



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

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

|                    |                                     |
|--------------------|-------------------------------------|
| <b>Version</b>     | <b>: 10<sup>th</sup> EDITION</b>    |
| <b>Document ID</b> | <b>: FB_U. MANUAL_PN_DISPENSING</b> |



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Application reference: PhIS & CPS v2.1 & v2.2



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## 1.0 Introduction

### 1.1 Overview of Phis

Pharmacy Information System or better known as PhIS, is a complete and comprehensive system that integrates pharmacy related services geared towards pharmacy excellence. PhIS implementation would transform most of current manual process to electronic system 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/functionalities. The primary objective is to help guide user through the process of completing PhIS application process.

User will understand the following activities in details:

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




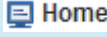







### 1.3 Organised Sections

These are the sections within this document:



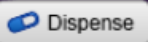

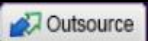
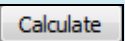


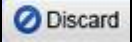
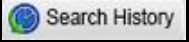
- Section 1 : Introduction
- Section 2 : Application Standard Features
- Section 3 : Parenteral Nutrition Dispensing
- Section 4 : Acronyms
- Section 5 : Links to Clinical Modules

## 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

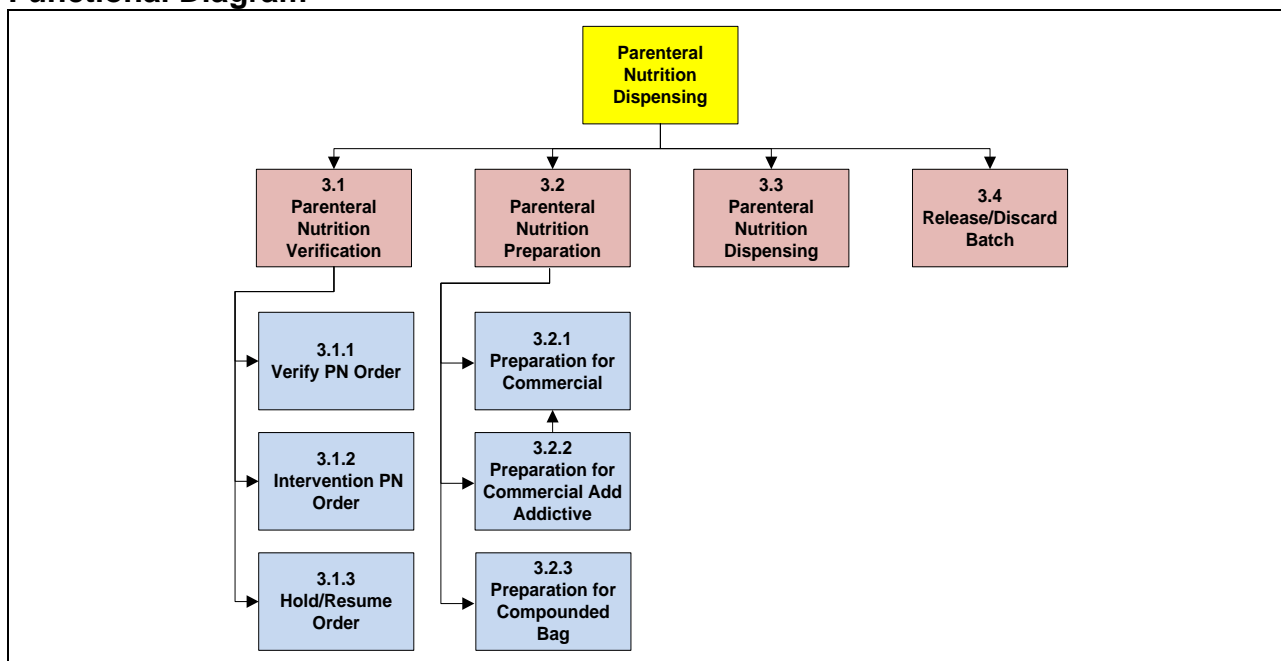


Figure 3.0-1

### 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

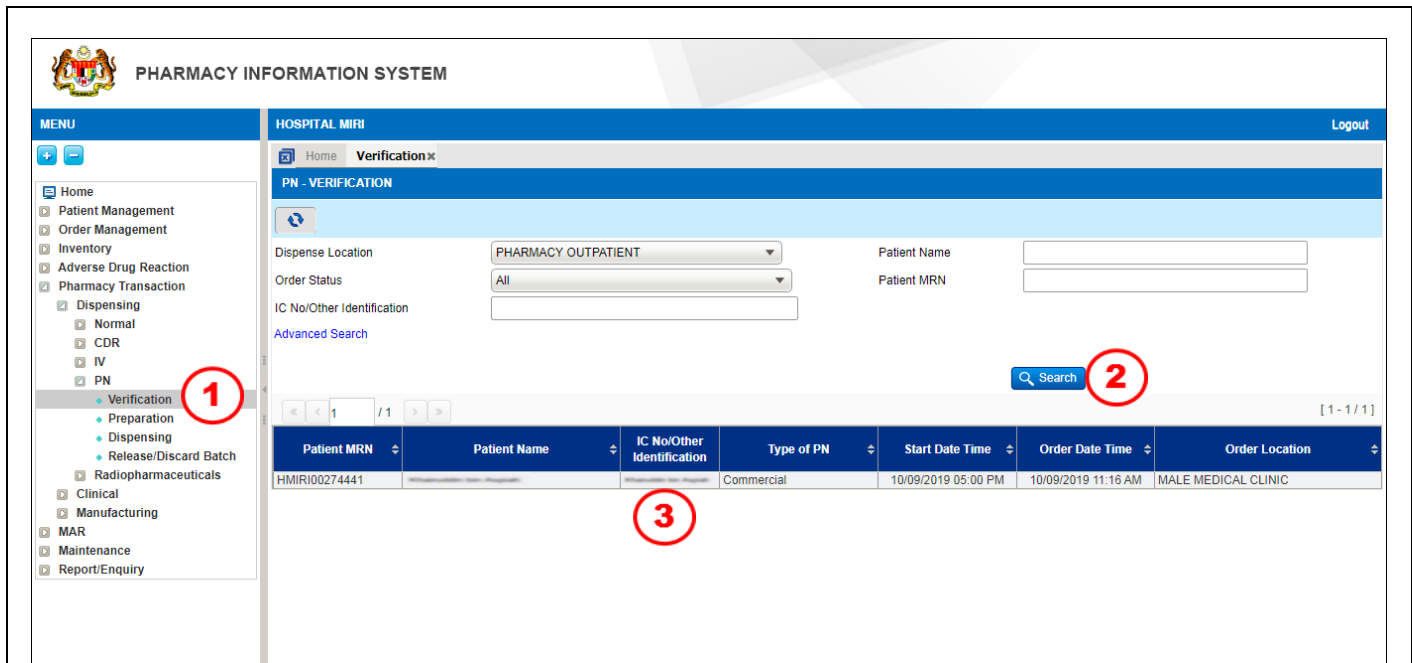


Figure 3.1.1-1 PN Verification Listing Page

#### 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:<br>All<br>New Orders<br>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:<br>Type the MRN either full or partial:<br><i>Example: HPSF00001234 or "1234"</i> |
| <b>Advance Search</b> |                     |   |  |
| a                     | Order Location Type | Search by:<br>- All<br>- Clinic<br>- Day Care<br>- ER<br>- Nursing Unit<br>- 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**

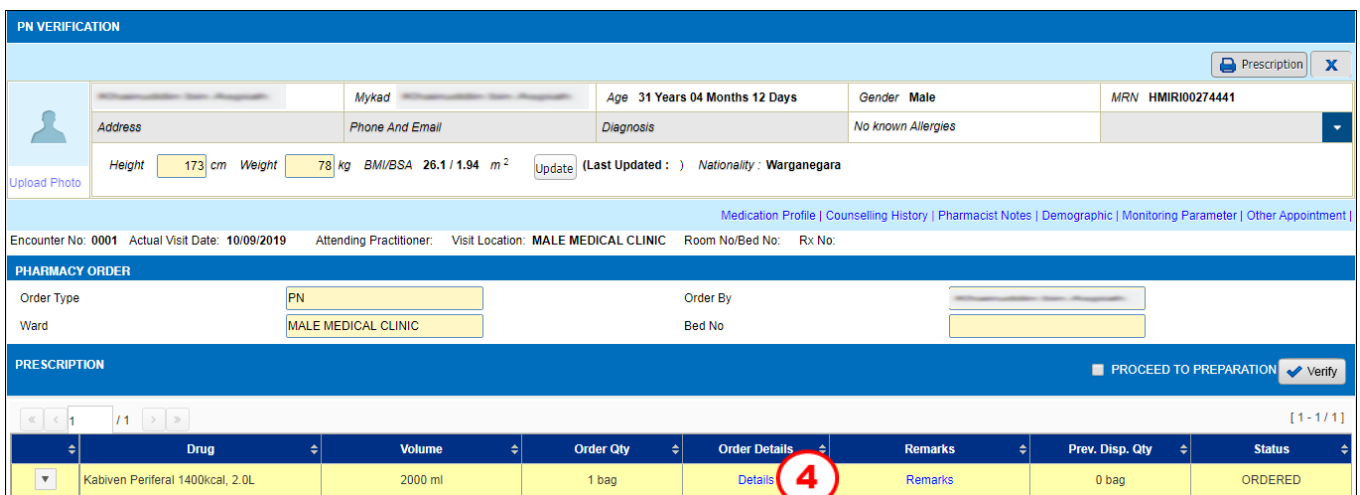
### STEP 3

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' screen. At the top, there's a 'Prescription' button. Below it, patient details are displayed: Mykad, Age (31 Years 04 Months 12 Days), Gender (Male), MRN (HMIRI00274441), Address, Phone And Email, Diagnosis, and No known Allergies. Patient vitals include Height (173 cm), Weight (78 kg), and BMI/BSA (26.1 / 1.94 m<sup>2</sup>). There's an 'Update' button and a note '(Last Updated : )'. Below this, a navigation bar includes links for Medication Profile, Counselling History, Pharmacist Notes, Demographic, Monitoring Parameter, and Other Appointment. The 'Encounter No.' is 0001, 'Actual Visit Date' is 10/09/2019, 'Attending Practitioner' is MALE MEDICAL CLINIC, 'Room No/Bed No.' is Rx No. The 'PHARMACY ORDER' section shows 'Order Type' as PN, 'Order By' as MALE MEDICAL CLINIC, and 'Bed No.' as MALE MEDICAL CLINIC. The 'PRESCRIPTION' section has a 'PROCEED TO PREPARATION' button and a 'Verify' button. At the bottom, a table lists the prescription details:

| Drug                             | Volume  | Order Qty | Order Details    | Remarks | Prev. Disp. Qty | Status  |
|----------------------------------|---------|-----------|------------------|---------|-----------------|---------|
| Kabiven Periferal 1400kcal, 2.0L | 2000 ml | 1 bag     | Details <b>4</b> | Remarks | 0 bag           | ORDERED |

**Figure 3.1.1-2 PN Verification**

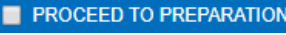
#### Note

##### 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  on the radio button at proceed to preparation, system will be open preparation screen directly.

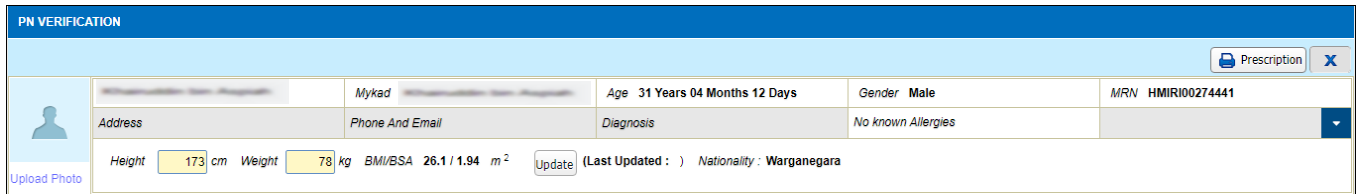


Figure 3.1.1-3 Patient's Banner

#### 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.

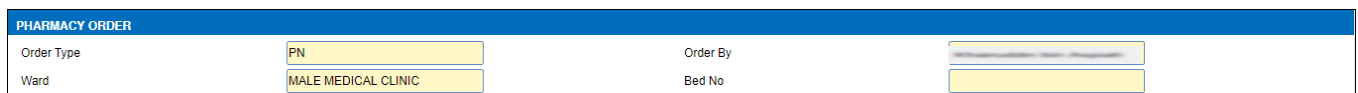

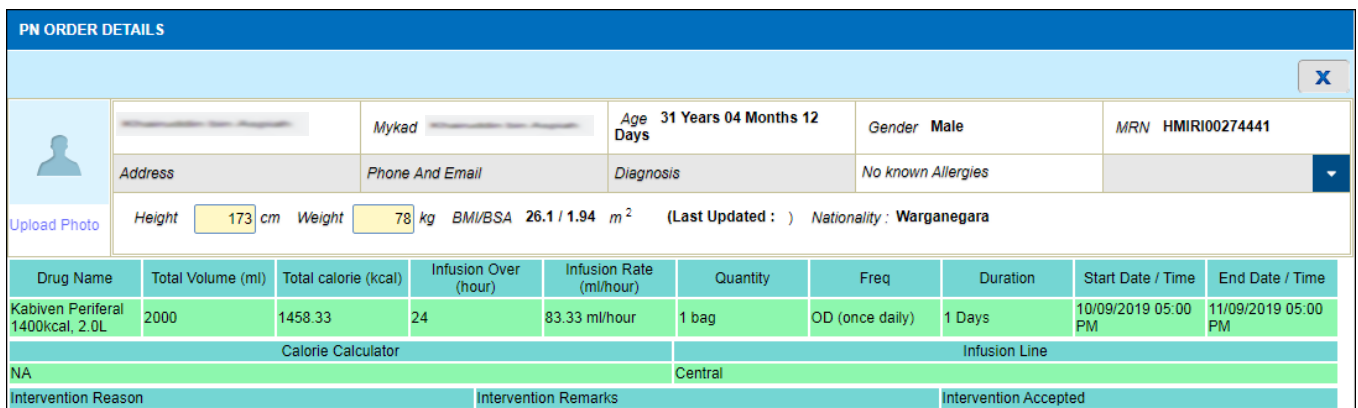


Figure 3.1.1-4 Pharmacy Order

#### STEP 4

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



| 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: NA

Infusion Line: 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 INTERVENTION ORDER**
2

**INTERVENTION REASON**

<< 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"/>     |

**MODIFY ORDER**

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

**Kabiven Periferal 1400kcal, 2.0L** ☐ Add Additive

Body weight type: ☒ Actual ☐ Ideal ☐ Adjusted    Body weight: **78 kg**

**ADMINISTRATION INFO**

|  |  |
|--|--|
| Volume: <b>2000 ml</b>   | Indication for PN: <b>Major trauma and burns</b> |
| Frequency: <b>OD (once daily)</b>                                  | Infusion Line: <b>Central</b>                    |
| Infusion Over: <b>24 hours</b>                                     | Order Quantity: <b>1 bag</b>                     |
| Start Date/Time: <b>10/09/2019 05:00 PM</b>                        | Duration: <b>1 Days</b>                          |
| End Date/Time: <b>11/09/2019 05:00 PM</b>                          | Dispense Location: <b>PHARMACY OUTPATIENT</b>    |
| Remarks: <div style="border: 1px solid #ccc; height: 30px;"></div> |  |

**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:
  - Intervention Reason
  - Modify Order
  - Administration Information
  - 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

#### Comercial PN type Intervention

PN INTERVENTION ORDER

History

Confirm

X

INTERVENTION REASON

<<

<

1

/ 1

>

>>

[ 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)

Kabiven Periferal 1400kcal, 2.0L

Compounded

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 3.1.2-3 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

<<

<

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

X

INTERVENTION REASON

<

>

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"/>     |

MODIFY ORDER

Type of PN

Commercial / MOH Pre mix(Std. Soln)

Smof Kabiven Peripheral 1000kcal, 1.5L

Compounded

Add Additive

Body weight type:

Actual

Ideal

Adjusted

Body weight: 60 kg

ADMINISTRATION INFO

Ordered Volume

1448 ml

Frequency

OD (once daily)

Infusion Over

24 hours

Start Date/Time

14/10/2019 05:00 PM

End Date/Time

15/10/2019 05:00 PM

Indication for PN

Enterocutaneous fistulae

Infusion Line

Central

Order Quantity

1 bag

Dispense Location

Satellite Pharmacy

Remarks

PN COMPONENT

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

X

INTERVENTION REASON

<

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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"/>     |

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

Use Fluid Calculator

☒

By weight

Per day

|  |             |                           |                     |            |
|--|-------------|---------------------------|---------------------|------------|
| Total volume required  | 43.08 ml/kg |                           | 2800 ml             |            |
| Total oral feeding   | 0 ml/kg     |                           | ml                  |            |
| TPN Volume   | 43.08 ml/kg |                           | 2800 ml             |            |
| Energy required  | kcal/kg     |                           | kcal                |            |
| <b>Macronutrient</b>   |             |                           |                     |            |
| Carbohydrate   | 3 g/kg      | Recommended range(per kg) | 3.00 - 5.00 g/kg    | 195 g      |
| Lipid  | 1 g/kg      |                           | 0.50 - 2.00 g/kg    | 65 g       |
| Protein  | 1 g/kg      |                           | 0.50 - 2.00 g/kg    | 65 g       |
| L-Glutamin   | 1.54 ml/kg  |                           | 1.50 - 2.50 ml/kg   | 100 ml     |
| Carbohydrate:Lipid(kcal)   | 57 : 43     | Nitrogen Content          | 11 g                | NPC:NRatio |
|  |             |                           | 131 : 1             | Total      |
|  |             |                           |                     | 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     |
| Trace elements   | 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

Frequency

OD

Infusion Over

24 hours

Start Date/Time

14/10/2019 05:00 PM

End Date/Time

15/10/2019 05:00 PM

Indication for PN

Gastrointestinal fistula

Infusion Line

Central

Order Quantity

1 BAG

Dispense Location

Satellite Pharmacy

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)     | 1 (65)       | 1 (65)     | 0.1 (6.5)  | 0.1 (6.5)  | NA                  | 0.08 (5)            |
| Sodium mmol per kg (mmol)         | 1 (65)       | 1 (65)       | 0.1 (6.5)  | 0.1 (6.5)  | NA         | NA                  | NA                  |
| Potassium mmol per kg (mmol)      | 1 (65)       | 1 (65)       | 0.1 (6.5)  | 0.1 (6.5)  | NA         | NA                  | NA                  |
| Calcium mmol per kg (mmol)        | 0.1 (6.5)    | 0.1 (6.5)    | 0.1 (6.5)  | 0.1 (6.5)  | NA         | NA                  | NA                  |
| Magnesium mmol per kg (mmol)      | 0.1 (6.5)    | 0.1 (6.5)    | 0.1 (6.5)  | 0.1 (6.5)  | NA         | NA                  | NA                  |
| Acetate mmol per kg (mmol)        | 0.1 (6.5)    | 0.1 (6.5)    | 0.1 (6.5)  | 0.1 (6.5)  | NA         | NA                  | NA                  |
| Trace Element ml per kg (ml)      | 0.08 (5)     | 0.08 (5)     | 0.08 (5)   | 0.08 (5)   | NA         | NA                  | NA                  |
| Fat Soluble Vit. ml per kg (ml)   | NA           | NA           | NA         | NA         | NA         | NA                  | NA                  |
| Water Soluble Vit. ml per kg (ml) | NA           | NA           | NA         | NA         | NA         | NA                  | NA                  |
| Combine Vitamin ml per kg (ml)    | NA           | NA           | NA         | NA         | NA         | NA                  | NA                  |
| Protein g per kg (g)              | 1 (65)       | 1 (65)       | 1 (65)     | 1 (65)     | 1 (65)     | 1.54 (100)          | NA                  |
| Carbohydrate g per kg (g)         | 3 (195)      | 3 (195)      | 3 (195)    | 3 (195)    | 3 (195)    | 3 (195)             | NA                  |
| Carbohydrate %                    | NA           | NA           | NA         | NA         | NA         | NA                  | NA                  |
| Lipid g per kg (g)                | 1 (65)       | 1 (65)       | 1 (65)     | 1 (65)     | 1 (65)     | 1 (65)              | NA                  |
| L-Glutamin ml per kg (ml)         | 1.54 (100)   | 1.54 (100)   | 1.54 (100) | 1.54 (100) | 1.54 (100) | 1.54 (100)          | NA                  |
| Calorie Calculator                | NA           | NA           | NA         | NA         | NA         | NA                  | NA                  |
| Infusion Line                     | Central      | Central      | Central    | Central    | Central    | Central             | 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 [Refresh] X

INTERVENTION REASON

< 1 / 1 >

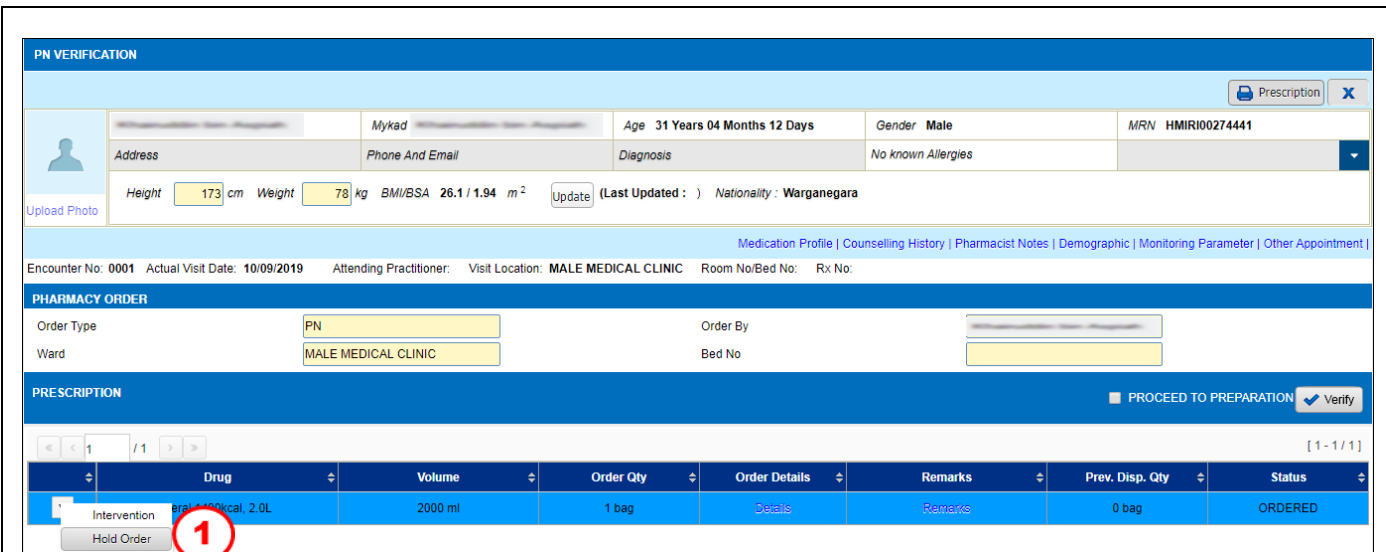
[ 1 - 12 / 12 ]

|                                     | 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 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



The screenshot shows the 'PN VERIFICATION' screen. At the top, there's a 'Prescription' button. Below it, patient information is displayed: 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>), and Nationality (Warganegara). There are links for 'Medication Profile', 'Counselling History', 'Pharmacist Notes', 'Demographic', 'Monitoring Parameter', and 'Other Appointment'. Below this, encounter details are shown: Encounter No: 0001, Actual Visit Date: 10/09/2019, Attending Practitioner, Visit Location: MALE MEDICAL CLINIC, Room No/Bed No, and Rx No. The 'PHARMACY ORDER' section shows Order Type (PN), Ward (MALE MEDICAL CLINIC), Order By, and Bed No. The 'PRESCRIPTION' section has a 'PROCEED TO PREPARATION' button and a 'Verify' checkbox. A table lists the prescription details: Drug (Intervention), Volume (2000 ml), Order Qty (1 bag), Order Details (Details), Remarks (Remarks), Prev. Disp. Qty (0 bag), and Status (ORDERED). A red circle with the number '1' highlights the 'Hold Order' button in the bottom left corner.


Figure 3.1.3-1 PN Verification Screen

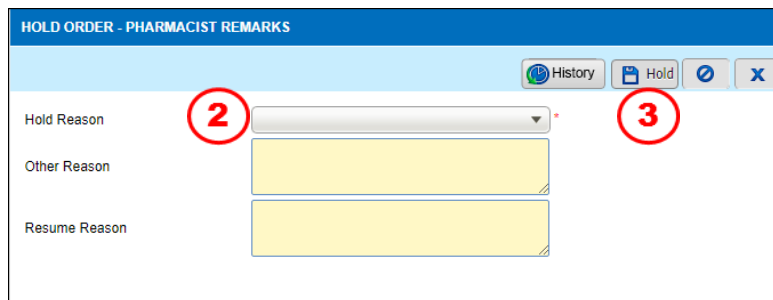
#### Note

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



The screenshot shows the 'HOLD ORDER - PHARMACIST REMARKS' screen. It has buttons for 'History', 'Hold', and 'X'. There are three input fields: 'Hold Reason' (with a dropdown arrow), 'Other Reason', and 'Resume Reason'. Red circles with numbers '2' and '3' highlight the 'Hold Reason' dropdown and the 'Hold' button respectively.

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

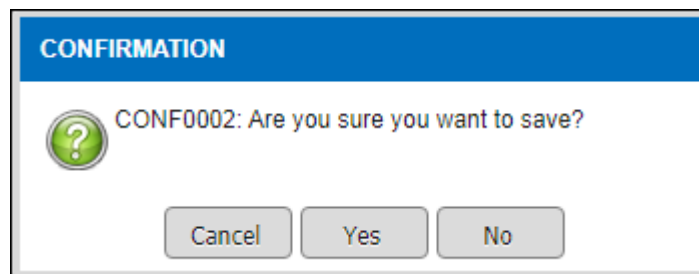
- Others
- Patient Refused
- Polypharmacy
- Suggest to Monitor Vital Signs/Lab Result
- Wrong Patient

**Note**

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

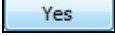
**STEP 3**

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

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

Height: 173 cm Weight: 78 kg BMI/BSA: 26.1 / 1.94 m<sup>2</sup> Update (Last Updated: ) Natio: 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: [Order By]  
Ward: MALE MEDICAL CLINIC Bed No: [Bed No]

**PRESCRIPTION** PROCEED TO PREPARATION Verify

1 / 1


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

Resume Order

Figure 3.1.3-4 PN Verification

### Resume Order

#### STEP 4

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

**HOLD ORDER - PHARMACIST REMARKS**

History Resume X

Hold Reason: Inappropriate Duration

Other Reason: [Text Area]

Resume Reason: Done

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  button to resume hold order

#### STEP 7

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

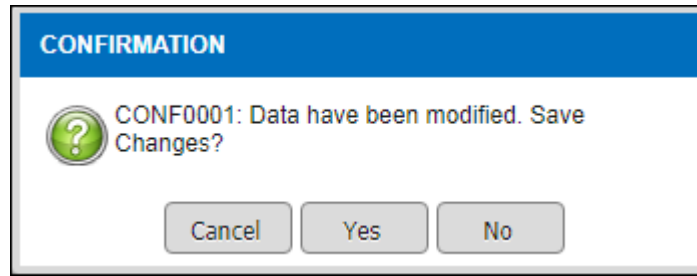





Figure 3.1.3-6 Confirmation Alert Message

**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  |              |                        |         |                |   |
|--|--------------|------------------------|---------|----------------|---|
|  |              |                        |         |                |  |
|  |              |                        |         |                |   |
| <div>   <span>1</span> / 1             </div> <div>[ 1 - 1 / 1 ]</div> |              |                        |         |                |   |
| 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

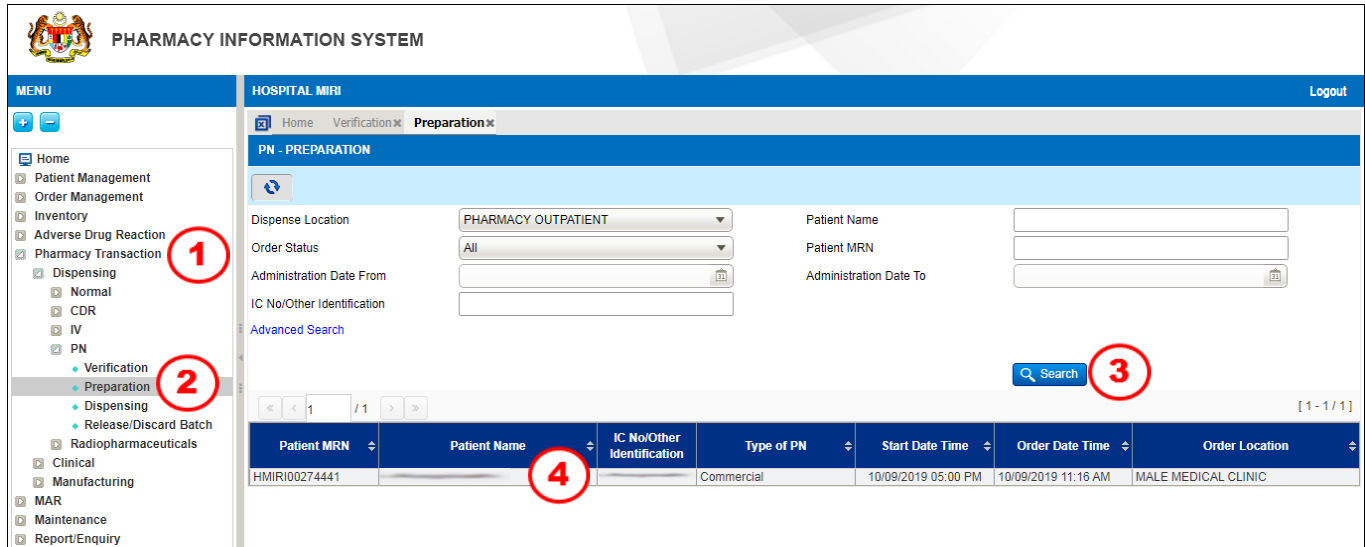


Figure 3.2.1-1 PN Preparation Listing Page

#### 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:<br>All<br>Verified<br>Verified Hold<br>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:<br>Type the MRN either full or partial:<br><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:<br>- All<br>- Clinic<br>- Day Care<br>- ER<br>- Nursing Unit<br>- 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

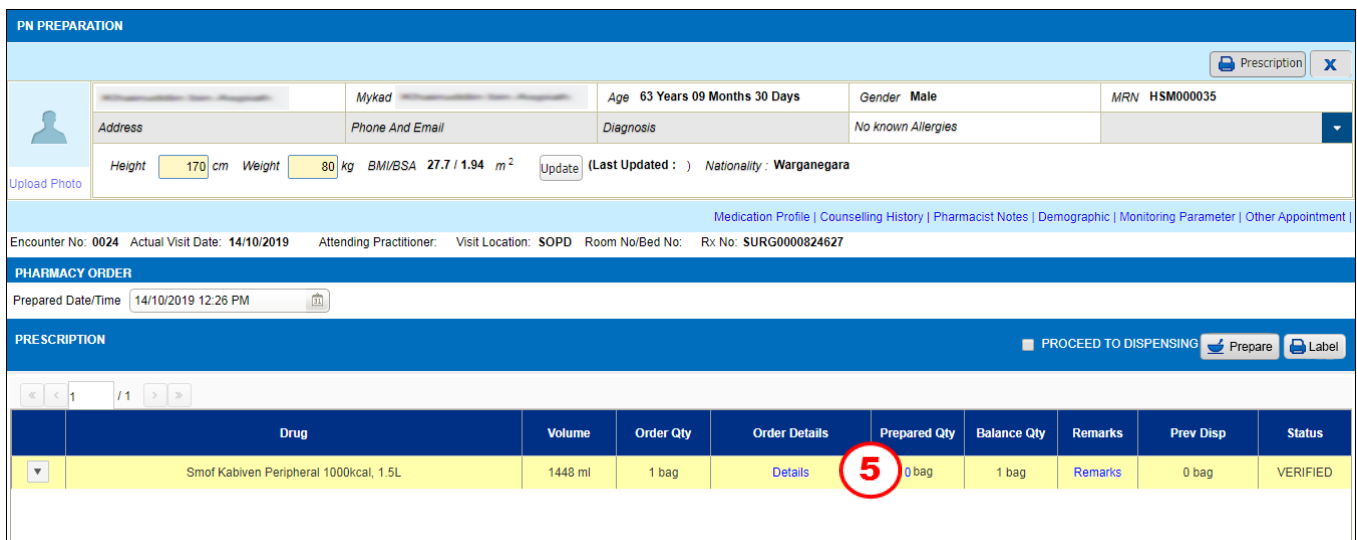
### Note

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



**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 ]

| 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  |                   |                      |                                    |                         |   |                 |                       |                     |                     |
|---|-------------------|----------------------|------------------------------------|-------------------------|---|-----------------|-----------------------|---------------------|---------------------|
|  | Mykad             |                      | Age 63 Years 09 Months 30 Days     |                         | Gender Male                                 |                 | MRN HSM000035         |                     |                     |
|   | Address           |                      | Phone And Email                    |                         | Diagnosis                                   |                 | No known Allergies    |                     |                     |
| Upload Photo  | Height 170 cm     | Weight 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 170 cm Weight 80 kg BMI/BSA 27.7 / 1.94 m<sup>2</sup> Update (Last Updated : ) Nationality : Warganegara

Upload Photo



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  


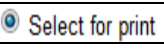



< 1 / 1 >

| 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 :<br>HSM000035  | WARD/BED NO:<br>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 :<br>2323  | Expiry Date :<br>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<br>(Once open use within 48 hours)<br>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 170 cm Weight 80 kg BMI/BSA 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 14/10/2019 12:26 PM

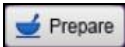
**PRESCRIPTION** PROCEED TO DISPENSING Prepare Label

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 3.2.1-10 PN Preparation

### STEP 9

Click on the  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 Yes 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

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

BATCH DETAIL

1

/ 1

| 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   | 1               |

Reason

Remark

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

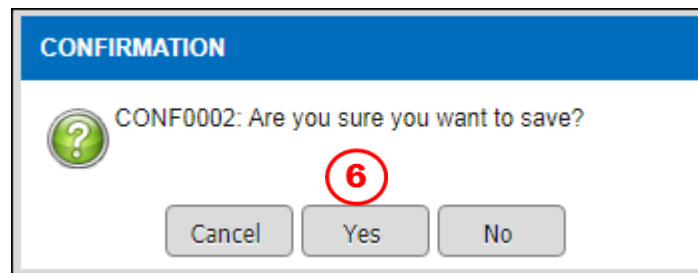


Figure 3.2.1.1-2 Confirmation Alert Message

## 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: [Redacted] Age: 74 Years 07 Months 06 Days Gender: Female MRN: HSM000012

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

Height: 155 cm Weight: 60 kg BMI/BSA: 25 / 1.61 m<sup>2</sup> G6PD: Update (Last Updated: ) Nationality: Warganegara

Upload Photo

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: 14/10/2019 10:58 AM

**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     |        |

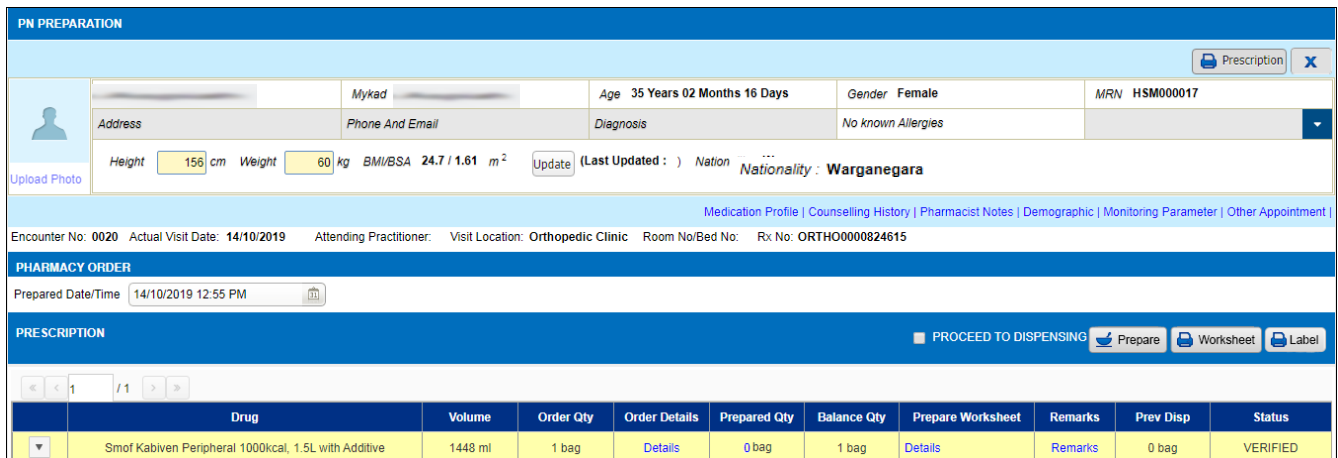
Figure 3.2.1.1-3 PN Preparation



### 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 | Counseling 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

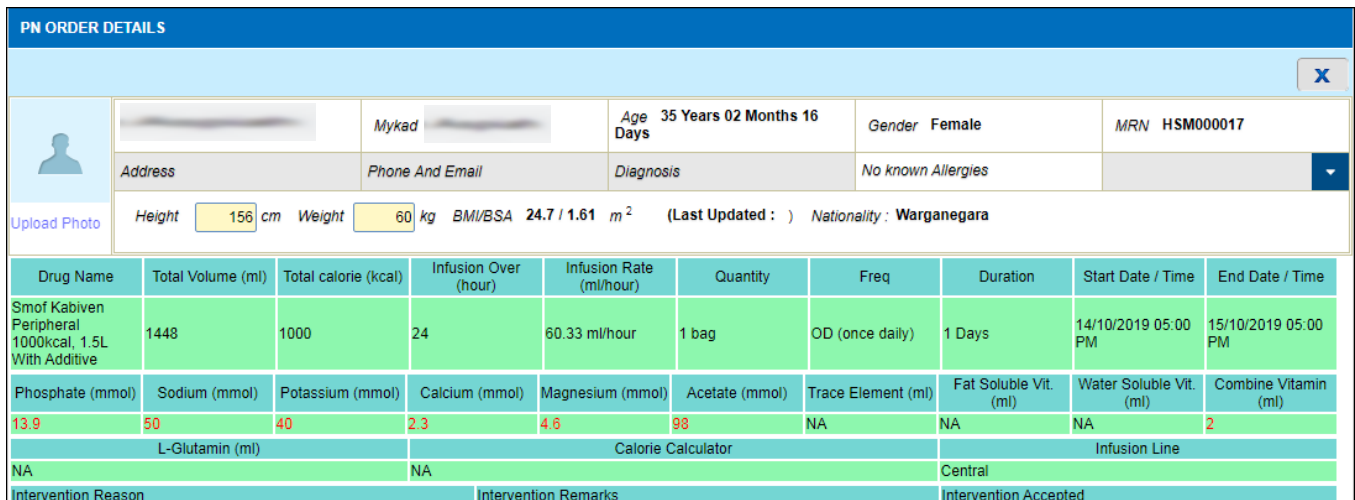
| Drug   | Volume  | Order Qty | Order Details           | Prepared Qty | Balance Qty | Prepare Worksheet       | Remarks | Prev Disp | Status   |
|--|---------|-----------|-------------------------|--------------|-------------|-------------------------|---------|-----------|----------|
| Smof Kabiven 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**

X

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

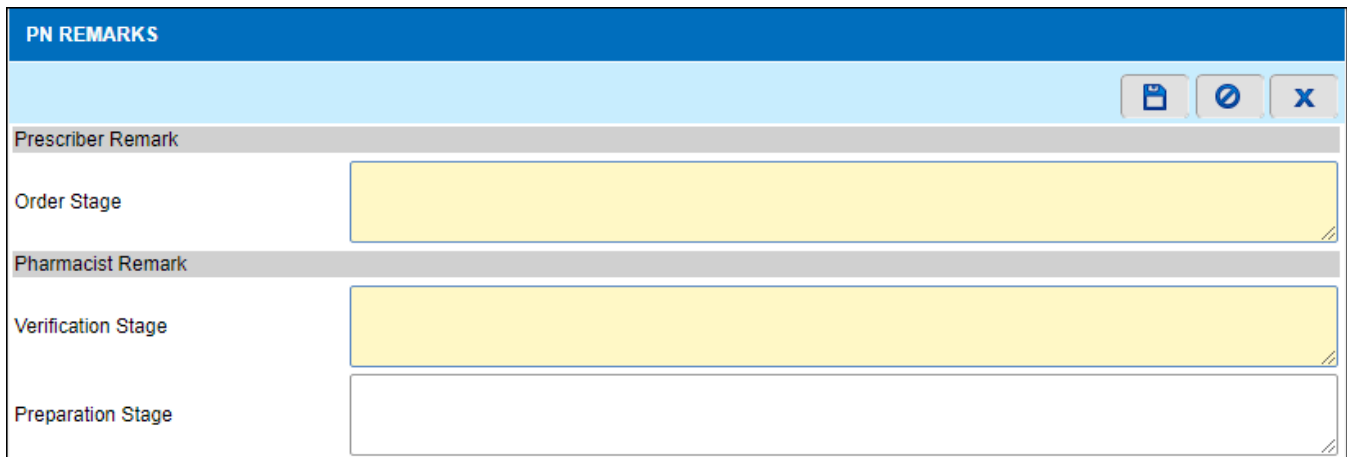
Address: [Redacted] Phone And Email: [Redacted] Diagnosis: [Redacted] No known Allergies

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

| 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

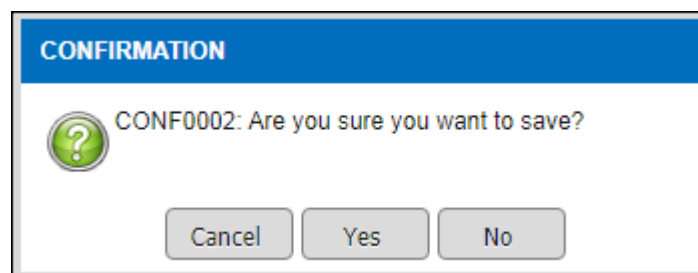
## Remarks



The screenshot shows a window titled "PN REMARKS". It has a light blue header bar with the title. Below the header, there are three buttons: a save icon (floppy disk), a cancel icon (circle with an X), and a close icon (X). The main area is divided into sections for "Prescriber Remark", "Order Stage", "Pharmacist Remark", "Verification Stage", and "Preparation Stage". Each section has a corresponding text input field. The "Order Stage", "Verification Stage", and "Preparation Stage" fields are highlighted in yellow.

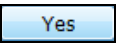


**Figure 3.2.2-3 PN Order Details**

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




The screenshot shows a "CONFIRMATION" dialog box. It has a blue header bar with the title. Below the header, there is a green question mark icon and the text "CONF0002: Are you sure you want to save?". At the bottom, there are three buttons: "Cancel", "Yes", and "No".

**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


 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: 156 cm Weight: 60 kg BMI/BSA: 24.7 / 1.61 m<sup>2</sup> Update (Last Updated: ) Nationality: Warganegara  
 Upload Photo 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     | Details <b>1</b> | 0 bag        | 1 bag       | Details           | Remarks | 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 <b>2</b>    |

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

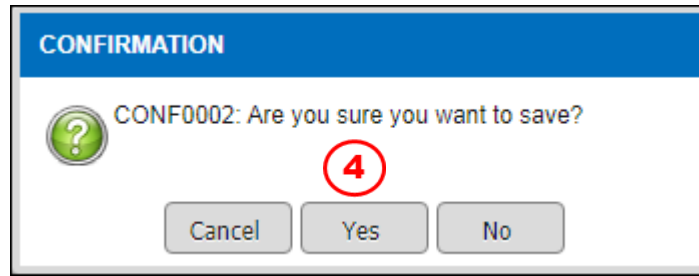



Figure 3.2.2-7 Confirmation Alert Message

#### 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




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

[Medication Profile](#) | [Counseling 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> | 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 ☒ Print Close

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)                |
| <div>▼</div>                                    | <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"/> |
| <div>▼</div>                                    | <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="0"/>    | <input type="text" value="0"/> | <input type="text" value="0"/> |
| <div>▼</div>                                    | <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"/> |
| <div>▼</div>                                    | <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                        |                                  |                                |                                |                                   |                                |                                |
| <div>▼</div>                                    | <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) |                                  |                                |                                |                                   |                                |                                |
| <div>▼</div>                                    | <input type="text" value="0"/> |                | <input type="text" value="0"/> | <input type="text" value="0"/> | <input type="text" value="0"/>          | Water Soluble Vitamins                |                                  |                                |                                |                                   |                                |                                |
| <div>▼</div>                                    | <input type="text" value="0"/> |                | <input type="text" value="0"/> | <input type="text" value="0"/> | <input type="text" value="0"/>          | Fat Soluble Vitamins                  |                                  |                                |                                |                                   |                                |                                |
| <div>▼</div>                                    | <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"/> mOsmol/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"/> |
|   |                                |                |                                |                                | 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

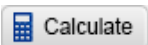
## STEP 6

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

8

PREPARE WORKSHEET

Intervention Auto Allocation Save Close

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"/>      | <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"/>               | 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                            |                                    |                                     |                                    |                                     |                                    |                                     |
| Total Preparation                            | <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"/> |

Calculate

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

CONFIRMATION



CONF5006: Are you sure to do manual allocation ?  
Please save calculator before proceed with manual allocation

Yes No

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

A12AA03000P3001XX

Default SKU

amp

Drug Name

Calcium Gluconate 10% Injection

BATCH DETAIL

< 1 / 1 >

[ 1 - 1 / 1 ]

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

Total Location Quantity

10

Total Allocated Quantity

1

Figure 3.2.2-12 Item Batch Details

- Key in allocated quantity and the save the record

PREPARE WORKSHEET

Intervention

Auto Allocation

DETAIL

Macronutrient

Glucose

g

Vitamin

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

Calculate

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 XXXXXXXX      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

Medication Profile | Counseling 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


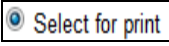


< < 1 / 1 > >

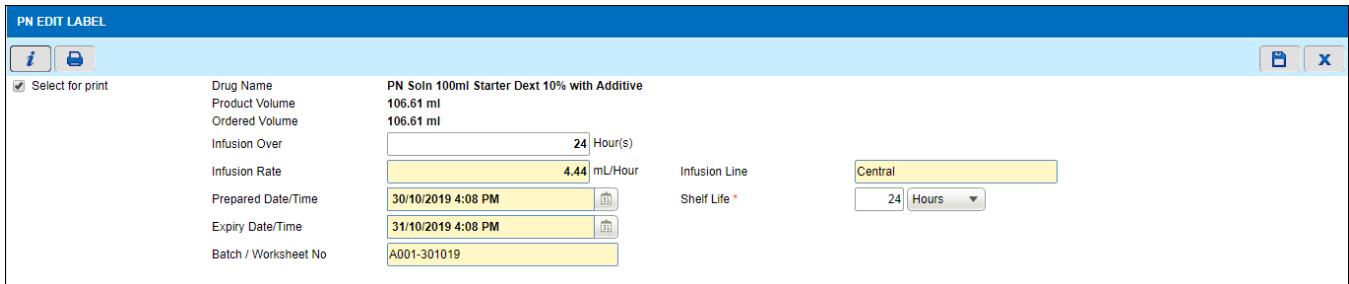
| Drug   | Volume | Order Qty | Order Details | Prepared Qty | Balance Qty | Prepare Worksheet | Remarks | Prev Disp | Status   |
|--|--------|-----------|---------------|--------------|-------------|-------------------|---------|-----------|----------|
| PN Soln 100ml Starter Dext 10% with Additive | 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        | 24   | Hour(s) |  |
| Infusion Rate        | 4.44   | mL/Hour |  |
| Prepared Date/Time   | 30/10/2019 4:08 PM                           |         |  |
| Expiry Date/Time     | 31/10/2019 4:08 PM                           |         |  |
| Batch / Worksheet No | A001-301019                                  |         |  |

Infusion Line: Central

Shelf Life: 24 Hours

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.

| HOSPITAL SERI MANJUNG   |                                     |            |
|---|-------------------------------------|------------|
| PN Soln 100ml Starter Dext 10% with Additive  |                                     |            |
| NAME : _____  |                                     |            |
| ID NO : _____   |                                     |            |
| AGE : 58 Years 01 Months 13 Days  |                                     |            |
| MRN :<br>HSM000015  | WARD/BED NO:<br>FBW FILLING STATION |            |
| Product Volume  | 106.61                              | ml/bag     |
| Ordered   | 106.61                              | ml/bag     |
| Content   | / kg                                | / bag      |
| Protein (g)   | 0.04                                | 3.3        |
| Dextrose (g)  | 0.12                                | 10         |
| Lipid (g)   | 0                                   | 0          |
| Sodium (mmol)   | 0.03                                | 2.5        |
| Potassium (mmol)  | 0                                   | 0.1        |
| Calcium (mmol)  | 0.03                                | 2.2        |
| Magnesium (mmol)  | 0.01                                | 0.5        |
| Phosphate (mmol)  | 0.01                                | 0.86       |
| Chloride (mmol)   | 0.01                                | 1          |
| 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<br>(Once open use within 24 Hours)<br>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**

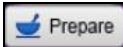
Prepared Date/Time: 30/10/2019 04:08 PM

**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?

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

Order Details

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

Upload Photo

Medication Profile | Counseling 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 | Prepared Date/Time      | 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 3.2.3.1-1 PN Preparation

**PN ORDER DETAILS**

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

Upload Photo

| 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

Prepare Worksheet

Details

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

2800 ml

Energy required

1705 kcal

Product category

☒ 3 in 1
 ☐ 2 in 1

Macronutrient

Glucose

195 g

Lipid

65 g

Protein

65 g

Electrolytes

Sodium(Natrium),Na+

65 mmol

Potassium(Kalium),K+

65 mmol

Vitamin

Vitamin Solution

ml

Water soluble

ml

Fat soluble

ml

Trace elements

5 ml

Acetate

0 mmol

L-Glutamin

100 ml

Calcium,Ca2+

6.5 mmol

Phosphate,(PO4)2-

39 mmol

Magnesium,Mg+

6.5 mmol

| Drug selected                                   | Volume (ml) | Order Quantity | Allocated Quantity | Calorie (kcal) | Osmolarity (mOsmol) | Lipid (g)                             | Glucose (g) | Protein (g) | Acetate (mmol) | Phosphate (mmol) | Sodium (mmol) | Potassium (mmol) | Calcium (mmol) | Magnesium (mmol) | Chloride (mmol) |
|---|-------------|----------------|--------------------|----------------|---------------------|---------------------------------------|-------------|-------------|----------------|------------------|---------------|------------------|----------------|------------------|-----------------|
|   | 0           |                | 0                  | 0              | 0                   | 65                                    | 0           | 0           | 0              | 0                | 0             | 0                | 0              | 0                | 0               |
|   | 0           |                | 0                  | 0              | 0                   | 0                                     | 195         | 0           | 0              | 0                | 0             | 0                | 0              | 0                | 0               |
| Amino acid 15% (Aminoplasmal) 500ml IV Soln     | 0           |                | 0                  | 0              | 0                   | 0                                     | 0           | 65          | 0              | 0                | 0             | 0                | 0              | 0                | 0               |
|   | 0           |                | 0                  | 0              | 0                   | 0                                     | 0           | 0           | 0              | 0                | 0             | 0                | 0              | 0                | 0               |
|   | 0           |                | 0                  | 0              | 0                   | 0                                     | 0           | 0           | 0              | 39               | 0             | 0                | 0              | 0                | 0               |
| Sodium Chloride 3% 500mL IV soln                | 0           |                | 0                  | 0              | 0                   | 0                                     | 0           | 0           | 0              | 0                | 65            | 0                | 0              | 0                | 0               |
| Potassium Chloride 1g/10ml Injection            | 0           |                | 0                  | 0              | 0                   | 0                                     | 0           | 0           | 0              | 0                | 0             | 65               | 0              | 0                | 0               |
|   | 0           |                | 0                  | 0              | 0                   | 0                                     | 0           | 0           | 0              | 0                | 0             | 0                | 6.5            | 0                | 0               |
|   | 0           |                | 0                  | 0              | 0                   | 0                                     | 0           | 0           | 0              | 0                | 0             | 0                | 0              | 6.5              | 0               |
| Trace Element - Paediatric (Peditrace) 10mL Inj | 5           |                | 0                  | 0              | 0                   | Trace Elements                        |             |             |                |                  |               |                  |                |                  |                 |
|   | 0           |                | 0                  | 0              | 0                   | Combine Vitamin (Water & Fat Soluble) |             |             |                |                  |               |                  |                |                  |                 |
|   | 0           |                | 0                  | 0              | 0                   | Water Soluble Vitamins                |             |             |                |                  |               |                  |                |                  |                 |
|   | 0           |                | 0                  | 0              | 0                   | Fat Soluble Vitamins                  |             |             |                |                  |               |                  |                |                  |                 |
|   | 100         |                | 0                  | 0              | 0                   | L-Glutamin                            |             |             |                |                  |               |                  |                |                  |                 |
|   | 0           |                | 0                  | 0              | 0                   | Water For Injection                   |             |             |                |                  |               |                  |                |                  |                 |
| Total Preparation                               | 0           |                |                    | 0              | 0 mOsmol/l          | 0                                     | 0           | 0           | 0              | 0                | 0             | 0                | 0              | 0                | 0               |
|   |             |                |                    |                | Content/L           | 0                                     | 0           | 0           | 0              | 0                | 0             | 0                | 0              | 0                | 0               |

Calculate

|  |                      |              |
|--|----------------------|--------------|
|  | NPC:N Ratio          |              |
| TOTAL content of Calcium and Phosphate | Calcium + Phosphate= | 0 mmol/100ml |
| TOTAL content of Magnesium and Calcium | Calcium + Magnesium= | 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  
Macronutrient  
Glucose  g  
Lipid  g  
Protein  g  
Electrolytes  
Sodium(Natrium),Na+  mmol  
Potassium(Kalium),K+  mmol

Energy required  kcal  
Vitamin  
Vitamin Solution  ml  
Water soluble  ml  
Fat soluble  ml  
Calcium, Ca2+  mmol  
Magnesium, Mg+  mmol

Product category ☐ 3 in 1 ☐ 2 in 1  
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                               |             |             |                |                  |               |                  |                |                  |                 |
|--|-------------|----------------|--------------------|----------------|---------------------|---------------------------------------|-------------|-------------|----------------|------------------|---------------|------------------|----------------|------------------|-----------------|
|  |             |                |                    |                |                     | 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               |
| Dextrose 50% 10mL Inj                            | 390         | 39 amp         | 0                  | 780            | 1084.2              | 0                                     | 195         | 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               |
| Potassium Dihydrogen Phosphate Injection         | 39          | 4 amp          | 0                  | 0              | 78                  | 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                | 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                | 26              |
| Calcium Gluconate 10% Injection                  | 28.76       | 3 amp          | 0                  | 0              | 18.98               | 0                                     | 0           | 0           | 0              | 0                | 0             | 0                | 6.5            | 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               |
| 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                   |             |             |                |                  |               |                  |                |                  |                 |
| Total Preparation                                | 2800        |                |                    | 1705           | 759.06 mOsmol/l     | 65                                    | 195         | 65          | 0              | 39               | 65            | 65               | 6.5            | 6.5              | 91              |
|  |             |                |                    |                | Content/L           | 23.21                                 | 69.64       | 23.21       | 0              | 13.93            | 23.21         | 23.21            | 2.32           | 2.32             | 32.5            |

 Calculate

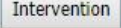
|  |                      |                 |
|--|----------------------|-----------------|
|  | NPC:N Ratio          | 131 : 1         |
| TOTAL content of Calcium and Phosphate | Calcium + Phosphate= | 1.63 mmol/100ml |
| TOTAL content of Magnesium and Calcium | Calcium + Magnesium= | 0.46 mmol/100ml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

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

CONFIRMATION



CONF0002: Are you sure you want to save?

6

Cancel

Yes

No

Figure 3.2.3.1-5 Confirmation Alert Message

## STEP 6

Click on the  button to save record

PN PREPARATION

Prescription

Mykad

Age 55 Years 02 Months 14 Days

Gender Female

MRN HSM000031

Address

Phone And Email

Diagnosis

No known Allergies

Height 156 cm Weight 65 kg BMI/BSA 26.7 / 1.68 m<sup>2</sup>

Update (Last Updated : ) Nationality : Warganegara

Upload Photo

[Medication Profile](#) | [Counseling 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

<< 1 / 1 >>

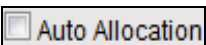
| Drug                | Volume  | Order Qty | Order Details           | Prepared Qty | Balance Qty | Prepare Worksheet       | Remarks                 | Prev Disp | Status   |
|---------------------|---------|-----------|-------------------------|--------------|-------------|-------------------------|-------------------------|-----------|----------|
| 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.



### ADULT PARENTERAL NUTRITION WORKSHEET

#### MINISTRY OF HEALTH

#### Hospital Full Based

Patient Name : OXXXX XXX XXXXXX  
MRN : HPSF00028523  
Ward/Bed No : WAD 7 (MED - L)/B19  
Age : 58 Years 11 Months 26 Days  
Gender : Male  
Body Weight : 67 kg

Worksheet : A116-131016  
Prepared Date/Time : 13/10/2016 03:11 PM  
Prescription # : 70000191335

| DRUG NAME                                   | VOLUME (ml) | QUANTITY  | BATCH NO | COMPONENT DETAIL (PER DAY) |
|---|-------------|-----------|----------|----------------------------|
| Amino acid 15% (Aminoplasmal) 500ml IV      | 893.33      | 2 bottle  | 123      | 134 g                      |
| Dextrose 50% IV soln 500ml                  | 402         | 1 bottle  | P1252129 | 201 g                      |
| Sterile Water for Inj 500mL                 | 15.96       | 1 bottle  | DMHPSF14 | NA                         |
| Fat emulsion, Lipofundin MCT/LCT 20%        | 335         | 2 bottle  | VV3456   | 67 g                       |
| Sodium Chloride 3% 500mL IV soln            | 131.37      | 1 bottle  | P1124468 | 67 mmol                    |
| Potassium Dihydrogen Phosphate Injection    | 40.2        | 5 ampoule | sdfg     | 40.2 mmol                  |
| Magnesium Sulphate 50% Inj (49.3%/5mL)      | 1.68        | 1 ampoule | 335074   | 3.35 mmol                  |
| Potassium Chloride 1g/10ml Inj              | 20          | 2 ampoule | 14014    | 67 mmol                    |
| Calcium Gluconate 10% Inj                   | 30.45       | 4 ampoule | 502065   | 6.7 mmol                   |
| Trace Element-Adult (Addamel N) 10mL Inj    | 10          | 1 ampoule | 124      | 10 ml                      |
| Vitamin A, D, E, K (Vitalipid N Adult) 10ml | 10          | 1 ampoule | CF543    | 10 ml                      |
| Vitamin B and C (Soluvit N) 10 ml Inj       | 10          | 1 vial    | 80HF531  | 10 ml                      |
| Amino acid 20% (Dipeptivan) 100ml IV Soln   | 100         | 1 bottle  | NGT543   | 100                        |
| TPN Volume Bag                              | 2000        | 1 Bag     |          |                            |

Worksheet Generated By : PharmacistTPN Date : 13/10/2016  
Worksheet and Label Checked By : Supervised By :  
Bag Prepared By :  
Final Product Checked By :

Figure 3.2.3.1-7 Sample of Worksheet

**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

Upload Photo

Medication Profile | Counseling 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


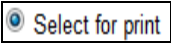


**PRESCRIPTION** PROCEED TO DISPENSING Prepare Worksheet Label Outsource

| 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  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**

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

Prepared Date/Time: 17/06/2017 12:22 PM

Expiry Date/Time: 18/06/2017 12:22 PM

Batch/Worksheet No: 10KF6782

Infusion Line: Peripheral

Shelf Life: 24 Hours


Figure 3.2.3.1-9 PN Edit Label

| HOSPITAL MIRI   |                                       |            |
|---|---------------------------------------|------------|
| PARENTERAL NUTRITION (Adult)  |                                       |            |
| NAME : _____  |                                       |            |
| ID NO : _____   |                                       |            |
| AGE : 61 Years 09 Months  |                                       |            |
| MRN :<br>HKL232335  | WARD/BED NO :<br>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 :<br>A002-290519   | Expiry Date :<br>30/05/2019           | Price : RM |
| Do not use if any visible solid particles, growth or precipitation appears.   |                                       |            |
| Store in refrigerator (2-8 °C). Protect from light<br>(Once open use within 24 Hours)<br>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  Age 55 Years 02 Months 14 Days Gender Female MRN HSM000031

Address Phone And Email Diagnosis No known Allergies

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

Upload Photo

Medication Profile | Counseling 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 3.2.3.1-12 Sample of PN Label

### STEP 8

Click on the  button to prepare PN order

**CONFIRMATION**

CONF0060: Do you want to proceed with the preparation?

Yes No

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

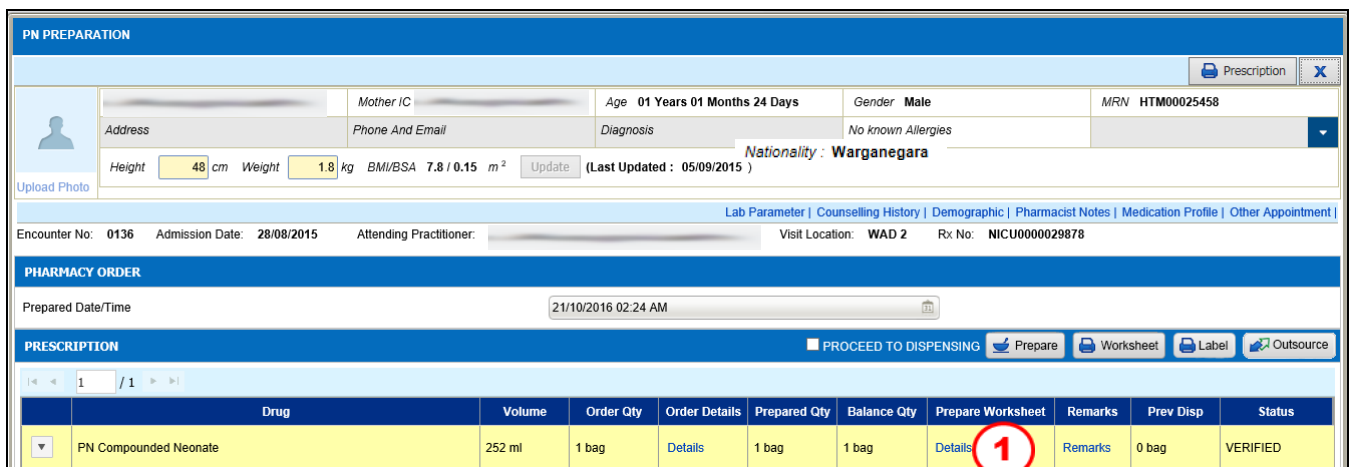
#### Note

- 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

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

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

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](#)

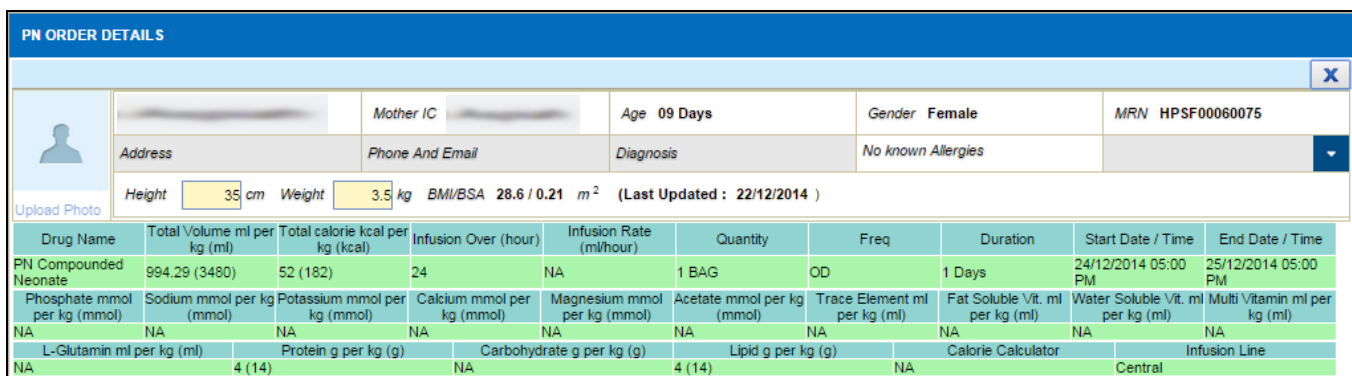
| Drug                  | Volume | Order Qty | Order Details           | Prepared Qty | Balance Qty | Prepare Worksheet       | Remarks | Prev Disp | Status   |
|-----------------------|--------|-----------|-------------------------|--------------|-------------|-------------------------|---------|-----------|----------|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

Address: [Redacted] Mother IC: [Redacted] Age: 09 Days Gender: Female MRN: HPSF00060075  
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) | NA                          | Potassium mmol per kg (mmol)     | NA                   | Calcium mmol per kg (mmol) | NA       | 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)    | 4 (14)                      | Protein g per kg (g)             | NA                   | Carbohydrate g per kg (g)  | 4 (14)   | Lipid g per kg (g)           | NA                              | Calorie Calculator                | Infusion Line                |
| NA                           | NA                          | NA                               | NA                   | NA                         | NA       | NA                           | NA                              | Central                           | Central                      |

Figure 3.2.3.2-2 PN Order Details



### Figure 3.2.3.2-3 Prepare Worksheet



## STEP 7

Click on  button to save record

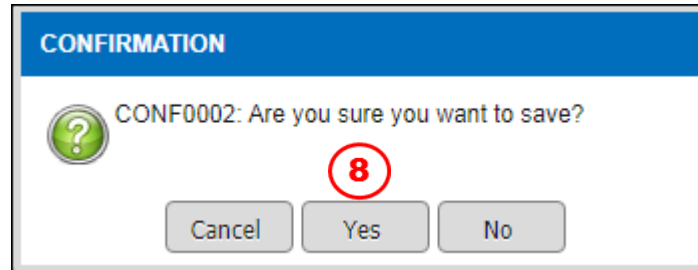




Figure 3.2.3.2-6 Confirmation Alert Message

## 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 (Vitlipid 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                 |
| Total Preparation                             | 0           |                |                    | 0              | 0                   | 0         |                       |

Calculate

**PN Bag (Without lipid)**

| Drug selected                                   | Volume (ml) | Order Quantity | Allocated Quantity | Calorie (kcal) | Osmolarity (mOsmol) | 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               |
| Amino acid 13.4% (Glamin) 500ml IV Soln         | 0           |                |                    | 260.93         | 0                   | 0                   | 65.23       | 0              | 0                | 0             | 0                | 0              | 0                | 0               |
| Sodium Acetate 2mmol/ml Injection               | 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               |
| Sodium Chloride 3% 500mL IV soln                | 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               |
| Calcium Gluconate 10% Injection                 | 0           |                |                    | 0              | 0                   | 0                   | 0           | 0              | 0                | 0             | 0                | 6.52           | 0                | 0               |
| Magnesium Sulphate 50% Injection (49.3%/5mL)    | 0           |                |                    | 0              | 0                   | 0                   | 0           | 0              | 0                | 0             | 0                | 0              | 6.52             | 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 |             |                |                  |               |                  |                |                  |                 |
| Total Preparation                               | 2810        |                |                    | 1043.71        | 0                   | 195.7               | 65.23       | 0              | 39.14            | 65.23         | 65.23            | 6.52           | 6.52             | 0               |
|   |             |                |                    |                | Content/L           | 69.64               | 23.21       | 0              | 13.93            | 23.21         | 23.21            | 2.32           | 2.32             | 0               |

Calculate


|  |  |                                      |
|--|--|--------------------------------------|
| NPC:N Ratio                            |  | 71 : 1                               |
| TOTAL content of Calcium and Phosphate |  | Calcium + Phosphate= 1.62 mmol/100ml |
| TOTAL content of Magnesium and Calcium |  | Calcium + Magnesium= 0.46 mmol/100ml |

Figure 3.2.3.2-7 Prepare Worksheet



**PN PREPARATION**

Prescription [X]


 Address: \_\_\_\_\_ Mother IC: \_\_\_\_\_ Age: 09 Days Gender: Female MRN: HPSF00060075  
 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) 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 3.2.3.2-8 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<br>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                       |
| Total Volume                      | 2419        | 1 Bag     |          |                               |

| DRUG NAME  | VOLUME (ml) | QUANTITY  | BATCH NO        | COMPONENT<br>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                       |
| Total Volume                                     | 206         | 1 Syringe |                 |                               |

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**

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

Infusion Line: Central  
 Shelf Life:  24 Hours

---




☐ Select for print  
 Lipid Bag: Lipid And Vitamins  
 Drug Name: Lipid And Vitamins  
 Total Volume: 0 mL  
 Infusion Over:  24 Hour(s)  
 Infusion Rate:  0.04 mL/Hour  
 Prepared Date/Time:  27/09/2019 2:11 PM   
 Expiry Date/Time:  28/09/2019 2:11 PM   
 Batch / Worksheet No: A001-270919

Shelf Life:  24 Hours

Figure 3.2.3.2-11 PN Edit Label

**Note**

**PN Compounded Pediatric**

- 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 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,<br/>MUAR</b>  |  |              |
| PARENTERAL NUTRITION (Adult)  |  |              |
| NAME : _____  |  |              |
| ID NO : _____   |  |              |
| AGE : 30 Years 04 Months 29 Days  |  |              |
| MRN :<br>HPSF00268220   | WARD/BED NO :<br>KLINIK PAKAR<br>PEMBEDAHAAN |              |
| 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 :<br>A001-270919   | Expiry Date :<br>28/09/2019                  | Price : RM   |
| Do not use if any visible solid particles, growth or precipitation appears.   |  |              |
| Store in refrigerator (2-8 °C). Protect from light<br>(Once open use within 24 Hours)<br>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            | PN Compounded Adult                             |  |
|  | Total Volume         | 3100 ml   |  |
|  | Infusion Over        | <input type="text" value="24"/> Hour(s)         |  |
|  | Infusion Rate        | <input type="text" value="129.17"/> mL/Hour     | Infusion Line <input type="text" value="Central"/> |
|  | Prepared Date/Time   | <input type="text" value="27/09/2019 2:11 PM"/> | Shelf Life * <input type="text" value="24"/> Hours |
|  | Expiry Date/Time     | <input type="text" value="28/09/2019 2:11 PM"/> |  |
|  | Batch / Worksheet No | <input type="text" value="A001-270919"/>        |  |
| <input checked="" type="checkbox"/> Select for print | Lipid Bag            |   |  |
|  | Drug Name            | Lipid And Vitamins                              |  |
|  | Total Volume         | 0 mL  |  |
|  | Infusion Over        | <input type="text" value="24"/> Hour(s)         |  |
|  | Infusion Rate        | <input type="text" value="0.04"/> mL/Hour       | Shelf Life * <input type="text" value="24"/> Hours |
|  | Prepared Date/Time   | <input type="text" value="27/09/2019 2:11 PM"/> |  |
|  | Expiry Date/Time     | <input type="text" value="28/09/2019 2:11 PM"/> |  |
|  | Batch / Worksheet No | <input type="text" value="A001-270919"/>        |  |

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                             |              |               |                       |
| ID NO                            |              |               |                       |
| 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<br>4:12 PM |
| Total Vol                        | 40000 mL     | Date Prepared | 27/09/2019<br>4:12 PM |
| Calories                         | 7200 kcal    | Price (RM)    |                       |
| (Keep refrigerated)              |              |               |                       |

---

| HOSPITAL PAKAR SULTANAH FATIMAH, |                         |               |                       |
|----------------------------------|-------------------------|---------------|-----------------------|
| NAME                             |                         |               |                       |
| ID NO                            |                         |               |                       |
| 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<br>4:12 PM |
| Total Vol                        | 40000 mL                | Date Prepared | 27/09/2019<br>4:12 PM |
| Calories                         | 7200 kcal               | Price (RM)    |                       |
| (Keep refrigerated)              |                         |               |                       |

---

| HOSPITAL PAKAR SULTANAH FATIMAH, |                         |               |                       |
|----------------------------------|-------------------------|---------------|-----------------------|
| NAME                             |                         |               |                       |
| ID NO                            |                         |               |                       |
| 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<br>4:12 PM |
| Total Vol                        | 40000 mL                | Date Prepared | 27/09/2019<br>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

Upload Photo

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


|   | 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

Figure 3.2.3.2-16 Preparation Confirmation Alert Message

#### STEP 11

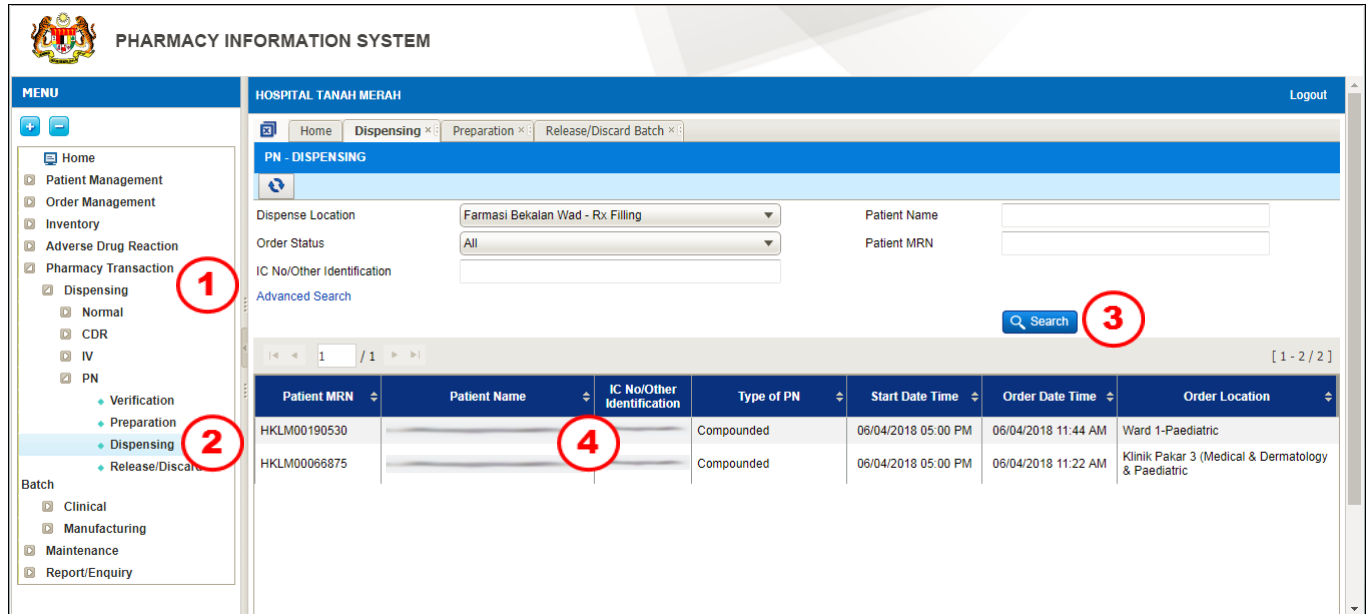
Click on the  button to confirm prepare order

#### 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.



**PHARMACY INFORMATION SYSTEM**

**HOSPITAL TANAH MERAH** Logout

Home Dispensing Preparation Release/Discard Batch

**PN - DISPENSING**

Dispense Location: Farmasi Bekalan Wad - Rx Filling Patient Name:

Order Status: All Patient MRN:

IC No/Other Identification:

Advanced Search

[ 1 - 2 / 2 ]

| 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

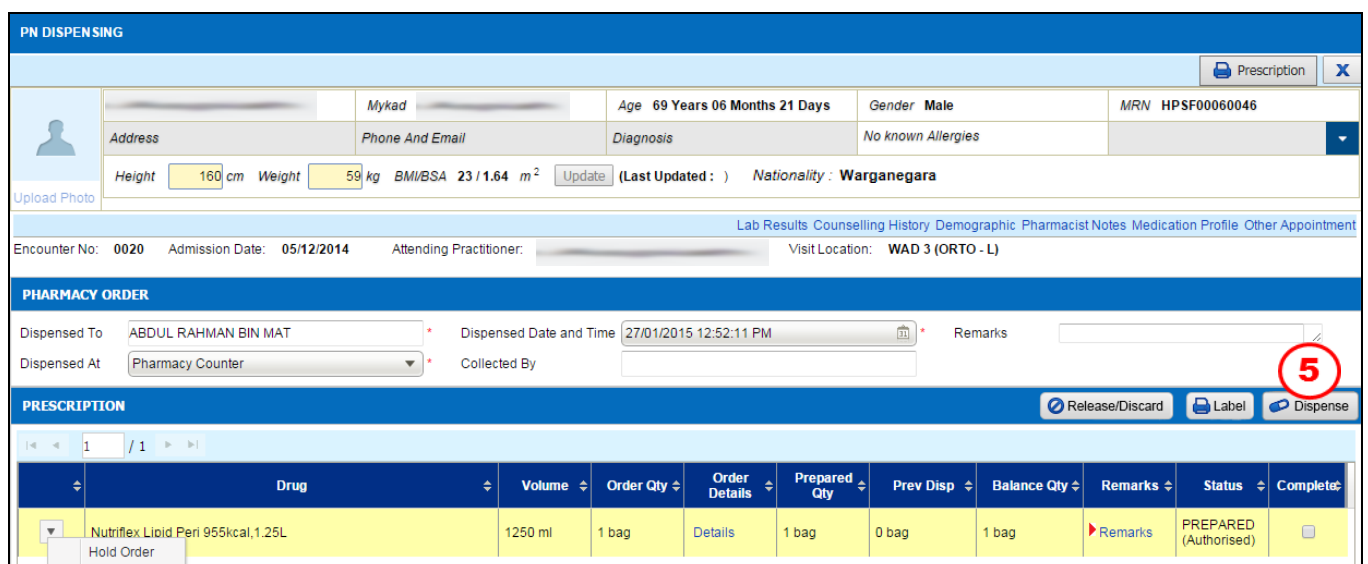


### Note

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:<br>- All<br>- Prepared<br>- 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:<br>Type the MRN either full or partial:<br><i>Example: HPSF00001234 or "1234"</i> |
| Advance Search |                     |   |  |
| a              | Order Location Type | Search by:<br>All<br>Clinic<br>Day Care<br>ER<br>Nursing Unit<br>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

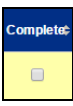


The screenshot displays the 'PN DISPENSING' interface. At the top, there's a 'Prescription' button. Below it, patient details are shown: Mykad, Age (69 Years 06 Months 21 Days), Gender (Male), MRN (HPSF00060046), Address, Phone And Email, Diagnosis, No known Allergies, Height (160 cm), Weight (59 kg), BMI/BSA (23 / 1.64 m<sup>2</sup>), and Nationality (Warganegara). A 'Lab Results' link is visible. The 'PHARMACY ORDER' section shows 'Dispensed To' (ABDUL RAHMAN BIN MAT), 'Dispensed Date and Time' (27/01/2015 12:52:11 PM), and 'Dispensed At' (Pharmacy Counter). The 'PRESCRIPTION' section shows a table with one entry: Nutriflex Lloid Peri 955kcal, 1.25L, 1250 ml, 1 bag, with a status of 'PREPARED (Authorised)'. A red circle with the number '5' highlights the 'Hold Order' button in the bottom left corner of the prescription table.

Figure 3.3-2 PN Dispensing

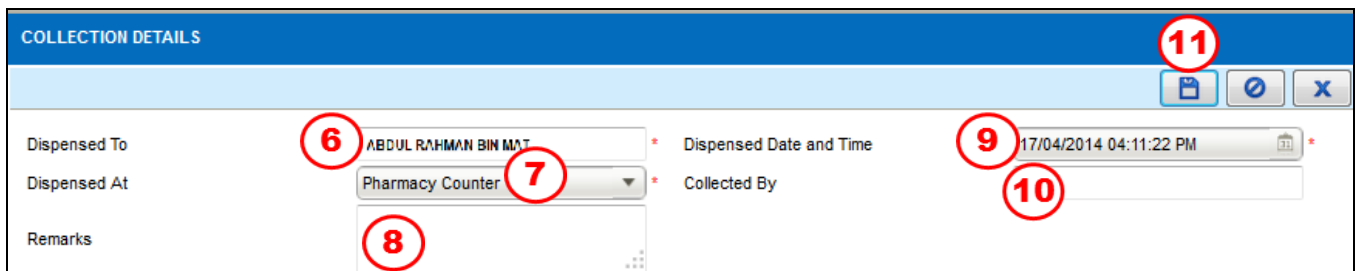
### Note

- 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 form titled 'COLLECTION DETAILS' contains the following fields and controls:

- Dispensed To:** Text field containing 'ABDUL RAHMAN BIN MAT' (labeled 6).
- Dispensed Date and Time:** Text field containing '17/04/2014 04:11:22 PM' (labeled 9).
- Dispensed At:** Dropdown menu showing 'Pharmacy Counter' (labeled 7).
- Collected By:** Text field (labeled 10).
- Remarks:** Text area (labeled 8).
- Complete checkbox:** Located at the top right of the form (labeled 11).

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

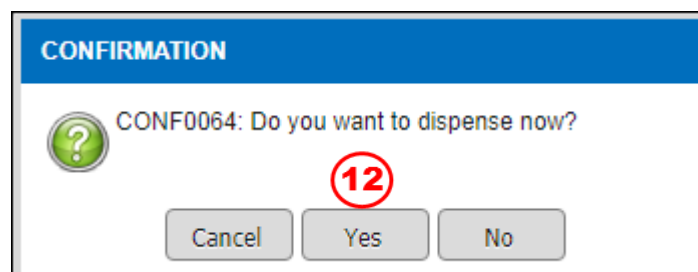
Select **Dispensed Date and Time**

#### STEP 10

Enter **Collected By**

#### STEP 11

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




The dialog box titled 'CONFIRMATION' displays the following:

- Message:** CONF0064: Do you want to dispense now?
- Buttons:** Cancel, Yes (labeled 12), and No.

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.

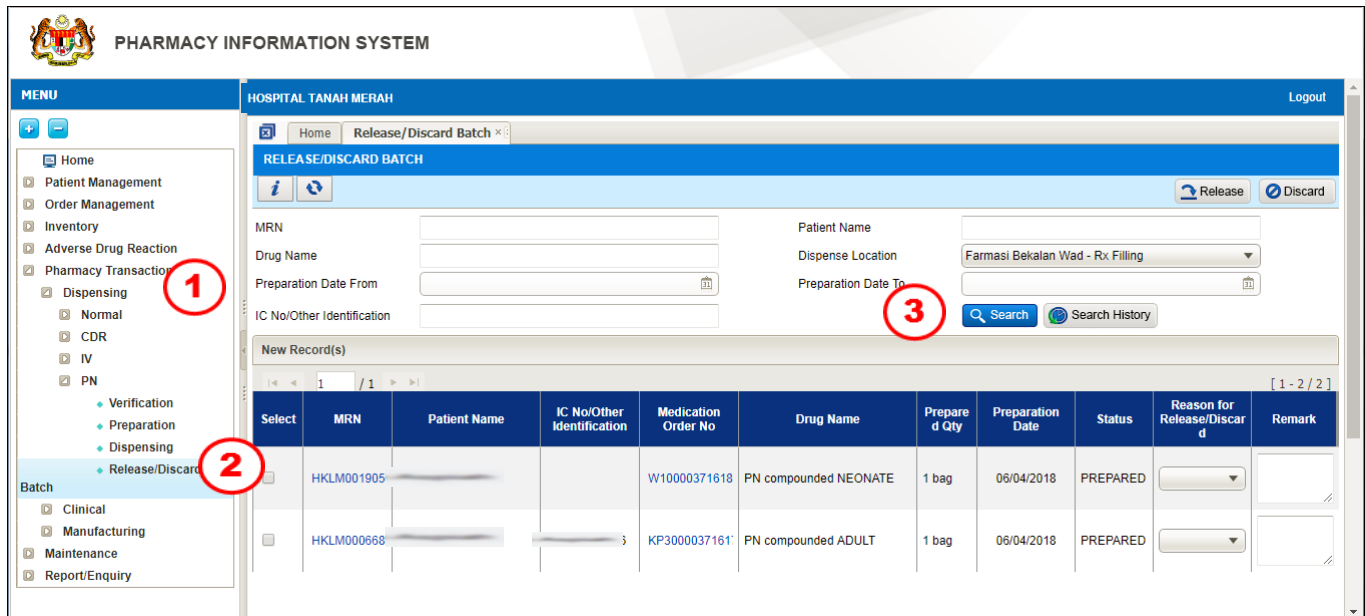


Figure 3.4-1 Release/Discard Batch Listing Page

#### 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:<br>• Type the MRN either full or partial:<br><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

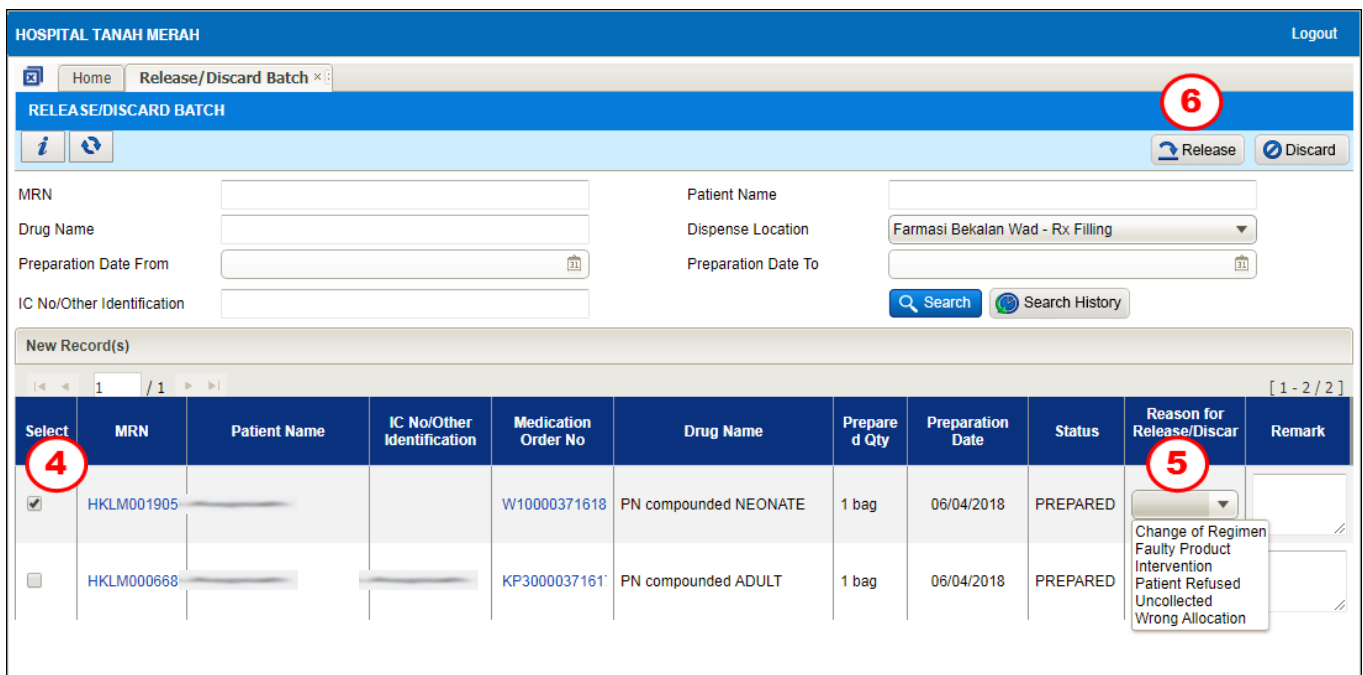
#### STEP 3

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

**RELEASE/DISCARD BATCH**

Release Discard

MRN:  Patient Name:

Drug Name:  Dispense Location: Farmasi Bekalan Wad - Rx Filling

Preparation Date From:  Preparation Date To:

IC No/Other Identification:

New Record(s)

| 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 | Change of Regimen<br>Faulty Product<br>Intervention<br>Patient Refused<br>Uncollected<br>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

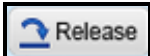
Select and check the ☒ checkbox to select order at the **Select** column

### 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

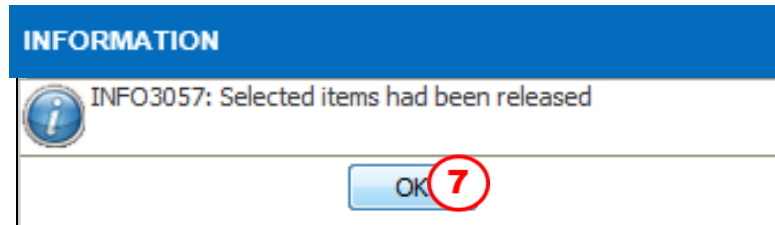
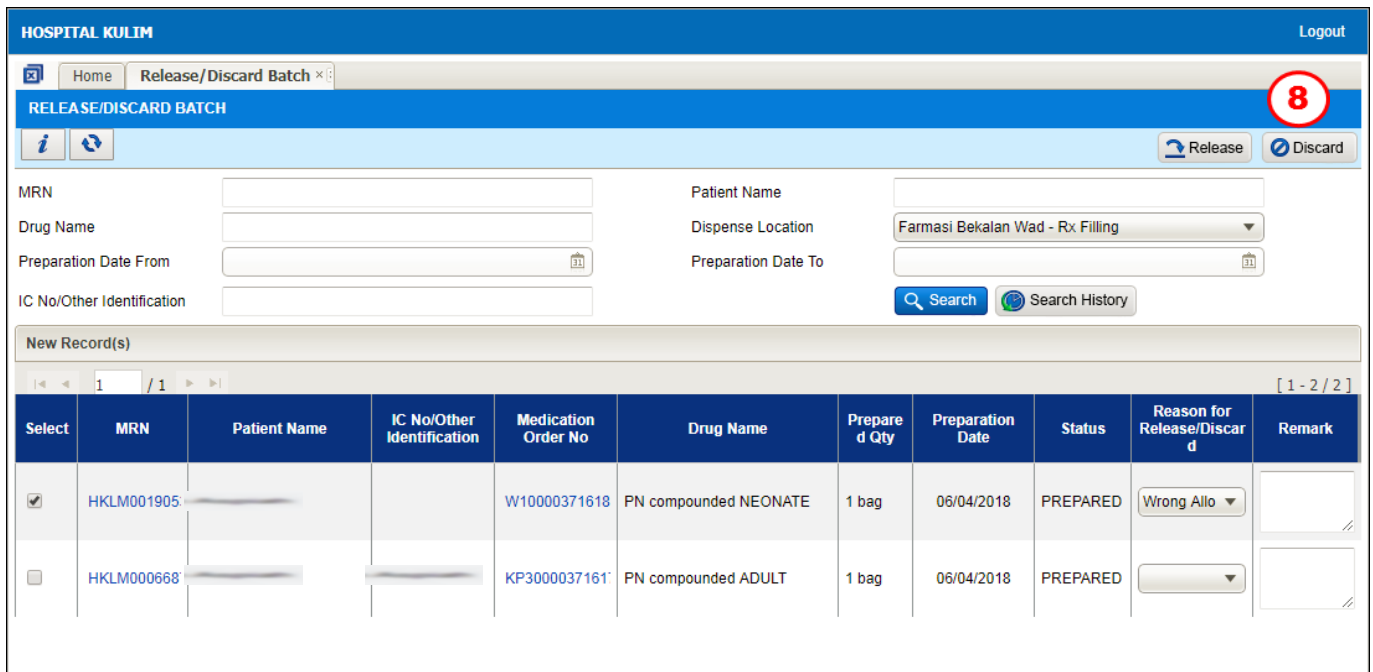


Figure 3.4-3 Information Alert Message

## STEP 7

Click on the  button to release order batch




The screenshot shows the "HOSPITAL KULIM" interface with a "Release/Discard Batch" window. The window has a blue header with "RELEASE/DISCARD BATCH" and a "Logout" button. Below the header are "Release" and "Discard" buttons. The "Release" button is circled in red with the number 8. The interface includes fields for MRN, Patient Name, Drug Name, Dispense Location, Preparation Date From, Preparation Date To, and IC No/Other Identification. There are "Search" and "Search History" buttons. Below these fields is a table with the following columns: Select, MRN, Patient Name, IC No/Other Identification, Medication Order No, Drug Name, Prepared Qty, Preparation Date, Status, Reason for Release/Discard, and Remark. The table contains two rows of data. The first row is selected, and the "Reason for Release/Discard" dropdown is set to "Wrong Allo". The second row is not selected. The table has a pagination bar at the bottom showing "1 / 1" and "[ 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

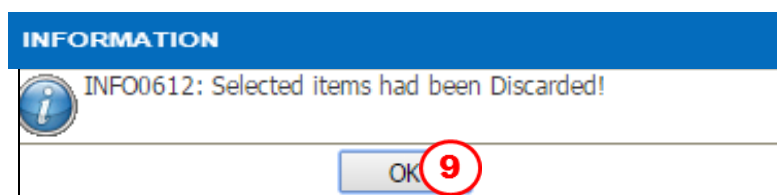




Figure 3.4-5 Information Alert Message

## 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 x

RELEASE/DISCARD BATCH

i

↺

Release

Discard

MRN

Patient Name

Drug Name

Dispense Location

Satellite Pharmacy

Preparation Date From

Preparation Date To

IC No/Other Identification

Search

Search History

History Record(s)

<<

<

1

/ 1

>

>>

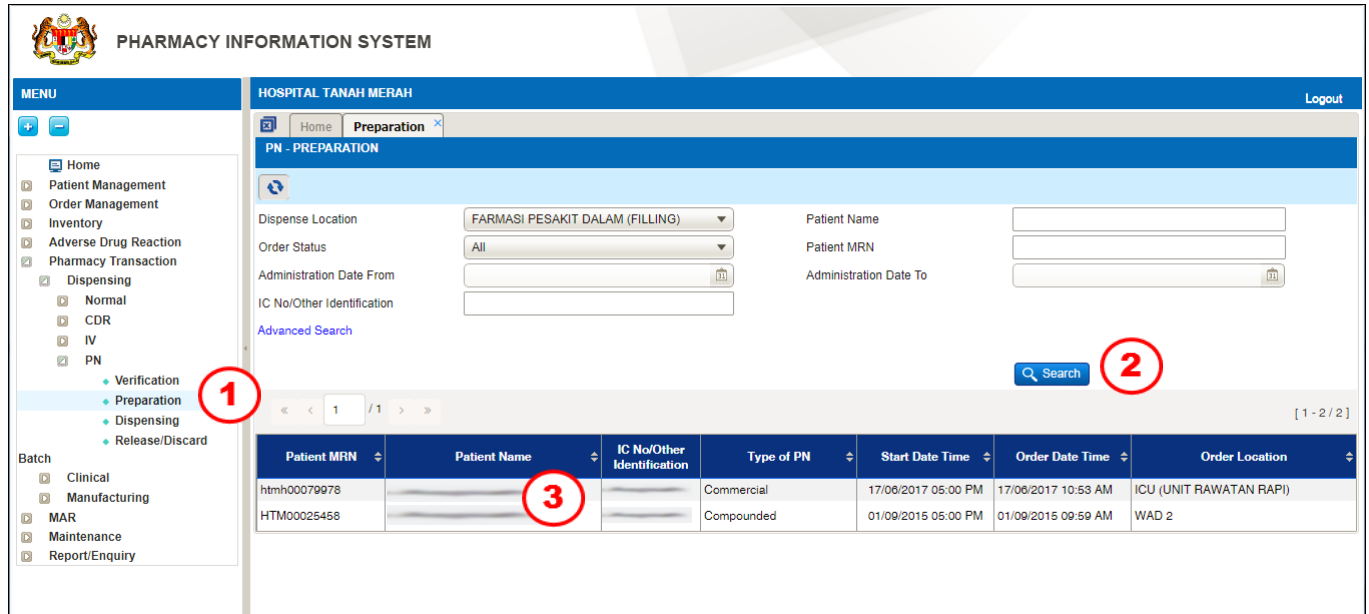
[ 1 - 1 / 1 ]

| 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<br>XXX XXXXXX |                            | ICU0000803173       | Smof Kabiven Peripheral 1000kcal,<br>1.5L | 1 bag        | 28/02/2019       | PREPARE<br>D | 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** 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](#)

1 2

| Patient MRN  | Patient Name | IC No/Other Identification | Type of PN | Start Date Time     | Order Date Time     | Order Location          |
|--------------|--------------|----------------------------|------------|---------------------|---------------------|-------------------------|
| htmh00079978 |              |                            | 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                   |

3

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  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

Upload Photo

Lab Parameter | Counseling 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: Rx No: KP30000371615 Order By: System Administrator Transcribed By: [Redacted]

Original Prescription Serial No: 13132

**PHARMACY ORDER**

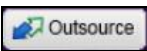
Prepared Date/Time: 06/04/2018 03:46 PM

**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

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

Upload Photo

**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** 7

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

Upload Photo

**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 |
|---------------|------------------------|-------------------------------------|--------------|-----------|---------|
| TPN0000000943 | 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 **Send Outsource Request** button to send outsource request

**CONFIRMATION**

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

8

Figure 3.5-5 Send Request Alert Message

### STEP 8

Click on the **Yes** button to send outsource request

**OUTSOURCE DETAILS** 9

Send Outsource Request

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

Upload Photo

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