



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

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## **User Manual Parenteral Nutrition (PN) Dispensing**

<b>Version</b>	<b>: 12<sup>th</sup> Edition</b>
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*Application reference: PhIS & CPS v2.5.1*



## Table of Contents

1.0	Introduction .....	1
1.1	Overview of Phis .....	1
1.2	Purpose and Objectives .....	1
1.3	Organised Sections .....	1
2.0	Application Standard Features .....	2
2.0	PhIS Legend .....	2
3.0	Parenteral Nutrition (PN) Dispensing .....	4
	Overview .....	4
	User Group .....	4
	Functional Diagram .....	4
	Functional Description .....	4
3.1	Parenteral Nutrition (PN) Verification .....	5
3.1.1	Verify Parenteral Nutrition (PN) Order .....	5
3.1.2	Intervention Parenteral Nutrition (PN) Order .....	9
3.1.3	Hold/Resume Parenteral Nutrition (PN) Order .....	17
3.2	Parenteral Nutrition (PN) Preparation .....	21
3.2.1	Preparation for Commercial .....	21
3.2.2	Preparation for Commercial Add Addictive .....	30
3.2.3	Preparation for Compounded Bag .....	42
3.3	Parenteral Nutrition (PN) Dispensing .....	61
3.4	Release/Discard Batch .....	64
3.5	Outsource .....	68
4.0	Acronyms .....	71
5.0	Links to Clinical Modules .....	71



## 1.0 Introduction

### 1.1 Overview of Phis

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

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

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

### 1.2 Purpose and Objectives

This user manual outlines the Parenteral Nutrition module and its key features/functionality. The primary objective is to help guide user through the process of completing PhIS application process.

User will understand the following activities in details:

- Parenteral Nutritional Verification
- Parenteral Nutritional Preparation
- Parenteral Nutritional Dispensing
- Hold / Resume Order
- Release / Discard Batch
- Outsource

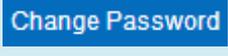
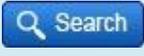
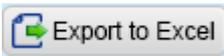
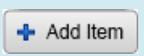
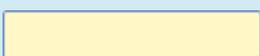
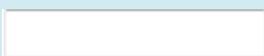
### 1.3 Organised Sections

These are the sections within this document:

- Section 1 : Introduction
- Section 2 : Application Standard Features
- Section 3 : Parenteral Nutrition Dispensing
- Section 4 : Acronyms
- Section 5 : Links to Clinical Modules

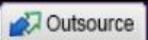
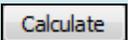
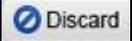
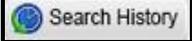
## 2.0 Application Standard Features

### 2.1 PhIS Legend

Standard Legend			
	Login to PhIS		Logout from PhIS
	Change Login Password		Reset Login Screen
	Expand Menu		Collapse Menu
	Display Home Tab		Expand Module
	Collapse Module		Close All Open Tabs
	Refresh Screen		Search Record
	Add/Create New Record		Show Help
	Print		Mandatory Field
	Calendar Icon		Search Icon
	Close Window		Radio Button
	Checkbox		Edit Record
	Cancel		Delete Record
	Save		Export and Open Report in Excel Format
	Add Item to the list		Delete Item from the list
	Request for Approval		Cancel the Request
	Approve Transaction		Reject Transaction
	Send for Approval		Dropdown Box
	Automatically Display/Retrieve Box		Empty Text Box



### Parenteral Nutrition Dispensing Module Legend

 Verify	Verification Prescription	 Prepare	Preparation Prescription
 Dispense	Dispensing	 Label	Edit and Print Label
 Outsource	Outsource Product	 Calculate	Calculate
 Worksheet	Generate Worksheet	 Release	Release Batch
 Discard	Discard Batch	 Search History	Search History

#### **Note**

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

## 3.0 Parenteral Nutrition (PN) Dispensing

### Overview

The Parenteral Nutrition (PN) Dispensing module include implementing safe, organised and efficient drug-dispensing systems which 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 ally 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 Authorized Pharmacist (subject to user assigned by the facility)

### Functional Diagram

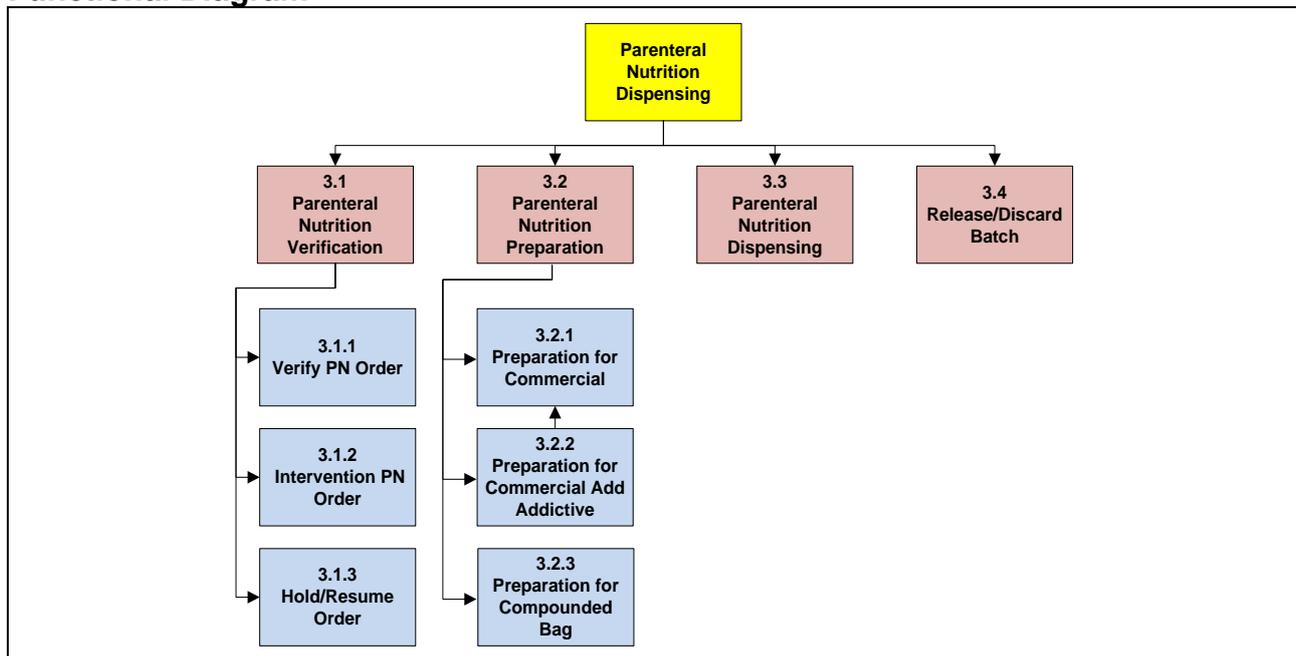


Figure 3.0-1

### Functional Description

Parenteral Nutrition (PN) dispensing comprises of four (4) main functions:

- **Verification**

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

- **Preparation**

The prescription and the drug preparation are made in the system that may integrate with inventory system. Access system data directly with no need to send files or manual drug labeling.

- **Dispensing**

The prescription and the dispensing report are made in the system that may integrate with inventory system.

- **Release/Discard Batch**

Allow the user to release/discard the drug reserved for the patient back into inventory. User need to release this drug in order for it to be available in the drug inventory list.

### 3.1 Parenteral Nutrition (PN) Verification

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

#### 3.1.1 Verify Parenteral Nutrition (PN) Order

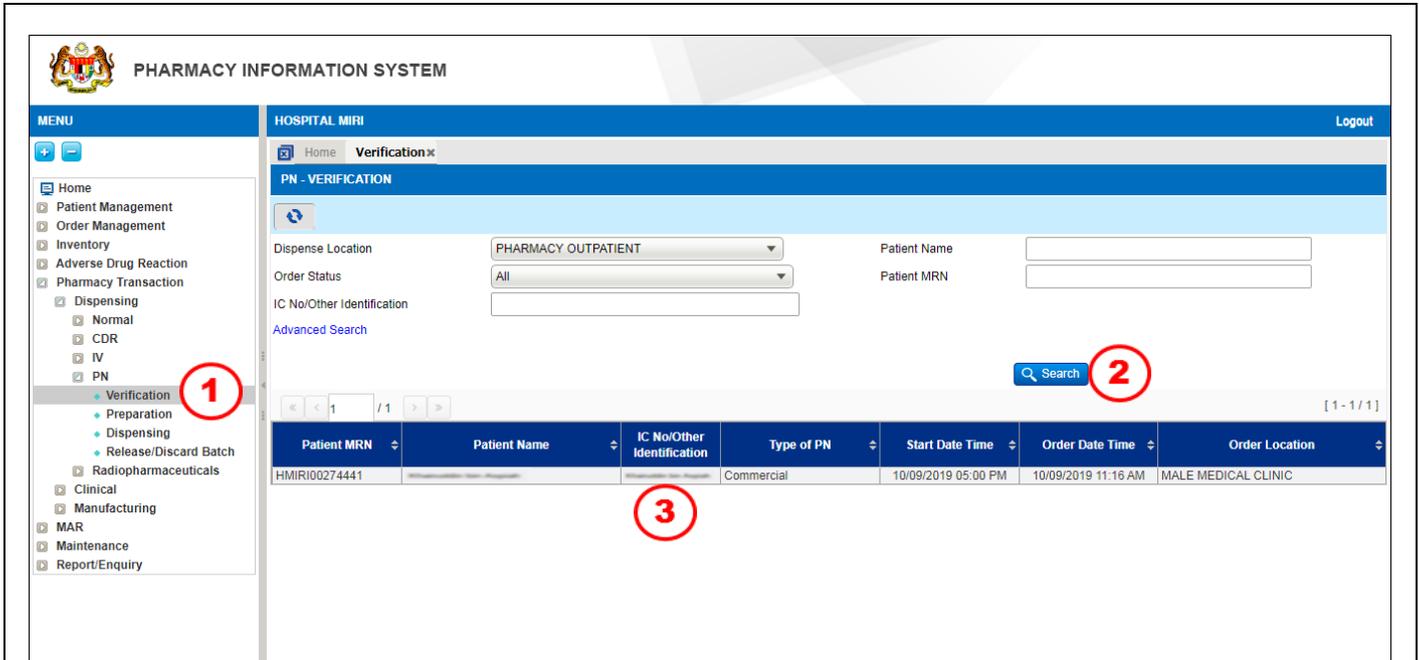


Figure 3.1.1-1 PN Verification Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' and click on 'PN Verification' sub-menu

#### Note

- Various search criteria is provided as below:
  - Dispense Location
  - Patient Name
  - Order Status
  - Patient MRN
- Click on the [Advanced Search](#) hyperlink for advance search.

#### STEP 2

Click on the [Search](#) button and system will display related order

#### Note

Search patient record based: -

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



d	Patient MRN	Patient Medical Record Number	Search option: Type the MRN either full or partial: <i>Example: HPSF00001234 or "1234"</i>
<b>Advance Search</b>			
a	Order Location Type	Search by: - All - Clinic - Day Care - ER - Nursing Unit - Pharmacy	Able to filter and search patient name by order location type
b	Order Location	Current visit Location	Able to filter and search patient name by visit location
c	Order Date From	Order confirmed date	Allow to search by start date of order created
d	Order Date To	Order confirmed date	Allow to search by selected duration of order created

Table 3.1.1-1

**STEP 3**

Double click on the record and PN Verification screen will be displayed as Figure 3.1.1-2

**Note**

Search result of patient record list will be displayed:

- Patient MRN
- Patient Name
- Type of PN
- Order Date
- Order Location

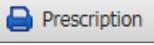
The screenshot shows the 'PN VERIFICATION' interface. At the top, there are fields for Mykad, Age (31 Years 04 Months 12 Days), Gender (Male), and MRN (HMIR10027444). Below this, there are fields for Address, Phone And Email, Diagnosis, and No known Allergies. A section for physical attributes shows Height (173 cm), Weight (78 kg), and BMI/BSA (26.1 / 1.94 m<sup>2</sup>). The Pharmacy Order section shows Order Type (PN), Order By, Ward (MALE MEDICAL CLINIC), and Bed No. The Prescription section includes a 'PROCEED TO PREPARATION' button and a 'Verify' button. At the bottom, a table lists the drug 'Kabiven Periferal 1400kcal, 2.0L' with a volume of 2000 ml, order quantity of 1 bag, and status of ORDERED. A red circle with the number '4' highlights the 'Order Details' column in the table.

Figure 3.1.1-2 PN Verification

**Note**

**Patient's Banner**

- Patient's Banner display patient's profile as per Figure 3.1.1-3
- User only can view patient's height and weight.
- System will automatically calculate the BMI/BSA in m<sup>2</sup>.

- Click on the  button to view/print PN Prescription.

**Note**

By  **PROCEED TO PREPARATION** on the radio button at proceed to preparation, system will be open preparation screen directly.



PN VERIFICATION

Prescription X

Mykad	Age 31 Years 04 Months 12 Days	Gender Male	MRN HMIRI00274441
Address	Phone And Email	Diagnosis	No known Allergies
Height 173 cm	Weight 78 kg	BMI/BSA 26.1 / 1.94 m <sup>2</sup>	Nationality : Warganegara

Update (Last Updated : )

Figure 3.1.1-3 Patient's Banner

**Pharmacy Order**

Information of **Order Type, Order by, Ward and Bed No** will be displayed by the system as per Figure 3.1.1-4.



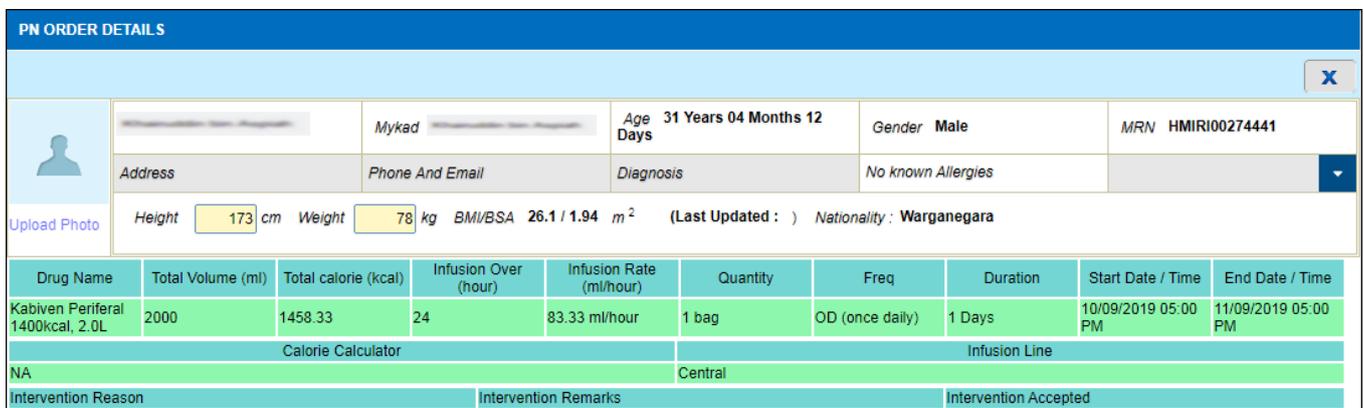
PHARMACY ORDER

Order Type	PN	Order By	
Ward	MALE MEDICAL CLINIC	Bed No	

Figure 3.1.1-4 Pharmacy Order

**STEP 4**

Click on the  hyperlink to view the order details as per Figure 3.1.1-5



PN ORDER DETAILS

X

Mykad	Age 31 Years 04 Months 12 Days	Gender Male	MRN HMIRI00274441
Address	Phone And Email	Diagnosis	No known Allergies
Height 173 cm	Weight 78 kg	BMI/BSA 26.1 / 1.94 m <sup>2</sup>	(Last Updated : ) Nationality : Warganegara

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Infusion Rate (ml/hour)	Quantity	Freq	Duration	Start Date / Time	End Date / Time
Kabiven Periferal 1400kcal, 2.0L	2000	1458.33	24	83.33 ml/hour	1 bag	OD (once daily)	1 Days	10/09/2019 05:00 PM	11/09/2019 05:00 PM
Calorie Calculator				Infusion Line					
NA				Central					
Intervention Reason			Intervention Remarks			Intervention Accepted			

Figure 3.1.1-5 PN Order Details

**STEP 5**

Click on the  button to verify PN order as per Figure 3.1.1-6



**PN VERIFICATION**

Prescription X

Mykad

Age 31 Years 04 Months 12 Days

Gender Male

MRN HMIRI00274441

Address

Phone And Email

Diagnosis

No known Allergies

Height 173 cm

Weight 78 kg

BMI/BSA 26.1 / 1.94 m<sup>2</sup>

Update (Last Updated : )

Nationality : Warganegara

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

Encounter No: 0001 Actual Visit Date: 10/09/2019 Attending Practitioner: Visit Location: MALE MEDICAL CLINIC Room No/Bed No: Rx No:

**PHARMACY ORDER**

Order Type

PN

Order By

Ward

MALE MEDICAL CLINIC

Bed No

PROCEED TO PREPARATION Verify

[ 1 - 1 / 1 ]

↓	Drug	Volume	Order Qty	Order Details	Remarks	Prev. Disp. Qty	Status
▼	Kabiven Periferal 1400kcal, 2.0L	2000 ml	1 bag	<a href="#">Details</a>	<a href="#">Remarks</a>	0 bag	ORDERED

Figure 3.1.1-6 PN Verification

**Note**

- User allowed to perform **Intervention** and **Hold/Resume Order** at verification stage.
- Upon verifying order status will be changed to Verified.
- Proceed to Next Stage function will allows user to advance to the next screen for each patient record.



### 3.1.2 Intervention Parenteral Nutrition (PN) Order

**PN VERIFICATION**

Prescription X

Mykad: [Redacted] Age: 31 Years 04 Months 12 Days Gender: Male MRN: HMIRI00274441

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

Height: 173 cm Weight: 78 kg BMI/BSA: 26.1 / 1.94 m<sup>2</sup> Update (Last Updated: ) Nationality: Warganegara

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

Encounter No: 0001 Actual Visit Date: 10/09/2019 Attending Practitioner: Visit Location: MALE MEDICAL CLINIC Room No/Bed No: Rx No:

**PHARMACY ORDER**

Order Type: PN Order By: [Redacted]

Ward: MALE MEDICAL CLINIC Bed No: [Redacted]

**PRESCRIPTION** PROCEED TO PREPARATION Verify

Drug	Volume	Order Qty	Order Details	Remarks	Prev. Disp. Qty	Status
feral 1400kcal, 2.0L	2000 ml	1 bag	Details	Remarks	0 bag	ORDERED

Figure 3.1.2-1 PN Verification

**Note**

To proceed with Intervention PN Order, repeat **Step 1 to 4** from section 3.1.1 Verify PN Order.

**STEP 1**

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

2
PN INTERVENTION ORDER
History Confirm Refresh X

INTERVENTION REASON

	Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted
<input type="checkbox"/>	Authenticity		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Contraindication		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Drug Interaction		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Dose		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Drug		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Duration		<input type="radio"/>	<input type="radio"/>

MODIFY ORDER

Type of PN:  Commercial / MOH Pre mix(Std. Soln)  Add Additive  Compounded

Kabiven Periferal 1400kcal, 2.0L  Add Additive

Body weight type:  Actual  Ideal  Adjusted Body weight: 78 kg

ADMINISTRATION INFO

Volume: 2000 ml	Indication for PN: Major trauma and burns *
Frequency: OD (once daily)	Infusion Line: Central *
Infusion Over: 24 hours	Order Quantity: 1 bag
Start Date/Time: 10/09/2019 05:00 PM	Duration: 1 Days
End Date/Time: 11/09/2019 05:00 PM	Dispense Location: PHARMACY OUTPATIENT
	Remarks:

PRESCRIPTION

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start Date/Time	End Date/Time
Kabiven Periferal 1400kcal, 2.0L	2000	1458.33	24	1 bag	OD (once daily)	1 Days	10/09/2019 05:00 PM	11/09/2019 05:00 PM
Calorie Calculator				Infusion Line				
NA				Central				

Figure 3.1.2-2 PN Intervention Order

**Note**

- PN Intervention Order screen include four sections:
  - a) Intervention Reason
  - b) Modify Order
  - c) Administration Information
  - d) Prescription
- Click on History button to view Intervention Reason History Listing screen.
- Enter **Remarks** field if applicable.

**STEP 2**

Click on the  button to save record as per Figure 3.1.2-2

**Note**

**Commercial PN type Intervention**

**PN INTERVENTION ORDER**

History Confirm Refresh Close

**INTERVENTION REASON**

[ 1 - 12 / 12 ]

	Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted
<input type="checkbox"/>	Inappropriate Frequency		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Incompatibility		<input type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/>	Others	Test	<input checked="" type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Polypharmacy		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Suggest to Monitor Vital Signs/Lab Result		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Wrong Patient		<input type="radio"/>	<input type="radio"/>

**MODIFY ORDER**

Type of PN:  Commercial / MOH Pre mix(Std. Soln)  Compounded

Add Additive
 Body weight type:  Actual  Ideal  Adjusted
Body weight:  kg

**ADMINISTRATION INFO**

<p>Volume: <input type="text" value="2000"/> ml</p> <p>Frequency: <input type="text" value="OD (once daily)"/></p> <p>Infusion Over: <input type="text" value="24"/> hours</p> <p>Start Date/Time: <input type="text" value="10/09/2019 05:00 PM"/></p> <p>End Date/Time: <input type="text" value="11/09/2019 05:00 PM"/></p>	<p>Indication for PN: <input type="text" value="Major trauma and burns"/></p> <p>Infusion Line: <input type="text" value="Central"/></p> <p>Order Quantity: <input type="text" value="1"/> bag</p> <p>Duration: <input type="text" value="1"/> Days</p> <p>Dispense Location: <input type="text" value="PHARMACY OUTPATIENT"/></p> <p>Remarks: <input type="text"/></p>
--	---

**PRESCRIPTION**

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start Date/Time	End Date/Time
Kabiven Periferal 1400kcal, 2.0L	2000	1458.33	24	1 bag	OD (once daily)	1 Days	10/09/2019 05:00 PM	11/09/2019 05:00 PM
<b>Calorie Calculator</b>		<b>Infusion Line</b>						
NA		Central						

**Figure 3.1.2-3 PN Intervention Order**

**Note**

- User able to **Modify Order, Administration Information and Prescription** section will display as per Figure 3.1.2-3.
- Field that can be edited in Administration Information as below:
  - Volume
  - Frequency
  - Infusion Over
  - Start Date/Time
  - Indication for PN
  - Infusion Line
  - Duration
  - Remarks
- Click on the  button to update back prescription details.
- User able to insert intervention reason as shown in Figure 3.1.2-4

PN INTERVENTION ORDER							
				History	Confirm		X
INTERVENTION REASON							
<input type="checkbox"/> < < 1 / 1 > >				[ 1 - 12 / 12 ]			
	Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted			
<input type="checkbox"/>	Authenticity		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Contraindication		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Drug Interaction		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Dose		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Drug		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Duration		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Frequency		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Incompatibility		<input type="radio"/>	<input type="radio"/>			
<input checked="" type="checkbox"/>	Others	Wrong order	<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Polypharmacy		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Suggest to Monitor Vital Signs/Lab Result		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Wrong Patient		<input type="radio"/>	<input type="radio"/>			

**Figure 3.1.2-4 Intervention Reason**

- *Field that can be edited in Intervention Reason as below:*
  - *Intervention Reason*
  - *Remarks*
  - *Intervention Accepted*
  - *Intervention Not Accepted*

**Note**

**Commercial with additive PN type Intervention**

PN INTERVENTION ORDER

History Confirm Refresh Close

INTERVENTION REASON

	Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted
<input type="checkbox"/>	Authenticity		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Contraindication		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Drug Interaction		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Dose		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Drug		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Duration		<input type="radio"/>	<input type="radio"/>

MODIFY ORDER

Type of PN:  Commercial / MOH Pre mix(Std. Soln)  
 Smof Kabiven Peripheral 1000kcal, 1.5L  Add Additive  Compounded

Body weight type:  Actual  Ideal  Adjusted Body weight:  kg

ADMINISTRATION INFO

Ordered Volume: <input type="text" value="1448"/> ml	Indication for PN: <input type="text" value="Enterocutaneous fistulae"/>
Frequency: <input type="text" value="OD (once daily)"/>	Infusion Line: <input type="text" value="Central"/>
Infusion Over: <input type="text" value="24"/> hours	Order Quantity: <input type="text" value="1"/> bag
Start Date/Time: <input type="text" value="14/10/2019 05:00 PM"/>	Dispense Location: <input type="text" value="Satellite Pharmacy"/>
End Date/Time: <input type="text" value="15/10/2019 05:00 PM"/>	Remarks: <input type="text"/>

PN COMPONENT

Electrolytes	Initial Content	Additional Requirement	Total Per Day
Sodium(Natrium),Na+	<input type="text" value="36"/> mmol	<input type="text" value="14"/> mmol	<input type="text" value="50"/> mmol
Potassium(Kalium),K+	<input type="text" value="28"/> mmol	<input type="text" value="12"/> mmol	<input type="text" value="40"/> mmol
Calcium,Ca2+	<input type="text" value="2.3"/> mmol	<input type="text" value="0"/> mmol	<input type="text" value="2.3"/> mmol
Magnesium,Mg+	<input type="text" value="4.6"/> mmol	<input type="text" value="0"/> mmol	<input type="text" value="4.6"/> mmol
Phosphate,(PO4)2-	<input type="text" value="11.9"/> mmol	<input type="text" value="2"/> mmol	<input type="text" value="13.9"/> mmol
Acetate(CH3COO)	<input type="text" value="96"/> mmol	<input type="text" value="2"/> mmol	<input type="text" value="98"/> mmol
Trace elements	<input type="text" value="0"/> ml	<input type="text" value="0"/> ml	<input type="text" value="0"/> ml
L-Glutamin	<input type="text" value="0"/> ml	<input type="text" value="0"/> ml	<input type="text" value="0"/> ml
Vitamin	<input checked="" type="radio"/> Combine Vitamin		
Water and Fat Soluble	<input type="text" value="0"/> ml	<input type="text" value="2"/> ml	<input type="text" value="2"/> ml

PRESCRIPTION

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date	
Smof Kabiven Peripheral 1000kcal, 1.5L With Additive	1448	1000	24	1 bag	OD (once daily)	1 Days	14/10/2019 05:00 PM	15/10/2019 05:00 PM	
Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Acetate (mmol)	Trace Element (ml)	Fat Soluble Vit. (ml)	Water Soluble Vit. (ml)	Combine Vitamin (ml)
13.9	50	40	N/A	N/A	98	N/A	N/A	N/A	2
L-Glutamin. (ml)		Calorie Calculator			Infusion Line				
N/A		NA			Central				

Figure 3.1.2-5 PN Intervention Order

**Note**

- User able to **Modify Order, Administration Information, PN Component and Prescription** section will display as per Figure 3.1.2-5.
- Field that can be edited in Administration Information as below:
  - Volume
  - Infusion Over

- Start Date/Time
- Indication for PN
- Infusion Line
- Remarks

- Field that can be edited in PN Component is all additional requirement
- Click on the  button to update back prescription details.
- User able to insert intervention reason as shown in Figure 3.1.2-6

PN INTERVENTION ORDER							
				History	Confirm		
INTERVENTION REASON							
				[ 1 - 12 / 12 ]			
	Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted			
<input type="checkbox"/>	Authenticity		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Contraindication		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Drug Interaction		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Dose		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Drug		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Duration		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Frequency		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Incompatibility		<input type="radio"/>	<input type="radio"/>			
<input checked="" type="checkbox"/>	Others	Wrong order	<input checked="" type="radio"/>	<input checked="" type="radio"/>			
<input type="checkbox"/>	Polypharmacy		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Suggest to Monitor Vital Signs/Lab Result		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Wrong Patient		<input type="radio"/>	<input type="radio"/>			

**Figure 3.1.2-6 Intervention Reason**

- Field that can be edited in Intervention Reason as below:
  - Intervention Reason
  - Remarks
  - Intervention Accepted
  - Intervention Not Accepted

**Note**

**Compounded PN type Intervention**



**PN INTERVENTION ORDER**
History Confirm Refresh X

**INTERVENTION REASON**

	Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted
<input type="checkbox"/>	Authenticity		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Contraindication		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Drug Interaction		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Dose		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Drug		<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Inappropriate Duration		<input type="radio"/>	<input type="radio"/>

**MODIFY ORDER**

Type of PN:  Commercial / MOH Pre mix(Std. Soln)  Compounded

PN for:  Adult  Paediatric Infant  Paediatric  Neonate

Body weight type:  Actual  Ideal  Adjusted Body weight: 65 kg

**PN COMPONENT**

By weight		Per day	
Use Fluid Calculator	<input checked="" type="checkbox"/>		
Total volume required	43.08 ml/kg	2800 ml	
Total oral feeding	0 ml/kg		
TPN Volume	43.08 ml/kg	2800 ml	
Energy required			
<b>Macronutrient</b>		<b>Recommended range(per kg)</b>	<b>Energy(per day)</b>
Carbohydrate	3 g/kg	3.00 - 5.00 g/kg	195 g / 780 kcal
Lipid	1 g/kg	0.50 - 2.00 g/kg	65 g / 585 kcal
Protein	1 g/kg	0.50 - 2.00 g/kg	65 g / 260 kcal
L-Glutamin	1.54 ml/kg	1.50 - 2.50 ml/kg	100 ml / 80 kcal
Carbohydrate:Lipid(kcal)	57 : 43	Nitrogen Content: 11 g	NPC:NRatio: 131 : 1
			<b>Total</b> 1705 kcal
<b>Electrolytes</b>			
Sodium(Natrium),Na+	1 mmol/kg	1.00 - 2.00 mmol/kg	65 mmol
Potassium(Kalium),K+	1 mmol/kg	0.70 - 1.50 mmol/kg	65 mmol
Calcium,Ca2+	0.1 mmol/kg	0.10 - 0.15 mmol/kg	6.5 mmol
Magnesium,Mg+	0.1 mmol/kg	0.05 - 0.15 mmol/kg	6.5 mmol
Phosphate,(PO4)2-	0.6 mmol/kg	0.50 - 0.70 mmol/kg	39 mmol
Chloride,Cl+	1 mmol/kg	1.30 - 2.00 mmol/kg	65 mmol
Acetate(CH3COO)	0 mmol/kg	0.00 - 0.00 mmol/kg	0 mmol
<b>Trace elements</b>	0.08 ml/kg	0.00 - 10.00 ml	5 ml
<b>Vitamin</b>			
	<input type="radio"/> Single Vitamin	<input type="radio"/> Combine Vitamin	

**ADMINISTRATION INFO**

Volume	2800 ml	Indication for PN	Gastrointestinal fistula
Frequency	OD	Infusion Line	Central
Infusion Over	24 hours	Order Quantity	1 BAG
Start Date/Time	14/10/2019 05:00 PM	Dispense Location	Satellite Pharmacy
End Date/Time	15/10/2019 05:00 PM	Remarks	

**PRESCRIPTION**

Drug Name	Total Volume ml per kg (ml)	Total calorie kcal per kg (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date											
PN Compounded Adult	43.08 (2800)	26.23 (1705)	24	1 BAG	OD	1 Days	14/10/2019 05:00 PM	15/10/2019 05:00 PM											
Phosphate mmol per kg (mmol)	0.6 (39)	Sodium mmol per kg (mmol)	1 (65)	Potassium mmol per kg (mmol)	1 (65)	Calcium mmol per kg (mmol)	0.1 (6.5)	Magnesium mmol per kg (mmol)	0.1 (6.5)	Acetate mmol per kg (mmol)	NA	Trace Element ml per kg (ml)	0.08 (5)	Fat Soluble Vit. ml per kg (ml)	NA	Water Soluble Vit. ml per kg (ml)	NA	Combine Vitamin ml per kg (ml)	NA
Protein g per kg (g)	1 (65)	Carbohydrate g per kg (g)	3 (195)	Carbohydrate %	NA	Lipid g per kg (g)	1 (65)	L-Glutamin ml per kg (ml)	1.54 (100)	Calorie Calculator	NA	Infusion Line	Central						

Figure 3.1.2-7 PN Intervention Order

**Note**

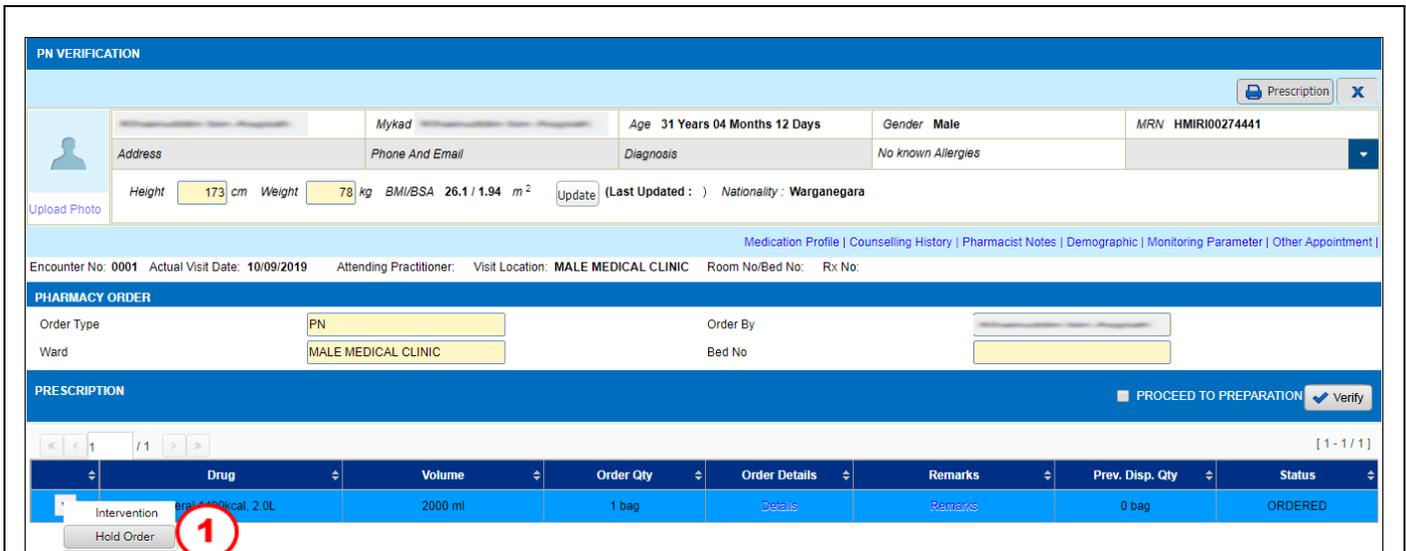
- User able to **Modify Order, PN Component, Administration Information and Prescription** section will display as per Figure 3.1.2-7.
- Field that can be edited in Administration Information as below:
  - Volume
  - Infusion Over
  - Start Date/Time
  - Indication for PN
  - Infusion Line
  - Remarks
- All field in PN Component is allowed to edit
- Click on the  button to update back prescription details.
- User able to insert intervention reason as shown in Figure 3.1.2-8

PN INTERVENTION ORDER							
				History	Confirm		
INTERVENTION REASON							
				[ 1 - 12 / 12 ]			
	Intervention Reason	Remarks	Intervention Accepted	Intervention Not Accepted			
<input type="checkbox"/>	Authenticity		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Contraindication		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Drug Interaction		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Dose		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Drug		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Duration		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Inappropriate Frequency		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Incompatibility		<input type="radio"/>	<input type="radio"/>			
<input checked="" type="checkbox"/>	Others	Wrong order	<input checked="" type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Polypharmacy		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Suggest to Monitor Vital Signs/Lab Result		<input type="radio"/>	<input type="radio"/>			
<input type="checkbox"/>	Wrong Patient		<input type="radio"/>	<input type="radio"/>			

**Figure 3.1.2-8 Intervention Reason**

- Field that can be edited in Intervention Reason as below:
  - Intervention Reason
  - Remarks
  - Intervention Accepted
  - Intervention Not Accepted

### 3.1.3 Hold/Resume Parenteral Nutrition (PN) Order



**PN VERIFICATION**

Mykad: [Redacted] Age: 31 Years 04 Months 12 Days Gender: Male MRN: HMIRI00274441

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

Height: 173 cm Weight: 78 kg BMI/BSA: 26.1 / 1.94 m<sup>2</sup> Nationality: Warganegara

Encounter No: 0001 Actual Visit Date: 10/09/2019 Attending Practitioner: [Redacted] Visit Location: MALE MEDICAL CLINIC Room No/Bed No: [Redacted] Rx No: [Redacted]

**PHARMACY ORDER**

Order Type: PN Ward: MALE MEDICAL CLINIC

**PRESCRIPTION**

Drug	Volume	Order Qty	Order Details	Remarks	Prev. Disp. Qty	Status
Intervention Bran 200kcal, 2.0L	2000 ml	1 bag	Details	Remarks	0 bag	ORDERED

Hold Order (1)

Figure 3.1.3-1 PN Verification Screen

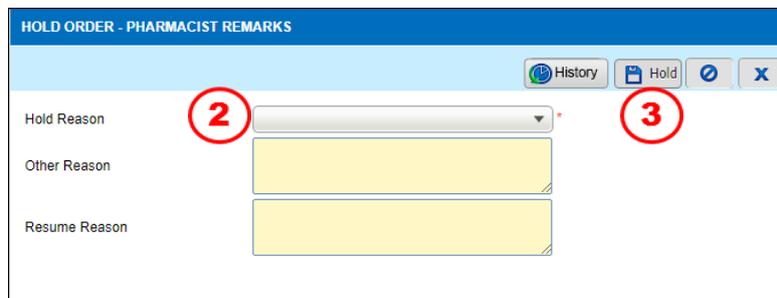
**Note**

To proceed with Hold/Resume PN Order, repeat **Step 1 to 4** from section **3.1.1 Verify PN Order**.

**Hold Order**

**STEP 1**

Right click on the  button and select **Hold Order** function and screen will be displayed as Figure 3.1.3-2



**HOLD ORDER - PHARMACIST REMARKS**

History Hold [Close]

Hold Reason (2)

Other Reason

Resume Reason

Hold (3)

Figure 3.1.3-2 Hold Order – Pharmacist Remarks

**STEP 2**

Select the **Hold Reason** from dropdown box:

- Authenticity
- Contraindication
- Drug Interaction
- Inappropriate Dose
- Inappropriate Drug
- Inappropriate Duration
- Inappropriate Frequency
- Incompatibility
- Intervention

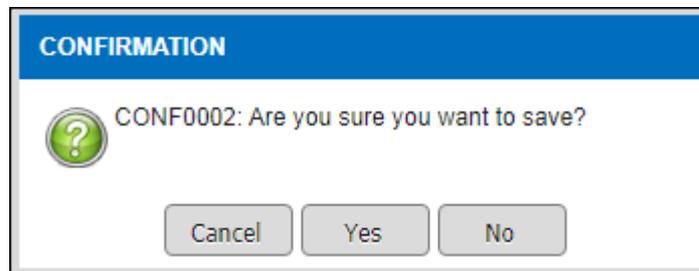
- Others
- Patient Refused
- Polypharmacy
- Suggest to Monitor Vital Signs/Lab Result
- Wrong Patient

**Note**

**Other Reason** field will activate if user select hold reason as Others.

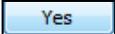
**STEP 3**

Click on the  button to hold order and alert message will display as Figure 3.1.3-3



**Figure 3.1.3-3 Confirmation Alert Message**

**Note**

- Click on the  button to confirm the hold record as per Figure 3.1.3-3.
- **Status** will change to "Ordered Hold" as per Figure 3.1.3-4.

**PN VERIFICATION**

Prescription [X]

Mykad: [Redacted] Age: 31 Years 04 Months 12 Days Gender: Male MRN: HMIRI00274441

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

Height: 173 cm Weight: 78 kg BMI/BSA: 26.1 / 1.94 m<sup>2</sup> Update (Last Updated: ) Nator: Nationality: Warganegara

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

Encounter No: 0001 Actual Visit Date: 10/09/2019 Attending Practitioner: Visit Location: MALE MEDICAL CLINIC Room No/Bed No: Rx No:

**PHARMACY ORDER**

Order Type: PN Order By: [Redacted]

Ward: MALE MEDICAL CLINIC Bed No: [Redacted]

**PRESCRIPTION** [PROCEED TO PREPARATION] [Verify]

[1 - 1 / 1]

Drug	Volume	Order Qty	Order Details	Remarks	Prev. Disp. Qty	Status
Kabiven Periferal 1400kcal, 2.0L Intervention	2000 ml	1 bag	Details	Remarks	0 bag	ORDERED HOLD

Resume Order [4]

Figure 3.1.3-4 PN Verification

**Resume Order**

**STEP 4**

Right click on the [Dropdown] button and select **Resume Order** function and screen will be displayed as Figure 3.1.3-5

**HOLD ORDER - PHARMACIST REMARKS** [6] [7]

History [Resume] [X]

Hold Reason: Inappropriate Duration

Other Reason: [Redacted]

Resume Reason: Done [5]

Figure 3.1.3-5 Hold Order – Pharmacist Remarks

**Note**

To proceed with Resume PN Order, repeat **Step 2 to 3** from section **3.1.3 Hold/Resume PN Order**.

**STEP 5**

Enter reason at **Resume Reason** field

**STEP 6**

Click on the [Resume] button to resume hold order

**STEP 7**

Click on the [X] button to close window and alert message will be displayed as per Figure 3.1.3.6

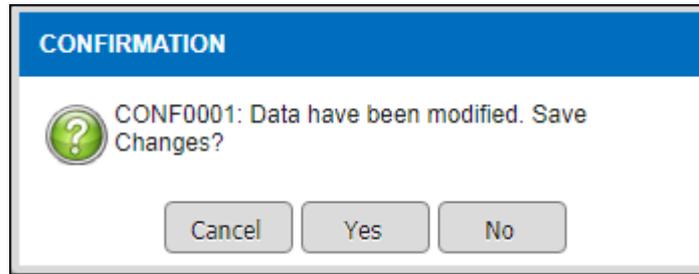


Figure 3.1.3-6 Confirmation Alert Message

**Note**

- Click on the  button to confirm save record.
- **Status** will change to "Ordered".

**History**

**Note**

- Click on the  button to view history of hold order reason history listing as per Figure 3.1.3-7.
- Click on the  button to close Hold Order Reason History listing screen.

HOLD ORDER REASON HISTORY LISTING					
					
 <span style="float: right;">[ 1 - 1 / 1 ]</span>					
Date/Time	Screen	Hold Reason	Remarks	Resume Remarks	Updated By
10/09/2019 12:43 PM	Verification	Inappropriate Duration		Done	

Figure 3.1.3-7 Hold Order – Pharmacist Remarks

## 3.2 Parenteral Nutrition (PN) Preparation

### 3.2.1 Preparation for Commercial

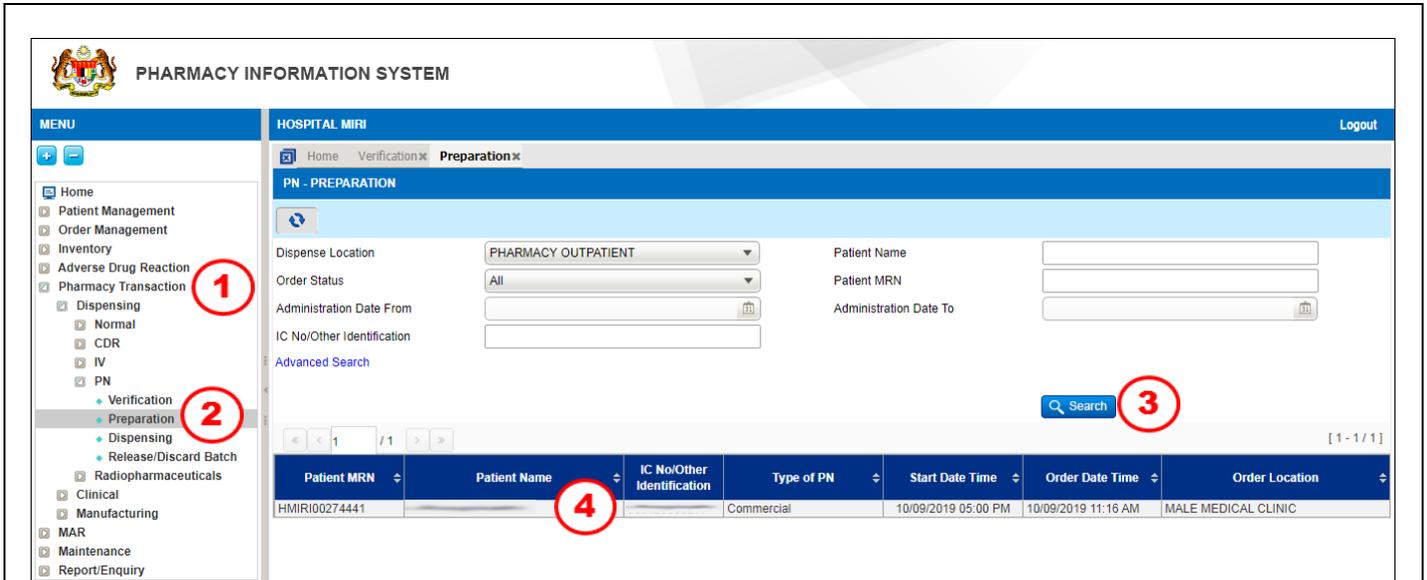


Figure 3.2.1-1 PN Preparation Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' sub menu and select 'PN'

#### STEP 2

Click on 'Preparation' function

#### Note

Search patient record based: -

Basic Search			
No	Field	Description	Remark
a	Dispense Location	Dispensing location. (It will list down all active location)	Able to filter and search patient name by dispensing location
b	Order Status	Search by: All Verified Verified Hold Partial Supply Orders	Able to filter and search patient name by order status
c	Patient Name	Patient Name	Allow to search by full name or partial
d	Patient MRN	Patient Medical Record Number	Search option: Type the MRN either full or partial: <i>Example: HPSF00001234 or "1234"</i>
e	Administration Date From	Administration confirmed date	Allow to search by start date of verification order
f	Administration Date To	Administration confirmed date	Allow to search by selected duration of verification order
Advance Search			
a	Order location Type	Current Visit Location Type	Search by: - All - Clinic - Day Care - ER - Nursing Unit - Pharmacy

b	Order Location	Current visit Location	Able to filter and search patient name by visit location
c	Order Date From	Order confirmed date	Allow to search by start date of order created
d	Order Date To	Order confirmed date	Allow to search by selected duration of order created

**Table 3.2.1-1: Search Criteria**

**STEP 3**

Click on the  button to search patient

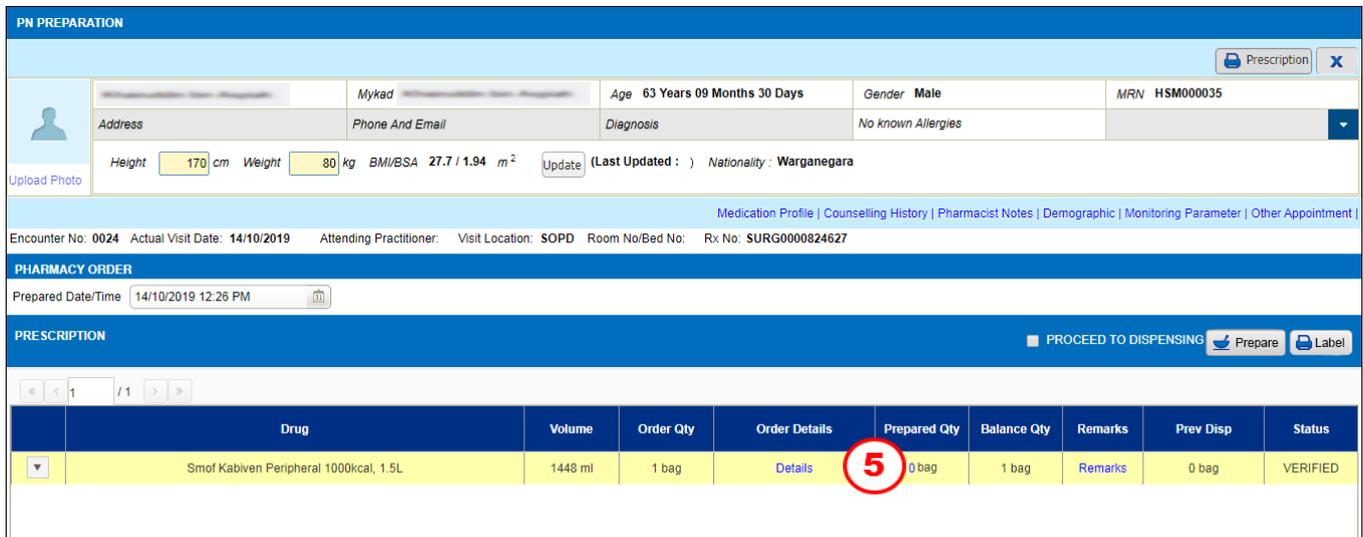
**Note**

Search result of patient record list will be displayed:

- Patient MRN
- Patient Name
- Type of PN
- Order Date
- Order Location

**STEP 4**

Double click on record and PN Preparation screen will be displayed as Figure 3.2.1-2



The screenshot shows the 'PN PREPARATION' interface. At the top, there's a 'Prescription' button. Below it, patient information is displayed: Mykad, Age 63 Years 09 Months 30 Days, Gender Male, MRN HSM000035, Address, Phone And Email, Diagnosis, No known Allergies, Height 170 cm, Weight 80 kg, BMI/BSA 27.7 / 1.94 m<sup>2</sup>, and Nationality: Warganegara. There are links for Medication Profile, Counselling History, Pharmacist Notes, Demographic, Monitoring Parameter, and Other Appointment. Encounter No: 0024, Actual Visit Date: 14/10/2019, Attending Practitioner, Visit Location: SOPD, Room No/Bed No, Rx No: SURG0000824627. The 'PHARMACY ORDER' section shows Prepared Date/Time: 14/10/2019 12:26 PM. The 'PRESCRIPTION' section has a 'PROCEED TO DISPENSING' button and 'Prepare' and 'Label' buttons. A table lists the prescription details:

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Remarks	Prev Disp	Status
Smof Kabiven Peripheral 1000kcal, 1.5L	1448 ml	1 bag	Details	0 bag	1 bag	Remarks	0 bag	VERIFIED

**Figure 3.2.1-2 PN Preparation**

**STEP 5**

Click on the  link to allocate quantity and Item Batch Details screen will display as per Figure 3.2.1-3

**ITEM BATCH DETAILS**

7

Drug Code: PNA00020      Default SKU: bag

Drug Name: Smof Kabiven Peripheral 1000kcal, 1.5L

**BATCH DETAIL**

<< < 1 / 1 > >> [1 - 1 / 1]

Batch No.	Expiry Date	Available Qty	Balance Qty	Allocated Qty
2323	02/01/2021	2222	1	1

6

Total Location Quantity: 2222      Total Allocated Quantity: 1

Figure 3.2.1-3 Item Batch Details

**STEP 6**

Enter *Allocated Qty* field

**STEP 7**

Click on the  button to save record

**CONFIRMATION**

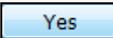
CONF0002: Are you sure you want to save?

8

Cancel    Yes    No

Figure 3.2.1-4 Confirmation Alert Message

**STEP 8**

Click on the  button to confirm save

**Note**

**Order Details**

- Click on the [Details](#) hyperlink to view order details as per Figure 3.2.1-5.

PN ORDER DETAILS									
 Upload Photo	Mykad	Age	63 Years 09 Months 30 Days	Gender	Male	MRN	HSM000035		
	Address	Phone And Email	Diagnosis	No known Allergies					
Height <input type="text" value="170"/> cm Weight <input type="text" value="80"/> kg BMI/BSA 27.7 / 1.94 m <sup>2</sup> (Last Updated : ) Nationality : Warganegara									
Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Infusion Rate (ml/hour)	Quantity	Freq	Duration	Start Date / Time	End Date / Time
Smof Kabiven Peripheral 1000kcal, 1.5L	1448	1000	24	60.33 ml/hour	1 bag	OD (once daily)	1 Days	14/10/2019 05:00 PM	15/10/2019 05:00 PM
Calorie Calculator					Infusion Line				
NA					Central				
Intervention Reason			Intervention Remarks			Intervention Accepted			

Figure 3.2.1-5 PN Order Details

**Note**

**Remarks**

PN REMARKS	
Prescriber Remark	
Order Stage	
Pharmacist Remark	
Verification Stage	
Preparation Stage	Proceed

Figure 3.2.1-6 PN Remarks

- Click on the [Remarks](#) hyperlink to display PN Remark as per Figure 3.2.1-6.
  - Prescriber Remark
    - Order Stage** to be retrieved upon ordering.
  - Pharmacist Remark
    - Verification Stage** to be retrieved during verification.
    - Preparation Stage** to be retrieved during preparation.

- The  button to save record.
- The  button to close PN Remarks screen.
- The  button to cancel remark record.

**PN PREPARATION**

Prescription 

Mykad  Age 63 Years 09 Months 30 Days Gender Male MRN HSM000035

Address  Phone And Email  Diagnosis  No known Allergies

Height  cm Weight  kg BMI/BSA  /  m<sup>2</sup>  (Last Updated : ) Nationality : Warganegara

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

Encounter No: 0024 Actual Visit Date: 14/10/2019 Attending Practitioner: Visit Location: SOPD Room No/Bed No: Rx No: SURG0000824627

**PHARMACY ORDER**

Prepared Date/Time: 14/10/2019 12:26 PM

**PRESCRIPTION**  PROCEED TO DISPENSING

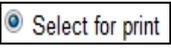
<< 1 / 1 >>

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Remarks	Prev Disp	Status
Smof Kabiven Peripheral 1000kcal, 1.5L	1448 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag	<a href="#">Remarks</a>	0 bag	VERIFIED

Figure 3.2.1-7 PN Preparation

**Note**

**Edit Label**

- Click on the  button to edit label and PN Edit Label window will display as per Figure 3.2.1-8.
- Select the  radio button to print label.
- User allows to edit **Infusion Over**, **Date Prepared** and **Shelf Life** field.
- **Expiry Date** field will automatically display after filling the **Shelf Life** field.
- **Drug Name**, **Total Volume**, **Infusion Rate** and **Batch No** field will be displayed automatically by system.
- The  button to print label as per Figure 3.2.1-8.
- The  button to close PN Edit Label window.
- The  button to cancel print label.

**PN EDIT LABEL**

Select for print

Drug Name: Smof Kabiven Peripheral 1000kcal, 1.5L

Total Volume: 1448 ml

Infusion Over: 24 Hour(s)

Infusion Rate: 60.33 mL/Hour

Prepared Date/Time: 14/10/2019 12:26 PM

Expiry Date/Time: 15/10/2019 12:26 PM

Batch/Worksheet No: 2323

Infusion Line: Central

Shelf Life: 24 Hours

Figure 3.2.1-8 PN Edit Label

HOSPITAL SERI MANJUNG		
Smof Kabiven Peripheral 1000kcal, 1.5L		
NAME :		
ID NO 551215085023		
AGE : 63 Years 09 Months 30 Days		
MRN : HSM000035	WARD/BED NO: SOPD	
Total 1448 ml/bag		
Content	/ kg	/ bag
Protein (g)	0.57	46
Dextrose (g)	1.29	103
Lipid (g)	0.51	41
Sodium (mmol)	0.45	36
Potassium (mmol)	0.35	28
Calcium (mmol)	0.03	2.3
Magnesium (mmol)	0.06	4.6
Phosphate (mmol)	0.15	11.9
Chloride (mmol)	0.4	32
Acetate (mmol)	1.2	96
Trace Element (ml)	0	0
Vitamins (ml)	0	0
Calories (kcal)	12.5	1000
Osmolarity (mOsm/l)	10.62	850
Admin Date/Time :		
Infusion Rate	60.33 mL/Hrs	
Infusion Over	24 Hrs	
Batch No : 2323	Expiry Date : 15/10/2019	Price : RM
Do not use if any visible solid particles, growth or precipitation appears.		
Store in refrigerator (2-8 °C). Protect from light (Once open use within 48 hours) Ensure PN Solution is at room temperature before infusion.		
TO BE INFUSED : CENTRAL LINE		

Figure 3.2.1-9 Sample Label

**PN PREPARATION**

Prescription X

	Mykad	Age 63 Years 09 Months 30 Days	Gender Male	MRN HSM000035
Address	Phone And Email	Diagnosis	No known Allergies	

Height  cm Weight  kg BMUBSA 27.7 / 1.94 m<sup>2</sup> Update (Last Updated : ) Nationality : Warganegara

[Medication Profile](#) | [Counseling History](#) | [Pharmacist Notes](#) | [Demographic](#) | [Monitoring Parameter](#) | [Other Appointment](#)

Encounter No: 0024 Actual Visit Date: 14/10/2019 Attending Practitioner: Visit Location: SOPD Room No/Bed No: Rx No: SURG0000824627

**PHARMACY ORDER**

Prepared Date/Time  9

**PRESCRIPTION**

PROCEED TO DISPENSING  Prepare  Label

	Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Remarks	Prev Disp	Status
1 / 1	Smof Kabiven Peripheral 1000kcal, 1.5L	1448 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag	<a href="#">Remarks</a>	0 bag	VERIFIED

**Figure 3.2.1-10 PN Preparation**

**STEP 9**

Click on the  Prepare button to prepare PN order and alert message will be displayed as per Figure 3.2.1-9

**CONFIRMATION**

INFO0577: Please make sure already print worksheet and label before proceed to dispensing stage. Do you want to proceed with the preparation?

Cancel
10
No

**Figure 3.2.1-9 Prepare Order Alert Message**

**STEP 10**

Click on the  button to confirm prepare order

**Note**

*Proceed to Next Stage function will allow user advance to the next screen for each patient record.*

### 3.2.1.1 Alternate Drug

#### Note

- Preparation for Commercial screen allows user to dispense different drug from existing ordered drug with conditionation, alternate drug should contains same active ingredient and same administration route.
- To proceed with Alternate Drug PN Order, repeat **Step 1 to 4** from section [3.2.1 Preparation for Commercial](#).
- All these field will be displayed automatically by system as below:
  - Location
  - Ordered Drug Code
  - Dosage Form
  - Ordered Drug Description

**ALTERNATE DRUG** 5

Location	UNIT NUTRISI PARENTERAL	Ordered Drug Code	PNA00001
Dosage Form	Parenteral Solution	Ordered Drug Description	Nutriflex Lipid Peri 955kcal,1.25L
Route	INF	Alternate Drug Name	Smof Kabiven Central 1600kcal, 1.5L <span style="float: right; border: 1px solid red; border-radius: 50%; padding: 2px;">1</span>

**BATCH DETAIL**

No	Drug Name	Dosage Form	Route	Batch	Expiry Date	Available Qty	Units	Qty to Dispense
1	Smof Kabiven Central 1600kcal, 1.5L	Parenteral Solution	INF	DMHPSF14	07/04/2015	79	bag	2

Reason	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">3</span>	Remark	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">4</span>
--------	---	--------	---

Figure 3.2.1.1-1 Alternate Drug

#### STEP 1

Select the **Alternate Drug Name** from dropdown box, example:

- Kabiven Periferal 1400kcal, 2.0L
- Kabiven Periferal 1000kcal, 1.5L
- PN Paed Soln 2 (72kcal, Dext 14%)
- PN Paed Soln 3 (48kcal, Dext 10%)
- Smof Kabiven Central 800kcal, 1.2L
- Kabiven Central 1900kcal, 2.0L
- Smof Kabiven Central 1100kcal, 1.0L
- Nutriflex Lipid Peri 1910kcal, 2.5L
- Nutriflex Lipid Peri 1435kcal, 1.875L
- Kabiven Central 900kcal, 1.0L
- Smof Kabiven Central 1600kcal, 1.5L
- PN Paed Soln 1 (72kcal, Dext 14%, K nil)

**STEP 2**

Enter **Allocate Qty** field as per Figure 3.2.1.1-1

**STEP 3**

Enter **Reason** field if applicable

**STEP 4**

Enter **Remark** field if applicable

**STEP 5**

Click on the  button to confirm save record and alert message will be displayed as per Figure 3.2.1.1-2

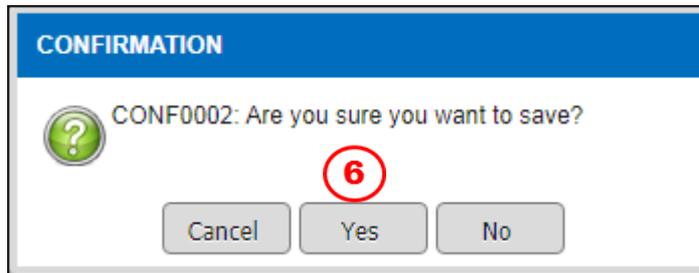


Figure 3.2.1.1-2 Confirmation Alert Message

**STEP 6**

Click on the  button to confirm save record

**Note**

- System will display the alternate drug in green row as per Figure 3.2.1.1-3.
- Intervention and Hold/Resume Order still can be done in preparation stage.
- Steps of Intervention can be referred at 3.1.1 sections.
- Steps of Hold/Resume Order can be referred at 3.1.2 sections.

PN PREPARATION

 Prescription X

	Mykad <span style="background-color: #ccc; padding: 2px;">[REDACTED]</span>	Age 74 Years 07 Months 06 Days	Gender Female	MRN HSM000012
Address <span style="background-color: #ccc; padding: 2px;">[REDACTED]</span>	Phone And Email <span style="background-color: #ccc; padding: 2px;">[REDACTED]</span>	Diagnosis <span style="background-color: #ccc; padding: 2px;">[REDACTED]</span>	No known Allergies	
Upload Photo 	Height <input type="text" value="155"/> cm Weight <input type="text" value="60"/> kg BMI/BSA 25 / 1.61 m <sup>2</sup> <span style="color: red;">G6PD</span> <input type="button" value="Update"/> (Last Updated : )	Nationality : Warganegara		

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

Encounter No: 0019 Actual Visit Date: 14/10/2019 Visit Location: MOPD Room No/Bed No: Rx No: MED0000824613 Order By: [REDACTED] Transcribed By: [REDACTED]

Original Prescription Serial No:

PHARMACY ORDER

Prepared Date/Time  

PRESCRIPTION 
 PROCEED TO DISPENSING  Prepare  Label

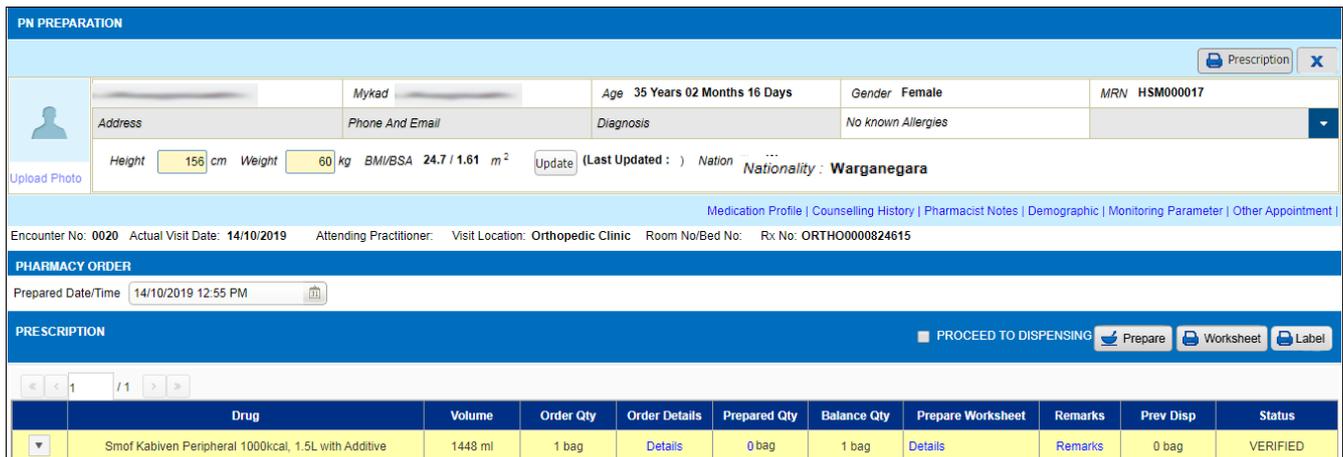
	Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Remarks	Prev Disp	Status
▼	Smof Kabiven Peripheral 1000kcal, 1.5L	1448 ml	1 bag		0 bag	0 bag		0 bag	
	Lipid Soln 36ml, Lipid + Water Soluble Vitamin (6.4g/36ml)	1448 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag		0 bag	

Figure 3.2.1.1-3 PN Preparation

### 3.2.2 Preparation for Commercial Add Additive

#### Note

- Preparation (commercial add additive) allows user to add additional component in existing commercial bag.
- To proceed with Preparation for Commercial Add Additive, repeat **Step 1 to 4** from section **3.2.1 Preparation for Commercial**.



**PN PREPARATION**

Prescription X

Mykad: [Redacted] Age: 35 Years 02 Months 16 Days Gender: Female MRN: HSM000017

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

Height: 156 cm Weight: 60 kg BMI/BSA: 24.7 / 1.61 m<sup>2</sup> (Last Updated: ) Nationality: Warganegara

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

Encounter No: 0020 Actual Visit Date: 14/10/2019 Attending Practitioner: Visit Location: Orthopedic Clinic Room No/Bed No: Rx No: ORTHO0000824615

**PHARMACY ORDER**

Prepared Date/Time: 14/10/2019 12:55 PM

**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label

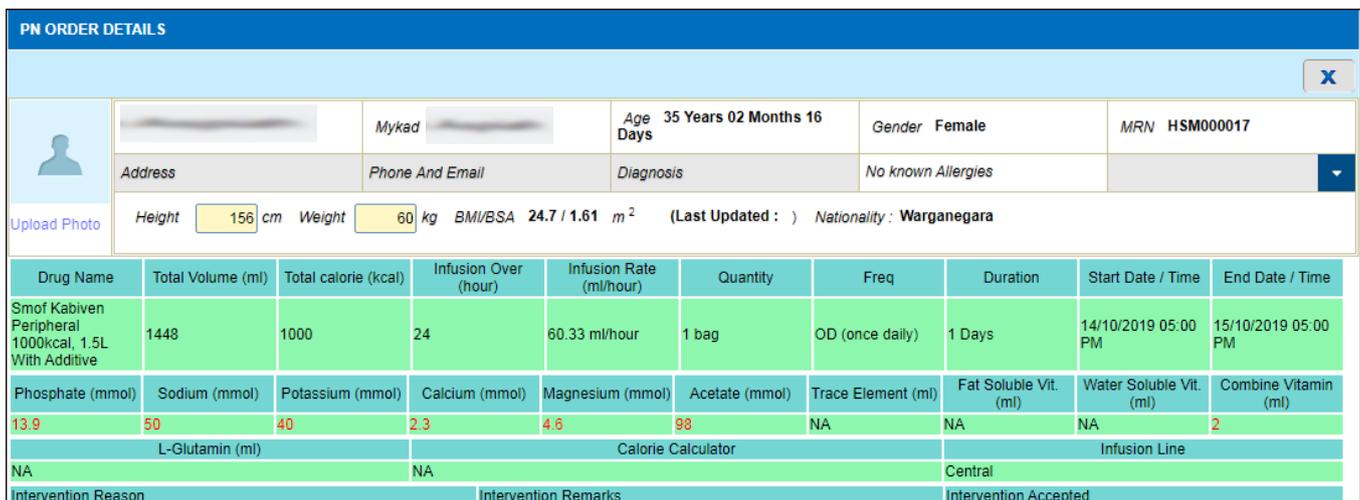
Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
Smof Kabiven Peripheral 1000kcal, 1.5L with Additive	1448 ml	1 bag	<a href="#">Details</a>	0 bag	1 bag	<a href="#">Details</a>	Remarks	0 bag	VERIFIED

Figure 3.2.2-1 PN Preparation

#### Note

#### Order Details

- Click on the [Details](#) hyperlink to view order details as per Figure 3.2.2-2.



**PN ORDER DETAILS**

Mykad: [Redacted] Age: 35 Years 02 Months 16 Days Gender: Female MRN: HSM000017

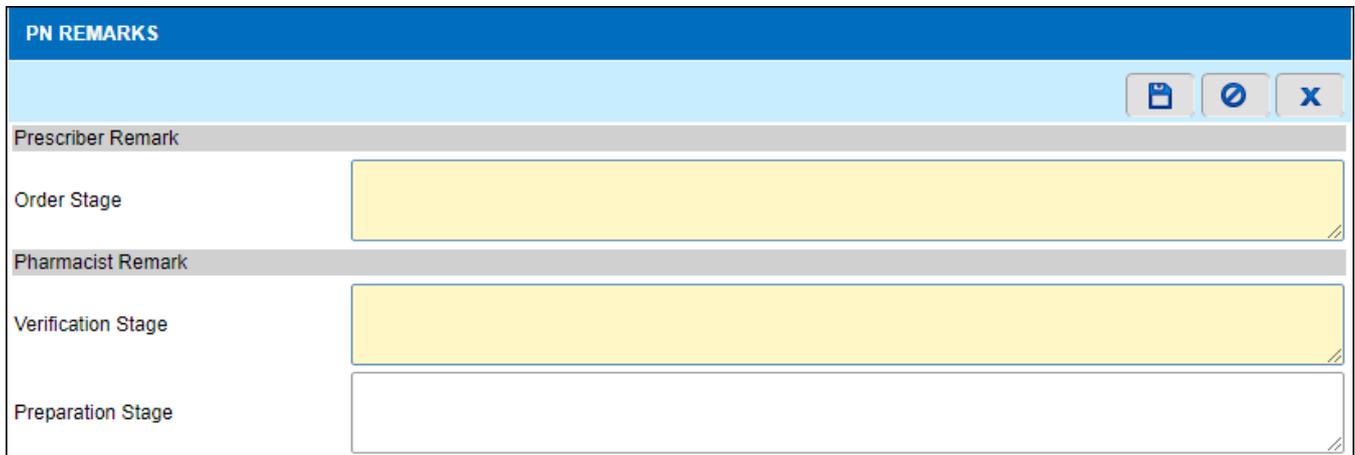
Address: [Redacted] Phone And Email: [Redacted] Diagnosis: [Redacted] No known Allergies

Height: 156 cm Weight: 60 kg BMI/BSA: 24.7 / 1.61 m<sup>2</sup> (Last Updated: ) Nationality: Warganegara

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Infusion Rate (ml/hour)	Quantity	Freq	Duration	Start Date / Time	End Date / Time
Smof Kabiven Peripheral 1000kcal, 1.5L With Additive	1448	1000	24	60.33 ml/hour	1 bag	OD (once daily)	1 Days	14/10/2019 05:00 PM	15/10/2019 05:00 PM
Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Acetate (mmol)	Trace Element (ml)	Fat Soluble Vit. (ml)	Water Soluble Vit. (ml)	Combine Vitamin (ml)
13.9	50	40	2.3	4.6	98	NA	NA	NA	2
L-Glutamin (ml)			Calorie Calculator				Infusion Line		
NA			NA				Central		
Intervention Reason			Intervention Remarks				Intervention Accepted		

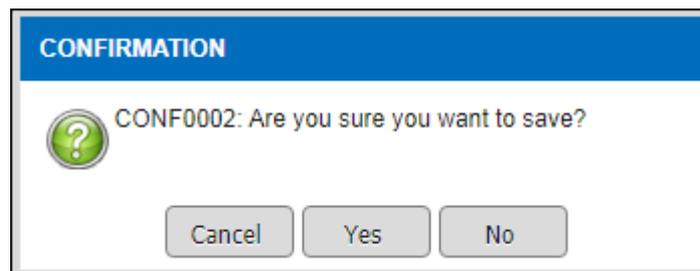
Figure 3.2.2-2 PN Order Details

**Remarks**

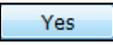


**Figure 3.2.2-3 PN Order Details**

- Click on the **Remarks** hyperlink to display PN Remark as per Figure 3.2.2-3.
  - a) Prescriber Remark
    - **Order Stage** to be retrieved upon ordering..
  - b) Pharmacist Remark
    - **Verification Stage** to be retrieved during verification.
    - **Preparation Stage** to be retrieved during preparation.
- The  button to save record alert message will be displayed as per Figure 3.2.2-3.



**Figure 3.2.2-4 Confirmation Alert Message**

- The  button to confirm save.
- The  button to close PN Remarks screen.
- The  button to cancel remark record.



**PN PREPARATION** Prescription X

Mykad: 840729145506 | Age: 35 Years 02 Months 16 Days | Gender: Female | MRN: HSM000017  
 Address: | Phone And Email: | Diagnosis: | No known Allergies:

Height: 156 cm | Weight: 60 kg | BMI/BSA: 24.7 / 1.61 m<sup>2</sup> | Update (Last Updated: ) | Nationality: Warganegara

Encounter No: 0020 | Actual Visit Date: 14/10/2019 | Attending Practitioner: | Visit Location: Orthopedic Clinic | Room No/Bed No: | Rx No: ORTHO0000824615

**PHARMACY ORDER**

Prepared Date/Time: 14/10/2019 12:55 PM

**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
Smof Kabiven Peripheral 1000kcal, 1.5L with Additive	1448 ml	1 bag	<a href="#">Details</a>	0 bag	1 bag	<a href="#">Details</a>	<a href="#">Remarks</a>	0 bag	VERIFIED

Figure 3.2.2-5 PN Preparation

**STEP 1**

Click on the [0 bag](#) link to allocate quantity and Item Batch Details screen will display as per Figure 3.2.2-6

**ITEM BATCH DETAILS** 3

Drug Code: PNA00020 | Default SKU: bag  
 Drug Name: Smof Kabiven Peripheral 1000kcal, 1.5L

**BATCH DETAIL** [ 1 - 1 / 1 ]

Batch No.	Expiry Date	Available Qty	Balance Qty	Allocated Qty
2323	02/01/2021	2221	1	1

Total Location Quantity: 2221 | Total Allocated Quantity: 1

Figure 3.2.2-6 Item Batch Details

**STEP 2**

Enter **Allocated Qty** field

**STEP 3**

Click on the  button to save record

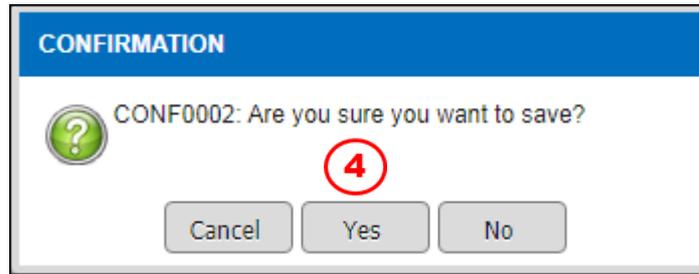
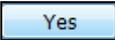


Figure 3.2.2-7 Confirmation Alert Message

**STEP 4**

Click on the  button to confirm save

PN PREPARATION
Prescription X

	MXXXXXXXX X/X XXXXXXXX	Mykad 840729145506	Age 35 Years 02 Months 16 Days	Gender Female	MRN HSM000017
Address	Phone And Email	Diagnosis	No known Allergies		

Height  cm
Weight  kg
BMI/BSA 24.7 / 1.61 m<sup>2</sup>
Update (Last Updated : )
Nationality : Warganegara

Nationality : Warganegara

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

Encounter No: 0020 Actual Visit Date: 14/10/2019 Attending Practitioner: Visit Location: Orthopedic Clinic Room No/Bed No: Rx No: ORTHO0000824615

PHARMACY ORDER

Prepared Date/Time

PRESCRIPTION

 PROCEED TO DISPENSING
 Prepare
Worksheet
Label

	Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
1 / 1	Smof Kabiven Peripheral 1000kcal, 1.5L with Additive	1448 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag	<a href="#">Details</a>	Remarks	0 bag	VERIFIED

Figure 3.2.2-8 PN Preparation

**STEP 5**

Click on the  button to prepare worksheet as per Figure 3.2.2-8

**Note**

- **Macronutrient, Vitamin and Electrolytes** field will automatically display by system.

**PREPARE WORKSHEET**

Intervention  Auto Allocation

**DETAIL**

**Macronutrient**  
 Glucose  g  
 Lipid  g  
 Protein  g

**Vitamin**  
 Vitamin Solution  ml  
 Water soluble  ml  
 Fat soluble  ml

**Trace elements**  ml  
 Acetate  mmol  
 L-Glutamin  ml

**Electrolytes**  
 Sodium(Natrium),Na+  mmol  
 Potassium(Kalium),K+  mmol  
 Calcium,Ca2+  mmol  
 Magnesium,Mg+  mmol  
 Phosphate,(PO4)2-  mmol

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolarity (mOsmol)	Content						
						Acetate (mmol)	Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Chloride (mmol)
<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0.1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Sodium Chloride 3% 500mL IV soln	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Potassium Chloride 1g/10ml Injection	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0.25"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Trace Element - Paediatric (Peditrace) 10mL Inj	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Trace Elements						
<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Combine Vitamin (Water & Fat Soluble)						
<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Water Soluble Vitamins						
<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Fat Soluble Vitamins						
<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	L-Glutamin						
Total Preparation	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
					Content/L	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Calculate

Figure 3.2.2-9 Prepare Worksheet

**STEP 6**

Click on the item dropdown to select the item before allocate

**Note**

- Able to set default drug in Maintenance - Pharmacy - PN Source Content screen.
- Drug listed should exists in dispense location unit catalogue.

**STEP 7**

Click on the Calculate button to calculate the item volume and order quantity as per Figure 3.2.2-10

PREPARE WORKSHEET
8

Intervention  Auto Allocation 📄 ✕

DETAIL

**Macronutrient**

Glucose  g

Lipid  g

Protein  g

**Electrolytes**

Sodium(Natrium),Na+  mmol

Potassium(Kalium),K+  mmol

**Vitamin**

Vitamin Solution  ml

Water soluble  ml

Fat soluble  ml

Calcium, Ca2+  mmol

Magnesium, Mg+  mmol

**Trace elements**

Trace elements  ml

Acetate  mmol

L-Glutamin  ml

Phosphate, (PO4)2-  mmol

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolarity (mOsmol)	Content						
						Acetate (mmol)	Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Chloride (mmol)
<input type="text" value="0"/>	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Potassium Dihydrogen Phosphate Injection	<input type="text" value="0.1"/>	1 amp	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0.2"/>	<input type="text" value="0"/>	<input type="text" value="0.1"/>	<input type="text" value="0"/>	<input type="text" value="0.1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Sodium Chloride 3% 500mL IV soln	<input type="text" value="1.96"/>	1 bott	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="2.02"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>
<input type="text" value="0"/>	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Calcium Gluconate 10% Injection	<input type="text" value="4.42"/>	1 amp	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="2.92"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Magnesium Sulphate 50% Injection (49.3%/5mL)	<input type="text" value="0.13"/>	1 amp	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0.6"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0.25"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	Trace Elements						
<input type="text" value="0"/>	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	Combine Vitamin (Water & Fat Soluble)						
<input type="text" value="0"/>	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	Water Soluble Vitamins						
<input type="text" value="0"/>	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	Fat Soluble Vitamins						
<input type="text" value="0"/>	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	L-Glutamin						
<b>Total Preparation</b>	<input type="text" value="6.61"/>			<input type="text" value="0"/>	<input type="text" value="868.38"/> mOsmol/L	<input type="text" value="0"/>	<input type="text" value="0.1"/>	<input type="text" value="1"/>	<input type="text" value="0.1"/>	<input type="text" value="1"/>	<input type="text" value="0.25"/>	<input type="text" value="1"/>
					Content/L	<input type="text" value="0"/>	<input type="text" value="15.13"/>	<input type="text" value="151.29"/>	<input type="text" value="15.13"/>	<input type="text" value="151.29"/>	<input type="text" value="37.82"/>	<input type="text" value="151.29"/>

Figure 3.2.2-10 Prepare Worksheet

**STEP 8**

Click on the button to save record and the system will display as per Figure 3.2.2-13

**Note**

- Once user click on the Intervention button, system will reset the allocated qty to '0', user able to do intervention and re-calculate the worksheet and do allocation again
- User able to allocate manually by click on  then alert message will be display as Figure 3.2.2-11

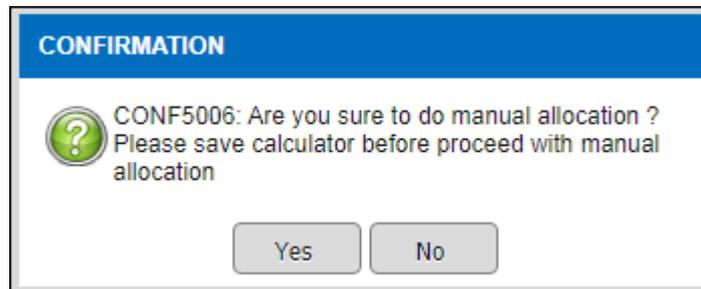


Figure 3.2.2-11 Confirmation Message

- Click Yes button then item batch details will be display as Figure 3.2.2-12

**ITEM BATCH DETAILS**

Drug Code:  Default SKU:

Drug Name:

**BATCH DETAIL**

[ 1 - 1 / 1 ]

Batch No.	Expiry Date	Available Qty	Balance Qty	Allocated Qty
17503011	12/12/2020	10	1	1

Total Location Quantity:  Total Allocated Quantity:

**Figure 3.2.2-12 Item Batch Details**

- Key in allocated quantity and the save the record

**PREPARE WORKSHEET**

Intervention  Auto Allocation

**DETAIL**

Macronutrient	Vitamin	Trace elements	
Glucose <input type="text" value="0"/> g	Vitamin Solution <input type="text" value="0"/> ml	<input type="text" value="0"/> ml	
Lipid <input type="text" value="0"/> g	Water soluble <input type="text" value="0"/> ml	Acetate <input type="text" value="0"/> mmol	
Protein <input type="text" value="0"/> g	Fat soluble <input type="text" value="0"/> ml	L-Glutamin <input type="text" value="0"/> ml	
<b>Electrolytes</b>			
Sodium(Natrium),Na+ <input type="text" value="1"/> mmol	Calcium,Ca2+ <input type="text" value="1"/> mmol	Phosphate,(PO4)2- <input type="text" value="0.1"/> mmol	
Potassium(Kalium),K+ <input type="text" value="0"/> mmol	Magnesium,Mg+ <input type="text" value="0.25"/> mmol		

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolarity (mOsmol)	Content							
						Acetate (mmol)	Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Chloride (mmol)	
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Potassium Dihydrogen Phosphate Injection	0.1	1 amp	0 amp	0	0.2	0	0.1	0	0.1	0	0	0	0
Sodium Chloride 3% 500mL IV soln	1.96	1 bott	0 bott	0	2.02	0	0	1	0	0	0	1	0
Calcium Gluconate 10% Injection	4.42	1 amp	1 amp	0	2.92	0	0	0	0	1	0	0	0
Magnesium Sulphate 50% Injection (49.3%/5mL)	0.13	1 amp	1 amp	0	0.6	0	0	0	0	0	0.25	0	0
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Trace Elements							
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Combine Vitamin (Water & Fat Soluble)							
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Water Soluble Vitamins							
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Fat Soluble Vitamins							
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	L-Glutamin							
<b>Total Preparation</b>	<b>6.61</b>			<b>0</b>	<b>888.38</b> mOsmol/L	<input type="text" value="0"/>	<input type="text" value="0.1"/>	<input type="text" value="1"/>	<input type="text" value="0.1"/>	<input type="text" value="1"/>	<input type="text" value="0.25"/>	<input type="text" value="1"/>	<input type="text" value="0"/>
					Content/L	<input type="text" value="0"/>	<input type="text" value="15.13"/>	<input type="text" value="151.29"/>	<input type="text" value="15.13"/>	<input type="text" value="151.29"/>	<input type="text" value="37.82"/>	<input type="text" value="151.29"/>	<input type="text" value="0"/>

**Figure 3.2.2-13 Prepare Worksheet**

**Note**

- **Calorie (kcal), Osmolarity(mOsmol), Content and Total Preparation** after click calculate button these value will be calculated and displayed automatically by system as Figure 3.2.2-13.
- Checkbox  **Auto Allocation** will auto untick when user do manual allocate.
- **Allocated Quantity** column will be calculated and displayed automatically by system after click on the save button as per Figure 3.2.2-15.



**PN PREPARATION**

Prescription X

Mykad: [redacted] Age: 58 Years 01 Months 13 Days Gender: Male MRN: HSM000015

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

Height: 173 cm Weight: 80 kg BMI/BSA: 26.7 / 1.96 m<sup>2</sup> Update (Last Updated: ) Nationality: Warganegara

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

Encounter No: 0005 Actual Admission Date: 30/10/2019 Attending Practitioner: Visit Location: FBW FILLING STATION Room No/Bed No: Rx No: FBW\_FILL0000824856

**PHARMACY ORDER**

Prepared Date/Time: 30/10/2019 04:08 PM

**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label

9

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Soln 100ml Starter Dext 10% with Additive	100 ml	1 bag	Details	1 bag	1 bag	Details	Remarks	0 bag	VERIFIED

Figure 3.2.2-14 Prepare Preparation

**STEP 9**

Click on the  button to print the worksheet

**Note**

Worksheet will display as per Figure 3.2.2-15.

**PARENTERAL NUTRITION WORKSHEET**  
**MINISTRY OF HEALTH**  
**Hospital Seri Manjung**

Patient Name : SXXXXX XXXX XXX XXXXXXXXX      Worksheet : A001-301019  
MRN : HSM000015      Prepared Date/Time : 30/10/2019 04:08 PM  
Ward/Bed No : FBW FILLING STATION      Prescription # : FBW\_FILL0000824856  
Age : 58 Years 01 Months 13 Days  
Gender : Male  
Body Weight : 80 kg

DRUG NAME	VOLUME (ml)	QUANTITY	BATCH NO	COMPONENT DETAIL (PER DAY)
PN Soln 100ml Starter Dext 10%	100	1 bag	T665	-
Sodium Chloride 3% 500mL IV soln	1.96	1 bottle	NA	1 mmol
Potassium Dihydrogen Phosphate Injection	0.1	1 ampoule	NA	0.1 mmol
Magnesium Sulphate 50% Injection (49.3%/5mL)	0.13	1 ampoule	646068	0.25 mmol
Calcium Gluconate 10% Injection	4.42	1 ampoule	17503011	1 mmol
TPN Volume Bag	106.61	1 Bag		

Worksheet Generated By : \_\_\_\_\_      Date : 30/10/2019  
Worksheet and Label Checked By : \_\_\_\_\_      Supervised By : \_\_\_\_\_  
Bag Prepared By : \_\_\_\_\_  
Final Product Checked By : \_\_\_\_\_

Figure 3.2.2-15 Sample of PN Worksheet

**Note**

Sample of PN Worksheet as per Figure 3.2.2-15.

**PN PREPARATION** Prescription X

Mykad \_\_\_\_\_ Age 58 Years 01 Months 13 Days Gender Male MRN HSM000015  
Address \_\_\_\_\_ Phone And Email \_\_\_\_\_ Diagnosis No known Allergies  
Height 173 cm Weight 80 kg BMI/BSA 26.7 / 1.96 m<sup>2</sup> Update (Last Updated : ) National Nationality : Warganegara

Encounter No: 0005 Actual Admission Date: 30/10/2019 Attending Practitioner: Visit Location: FBW FILLING STATION Room No/Bed No: Rx No: FBW\_FILL0000824856

**PHARMACY ORDER**  
Prepared Date/Time 30/10/2019 04:08 PM

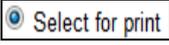
**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label

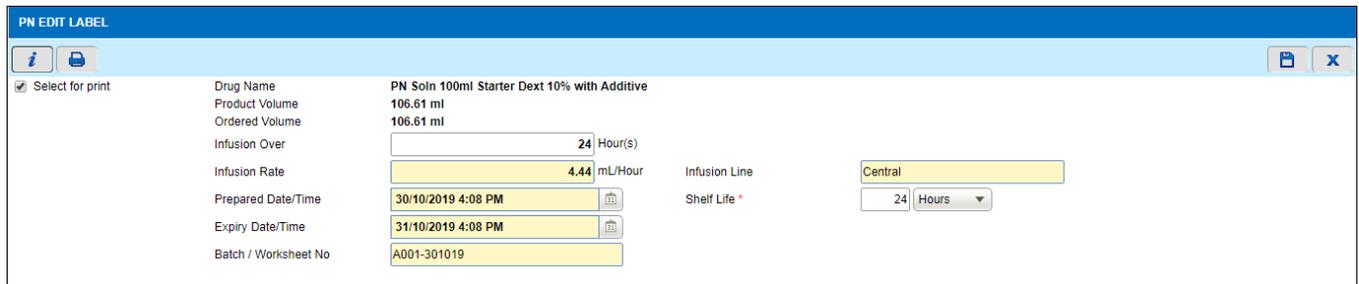
Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Soln 100ml Starter Dext 10% with Additive	100 ml	1 bag	Details	1 bag	1 bag	Details	Remarks	0 bag	VERIFIED

Figure 3.2.2-16 PN Preparation

**Note**

**Edit Label**

- Click on the  button to edit label as per Figure 3.2.2.16 and PN Edit Label window will display as per Figure 3.2.2-17.
- Select the  radio button to print label.
- User allowed to edit **Infusion Over**, **Date Prepared** and **Shelf Life** field.
- **Expiry Date** field will automatically display after filling the **Shelf Life** field.
- **Drug Name**, **Total Volume**, **Infusion Rate** and **Batch No** field will be displayed automatically by system.
- The  button to print label.
- The  button to close PN Edit Label window.



**PN EDIT LABEL**

Select for print

Drug Name	PN Soln 100ml Starter Dext 10% with Additive		
Product Volume	106.61 ml		
Ordered Volume	106.61 ml		
Infusion Over	<input type="text" value="24"/>	Hour(s)	
Infusion Rate	<input type="text" value="4.44"/>	mL/Hour	Infusion Line <input type="text" value="Central"/>
Prepared Date/Time	<input type="text" value="30/10/2019 4:08 PM"/>		Shelf Life * <input type="text" value="24"/> <input type="text" value="Hours"/>
Expiry Date/Time	<input type="text" value="31/10/2019 4:08 PM"/>		
Batch / Worksheet No	<input type="text" value="A001-301019"/>		

**Figure 3.2.2-17 PN Edit Label**

**Note**

- PN Label will display as per figure 3.2.2-18.
- Additional content will be bolded description and value.

<b>HOSPITAL SERI MANJUNG</b>		
PN Soln 100ml Starter Dext 10% with Additive		
NAME : _____		
ID NO : _____		
AGE : 58 Years 01 Months 13 Days		
MRN : HSM000015	WARD/BED NO: FBW FILLING STATION	
Product Volume	106.61	ml/bag
Ordered	106.61	ml/bag
<b>Content</b>	<b>/ kg</b>	<b>/ bag</b>
Protein (g)	0.04	3.3
Dextrose (g)	0.12	10
Lipid (g)	0	0
<b>Sodium (mmol)</b>	<b>0.03</b>	<b>2.5</b>
<b>Potassium (mmol)</b>	<b>0</b>	<b>0.1</b>
<b>Calcium (mmol)</b>	<b>0.03</b>	<b>2.2</b>
<b>Magnesium (mmol)</b>	<b>0.01</b>	<b>0.5</b>
<b>Phosphate (mmol)</b>	<b>0.01</b>	<b>0.86</b>
<b>Chloride (mmol)</b>	<b>0.01</b>	<b>1</b>
Acetate (mmol)	0	0
Trace Element (ml)	0	0
Vitamins (ml)	0	0
Osmolarity (mOsm/l)	10.74	859.58
L-Glutamin (g)	0	0
Admin Date/Time :		
Infusion Rate	4.44	mL/Hrs
Infusion Over	24	Hrs
Prepared Date	30/10/2019 4:08 PM	
Worksheet ID :	Expiry Date :	Price : RM
A001-301019	31/10/2019	
Do not use if any visible solid particles, growth or precipitation appears.		
Store in refrigerator (2-8 °C). Protect from light (Once open use within 24 Hours) Ensure PN Solution is at room temperature before infusion.		
TO BE INFUSED : CENTRAL LINE		

Figure 3.2.2-18 Sample of PN Label

**PN PREPARATION**

Prescription X

Mykad: [REDACTED] Age: 58 Years 01 Months 13 Days Gender: Male MRN: HSM000015

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

Height: 173 cm Weight: 80 kg BMI/BSA: 26.7 / 1.96 m<sup>2</sup> Update (Last Updated: ) Nationality: Warganegara

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

Encounter No: 0005 Actual Admission Date: 30/10/2019 Attending Practitioner: Visit Location: FBW FILLING STATION Room No/Bed No: Rx No: FBW\_FILL0000824856

**PHARMACY ORDER**

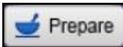
Prepared Date/Time: 30/10/2019 04:08 PM 10

**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Soln 100ml Starter Dext 10% with Additive	100 ml	1 bag	Details	1 bag	1 bag	Details	Remarks	0 bag	VERIFIED

Figure 3.2.2-19 PN Preparation

**STEP 10**

Click on the  button to prepare PN order and alert message will be displayed as per Figure 3.2.2-18

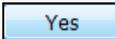
**CONFIRMATION**

 INFO0577: Please make sure already print worksheet and label before proceed to dispensing stage. Do you want to proceed with the preparation? 11

Cancel Yes No

Figure 3.2.2-20 Preparation Confirmation Alert Message

**STEP 11**

Click on the  button to confirm prepare order

**Note**

Proceed to Next Stage function will allow user to advance to the next stage screen for each patient record.

### 3.2.3 Preparation for Compounded Bag

#### 3.2.3.1 Preparation Compounded 3 in 1 Bag

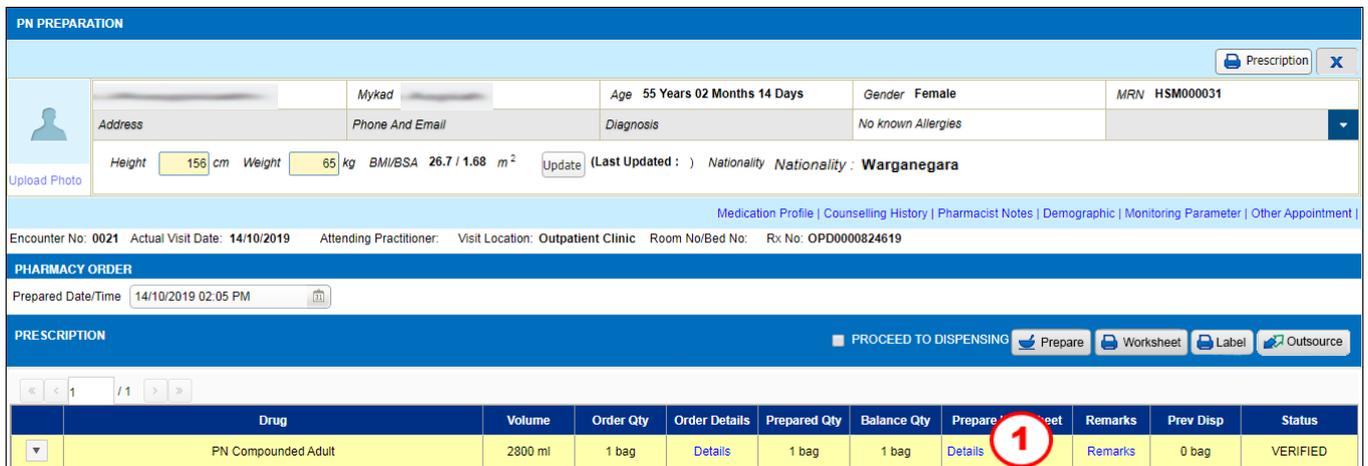
##### Note

- Preparation (compounded) will allow user to prepare compounded bag. Worksheet and label can be printed after completing final calculation in preparation.
- Preparation for compounded have two product categories as 3 in 1 bag and 2 in 1 bag.
- To proceed with Preparation for Compounded, repeat **Step 1 to 4** from section **3.2.1 Preparation for Commercial**.

##### Order Details



- Click on the [Details](#) hyperlink (Order Details column) to view order details as per Figure 3.2.3.1-2.



**PN PREPARATION**

Prescription [X]

Mykad: [Redacted] Age: 55 Years 02 Months 14 Days Gender: Female MRN: HSM000031

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

Height: 156 cm Weight: 65 kg BMI/BSA: 26.7 / 1.68 m<sup>2</sup> (Last Updated: ) Nationality: Warganegara

Encounter No: 0021 Actual Visit Date: 14/10/2019 Attending Practitioner: Visit Location: Outpatient Clinic Room No/Bed No: Rx No: OPD0000824619

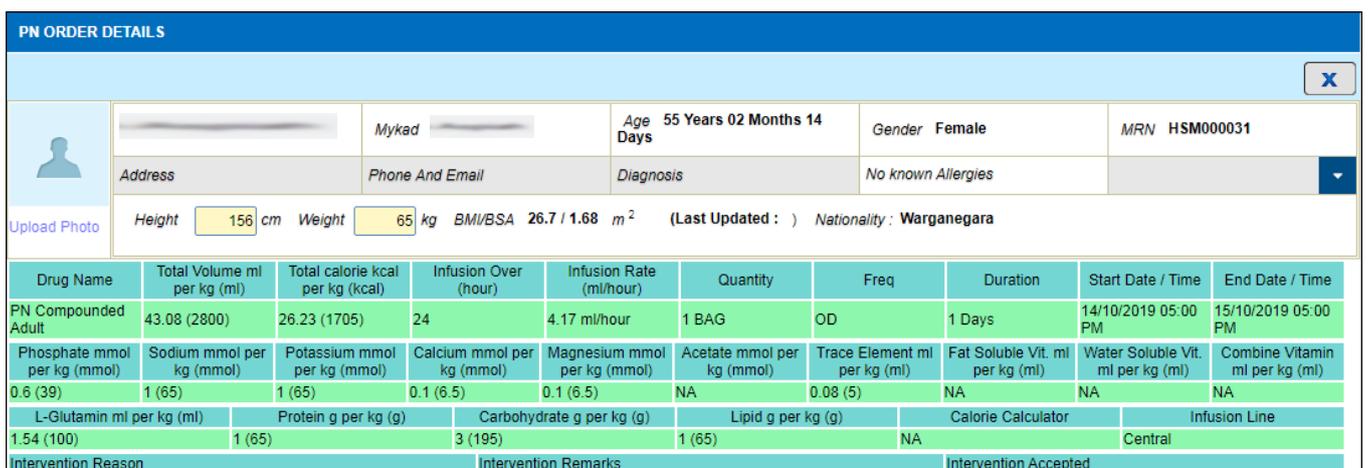
**PHARMACY ORDER**

Prepared Date/Time: 14/10/2019 02:05 PM

**PRESCRIPTION** [PROCEED TO DISPENSING] [Prepare] [Worksheet] [Label] [Outsource]

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepared Sheet	Remarks	Prev Disp	Status
PN Compounded Adult	2800 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag	<a href="#">Details</a> <b>1</b>	Remarks	0 bag	VERIFIED

Figure 3.2.3.1-1 PN Preparation



**PN ORDER DETAILS**

Mykad: [Redacted] Age: 55 Years 02 Months 14 Days Gender: Female MRN: HSM000031

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

Height: 156 cm Weight: 65 kg BMI/BSA: 26.7 / 1.68 m<sup>2</sup> (Last Updated: ) Nationality: Warganegara

Drug Name	Total Volume ml per kg (ml)	Total calorie kcal per kg (kcal)	Infusion Over (hour)	Infusion Rate (ml/hour)	Quantity	Freq	Duration	Start Date / Time	End Date / Time
PN Compounded Adult	43.08 (2800)	26.23 (1705)	24	4.17 ml/hour	1 BAG	OD	1 Days	14/10/2019 05:00 PM	15/10/2019 05:00 PM
Phosphate mmol per kg (mmol)	Sodium mmol per kg (mmol)	Potassium mmol per kg (mmol)	Calcium mmol per kg (mmol)	Magnesium mmol per kg (mmol)	Acetate mmol per kg (mmol)	Trace Element ml per kg (ml)	Fat Soluble Vit. ml per kg (ml)	Water Soluble Vit. ml per kg (ml)	Combine Vitamin ml per kg (ml)
0.6 (39)	1 (65)	1 (65)	0.1 (6.5)	0.1 (6.5)	NA	0.08 (5)	NA	NA	NA
L-Glutamin ml per kg (ml)	Protein g per kg (g)	Carbohydrate g per kg (g)	Lipid g per kg (g)	Calorie Calculator	Infusion Line				
1.54 (100)	1 (65)	3 (195)	1 (65)	NA	Central				
Intervention Reason			Intervention Remarks			Intervention Accepted			

Figure 3.2.3.1-2 PN Order Details

##### STEP 1



- Click on the [Details](#) hyperlink (Prepare Worksheet column) to prepare worksheet as per Figure 3.2.3.1-3

**PREPARE WORKSHEET**

Intervention  Auto Allocation

**DETAIL**

TPN volume:  ml    Energy required:  kcal    Product category:  3 in 1    2 in 1 2

**Macronutrient**  
 Glucose:  g  
 Lipid:  g  
 Protein:  g

**Vitamin**  
 Vitamin Solution:  ml  
 Water soluble:  ml  
 Fat soluble:  ml

**Trace elements**:  ml  
**Acetate**:  mmol  
**L-Glutamin**:  ml

**Electrolytes**  
 Sodium(Natrium),Na+:  mmol  
 Potassium(Kalium),K+:  mmol  
 Calcium,Ca2+:  mmol  
 Magnesium,Mg+:  mmol  
 Phosphate,(PO4)2-:  mmol

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolality (mOsmol)	Content										
						Lipid (g)	Glucose (g)	Protein (g)	Acetate (mmol)	Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Chloride (mmol)	
	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">3</span> <input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="65"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Amino acid 15% (Aminoplasmal) 500ml IV Soln	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="195"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="39"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Sodium Chloride 3% 500mL IV soln	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="65"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Potassium Chloride 1g/10ml Injection	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="65"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="6.5"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Trace Element - Paediatric (Peditrace) 10mL Inj	<input type="text" value="5"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Trace Elements										
	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Combine Vitamin (Water & Fat Soluble)										
	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Water Soluble Vitamins										
	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Fat Soluble Vitamins										
	<input type="text" value="100"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	L-Glutamin										
	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Water For Injection										
Total Preparation	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
						Content/L	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

4

TOTAL content of Calcium and Phosphate	NPC:N Ratio	<input type="text" value=""/>
TOTAL content of Magnesium and Calcium	Calcium + Phosphate=	<input type="text" value="0"/> mmol/100ml
	Calcium + Magnesium=	<input type="text" value="0"/> mmol/100ml

Figure 3.2.3.1-3 Prepare Worksheet

**STEP 2**

Select on the  3 in 1  2 in 1 radio button for product category

**Note**

- Value at top section will be displayed based on value to be prepared by pharmacist based on formula.
- **Macronutrient, Vitamin and Electrolytes** field will be displayed automatically by system.
- **Item selected, Volume (ml) and Content** column will be displayed automatically by system.

**STEP 3**

Select the item from the drop down box

**STEP 4**

Click on the **Calculate** button to calculate PN content value

**Note**

**Volume (ml), Order Quantity, Calorie (kcal), Osmolrity (mOsmol), Content and Total Preparation** will be automatically calculated and displayed by system as per figure 3.2.3.1-4.

**PREPARE WORKSHEET**

Intervention  Auto Allocation 📄 ✕

**DETAIL**

TPN volume  ml      Energy required  kcal      Product category  3 in 1  2 in 1

**Macronutrient**

Glucose  g      Vitamin Solution  ml      Trace elements  ml

Lipid  g      Water soluble  ml      Acetate  mmol

Protein  g      Fat soluble  ml      L-Glutamin  ml

**Electrolytes**

Sodium(Natrium),Na+  mmol      Calcium,Ca2+  mmol      Phosphate,(PO4)2-  mmol

Potassium(Kalium),K+  mmol      Magnesium,Mg+  mmol

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolarity (mOsmol)	Content										
						Lipid (g)	Glucose (g)	Protein (g)	Acetate (mmol)	Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Chloride (mmol)	
Fat emulsion, SMOFilipid 20% 100ml IV Soln	325	4 bott	0	585	94.25	65	0	0	0	0	0	0	0	0	0	0
Dextrose 50% 10mL Inj	390	39 amp	0	780	1084.2	0	195	0	0	0	0	0	0	0	0	0
Amino acid 15% (Aminoplasma) 500ml IV Soln	433.33	1 bott	0	260	559	0	0	65	0	0	0	0	0	0	0	0
Potassium Dihydrogen Phosphate Injection	39	4 amp	0	0	78	0	0	0	0	0	39	0	39	0	0	0
Sodium Chloride 3% 500mL IV soln	127.45	1 bott	0	0	131.27	0	0	0	0	0	0	65	0	0	0	65
Potassium Chloride 1g/10ml Injection	19.4	2 amp	0	0	52.44	0	0	0	0	0	0	26	0	0	0	26
Calcium Gluconate 10% Injection	28.76	3 amp	0	0	18.98	0	0	0	0	0	0	0	6.5	0	0	0
Magnesium Sulphate 50% Injection (49.3%/5mL)	3.25	1 amp	0	0	14.95	0	0	0	0	0	0	0	0	6.5	0	0
Trace Element - Paediatric (Peditrace) 10mL Inj	5	1 amp	0	0	0.19	Trace Elements										
	0			0	0	Combine Vitamin (Water & Fat Soluble)										
	0			0	0	Water Soluble Vitamins										
	0			0	0	Fat Soluble Vitamins										
N(2)-L-alanyl-L-glutamine 20% (Dipeptivan) 100ml	100	1 bott	0	80	92.1	L-Glutamin										
Sterile Water for Injection 10mL	1328.8	133 amp	0	0	0	Water For Injection										
<b>Total Preparation</b>	<b>2800</b>			<b>1705</b>	<b>759.06</b>	<b>65</b>	<b>195</b>	<b>65</b>	<b>0</b>	<b>39</b>	<b>65</b>	<b>65</b>	<b>6.5</b>	<b>6.5</b>	<b>91</b>	
					<b>mOsmol/l</b>	<b>23.21</b>	<b>69.64</b>	<b>23.21</b>	<b>0</b>	<b>13.93</b>	<b>23.21</b>	<b>23.21</b>	<b>2.32</b>	<b>2.32</b>	<b>32.5</b>	
					<b>Content/L</b>	<b>23.21</b>	<b>69.64</b>	<b>23.21</b>	<b>0</b>	<b>13.93</b>	<b>23.21</b>	<b>23.21</b>	<b>2.32</b>	<b>2.32</b>	<b>32.5</b>	

📄 Calculate

	NPC:N Ratio	131 : 1
TOTAL content of Calcium and Phosphate	Calcium + Phosphate=	1.63 mmol/100ml
TOTAL content of Magnesium and Calcium	Calcium + Magnesium=	0.46 mmol/100ml

Figure 3.2.3.1-4 Prepare Worksheet

**STEP 5**

Click on the button to save record and alert message will be displayed as per Figure 3.2.3.1-5

**Note**

- Once user click on the Intervention button, system will reset the allocated qty to '0', user able to do intervention and re-calculate the worksheet and do allocation again

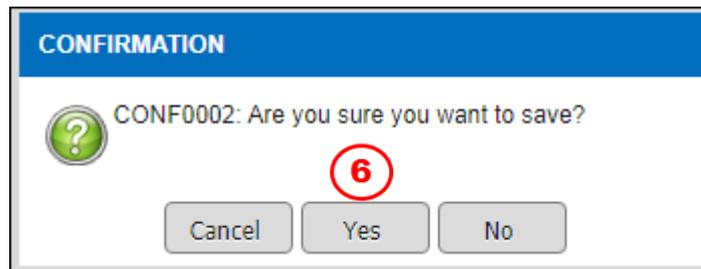


Figure 3.2.3.1-5 Confirmation Alert Message

**STEP 6**

Click on the Yes button to save record



**PN PREPARATION**

Prescription X

Mykad: [redacted] Age: 55 Years 02 Months 14 Days Gender: Female MRN: HSM000031

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

Height: 156 cm Weight: 65 kg BMI/BSA: 26.7 / 1.68 m<sup>2</sup> Update (Last Updated: ) Nationality: Warganegara

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

Encounter No: 0021 Actual Visit Date: 14/10/2019 Attending Practitioner: Visit Location: Outpatient Clinic Room No/Bed No: Rx No: OPD0000824619

**PHARMACY ORDER**

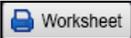
Prepared Date/Time: 14/10/2019 02:05 PM **7**

**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label Outsource

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Compounded Adult	2800 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag	<a href="#">Details</a>	<a href="#">Remarks</a>	0 bag	VERIFIED

Figure 3.2.3.1-6 PN Preparation

**STEP 7**

Click on the  button to print worksheet as per Figure 3.2.3.1-7

**Note**

- Proceed to Next Stage function will allow user advance to next stage screen for each patient record.
- Untick on the  checkbox to allocate manually.



**PN PREPARATION**

Prescription X

	Mykad	Age 55 Years 02 Months 14 Days	Gender Female	MRN HSM000031
Address	Phone And Email	Diagnosis	No known Allergies	
Upload Photo	Height 156 cm Weight 65 kg BMI/BSA 26.7 / 1.68 m <sup>2</sup>	Update (Last Updated : ) Nationality : Warganegara		

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

Encounter No: 0021 Actual Visit Date: 14/10/2019 Attending Practitioner: Visit Location: Outpatient Clinic Room No/Bed No: Rx No: OPD0000824619

**PHARMACY ORDER**

Prepared Date/Time 14/10/2019 02:05 PM

**PRESCRIPTION**

PROCEED TO DISPENSING Prepare Worksheet Label Outsource

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Compounded Adult	2800 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag	<a href="#">Details</a>	<a href="#">Remarks</a>	0 bag	VERIFIED

**Figure 3.2.3.1-8 PN Preparation**

**Note**

**Edit Label**

- Click on the  button to edit label and PN Edit Label window will display as per Figure 3.2.3.1-9.
- Select the  Select for print radio button to print label.
- User allows to edit **Infusion Over**, **Date Prepared** and **Shelf Life** field.
- **Expiry Date** field will automatically display after filling the **Shelf Life** field.
- **Drug Name**, **Total Volume**, **Infusion Rate** and **Batch/Worksheet No** field will be displayed automatically by system.
- The  button to print label as per Figure 3.2.3.1-10.
- The  button to close PN Edit Label window.

**PN EDIT LABEL**

Label X

Select for print

Drug Name	Smof Kabiven Peripheral 800kcal, 1.2L		
Total Volume	1206 ml		
Infusion Over	24 Hour(s)		
Infusion Rate	50.25 mL/Hour	Infusion Line	Peripheral
Prepared Date/Time	17/08/2017 12:22 PM	Shelf Life *	24 Hours
Expiry Date/Time	18/06/2017 12:22 PM		
Batch/Worksheet No	10KF6782		

**Figure 3.2.3.1-9 PN Edit Label**

HOSPITAL MIRI		
PARENTERAL NUTRITION (Adult)		
NAME : _____		
ID NO : _____		
AGE : 61 Years 09 Months		
MRN : HKL232335	WARD/BED NO : Wad NW23 (Perubatan)	
Total 2399 ml/bag		
Content	/ kg	/ bag
Protein (g)	0	0
Dextrose (g)	4	220
Sodium (mmol)	1.1	60.5
Potassium (mmol)	0	0
Calcium (mmol)	0	0
Magnesium (mmol)	0	0
Phosphate (mmol)	0	0
Chloride (mmol)	1.1	60.5
Acetate (mmol)	0	0
Trace Element (ml)	0	0
Vitamins (ml)	0	0
Osmolarity (mOsm/l)	4.76	366.71
L-Glutamin (g)	0.38	29
Admin Date/Time :		
Infusion Rate	125	mL/Hrs
Infusion Over	24	Hrs
Prepared Date	29/05/2019 4:05 PM	
Worksheet ID :	Expiry Date :	Price : RM
A002-290519	30/05/2019	
Do not use if any visible solid particles, growth or precipitation appears.		
Store in refrigerator (2-8 °C). Protect from light (Once open use within 24 Hours) Ensure PN Solution is at room temperature before infusion.		
TO BE INFUSED : CENTRAL LINE		

Figure 3.2.3.1-10 Sample of PN Label

**PN PREPARATION**

Prescription X

Mykad: [Redacted] Age: 55 Years 02 Months 14 Days Gender: Female MRN: HSM000031

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

Height: 156 cm Weight: 65 kg BMI/BSA: 26.7 / 1.68 m<sup>2</sup> Update (Last Updated: ) Nationality: Warganegara

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

Encounter No: 0021 Actual Visit Date: 14/10/2019 Attending Practitioner: Visit Location: Outpatient Clinic Room No/Bed No: Rx No: OPD0000824619

**PHARMACY ORDER**

Prepared Date/Time: 14/10/2019 02:05 PM **8**

**PRESCRIPTION**  PROCEED TO DISPENSING

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Compounded Adult	2800 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag	<a href="#">Details</a>	Remarks	0 bag	VERIFIED

Figure 3.2.3.1-12 Sample of PN Label

**STEP 8**

Click on the  button to prepare PN order

**CONFIRMATION**

CONF0060: Do you want to proceed with the preparation?

**9**

Figure 3.2.3.1-13 Preparation Confirmation Alert Message

**STEP 9**

Click on the  button to confirm prepare order



### 3.2.3.2 Preparation Compounded 2 in 1 Bag

**Note**

- If PN order is for pediatrics, pediatric infant or neonate, product category will default to 2 in 1.
- To proceed with Preparation for Compounded, repeat **Step 1 to 4** from section 3.2.1 Preparation for Commercial.

**Order Details**



- Click on the [Details](#) hyperlink to view order details as per Figure 3.2.3.2-2.

**PN PREPARATION**

Prescription

Mother IC: [Redacted] Age: 01 Years 01 Months 24 Days Gender: Male MRN: HTM00025458

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

Height: 48 cm Weight: 1.8 kg BMI/BSA: 7.8 / 0.15 m<sup>2</sup> (Last Updated: 05/09/2015) Nationality: Warganegara

Encounter No: 0136 Admission Date: 28/08/2015 Attending Practitioner: [Redacted] Visit Location: WAD 2 Rx No: NICU000029878

**PHARMACY ORDER**

Prepared Date/Time: 21/10/2016 02:24 AM

**PRESCRIPTION**  PROCEED TO DISPENSING [Prepare](#) [Worksheet](#) [Label](#) [Outsource](#)

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Compounded Neonate	252 ml	1 bag	<a href="#">Details</a>	1 bag	1 bag	<a href="#">Details</a> <b>1</b>	Remarks	0 bag	VERIFIED

Figure 3.2.3.2-1 PN Preparation

**STEP 1**



Click on the [Details](#) hyperlink to prepare worksheet as per Figure 3.2.3.2-3

**PN ORDER DETAILS**

Mother IC: [Redacted] Age: 09 Days Gender: Female MRN: HPSF00060075

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

Height: 35 cm Weight: 3.5 kg BMI/BSA: 28.6 / 0.21 m<sup>2</sup> (Last Updated: 22/12/2014)

Drug Name	Total Volume ml per kg (ml)	Total calorie kcal per kg (kcal)	Infusion Over (hour)	Infusion Rate (ml/hour)	Quantity	Freq	Duration	Start Date / Time	End Date / Time
PN Compounded Neonate	994.29 (3480)	52 (182)	24	NA	1 BAG	OD	1 Days	24/12/2014 05:00 PM	25/12/2014 05:00 PM
Phosphate mmol per kg (mmol)	Sodium mmol per kg (mmol)	Potassium mmol per kg (mmol)	Calcium mmol per kg (mmol)	Magnesium mmol per kg (mmol)	Acetate mmol per kg (mmol)	Trace Element ml per kg (ml)	Fat Soluble Vit. ml per kg (ml)	Water Soluble Vit. ml per kg (ml)	Multi Vitamin ml per kg (ml)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
L-Glutamin ml per kg (ml)	Protein g per kg (g)	Carbohydrate g per kg (g)	Lipid g per kg (g)	Calorie Calculator	Infusion Line				
NA	4 (14)	NA	4 (14)	NA	Central				

Figure 3.2.3.2-2 PN Order Details

**PREPARE WORKSHEET**

Intervention  Auto Allocation  📄 ✕

**DETAIL**

TPN volume  ml      Energy required  kcal      Product category  3 in 1  2 in 1 2

**Macronutrient**  
 Glucose  g      Vitamin Solution  ml  
 Lipid  g      Water soluble  ml  
 Protein  g      Fat soluble  ml

**Electrolytes**  
 Sodium(Natrium),Na+  mmol      Calcium,Ca2+  mmol      Phosphate,(PO4)2-  mmol  
 Potassium(Kalium),K+  mmol      Magnesium,Mg+  mmol

Lipid Syringe  ml  
 Volume Without Lipid  ml  
 Lipid Overage Volume  ml

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolarity (mOsmol)	Lipid (g)	
Vitamin A, D, E, K (Vitalipid N Infant) 10ml I	<input type="text" value="0"/>		0	0	0	0	Fat Soluble Vitamin
Vitamin B and C (P-Trovite) 10mL Inj	<input type="text" value="0"/>		0	0	0	0	Water Soluble Vitamin
Fat emulsion, SMOFlipid 20% 250ml IV Sol	<input type="text" value="0"/>		0	0	0	0	Lipid
Total Preparation	<input type="text" value="0"/>			0	0	0	

📄 Calculate 4

PN Bag (Without lipid)

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolarity (mOsmol)	Content								
						Glucose (g)	Protein (g)	Acetate (mmol)	Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Chloride (mmol)

Figure 3.2.3.2-3 Prepare Worksheet

**STEP 2**

Select on the  3 in 1  2 in 1 radio button for product category

**Note**

- Value at top section will be display based on value to be prepared by pharmacist based on formula.
- **Macronutrient, Vitamin and Electrolytes** field will automatically be displayed by system.

**STEP 3**

Select the item from the drop down box

**Note**

**Lipid Syringe**

- **Item selected, Volume (ml), Order Quantity, Calorie (kcal), Osmolrity(mOsmol), Lipid and Total Preparation** will be calculated and displayed automatically by system.
- **Lipid Overage** function provided.

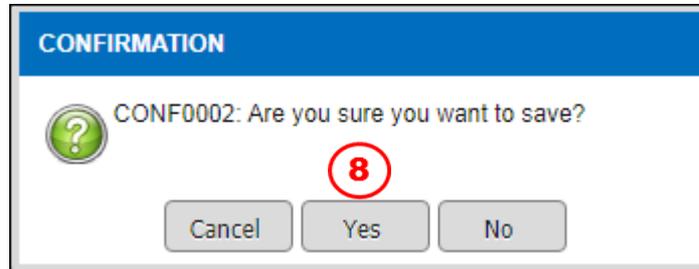
**STEP 4**

Click on the  button to calculate PN content value



**STEP 7**

Click on button to save record



**Figure 3.2.3.2-6 Confirmation Alert Message**

**STEP 8**

Click on the button to confirm save record

**PREPARE WORKSHEET**

Intervention  Auto Allocation

**DETAIL**

TPN volume  ml      Energy required  kcal      Product category  3 in 1  2 in 1

**Macronutrient**

Glucose  g      Vitamin  ml      Trace elements  ml      Lipid Syringe  ml

Lipid  g      Water soluble  ml      Acetate  mmol      Volume Without Lipid  ml

Protein  g      Fat soluble  ml      Overage volume  ml      Lipid Overage Volume  ml

**Electrolytes**

Sodium(Natrium),Na+  mmol      Calcium,Ca2+  mmol      Phosphate,(PO4)2-  mmol

Potassium(Kalium),K+  mmol      Magnesium,Mg+  mmol

**Lipid Syringe**

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolarity (mOsmol)	Lipid (g)	
Vitamin A, D, E, K (Vitalipid N Infant) 10ml I	0		0	0	0	0	Fat Soluble Vitamin
Vitamin B and C (P-Trovite) 10mL Inj	0		0	0	0	0	Water Soluble Vitamin
Fat emulsion, SMOFlipid 20% 100ml IV Sol	0		0	0	0	65	Lipid
<b>Total Preparation</b>	<input type="text" value="0"/>			<input type="text" value="0"/>	<input type="text" value="0"/> mOsmol/l	<input type="text" value="0"/>	
						<input type="text" value="0"/>	Content/L

**PN Bag (Without lipid)**

Drug selected	Volume (ml)	Order Quantity	Allocated Quantity	Calorie (kcal)	Osmolarity (mOsmol)	Content									
						Glucose (g)	Protein (g)	Acetate (mmol)	Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Chloride (mmol)	
Dextrose 50% 10mL Inj	0			782.79	0	195.7	0	0	0	0	0	0	0	0	0
Amino acid 13.4% (Glamin) 500ml IV Soln	0			260.93	0	0	65.23	0	0	0	0	0	0	0	0
Sodium Acetate 2mmol/ml Injection	0			0	0	0	0	0	0	0	0	0	0	0	0
Potassium Dihydrogen Phosphate Injection	0			0	0	0	0	0	39.14	0	0	0	0	0	0
Sodium Chloride 3% 500mL IV soln	0			0	0	0	0	0	0	65.23	0	0	0	0	0
Potassium Chloride 1g/10ml Injection	0			0	0	0	0	0	0	0	65.23	0	0	0	0
Calcium Gluconate 10% Injection	0			0	0	0	0	0	0	0	0	6.52	0	0	0
Magnesium Sulphate 50% Injection (49.3%/5mL)	0			0	0	0	0	0	0	0	0	0	6.52	0	0
Trace Element - Paediatric (Peditrace) 10mL Inj	5.02			0	0	Trace Elements									
Sterile Water for Injection 10mL	2804.98	281 amp	0	0	0	Water For Injection									
<b>Total Preparation</b>	<input type="text" value="2810"/>			<input type="text" value="1043.71"/>	<input type="text" value="0"/> mOsmol/l	<input type="text" value="195.7"/>	<input type="text" value="65.23"/>	<input type="text" value="0"/>	<input type="text" value="39.14"/>	<input type="text" value="65.23"/>	<input type="text" value="65.23"/>	<input type="text" value="6.52"/>	<input type="text" value="6.52"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
						<input type="text" value="69.64"/>	<input type="text" value="23.21"/>	<input type="text" value="0"/>	<input type="text" value="13.93"/>	<input type="text" value="23.21"/>	<input type="text" value="23.21"/>	<input type="text" value="2.32"/>	<input type="text" value="2.32"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

NPC:N Ratio		<input type="text" value="71 : 1"/>
TOTAL content of Calcium and Phosphate	Calcium + Phosphate=	<input type="text" value="1.62"/> mmol/100ml
TOTAL content of Magnesium and Calcium	Calcium + Magnesium=	<input type="text" value="0.46"/> mmol/100ml

**Figure 3.2.3.2-7 Prepare Worksheet**



**PN PREPARATION** Prescription X

	Mother IC	Age 09 Days	Gender Female	MRN HPSF00060075
Address	Phone And Email	Diagnosis	No known Allergies	
Height 35 cm	Weight 3.5 kg	BMI/BSA 28.6 / 0.21 m <sup>2</sup>	Update (Last Updated : 22/12/2014 )	

Upload Photo Nationality : Warganegara

Encounter No: 0004 Admission Date: 22/12/2014 Attending Practitioner: Visit Location: WAD 3 (ORTO - L)

Lab Results Counselling History Demographic Pharmacist Notes Medication Profile Other Appointment

**PHARMACY ORDER**

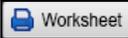
Prepared Date/Time: 24/12/2014 05:34 PM 9

**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label Outsource

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Compounded Neonate	3480 ml	1 Bag	Details	1 Bag	1 Bag	Details	Remarks	0 Bag	VERIFIED

Figure 3.2.3.2-8 PN Preparation

**STEP 9**

Click on the  button to print the worksheet as per Figure 3.2.3.2-8

**ADULT PARENTERAL NUTRITION WORKSHEET**  
**MINISTRY OF HEALTH**  
**HOSPITAL KUALA LUMPUR**

Patient Name	: ██████████	Worksheet	: A002-190719
MRN	: HKL232335	Prepared Date/Time	: 19/07/2019 11:09 AM
Ward/Bed No	: Wad NW23 (Perubatan)	Prescription #	: NW230000740528
Age	: 61 Years 07 Months 28 Days		
Gender	: Female		
Body Weight	: 55 kg		

\*This worksheet includes overage volume (if any)

DRUG NAME	VOLUME (ml)	QUANTITY	BATCH NO	COMPONENT DETAIL (PER DAY)
Dextrose 50% IV soln 500ml	443.67	1 bottle	0001	221.83 g
Sterile Water for Injection 500mL	1957.49	4 bottle	0001	NA
Sodium Chloride 20% Inj	17.84	2 ampoule	THA57023	61 mmol
<b>Total Volume</b>	<b>2419</b>	<b>1 Bag</b>		

DRUG NAME	VOLUME (ml)	QUANTITY	BATCH NO	COMPONENT DETAIL (PER DAY)
Fat emulsion, SMOFlipid 20% 500ml IV Soln	194.73	1 bottle	0001	38.95 g
Vitamin A, D, E, K (Vitalipid N Infant) 10ml Inj	5.12	1 ampoule	10LH3355	5.12 ml
Vitamin B and C (P-Trovite) 10mL Inj	6.15	1 pair	180103T/180104T	6.15 ml
<b>Total Volume</b>	<b>206</b>	<b>1 Syringe</b>		

**Figure 3.2.3.2-9 Sample of Worksheet**

**Note**

- Worksheet will be printed with additional disclaimer in worksheet, 'This worksheet includes overage volume (if any)'.
- For 2 in 1 which have Overage Volume, Worksheet will display value including Overage Volume value but in PN Bag label and PN Lipid label will display value exclude Overage Volume value.

**PN PREPARATION**

Prescription X

Mother IC: [ ] Age: 09 Days Gender: Female MRN: HPSF00060075

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

Height: 35 cm Weight: 3.5 kg BMI/BSA: 28.6 / 0.21 m<sup>2</sup> (Last Updated: 22/12/2014) Nationality: Warganegara

Encounter No: 0004 Admission Date: 22/12/2014 Attending Practitioner: [ ] Visit Location: WAD 3 (ORTO - L)

**PHARMACY ORDER**

Prepared Date/Time: 24/12/2014 05:34 PM

**PRESCRIPTION** [ ] PROCEED TO DISPENSING [ ] Prepare [ ] Worksheet [ ] Label [ ] Outsource

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Compounded Neonate	3480 ml	1 Bag	Details	1 Bag	1 Bag	Details	Remarks	0 Bag	VERIFIED

Figure 3.2.3.2-10 PN Preparation

**Note**

**Edit Label**



Click on the  button to edit label and PN Edit Label window will display as per Figure 3.2.3.2-11.

**PN EDIT LABEL**

Select for print  Drug Name: PN Compounded Adult Total Volume: 3100 ml

Infusion Over: 24 Hour(s) Infusion Rate: 129.17 mL/Hour Infusion Line: Central

Prepared Date/Time: 27/09/2019 2:11 PM Shelf Life: 24 Hours

Expiry Date/Time: 28/09/2019 2:11 PM Batch / Worksheet No: A001-270919

---

Select for print  Lipid Bag Drug Name: Lipid And Vitamins Total Volume: 0 mL

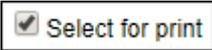
Infusion Over: 24 Hour(s) Infusion Rate: 0.04 mL/Hour Shelf Life: 24 Hours

Prepared Date/Time: 27/09/2019 2:11 PM Expiry Date/Time: 28/09/2019 2:11 PM Batch / Worksheet No: A001-270919

Figure 3.2.3.2-11 PN Edit Label

**Note**

**PN Compounded Pediatric**

- Select the  radio button to print label.
- User allows to edit **Infusion Over**, **Date Prepared** and **Shelf Life** field.
- **Expiry Date** field will automatically display after the **Shelf Life** field is filled.
- **Drug Name**, **Total Volume**, **Infusion Rate** and **Batch No** field will be displayed automatically by the system.
- The  button to print label.
- The  button to close PN Edit Label window.
- The  button to cancel print label.

<b>HOSPITAL PAKAR SULTANAH FATIMAH, MUAR</b>		
PARENTERAL NUTRITION (Adult)		
NAME : _____		
ID NO : _____		
AGE : 30 Years 04 Months 29 Days		
MRN : HPSF00268220	WARD/BED NO : KLINIK PAKAR PEMBEDAHAN	
Total _____ 3100 ml/bag		
<b>Content</b>	<b>/ kg</b>	<b>/ bag</b>
Protein (g)	0	0
Dextrose (g)	0	0
Sodium (mmol)	0	0
Potassium (mmol)	0	0
Calcium (mmol)	0	0
Magnesium (mmol)	0	0
Phosphate (mmol)	0	0
Chloride (mmol)	0	0
Acetate (mmol)	0	0
Trace Element (ml)	0	0
Vitamins (ml)	0	0
Calories (kcal)	0	0
Osmolarity (mOsm/l)	0	0
Admin Date/Time :		
Infusion Rate	129.17 ml/hrs	
Infusion Over	24 Hrs	
Prepared Date	27/09/2019 2:11 PM	
Worksheet ID :	Expiry Date :	Price : RM
A001-270919	28/09/2019	
Do not use if any visible solid particles, growth or precipitation appears.		
Store in refrigerator (2-8 °C). Protect from light (Once open use within 24 Hours) Ensure PN Solution is at room temperature before infusion.		
TO BE INFUSED : CENTRAL LINE		

Figure 3.2.3.2-12 Sample PN Label

PN EDIT LABEL

<input type="checkbox"/> Select for print	Drug Name Total Volume Infusion Over Infusion Rate Prepared Date/Time Expiry Date/Time Batch / Worksheet No	PN Compounded Adult 3100 ml <input type="text" value="24"/> Hour(s) <input type="text" value="129.17"/> mL/Hour <input type="text" value="27/09/2019 2:11 PM"/> <input type="text" value="28/09/2019 2:11 PM"/> <input type="text" value="A001-270919"/>	Infusion Line Shelf Life *	<input type="text" value="Central"/> <input type="text" value="24"/> Hours
---	---	--	-------------------------------	---

---

<input checked="" type="checkbox"/> Select for print	Lipid Bag Drug Name Total Volume Infusion Over Infusion Rate Prepared Date/Time Expiry Date/Time Batch / Worksheet No	Lipid And Vitamins 0 mL <input type="text" value="24"/> Hour(s) <input type="text" value="0.04"/> mL/Hour <input type="text" value="27/09/2019 2:11 PM"/> <input type="text" value="28/09/2019 2:11 PM"/> <input type="text" value="A001-270919"/>	Shelf Life *	<input type="text" value="24"/> Hours
--	--	--	--------------	---------------------------------------

Figure 3.2.3.2-13 PN Edit Label

**Note**

**Lipid Bag**

- Select the **Select for print** radio button to print label.
- User allows to edit **Infusion Over**, **Date Prepared** and **Shelf Life** field.
- **Expiry Date** field will automatically display after filling the **Shelf Life** field.
- **Drug Name**, **Total Volume**, **Infusion Rate** and **Batch No** field will be displayed automatically by system.
- The button to print label.
- The button to close PN Edit Label window.
- The button to cancel print label.

HOSPITAL PAKAR SULTANAH FATIMAH,			
NAME	[REDACTED]		
ID NO	[REDACTED]		
MRN	HPSF00268220		
WARD/ BED NO	KLINIK PAKAR		
Lipid	40000 mL	Infusion Rate	1666.6 ml/hr
Fat Soluble	0 mL	Worksheet ID	A003-270919
Water Soluble	0 mL	Exp Date	28/09/2019 4:12 PM
Total Vol	40000 mL	Date Prepared	27/09/2019 4:12 PM
Calories	7200 kcal	Price (RM)	
(Keep refrigerated)			
HOSPITAL PAKAR SULTANAH FATIMAH,			
NAME	[REDACTED]		
ID NO	[REDACTED]		
MRN	HPSF00268220		
WARD	KLINIK PAKAR PEMBEDAHAN		
Lipid	40000 mL	Infusion Rate	1666.6 ml/hr
Fat Soluble	0 mL	Worksheet ID	A003-270919
Water Soluble	0 mL	Exp Date	28/09/2019 4:12 PM
Total Vol	40000 mL	Date Prepared	27/09/2019 4:12 PM
Calories	7200 kcal	Price (RM)	
(Keep refrigerated)			
HOSPITAL PAKAR SULTANAH FATIMAH,			
NAME	[REDACTED]		
ID NO	[REDACTED]		
MRN	HPSF00268220		
WARD	KLINIK PAKAR PEMBEDAHAN		
Lipid	40000 mL	Infusion Rate	1666.6 ml/hr
Fat Soluble	0 mL	Worksheet ID	A003-270919
Water Soluble	0 mL	Exp Date	28/09/2019 4:12 PM
Total Vol	40000 mL	Date Prepared	27/09/2019 4:12 PM
Calories	7200 kcal	Price (RM)	
(Keep refrigerated)			

Figure 3.2.3.2-14 Sample of PN Label

**Note**

*It will print 3 set of label in one page.*

**PN PREPARATION**

Prescription X

Mother IC: [ ] Age: 09 Days Gender: Female MRN: HPSF00060075

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

Height: 35 cm Weight: 3.5 kg BMI/BSA: 28.6 / 0.21 m<sup>2</sup> (Last Updated: 22/12/2014) Nationality: Warganegara

Encounter No: 0004 Admission Date: 22/12/2014 Attending Practitioner: [ ] Visit Location: WAD 3 (ORTO - L)

Lab Results Counselling History Demographic Pharmacist Notes Medication Profile Other Appointment

**PHARMACY ORDER**

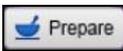
Prepared Date/Time: 24/12/2014 05:34 PM **10**

**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label Outsource

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Compounded Neonate	3480 ml	1 Bag	Details	1 Bag	1 Bag	Details	Remarks	0 Bag	VERIFIED

Figure 3.2.3.2-15 PN Preparation

**STEP 10**

Click on the  button to prepare PN order

**CONFIRMATION**

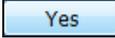
CONF0060: Do you want to proceed with the preparation?

**11**

Yes No

Figure 3.2.3.2-16 Preparation Confirmation Alert Message

**STEP 11**

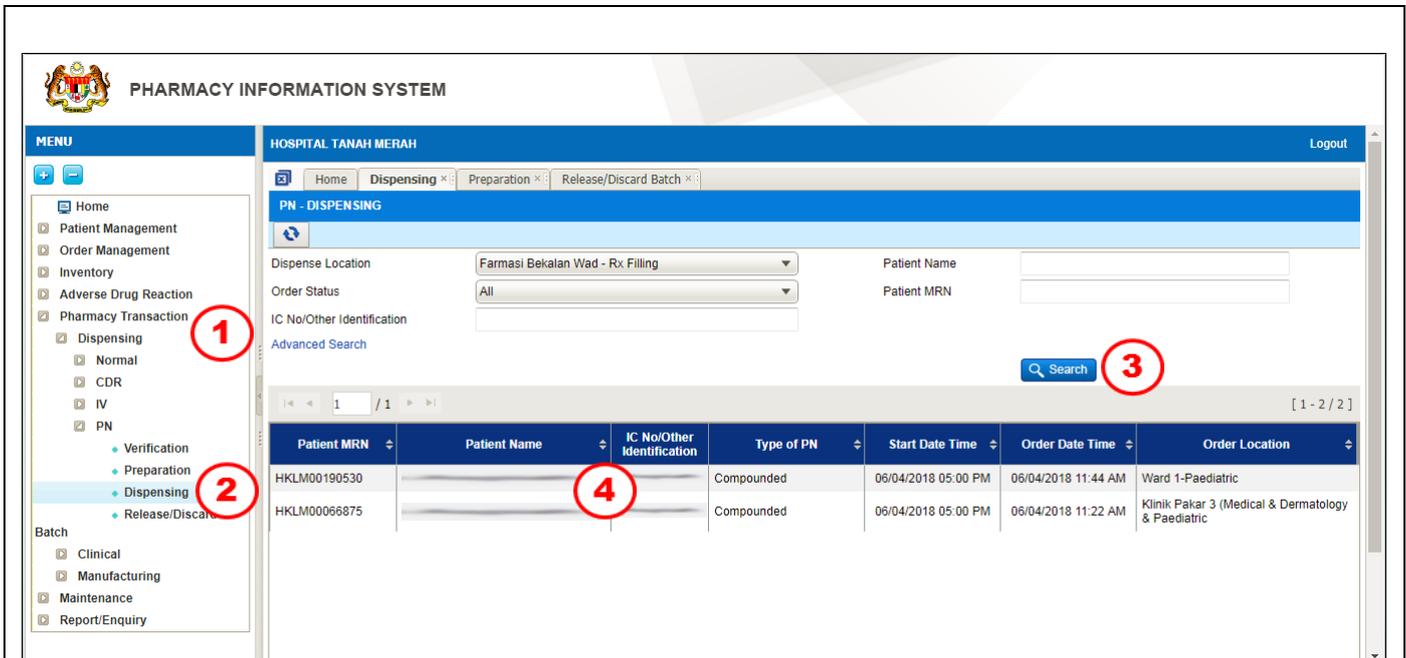
Click on the  button to confirm prepare order

**Note**

*Proceed to Next Stage function will allow user to go next screen for each patient record.*

### 3.3 Parenteral Nutrition (PN) Dispensing

Dispensing screen allows user to dispense all prepared bag.



The screenshot shows the 'PHARMACY INFORMATION SYSTEM' interface for 'HOSPITAL TANAH MERAH'. The main area is titled 'PN - DISPENSING'. It features search filters for 'Dispense Location' (Farmasi Bekalan Wad - Rx Filling), 'Patient Name', 'Order Status' (All), and 'Patient MRN'. A 'Search' button is present. Below the filters is a table with the following data:

Patient MRN	Patient Name	IC No/Other Identification	Type of PN	Start Date Time	Order Date Time	Order Location
HKLM00190530			Compounded	06/04/2018 05:00 PM	06/04/2018 11:44 AM	Ward 1-Paediatric
HKLM00066875			Compounded	06/04/2018 05:00 PM	06/04/2018 11:22 AM	Klinik Pakar 3 (Medical & Dermatology & Paediatric)

Figure 3.3-1 PN Dispensing Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' sub menu and select 'PN '

#### STEP 2

Click on 'Dispensing' menu

#### STEP 3

Click on Search button  to search patient

#### Note

Search result of patient record list will be displayed:

- Patient MRN
- Patient Name
- Type of PN
- Order Date
- Order Location

#### STEP 4

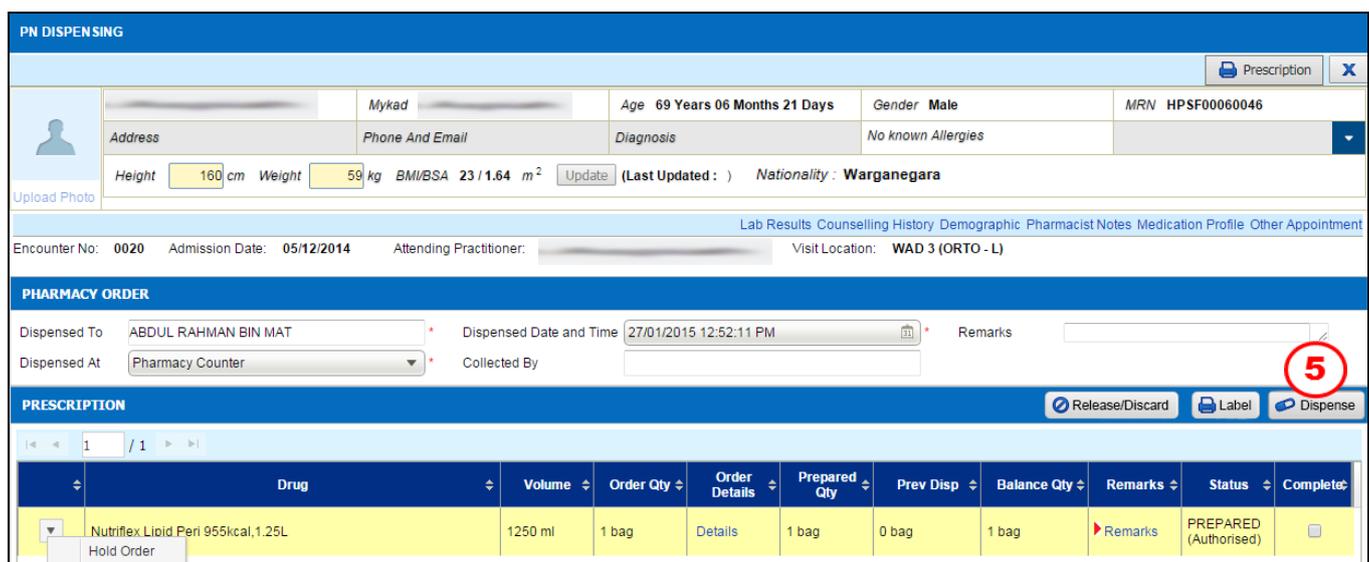
Double click on record and PN Dispensing screen will be displayed as Figure 3.3-2

**Note**

Search patient record based: -

Basic Search			
No	Field	Description	Remark
a	Dispense Location	Dispensing location. (It will list down all active location)	Able to filter and search patient name by dispensing location
b	Order Status	Search by: - All - Prepared - Prepared hold	Able to filter and search patient name by order status
c	Patient Name	Patient Name	Allow to search by full name or partial
d	Patient MRN	Patient Medical Record Number	Search option: Type the MRN either full or partial: <i>Example: HPSF00001234 or "1234"</i>
Advance Search			
a	Order Location Type	Search by: All Clinic Day Care ER Nursing Unit Pharmacy	Able to filter and search patient name by order location type
b	Order Location	Current visit Location	Able to filter and search patient name by visit location
c	Order Date From	Order confirmed date	Allow to search by start date of order created
d	Order Date To	Order confirmed date	Allow to search by selected duration of order created

**Table 3.3-1: Search Criteria**



The screenshot displays the 'PN DISPENSING' interface. At the top, there are navigation buttons for 'Prescription' and 'X'. Below this, patient information is shown, including Mykad, Age (69 Years 06 Months 21 Days), Gender (Male), and MRN (HPSF00060046). There are also fields for Address, Phone And Email, Diagnosis, and No known Allergies. Physical attributes like Height (160 cm) and Weight (59 kg) are also visible. A '5' in a red circle highlights a button in the 'PHARMACY ORDER' section. The 'PRESCRIPTION' section shows a table with columns for Drug, Volume, Order Qty, Order Details, Prepared Qty, Prev Disp, Balance Qty, Remarks, Status, and Complete. The first row shows 'Nutriflex Lloid Peri 955kcal, 1.25L' with a volume of 1250 ml and 1 bag, and a status of 'PREPARED (Authorised)'. A 'Hold Order' button is visible next to the drug name.

**Figure 3.3-2 PN Dispensing**

**Note**

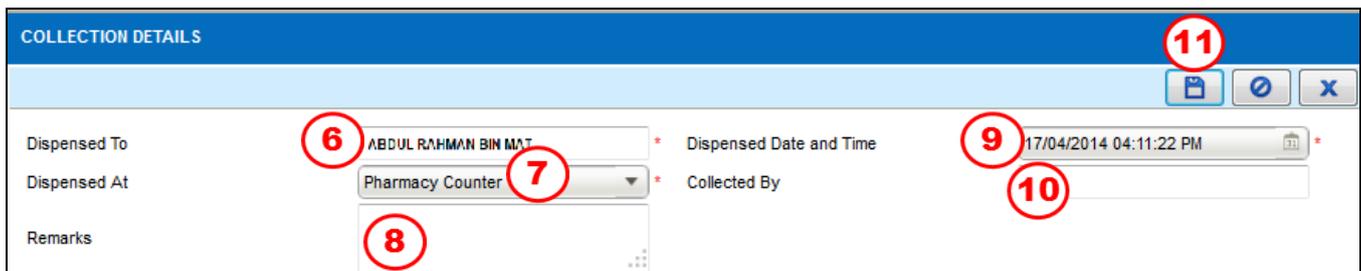
- Click on the  button to select **Hold Order** as per Figure 3.3-2.
- User only can do **Hold/Resume Order** at Dispensing screen.



- Check at  checkbox to force close order by Pharmacist.

#### STEP 5

Click on the  button and Collection Details will display as per Figure 3.3-3



The screenshot shows a window titled 'COLLECTION DETAILS'. It contains several input fields: 'Dispensed To' (text field with value 'ABDUL RAHMAN BIN MAT'), 'Dispensed Date and Time' (text field with value '17/04/2014 04:11:22 PM'), 'Dispensed At' (dropdown menu with value 'Pharmacy Counter'), and 'Collected By' (text field). There is also a 'Remarks' text area. A 'Complete' checkbox is visible in the top right corner. Red circles with numbers 6 through 11 highlight these specific elements.

Figure 3.3-3 Collections Details

#### STEP 6

Enter **Dispensed To**

#### Note

- **Dispensed To, Dispensed Date and Time and Dispensed At** fields are automatically defaulted by system but user can still amend the field if applicable.
- All this three fields are mandatory.

#### STEP 7

Select **Dispensed At**

#### STEP 8

Select **Remarks**

#### STEP 9

Select **Dispensed Date and Time**

#### STEP 10

Enter **Collected By**

#### STEP 11

Click on the  button and alert message will be displayed as per Figure 3.3-4



The screenshot shows a 'CONFIRMATION' dialog box with a question mark icon. The text inside reads 'CONF0064: Do you want to dispense now?'. Below the text are three buttons: 'Cancel', 'Yes', and 'No'. A red circle with the number 12 highlights the 'Yes' button.

Figure 3.3-4 Confirmation Alert Message

#### STEP 12

Click on the  button to dispense order

### 3.4 Release/Discard Batch

Release function is to release and update back stock into inventory. Discard function is to discard stock from inventory even without dispensing.

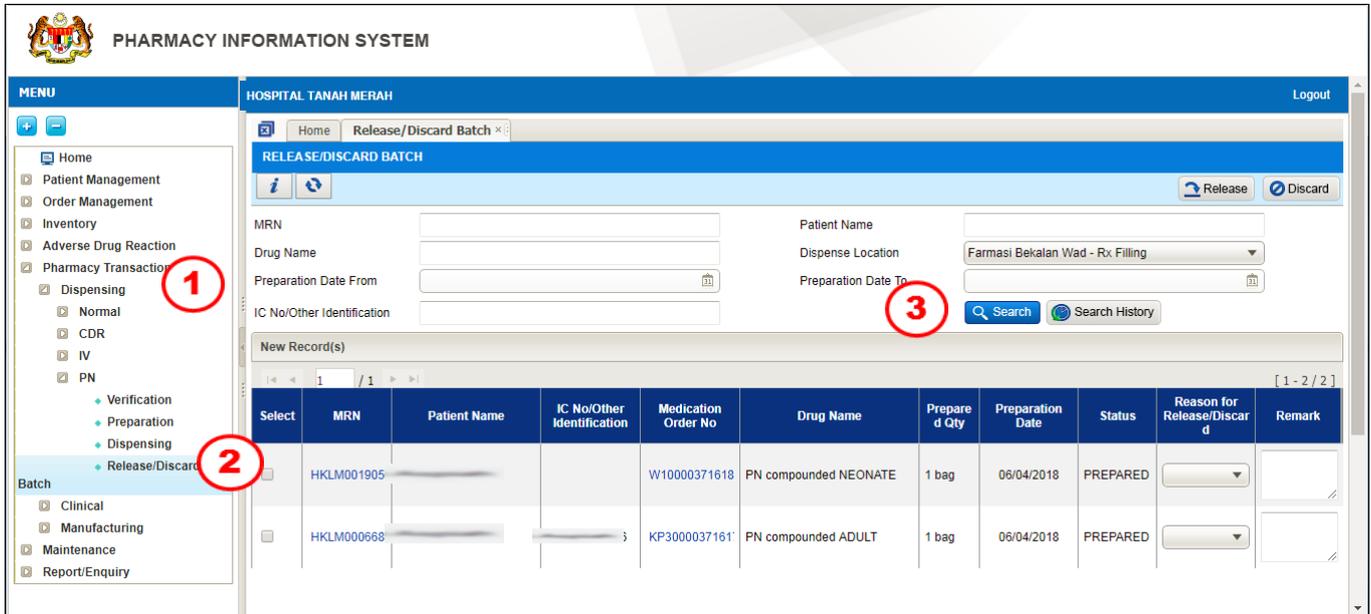


Figure 3.4-1 Release/Discard Batch Listing Page

**STEP 1`**

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' sub menu and select 'PN'

**STEP 2**

Click on 'Release/Discard Batch' function

**Note**

Search patient record based: -

No	Field	Description	Remark
a	MRN	Patient Medical Record Number	Search option: • Type the MRN either full or partial: <i>Example: HPSF00001234 or "1234"</i>
b	Patient Name	Patient Name	Allow to search by full name or partial
c	Drug Name	Drug Name	Allow to search by full name or partial drug name
d	Dispense Location	Dispensing location. (It will list down all active location)	Able to filter and search patient name by dispensing location

Table 3.4-1: Patient Record Search

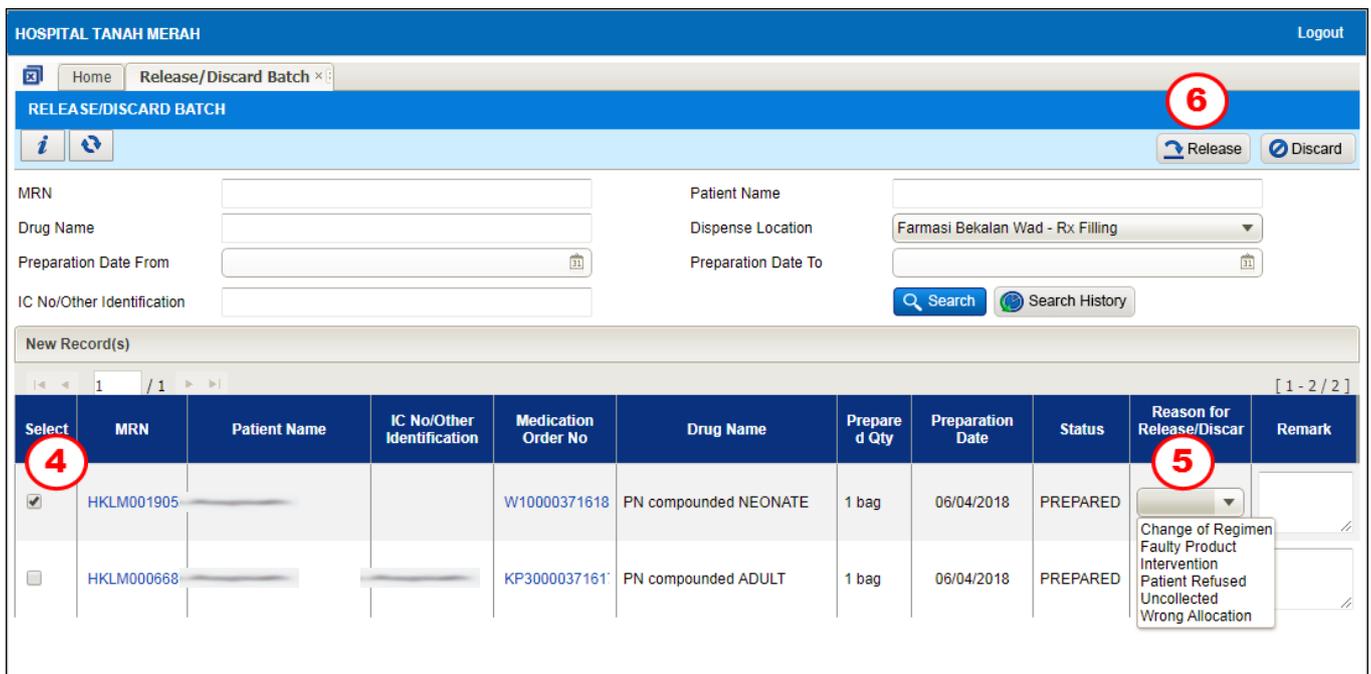
**STEP 3**

Click on the button to search patient

**Note**

Search result of patient record list will be displayed:

- MRN
- Patient Name
- Drug Name
- Medication Order No
- Preparation Date
- Prepared Quantity
- Status
- Reason for Discard



HOSPITAL TANAH MERAH Logout

Home Release/Discard Batch x1

**RELEASE/DISCARD BATCH** 6

Release Discard

MRN  Patient Name

Drug Name  Dispense Location

Preparation Date From  Preparation Date To

IC No/Other Identification

New Record(s)

1 / 1 [ 1 - 2 / 2 ]

Select	MRN	Patient Name	IC No/Other Identification	Medication Order No	Drug Name	Prepared Qty	Preparation Date	Status	Reason for Release/Discard	Remark
<input checked="" type="checkbox"/> 4	HKLM001905			W10000371618	PN compounded NEONATE	1 bag	06/04/2018	PREPARED	5 Change of Regimen Faulty Product Intervention Patient Refused Uncollected Wrong Allocation	
<input type="checkbox"/>	HKLM000668			KP3000037161	PN compounded ADULT	1 bag	06/04/2018	PREPARED		

Figure 3.4-2 Release/Discard Batch

**STEP 4**

Select and check the  checkbox to select order at the **Select** column

**STEP 5**

Select the **Reason for Release and Discard** from dropdown box:

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

### STEP 6

Click on the  button to release batch and inventory stock will be updated

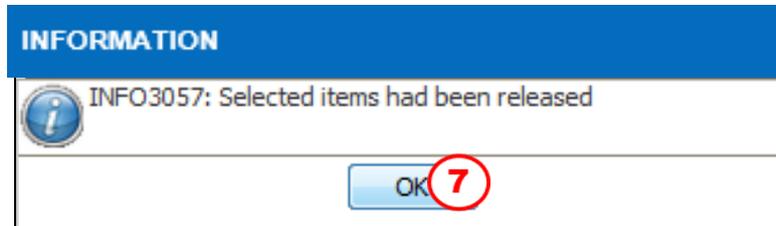
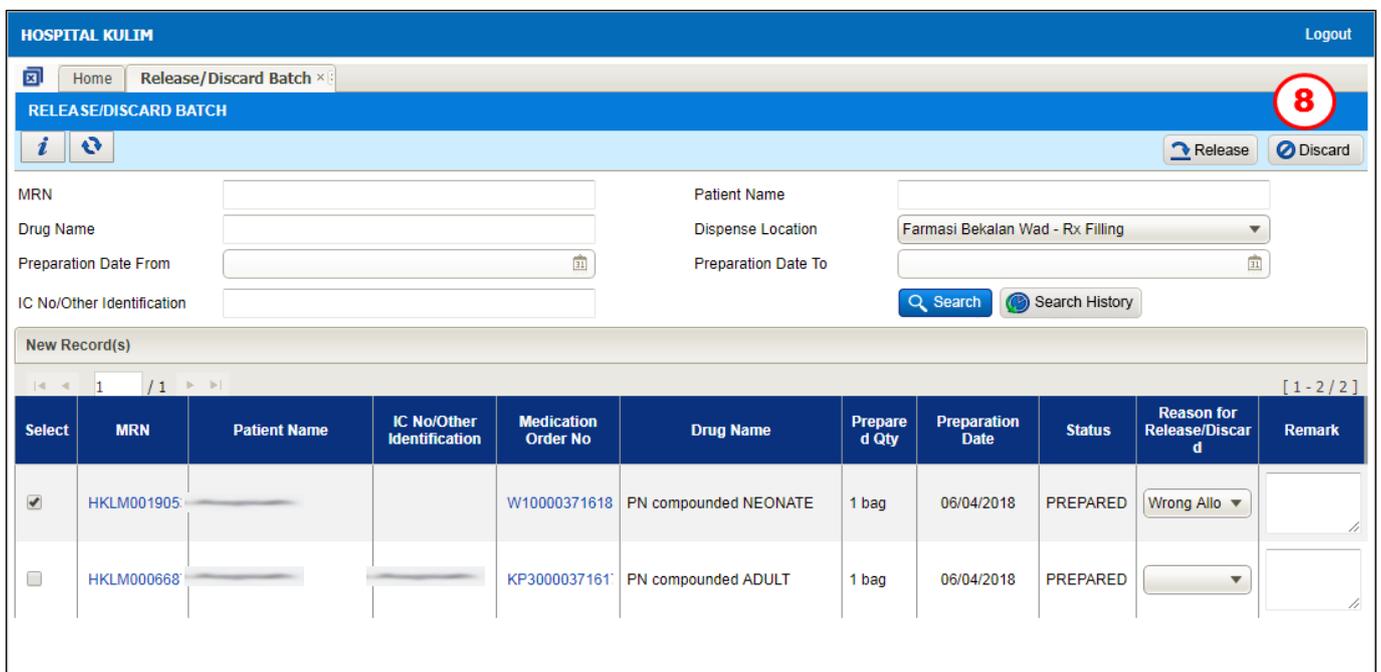


Figure 3.4-3 Information Alert Message

### STEP 7

Click on the  button to release order batch



HOSPITAL KULIM Logout

Home Release/Discard Batch **8**

RELEASE/DISCARD BATCH

MRN  Patient Name

Drug Name  Dispense Location

Preparation Date From  Preparation Date To

IC No/Other Identification

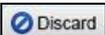
New Record(s)

1 / 1 [ 1 - 2 / 2 ]

Select	MRN	Patient Name	IC No/Other Identification	Medication Order No	Drug Name	Prepared Qty	Preparation Date	Status	Reason for Release/Discard	Remark
<input checked="" type="checkbox"/>	HKLM001905			W10000371618	PN compounded NEONATE	1 bag	06/04/2018	PREPARED	Wrong Allo	
<input type="checkbox"/>	HKLM000668			KP3000037161	PN compounded ADULT	1 bag	06/04/2018	PREPARED		

Figure 3.4-4 Release / Discard Batch

### STEP 8

Click on the  button to discard batch and inventory stock will be updated

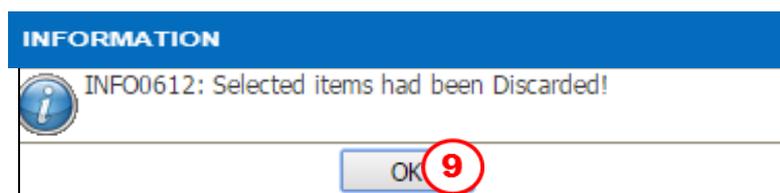


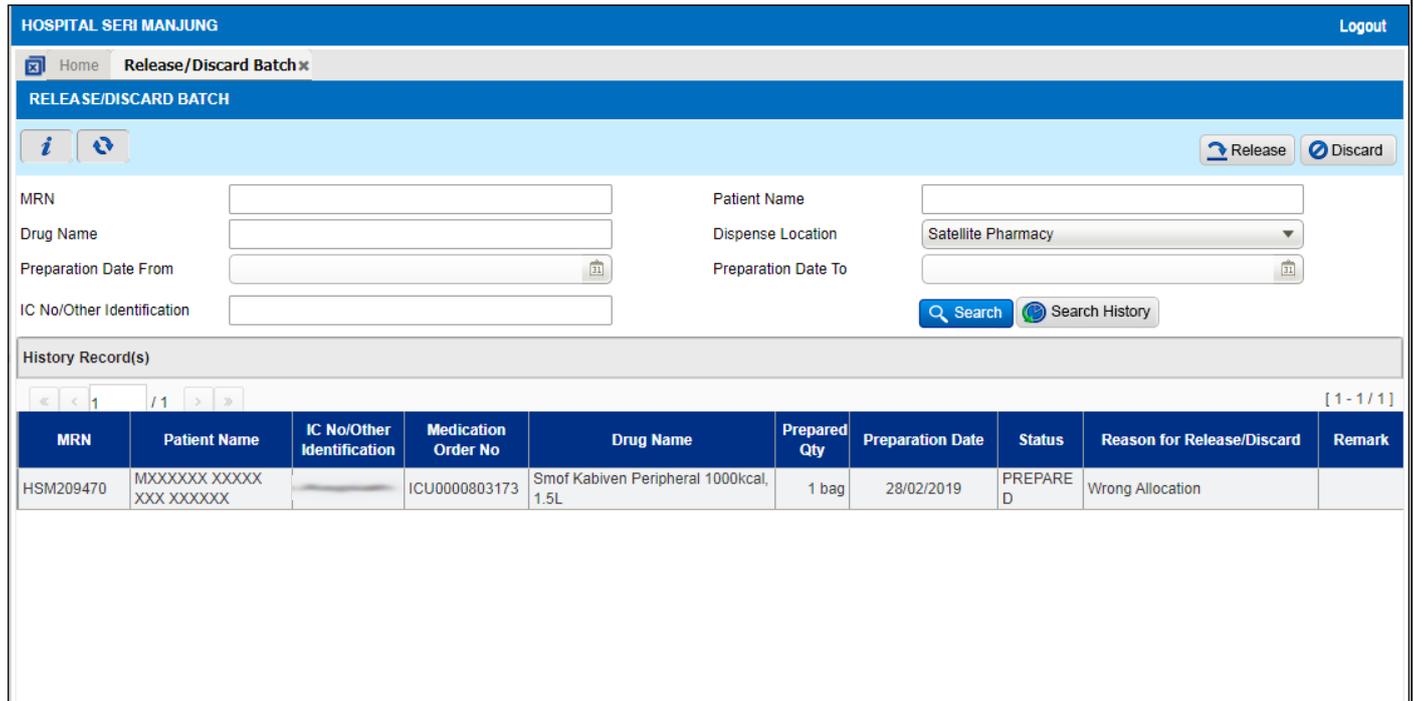
Figure 3.4-5 Information Alert Message

**STEP 9**

Click on the  button to discard batch

**Note**

Click on the  button to view release/discard history as Figure 3.4-6.



**HOSPITAL SERI MANJUNG** Logout

Home **Release/Discard Batch**

**RELEASE/DISCARD BATCH**

MRN  Patient Name

Drug Name  Dispense Location

Preparation Date From  Preparation Date To

IC No/Other Identification   

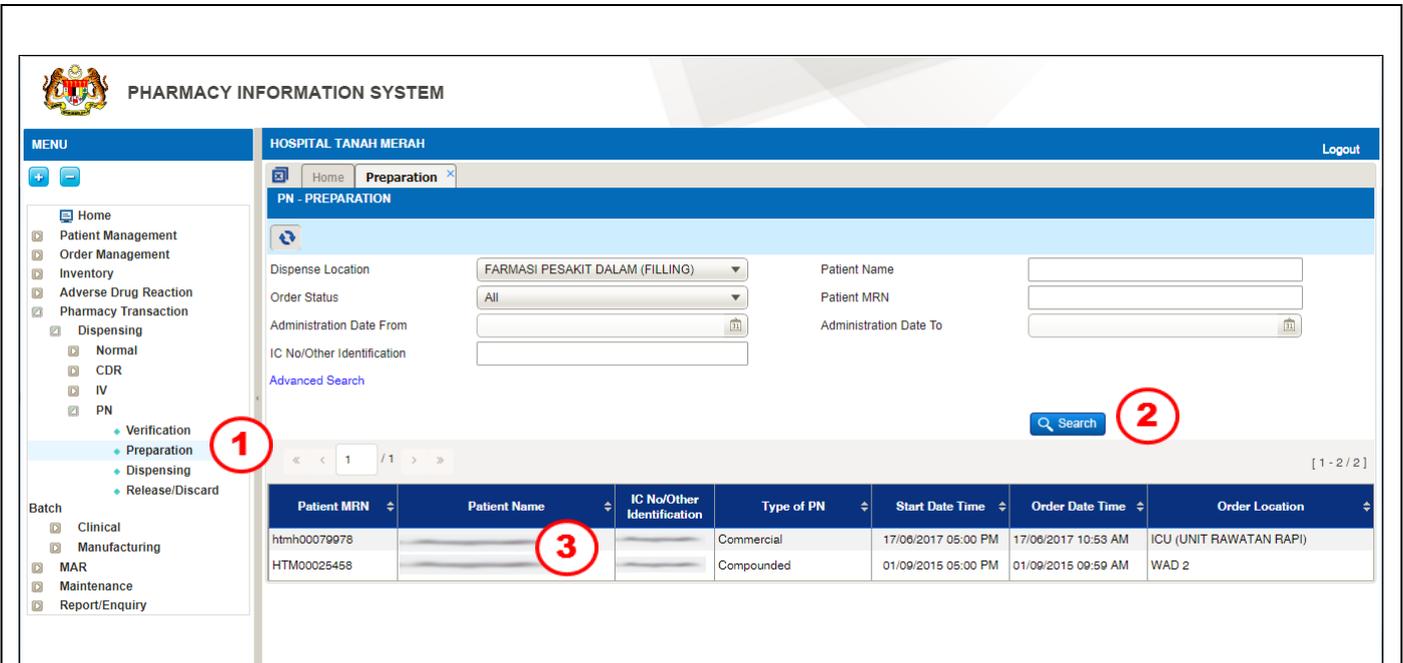
History Record(s) [ 1 - 1 / 1 ]

MRN	Patient Name	IC No/Other Identification	Medication Order No	Drug Name	Prepared Qty	Preparation Date	Status	Reason for Release/Discard	Remark
HSM209470	IMXXXXXX XXXXX XXX XXXXXX		ICU0000803173	Smof Kabiven Peripheral 1000kcal, 1.5L	1 bag	28/02/2019	PREPARED	Wrong Allocation	

**Figure 3.4-6 Release/Discard Batch**

### 3.5 Outsource

Outsource allow user to send preparation request to another facility through PhIS



**PHARMACY INFORMATION SYSTEM**

HOSPITAL TANAH MERAH

PHIS

Logout

Home Preparation

PN - PREPARATION

Dispense Location: FARMASI PESAKIT DALAM (FILLING) Patient Name:

Order Status: All Patient MRN:

Administration Date From:  Administration Date To:

IC No/Other Identification:

Advanced Search

Search

< 1 / 1 >

Patient MRN	Patient Name	IC No/Other Identification	Type of PN	Start Date Time	Order Date Time	Order Location
htmlh00079978			Commercial	17/06/2017 05:00 PM	17/06/2017 10:53 AM	ICU (UNIT RAWATAN RAPI)
HTM00025458			Compounded	01/09/2015 05:00 PM	01/09/2015 09:59 AM	WAD 2

Figure 3.5-1 PN Preparation Listing Page

#### STEP 1

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' and click on 'PN Dispensing' sub-menu

#### Note

- Various search criteria is provided as below:
  - Dispense Location
  - Patient Name
  - Order Status
  - Patient MRN
- Click on the [Advanced Search](#) hyperlink for advance search.

#### STEP 2

Click on the [Search](#) button and system will display related order

#### STEP 3

Double click on the selected patient record and system will display PN Dispensing screen as per Figure 3.5-2



**PN PREPARATION**

Prescription X

Mykad: [redacted] Age: 32 Years 10 Months Gender: Female MRN: HKLM00066875

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

Height: 150 cm Weight: 50 kg BMI/BSA: 22.2 / 1.44 m<sup>2</sup> Update (Last Updated: 06/04/2018) Nationality: Warganegara

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

Encounter No: 0001 Visit Date: 06/04/2018 Visit Location: Klinik Pakar 3 (Medical & Dermatology & Paediatric) Room No/Bed No: [redacted] Rx No: KP30000371615 Order By: System Administrator Transcribed By: [redacted]

Original Prescription Serial No: 13132

**PHARMACY ORDER**

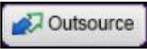
Prepared Date/Time: 06/04/2018 03:46 PM

**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label Outsource

Drug	Volume	Order Qty	Order Details	Prepared Qty	Balance Qty	Prepare Worksheet	Remarks	Prev Disp	Status
PN Compounded Adult	2500 ml	1 bag	Details	1 bag	1 bag	Details	Remarks	0 bag	OUTSOURCED

Figure 3.5-2 PN Preparation

**STEP 4**

Click on the  button to prepare outsource product

**OUTSOURCE DETAILS**

Send Outsource Request X

Mykad: [redacted] Age: 14 Years 0 Months 23 Days Gender: Male MRN: HPSF00012482

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

Height: 180 cm Weight: 65 kg BMI/BSA: 20.1 / 1.79 m<sup>2</sup> Update (Last Updated: ) Nationality: Warganegara

**PHARMACY ORDER**

Outsource No: [redacted]

Referred From: Hospital Pakar Sultanah Fatimah, Muar Referred To: KK Greentown

Contact Person / Office: Halim Abdullah Contact Person / Office: Mohd Zubir

Contact no / Ext No: 0173692581 Contact no / Ext No: 055622114

Request Date/Time: 17/04/2014 4:31 PM Tentative Receipt Date: 17/04/2014

Remarks: [redacted]

Rx No	Rx Date	Drug Name	Order Detail	Order Qty	Remarks
TPN0000000943	17/04/2014 12:05:34 PM	Nutriflex Lipid Peri 955kcal,1.25L	Details	1	Remarks

Figure3.5-3 Outsource Details

**STEP 5**

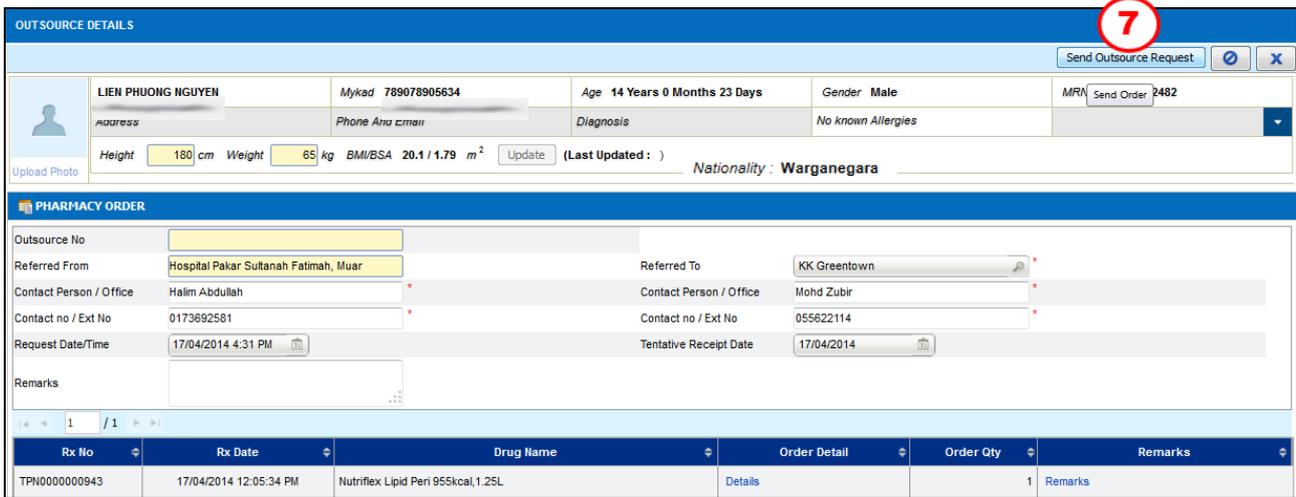
Enter **Contact Person/office, Contact No/Ext/No., Request Date/Time** and **Remarks**

**STEP 6**

Enter **Referred To** by click on the search button

**Note**

Enter **Contact Person/office, Contact No/Ext/No.** and **Tentative Receipt Date.**



**OUTSOURCE DETAILS**

Send Outsource Request

LIEN PHUONG NGUYEN Mykad 789078905634 Age 14 Years 0 Months 23 Days Gender Male MRN Send Order 2482

Address Phone And Email Diagnosis No known Allergies

Height 180 cm Weight 65 kg BMI/BSA 20.1 / 1.79 m<sup>2</sup> Update (Last Updated : ) Nationality : Warganegara

**PHARMACY ORDER**

Outsource No [ ] Referred From Hospital Pakar Sultanah Fatimah, Muar Referred To KK Greentown

Contact Person / Office Halim Abdullah Contact Person / Office Mohd Zubir

Contact no / Ext No 0173692581 Contact no / Ext No 055622114

Request Date/Time 17/04/2014 4:31 PM Tentative Receipt Date 17/04/2014

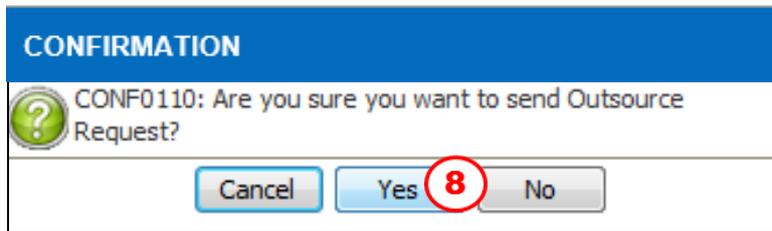
Remarks [ ]

Rx No	Rx Date	Drug Name	Order Detail	Order Qty	Remarks
TPN000000943	17/04/2014 12:05:34 PM	Nutriflex Lipid Peri 955kcal,1.25L	Details	1	Remarks

Figure 3.5-4 Outsource Details

**STEP 7**

Click on the  button to send outsource request



**CONFIRMATION**

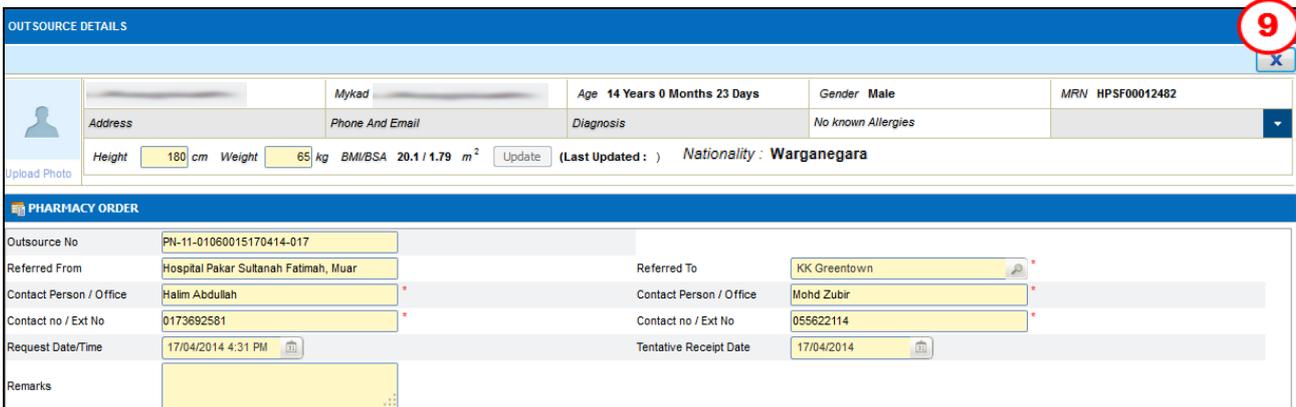
CONF0110: Are you sure you want to send Outsource Request?

Cancel Yes No

Figure 3.5-5 Send Request Alert Message

**STEP 8**

Click on the  button to send outsource request



**OUTSOURCE DETAILS**

X

Address Mykad Age 14 Years 0 Months 23 Days Gender Male MRN HPSF00012482

Phone And Email Diagnosis No known Allergies

Height 180 cm Weight 65 kg BMI/BSA 20.1 / 1.79 m<sup>2</sup> Update (Last Updated : ) Nationality : Warganegara

**PHARMACY ORDER**

Outsource No PN-11-01060015170414-017 Referred From Hospital Pakar Sultanah Fatimah, Muar Referred To KK Greentown

Contact Person / Office Halim Abdullah Contact Person / Office Mohd Zubir

Contact no / Ext No 0173692581 Contact no / Ext No 055622114

Request Date/Time 17/04/2014 4:31 PM Tentative Receipt Date 17/04/2014

Remarks [ ]

Figure 3.5-6 Outsource Details

**STEP 9**

Click on the  button to close outsource screen as per Figure 3.5-6



## 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>	<a href="#">Click Here</a>	12	<i>CDR Dispensing</i>	<a href="#">Click Here</a>
2	<i>CDR Order</i>	<a href="#">Click Here</a>	13	<i>Methadone Dispensing</i>	<a href="#">Click Here</a>
3	<i>TDM Order</i>	<a href="#">Click Here</a>	14	<i>PN Dispensing</i>	<a href="#">Click Here</a>
4	<i>PN Order</i>	<a href="#">Click Here</a>	15	<i>Order Management</i>	<a href="#">Click Here</a>
5	<i>IV Order</i>	<a href="#">Click Here</a>	16	<i>Patient Management</i>	<a href="#">Click Here</a>
6	<i>Prepacking</i>	<a href="#">Click Here</a>	17	<i>Radiopharmaceuticals</i>	<a href="#">Click Here</a>
7	<i>Galenical</i>	<a href="#">Click Here</a>	18	<i>Outpatient</i>	<a href="#">Click Here</a>
8	<i>MTAC</i>	<a href="#">Click Here</a>	19	<i>Special Drug Request</i>	<a href="#">Click Here</a>
9	<i>ADR &amp; DAC</i>	<a href="#">Click Here</a>	20	<i>MAR</i>	<a href="#">Click Here</a>
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11	<i>Ward Pharmacy</i>	<a href="#">Click Here</a>	22		