form | Route | Batch | Expiry Date | Available Qty | Units | Qty to Dispense |
|----|------------------------------------|---------------------|-------|------------|-------------|---------------|--------|-----------------|
| 1 | Sodium Chloride 0.9% 500mL IV soln | Parenteral Solution | IV | 11THSC2016 | 12/07/2020 | 0 | bottle | 0 |
| | | | | P3105166 | 12/07/2020 | 0 | bottle | 0 |
| | | | | P3106105 | 04/05/2021 | 70 | bottle | 0 |

| | |
|--------|--------|
| Reason | Remark |
|--------|--------|

Figure 3.1.2-2 Alternate screen

STEP 2

Select **Alternate Drug Name** from dropdown box

Note

Alternate drug screen consists of three (3) sections:

a) *Alternate Drug Detail*

- **Location, Dosage Form, Route, Ordered Drug Code, Ordered Drug Description, Alternate Drug Name** will be retrieved from medication order and drug master setup.

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.

ALTERNATE DRUG DETAILS

| | |
|--|--|
| Location: UNIT FARMASI PENGELUARAN FARMASEUTIKAL | Ordered Drug Code: J01GB06183P3002XX |
| Dosage Form: Parenteral Solution | Ordered Drug Description: Amikacin 500mg/2ml Injection |
| Route: IV | Alternate Drug Name: Amikacin 250mg/2ml Injection |
| Order Details: 500 mg, Single Dose, 1 Days | Alternate Drug Order Qty (Total Order Qty: 2 vial): 1 vial |

BATCH DETAIL

| No | Drug Name | Dosage Form | Route | Batch | Expiry Date | Available Qty | Units | Qty to Dispense |
|----|------------------------------|---------------------|-------|-------|-------------|---------------|-------|-----------------|
| 1 | Amikacin 250mg/2ml Injection | Parenteral Solution | IV | 12 | 23/11/2017 | 11110 | vial | 1 |

DILUENT BATCH DETAIL

Diluent: Sodium Chloride 0.9% 500mL IV soln Diluent Order Qty (Total Order Qty: 1 bott): 1 bottle

| No | Drug Name | Dosage Form | Route | Batch | Expiry Date | Available Qty | Units | Qty to Dispense |
|----|------------------------------------|---------------------|-------|------------|-------------|---------------|--------|-----------------|
| 1 | Sodium Chloride 0.9% 500mL IV soln | Parenteral Solution | IV | 11THSC2016 | 12/07/2020 | 0 | bottle | 0 |
| | | | | P3105166 | 12/07/2020 | 0 | bottle | 0 |
| | | | | P3106105 | 04/05/2021 | 70 | bottle | 1 |

Reason: Remark:

Figure 3.1.2-3 Alternate screen

STEP 3

Select **Diluent** from dropdown box

STEP 4

Select the item list checkbox under **Batch Detail** section

STEP 5

Select the item list checkbox under **Diluent Batch Detail** section

STEP 6

Click on the  button to confirm alternate drug

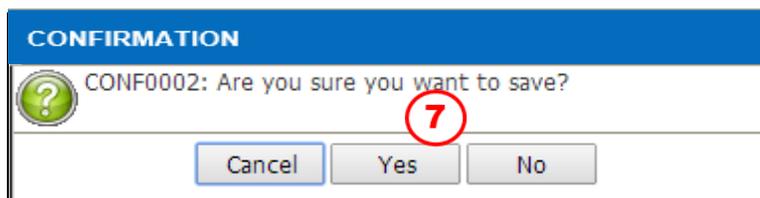


Figure 3.1.2-4 Prescription Listing Screen After Done Alternate

STEP 7

Click on the button to save record

Note

- Value of **Alternate Drug Name** and **Diluent** from dropdown menu will be defined in drug master setup.
- **Batch Detail** will display the **earliest expiration date**.
- After completing the alternate drug selected, the drug will change to green colour as shown in figure 3.1.2-5.

| PRESCRIPTION | | | | | | | | | | | | | Prepare | Worksheet | Label |
|----------------|--|--------|----------------|-------------------------------|------------------|-------------|------------------|------------------|----------------------------------|------------------|---------|---------------|-----------|-----------|-------|
| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | No. of Dose | Prepare Qty | Bal Qty | Prepare Admixture | Prev Disp Qty | Remarks | Status | Drug Info | | |
| Drug Interactx | Amikacin 500mg/2ml Injection Sodium Chloride 0.9% 500mL IV soln | 500 mg | | 1 mg/ml, Single Dose , 1 Days | 0 vial 0 bott | 0 | 0 vial 0 bott | 1 vial 1 bott | | 0 vial 0 bott | Remarks | VERIFIED (PA) | Drug Info | | |
| | Amikacin 250mg/2ml Injection Sodium Chloride 0.9% 500mL IV soln | | 4 ml 500 ml | | 2 vial 1 bott | | 1 vial 1 bott | | <input type="checkbox"/> Details | | | | | | |

Figure 3.1.2-5 Prescription Listing Screen After Done Alternate

3.1.3 Intervention

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

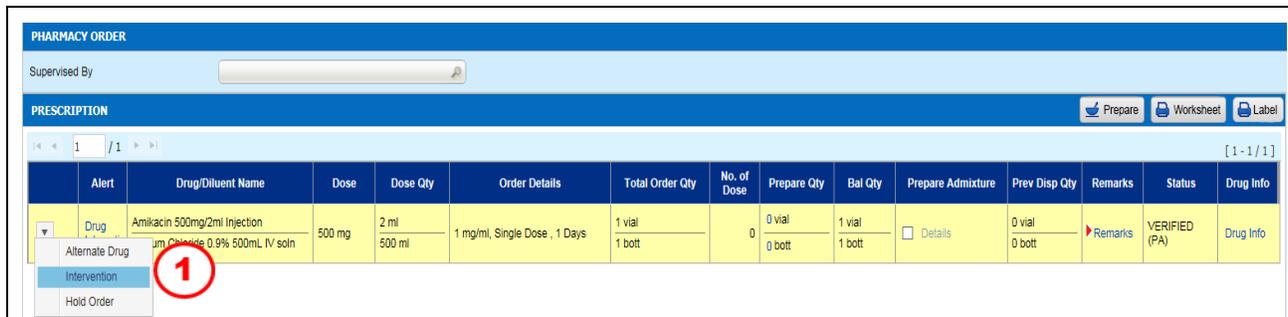


Figure 3.1.3-1 Prescription Listing Screen

Note

To perform Intervention repeat as in Verification process from Step 1 to 4.

STEP 1

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

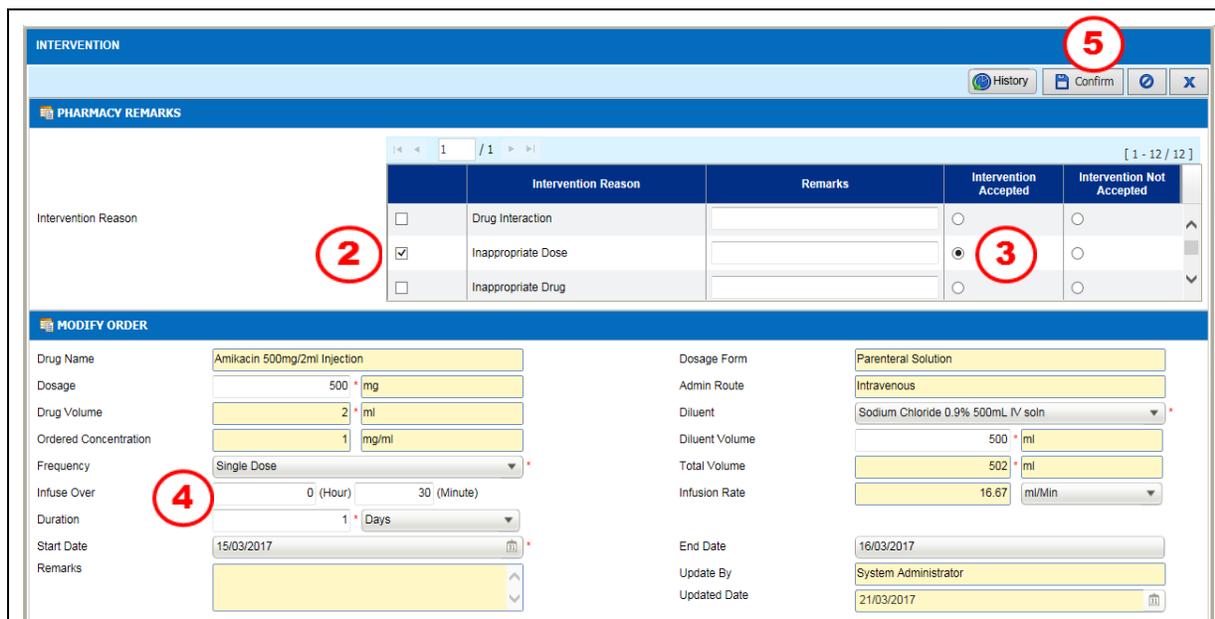


Figure 3.1.3-2 Intervention Screen

STEP 2

Select **Intervention Reason** from drop 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

STEP 3

Select on **Accepted** radio button under Intervention Status

Note

Pharmacist will select the **Intervention Status** radio button after confirming the intervention status with prescriber.

STEP 4

Change Modify Order details as required

STEP 5

Click on the  button to save the changes

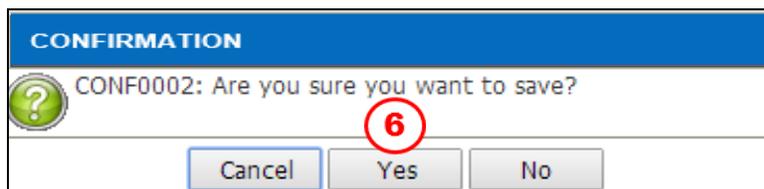


Figure 3.1.3-3 Alert Message

Step 6

Click on the  button to confirm the intervention

| PRESCRIPTION | | | | | | | | | | | | | | Prepare | Worksheet | Label |
|-----------------|---|--------|------------------|--------------------------------------|-----------------|-------------|-----------------|-----------------|----------------------------------|-----------------|---------|----------|-----------|---------|-----------|-------|
| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | No. of Dose | Prepare Qty | Bal Qty | Prepare Admixture | Prev Disp Qty | Remarks | Status | Drug Info | | | |
| Drug Interactio | Gentamicin 80mg/2ml Injection Sodium Chloride 0.9% 100mL IV soln | 100 mg | 2.5 ml 100 ml | 1 mg/ml, OD (once daily) , 1 Days | 2 amp 1 bott | 1 | 0 amp 0 bott | 2 amp 1 bott | <input type="checkbox"/> Details | 0 amp 0 bott | Remarks | VERIFIED | Drug Info | | | |

Figure 3.1.3-4 Prescription Listing Screen After Done Intervention

Note

- After intervention is made, Order Details column will changed to blue hyperlink. User may click to view the original order details.
- Order details will displayed as show in per Figure 3.1.3-5

ORIGINAL RX

Drug Code: J01GB03183P3003XX
Default SKU: amp

Drug Name: Gentamicin 80mg/2ml Injection

| Dose | Frequency | Duration | Start Date | End Date | Intervention Reason | Other Reason | Infuse Over | Diluent | Diluent Volume | Infusion Rate |
|--------|-----------|----------|------------|------------|---------------------|------------------------------------|----------------|------------------------------------|----------------|---------------|
| 80 mg | OD | 1 Days | 17/03/2017 | 18/03/2017 | Contraindication | | 30 Minutes | Sodium Chloride 0.9% 100mL IV soln | 100 ml | 3.33 ml/Min |
| | | | | | | | | | | |
| Dose | Frequency | Duration | Start Date | End Date | Infuse Over | Diluent | Diluent Volume | Infusion Rate | | |
| 100 mg | OD | 1 Days | 17/03/2017 | 18/03/2017 | 30 Minutes | Sodium Chloride 0.9% 100mL IV soln | 100 ml | 3.33 ml/Min | | |
| | | | | | | | | | | |

Figure 3.1.3-5 Original Rx Screen

3.2 IV Admixture Preparation

This function is used to record preparation of IV before the dispensing stage.

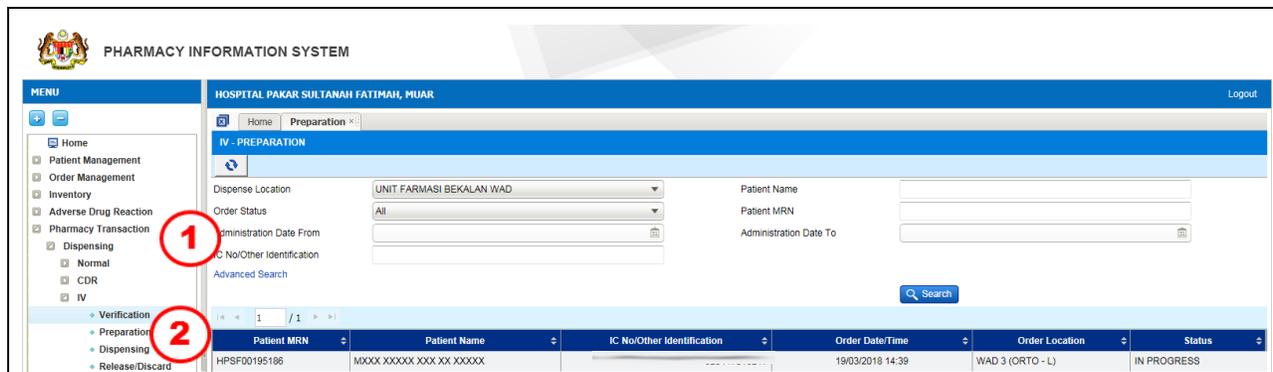


Figure 3.2-1 Preparation Listing Screen

STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Preparation' and select 'IV' sub-menu

STEP 2

Click on 'Preparation' sub-menu

Note

Various search criteria are provided as below:

- Basic search
- Advance search

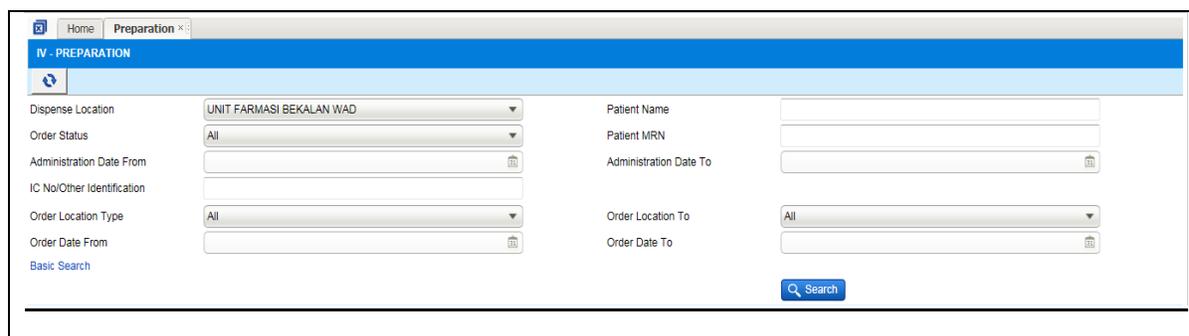


Figure 3.2-2 Advance search

| Advance Search | | | |
|----------------|----------------------------|---|--|
| No | Field | Description | Remark |
| a) | Dispense Location | Dispensing location. (It will list down all active locations) | Able to filter and search patient name by dispensing location |
| b) | Order Status | All New Orders Outsourced Orders | Able to filter status prescription by order status |
| c) | Patient Name | Patient Name | Allow to search by full or partial patient name |
| d) | Patient MRN | Patient Medical Record Number | Search option: • Type the MRN either in full or partially: <i>Example : HPSF00001234 or "1234"</i> |
| e) | Administration Date From | Administration Date From | Able to search date before |
| f) | Administration Date To | Administration Date To | Able to search date current |
| g) | IC No/Other Identification | IC No/Other Identification | Able to search patient based on MYKAD/MYKID and others identification. |
| Advance Search | | | |
| h) | Order Location Type | - Order location type (It will list down all active location types) | Able to filter and search patient name by order location type |
| i) | Order Date from | Order confirmed date | Allow to search by start date of order created |
| j) | Order Location To | It will list down all active location | Able to filter and search patient name by order location |
| k) | Order Date To | Order confirmed date | Allow to search by selected duration of order created |

Table 3.2-1

Note

Search result of patients record list will display:

- Patient MRN
- Patient Name
- IC No/Other Identification
- Order Location
- Order Status
- Administration Date From
- Administration Date To

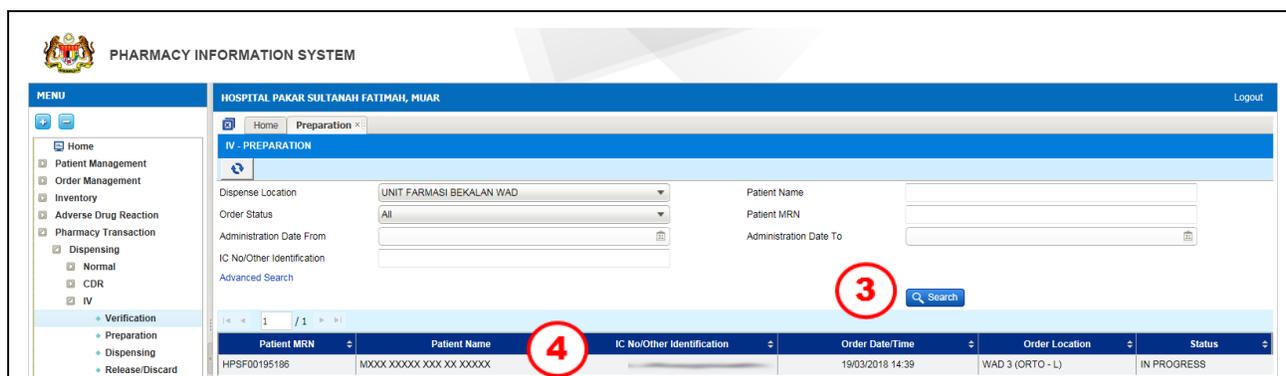


Figure 3.2-3 Preparation Listing Screen

STEP 3

Click on the button to search for patient

STEP 4

Double click on the selected patient

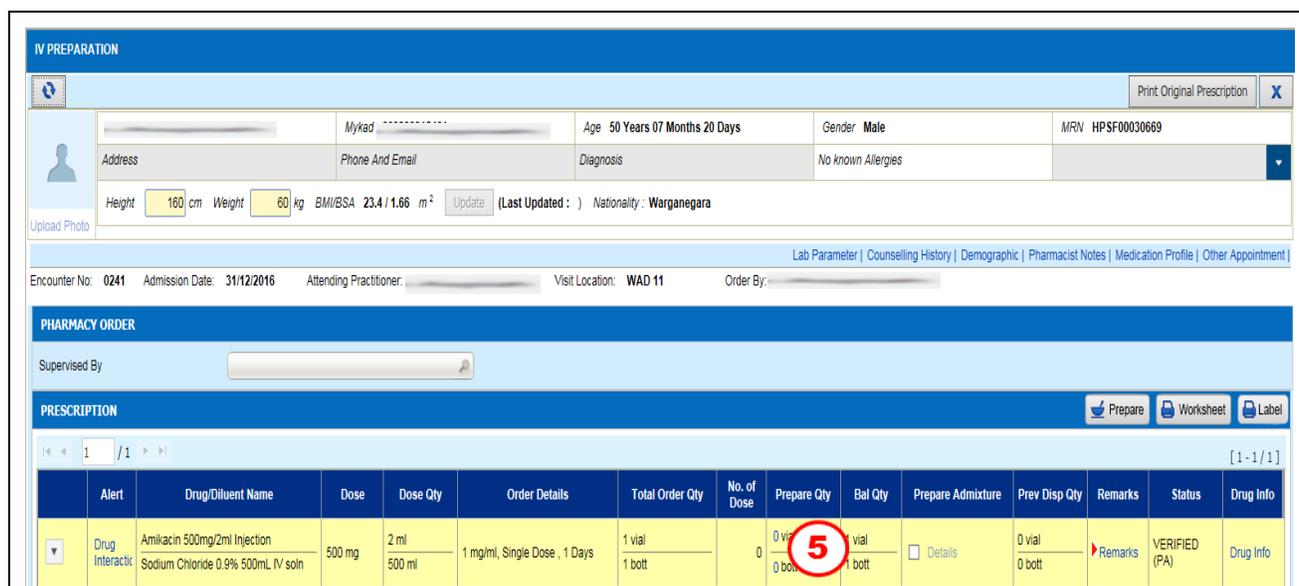


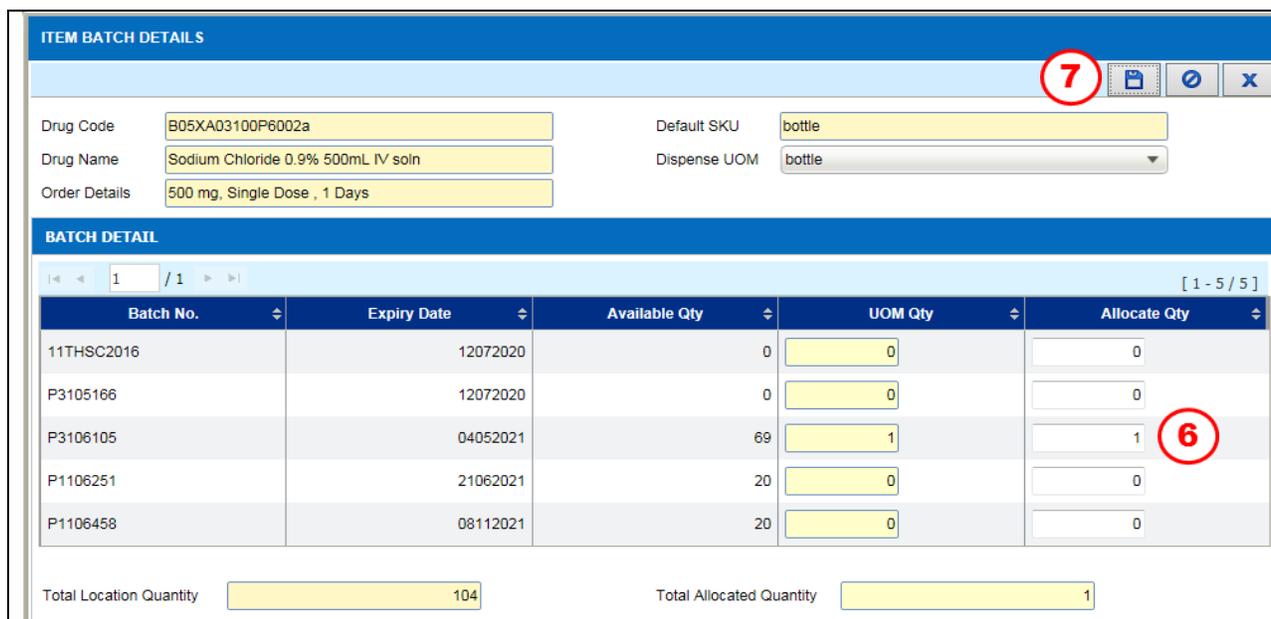
Figure 3.2-4 Prescription Listing Screen

Note

- **Dose Qty** column will be automatically calculated based on drug and diluent volume.
- **Total Order Qty** is the total no. of drugs needed for preparation.
- **No of Dose** is no of dose(s) to be prepared.

STEP 5

Click on **Prepare Qty** "0" hyperlink to perform the allocation from displayed window as show in Figure 3.2-5



| Batch No. | Expiry Date | Available Qty | UOM Qty | Allocate Qty |
|------------|-------------|---------------|---------|--------------|
| 11THSC2016 | 12072020 | 0 | 0 | 0 |
| P3105166 | 12072020 | 0 | 0 | 0 |
| P3106105 | 04052021 | 69 | 1 | 1 |
| P1106251 | 21062021 | 20 | 0 | 0 |
| P1106458 | 08112021 | 20 | 0 | 0 |

Total Location Quantity: 104
Total Allocated Quantity: 1

Figure 3.2-5 Allocation Screen

STEP 6

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

STEP 7

Click on the  button to proceed with allocation

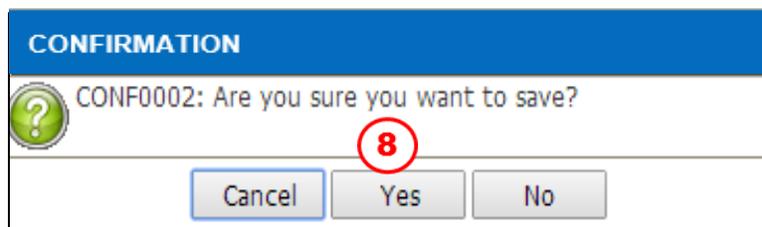
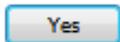


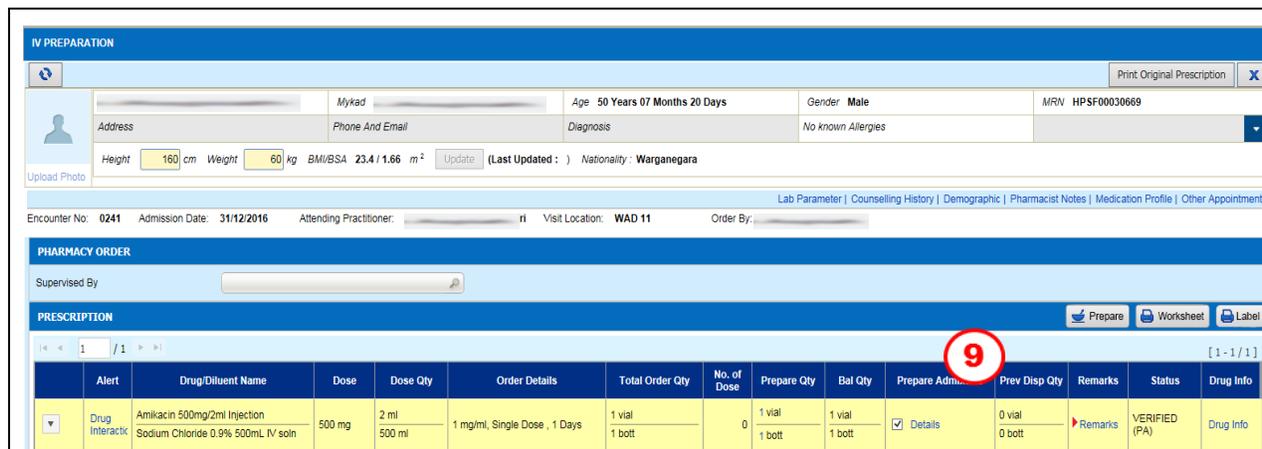
Figure 3.2-6 Preparation Screen

STEP 8

Click on the  button to save and close the window

STEP 9

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

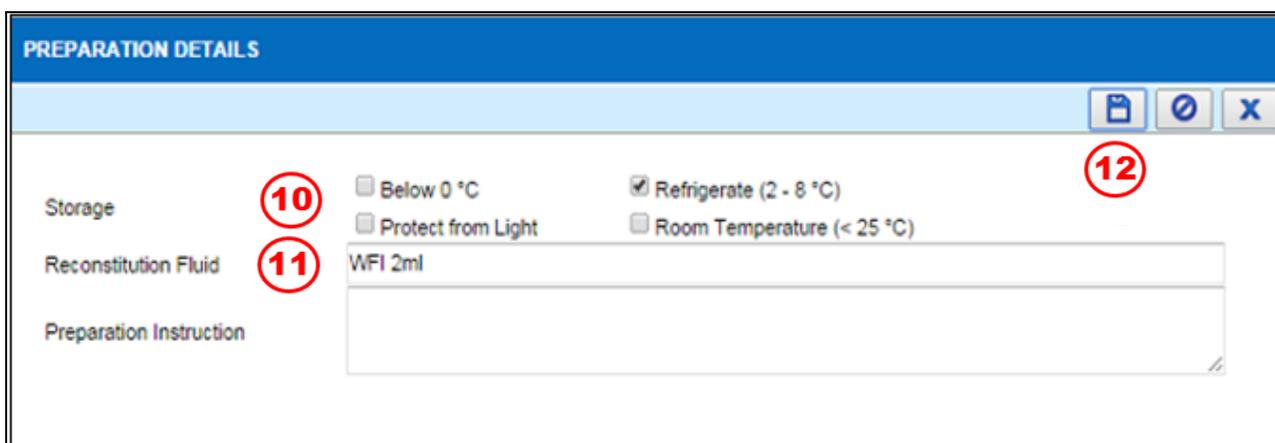


| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | No. of Dose | Prepare Qty | Bal Qty | Prepare Admin | Prev Disp Qty | Remarks | Status | Drug Info |
|---------------|--|--------|----------------|------------------------------|------------------|-------------|------------------|------------------|---|------------------|---------|---------------|-----------|
| Drug Interact | Amikacin 500mg/2ml Injection Sodium Chloride 0.9% 500mL IV soln | 500 mg | 2 ml 500 ml | 1 mg/ml, Single Dose, 1 Days | 1 vial 1 bott | 0 | 1 vial 1 bott | 1 vial 1 bott | <input checked="" type="checkbox"/> Details | 0 vial 0 bott | Remarks | VERIFIED (PA) | Drug Info |

Figure 3.2-7 Preparation Listing Screen

Note

After selecting the **Details** checkbox a pop-up window will appear as show in Figure 3.2.8.



PREPARATION DETAILS

Storage 10 Below 0 °C Refrigerate (2 - 8 °C) 12
 Protect from Light Room Temperature (< 25 °C)

Reconstitution Fluid 11 WFI 2ml

Preparation Instruction

Figure 3.2-8 Preparation Details Screen

STEP 10

Select the applicable **Storage** checkboxes
Below/Refrigerate/Protected From Light Or Room Temperature

STEP 11

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

STEP 12

Click on the  button to save record

Note

- Storage condition, reconstitution fluid and preparation instruction will default value as setup in Drug Master (if any).

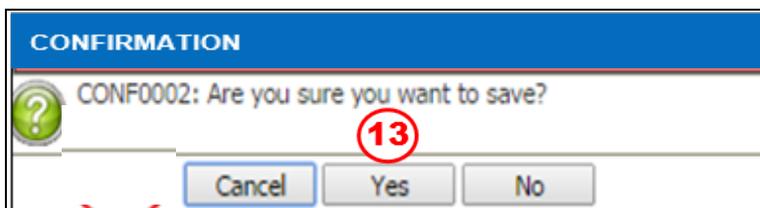
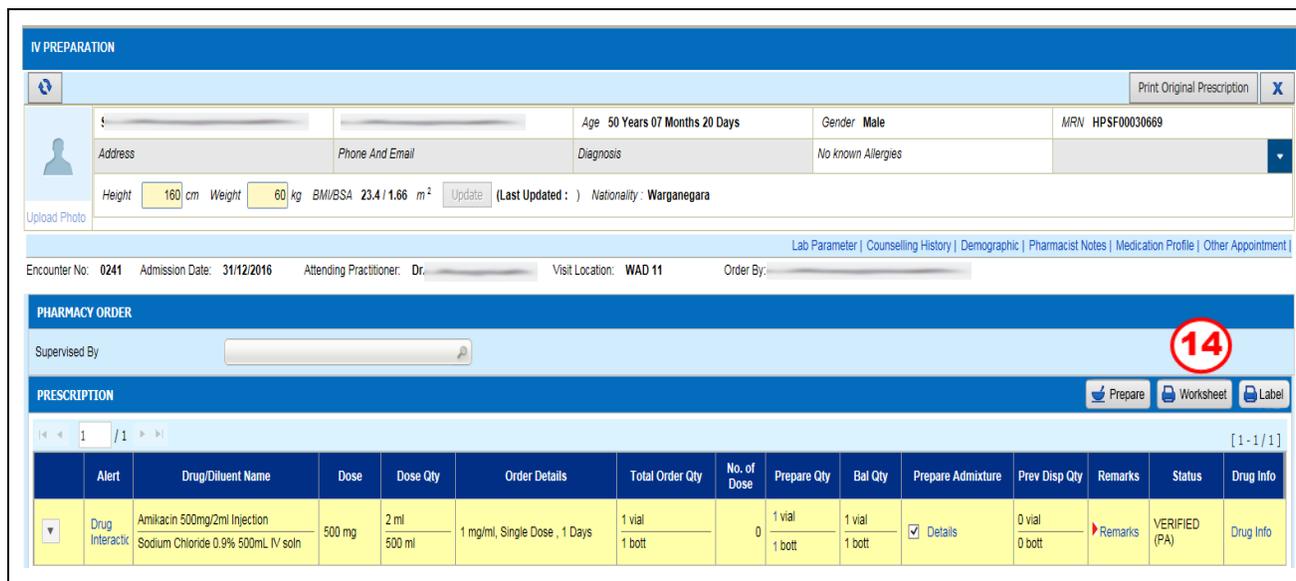


Figure 3.2-9 Preparation Details Screen

STEP 13

Click on  button to confirm saving of preparation details



IV PREPARATION

Print Original Prescription X

Age: 50 Years 07 Months 20 Days | Gender: Male | MRN: HPSF00030669

Address | Phone And Email | Diagnosis | No known Allergies

Height: 160 cm | Weight: 60 kg | BMI/BSA: 23.4 / 1.66 m² | Update (Last Updated:) | Nationality: Warganegara

Encounter No: 0241 | Admission Date: 31/12/2016 | Attending Practitioner: Dr. | Visit Location: WAD 11 | Order By:

PHARMACY ORDER

Supervised By

PRESCRIPTION

Prepare Worksheet Label

| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | No. of Dose | Prepare Qty | Bal Qty | Prepare Admixture | Prev Disp Qty | Remarks | Status | Drug Info |
|-----------------|------------------------------------|--------|----------|-------------------------------|-----------------|-------------|-------------|---------|---|---------------|---------|---------------|-----------|
| Drug Interactik | Amikacin 500mg/2ml Injection | 500 mg | 2 ml | 1 mg/ml, Single Dose , 1 Days | 1 vial | 0 | 1 vial | 1 vial | <input checked="" type="checkbox"/> Details | 0 vial | Remarks | VERIFIED (PA) | Drug Info |
| | Sodium Chloride 0.9% 500mL IV soin | | 500 ml | | 1 bott | | 1 bott | 1 bott | | 0 bott | | | |

Figure 3.2-10 Preparation Listing Screen

STEP 14

Click on the  button to view and print

| IV WORKSHEET | | | | | | | | | | | |
|---------------------------------------|-----|---------------------------|-----------------------------------|-------------|-------------|--------------------------|-----------|------------------|-------------------------|-------------|------------------------|
| MINISTRY OF HEALTH | | | | | | | | | | | |
| Hospital Pakar Sultanah Fatimah, Muar | | | | | | | | | | | |
| Date of preparation : 24/09/2014 | | | | | | Worksheet Id: 14-09-0003 | | | | | |
| MRN HPSF00016240 | | | Name MOHD ALIFF KUZANI BIN RAZALI | | | ID No 910201065269 | | | Rx. No. WAD 30000015985 | | |
| Order Location WAD 11 | | | Ordered By Dr Boon Wei Jie | | | Order Date 19/09/2014 | | | | | |
| No | ROA | Preparation Name | Material Used | | | | | | | | Storage |
| | | | Ingredient Name | Dose | Dose Volume | No of Dose | Total Qty | Preparation Qty | Batch No | Expiry Date | |
| 1 | IV | Amikacin 5 mg/ml | Amikacin 500mg/2ml Inj | 500 mg | 2 ml | 4 | 8 ml | 4 vial | FA812607 4 | 31/10/2015 | Refrigerate (2 - 8 °C) |
| | | | WFI 2ml | | | | | | | | |
| | | | Dextrose 5% 100ml IV soln | | | | | | | | |
| Instruction: Please Refer to SOP | | | | | | | | | | | |
| Reference: | | | | | | | | | | | |
| Worksheet generated by | | Worksheet & label checked | | Prepared by | | Final Product Checked by | | Supervised by | | | |
| Date: 24/09/2014 | | Date: | | Date: | | Date: | | Date: 24/09/2014 | | | |

Figure 3.2-11 Worksheet

IV PREPARATION

[Print Original Prescription](#) X

| | | | | |
|--|---|---|--|------------------|
| | Mykad <input type="text"/> | Age 50 Years 07 Months 20 Days | Gender Male | MRN HPSF00030669 |
| Address <input type="text"/> | Phone And Email <input type="text"/> | Diagnosis <input type="text"/> | No known Allergies | |
| Height <input type="text" value="160"/> cm | Weight <input type="text" value="60"/> kg | BMI/BSA <input type="text" value="23.4 / 1.66"/> m ² | Update (Last Updated :) Nationality : Warganegara | |

[Lab Parameter](#) | [Counselling History](#) | [Demographic](#) | [Pharmacist Notes](#) | [Medication Profile](#) | [Other Appointment](#)

Encounter No: 0241 Admission Date: 31/12/2016 Attending Practitioner: Dr. Visit Location: WAD 11 Order By:

PHARMACY ORDER

Supervised By
15

PRESCRIPTION

[Prepare](#) [Worksheet](#) [Label](#)

| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | No. of Dose | Prepare Qty | Bal Qty | Prepare Admixture | Prev Disp Qty | Remarks | Status | Drug Info |
|-------|------------------------------------|--------|----------|-------------------------------|-----------------|-------------|-------------|---------|---|---------------|---------|---------------|-----------|
| | Amikacin 500mg/2ml Injection | 500 mg | 2 ml | 1 mg/ml, Single Dose , 1 Days | 1 vial | 0 | 1 vial | 1 vial | <input checked="" type="checkbox"/> Details | 0 vial | Remarks | VERIFIED (PA) | Drug Info |
| | Sodium Chloride 0.9% 500mL IV soln | 500 mg | 500 ml | | 1 bott | | 1 bott | 1 bott | | 0 bott | | | |

Figure 3.2-12 Preparation Listing Screen

STEP 15

Click on  button and a window will display as show in Figure 3.2-13

DRUG LABEL

Select All

| | | | |
|---------------|------------------------|----------------|------------------------------|
| Drug Name | Amikacin 500mg/2ml Inj | Concentration | 5 mg/ml |
| Dose | 500 mg | Diluent | Dextrose 5% 100ml IV soln |
| Drug Volume | 2 ml | Diluent Volume | 100 ml |
| Route | IV | Total Volume | 102 ml |
| Frequency | Q8H | Infusion Rate | 3.33 ml/Min |
| Prepared Date | 24/09/2014 | Indication | Antibiotics, Aminoglycosides |
| Expiry Date | 24/09/2014 | | |
| Price | RM 1.00 | | |
| Storage | Refrigerate (2 - 8 °C) | | |

Figure 3.2-13 Drug label

STEP 16

Click on the button to print drug label

Note

Select All checkbox allow users to print all drug labels in the selected prescription.

IV PREPARATION

Print Original Prescription

Mykad: [Redacted] Age: 50 Years 07 Months 20 Days Gender: Male MRN: HPSF00030669

Address: Phone And Email Diagnosis: No known Allergies

Height: 160 cm Weight: 60 kg BMI/BSA: 23.4 | 1.66 m² Update (Last Updated:) Nationality: Warganegara

Encounter No: 0241 Admission Date: 31/12/2016 Attending Practitioner: Location: WAD 11 Order By:

PHARMACY ORDER

Supervised By: [Redacted]

PRESCRIPTION Prepare Worksheet Label

| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | No. of Dose | Prepare Qty | Bal Qty | Prepare Admixture | Prev Disp Qty | Remarks | Status | Drug Info |
|-----------------|------------------------------------|--------|----------|------------------------------|-----------------|-------------|-------------|---------|---|---------------|---------|---------------|-----------|
| Drug Interactio | Amikacin 500mg/2ml Injection | 500 mg | 2 ml | 1 mg/ml, Single Dose, 1 Days | 1 vial | 0 | 1 vial | 1 vial | <input checked="" type="checkbox"/> Details | 0 vial | Remarks | VERIFIED (PA) | Drug Info |
| | Sodium Chloride 0.9% 500mL IV soln | 500 ml | 500 ml | | 1 bott | | 1 bott | 1 bott | | 0 bott | | | |

Figure 3.2-14 Preparation Screen

STEP 17

Click on the button to proceed with preparation

Note

After allocating the quantity, **Prepare Qty** column will retrieve the reserved quantity from item batch.

CONFIRMATION

CONF0060: Do you want to proceed with the preparation?

Cancel Yes No

Figure 3.2-15 Preparation Screen

STEP 18

Click on the button to proceed with dispensing

3.3 IV Admixture Dispensing

This function allows user to record dispensing, to hold, resume and reprint drug label

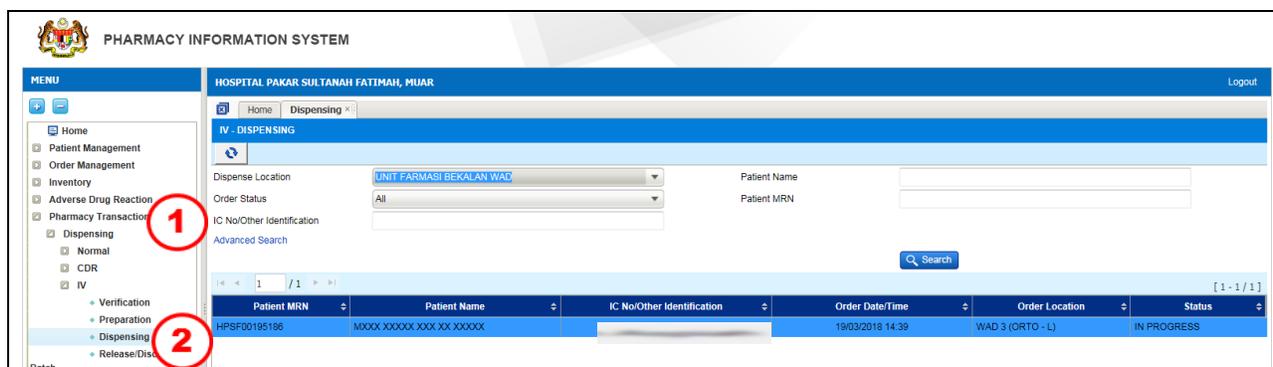


Figure 3.3-1 Dispensing Listing Screen

STEP 1

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

STEP 2

Click on 'Dispensing' sub-menu

Note

Various search criteria are provided as below :

- a) Basic search
- b) Advance search

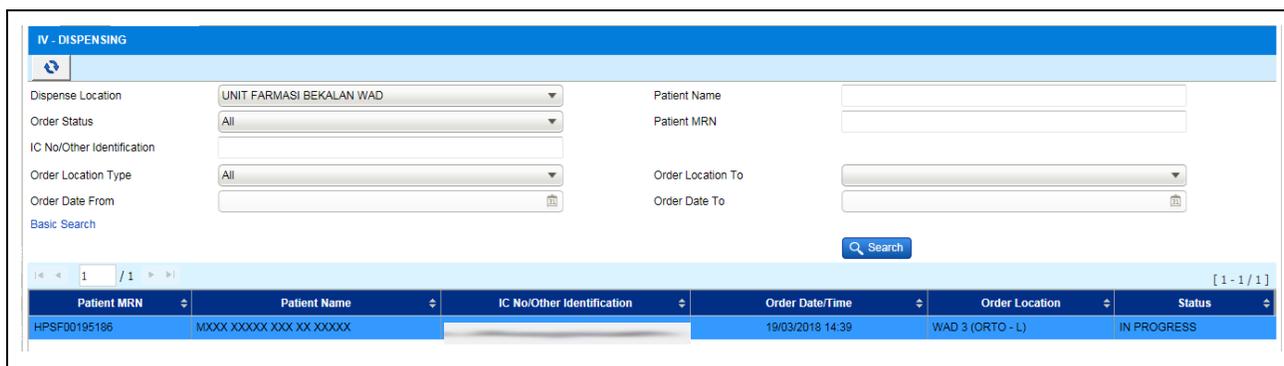


Figure 3.3-2 Dispensing Listing Screen

| Basic Search | | | |
|--------------|-------------------|---|---|
| No | Field | Description | Remark |
| a) | Dispense Location | Dispensing location. (It will list down all active locations) | Able to filter and search patient name by dispensing location |
| b) | Order Status | All New Orders Outsourced Orders | Able to filter status prescription by order status |
| c) | Patient Name | Patient Name | Allow to search by full or partial patient name |

| | | | |
|-----------------------|----------------------------|---|--|
| d) | Patient MRN | Patient Medical Record Number | Search option: • Type the MRN either in full or partially: <i>Example : HPSF00001234 or "1234"</i> |
| e) | IC No/Other Identification | IC No/Other Identification | Able to search patient based on MYKAD/MYKID and others identification. |
| Advance Search | | | |
| f) | Order Location Type | - Order location type (It will list down all active location types) | Able to filter and search patient name by order location type |
| g) | Order Date from | Order confirmed date | Allow to search by start date of order created |
| h) | Order Location To | It will list down all active location | Able to filter and search patient name by order location |
| i) | Order Date To | Order confirmed date | Allow to search by selected duration of order created |

Table 3.3-1

Note

Search results of patient record list will display:

- Patient MRN
- Patient Name
- IC No/Other Identification
- Order Date
- Order Location
- Status

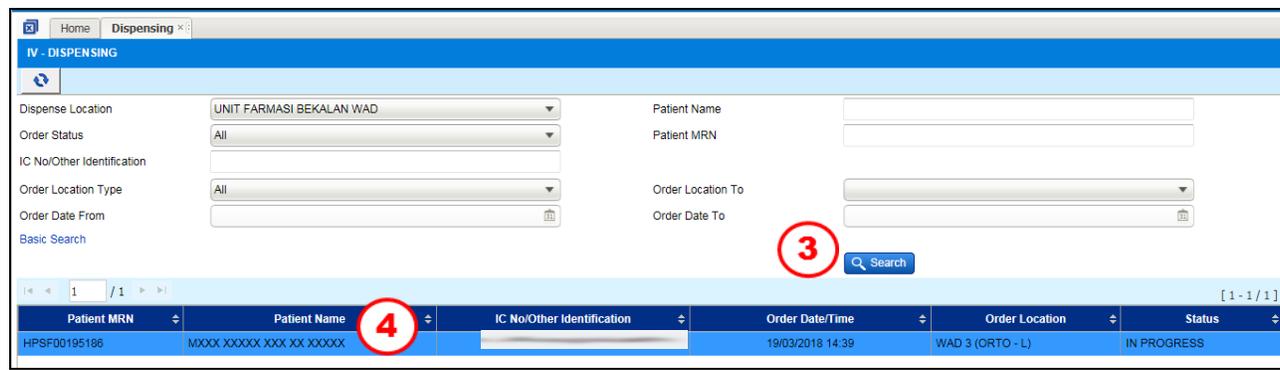


Figure 3.3-3 Dispensing Listing Screen

STEP 3

Click on the  button to search for patient

STEP 4

Double click on the selected patient

IV DISPENSING

Print Original Prescription X



Mykad: [Redacted] Age: 50 Years 07 Months 20 Days Gender: Male MRN: HPSF00030669

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

Height: 160 cm Weight: 60 kg BMI/BSA: 23.4 / 1.66 m² Update (Last Updated:) Nationality: Warganegara

Upload Photo

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

Encounter No: 0241 Admission Date: 31/12/2016 Attending Practitioner: Dr. [Redacted] Visit Location: WAD 11 Order By: [Redacted]

PHARMACY ORDER

Dispensed To: [Redacted] Dispensed Date/Time: 28/03/2017 04:18 Remarks: [Redacted]

Dispensed At: Pharmacy Counter Collected By: [Redacted]

Supervised By: [Redacted]

5

PRESCRIPTION Release/Discard Dispense Label

[1-1/1]

| Alert | Drug/Diluent Name | Dose | Dose Qty | Order Details | Total Order Qty | No. of Dose | Prepare Qty | Bal Qty | Prepare Admixture | Prev Disp Qty | Remarks | Status | Drug Info |
|---------------|--|--------|----------------|-------------------------------|------------------|-------------|------------------|------------------|---|------------------|---------|---------------|-----------|
| Drug Interact | Amikacin 500mg/2ml Injection Sodium Chloride 0.9% 500mL IV soln | 500 mg | 2 ml 500 ml | 1 mg/ml, Single Dose , 1 Days | 1 vial 1 bott | 0 | 1 vial 1 bott | 1 vial 1 bott | <input checked="" type="checkbox"/> Details | 0 vial 0 bott | Remarks | PREPARED (PA) | Drug Info |

Figure 3.3-4 Dispensing Screen

STEP 5

Click on the  button and system will open a new window as show in Figure 3.3-5

CONFIRMATION



CONF0064: Do you want to dispense now?

Cancel

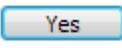
Yes

No

6

Figure 3.3-5 Conformation Screen

STEP 6

Click on the  button to dispense as Figure 3.3-5

Note

User may record the collectors name. Example the nurse in charge on the day.

3.4 IV Discard Batch

This function is used by the pharmacist to discard the IV admixture that has been prepared at the preparation stages. The drug and diluents quantity will be deducted from the inventory.

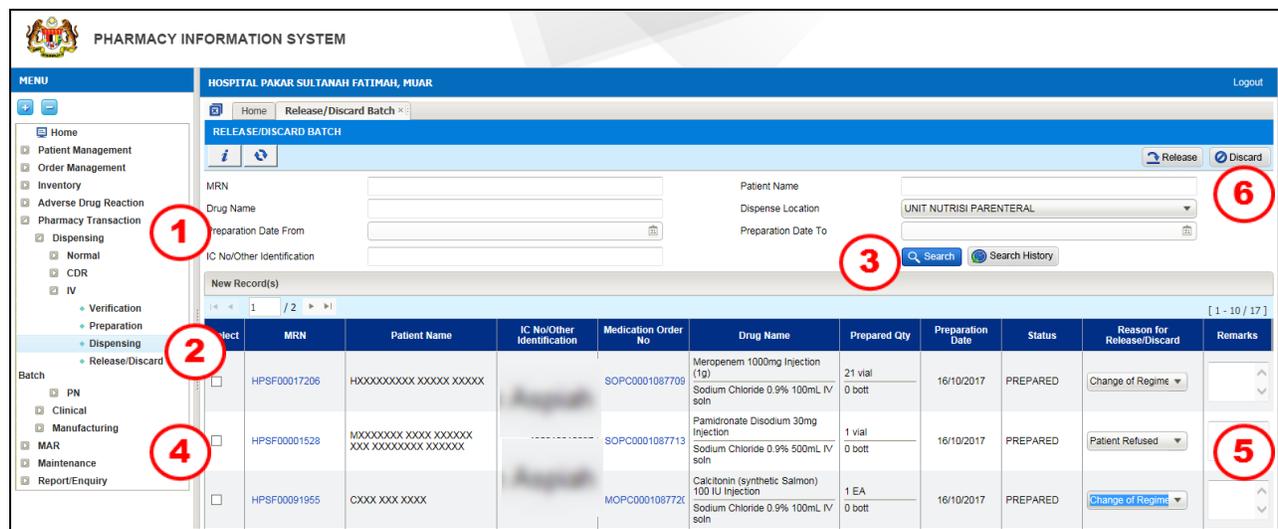


Figure 3.4-1 Discard Batch screen

STEP 1

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

STEP 2

Click on 'Release and Discard Batch' sub-menu

Note

Various search criteria is provided as below

| No | Field | Description | Remark |
|----|----------------------------|--|--|
| a | MRN | Patient Medical Record Number | Search option: • Type the MRN either in full or partially: <i>Example : HPSF00001234 or "1234"</i> |
| b | Patient Name | Patient Name | Allow to search by t full or partial patient name |
| c | Drug Name | Drug Name | Generic name |
| d | Dispense Location | Dispensing location. (It will list down all active locations) | Able to filter and search patient name by dispensing location |
| e | Preparation Date From | Preparation Date From | Able to search date before |
| f | Preparation Date To | Preparation Date To | Able to search current date |
| g | IC No/Other Identification | IC No/Other Identification | Able to search patient based on MYKAD/MYKID and others identification. |

Table 3.4-1

Note

Search results of patient record list will display:

- *Select*
- *MRN*
- *Patient Name*
- *IC No/Other Identification*
- *Drug Name*
- *Medication Order No*
- *Preparation Date*
- *Prepared Qty*
- *Status*
- *Reason For Discard*

STEP 3

Click on the  button

STEP 4

Select checkbox to Release/discard from the listed drug

STEP 5

Select Reason for Release/Discard from the dropdown box options:

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

STEP 6

Click on the Release or Discard button to proceed with release/discard

Note

Once the drug is already discard, it will display back in the Preparation screen for re-allocation of a new batch quantity.

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