

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

User Manual Parenteral Nutrition Order

Version	: 12th Edition
Document ID	: U.MANUAL_OM PN



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Reference ID : U.MANUAL_OM PN-12th E

Application reference: PhIS & CPS v2.5.1



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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 sub-module and its key features and functionalities. The primary objective is to help guide user through the process of completing PhIS application process.

User will understand the following activities in detail:

- Nutritional Assessment
- Parenteral Nutritional Order

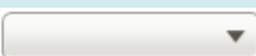
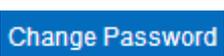
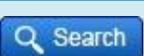
1.3 Organized Sections

These are the sections within this document:

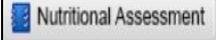
- Section 1 : Introduction
- Section 2 : Application Standard Features
- Section 3 : Parenteral Nutrition
- Section 4 : Acronyms
- Section 5 : Links to Clinical Modules

2.0 Application Standard Features

2.1 PhIS Legend

	Login to PhIS		Logout from PhIS
	Reset Login Screen		Expand Menu
	Display Home Tab		Expand Module
	Close All Open Tabs		Refresh Screen
	Add/Create New Record		Show Help
*	Mandatory Field		Calendar Icon
	Close Window		Radio Button
	Edit Record		Cancel
	Save		Add Item to the list
	Dropdown Box		Automatically Display/Retrieve Box
	Change Login Password		Delete Record
	Collapse Menu		Delete Item from the list
	Collapse Module		Empty Text Box
	Search Record		Search Icon
	Print	<input type="checkbox"/>	Checkbox

Parenteral Nutrition Order Module Legend

 Clear	Clear Prescription Information	 Refresh Prescription	Display Prescription
 Authorize	Authorisation Approval	 Nutritional Assessment	Nutritional Assessment
 Endorse	Endorsement Order	 Calorie Calculator	Calculate Patient's Calorie

Note

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

3.0 Parenteral Nutrition Order

Overview

Parenteral nutrition (PN) is a vital therapeutic modality for neonates, children and adults for a number of indications used in a variety of settings. Appropriate use of this complex therapy maximizes clinical benefit while minimizing the potential risk for adverse events. The Safe Practices for PN addressed the standardization of practices surrounding PN to improve care and to limit medication errors.

User Group

This module is intended for doctor, specialist and pharmacist (subject to the user assigned by the facility)

Functional Diagram

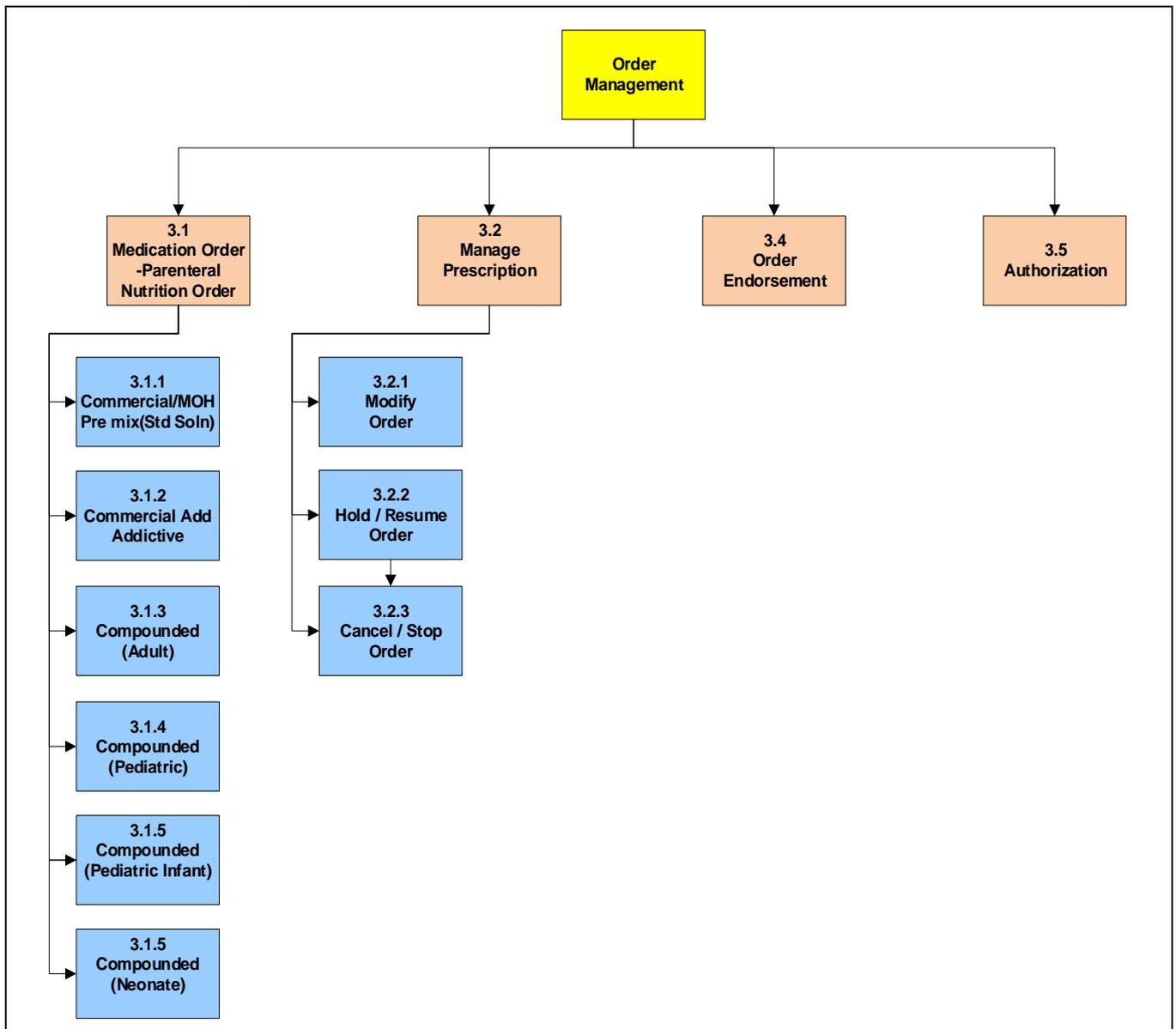


Figure 3.0-1



Functional Description

Parenteral Nutrition Order comprises of four (4) main functions:

- **Medication Order – Parenteral Nutrition Order**
To prescribe Parenteral Nutrition order
- **Manage Prescription**
To monitor patient's prescription by modifying order, stop order and tapering up/down.
- **Order Endorsement**
To endorse the intervention made by a Pharmacist
- **Authorization**
To approve list A/ A*/ A/KK drug that requires authorization

3.1 Nutritional Assessment

Nutritional Assessment allow user to record all nutritional assessment for new patient and existing patient.

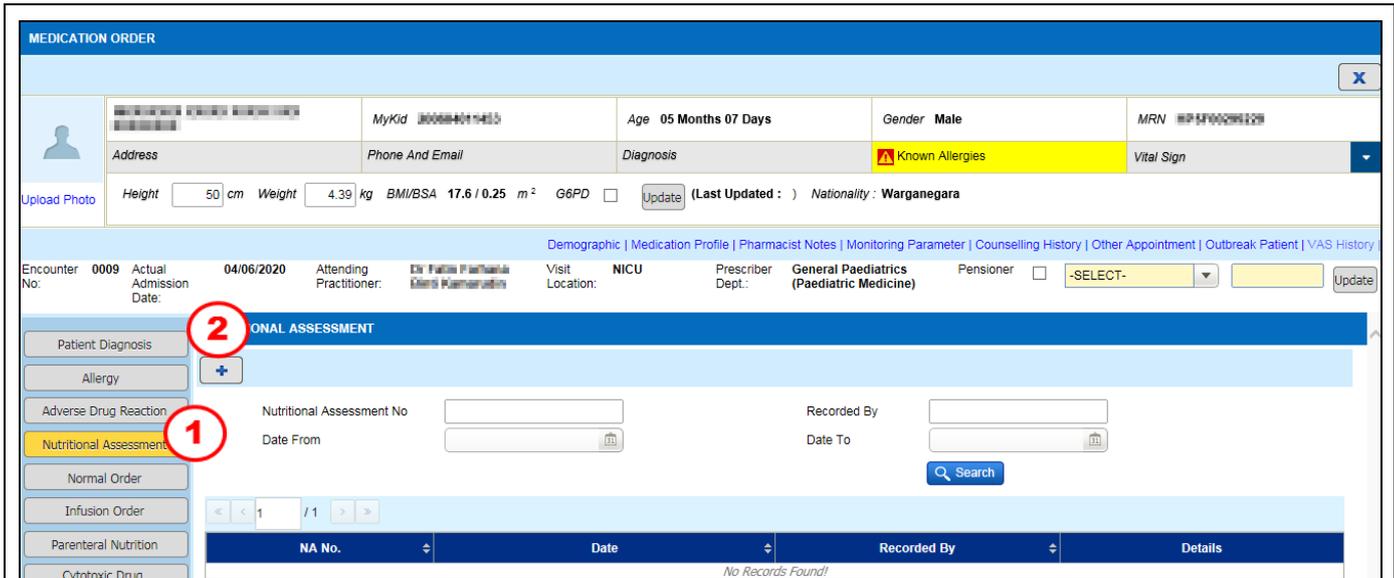


Figure 3.1-1 PN Order

STEP 1

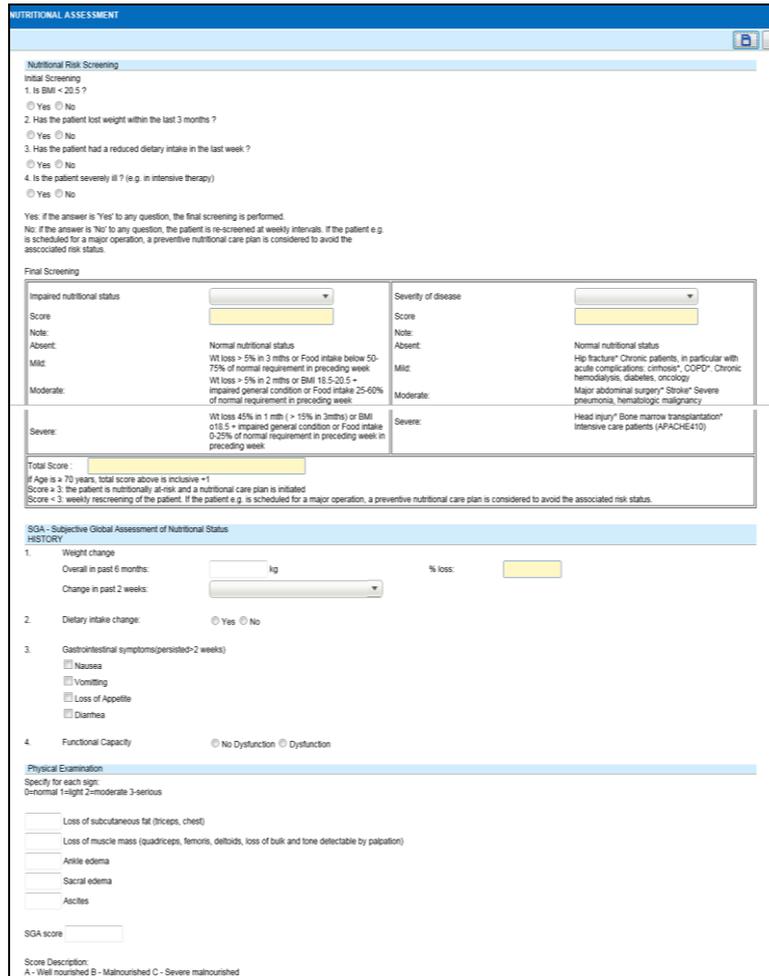
Click on the **Nutritional Assessment** button to do nutritional assessment for new patient or existing patient's

STEP 2

Click on the **+** button to do nutritional assessment for new patient

Note

Nutritional Assessment screen will be displayed as per Figure 3.1-2.



NUTRITIONAL ASSESSMENT

Nutritional Risk Screening

Initial Screening

1. Is BMI < 20.5 ?
 Yes No
2. Has the patient lost weight within the last 3 months ?
 Yes No
3. Has the patient had a reduced dietary intake in the last week ?
 Yes No
4. Is the patient severely ill ? (e.g. in intensive therapy)
 Yes No

Yes: if the answer is 'Yes' to any question, the final screening is performed.
No: if the answer is 'No' to any question, the patient is re-screened at weekly intervals. If the patient e.g. is scheduled for a major operation, a preventive nutritional care plan is considered to avoid the associated risk status.

Final Screening

Impaired nutritional status Score Note: Absent: Mild: Moderate: Severe:	Severity of disease Score Note: Absent: Mild: Moderate: Severe:
Normal nutritional status Wt loss > 5% in 3 mths or Food intake below 50-75% of normal requirement in preceding week Wt loss > 5% in 2 mths or BMI 18.5-20.5 = impaired general condition or Food intake 25-60% of normal requirement in preceding week	Normal nutritional status Hip fracture* Chronic patients, in particular with acute complications; cirrhosis* COPD* Chronic hemodialysis, diabetes, oncology Major abdominal surgery* Stroke* Severe pneumonia, hematology, malignancy Head injury* Bone marrow transplant* Intensive care patients (APACHE410)

Total Score: []

If Age is > 70 years, total score above is inclusive +1
Score > 3: the patient is nutritionally at-risk and a nutritional care plan is initiated
Score < 3: weekly re-screening of the patient. If the patient e.g. is scheduled for a major operation, a preventive nutritional care plan is considered to avoid the associated risk status.

SGA - Subjective Global Assessment of Nutritional Status (HISTORY)

1. Weight change
Overall in past 6 months: [] kg % loss: []
Change in past 2 weeks: []
2. Dietary intake change Yes No
3. Gastrointestinal symptoms (persisted > 2 weeks)
 Nausea
 Vomiting
 Loss of Appetite
 Diarrhea
4. Functional Capacity No Dysfunction Dysfunction

Physical Examination

Specify for each sign:
0=normal 1=light 2=moderate 3=serious

Loss of subcutaneous fat (triceps, chest)
 Loss of muscle mass (quadriceps, femors, deltoids, loss of bulk and tone detectable by palpation)
 Ankle edema
 Sacral edema
 Ascites

SGA score []

Score Description:
A - Well nourished B - Malnourished C - Severe malnourished

Figure 3.1-2 Nutritional Assessment

Note

Nutritional Risk Screening Section

Answer all question by selecting “Yes” or “No” for nutritional assessment.

Final Screening Section

- User have to select the **Impaired Nutritional Status** from the dropdown menu:
 - Absent
 - Mild Score
 - Moderate Score
 - Severe Score
- User have to select the **Severity of Disease** from the dropdown menu:
 - Absent
 - Mild Score
 - Moderate Score
 - Severe Score
- **Total Score** for final screening will automatically calculate and display by system.

SGA - Subjective Global Assessment of Nutritional Status (HISTORY) Section

All field for this section have to be entered by user.

MEDICATION ORDER
X

	MyKid: 35088404134810	Age: 05 Months 07 Days	Gender: Male	MRN: 8249000001020
Address	Phone And Email	Diagnosis	Known Allergies	Vital Sign

Height: 50 cm Weight: 4.39 kg BMI/BSA: 17.6 / 0.25 m² G6PD: Update (Last Updated:) Nationality: Warganegara

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

Encounter No: 0009 Actual Admission Date: 04/06/2020 Attending Practitioner: Dr. Fatin Farhana Mohd Kamarudin Visit Location: NICU Prescriber Dept.: General Paediatrics (Paediatric Medicine) Pensioner: -SELECT- Update

NUTRITIONAL ASSESSMENT
^

Patient Diagnosis

Allergy

Adverse Drug Reaction

Nutritional Assessment

Normal Order

Infusion Order

Parenteral Nutrition

Cytotoxic Drug Reconstitution

Nutritional Assessment No:

Date From:

Recorded By:

Date To:

Search

NA No.	Date	Recorded By	Details
NA20-11-0001	11/11/2020	Dr. Wai Hin Wong Liah, Anggerik	NRS Total Score: 2, SGA Score: A - Well nourished

Figure 3.1-3 Nutritional Assessment Listing Page

Physical Examination Section

This section have to be entered by user.

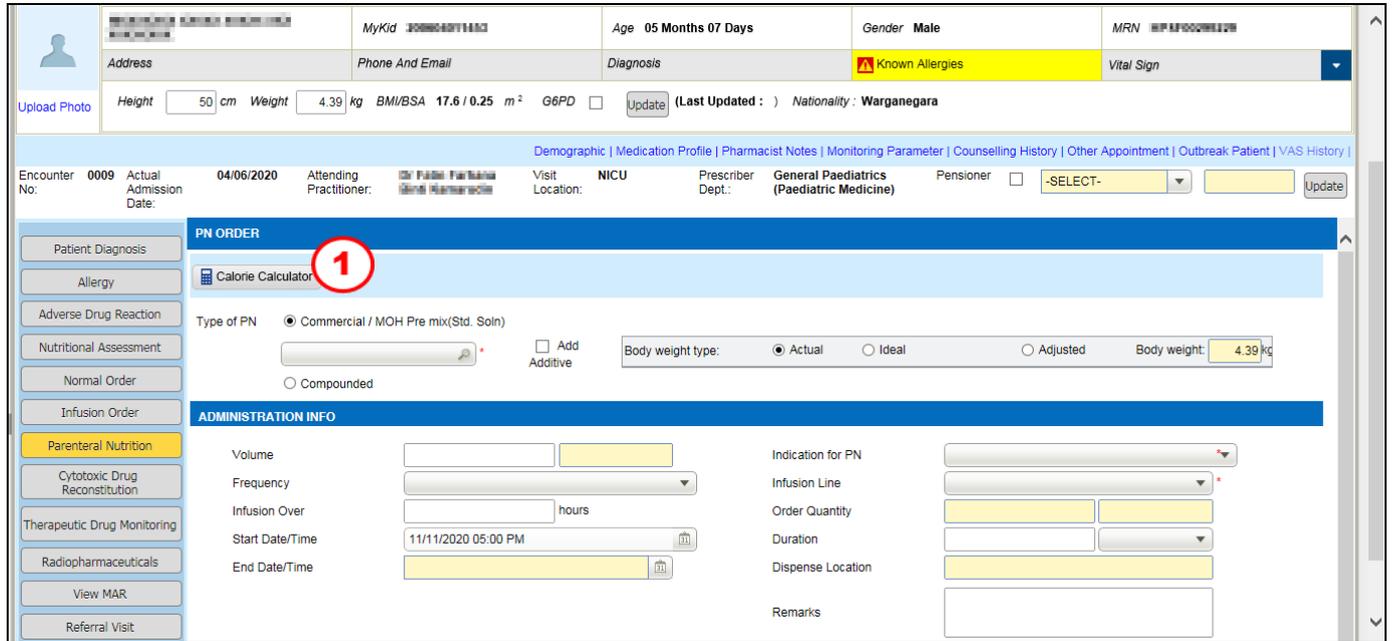
Note

- The button to save record.
- The button to close the screen.
- The Nutritional Assessment record will be displayed at Nutritional Assessment Listing Page as per Figure 3.1-3.
- To search for existing nutritional assessment record(s), you may search by criteria as follow:
 - a) Nutritional Assessment No
 - b) Date From
 - c) Date To
 - d) Recorded By
- The button to search for nutritional assessment record(s).
- Nutritional assessment details will be displayed and user have to double click on the nutritional assessment record listing.

3.2 Parenteral Nutrition Order

3.2.1 Calorie Calculator

Calorie calculator allow user to calculate patient’s calorie requirement. This value will out as a guideline for user to order the required TPN order for patient.



The screenshot shows the 'Parenteral Nutrition Order' system interface. At the top, there is a patient information header with fields for MyKid, Age (05 Months 07 Days), Gender (Male), and MRN. Below this is a navigation bar with links for Demographic, Medication Profile, Pharmacist Notes, Monitoring Parameter, Counselling History, Other Appointment, Outbreak Patient, and VAS History. The main area is divided into sections: 'PN ORDER' (with a red circle and '1' around the 'Calorie Calculator' button), 'ADMINISTRATION INFO' (with fields for Volume, Frequency, Infusion Over, Start Date/Time, End Date/Time, Indication for PN, Infusion Line, Order Quantity, Duration, Dispense Location, and Remarks), and a sidebar with various order types like Patient Diagnosis, Allergy, Adverse Drug Reaction, Nutritional Assessment, Normal Order, Infusion Order, Parenteral Nutrition (highlighted), Cytotoxic Drug Reconstitution, Therapeutic Drug Monitoring, Radiopharmaceuticals, View MAR, and Referral Visit.

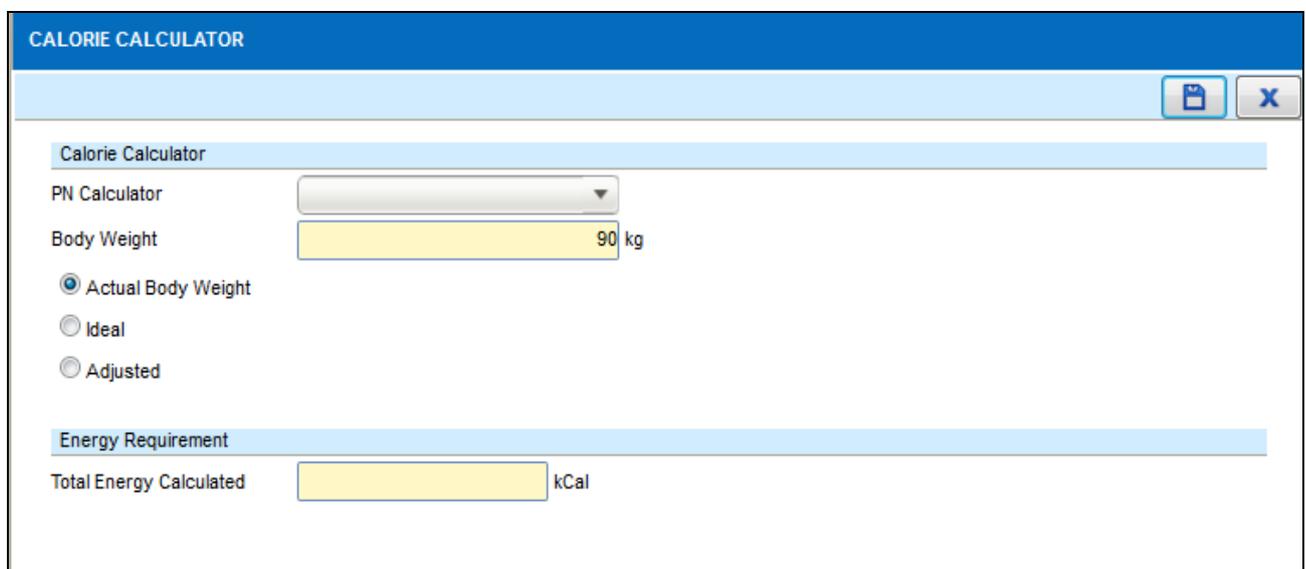
Figure 3.2.1-1 Calorie Calculator

STEP 1

Click on the  button to calculate patient calorie

Note

Calorie Calculator screen will be displayed as per Figure 3.2.1-2.

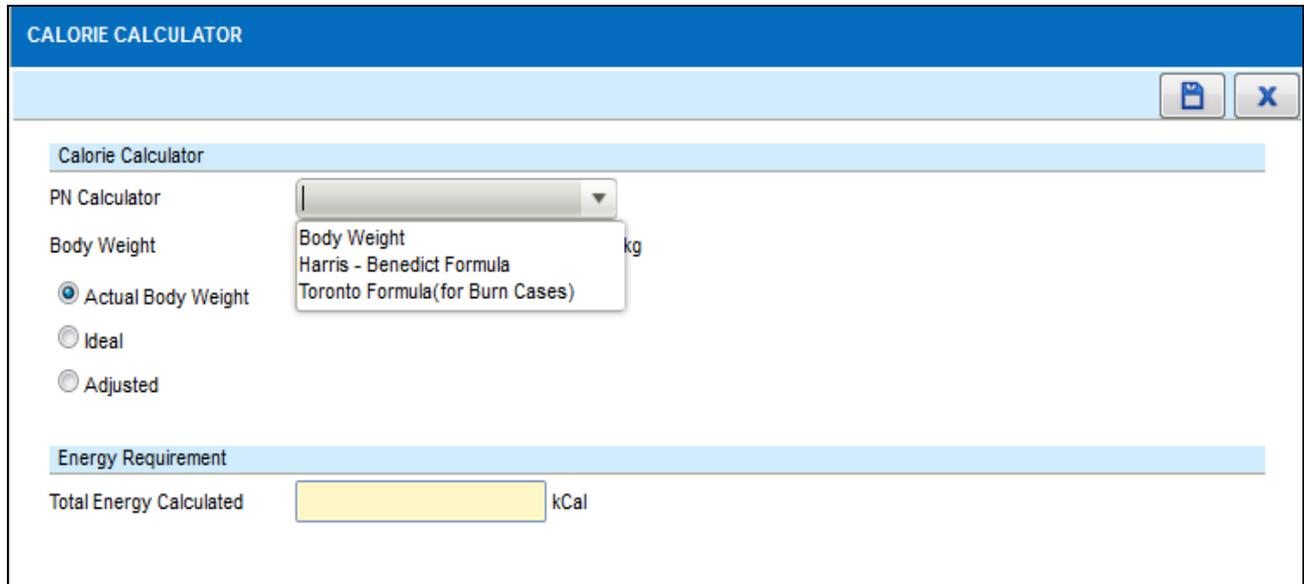


The screenshot shows the 'CALORIE CALCULATOR' window. It has a title bar with a save icon and a close button. The main area contains a 'Calorie Calculator' section with a dropdown menu for 'PN Calculator'. Below this is a 'Body Weight' field set to '90 kg'. There are three radio buttons: 'Actual Body Weight' (selected), 'Ideal', and 'Adjusted'. At the bottom, there is a 'Total Energy Calculated' field set to 'kCal'.

Figure 3.2.1-2 Calorie Calculator

Note

- By default the **Body Weight** radio button will auto select the Actual Body Weight of the patient.
- User have to select either one of the following **Body Weight** radio button:
 - Actual Body Weight
 - Ideal
 - Adjusted
- **Body Weight** value will automatically display base on the information from patient banner.

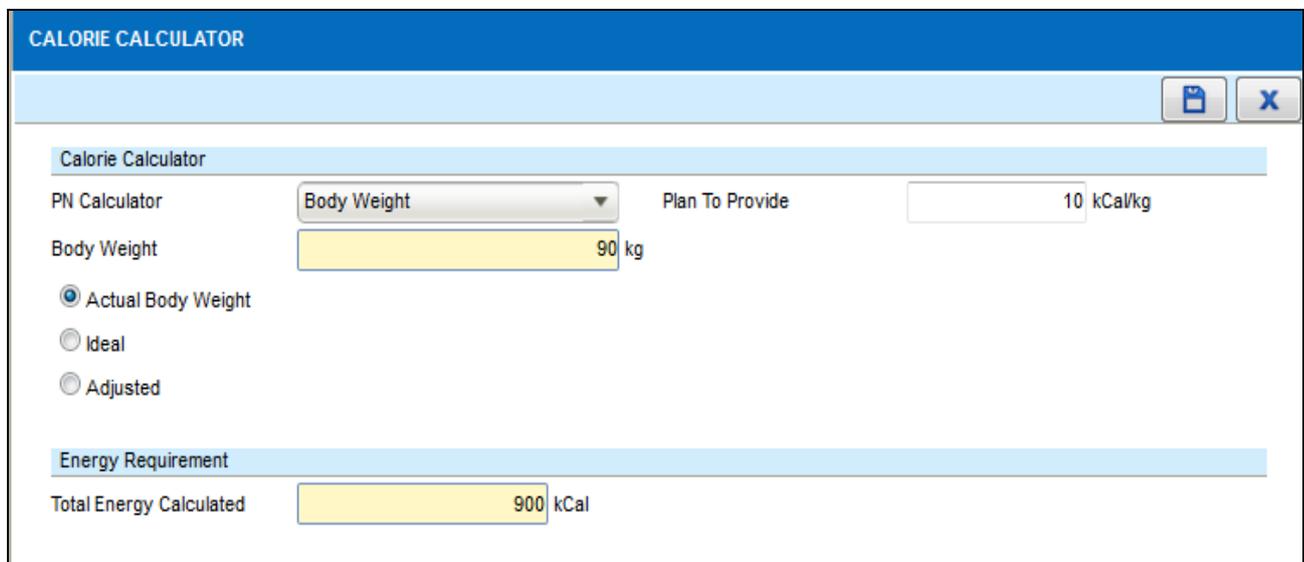


The screenshot shows a window titled 'CALORIE CALCULATOR'. Inside, there is a section for 'Calorie Calculator' with a dropdown menu for 'PN Calculator' and a 'Body Weight' section. The 'Body Weight' section has three radio buttons: 'Actual Body Weight' (selected), 'Ideal', and 'Adjusted'. A dropdown menu is open for 'Body Weight', showing options: 'Body Weight', 'Harris - Benedict Formula', and 'Toronto Formula(for Burn Cases)'. Below this is an 'Energy Requirement' section with a 'Total Energy Calculated' field showing a yellow box and 'kCal'.

Figure 3.2.1-3 Calorie Calculator

Note

- There are three type of **PN Calculator**:
 - Body Weight
 - Harris-Benedict Formula
 - Toronto Formula(for Burn Cases)



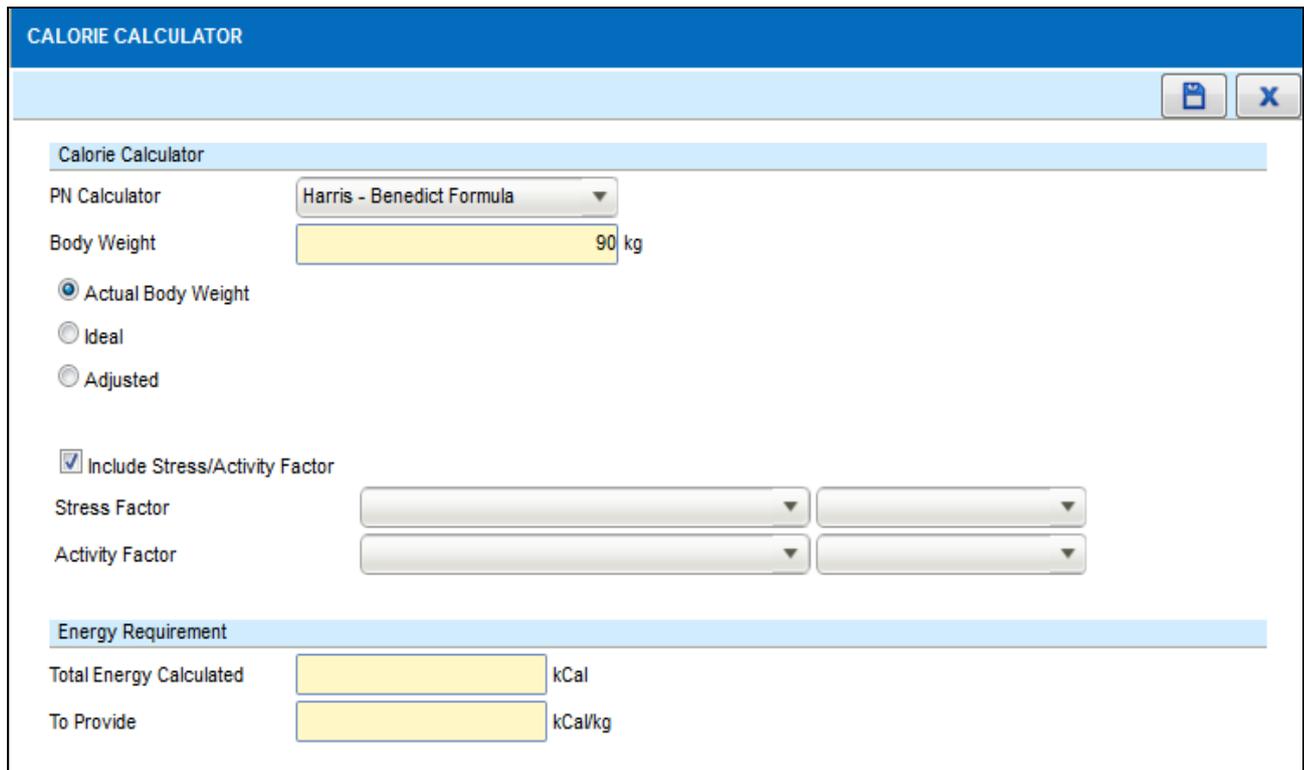
The screenshot shows the 'CALORIE CALCULATOR' window with the 'PN Calculator' dropdown set to 'Body Weight'. The 'Body Weight' field is filled with '90 kg'. The 'Plan To Provide' field is set to '10 kCal/kg'. The 'Actual Body Weight' radio button is selected. The 'Total Energy Calculated' field shows '900 kCal'.

Figure 3.2.1-4 Calorie Calculator

Note

PN Calculator : Body Weight

- Select **Body Weight** from **PN Calculator** dropdown box.
- Enter the amount in **Plan To Provide** (kCal/kg).
- **Total Energy Calculated** will automatically calculate and display as per Figure 3.2.1-5.
- The  button to save record.
- The  button to close the screen.



The screenshot shows a software window titled "CALORIE CALCULATOR". At the top right of the window are "Save" and "Close" buttons. Below the title bar, there is a section labeled "Calorie Calculator". Under this section, the "PN Calculator" dropdown menu is set to "Harris - Benedict Formula". The "Body Weight" input field contains "90 kg". There are three radio button options: "Actual Body Weight" (which is selected), "Ideal", and "Adjusted". Below these is a checked checkbox for "Include Stress/Activity Factor". Underneath the checkbox are two pairs of dropdown menus, one for "Stress Factor" and one for "Activity Factor". At the bottom of the window, there is a section labeled "Energy Requirement" with two input fields: "Total Energy Calculated" (with a unit of "kCal") and "To Provide" (with a unit of "kCal/kg").

Figure 3.2.1-5 Calorie Calculator

Note

PN Calculator : Harris-Benedict Formula

- Select **Harris – Benedict Formula** from **PN Calculator** dropdown box.
- Select the **Include Stress/Activity Factor** checkbox.
- **Stress Factor, Activity Factor** and **To Provide** will display after selected the **Include Stress/ Activity Factor** checkbox.

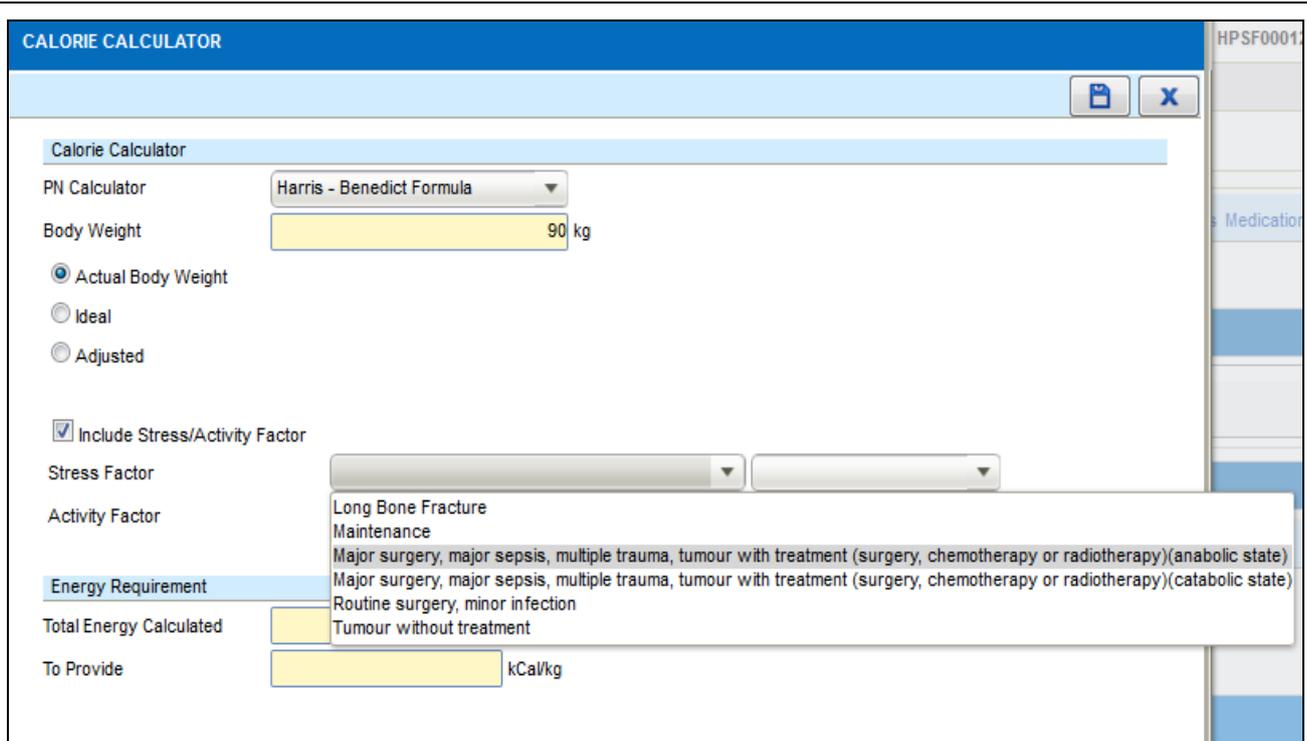


Figure 3.2.1-6 Calorie Calculator

Note

User have to select the type of **Stress Factor** from the dropdown box:

- Long Bone Fracture.
- Maintenance.
- Major surgery, major sepsis, multiple trauma, tumour with treatment (surgery, chemotherapy or radiotherapy)(anabolic state).
- Routine surgery, minor infection.
- Tumour without treatment.

CALORIE CALCULATOR

Calorie Calculator

PN Calculator: Harris - Benedict Formula

Body Weight: 90 kg

Actual Body Weight
 Ideal
 Adjusted

Include Stress/Activity Factor

Stress Factor: Major surgery, major sepsis, multiple trauma, tum 1.7

Activity Factor: [] []

Energy Requirement

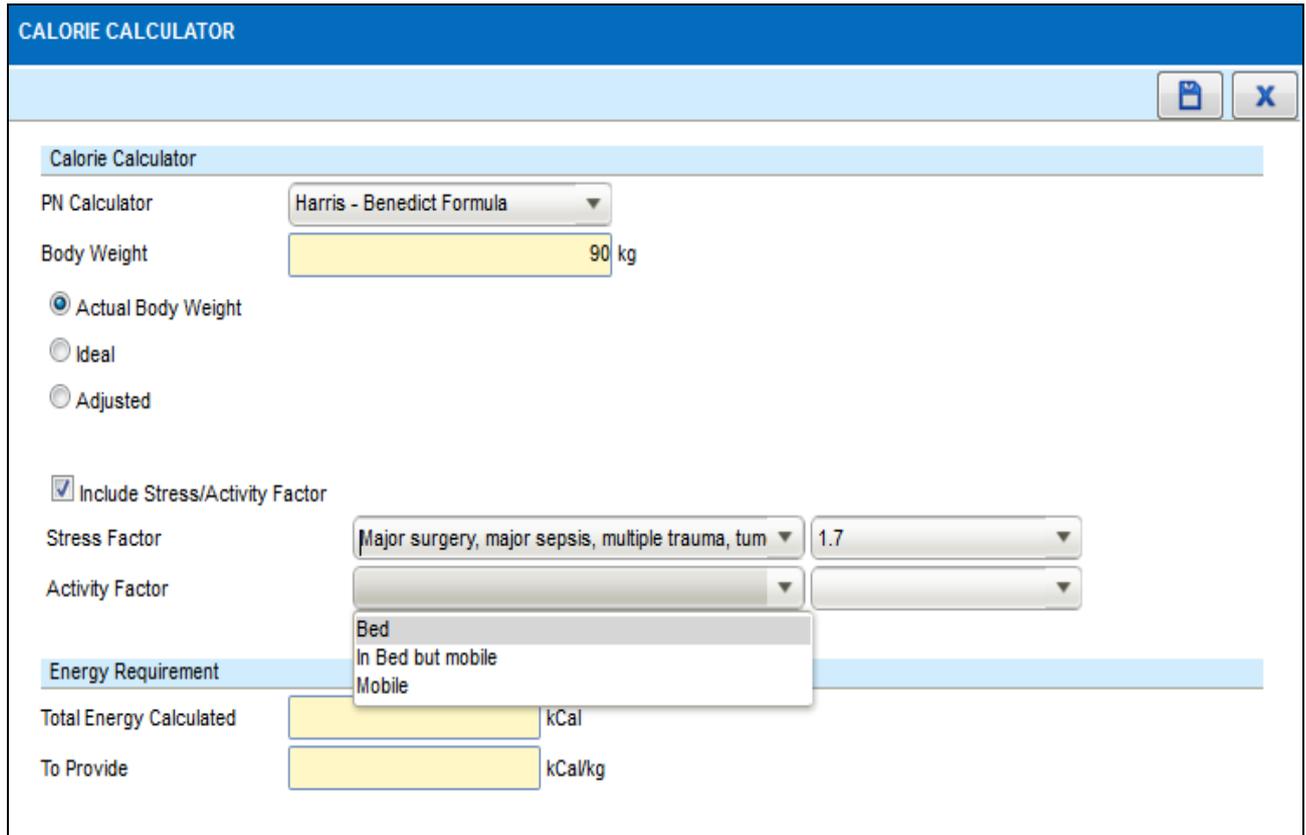
Total Energy Calculated: [] kCal

To Provide: [] kCal/kg

Figure 3.2.1-7 Calorie Calculator

Note

Value of the **Stress Factor** will automatically calculate by system.



CALORIE CALCULATOR

Calorie Calculator

PN Calculator: Harris - Benedict Formula

Body Weight: 90 kg

Actual Body Weight
 Ideal
 Adjusted

Include Stress/Activity Factor

Stress Factor: Major surgery, major sepsis, multiple trauma, tum | 1.7

Activity Factor: [Open dropdown menu showing: Bed, In Bed but mobile, Mobile]

Energy Requirement

Total Energy Calculated: [] kCal

To Provide: [] kCal/kg

Figure 3.2.1-8 Calorie Calculator

Note

From the dropdown box user have to select type of **Activity Factor** list which are:

- Bed
- In Bed but mobile
- Mobile

CALORIE CALCULATOR

Calorie Calculator

PN Calculator

Body Weight kg

Actual Body Weight
 Ideal
 Adjusted

Include Stress/Activity Factor

Stress Factor

Activity Factor

Energy Requirement

Total Energy Calculated kCal

To Provide kCal/kg

Figure 3.2.1-9 Calorie Calculator

Note

- Value of the **Activity Factor** will automatically calculate by system.
- Amount of **Total Energy Calculated** and **To Provide** will automatically calculate after selected the **Activity Factor** as per Figure 3.2.1-9.
- The  button to save record.
- The  button to close the screen.

CALORIE CALCULATOR

Calorie Calculator

PN Calculator Toronto Formula(for Burn Cases) ▼

Body Weight kg

Actual Body Weight
 Ideal
 Adjusted

Burn Surface Area %

Body Temperature °C

Post Burn Days Days

Caloric intake kCal

Activity Factor Bed ▼ 1.1 ▼

Energy Requirement

Total Energy Calculated kCal

To Provide kCal/kg

Figure 3.2.1-10 Calorie Calculator

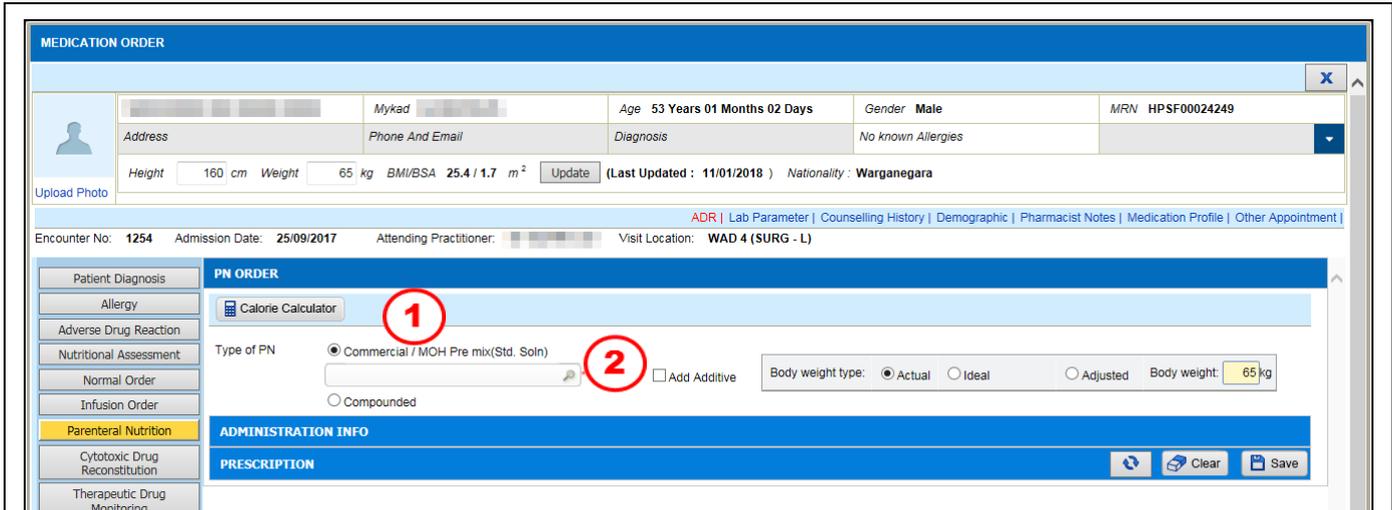
Note

PN Calculator : Toronto Formula

- Select **Toronto Formula (for Burn Cases)** from **PN Calculator** dropdown box.
- Enter all field below:
 - Burn Surface Area
 - Body Temperature
 - Post Burn Days
 - Calorie Intake
- User have to select type of **Activity Factor** from the dropdown box:
 - Bed
 - In Bed but mobile
 - Mobile
- Value of the **Activity Factor** will automatically calculate by system.
- **Total Energy Calculated** and **To Provide** will automatically calculate after selected the **Activity Factor** as per Figure 3.2.1-10.
- The  button to save record.
- The  button to close the screen.

3.2.2 Commercial/MOH Pre mix (Std. Soln)

Commercial / MOH Pre Mix (Std. Soln) allow user to order ready made product from manufacturer or facility.



The screenshot shows the 'MEDICATION ORDER' interface. At the top, patient information is displayed: Mykad, Age 53 Years 01 Months 02 Days, Gender Male, MRN HPSF00024249. Below this, there are fields for Address, Phone And Email, Diagnosis, and No known Allergies. A section for physical attributes includes Height (160 cm), Weight (65 kg), and BMI/BSA (25.4 / 1.7 m²). A 'Calorie Calculator' button is circled with a red '1'. The 'Type of PN' section has a radio button selected for 'Commercial / MOH Pre mix(Std. Soln)', which is circled with a red '2'. There is also an 'Add Additive' checkbox and 'Body weight type' options (Actual, Ideal, Adjusted) with a 'Body weight' field set to 65 kg. The 'ADMINISTRATION INFO' and 'PRESCRIPTION' sections are visible at the bottom.

Figure 3.2.2-1 PN Order

STEP 1

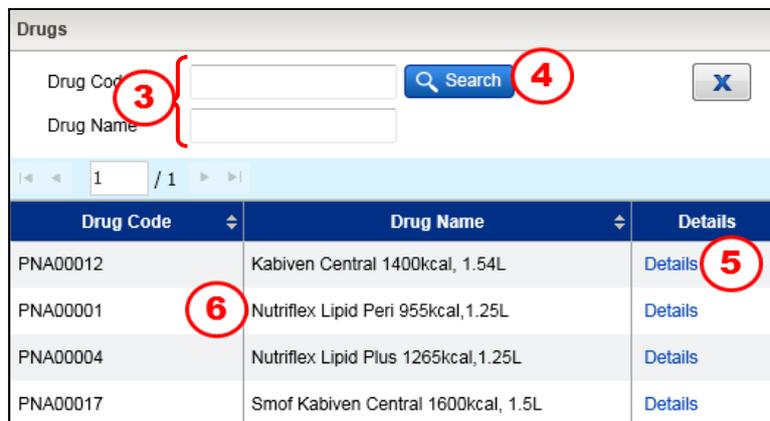
Select on the Commercial / MOH Pre mix(Std. Soln) radio button for *Type of PN*

STEP 2

Click on the  button to search for product

Note

User allowed to choose **Body weight type: Actual/Ideal/Adjusted**



The screenshot shows a 'Drugs' search results window. It has input fields for 'Drug Code' (circled with a red '3') and 'Drug Name', a 'Search' button (circled with a red '4'), and a close button 'X'. Below the search fields is a table with columns 'Drug Code', 'Drug Name', and 'Details'. The first row is highlighted, with its 'Details' link circled with a red '5'. A red '6' is placed over the second row of the table.

Drug Code	Drug Name	Details
PNA00012	Kabiven Central 1400kcal, 1.54L	Details
PNA00001	Nutriflex Lipid Peri 955kcal, 1.25L	Details
PNA00004	Nutriflex Lipid Plus 1265kcal, 1.25L	Details
PNA00017	Smof Kabiven Central 1600kcal, 1.5L	Details

Figure 3.2.2-2 PN Order

STEP 3

To search for existing product record(s), you may search by criteria as follow:

- Drug Code
- Drug Name

STEP 4

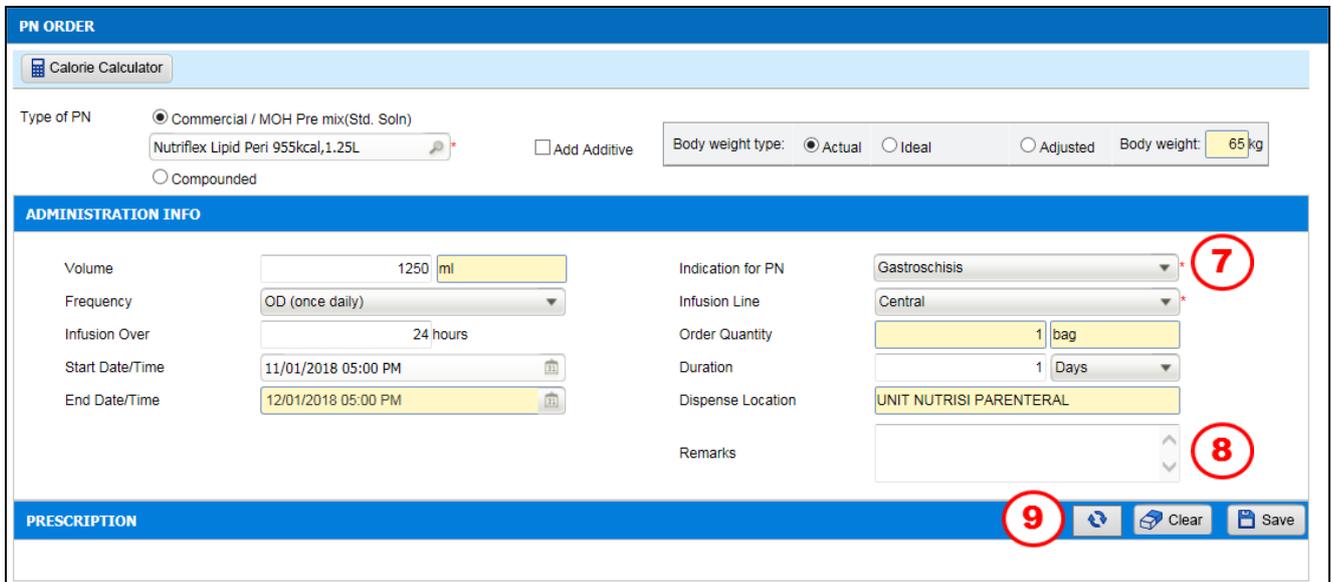
Click on the  button to search for the product

STEP 5

Click on the  button to view product ingredients and content

STEP 6

Select product that required for patient



The screenshot shows the 'PN ORDER' form. At the top, there is a 'Calorie Calculator' button. Below it, the 'Type of PN' section includes radio buttons for 'Commercial / MOH Pre mix(Std. Soln)' (selected) and 'Compounded', a dropdown menu for 'Nutriflex Lipid Peri 955kcal,1.25L', an 'Add Additive' checkbox, and 'Body weight type' radio buttons for 'Actual' (selected), 'Ideal', and 'Adjusted', with a 'Body weight' field set to '65 kg'. The 'ADMINISTRATION INFO' section contains fields for 'Volume' (1250 ml), 'Frequency' (OD (once daily)), 'Infusion Over' (24 hours), 'Start Date/Time' (11/01/2018 05:00 PM), and 'End Date/Time' (12/01/2018 05:00 PM). On the right, there are dropdowns for 'Indication for PN' (Gastroschisis, circled 7), 'Infusion Line' (Central), 'Order Quantity' (1 bag), 'Duration' (1 Days), and 'Dispense Location' (UNIT NUTRISI PARENTERAL). A 'Remarks' text area is circled 8. At the bottom, the 'PRESCRIPTION' section has a 'Save' button circled 9, along with 'Clear' and 'Refresh' buttons.

Figure 3.2.2-3 PN Order

Note

- All information for **Volume, Frequency, Start Date/Time, End Date/Time, Order Quantity, Infusion Line, Duration, Infusion Over** and **Dispense Location** field will be automatically displayed and base on the information from PN Source Content and PN Constituents Reference Range.
- **Volume, Frequency, Infusion Line, Duration** and **Infusion Over** field still can be change by the user if applicable.
- **Start Date** and will be automatically default to current date but still can be change by the user if applicable.
- **End Date** will display according to duration product given.
- **Dispense Location** will be automatically default by system.

STEP 7

Select Indication for PN from the dropdown box

STEP 8

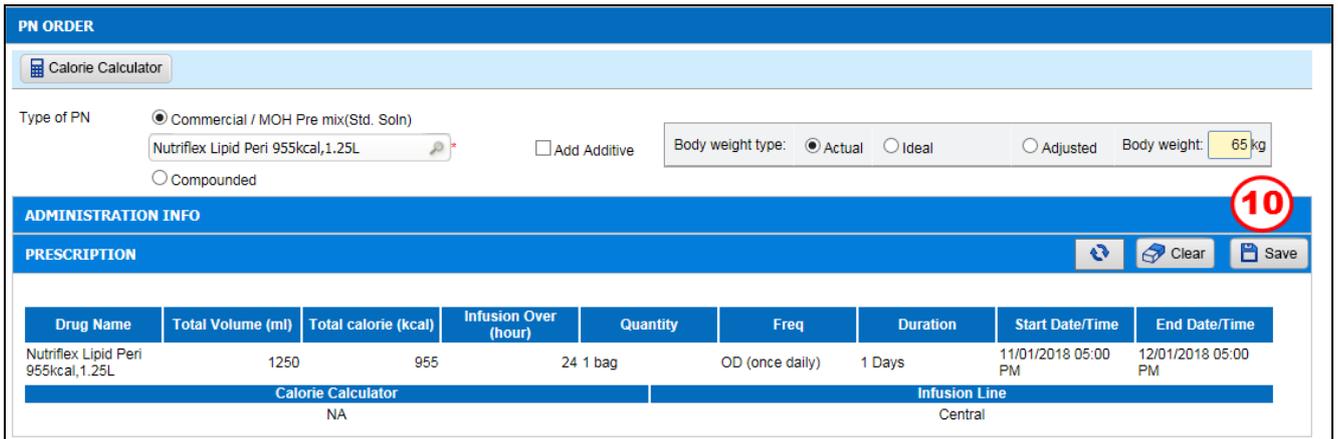
Enter **Remarks** if applicable

STEP 9

Click on the  button to add prescription

Note

Prescription will be displayed as per Figure 3.2.2-4.



PN ORDER

Calorie Calculator

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

Nutriflex Lipid Peri 955kcal,1.25L Add Additive

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

ADMINISTRATION INFO 10

PRESCRIPTION

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start Date/Time	End Date/Time
Nutriflex Lipid Peri 955kcal,1.25L	1250	955	24	1 bag	OD (once daily)	1 Days	11/01/2018 05:00 PM	12/01/2018 05:00 PM
Calorie Calculator				Infusion Line				
NA				Central				

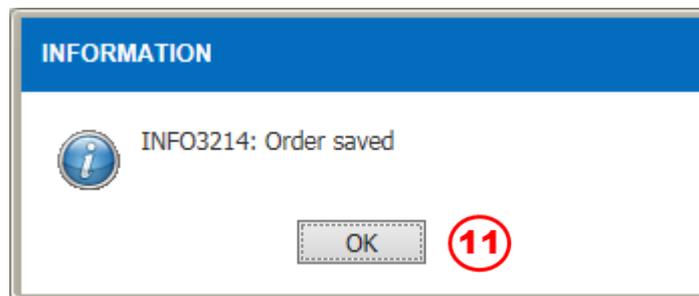
Figure 3.2.2-4 PN Order

STEP 10

Click on the button to save prescription

Note

The button to clear all information of prescription order.



INFORMATION

 INFO3214: Order saved

11

Figure 3.2.2-5 Information Alert

STEP 11

Click on the button to save order record

Note

After saving the record, button, button, button and button will be displayed as per Figure 3.1.3-6.

PN ORDER

Calorie Calculator

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

Nutriflex Lipid Peri 955kcal, 1.25L Add Additive

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

ADMINISTRATION INFO 12

PRESCRIPTION

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start Date/Time	End Date/Time
Nutriflex Lipid Peri 955kcal, 1.25L	1250	955	24	1 bag	OD (once daily)	1 Days	11/01/2018 05:00 PM	12/01/2018 05:00 PM
Calorie Calculator			Infusion Line					
NA			Central					

Figure 3.2.2-6 Medication Order

STEP 12

Click on the button to confirm prescription

Note

- The button to delete prescription.
- The button to print prescription.
- The button to edit information after saved record.

CONFIRMATION

 CONF3219: Are you sure want to confirm the order?

13

Figure 3.2.2-7 Confirmation Alert

STEP 13

Click on the button to confirm record order

PN ORDER

Calorie Calculator

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

Nutriflex Lipid Peri 955kcal, 1.25L Add Additive

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

ADMINISTRATION INFO

PRESCRIPTION

↻ New Prescription 🖨️ Prescription

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start Date/Time	End Date/Time
Nutriflex Lipid Peri 955kcal, 1.25L	1250	955	24	1 bag	OD (once daily)	1 Days	11/01/2018 05:00 PM	12/01/2018 05:00 PM
Calorie Calculator				Infusion Line				
NA				Central				

Figure 3.2.2-8 PN Order

Note

- Click on the 🖨️ Prescription button to view/print PN prescription as Figure 3.2.2-8
- Click on the New Prescription button to order a new prescription

Ministry Of Health, Malaysia
Hospital Pakar Sultanah Fatimah, Muar
PARENTERAL NUTRITION

Patient Name: SXXXXXXXXX XXX XXXXX XXXXX **Patient ID:** 641209015255

Age: 53 Years 01 Months 02 Days **MRN:** HPSF00024249

Gender: Male **Prescription :** 40001087881

Height / Weight / BSA: 160 cm/65 kg/1.73 m² **Order Date / Time :** 11/01/2018 12:19 PM

Room No / Bed: **Location:** WAD 4 (SURG - L)

Diagnosis: PREMED **Allergy:**

TPN Order: Nutriflex Lipid Peri 955kcal,1.25L **Order Quantity:** 1 bag

Start Date/Time: 11/01/2018 05:00 PM **End Date/Time:** 12/01/2018 05:00 PM

	Content / kg	Content / bag
Volume (ml)	19.23	1250
Calorie (kCal)	14.69	955
Protein (g)	0.62	40
Carbohydrate (g)	1.23	80
Lipid (g)	0.77	50
Sodium (mmol)	0.77	50
Potassium (mmol)	0.46	30
Calcium (mmol)	0.05	3
Magnesium (mmol)	0.05	3
Phosphate (mmol)	0.12	7.5
Fat Soluble Vitamin (ml)	NA	NA

Infusion Over: 24 hr **Infusion Rate:** 52.08 ml/hr

Prescriber: Dr Tay Wei Lun **Frequency:** OD (once daily)

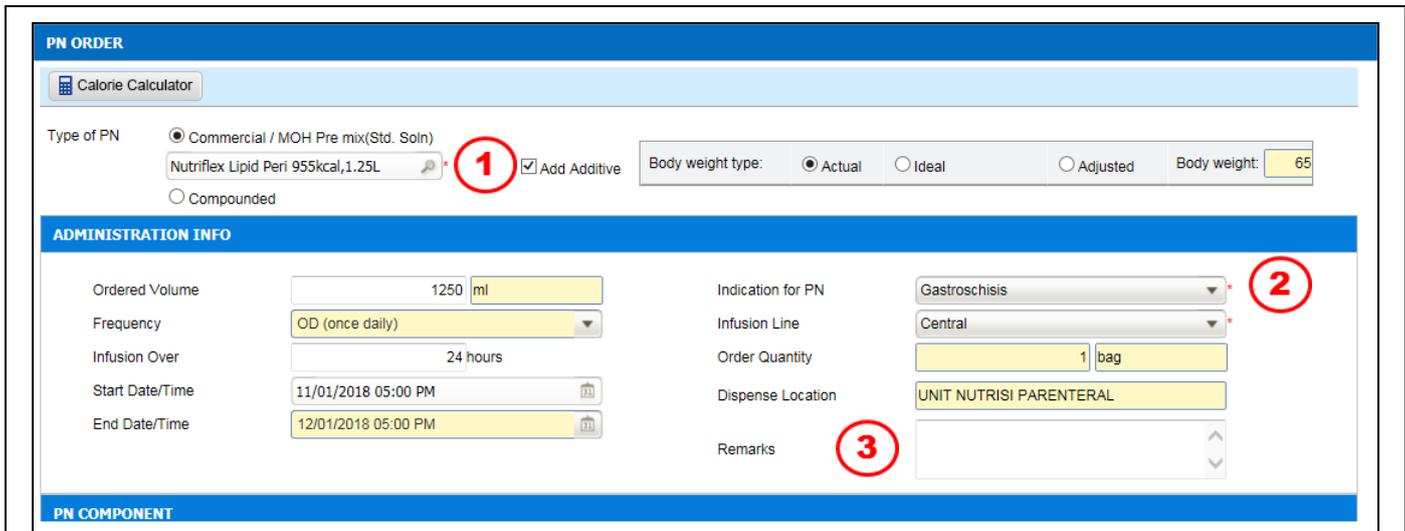
Designation: Pegawai Perubatan **Infusion Route:** Central

Department: Anaesthesia and Intensive Care **Remarks:**

Figure 3.2.2-9 PN Prescription

3.2.3 Commercial/MOH Pre mix (Std. Soln) Add Additive

Commercial / MOH Pre Mix (Std. Soln) allow user to order ready made product with additional PN component.



The screenshot shows the 'PN ORDER' form. At the top, there is a 'Calorie Calculator' button. Below it, the 'Type of PN' section is active, showing 'Commercial / MOH Pre mix(Std. Soln)' selected. A dropdown menu shows 'Nutriflex Lipid Peri 955kcal,1.25L' with a red circle '1' around the 'Add Additive' checkbox. To the right, 'Body weight type' has 'Actual' selected, and 'Body weight' is '65'. The 'ADMINISTRATION INFO' section contains several fields: 'Ordered Volume' (1250 ml), 'Frequency' (OD (once daily)), 'Infusion Over' (24 hours), 'Start Date/Time' (11/01/2018 05:00 PM), 'End Date/Time' (12/01/2018 05:00 PM), 'Indication for PN' (Gastrochisis), 'Infusion Line' (Central), 'Order Quantity' (1 bag), 'Dispense Location' (UNIT NUTRISI PARENTERAL), and 'Remarks' (empty). Red circles '2' and '3' highlight the 'Indication for PN' dropdown and the 'Remarks' field respectively. At the bottom, there is a 'PN COMPONENT' section.

Figure 3.2.3-1 PN Order

STEP 1

Select product and check on the **add additive** checkbox

Note

- All information for **Volume, Frequency, Start Date/Time, End Date/Time, Order Quantity, Infusion Line, Duration, Infusion Over** and **Dispense Location** field will be automatically displayed and base on the information from PN Source Content and PN Constituents Reference Range.
- **Volume, Frequency, Infusion Line, Duration** and **Infusion Order** field still can be change by the user if applicable.
- **Start Date/Time** and will be automatically default to current date but still can be change by the user if applicable.
- **End Date/Time** will display according to duration product given.
- **Dispense Location** will be automatically default by system.
- User allowed to choose **Body weight type: Actual/Ideal/Adjusted**

STEP 2

Select Indication for PN from the dropdown box

STEP 3

Enter **Remarks** if applicable

PN ORDER

Type of PN Commercial / MOH Pre mix(Std. Soln)
 Add Additive Body weight type: Actual Ideal Adjusted Body weight:
 Compounded

ADMINISTRATION INFO

PN COMPONENT

Electrolytes	Initial Content	Additional Requirement	Total Per Day
Sodium(Natrium),Na+	<input type="text" value="50"/> mmol	<input type="text"/> mmol	<input type="text" value="50"/> mmol
Potassium(Kalium),K+	<input type="text" value="30"/> mmol	<input type="text"/> mmol	<input type="text" value="30"/> mmol
Calcium,Ca2+	<input type="text" value="3"/> mmol	<input type="text" value="3"/> mmol	<input type="text" value="6"/> mmol
Magnesium,Mg+	<input type="text" value="3"/> mmol	<input type="text" value="3"/> mmol	<input type="text" value="6"/> mmol
Phosphate,(PO4)2-	<input type="text" value="7.5"/> mmol	<input type="text"/> mmol	<input type="text" value="7.5"/> mmol
Acetate(CH3COO)	<input type="text" value="40"/> mmol	<input type="text"/> mmol	<input type="text" value="40"/> mmol
Trace elements	<input type="text" value="0"/> ml	<input type="text"/> ml	<input type="text" value="0"/> ml
L-Glutamin	<input type="text" value="0"/> ml	<input type="text"/> ml	<input type="text" value="0"/> ml

Vitamin
 Single Vitamin Combine Vitamin

PRESCRIPTION
5

Figure 3.2.3-2 PN Order

STEP 4

Enter value of **Electrolytes**, **Trace elements** and **L-Glutamin** that require for patient per day

Note

- User need to enter total electrolytes required for patient per day.
- All value must be more than per bag ordering.
- All value in all **Per Bag (Per Ordering)** field will automatically default by system.
- Select **Single Vitamin** radio button. **Water soluble** and **Fat soluble** field will automatically display as per Figure 3.2.3-3.
- Select **Combine Vitamin** radio button. **Water and Fat soluble** field will automatically display as per Figure 3.2.3-4.
- All value in all **Per Bag (Per Ordering)** field will automatically default by system.

Vitamin
 Single Vitamin Combine Vitamin

Water soluble	<input type="text" value="0"/> ml	<input type="text"/> ml	<input type="text" value="0"/> ml
Fat soluble	<input type="text" value="0"/> ml	<input type="text"/> ml	<input type="text" value="0"/> ml

Figure 3.2.3-3 PN Component

Vitamin
 Single Vitamin Combine Vitamin

Water and Fat Soluble	<input type="text" value="0"/> ml	<input type="text"/> ml	<input type="text" value="0"/> ml
-----------------------	-----------------------------------	-------------------------	-----------------------------------

Figure 3.2.3-4 PN Component

STEP 5

Click on the  button to add prescription

Note

Prescription will display as per Figure 3.2.3-5.

PN ORDER

Calorie Calculator

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

Nutriflex Lipid Peri 955kcal,1.25L  * Add Additive

Body weight type: Actual Ideal Adjusted Body weight: 65

ADMINISTRATION INFO

PN COMPONENT

PRESCRIPTION   

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date											
Nutriflex Lipid Peri 955kcal,1.25L With Additive	1250	955	24	1 bag	OD (once daily)	1 Days	11/01/2018 05:00 PM	12/01/2018 05:00 PM											
Phosphate (mmol)	N/A	Sodium (mmol)	N/A	Potassium (mmol)	N/A	Calcium (mmol)	6	Magnesium (mmol)	6	Acetate (mmol)	N/A	Trace Element (ml)	N/A	Fat Soluble Vit. (ml)	N/A	Water Soluble Vit. (ml)	N/A	Combine Vitamin (ml)	20
L-Glutamin. (ml)			N/A			Calorie Calculator			NA			Infusion Line			Central				

Figure 3.2.3-5 PN Prescription

STEP 6

Click on the  button to save prescription

Note

The  button to clear all information of prescription order.

INFORMATION

 INFO3214: Order saved

 **7**

Figure 3.2.3-6 Information Alert

STEP 17

Click on the  button to save order record

Note

After saving the record,  button,  button,  button and  button will be displayed as per Figure 3.2.3-7.

PN ORDER

Calorie Calculator

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

Nutriflex Lipid Peri 955kcal,1.25L Add Additive

Body weight type: Actual Ideal Adjusted Body weight:

ADMINISTRATION INFO

PN COMPONENT

PRESCRIPTION

Confirm Order Delete Prescription Modify

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date	
Nutriflex Lipid Peri 955kcal,1.25L With Additive	1250	955	24	1 bag	OD (once daily)	1 Days	11/01/2018 05:00 PM	12/01/2018 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)
N/A	N/A	N/A	6	6	N/A	N/A	N/A	N/A	20
L-Glutamin. (ml)		Calorie Calculator			Infusion Line				
N/A		NA			Central				

Figure 3.2.3-7 Prescription

STEP 8

Click on the Confirm Order button to confirm prescription

Note

- The Delete button to delete prescription.
- The Prescription button to print prescription.
- The Modify button to edit information after saved record.

CONFIRMATION

CONF3219: Are you sure want to confirm the order?

Cancel Yes No

Figure 3.2.3-8 Confirmation Alert

STEP 9

Click on the Yes button to confirm record order

PN ORDER

Calorie Calculator

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

Nutriflex Lipid Peri 955kcal,1.25L Add Additive : Body weight type: Actual Ideal Adjusted Body weight:

ADMINISTRATION INFO

PN COMPONENT

PRESCRIPTION

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date	
Nutriflex Lipid Peri 955kcal,1.25L With Additive	1250	955		24 1 bag	OD (once daily)	1 Days	11/01/2018 05:00 PM	12/01/2018 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)
N/A	N/A	N/A	6	6	N/A	N/A	N/A	N/A	20
L-Glutamin. (ml)		Calorie Calculator			Infusion Line				
		N/A			NA Central				

Figure 3.2.3-9 PN Order

Note

- Click on the button to view/print PN prescription as Figure 3.2.3-10
- Click on the button to order a new prescription

Ministry Of Health, Malaysia
Hospital Pakar Sultanah Fatimah, Muar
PARENTERAL NUTRITION

Patient Name: SXXXXXXXXX XXX XXXXX XXXXX **Patient ID:** 641209015255

Age: 53 Years 01 Months 02 Days **MRN:** HPSF00024249

Gender: Male **Prescription :** 40001087882

Height / Weight / BSA: 160 cm/65 kg/1.73 m² **Order Date / Time :** 11/01/2018 12:55 PM

Room No / Bed: **Location:** WAD 4 (SURG - L)

Diagnosis: PREMED **Allergy:**

TPN Order: Nutriflex Lipid Peri 955kcal,1.25L With additive **Order Quantity:** 1 bag

Start Date/Time: 11/01/2018 05:00 PM **End Date/Time:** 12/01/2018 05:00 PM

		Additional Requirement	Content/bag	Content/kg
Volume	(ml)	NA	1250	19.23
Calorie	(kCal)	NA	955	14.69
Protein	(g)	NA	40	0.62
Carbohydrate	(g)	NA	80	1.23
Lipid	(g)	NA	50	0.77
Sodium	(mmol)	NA	50	0.77
Potassium	(mmol)	NA	30	0.46
Calcium	(mmol)	3	6	0.09
Magnesium	(mmol)	3	6	0.09
Phosphate	(mmol)	NA	7.5	0.12
Chloride	(mmol)	NA	48	0.74
Acetate	(mmol)	NA	40	0.62
Trace Element	(ml)	NA	NA	NA
Combine Vitamin	(ml)	20	20	0.31
Water Soluble Vitamin	(ml)	NA	NA	NA
Fat Soluble Vitamin	(ml)	NA	NA	NA
Glutamin	(ml)	NA	NA	NA

Infusion Over: 24 hr **Infusion Rate:** 52.08 ml/hr

Prescriber: Dr Tay Wei Lun **Frequency:** OD (once daily)

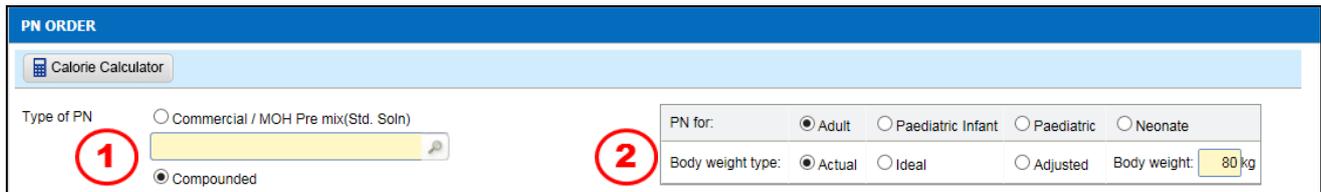
Designation: Pegawai Perubatan **Infusion Route:** Central

Department: Anaesthesia and Intensive Care **Remarks:**

Figure 3.2.3-10 PN Prescription

3.2.4 Compounded for Adult

PN Compounded allow user to order PN ready made product with customized patient requirement.



The screenshot shows the 'PN ORDER' interface. At the top left is a 'Calorie Calculator' button. Below it, the 'Type of PN' section has two radio buttons: 'Commercial / MOH Pre mix(Std. Soln)' and 'Compounded'. A red circle with the number '1' is placed over the 'Compounded' radio button. To the right, the 'PN for:' section has four radio buttons: 'Adult', 'Paediatric Infant', 'Paediatric', and 'Neonate'. Below this, the 'Body weight type:' section has three radio buttons: 'Actual', 'Ideal', and 'Adjusted'. A 'Body weight:' input field contains the value '80 kg'. A red circle with the number '2' is placed over the 'Actual' radio button.

Figure 3.2.4-1 PN Order

STEP 1

Select on **Type of PN** as Compounded

Note

PN for: will be automatically based on the patient PN Reference;

- Adult : age from 13 years to 150 years
- Paediatric : age from 3 years to 12 years
- Paediatric-infant : 31 days to 2 years
- Neonate : from 1 day to 30 days

STEP 2

Select on the **Body Weight Type** radio button to use for calculation either as:

- Actual
- Ideal
- Adjusted

Note

By default **Body Weight Type** show the **Actual** body weight of the patient. Value for **Body Weight (kg)** will be change base on selected **Body Weight Type**.

PN COMPONENT							
By weight			Per day				
Use Fluid Calculator	<input checked="" type="checkbox"/>						
Total volume required	38.75 ml/kg			3100 ml			
Total oral feeding	0 ml/kg						
TPN Volume	38.75 ml/kg			3100 ml			
Energy required	48 kcal/kg			3840 kcal			
Macronutrient		Recommended range(per kg)			Energy(per day)		
Carbohydrate	3 g/kg	3.00 - 5.00 g/kg		240 g	960 kcal		
Lipid	1 g/kg	0.50 - 2.00 g/kg		80 g	720 kcal		
Protein	2 g/kg	0.50 - 2.00 g/kg		160 g	640 kcal		
L-Glutamin	2.5 ml/kg	1.50 - 2.50 ml/kg		200 ml	160 kcal		
Carbohydrate:Lipid (kcal)	57 : 43	Nitrogen Content	26 g	NPC:NRatio	70 : 1	Total	2480 kcal
Electrolytes							
Sodium (Natrium), Na+	1 mmol/kg	1.00 - 2.00 mmol/kg		80 mmol			
Potassium (Kalium), K+	1 mmol/kg	0.70 - 1.50 mmol/kg		80 mmol			
Calcium, Ca2+	0.1 mmol/kg	0.10 - 0.15 mmol/kg		8 mmol			
Magnesium, Mg+	0.1 mmol/kg	0.05 - 0.15 mmol/kg		8 mmol			
Phosphate, (PO4)2-	0.6 mmol/kg	0.50 - 0.70 mmol/kg		48 mmol			
Chloride, Cl+	mmol/kg	1.30 - 2.00 mmol/kg		0 mmol			
Acetate, (CH3COO)	mmol/kg	0.00 - 0.00 mmol/kg		0 mmol			
Trace elements							
	ml/kg	0.00 - 10.00 ml		ml			
Vitamin							
<input checked="" type="radio"/> Single Vitamin		<input type="radio"/> Combine Vitamin					
Water soluble	0.09 ml/kg	0.00 - 10.00 ml		7 ml			
Fat soluble	0.06 ml/kg	0.00 - 10.00 ml		5 ml			

Figure 3.2.4-2 PN Component

STEP 3

Select **Use Fluid Calculator** check box

Note

By selecting **Use Fluid Calculator** check box, system will be auto calculate **Total volume required per day** based on the **Body Weight Type**

STEP 4

Enter value for **Total volume required per day**

STEP 5

Enter value for **Total Oral Feeding per day**

Note

- TPN Volume on 'By Weight' (in ml/kg) will be auto calculate and TPN Volume on 'Per Day' (in ml) field edible.
- TPN Volume which is edited value (in ml) will impact to the final bag volume required which is same value will be displayed.
- If changing the value 'Total volume required' or 'Total Oral Feeding', edited 'TPN Volume' value will recalculate back based on existing calculation

STEP 6

Enter value of the **Macronutrient** that applicable for the PN Component.

Note

- All entered value must between the **Recommended Range (per kg)**.
- All value **Per day** and **Energy(per day)** will automatically calculate and display.
- L-Gutamin is an optional function. Value of **By weight** and **Energy(per day)** will automatically display.
- Value of **Carbohydrate:Lipid(kcal) Content, Nitrogen and NPC:Ratio** will automatically calculate and display.
- Value **By Weight** will automatically calculate and display after enter the **Trace elements Per day** value.

STEP 7

Enter value of the **Electrolytes** that applicable for the PN Component

Note

- All entered value must between the **Recommended Range (per kg)**.
- **Chloride ,Cl⁻** and **Acetate (CH₃COO)** is optional function.
- All value **Per day** will automatically calculate and display.
- Enter value of the **Trace elements Per day**. Value **By Weight** will be automatically calculated and displayed after enter the **Trace elements Per day** value.



Figure 3.2.4-3 PN Component

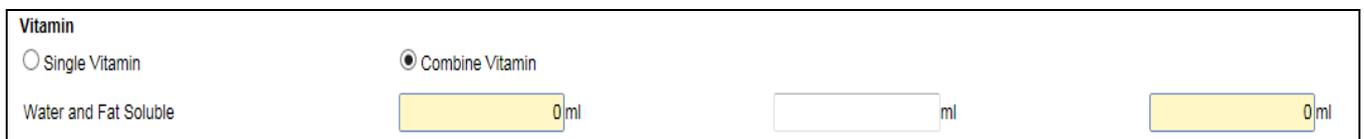


Figure 3.2.4-4 PN Component

Note

- Select either **Single Vitamin** or **Combine Vitamin** radio button.
- Vitamin have 2 types vitamin:
 - Single Vitamin
 - Combine Vitamin
- If user select **Single Vitamin** radio button; **Water soluble** and **Fat soluble** field will automatically display by system as per Figure 3.2.4-3.
- If user select **Combine Vitamin** radio button; **Water and Fat Soluble** field will automatically display by system as per Figure 3.2.4-4.

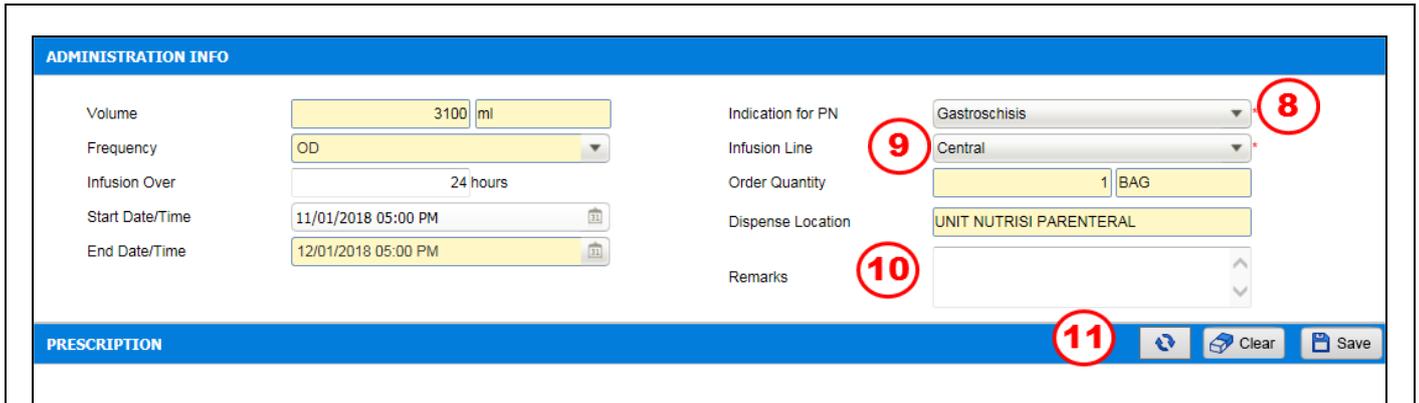


Figure 3.2.4-5 Administration Info

STEP 8

Enter **Indication for PN** by select from drop down box

STEP 9

Enter **Infusion Line** by select from drop down box

Note

- **Infusion Over** will be automatically default to 24 hours but user is allow to change at this field.
- **Volume** will be automatically displayed based on value of TPN Volume 'Per day'.
- **Frequency, Order Quantity** and **Duration** will be automatically displayed by system and user is not allow to edit this field.
- **Start Date/Time** will be automatically default to current date but still can be change by the user if applicable.
- **End Date/Time** will be displayed according to duration product given.
- **Dispense Location** will be automatically default by system.

STEP 10

Enter **Remarks** if applicable

STEP 11

Click on the  button to add prescription

Note

Prescription will display as per Figure 3.2.4-6

PN ORDER

Calorie Calculator

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: 80 kg

PN COMPONENT

ADMINISTRATION INFO

PRESCRIPTION Clear Save

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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.4-6 PN Prescription

STEP 12

Click on the button to save prescription

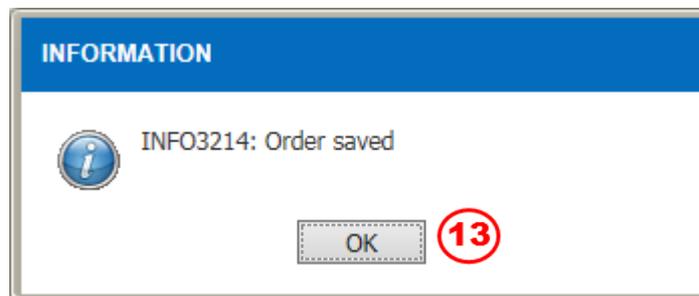


Figure 3.2.4-7 Information Alert Message

STEP 13

Click on the button to save order record

Note

After saving the record, button, button, button and button will be displayed as per Figure 3.2.4-8.

PN ORDER

Calorie Calculator

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: 80 kg

PN COMPONENT

ADMINISTRATION INFO 14

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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.4-8 PN Prescription

STEP 14

Click on the button to confirm prescription

Note

- The button to delete prescription.
- The button to print prescription.
- The button to edit information after saved record

CONFIRMATION

CONF3219: Are you sure want to confirm the order?

15

Figure 3.2.4-9 Confirmation Alert Message

STEP 15

Click on the button to confirm record order

PN ORDER

Calorie Calculator

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: 80 kg

PN COMPONENT

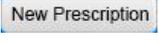
ADMINISTRATION INFO

PRESCRIPTION New Prescription 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	38.75 (3100)	31 (2480)		24 1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.4-10 PN Order

Note

- Click on the  button to view/print PN prescription as Figure 3.2.4-11
- Click on the  button to order a new prescription

Ministry Of Health, Malaysia
Hospital Pakar Sultanah Fatimah, Muar
PARENTERAL NUTRITION

Patient Name: MXXXXXXXX XXXXX XXX XXXXXX **Patient ID:** 930328045183

Age: 24 Years 09 Months 14 Days **MRN:** HPSF00190582

Gender: Male **Prescription :** W2L0001087884

Height / Weight / 169 cm/80 kg/1.97 m² **Order Date / Time** 11/01/2018 02:33 PM

Room No / Bed: **Location:** WAD 2 L (MED/SURG/ORTO)

Diagnosis: rheumatic fever **Allergy:**

TPN Order: PN Compounded Adult **Order** 1 bag

Start 11/01/2018 05:00 PM **End** 12/01/2018 05:00 PM

	Content / kg	Content / bag
Volume (ml)	38.75	3100
Calorie (kCal)	48	3840
Protein (g)	2	160
Carbohydrate (g)	3	240
Lipid (g)	1	80
Sodium (mmol)	1	80
Potassium (mmol)	1	80
Calcium (mmol)	0.1	8
Magnesium (mmol)	0.1	8
Phosphate (mmol)	0.6	48
Chloride (mmol)	NA	NA
Acetate (mmol)	NA	NA
Trace Element (ml)	NA	NA
Combine Vitamin (ml)	NA	NA
Water Soluble Vitamin (ml)	0.09	7
Fat Soluble Vitamin (ml)	0.06	5
L-Glutamin (ml)	2.5	200

Infusion Over: 24 hr **Frequency:** OD

Prescriber: Masnizar Bin Jamian **Infusion Route:** Central

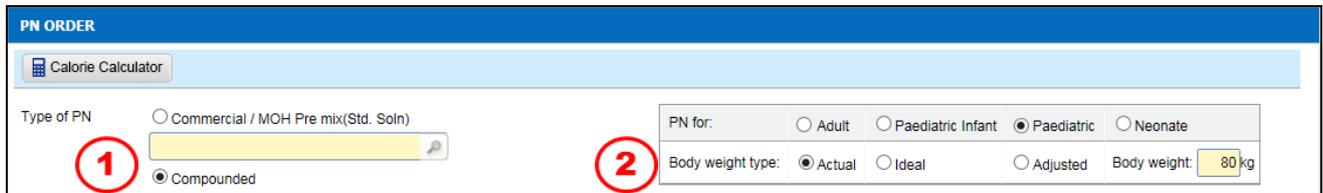
Designation: Pegawai Perubatan **Remarks:**

Department: General Medicine

Figure 3.2.4-11 PN Order Prescription

3.2.5 Compounded for Pediatric

PN Compounded allow user to order PN drug with certain information for patient between 3 years old to 12 years old.



The screenshot shows the 'PN ORDER' interface. At the top left is a 'Calorie Calculator' button. Below it, the 'Type of PN' section has two radio buttons: 'Commercial / MOH Pre mix(Std. Soln)' and 'Compounded'. The 'Compounded' option is selected and circled with a red '1'. To the right, the 'PN for:' section has four radio buttons: 'Adult', 'Paediatric Infant', 'Paediatric', and 'Neonate'. The 'Paediatric' option is selected and circled with a red '2'. Below this, the 'Body weight type:' section has three radio buttons: 'Actual', 'Ideal', and 'Adjusted'. The 'Actual' option is selected and circled with a red '2'. To the right of these radio buttons is a 'Body weight:' field with the value '80 kg'.

Figure 3.2.5-1 PN Order

STEP 1

Select on **Type of PN** as Compounded

Note

PN for: will be automatically based on the patient PN Reference;

- Adult : age from 13 years to 150 years
- Paediatric : age from 3 years to 12 years
- Paediatric-infant : 31 days to 2 years
- Neonate : from 1 day to 30 days

STEP 2

Select on the **Body Weight Type** radio button to use for calculation either as:

- Actual
- Ideal
- Adjusted

Note

By default **Body Weight Type** show the **Actual** body weight of the patient. Value for **Body Weight (kg)** will be change base on selected **Body Weight Type**.

PN COMPONENT			
Use Fluid Calculator	<input checked="" type="checkbox"/>		
Total volume required	100 ml/kg		200 ml
Total oral feeding	0 ml/kg		ml
TPN Volume	100 ml/kg		200 ml
Energy required	48 kcal/kg		96 kcal
Macronutrient		Recommended range(per kg)	Energy(per day)
Carbohydrate	3 g/kg	3.00 - 10.50 g/kg	6 g / 24 kcal
Lipid	1 g/kg	1.00 - 2.00 g/kg	2 g / 18 kcal
Protein	2 g/kg	1.00 - 3.00 g/kg	4 g / 16 kcal
L-Glutamin	ml/kg	0.00 - 0.00 ml/kg	0 ml / 0 kcal
Carbohydrate:Lipid(kcal)	57 : 43	Nitrogen Content	1 g / NPC:NRatio
			42 : 1 / Total 58 kcal
Electrolytes			
Sodium(Natrium),Na+	1 mmol/kg	1.00 - 3.00 mmol/kg	2 mmol
Potassium(Kalium),K+	1 mmol/kg	1.00 - 3.00 mmol/kg	2 mmol
Calcium,Ca2+	1 mmol/kg	0.50 - 1.25 mmol/kg	2 mmol
Magnesium,Mg+	0.15 mmol/kg	0.15 - 0.25 mmol/kg	0.3 mmol
Phosphate,(PO4)2-	0.5 mmol/kg	0.50 - 1.00 mmol/kg	1 mmol
Chloride,Cl+	2 mmol/kg	2.00 - 5.00 mmol/kg	4 mmol
Acetate(CH3COO)	mmol/kg	0.00 - 0.00 mmol/kg	mmol
Trace elements	ml/kg	0.00 - 15.00 ml	ml
Vitamin			
<input type="radio"/> Single Vitamin			
<input checked="" type="radio"/> Combine Vitamin			
Water and Fat Soluble	ml/kg	0.00 - 0.00 ml	ml

Figure 3.2.5-2 PN Component

STEP 3

Select **Use Fluid Calculator** check box

Note

By selecting **Use Fluid Calculator** check box, system will be auto calculate **Total volume required per day** based on the **Body Weight Type**

STEP 4

Enter value for **Total volume required by weight**

STEP 5

Enter value for **Total Oral Feeding per day**

Note

- TPN Volume on '**Per Day**' (in ml) will be auto calculate and TPN Volume on '**By Weight**' (in ml/kg) field editeble.
- TPN Volume whis is edited value (in ml) will impact to the final bag volume required which is same value will be displayed.
- If changing the value '**Total volume required**' or '**Total Oral Feeding**', edited '**TPN Volume**' value will recalculate back based on existing calculation

STEP 6

Enter value of the **Macronutrient** that applicable for the PN Component.

Note

- All entered value must between the **Recommended Range (per kg)**.
- All value **Per day** and **Energy(per day)** will automatically calculate and display.
- L-Gutamin is an optional function. Value of **By weight** and **Energy(per day)** will automatically display.
- Value of **Carbohydrate:Lipid(kcal) Content, Nitrogen and NPC:Ratio** will automatically calculate and display.
- Value **By Weight** will automatically calculate and display after enter the **Trace elements Per day** value.

STEP 7

Enter value of the **Electrolytes** that applicable for the PN Component

Note

- All entered value must between the **Recommended Range (per kg)**.
- **Chloride ,Cl⁻** and **Acetate (CH₃COO)** is optional function.
- All value **Per day** will automatically calculate and display.
- Enter value of the **Trace elements Per day**. Value **By Weight** will be automatically calculated and displayed after enter the **Trace elements Per day** value.

Vitamin			
<input checked="" type="radio"/> Single Vitamin	<input type="radio"/> Combine Vitamin		
Water soluble	<input type="text" value="0"/> ml	<input type="text" value=""/> ml	<input type="text" value="0"/> ml
Fat soluble	<input type="text" value="0"/> ml	<input type="text" value=""/> ml	<input type="text" value="0"/> ml

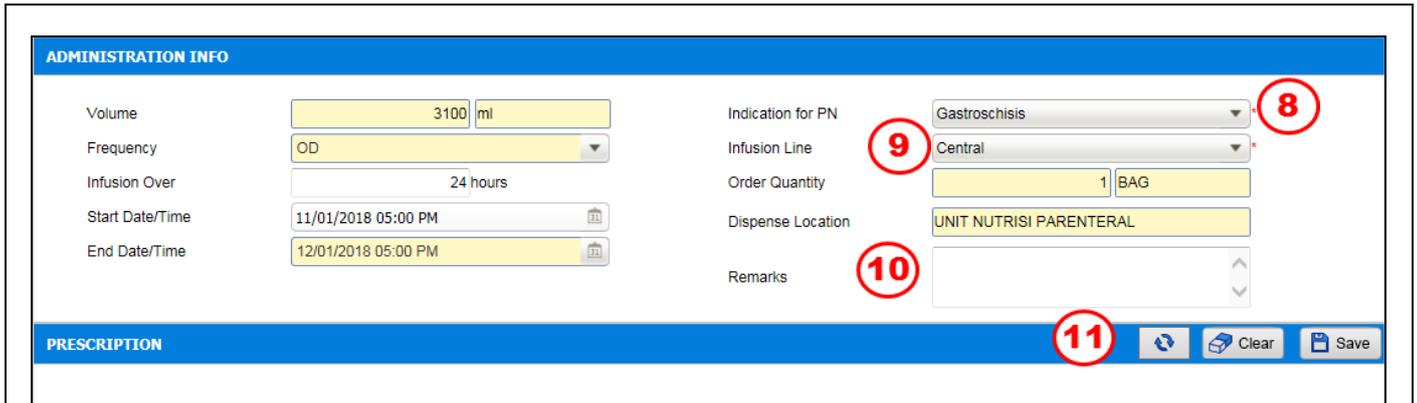
Figure 3.2.5-3 PN Component

Vitamin			
<input type="radio"/> Single Vitamin	<input checked="" type="radio"/> Combine Vitamin		
Water and Fat Soluble	<input type="text" value="0"/> ml	<input type="text" value=""/> ml	<input type="text" value="0"/> ml

Figure 3.2.5-4 PN Component

Note

- Select either **Single Vitamin** or **Combine Vitamin** radio button.
- Vitamin have 2 types vitamin:
 - Single Vitamin
 - Combine Vitamin
- If user select **Single Vitamin** radio button; **Water soluble** and **Fat soluble** field will automatically display by system as per Figure 3.2.5-3.
- If user select **Combine Vitamin** radio button; **Water and Fat Soluble** field will automatically display by system as per Figure 3.2.5-4.



ADMINISTRATION INFO

Volume	3100 ml	Indication for PN	Gastroschisis
Frequency	OD	Infusion Line	Central
Infusion Over	24 hours	Order Quantity	1 BAG
Start Date/Time	11/01/2018 05:00 PM	Dispense Location	UNIT NUTRISI PARENTERAL
End Date/Time	12/01/2018 05:00 PM	Remarks	

PRESCRIPTION

Refresh Clear Save

Figure 3.2.5-5 Administration Info

STEP 8

Enter **Indication for PN** by select from drop down box

STEP 9

Enter **Infusion Line** by select from drop down box

Note

- **Infusion Over** will be automatically default to 24 hours but user is allow to change at this field.
- **Volume** will be automatically displayed based on value of TPN Volume 'Per day'.
- **Frequency, Order Quantity** and **Duration** will be automatically displayed by system and user is not allow to edit this field.
- **Start Date/Time** will be automatically default to current date but still can be change by the user if applicable.
- **End Date/Time** will be displayed according to duration product given.
- **Dispense Location** will be automatically default by system.

STEP 10

Enter **Remarks** if applicable

STEP 11

Click on the  button to add prescription

PN ORDER

Calorie Calculator

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

PN for: Adult Paediatric Infant Paediatric Neonate

Body weight type: Actual Ideal Adjusted Body weight: 80 kg

PN COMPONENT

ADMINISTRATION INFO

PRESCRIPTION Clear Save

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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.5-6 PN Prescription

STEP 12

Click on the button to save prescription

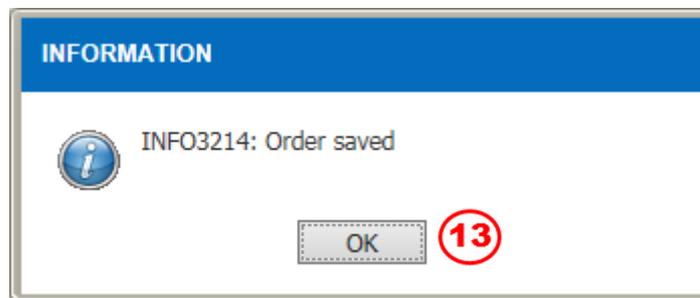


Figure 3.2.5-7 Information Alert Message

STEP 13

Click on the button to save order record

Note

After saving the record, button, button, button and button will be displayed as per Figure 3.2.5-8.

PN ORDER

Calorie Calculator

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: 80 kg

PN COMPONENT

ADMINISTRATION INFO 14

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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.5-8 PN Prescription

STEP 14

Click on the button to confirm prescription

Note

- The button to delete prescription.
- The button to print prescription.
- The button to edit information after saved record

CONFIRMATION

CONF3219: Are you sure want to confirm the order?

15

Figure 3.2.5-9 Confirmation Alert Message

STEP 15

Click on the button to confirm record order

PN ORDER

Calorie Calculator

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: 80 kg

PN COMPONENT

ADMINISTRATION INFO

PRESCRIPTION New Prescription 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	38.75 (3100)	31 (2480)		24 1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.5-10 PN Order

Note

- Click on the  button to view/print PN prescription as Figure 3.2.5-10
- Click on the  button to order a new prescription

Ministry Of Health, Malaysia
Hospital Pakar Sultanah Fatimah, Muar
PARENTERAL NUTRITION

Patient Name: [REDACTED] Patient ID: 930328045183
 Age: [REDACTED] MRN: HPSF00190582
 Gender: Male Prescription : W2L0001087884
 Height / Weight / : 169 cm/80 kg/1.97 m² Order Date / Time 11/01/2018 02:33 PM
 Room No / Bed: [REDACTED] Location: [REDACTED]
 Diagnosis: rheumatic fever Allergy:

TPN Order: PN Compounded : Order 1 bag
 Start 11/01/2018 05:00 PM End 12/01/2018 05:00 PM

	Content / kg	Content / bag
Volume (ml)	38.75	3100
Calorie (kCal)	48	3840
Protein (g)	2	160
Carbohydrate (g)	3	240
Lipid (g)	1	80
Sodium (mmol)	1	80
Potassium (mmol)	1	80
Calcium (mmol)	0.1	8
Magnesium (mmol)	0.1	8
Phosphate (mmol)	0.6	48
Chloride (mmol)	NA	NA
Acetate (mmol)	NA	NA
Trace Element (ml)	NA	NA
Combine Vitamin (ml)	NA	NA
Water Soluble Vitamin (ml)	0.09	7
Fat Soluble Vitamin (ml)	0.06	5
L-Glutamin (ml)	2.5	200

Infusion Over: 24 hr Frequency: OD
 Prescriber: [REDACTED] Infusion Route: Central
 Designation: Pegawai Perubatan Remarks:
 Department: General Medicine

Figure 3.2.5-11 PN Order Prescription

3.2.6 Compounded for Pediatric Infant

PN Compounded allow user to order PN drug with certain information for patient between 31 days old to 2 years old.



The screenshot shows the 'PN ORDER' form. At the top left is a 'Calorie Calculator' button. Below it, the 'Type of PN' section has two radio buttons: 'Commercial / MOH Pre mix(Std. Soln)' and 'Compounded'. A red circle with the number '1' is around the 'Compounded' radio button. To the right, the 'PN for:' section has four radio buttons: 'Adult', 'Paediatric Infant', 'Paediatric', and 'Neonate'. A red circle with the number '2' is around the 'Paediatric Infant' radio button. Below these are 'Body weight type:' radio buttons for 'Actual', 'Ideal', and 'Adjusted', and a 'Body weight:' input field with '80 kg' entered.

Figure 3.3.6-1 PN Order

STEP 1

Select on **Type of PN** as Compounded

Note

PN for: will be automatically based on the patient PN Reference;

- Adult : age from 13 years to 150 years
- Paediatric : age from 3 years to 12 years
- Paediatric-infant : 31 days to 2 years
- Neonate : from 1 day to 30 days

STEP 2

Select on the **Body Weight Type** radio button to use for calculation either as:

- Actual
- Ideal
- Adjusted

Note

By default **Body Weight Type** show the **Actual** body weight of the patient. Value for **Body Weight (kg)** will be change base on selected **Body Weight Type**.

PN COMPONENT							
Use Fluid Calculator	<input checked="" type="checkbox"/>						
Total volume required	100 ml/kg			260 ml			
Total oral feeding	0 ml/kg						
TPN Volume	100 ml/kg			260 ml			
Energy required	56 kcal/kg			143 kcal			
Macronutrient		Recommended range(per kg)			Energy(per day)		
Carbohydrate	3 g/kg	8.00 - 18.00 g/kg		7.8 g	31.2 kcal		
Lipid	1 g/kg	0.50 - 3.00 g/kg		2.6 g	23.4 kcal		
Protein	2 g/kg	1.00 - 2.50 g/kg		5.2 g	20.8 kcal		
L-Glutamin	ml/kg	0.00 - 0.00 ml/kg		0 ml	0 kcal		
Carbohydrate:Lipid(kcal)	57 : 43	Nitrogen Content	1 g	NPC:NRatio	54 : 1	Total	75.4 kcal
Electrolytes							
Sodium(Natrium),Na+	1 mmol/kg	2.00 - 6.00 mmol/kg		2.6 mmol			
Potassium(Kalium),K+	1 mmol/kg	1.00 - 3.00 mmol/kg		2.6 mmol			
Calcium,Ca2+	1 mmol/kg	0.50 - 1.25 mmol/kg		2.6 mmol			
Magnesium,Mg+	0.15 mmol/kg	0.15 - 0.25 mmol/kg		0.36 mmol			
Phosphate,(PO4)2-	0.5 mmol/kg	0.50 - 1.00 mmol/kg		1.3 mmol			
Chloride,Cl+	2 mmol/kg	2.00 - 5.00 mmol/kg		5.2 mmol			
Acetate(CH3COO)	mmol/kg	0.00 - 0.00 mmol/kg		mmol			
Trace elements							
Vitamin							
<input type="radio"/> Single Vitamin							
<input checked="" type="radio"/> Combine Vitamin							
Water and Fat Soluble	ml/kg	0.00 - 0.00 ml		ml			

Figure 3.2.6-2 PN Component

STEP 3

Select **Use Fluid Calculator** check box

Note

By selecting **Use Fluid Calculator** check box, system will be auto calculate **Total volume required per day** based on the **Body Weight Type**

STEP 4

Enter value for **Total volume required by weight**

STEP 5

Enter value for **Total Oral Feeding per day**

Note

- TPN Volume on 'Per Day' (in ml) will be auto calculate and TPN Volume on 'By Weight' (in ml/kg) field editeble.
- TPN Volume whis is edited value (in ml) will impact to the final bag volume required which is same value will be displayed.
- If changing the value 'Total volume required' or 'Total Oral Feeding', edited 'TPN Volume' value will recalculate back based on existing calculation

STEP 6

Enter value of the **Macronutrient** that applicable for the PN Component.

Note

- All entered value must between the **Recommended Range (per kg)**.
- All value **Per day** and **Energy(per day)** will automatically calculate and display.
- L-Gutamin is an optional function. Value of **By weight** and **Energy(per day)** will automatically display.
- Value of **Carbohydrate:Lipid(kcal) Content, Nitrogen and NPC:Ratio** will automatically calculate and display.
- Value **By Weight** will automatically calculate and display after enter the **Trace elements Per day** value.

STEP 7

Enter value of the **Electrolytes** that applicable for the PN Component

Note

- All entered value must between the **Recommended Range (per kg)**.
- **Chloride ,Cl⁻** and **Acetate (CH₃COO)** is optional function.
- All value **Per day** will automatically calculate and display.
- Enter value of the **Trace elements Per day**. Value **By Weight** will be automatically calculated and displayed after enter the **Trace elements Per day** value.

Vitamin			
<input checked="" type="radio"/> Single Vitamin	<input type="radio"/> Combine Vitamin		
Water soluble	<input type="text" value="0"/> ml	<input type="text" value=""/> ml	<input type="text" value="0"/> ml
Fat soluble	<input type="text" value="0"/> ml	<input type="text" value=""/> ml	<input type="text" value="0"/> ml

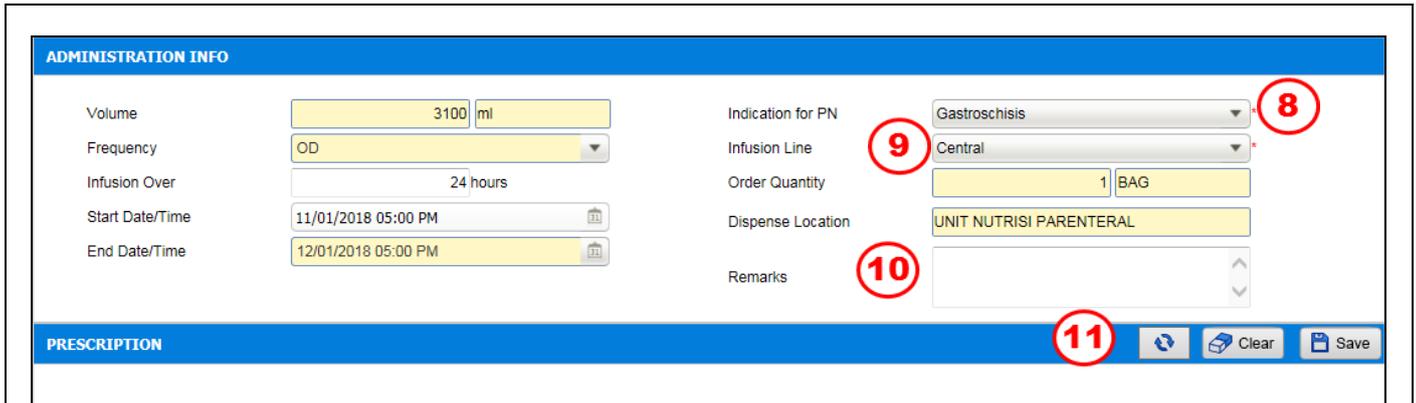
Figure 3.2.6-3 PN Component

Vitamin			
<input type="radio"/> Single Vitamin	<input checked="" type="radio"/> Combine Vitamin		
Water and Fat Soluble	<input type="text" value="0"/> ml	<input type="text" value=""/> ml	<input type="text" value="0"/> ml

Figure 3.2.6-4 PN Component

Note

- Select either **Single Vitamin** or **Combine Vitamin** radio button.
- Vitamin have 2 types vitamin:
 - Single Vitamin
 - Combine Vitamin
- If user select **Single Vitamin** radio button; **Water soluble** and **Fat soluble** field will automatically display by system as per Figure 3.2.6-3.
- If user select **Combine Vitamin** radio button; **Water and Fat Soluble** field will automatically display by system as per Figure 3.2.6-4.



ADMINISTRATION INFO	
Volume	3100 ml
Frequency	OD
Infusion Over	24 hours
Start Date/Time	11/01/2018 05:00 PM
End Date/Time	12/01/2018 05:00 PM
Indication for PN	Gastroschisis
Infusion Line	Central
Order Quantity	1 BAG
Dispense Location	UNIT NUTRISI PARENTERAL
Remarks	

PRESCRIPTION

Buttons: Add Prescription, Clear, Save

Figure 3.2.6-5 Administration Info

STEP 8

Enter **Indication for PN** by select from drop down box

STEP 9

Enter **Infusion Line** by select from drop down box

Note

- **Infusion Over** will be automatically default to 24 hours but user is allow to change at this field.
- **Volume** will be automatically displayed based on value of TPN Volume 'Per day'.
- **Frequency, Order Quantity** and **Duration** will be automatically displayed by system and user is not allow to edit this field.
- **Start Date/Time** will be automatically default to current date but still can be change by the user if applicable.
- **End Date/Time** will be displayed according to duration product given.
- **Dispense Location** will be automatically default by system.

STEP 10

Enter **Remarks** if applicable

STEP 11

Click on the  button to add prescription

PN COMPONENT									
ADMINISTRATION INFO									
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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.6-6 PN Prescription

STEP 12

Click on the button to save prescription

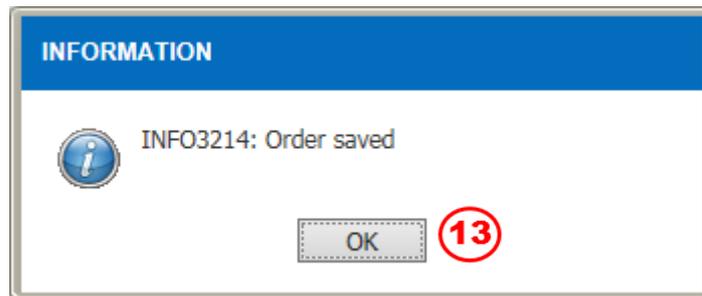


Figure 3.2.6-7 Information Alert Message

STEP 13

Click on the button to save order record

Note

After saving the record, button, button, button and button will be displayed as per Figure 3.2.6-8.

PN COMPONENT									
ADMINISTRATION INFO									
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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.6-8 PN Prescription

STEP 14

Click on the button to confirm prescription

Note

- The button to delete prescription.

- The Prescription button to print prescription.
- The Modify button to edit information after saved record

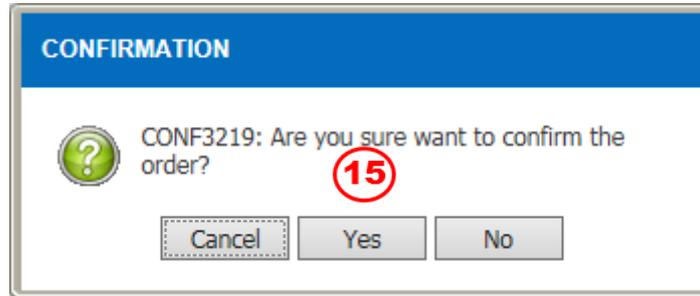


Figure 3.2.6-9 Confirmation Alert Message

STEP 15

Click on the Yes button to confirm record order

PN ORDER

Calorie Calculator

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: kg

PN COMPONENT

ADMINISTRATION INFO

PRESCRIPTION New Prescription 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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.6-10 PN Order

Note

- Click on the Prescription button to view/print PN prescription as Figure 3.2.6-11
- Click on the New Prescription button to order a new prescription

Ministry Of Health, Malaysia
Hospital Pakar Sultanah Fatimah, Muar
PARENTERAL NUTRITION

Patient Name: [REDACTED] Patient ID: 930328045183
Age: [REDACTED] MRN: HPSF00190582
Gender: Male Prescription : W2L0001087884
Height / Weight / : 169 cm/80 kg/1.97 m² Order Date / Time 11/01/2018 02:33 PM
Room No / Bed: Location: [REDACTED]
Diagnosis: rheumatic fever Allergy:

TPN Order: PN Compounded : Order 1 bag
Start 11/01/2018 05:00 PM End 12/01/2018 05:00 PM

	Content / kg	Content / bag
Volume (ml)	38.75	3100
Calorie (kCal)	48	3840
Protein (g)	2	160
Carbohydrate (g)	3	240
Lipid (g)	1	80
Sodium (mmol)	1	80
Potassium (mmol)	1	80
Calcium (mmol)	0.1	8
Magnesium (mmol)	0.1	8
Phosphate (mmol)	0.6	48
Chloride (mmol)	NA	NA
Acetate (mmol)	NA	NA
Trace Element (ml)	NA	NA
Combine Vitamin (ml)	NA	NA
Water Soluble Vitamin (ml)	0.09	7
Fat Soluble Vitamin (ml)	0.06	5
L-Glutamin (ml)	2.5	200

Infusion Over: 24 hr Frequency: OD
Prescriber: [REDACTED] Infusion Route: Central
Designation: Pegawai Perubatan Remarks:
Department: General Medicine

Figure 3.2.6-11 PN Order Prescription

3.2.7 Compounded for Neonate

Compounded (Neonate) allow user to add ingredients under PN component based on patient nutrition level for patient 1 day old to 30 days old.



PN ORDER

Calorie Calculator

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

PN for: Adult Paediatric Infant Paediatric Neonate

Birth weight: 3 kg Current weight: 2.8 kg

Figure 3.2.7-1 PN Order

STEP 1

Select on **Type of PN** as Compounded

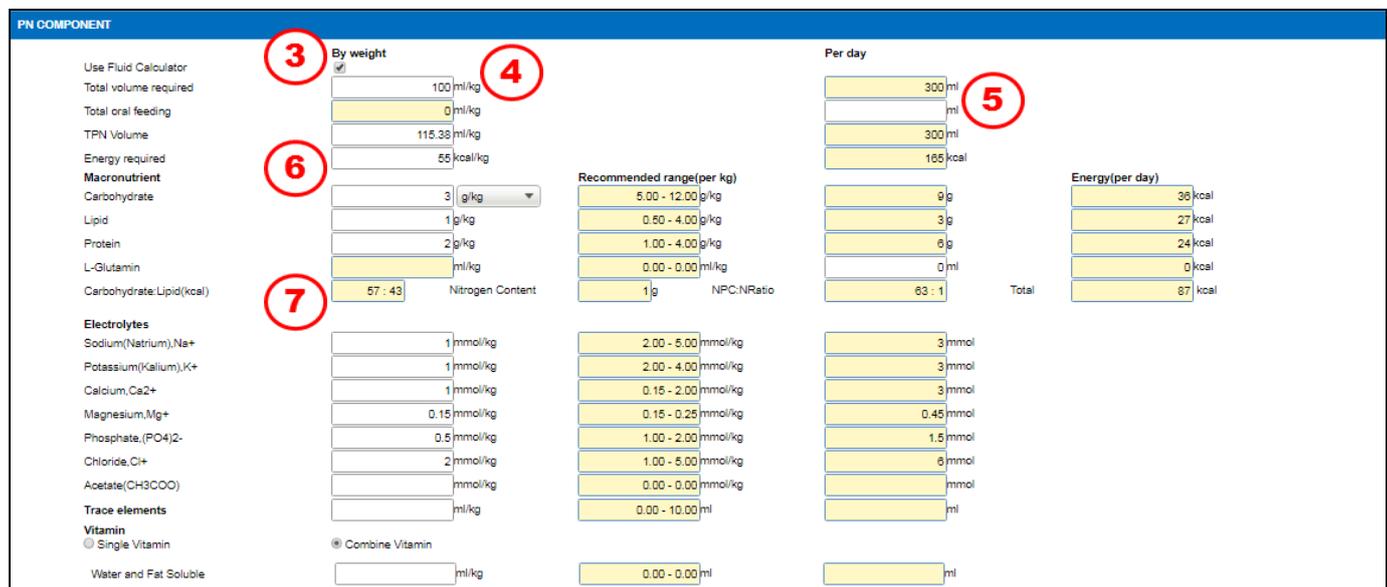
Note

PN for: will be automatically based on the patient PN Reference;

- Adult : age from 13 years to 150 years
- Paediatric : age from 3 years to 12 years
- Paediatric-infant : 31 days to 2 years
- Neonate : from 1 day to 30 days

STEP 2

Enter value for **Birth weight** and **Current weight**



PN COMPONENT

Use Fluid Calculator

By weight Per day

Total volume required: 100 ml/kg (300 ml)

Total oral feeding: 0 ml/kg (0 ml)

TPN Volume: 115.38 ml/kg (300 ml)

Energy required: 55 kcal/kg (165 kcal)

Macronutrient	By weight	Recommended range(per kg)	Per day	Energy(per day)
Carbohydrate	3 g/kg	5.00 - 12.00 g/kg	9 g	36 kcal
Lipid	1 g/kg	0.60 - 4.00 g/kg	3 g	27 kcal
Protein	2 g/kg	1.00 - 4.00 g/kg	6 g	24 kcal
L-Glutamin	ml/kg	0.00 - 0.00 ml/kg	0 ml	0 kcal
Carbohydrate:Lipid(kcal)	57 : 43	1 g	63 : 1	Total 87 kcal

Electrolytes

Electrolyte	By weight	Recommended range(per kg)	Per day
Sodium(Natrium),Na+	1 mmol/kg	2.00 - 5.00 mmol/kg	3 mmol
Potassium(Kalium),K+	1 mmol/kg	2.00 - 4.00 mmol/kg	3 mmol
Calcium,Ca2+	1 mmol/kg	0.15 - 2.00 mmol/kg	3 mmol
Magnesium,Mg+	0.15 mmol/kg	0.15 - 0.25 mmol/kg	0.45 mmol
Phosphate,(PO4)2-	0.5 mmol/kg	1.00 - 2.00 mmol/kg	1.5 mmol
Chloride,Cl+	2 mmol/kg	1.00 - 5.00 mmol/kg	6 mmol
Acetate(CH3COO)	mmol/kg	0.00 - 0.00 mmol/kg	mmol

Trace elements

Vitamin: Single Vitamin Combine Vitamin

Water and Fat Soluble: ml/kg (0.00 - 0.00 ml)

Figure 3.2.7-2 PN Component

STEP 3

Select **Use Fluid Calculator** check box

Note

By selecting **Use Fluid Calculator** check box, system will be auto calculate **Total volume required per day** based on the **Body Weight Type**

STEP 4

Enter value for **Total volume required by weight**

STEP 5

Enter value for **Total Oral Feeding per day**

Note

- TPN Volume on '**Per Day**' (in ml) will be auto calculate and TPN Volume on '**By Weight**' (in ml/kg) field editeble.
- TPN Volume whis is edited value (in ml) will impact to the final bag volume required which is same value will be displayed.
- If changing the value '**Total volume required**' or '**Total Oral Feeding**', edited '**TPN Volume**' value will recalculate back based on existing calculation.

STEP 6

Enter value of the **Macronutrient** that applicable for the PN Component.

Note

- All entered value must between the **Recommended Range (per kg)**.
- All value **Per day** and **Energy(per day)** will automatically calculate and display.
- L-Gutamin is an optional function. Value of **By weight** and **Energy(per day)** will automatically display.
- Value of **Carbohydrate:Lipid(kcal) Content, Nitrogen and NPC:Ratio** will automatically calculate and display.
- Value **By Weight** will automatically calculate and display after enter the **Trace elements Per day** value.

STEP 7

Enter value of the **Electrolytes** that applicable for the PN Component

Note

- All entered value must between the **Recommended Range (per kg)**.
- **Chloride ,Cl+ and Acetate (CH3COO)** is optional function.
- All value **Per day** will automatically calculate and display.
- Enter value of the **Trace elements Per day**. Value **By Weight** will be automatically calculated and displayed after enter the **Trace elements Per day** value.

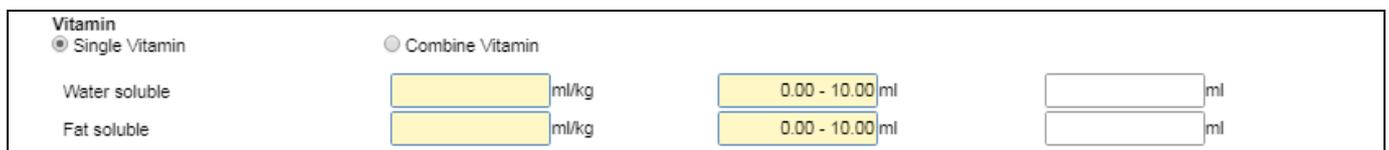


Figure 3.2.7-3 PN Component



Figure 3.2.7-4 PN Component

Note

- Select either **Single Vitamin** or **Combine Vitamin** radio button.

- *Vitamin have 2 types :*
 - *Single Vitamin*
 - *Combine Vitamin*
- *If user select **Single Vitamin** radio button; **Water soluble** and **Fat soluble** field will automatically display by system as per Figure 3.2.7-3.*
- *If user select **Combine Vitamin** radio button; **Water and Fat Soluble** field will automatically display by system as per Figure 3.2.7-4.*

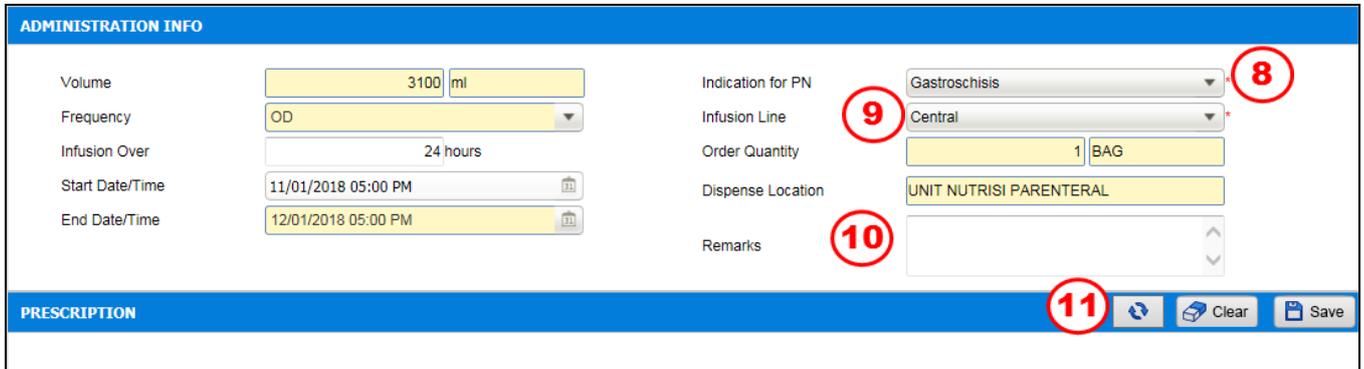


Figure 3.2.7-5 Administration Info

STEP 8

Enter **Indication for PN** by select from drop down box

STEP 9

Enter **Infusion Line** by select from drop down box

Note

- **Infusion Over** will be automatically default to 24 hours but user is allow to change at this field.
- **Volume, Frequency, Order Quantity** and **Duration** will be automatically displayed by system and user is not allow to edit this field.
- **Volume** will be automatically displayed based on value of TPN Volume 'Per day'.
- **Start Date/Time** will be automatically default to current date but still can be change by the user if applicable.
- **End Date/Time** will be displayed according to duration product given.
- **Dispense Location** will be automatically default by system.

STEP 10

Enter **Remarks** if applicable

STEP 11

Click on the  button to add prescription

Note

Prescription will display as per Figure 3.2.7-6

PN COMPONENT									
ADMINISTRATION INFO									
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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.7-6 PN Prescription

STEP 12

Click on the button to save prescription

INFORMATION

INFO3214: Order saved

13

Figure 3.2.7-7 Information Alert Message

STEP 13

Click on the button to save order record

Note

After saving the record, button, button, button and button will be displayed as per Figure 3.2.7-8.

PN COMPONENT									
ADMINISTRATION INFO									
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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.7-8 PN Prescription

STEP 14

Click on the button to confirm prescription

Note

- The button to delete prescription.
- The button to print prescription.

- The  button to edit information after saved record

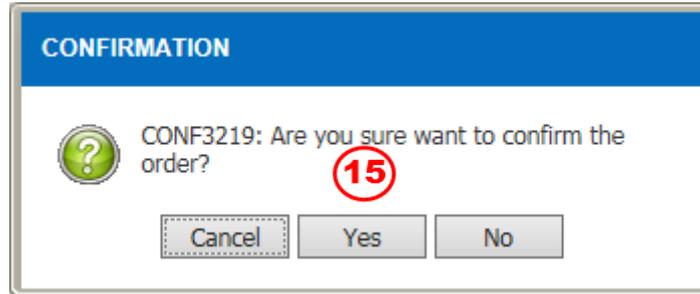
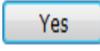
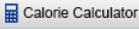


Figure 3.2.7-9 Confirmation Alert Message

STEP 15

Click on the  button to confirm record order

PN ORDER

 Calorie Calculator

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: 80 kg

PN COMPONENT

ADMINISTRATION INFO

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	38.75 (3100)	31 (2480)	24	1 BAG	OD	1 Days	11/01/2018 05:00 PM	12/01/2018 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 (48)	1 (80)	1 (80)	0.1 (8)	0.1 (8)	NA	NA	0.06 (5)	0.09 (7)	NA
Protein g per kg (g)	Carbohydrate g per kg (g)	Carbohydrate %	Lipid g per kg (g)	L-Glutamin ml per kg (ml)	Calorie Calculator	Infusion Line			
2 (160)	3 (240)	NA	1 (80)	2.5 (200)	NA	Central			

Figure 3.2.7-10 PN Order

Note

- Click on the  button to view/print PN prescription as Figure 3.2.7 -11
- Click on the  button to order a new prescription

Ministry Of Health, Malaysia
Hospital Pakar Sultanah Fatimah, Muar
PARENTERAL NUTRITION

Patient Name: [REDACTED] Patient ID: 930328045183
 Age: [REDACTED] MRN: HPSF00190582
 Gender: Male Prescription : W2L0001087884
 Height / Weight / : 169 cm/80 kg/1.97 m² Order Date / Time 11/01/2018 02:33 PM
 Room No / Bed: [REDACTED] Location: [REDACTED]
 Diagnosis: rheumatic fever Allergy:

TPN Order: PN Compounded : Order 1 bag
 Start 11/01/2018 05:00 PM End 12/01/2018 05:00 PM

	Content / kg	Content / bag
Volume (ml)	38.75	3100
Calorie (kCal)	48	3840
Protein (g)	2	160
Carbohydrate (g)	3	240
Lipid (g)	1	80
Sodium (mmol)	1	80
Potassium (mmol)	1	80
Calcium (mmol)	0.1	8
Magnesium (mmol)	0.1	8
Phosphate (mmol)	0.6	48
Chloride (mmol)	NA	NA
Acetate (mmol)	NA	NA
Trace Element (ml)	NA	NA
Combine Vitamin (ml)	NA	NA
Water Soluble Vitamin (ml)	0.09	7
Fat Soluble Vitamin (ml)	0.06	5
L-Glutamin (ml)	2.5	200

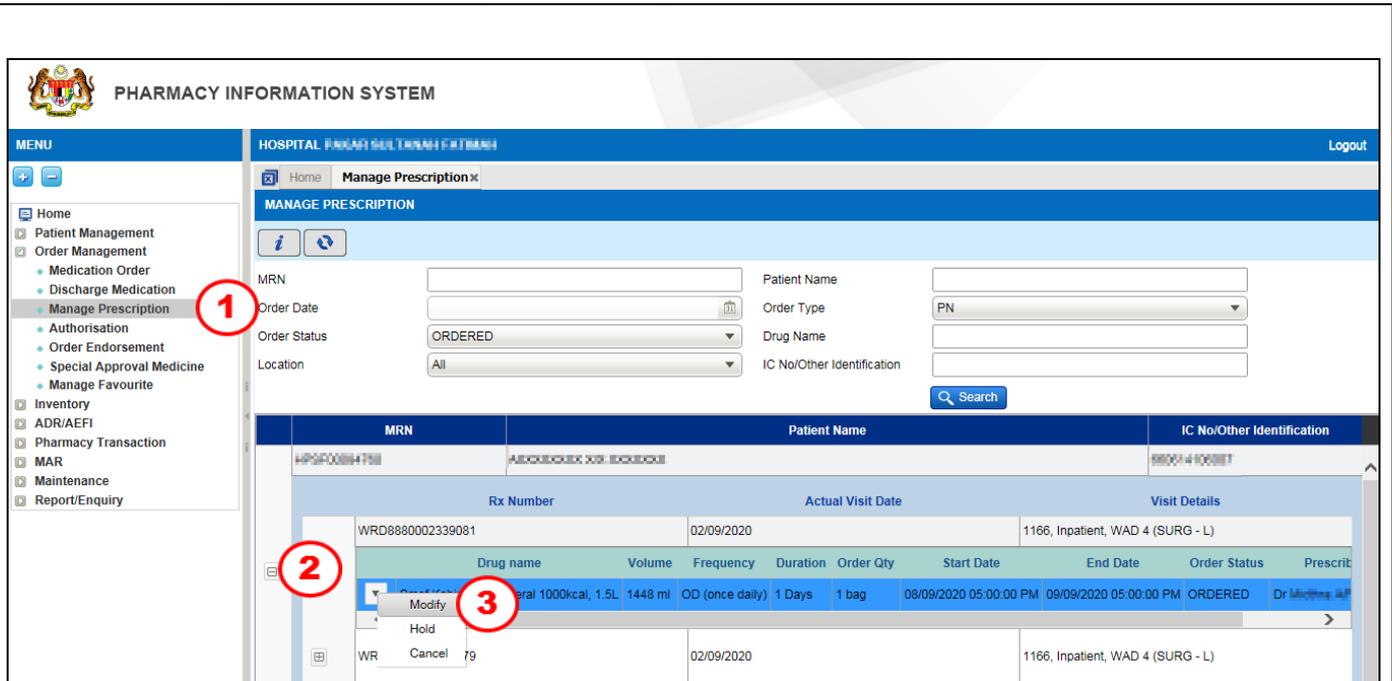
Infusion Over: 24 hr Frequency: OD
 Prescriber: [REDACTED] Infusion Route: Central
 Designation: Pegawai Perubatan Remarks:
 Department: General Medicine

Figure 3.2.7-11 PN Order Prescription

3.3 Manage Prescription

3.3.1 Modify Order

Modify order is allowed only when the drug status is Ordered.



PHARMACY INFORMATION SYSTEM

HOSPITAL [MALAYSIA] [SULTANAH] [FATMahan]

Logout

Home Manage Prescription x

MANAGE PRESCRIPTION

MRN: Patient Name:

Order Date: Order Type:

Order Status: Drug Name:

Location: IC No/Other Identification:

MRN	Patient Name	IC No/Other Identification
WRD8880002339081	AJIBUSALIM, XIN ENDEBOUT	88003480081

Rx Number	Actual Visit Date	Visit Details
WRD8880002339081	02/09/2020	1166, Inpatient, WAD 4 (SURG - L)

Drug name	Volume	Frequency	Duration	Order Qty	Start Date	End Date	Order Status	Prescriber
Parenteral 1000kcal, 1.5L	1448 ml	OD (once daily)	1 Days	1 bag	08/09/2020 05:00:00 PM	09/09/2020 05:00:00 PM	ORDERED	Dr. Muzammil

Context menu options: Modify, Hold, Cancel

Figure 3.3.1-1 Manage Order

STEP 1

Click on 'Order Management' menu and click on 'Manage Prescription' sub-menu

Note

- Various search criteria is provided as below:
 - MRN
 - Patient Name
 - Order Date
 - Order Type
 - Order Status
 - Drug name
 - Location
 - IC No/Other Identification
- Order Type choose as PN

STEP 2

Click on the  expand button to display order details as per Figure 3.3.1-1

STEP 3

Right click mouse on the  button and select **Modify** as per Figure 3.3.1-1

Note

- PN Manage Prescription screen will be displayed as per Figure 3.3.1-2.

PN MANAGE PRESCRIPTION

MODIFY ORDER

Type of PN Commercial / MOH Pre mix(Std. Soln) Add Additive Compounded
 Nutriflex Lipid Special 740kcal, 0.625L Body weight type: Actual Ideal Adjusted Body weight: kg

ADMINISTRATION INFO

Volume: ml **4** Indication for PN: *
 Frequency: Infusion Line: *
 Infusion Over: hours Order Quantity: bag
 Start Date/Time: Duration: Days
 End Date/Time: Dispense Location:
 Remarks:

PRESCRIPTION

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start Date/Time	End Date/Time
Nutriflex Lipid Special 740kcal, 0.625L	625	740	24	1 bag	OD (once daily)	1 Days	17/10/2019 07:30 PM	18/10/2019 07:30 PM
Calorie Calculator				Infusion Line				
NA				Central				

Figure 3.3.1-2 Drug Details

STEP 4

Edit the necessary information

STEP 5

Click on the  button to update the edited information into the prescription

STEP 6

Click on the  button to save the record and confirmation alert will displayed as Figure 3.3.1-2

CONFIRMATION



CONF0002: Are you sure you want to save?

Figure 3.3.1-3 Confirmation Alert

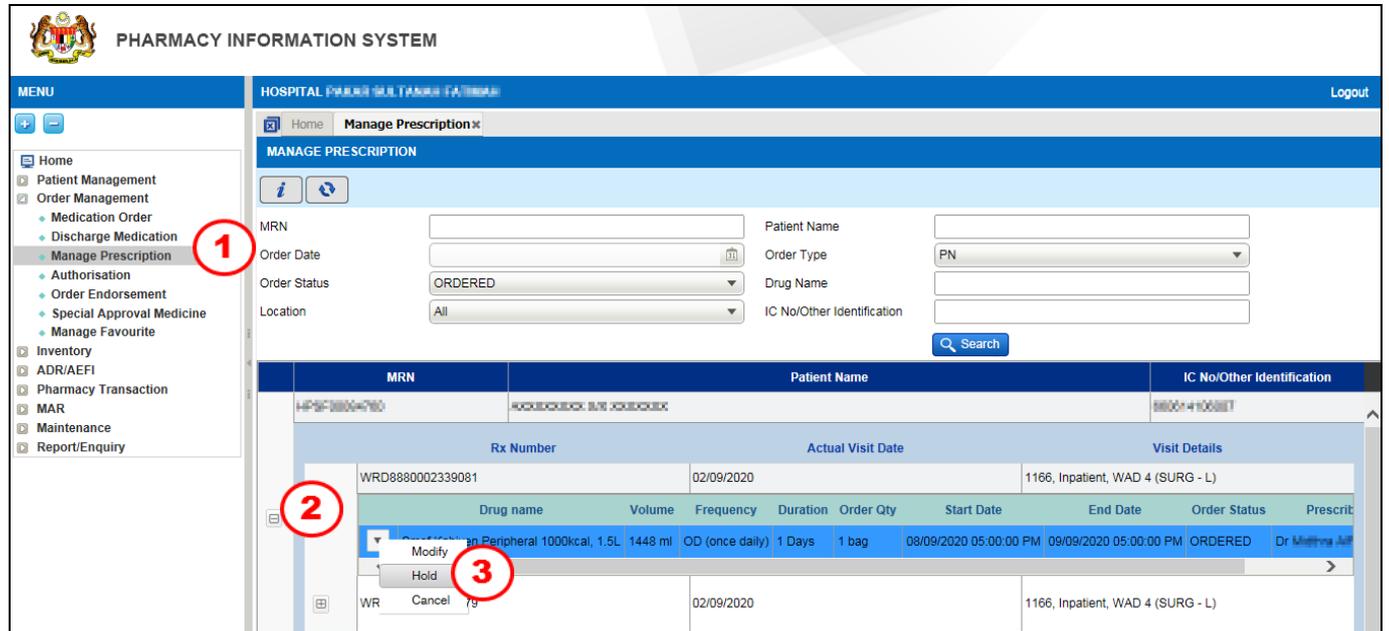
Note

Click on the button to save the record

3.3.2 Hold and Resume Order

Hold and Resume order screen allow user to hold order before verify order and to hold and suspicious prescription. Also to resume back the hold order. User need to enter reason to hold order in remarks.

Hold Order



PHARMACY INFORMATION SYSTEM

HOSPITAL (HAWA) (SULTANAH FATMAH) Logout

Home Manage Prescription x

MANAGE PRESCRIPTION

MRN: Patient Name:

Order Date: Order Type:

Order Status: Drug Name:

Location: IC No/Other Identification:

MRN	Patient Name	IC No/Other Identification
WRD8880002339081	1166, Inpatient, WAD 4 (SURG - L)	1166, Inpatient, WAD 4 (SURG - L)

Rx Number	Actual Visit Date	Visit Details
WRD8880002339081	02/09/2020	1166, Inpatient, WAD 4 (SURG - L)

Drug name	Volume	Frequency	Duration	Order Qty	Start Date	End Date	Order Status	Prescrib
Peripheral 1000kcal, 1.5L	1448 ml	OD (once daily)	1 Days	1 bag	08/09/2020 05:00:00 PM	09/09/2020 05:00:00 PM	ORDERED	Dr Mattheus Alf

Context menu options: Modify, Hold, Cancel

Figure 3.3.2-1 Hold Order

STEP 1

Click on 'Order Management' menu and click on 'Manage Prscription' sub-menu

Note

- Various search criteria is provided as below:
 - MRN
 - Patient Name
 - Order Date
 - Order Type
 - Order Status
 - Drug name
 - Location
 - IC No/Other Identification
- Order Type choose as PN

STEP 2

Click on the  expand button to display order details as per Figure 3.3.2-1

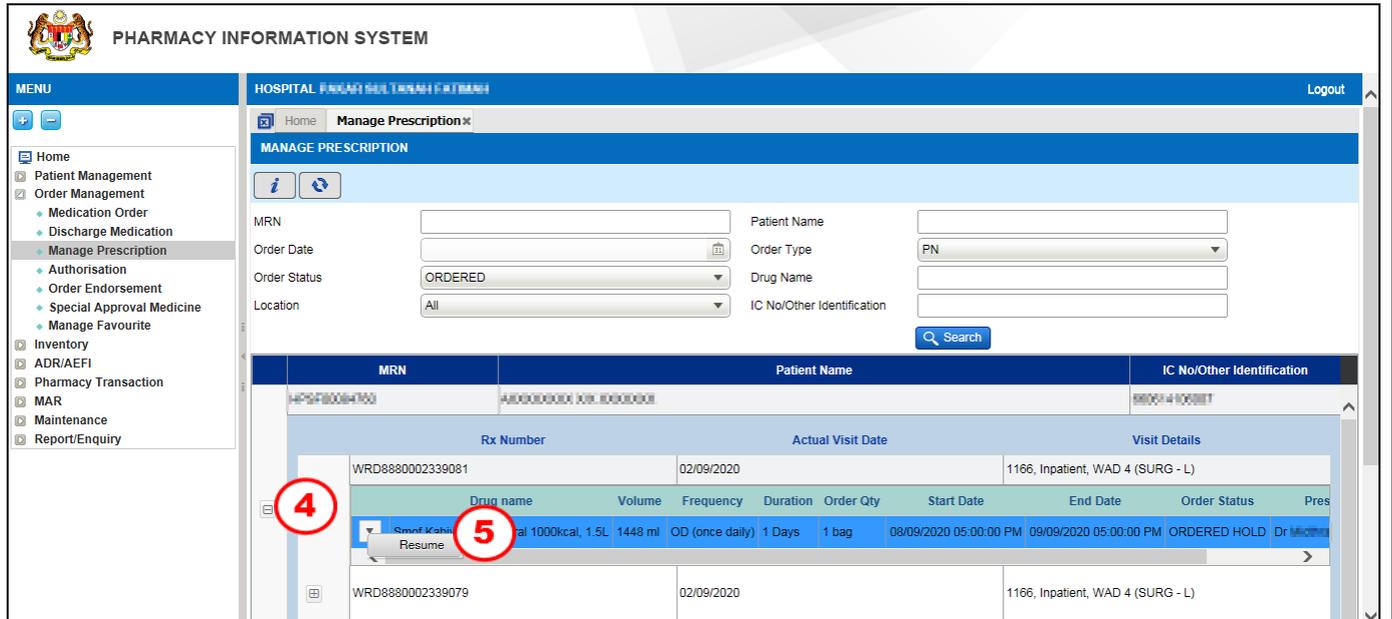
STEP 3

Right click mouse on the  button and select **Hold** as per Figure 3.3.2-1

Note

System will hold order from dispensing and changed **Order Status** to **Ordered Hold**.

Resume Order



PHARMACY INFORMATION SYSTEM

HOSPITAL HAWAIIAN TAWAN C. TRAWAN Logout

Home Manage Prescription x

MANAGE PRESCRIPTION

MRN: Patient Name:
Order Date: Order Type: PN
Order Status: ORDERED Drug Name:
Location: All IC No/Other Identification:

Search

MRN	Patient Name	IC No/Other Identification						
WRD8880002339081	XXXXXXXXXX XXXXXXXX	XXXXXXXXXXXX						
Rx Number Actual Visit Date Visit Details								
WRD8880002339081	02/09/2020	1166, Inpatient, WAD 4 (SURG - L)						
Drug name	Volume	Frequency	Duration	Order Qty	Start Date	End Date	Order Status	Pres
Smof Kalbe	1000kcal, 1.5L, 1448 ml	OD (once daily)	1 Days	1 bag	08/09/2020 05:00:00 PM	09/09/2020 05:00:00 PM	ORDERED HOLD	Dr. MICHAEL
Resume								
WRD8880002339079								

Figure 3.3.2-2 Resume Order

STEP 4

Click on the  expand button to display order details as per Figure 3.3.2-2

STEP 5

Right click mouse on the  button and select **Resume** as per Figure 3.3.2-2

3.3.3 Cancel / Stop Order

Cancel order is allowed only when the drug status is Ordered, Verified and Prepared. This function will update the drug status to Cancelled and will remove the drug from the Manage Order listing screen. Stop order is allowed only when the drug status is Partial Dispensed. This function will update the drug status to Discontinued and will remove the drug from the Manage Order listing screen.

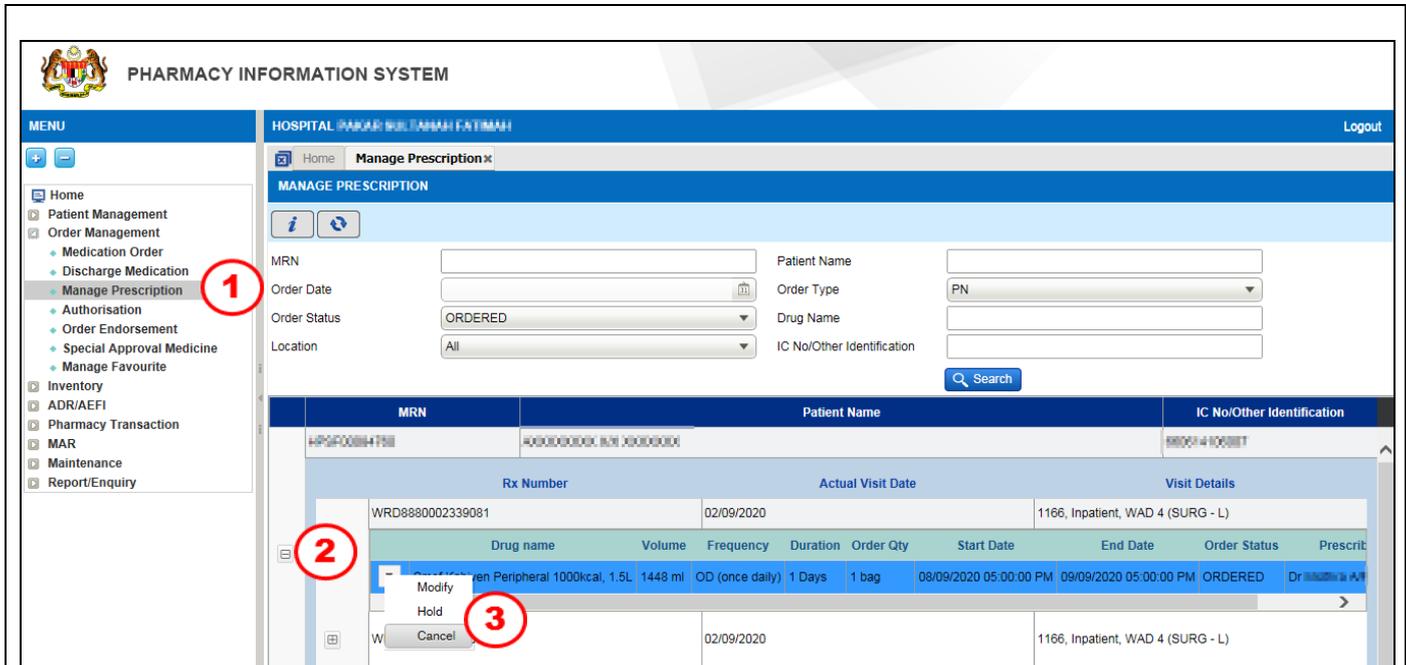


Figure 3.3.3-1 Manage Prescription

STEP 1

Click on 'Order Management' menu and click on 'Manage Prescription' sub-menu

Note

Various search criteria is provided as below:

- a) MRN
 - b) Patient Name
 - c) Order Date
 - d) Order Type
 - e) Order Status
 - f) Drug name
 - g) Location
 - h) IC No/Other Identification
- Order Type choose as PN

STEP 2

Click on the  expand button to display order details

STEP 3

Right click mouse on the  button and select **Cancel** and system will displayed cancel reason window as Figure 3.3.3-2



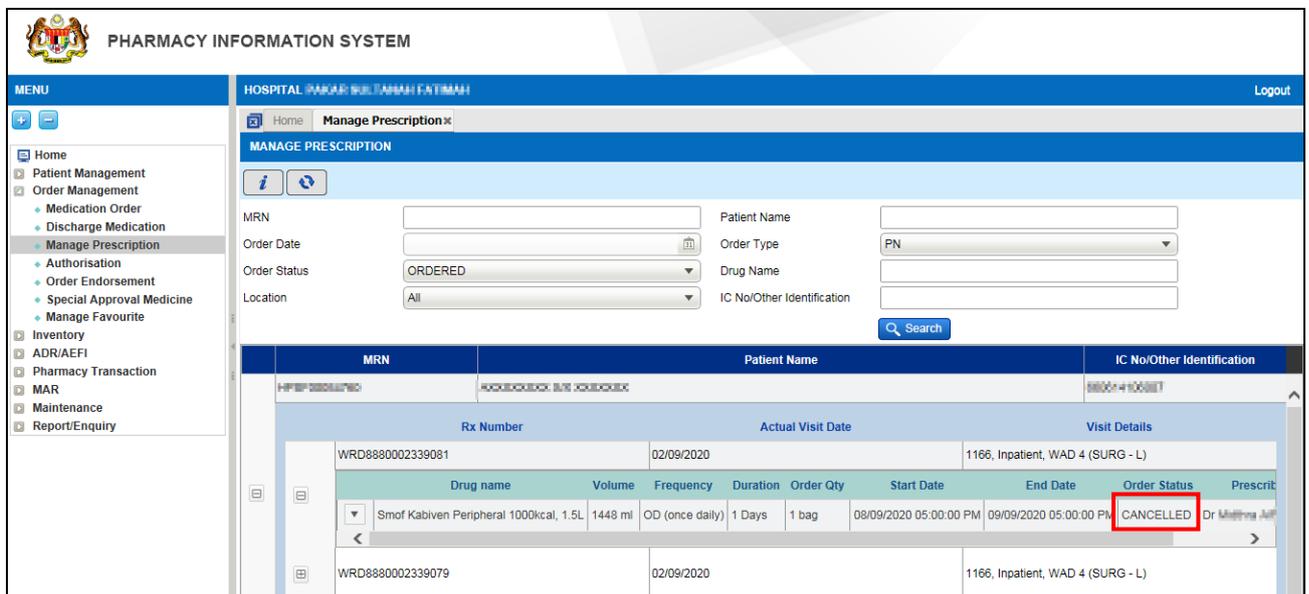
Figure 3.3.3-2 Cancel Reason

STEP 4

Enter cancel reason and click on the  Save button

Note

- Select **Cancel** function to cancel order that have not yet been dispensed to patient and system will display Cancel Reason screen as per Figure 3.3.3-2.
- Cancel order status became cancelled as per Figure 3.3.3-3

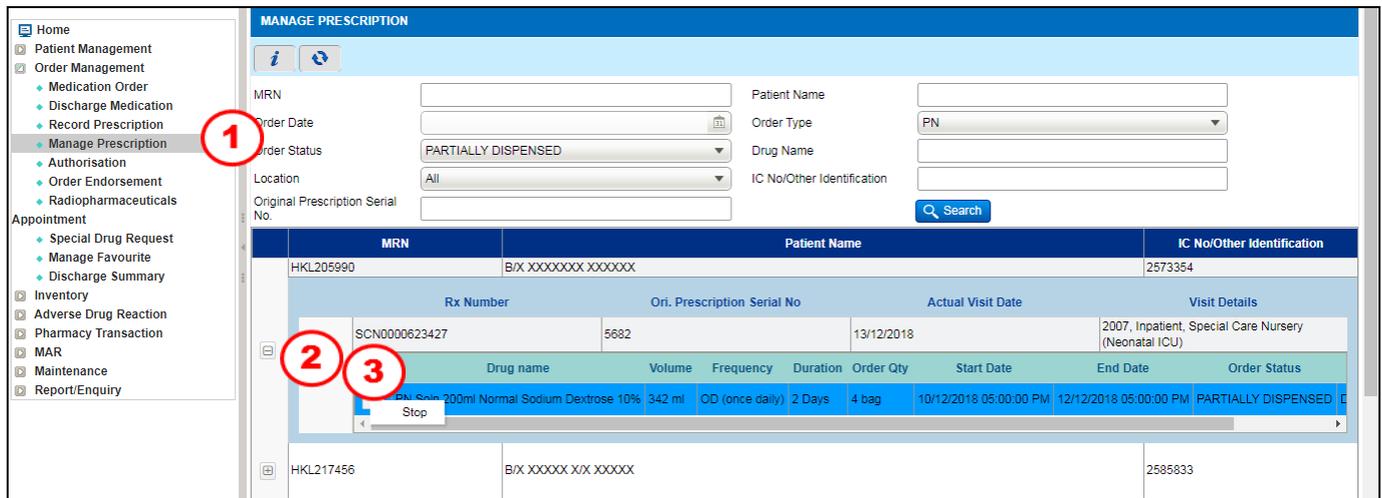


MRN	Patient Name	IC No/Other Identification						
WRD8880002339081	1166, Inpatient, WAD 4 (SURG - L)	1166, Inpatient, WAD 4 (SURG - L)						
Rx Number	Actual Visit Date	Visit Details						
Drug name	Volume	Frequency	Duration	Order Qty	Start Date	End Date	Order Status	Prescriber
Smof Kabiven Peripheral 1000kcal, 1.5L	1448 ml	OD (once daily)	1 Days	1 bag	08/09/2020 05:00:00 PM	09/09/2020 05:00:00 PM	CANCELLED	Dr. Matrena Jufri
WRD8880002339079	1166, Inpatient, WAD 4 (SURG - L)	1166, Inpatient, WAD 4 (SURG - L)						

Figure 3.3.3-3 Manage Prescription

Stop Order

Stop order is allowed only when the drug status is Partial Dispensed. This function will update the drug status to Discontinued and will remove the drug from the Manage Order listing screen.



MRN	Patient Name	IC No/Other Identification
HKL205990	B/X XXXXXXXX XXXXXX	2573354

Rx Number	Ori. Prescription Serial No	Actual Visit Date	Visit Details
SCN0000623427	5682	13/12/2018	2007, Inpatient, Special Care Nursery (Neonatal ICU)

Drug name	Volume	Frequency	Duration	Order Qty	Start Date	End Date	Order Status
PN Soln 200ml Normal Sodium Dextrose 10%	342 ml	OD (once daily)	2 Days	4 bag	10/12/2018 05:00:00 PM	12/12/2018 05:00:00 PM	PARTIALLY DISPENSED

Figure 3.3.3-4 Manage Prescription

STEP 1

Click on 'Order Management' menu and click on 'Manage Prescription' sub-menu

Note

Various search criteria is provided as below:

- MRN
 - Patient Name
 - Order Date
 - Order Type
 - Order Status
 - Drug name
 - Location
 - IC No/Other Identification
- Order Type choose as PN
 - Order Status choose as Partially Dispensed

STEP 2

Click on the  expand button to display order details

STEP 3

Right click mouse on the  button and select **Stop** and system will displayed will be displayed as shown in Figure 3.3.3-5

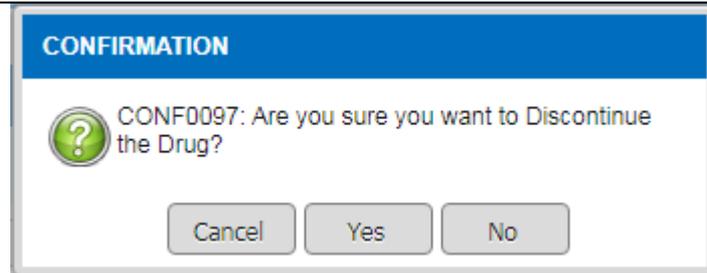


Figure 3.3.3-5 Allert Message

Note

Stop order is allowed only when the drug status is Partial Dispensed as shown in Figure 3.3.3-6

MANAGE PRESCRIPTION

MRN: Patient Name:
 Order Date: Order Type:
 Order Status: Drug Name:
 Location: IC No/Other Identification:
 Original Prescription Serial No.:

<< < 47 / 47 > >> [461 - 463 / 463]

MRN	Patient Name	IC No/Other Identification
HR1204291	DR. DUMMY INPATIENT	2593000

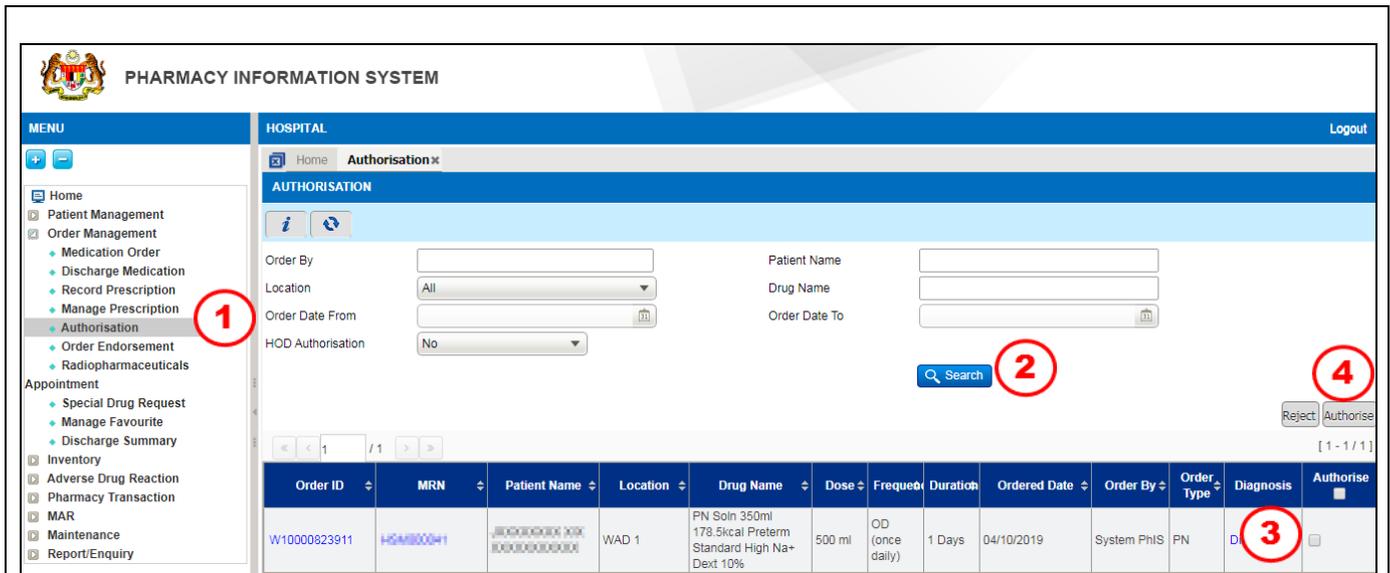
Rx Number	Ori. Prescription Serial No	Actual Visit Date	Visit Details
SCN000700916	0653	31/01/2019	2055, Inpatient, Special Care Nursery (Neonatal ICU)

Drug name	Volume	Frequency	Duration	Order Qty	Start Date	End Date	Order Status	Prescriber Name
PN Compounded Neonate	406.9 ml	OD	1 Days	1 bag	08/02/2019 05:00:00 PM	10/02/2019 05:00:00 PM	STOP	DR.Dummy Inpatient

Figure 3.3.3-6 Manage Prescription

3.4 Authorization

These function is use by specialist or authorised person to approve list A/ A*/ A/KK drug that requires authorisation.



The screenshot shows the 'PHARMACY INFORMATION SYSTEM' interface. On the left is a 'MENU' with 'Authorisation' highlighted (1). The main area is titled 'AUTHORISATION' and contains search filters for 'Order By', 'Location', 'Order Date From', 'Order Date To', 'Patient Name', 'Drug Name', and 'HOD Authorisation'. A 'Search' button (2) is present. Below the filters is a table with columns: Order ID, MRN, Patient Name, Location, Drug Name, Dose, Frequency, Duration, Ordered Date, Order By, Order Type, Diagnosis, and Authorise. The first row shows an order for 'PN Soln 350ml 178.5kcal Preterm Standard High Na+ Dext 10%' with an 'Authorise' checkbox (3). At the top right, there are 'Reject' and 'Authorise' buttons (4).

Figure 3.4-1 Authorisation

STEP 1

Click on the 'Order Management' menu and followed by 'Authorisation' sub menu.

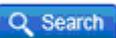
Note

Search patients record by below criteria:-

No	Field	Description	Remark
a	Order By	Prescriber Name	Allow to search by fully or partially entered prescriber name
b	Patient Name	Patient Name	Allow to search by fully or partially entered prescriber name
c	Location	Patient Visit Location	Able to filter and search patient by visit location and prescriber's location
d	Drug Name	Drug Name	Allow to search by fully or partially entered drug name
e	Order Date From	Order confirmed date	Allow to search by start date of order created
f	Order Date To	Order confirmed date	Allow to search by selected duration of order created
g	HOD Authorisation	Order Authorisation by HOD	Allow to authorize order by selected drug by HOD

Table 3.4-1

STEP 2

Click on  button to search for patient

Note

Search results of patient record list will display:

- Order ID
- MRN
- Patient Name
- Location
- Drug Name
- Dose
- Frequency
- Duration
- Ordered Date/Time
- Order By
- Order Type
- Authorise

Note

- Click on the Order ID hyperlink to view Order Details as shown in Figure 3.4-2.
- Click on the MRN hyperlink to view patient Medication Profile as shown in Figure 3.4-3.

PN ORDER DETAILS									
	XXXXXXXXXX XXXXXXXXXX	Mykad XXXXXXXXXX	Age 46 Years 11 Months 15 Days	Gender Female	MRN HSM000041				
Address		Phone And Email		Diagnosis	No known Allergies				
Upload Photo	Height 170 cm	Weight 70 kg	BMI/BSA 24.2 / 1.82 m ²	(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
PN Soln 350ml 178.5kcal Preterm Standard High Na+ Dext 10%	500	255	24	20.83 ml/hour	2 bag	OD (once daily)	1 Days	26/08/2019 05:00 PM	27/08/2019 05:00 PM
Calorie Calculator					Infusion Line				
NA					Central				
Intervention Reason			Intervention Remarks			Intervention Accepted			

Figure 3.4-2 Order Details

PN DRUG LIST																
Current Medication																
Rx No.	Dosage Form	Drug Name	Volume	Route	Frequency	Duration	Start Date	End Date	Status	Order By	Prescribed Qty	Visit Type	Actual Visit Date	Dispensed Qty	Pend	
Previous Medication																
Rx No.	Dosage Form	Drug Name	Volume	Route	Frequency	Duration	Start Date	End Date	Status	Order By	Prescribed Qty	Visit Type	Actual Visit Date	Dispensed Qty	Pend	
<input type="checkbox"/>	W10000823911	Parenteral Solution	PN Soln 350ml 178.5kcal Preterm Standard High Na+ Dext 10%	350 ml	CENT	OD (once daily)	1 Days	26/08/2019	27/08/2019	ORDERED	System PhIS	2	Inpatient	10/06/2019	0	

Figure3.4-3 Medication Profile

STEP 3

Click on the selected Patient Name checkbox

STEP 4

Click on  the button to authorise the drug and an alert message will be displayed as shown in Figure 3.4-4

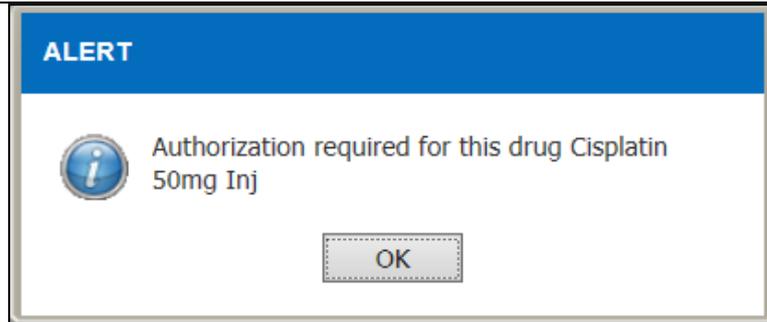
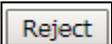


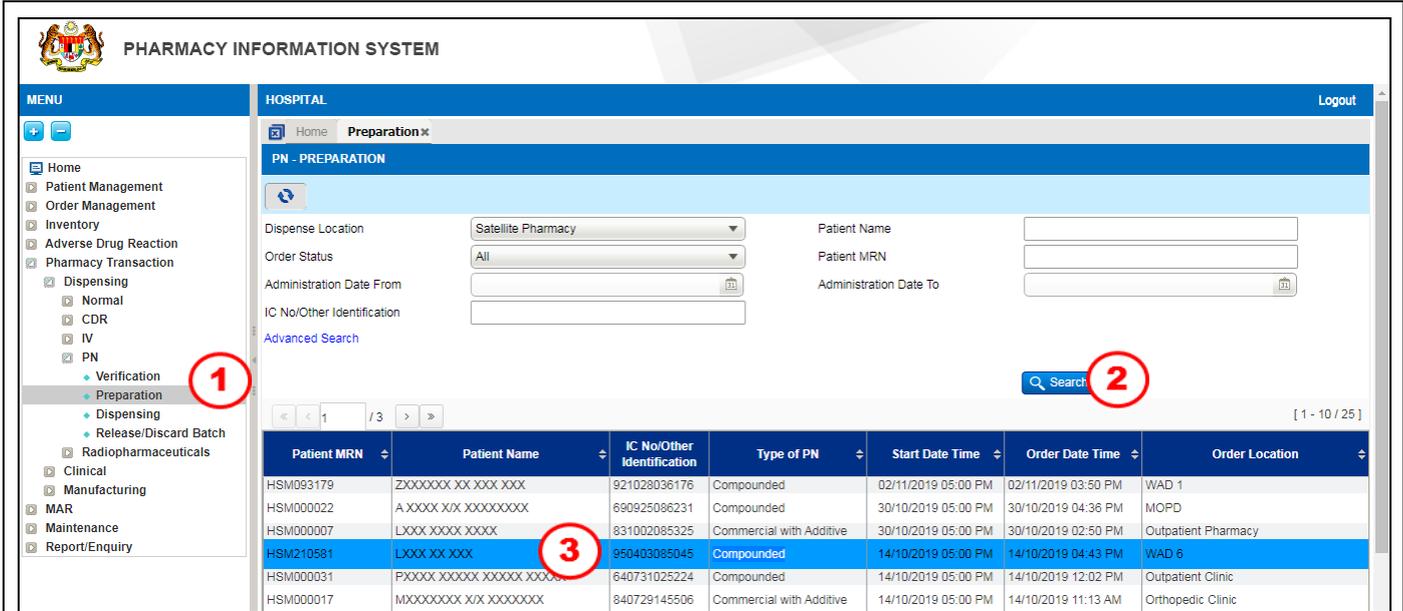
Figure 3.4-4 Alert Message

NOTE

- Click on  the button to confirm the authorisation.
- Click on  button to reject the authorisation.

3.5 Outsource

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



PHARMACY INFORMATION SYSTEM

MENU

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

HOSPITAL Logout

Home Preparation x

PN - PREPARATION

Dispense Location: Satellite Pharmacy Patient Name:

Order Status: All Patient MRN:

Administration Date From: Administration Date To:

IC No/Other Identification:

Advanced Search Search

[1 - 10 / 25]

Patient MRN	Patient Name	IC No/Other Identification	Type of PN	Start Date Time	Order Date Time	Order Location
HSM093179	ZXXXXXX XX.XXX.XXX	921028036176	Compounded	02/11/2019 05:00 PM	02/11/2019 03:50 PM	WAD 1
HSM000022	A.XXXX.XX.XXXXXXXX	690925086231	Compounded	30/10/2019 05:00 PM	30/10/2019 04:36 PM	MOPD
HSM000007	LXXX.XXXX.XXXX	831002085325	Commercial with Additive	30/10/2019 05:00 PM	30/10/2019 02:50 PM	Outpatient Pharmacy
HSM210581	LXXX.XX.XXX	950403085045	Compounded	14/10/2019 05:00 PM	14/10/2019 04:43 PM	WAD 6
HSM000031	PXXXX.XXXXX.XXXXX.XXXXX	640731025224	Compounded	14/10/2019 05:00 PM	14/10/2019 12:02 PM	Outpatient Clinic
HSM000017	MXXXXXXX.XX.XXXXXXX	840729145506	Commercial with Additive	14/10/2019 05:00 PM	14/10/2019 11:13 AM	Orthopedic Clinic

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:

- a) Dispence Location
- b) Patient Name
- c) Order Status
- d) Patient MRN
- e) Administartion Date From
- f) Administartion Date To
- g) IC No/Other Identification

- 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 3.5-1

PN PREPARATION

Prescription X

	NAME XX XXX	Mykad: XXXXXXXXXXXX	Age: 24 Years 07 Months 02 Days	Gender: Male	MRN: HSM210581
Upload Photo	Address	Phone And Email	Diagnosis	No known Allergies	
	Height: 166 cm	Weight: 66 kg	BMI/BSA: 24 / 1.74 m²	Update (Last Updated : 20/09/2019) Nationality : Warganegara	

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

Encounter No: **0067** Actual Admission Date: **05/03/2019** Attending Practitioner: **DR. HOOR HUZAMA BINTI GAZALI** Visit Location: **WAD 6** Room No/Bed No: Rx No: **W60000824637**

PHARMACY ORDER

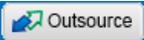
Prepared Date/Time: **05/11/2019 12:20 PM**

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	2820 ml	1 bag	Details	1 bag	1 bag	Details	Remarks	0 bag	VERIFIED

Figure 3.5-2 PN Preparation

STEP 4

Click on the  button to prepare outsource product

OUTSOURCE DETAILS Cancel Outsource Send Outsource Request X

	NAME XX XXX	Mykad: XXXXXXXXXXXX	Age: 24 Years 07 Months 02 Days	Gender: Male	MRN: HSM210581
Upload Photo	Address	Phone And Email	Diagnosis	No known Allergies	
	Height: 166 cm	Weight: 66 kg	BMI/BSA: 24 / 1.74 m²	Update (Last Updated : 20/09/2019) Nationality : Warganegara	

PHARMACY ORDER

Outsource No		Sending Status	
Referred From	Hospital Seri Manjung	Referred To	 6
Contact Person / Office	Sydena PHU	Contact Person / Office	*
Contact no / Ext No	13245623423434	Contact no / Ext No	*
Request Date/Time	05/11/2019 12:23 PM	Tentative Receipt Date	
Remarks			

5

Rx No	Rx Date	Drug Name	Order Detail	Order Qty	Remarks
W60000824637	14/10/2019 04:43:10 PM	PN Compounded Adult	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

	Mykad: XXXXXXXXXX Address: XXXXXXXXXX	Mykad: XXXXXXXXXX Phone And Email: XXXXXXXXXX	Age: 24 Years 07 Months 02 Days Gender: Male Diagnosis: XXXXXXXXXX	MRN: HSXXXXXXXXXX 7
Height: 166 cm Weight: 66 kg BMI/BSA: 24 / 1.74 m ² Update (Last Updated : 20/09/2019) Nationality : Warganegara				

PHARMACY ORDER

Outsource No: XXXXXXXXXX	Sending Status: XXXXXXXXXX
Referred From: Hospital Seri Manjung	Referred To: Hospital Kuala Lumpur
Contact Person / Office: XXXXXXXXXX	Contact Person / Office: XXXXXXXXXX
Contact no / Ext No: 13245623423434	Contact no / Ext No: XXXXXXXXXX
Request Date/Time: 05/11/2019 12:28 PM	Tentative Receipt Date: 05/11/2019
Remarks: <div style="border: 1px solid #ccc; height: 20px; width: 100%;"></div>	

Rx No	Rx Date	Drug Name	Order Detail	Order Qty	Remarks
W60000824637	14/10/2019 04:43:10 PM	PN Compounded Adult	Details	1	Remarks

Figure 3.5-4 Outsource Details

STEP 7

Click on the button to send outsource request

CONFIRMATION



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

8

Figure 3.5-5 Send Request Alert Message

STEP 8

Click on the button to send outsource request

INFORMATION



INFO0306: Outsource Request has been submitted successfully.

9

Figure 3.5-6 Alert Message

STEP 9

Click on the button

ORDER ENDORSEMENT									
Select ion	Order No	MRN	Patient Name	Order Location	Drug Name	Order Details	Date/ Time	Order By	Status
<input checked="" type="checkbox"/>	WAD 0000000294	HPSF0000399	GAMBUON FOMT	WAD 8 (MED - L)	Kabiven Central 1900kcal, 2.053L	2353 ml, Single dose, 2 Days	04/04/2014	Abdul Rahim Sulaiman	ORDERED
<input type="checkbox"/>	WAD 90000000397	HPSF0000899	SALWAH BINTI ABDULLAH	WAD 9 (MED - P)	PN Compounded Adult	100 ml, OD, 1 Days	07/04/2014	Dr. Noreen Md Arus	VERIFIED

Figure 3.5-2 Medication Order Endorsement

STEP 2

Click the selection checkbox as per Figure 3.5-2

STEP 3

Click on the Endorse button to confirm endorsement order

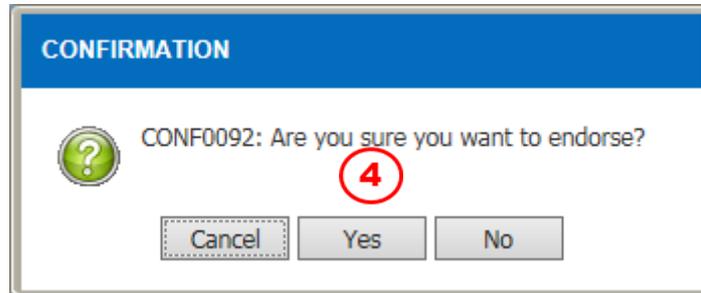


Figure 3.5-3 Confirmation Alert

STEP 4

Click on the button to endorse the order

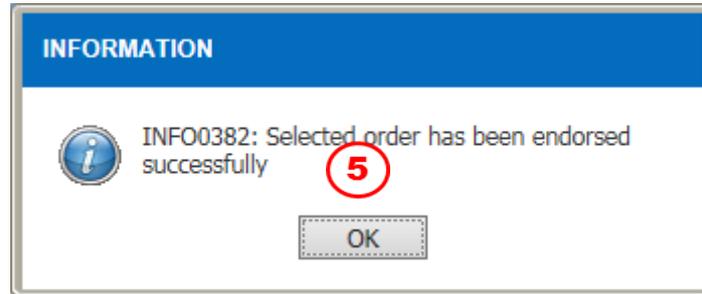


Figure 3.5-4 Information Alert

STEP 5

Click on the button to successfully endorsed the order

4.0 Acronyms

Abbreviation	Definition
PhIS	Pharmacy Information System
CPS	Clinical Pharmacy System
MOH	Ministry Of Health
PN	Parenteral Nutrition Order

5.0 Links to Clinical Modules

No	Module	PDF Links	No	Module	PDF Links
1	Inpatient	Click Here	12	CDR Dispensing	Click Here
2	CDR Order	Click Here	13	Methadone Dispensing	Click Here
3	TDM Order	Click Here	14	PN Dispensing	Click Here
4	PN Order	Click Here	15	Order Management	Click Here
5	IV Order	Click Here	16	Patient Management	Click Here
6	Prepacking	Click Here	17	Radiopharma	Click Here
7	Galenical	Click Here	18	Outpatient	Click Here
8	MTAC	Click Here	19	Special Drug Request	Click Here
9	ADR & DAC	Click Here	20	MAR	Click Here
10	Medication Counselling	Click Here	21	DICE	Click Here
11	Ward Pharmacy	Click Here	22		