



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

Full Based

**User Manual
Parenteral Nutrition Order**

Version	: 6th Edition
Document ID	: FB_U. MANUAL_OM PN



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Application reference: PhIS & CPS v1.6.1



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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

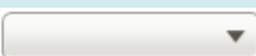
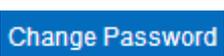
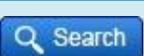
1.3 Organised Sections

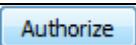
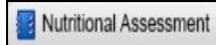
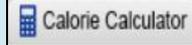
These are the sections within this document:

- 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

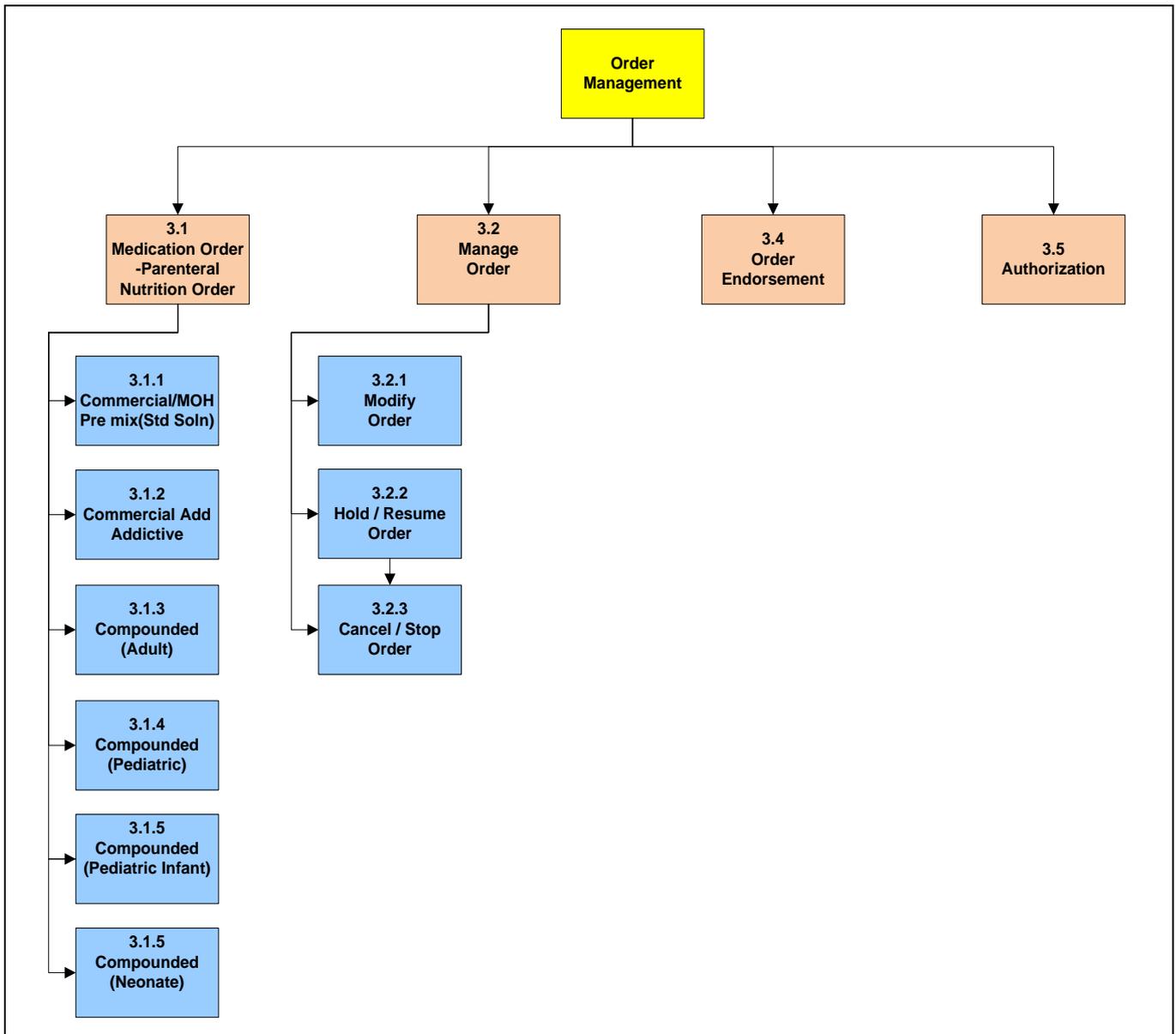


Figure 3.0-1



Functional Description

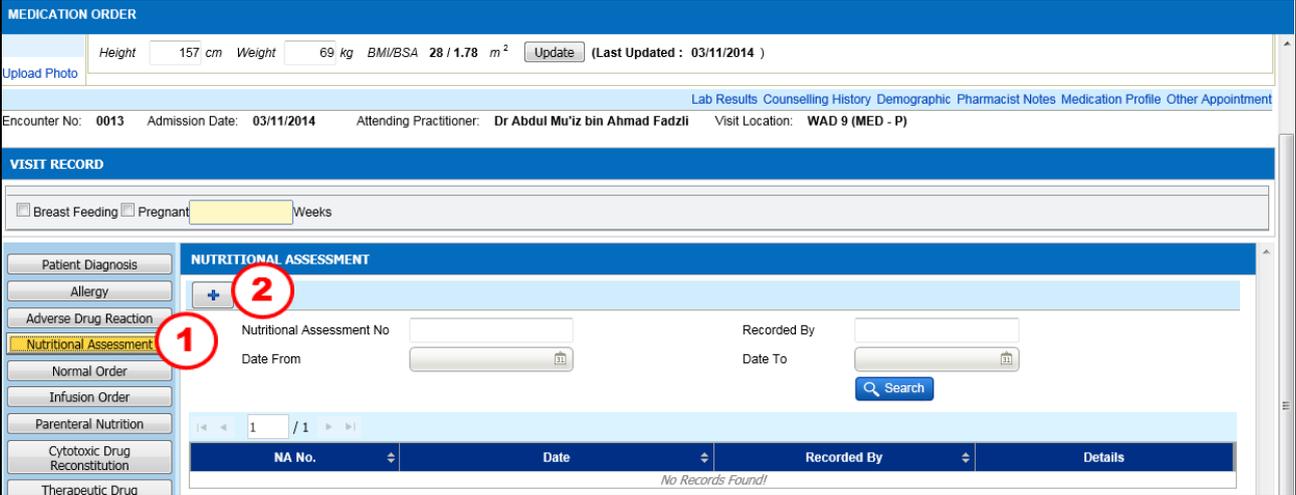
Parenteral Nutrition Order comprises of four (4) main functions:

- **Medication Order – Parenteral Nutrition Order**
To prescribe Parenteral Nutrition order
- **Manage Order**
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 Parenteral Nutrition Order

3.1.1 Nutritional Assessment

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



The screenshot displays the 'MEDICATION ORDER' interface. At the top, patient information is shown: Height 157 cm, Weight 69 kg, BMI/BSA 28 / 1.78 m², and an 'Update' button. Below this is a 'VISIT RECORD' section with checkboxes for 'Breast Feeding' and 'Pregnant' (with a 'Weeks' field). The main area is titled 'NUTRITIONAL ASSESSMENT'. On the left, a sidebar menu lists various order types, with 'Nutritional Assessment' highlighted in yellow and marked with a red circle '1'. In the main form area, there is a '+' button (marked with a red circle '2') for adding a new assessment, followed by input fields for 'Nutritional Assessment No.', 'Date From', 'Date To', and 'Recorded By'. A 'Search' button is also present. At the bottom, a table header is visible with columns for 'NA No.', 'Date', 'Recorded By', and 'Details', and a message 'No Records Found!'.

Figure 3.1.1-1 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 3.1.1-2.

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: <input type="text"/> Note: Absent: Normal nutritional status Mild: Wt loss > 5% in 3 mths or Food intake below 50-75% of normal requirement in preceding week Moderate: 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 Severe: Wt loss 45% in 1 mth (> 15% in 3mths) or BMI < 18.5 + impaired general condition or Food intake < 25% of normal requirement in preceding week	Severity of disease Score: <input type="text"/> Note: Absent: Normal nutritional status Mild: Hip fracture* Chronic patients, in particular with acute complications: cirrhosis* COPD* Chronic hemodialysis, diabetes, oncology Moderate: Major abdominal surgery* Stroke* Severe pneumonia, hematologic malignancy Severe: Head injury* Bone marrow transplantation* 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 3.1.1-2 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

Height Weight BMI/BSA (Last Updated : 03/11/2014)

[Upload Photo](#)

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

Encounter No: 0013 Admission Date: 03/11/2014 Attending Practitioner: Dr Abdul Mu'iz bin Ahmad Fadzli Visit Location: WAD 9 (MED - P)

VISIT RECORD

Breast Feeding Pregnant Weeks

NUTRITIONAL ASSESSMENT

Nutritional Assessment No

Recorded By

Date From

Date To

1 / 1

NA No.	Date	Recorded By	Details
NA14-11-0015	03/11/2014	Dr Abdul Mu'iz bin Ahmad Fadzli	NRS Total Score: 2, SGA Score: B - Malnourished

Figure 3.1.1-3 Nutritional Assessment Listing Page

Physical Examination Section

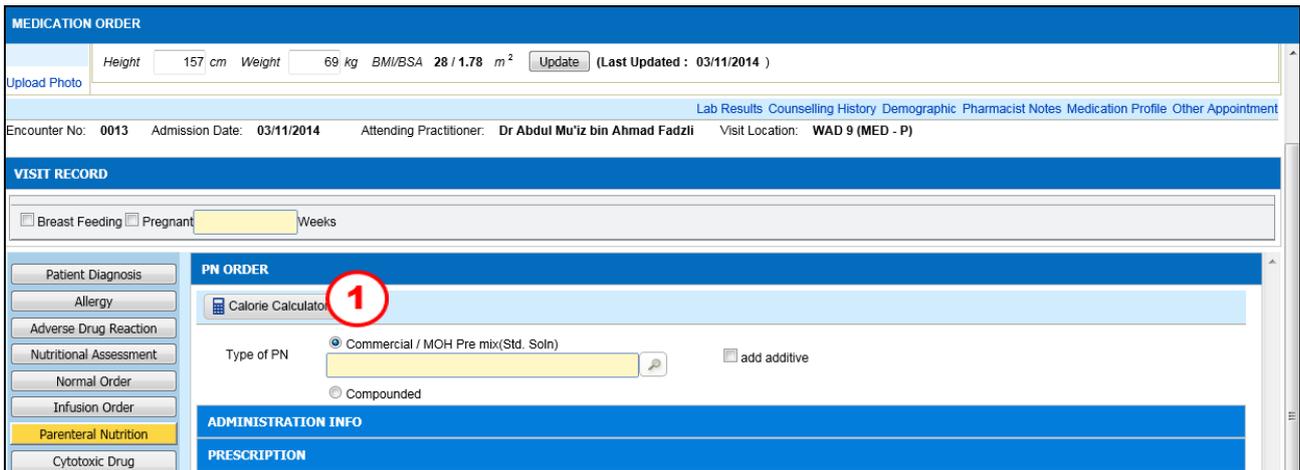
This section have to be entered by user.

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 3.1.1-3.
- 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.

3.1.2 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 'MEDICATION ORDER' interface. At the top, patient details are displayed: Height 157 cm, Weight 69 kg, BMI/BSA 28 / 1.78 m². Below this is the 'VISIT RECORD' section with checkboxes for Breast Feeding and Pregnant. The main area is titled 'PN ORDER' and contains a 'Calorie Calculator' button, which is circled in red with the number '1'. Other options include 'Type of PN' (Commercial / MOH Pre mix(Std. Soln) selected, Compounded) and 'ADMINISTRATION INFO'.

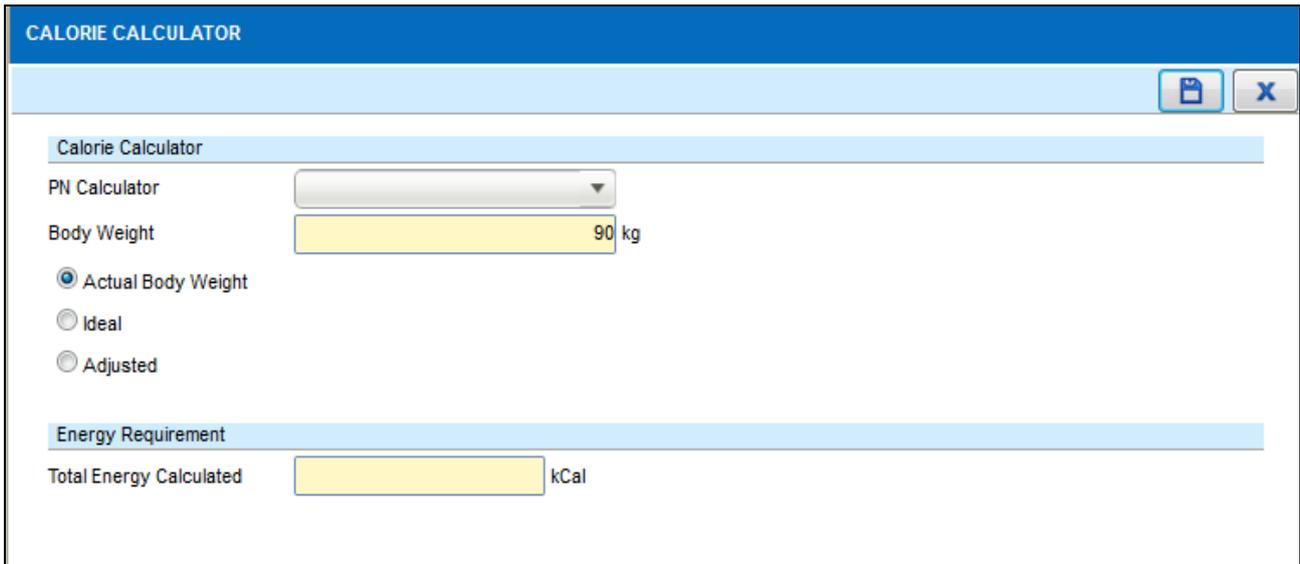
Figure 3.1.2-1 Calorie Calculator

STEP 1

Click on the  **Calorie Calculator** button to calculate patient calorie

Note

Calorie Calculator screen will be displayed as per Figure 3.1.2-2.



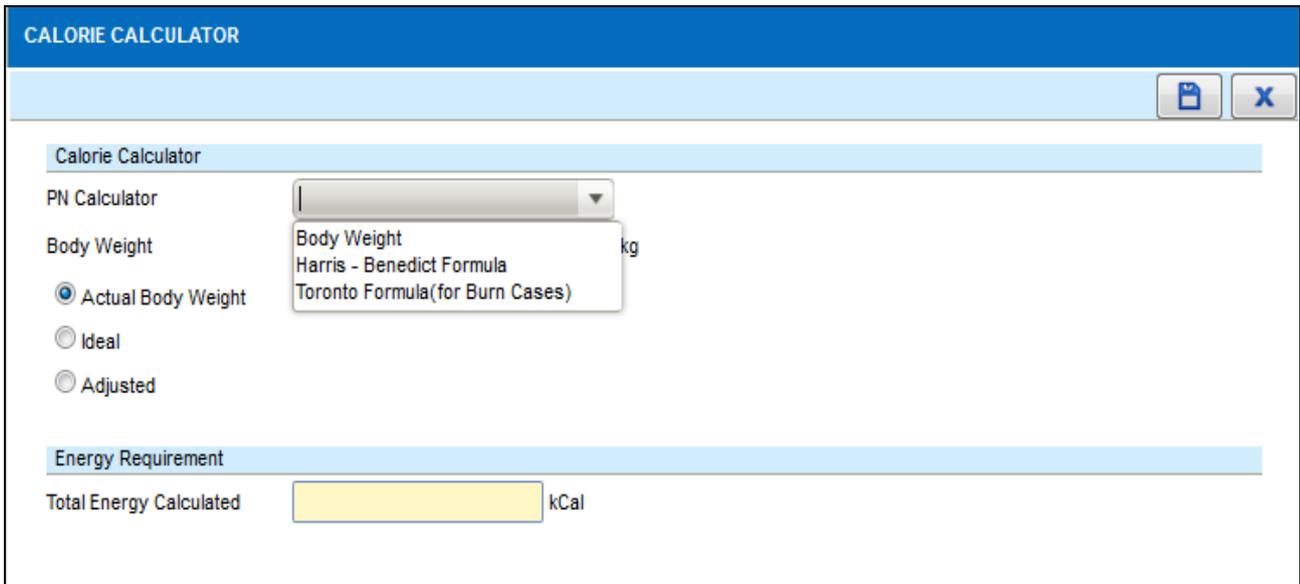
The screenshot shows the 'CALORIE CALCULATOR' window. It has a title bar with a save icon and a close button. The main content area has a 'Calorie Calculator' header. Below it is a 'PN Calculator' dropdown menu. The 'Body Weight' field is set to '90 kg'. There are three radio buttons for 'Actual Body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

Figure 3.1.2-2 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.

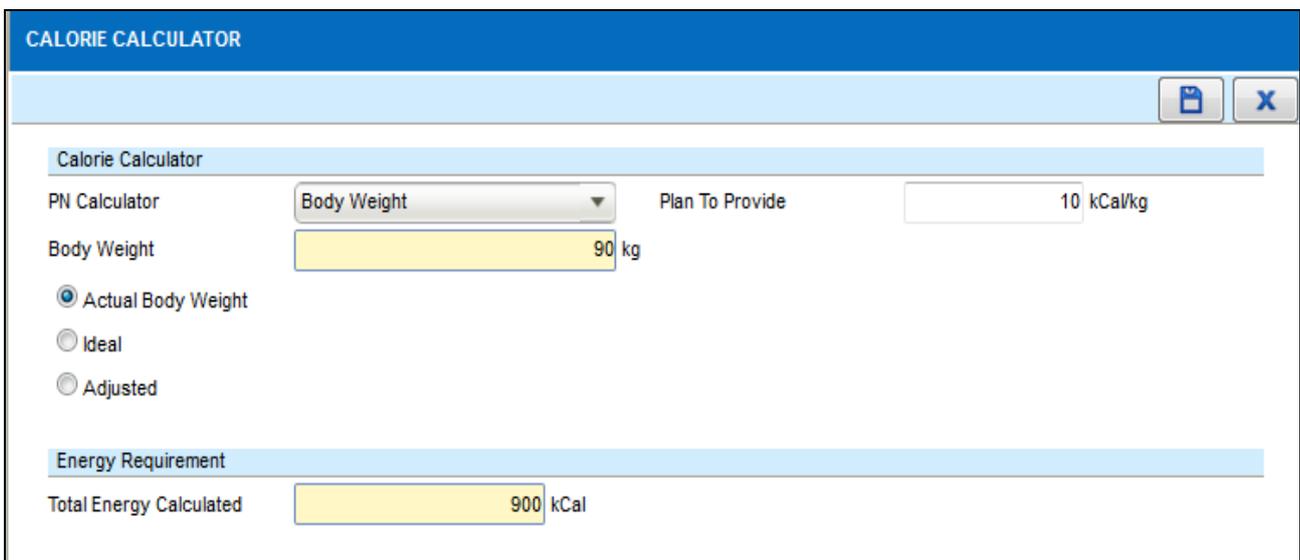


The screenshot shows a window titled "CALORIE CALCULATOR". Inside, there is a section for "Calorie Calculator" with a "PN Calculator" dropdown menu. The dropdown menu is open, showing three options: "Body Weight", "Harris - Benedict Formula", and "Toronto Formula(for Burn Cases)". Below the dropdown, there are three radio buttons: "Actual Body Weight" (which is selected), "Ideal", and "Adjusted". At the bottom, there is a field for "Total Energy Calculated" which is currently empty, followed by the unit "kCal".

Figure 3.1.2-3 Calorie Calculator

Note

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



The screenshot shows the same "CALORIE CALCULATOR" window. The "PN Calculator" dropdown is now set to "Body Weight". To the right of the dropdown, there is a "Plan To Provide" field with the value "10 kCal/kg". The "Body Weight" field now contains the value "90 kg". The "Actual Body Weight" radio button remains selected. The "Total Energy Calculated" field now displays the value "900 kCal".

Figure 3.1.2-4 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 3.1.2-4.
- The  button to save record.
- The  button to close the screen.

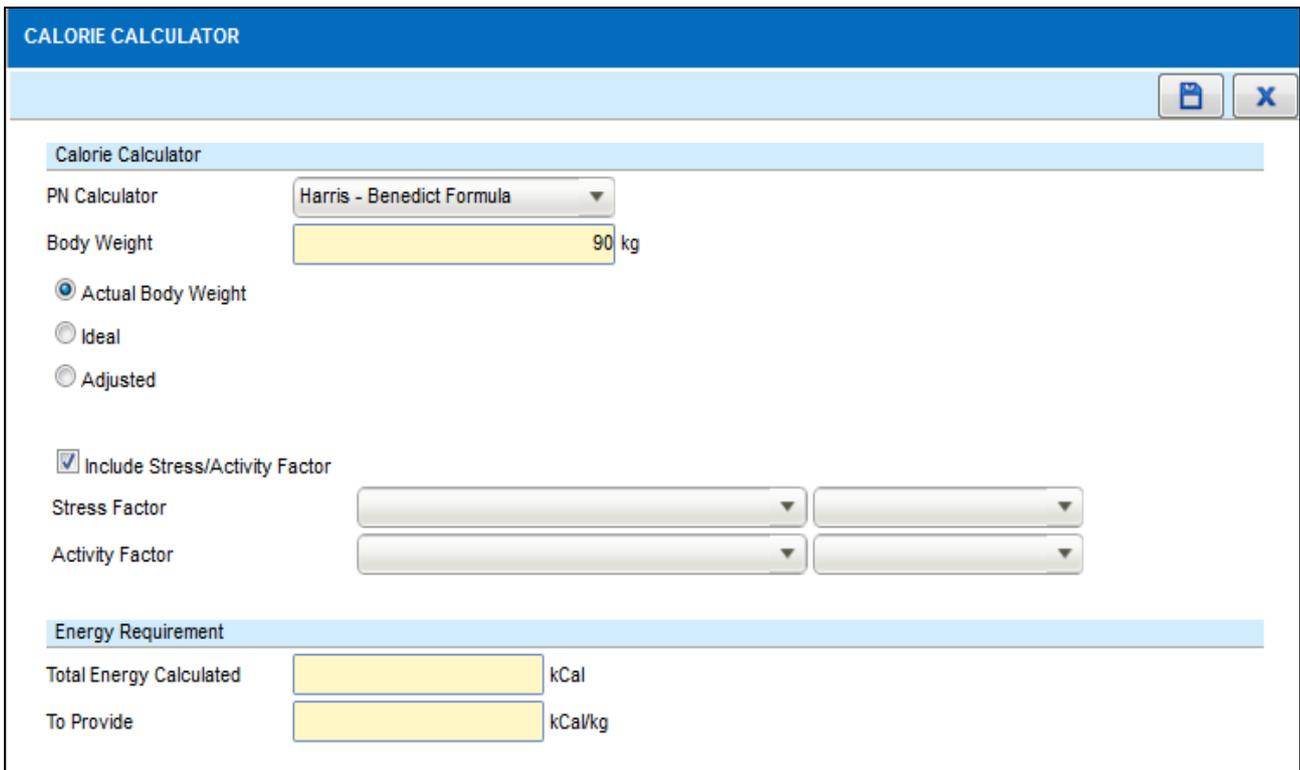


Figure 3.1.2-5 Calorie Calculator

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.

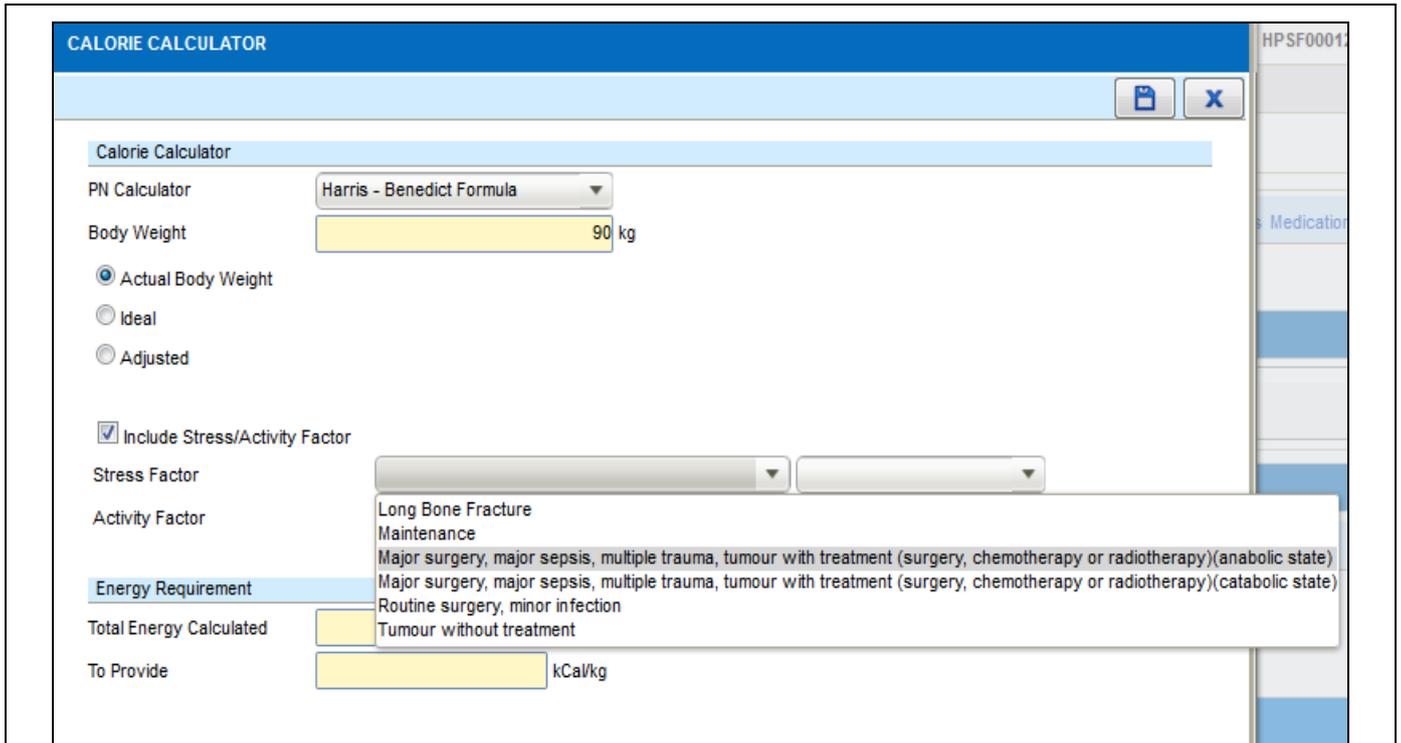


Figure 3.1.2-6 Calorie Calculator

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

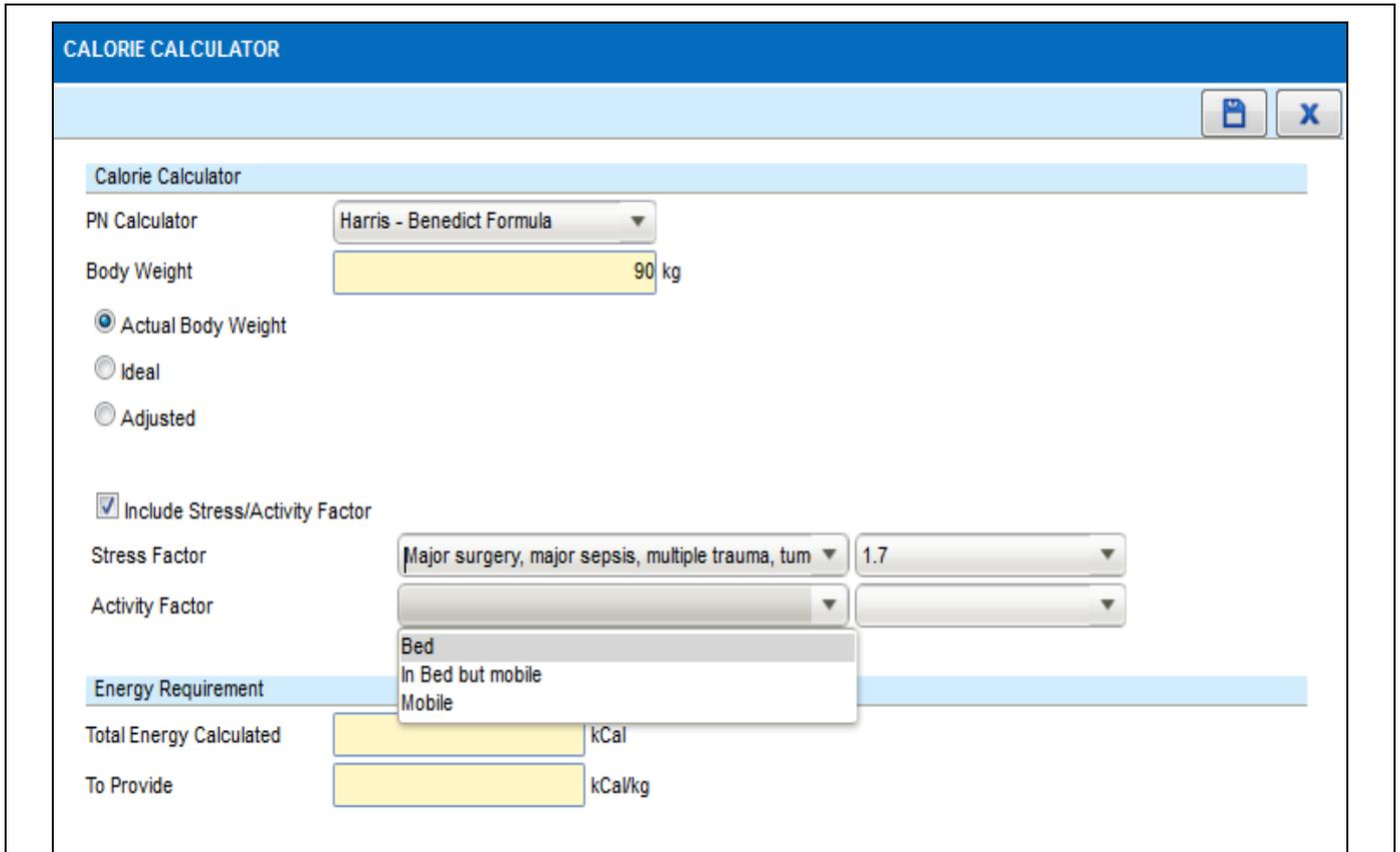
Total Energy Calculated: [] kCal

To Provide: [] kCal/kg

Figure 3.1.2-7 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 3.1.2-8 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: 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: Bed 1.1

Energy Requirement

Total Energy Calculated: 2961.9 kCal

To Provide: 32.9 kCal/kg

Figure 3.1.2-9 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 3.1.2-9.
- The  button to save record.
- The  button to close the screen.

CALORIE CALCULATOR

Calorie Calculator

PN Calculator: Toronto Formula(for Burn Cases) ▼

Body Weight: 90 kg

Actual Body Weight
 Ideal
 Adjusted

Burn Surface Area: 5 %

Body Temperature: 50 °C

Post Burn Days: 1 Days

Caloric intake: 100 kCal

Activity Factor: Bed ▼ 1.1 ▼

Energy Requirement

Total Energy Calculated: 3034.3 kCal

To Provide: 33.7 kCal/kg

Figure 3.1.2-10 Calorie Calculator

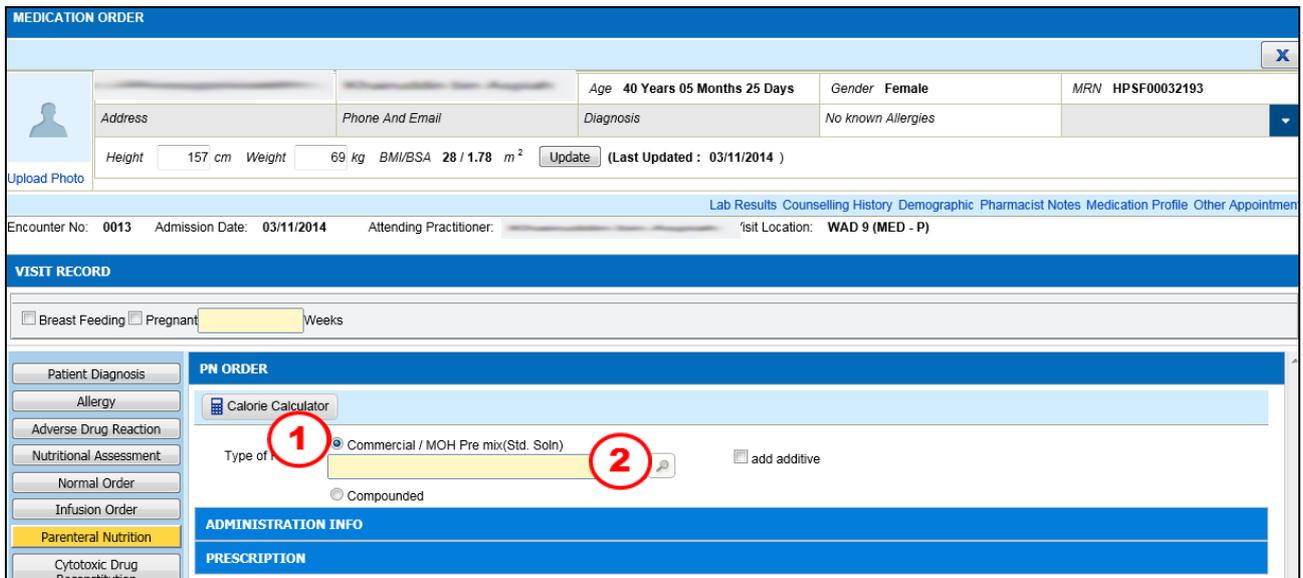
Note

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 3.1.2-10.
- The button to save record.
- The button to close the screen.

3.1.3 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. The patient information section includes fields for Age (40 Years 05 Months 25 Days), Gender (Female), MRN (HPSF00032193), Address, Phone And Email, Diagnosis, and No known Allergies. Physical attributes include Height (157 cm), Weight (69 kg), and BMI/BSA (28 / 1.78 m²). The 'PN ORDER' section is active, showing a 'Type of' field with a radio button selected for 'Commercial / MOH Pre mix(Std. Soln)'. A search icon is visible next to this field. Below this are sections for 'ADMINISTRATION INFO' and 'PRESCRIPTION'.

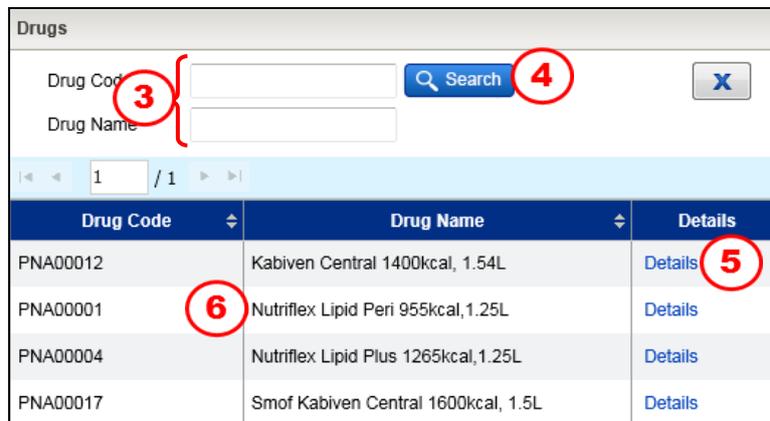
Figure 3.1.3-1 PN Order

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



The screenshot shows a 'Drugs' search results window. It has input fields for 'Drug Code' and 'Drug Name', a 'Search' button, and a close button. Below the inputs is a table with columns for 'Drug Code', 'Drug Name', and 'Details'. The table lists several parenteral nutrition products.

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

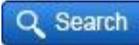
Figure 3.1.3-2 PN Order

STEP 3

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

- a) Drug Code
- b) Drug Name

STEP 4

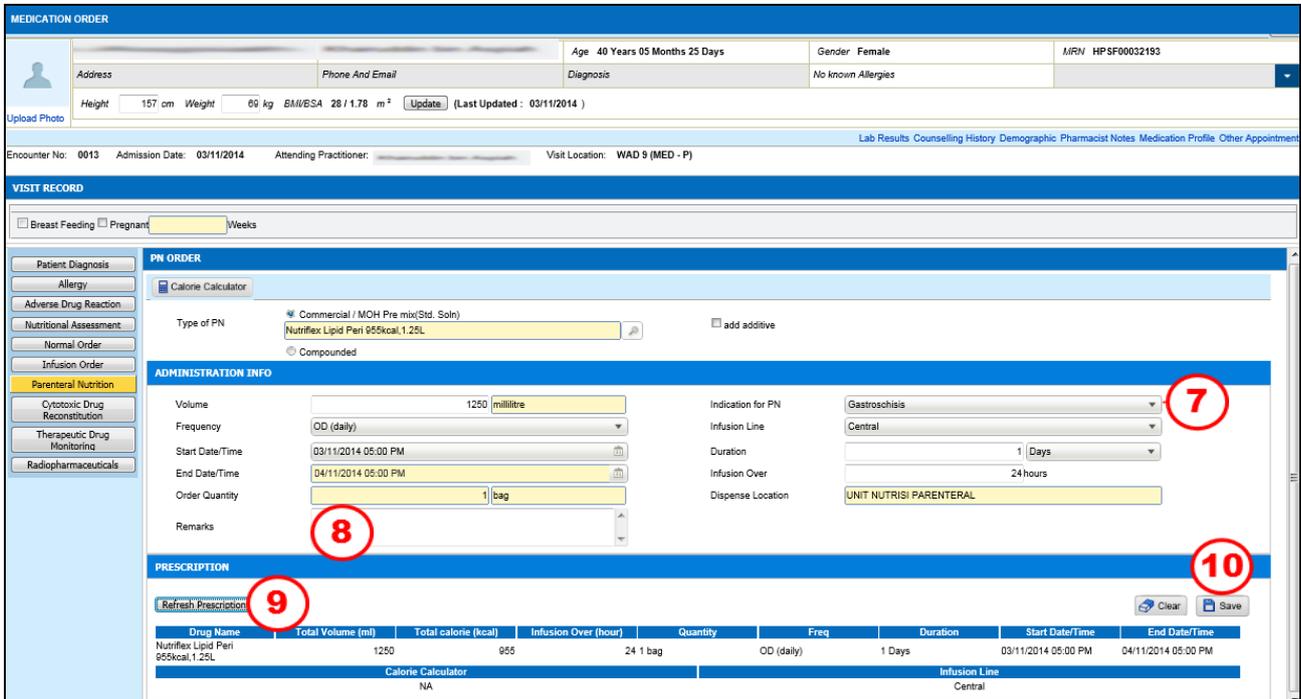
Click on the  button to search for the product

STEP 5

Click on the  button to view product ingredients and content

STEP 6

Select product that required for patient



The screenshot shows the 'MEDICATION ORDER' form for a patient. The patient's details include Age (40 Years 05 Months 25 Days), Gender (Female), and M/RN (HPSF0032193). The 'VISIT RECORD' section shows the patient is not pregnant. The 'PN ORDER' section includes a 'Calorie Calculator' and 'ADMINISTRATION INFO' fields. The 'ADMINISTRATION INFO' fields are: Volume (1250 millilitre), Frequency (OD (daily)), Start Date/Time (03/11/2014 05:00 PM), End Date/Time (04/11/2014 05:00 PM), Order Quantity (1 bag), Indication for PN (Gastroschisis), Infusion Line (Central), Duration (1 Days), Infusion Over (24 hours), and Dispense Location (UNIT NUTRISI PARENTERAL). The 'PRESCRIPTION' table below shows the order details.

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 (daily)	1 Days	03/11/2014 05:00 PM	04/11/2014 05:00 PM
Calorie Calculator	NA							
Infusion Line								Central

Figure 3.1.3-3 PN Order

Note

- All information for **Volume, Frequency, Start Date/Time, End Date/Time, Order Quantity, Infusion Line, Duration, Infusion Order** 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** 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 3.1.3-3.

STEP 10

Click on the  button to save prescription

Note

The  button to clear all information of prescription order.

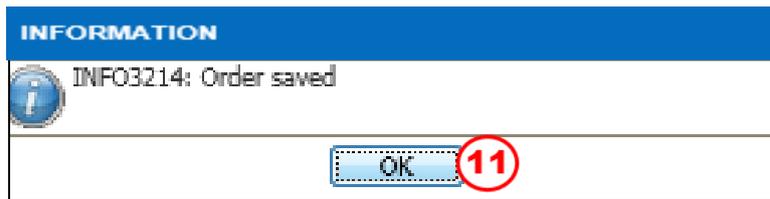


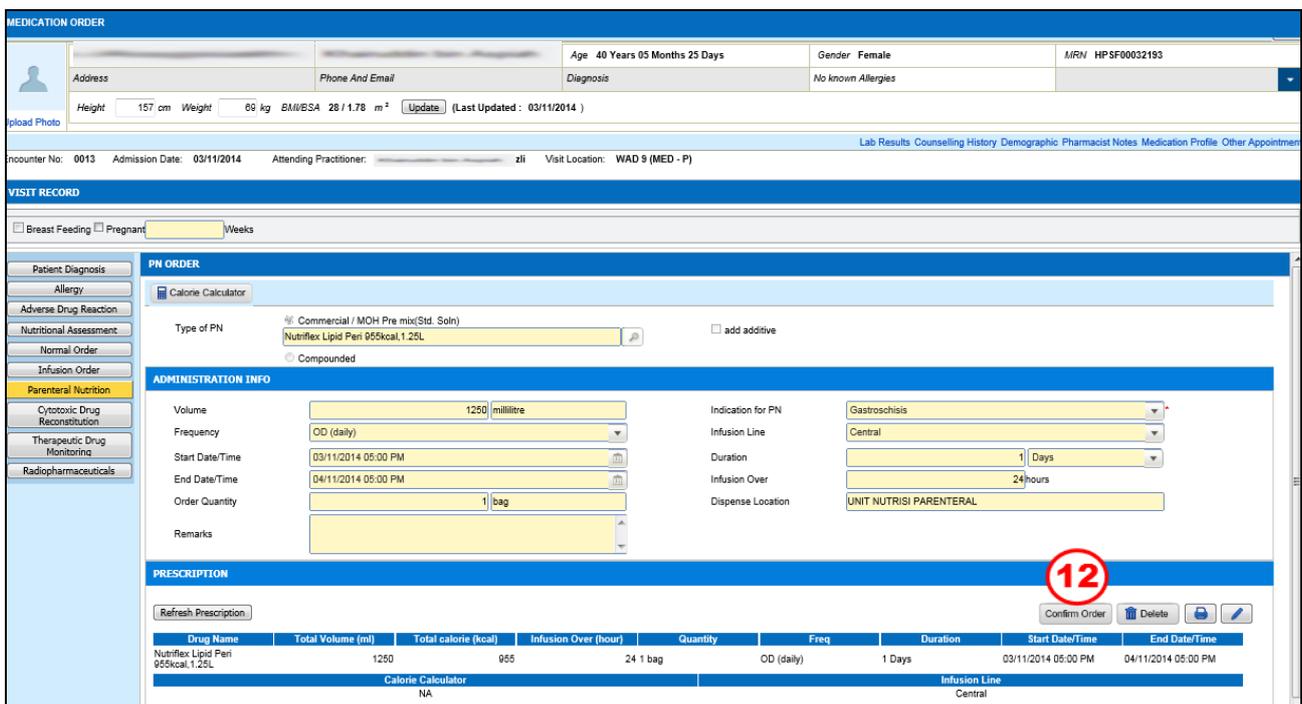
Figure 3.1.3-4 Information Alert Message

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 3.1.3-5.



MEDICATION ORDER

Address: [Redacted] Phone And Email: [Redacted] Age: 40 Years 05 Months 25 Days Gender: Female MIRN: HPSF00032193
 Height: 157 cm Weight: 60 kg BMI/BSA: 28 / 1.78 m² Update (Last Updated: 03/11/2014)
 Diagnosis: No known Allergies

Encounter No: 0013 Admission Date: 03/11/2014 Attending Practitioner: [Redacted] zti Visit Location: WAD 9 (MED - P)

VISIT RECORD

Breast Feeding Pregnant [Redacted] Weeks

PN ORDER

Calorie Calculator

Type of PN: Commercial / MOH Pre mix(Std. Soln) add additive
 Nutriflex Lipid Pen 955kcal,1.25L Compounded

ADMINISTRATION INFO

Volume: 1250 millilitre Indication for PN: Gastrostichia
 Frequency: OD (daily) Infusion Line: Central
 Start Date/Time: 03/11/2014 05:00 PM Duration: 1 Days
 End Date/Time: 04/11/2014 05:00 PM Infusion Over: 24 hours
 Order Quantity: 1 bag Dispense Location: UNIT NUTRISI PARENTERAL

Remarks: [Redacted]

PRESCRIPTION

Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start Date/Time	End Date/Time
Nutriflex Lipid Pen 955kcal,1.25L	1250	955	24	1 bag	OD (daily)	1 Days	03/11/2014 05:00 PM	04/11/2014 05:00 PM
Calorie Calculator	NA							
Infusion Line						Central		

Figure 3.1.3-5 Medication Order

STEP 12

Click on the  button to confirm prescription

Note

- The  button to delete prescription.
- The  button to print prescription. Sample prescription as per Figure 3.1.3-7.
- The  button to edit information after saved record.

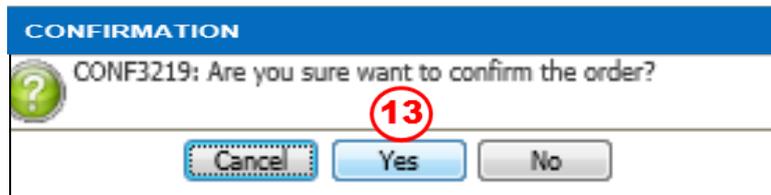


Figure 3.1.3-6 Confirmation Alert Message

STEP 13

Click on the  button to confirm record order

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

Patient Name: AIDILYANA BINTI ABDUL ZALIF **ID No:** 740509145806
Age: 40 Years 05 Months 25 Days **MRN:** HPSF00032193
Gender: Female **Prescription :** WAD 900000017440
Height / Weight / BSA: 157 cm/69 kg/1.78 **Order Date / Time** 03/11/2014 05:29 PM
Allergy: **Location:** WAD 9 (MED - P)
Diagnosis: comma **Room No / Bed:**

TPN Order: Nutriflex Lipid Peri 955kcal, 1.25L **Order Quantity:** 1 bag
Start Date/Time: 03/11/2014 05:00 PM **End Date/Time:** 04/11/2014 05:00 PM

		Content / bag
Volume	(ml)	1250
Calorie	(kCal)	955
Protein	(g)	40
Carbohydrate	(g)	80
Lipid	(g)	50
Sodium	(mmol)	50
Potassium	(mmol)	30
Calcium	(mmol)	3
Magnesium	(mmol)	3
Phosphate	(mmol)	7.5
Chloride	(mmol)	48
Acetate	(mmol)	40
Trace Element	(ml)	NA
Multivitamin	(ml)	NA
Water Soluble Vitamin	(ml)	NA
Fat Soluble Vitamin	(ml)	NA

Infusion Over: 24 hr **Infusion Rate:** 52.08 ml/hr
Frequency: OD (daily) **Infusion Route:** Central
Prescriber: Dr Abdul Mu'iz bin Ahmad Fadzil **Remarks:**
Designation: Pegawai Perubatan Pelatih
Order Date/Time: 03/11/2014 05:28 PM

Figure 3.1.3-7 Sample of PN Prescription

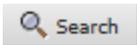
PRESCRIPTION								
Refresh Prescription		Assign To <input type="text"/>			Confirm Order <input type="button" value="Delete"/> <input type="button" value="Print"/> <input type="button" value="Edit"/>			
Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date
Smof Kabiven Central 1600kcal, 1.5L	1477	1600	24	1 bag	OD	1 Days	03/04/2014 05:00:00 PM	04/04/2014 05:00:00 PM
Calorie Calculator NA								

Figure 3.1.3-8 Prescription

Search Prescriber	
Department	<input type="text"/> <input type="button" value="Search"/>
Discipline	<input type="text"/>
Doctor	<input type="text"/>
1 / 20 [1 - 20 / 394]	
Department Discipline	Doctor
Anaesthesiology	Dr. [blurred]
Anaesthesiology	Dr. [blurred]
Anaesthesiology	[blurred]
Anaesthesiology	Dr. [blurred]
Anaesthesiology	Dr. [blurred]
Anaesthesiology	Dr. [blurred]

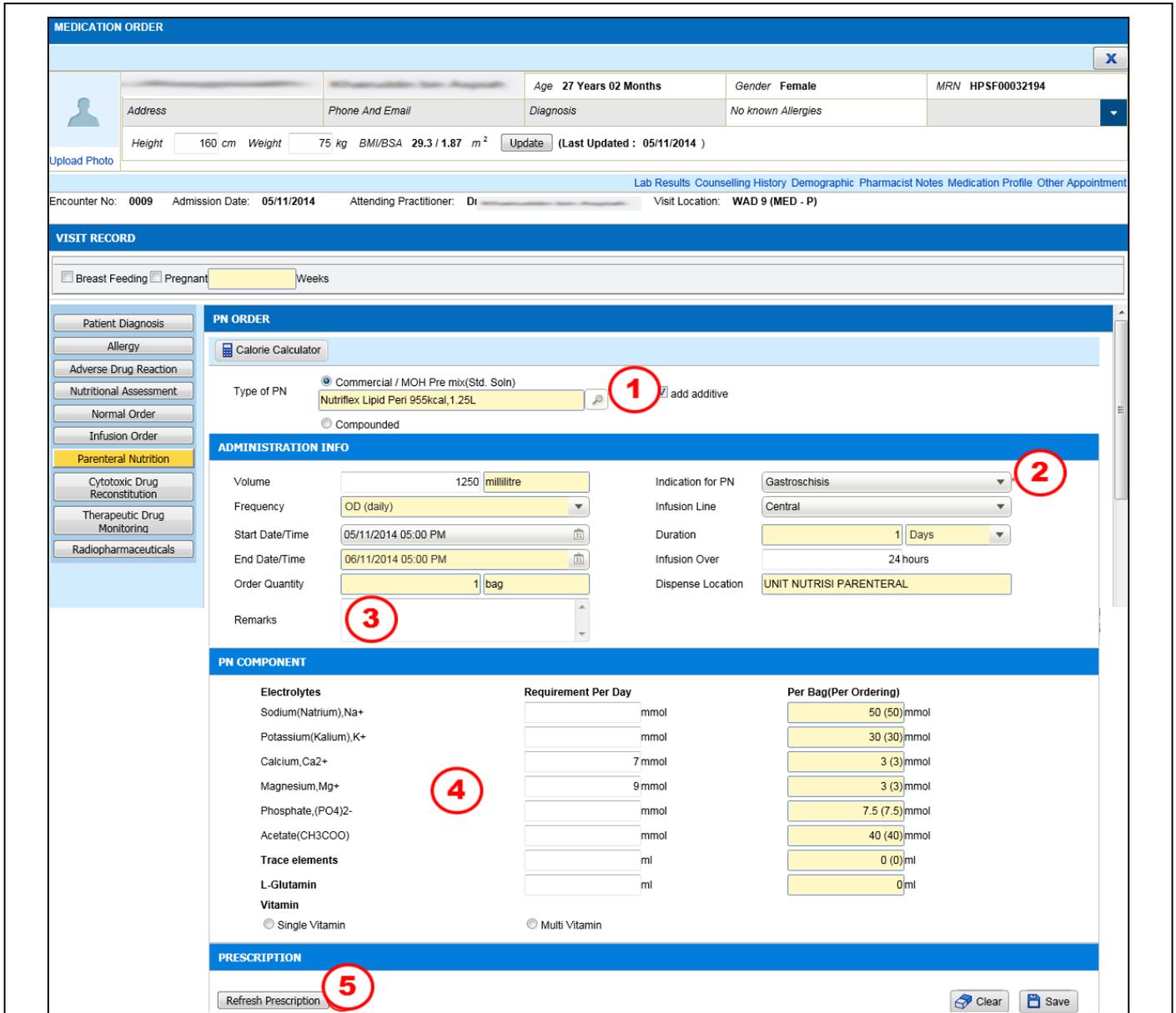
Figure 3.1.3-9 Search Prescriber

Note

- Figure 3.1.3-8 and Figure 3.1.3-9 only for Pharmacist to make PN Order.
- Additional field at Prescription screen is the **Assign To** field.
- Click on the  button to search and assign prescriber.
- Search existing prescriber as below:
 - Department/Dipline
 - Doctor
- Click on the  button to search the prescriber.
- Double click on the listing prescriber record.

3.1.4 Commercial/MOH Pre mix (Std. Soln) Add Addictive

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



MEDICATION ORDER

Age 27 Years 02 Months Gender Female MRN HPSF00032194

Address Phone And Email Diagnosis No known Allergies

Height 160 cm Weight 75 kg BMI/BSA 29.3 / 1.87 m² Update (Last Updated : 05/11/2014)

Encounter No: 0009 Admission Date: 05/11/2014 Attending Practitioner: Dr Visit Location: WAD 9 (MED - P)

VISIT RECORD

Breast Feeding Pregnant Weeks

PN ORDER

Type of PN Commercial / MOH Pre mix(Std. Soln) add additive
Nutriflex Lipid Peri 955kcal, 1.25L Compounded

ADMINISTRATION INFO

Volume 1250 millilitre Indication for PN Gastrochisis
Frequency OD (daily) Infusion Line Central
Start Date/Time 05/11/2014 05:00 PM Duration 1 Days
End Date/Time 06/11/2014 05:00 PM Infusion Over 24 hours
Order Quantity 1 bag Dispense Location UNIT NUTRISI PARENTERAL

Remarks

PN COMPONENT

Electrolytes	Requirement Per Day	Per Bag(Per Ordering)
Sodium(Natrium),Na+	mmol	50 (50)mmol
Potassium(Kalium),K+	mmol	30 (30)mmol
Calcium,Ca2+	7 mmol	3 (3)mmol
Magnesium,Mg+	9mmol	3 (3)mmol
Phosphate,(PO4)2-	mmol	7.5 (7.5)mmol
Acetate(CH3COO)	mmol	40 (40)mmol
Trace elements	ml	0 (0)ml
L-Glutamin	ml	0ml

Vitamin Single Vitamin Multi Vitamin

PRESCRIPTION

Refresh Prescription Clear Save

Figure 3.1.4-1 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 Order** 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.

STEP 2

Select Indication for PN from the dropdown box

STEP 3

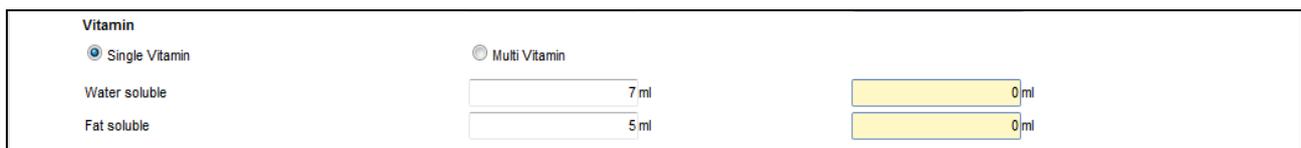
Enter **Remarks** if applicable

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 3.1.4-2.
- Select **Multi Vitamin** radio button. **Vitamin(Water and Fat Soluble)** field will automatically display as per Figure 3.1.4-3.
- All value in all **Per Bag (Per Ordering)** field will automatically default by system.



The screenshot shows a form titled "Vitamin". It has two radio buttons: "Single Vitamin" (selected) and "Multi Vitamin". Below the radio buttons are two rows of input fields. The first row is for "Water soluble" with a text input field containing "7 ml" and a yellow numeric input field containing "0 ml". The second row is for "Fat soluble" with a text input field containing "5 ml" and a yellow numeric input field containing "0 ml".

Figure 3.1.4-2 PN Component



The screenshot shows a form titled "Vitamin". It has two radio buttons: "Single Vitamin" and "Multi Vitamin" (selected). Below the radio buttons is one row of input fields for "Vitamin(Water and Fat Soluble)" with a text input field containing "10 ml" and a yellow numeric input field containing "0 ml".

Figure 3.1.4-3 PN Component

STEP 5

Click on the button to add prescription

Note

Prescription will display as per Figure 3.1.4-4.

PRESCRIPTION									
Refresh Prescription									
Clear Save									
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 (daily)	1 Days	05/11/2014 05:00 PM	06/11/2014 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)	Multi Vitamin (ml)
NA	NA	NA	7	9	NA	NA	NA	NA	NA
L-Glutamin. (ml)			Calorie Calculator			Infusion Line			
NA			NA			Central			

Figure 3.1.4-4 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
OK	

Figure 3.1.4-5 Information Alert Message

STEP 7

Click on the  button to save order record

Note

After saving the record,  button,  button,  button and  button will be displayed as per Figure 3.1.4-6.

PRESCRIPTION									
Refresh Prescription									
Confirm Order Delete  									
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 (daily)	1 Days	05/11/2014 05:00 PM	06/11/2014 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)	Multi Vitamin (ml)
NA	NA	NA	7	9	NA	NA	NA	NA	NA
L-Glutamin. (ml)			Calorie Calculator			Infusion Line			
NA			NA			Central			

Figure 3.1.4-6 Prescription

STEP 8

Click on the  button to confirm prescription

Note

- The  button to delete prescription.
- The  button to print prescription. Sample prescription as per Figure 3.1.4-7.
- The  button to edit information after saved record.

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

Patient Name: _____ ID No: _____
 Age: _____ MRN: HPSF00032194
 Gender: Female Prescription : WAD 70000017482
 Height / Weight / BSA: 160 cm/75 kg/1.87 Order Date / Time
 Allergy: _____ Location: WAD 9 (MED - P)
 Diagnosis: throat swollen Room No / Bed:

TPN Order: Nutriflex Lipid Peri 955kcal, 1.25L With additive Order Quantity: 1 bag
 Start Date/Time: 05/11/2014 05:00 PM End Date/Time: 05/11/2014 05:00 PM

	Requirement Per Day	Content/Bag
Volume (ml)	NA	1250
Calorie (kCal)	NA	955
Protein (g)	NA	40
Carbohydrate (g)	NA	80
Lipid (g)	NA	50
Sodium (mmol)	NA	50
Potassium (mmol)	NA	30
Calcium (mmol)	7	10
Magnesium (mmol)	9	12
Phosphate (mmol)	NA	7.5
Chloride (mmol)	NA	48
Acetate (mmol)	NA	40
Trace Element (ml)	NA	NA
Multivitamin (ml)	NA	NA
Water Soluble Vitamin (ml)	NA	NA
Fat Soluble Vitamin (ml)	NA	NA
Glutamin (ml)	NA	NA

Infusion Over: 24 hr Infusion Rate: 52.08 ml/hr
 Frequency: OD (daily) Infusion Route: Central
 Prescriber: _____ Remarks:
 Designation: Pegawai Perubatan Pelatih
 Order Date/Time: 05/11/2014 12:18 PM

Figure 3.1.4-7 Sample Prescription

STEP 9

Click on the  button to confirm record order

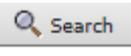
CONFIRMATION

 CONF3219: Are you sure want to confirm the order?

9

Figure 3.1.4-8 Confirmation Alert Message

Note

- Figure 3.1.4-9 and Figure 3.1.4-10 only for Pharmacist to make PN Order :
- Additional field at Prescription screen is the **Assign To** field.
- Click on the  button to search and assign prescriber.
- Search existing prescriber as below:
 - Department/Disipline
 - Doctor
- Click on the  button to search the prescriber.
- Double click on the listing prescriber record.

PRESCRIPTION												
Refresh Prescription		Assign To <input type="text"/>		Confirm Order		Delete						
Drug Name	Total Volume (ml)	Total calorie (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date				
Nutriflex Lipid Plus 1265kcal,1.25L With Additive	1250	1265.8	24	1 bag	Single dose	1 Days	03/04/2014 05:00:00 PM	04/04/2014 05:00:00 PM				
Phosphate (mmol)	Sodium (mmol)	Potassium (mmol)	Calcium (mmol)	Magnesium (mmol)	Acetate (mmol)	Trace Element (ml)	Fat Soluble Vit. (ml)	Water Soluble Vit. (ml)	Multi Vitamin (ml)			
17	51	40	5	5	48	1	NA	NA	10			
L-Glutamin. (ml)					Calorie Calculator							
					1					NA		

Figure 3.1.4-9 Prescription

Search Prescriber	
Department	<input type="text"/>
Discipline	<input type="text"/> 
Doctor	<input type="text"/>
<input type="text" value="1"/> / 20 [1 - 20 / 394]	
Department Discipline	Doctor
Anaesthesiology	Dr. _____

Figure 3.1.4-10 Search Prescriber

3.1.5 Compounded for Adult

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

The screenshot shows the 'PN Medication Order' form with the following sections and callouts:

- 1:** Type of PN: Compounded
- 2:** PN for: Adult
- 3:** Body weight type: Actual (67 kg)
- 4:** Use Fluid Calculator: (By weight)
- 5:** Per day: 2000 ml
- 6:** Total volume required: 29.85 ml/kg
- 7:** Carbohydrate: 3 g/kg
- 8:** Electrolytes section (Sodium, Potassium, Calcium, Magnesium, Phosphate, Chloride, Acetate)
- 9:** Administration Info: Volume (2000 ml), Frequency (OD), Start Date/Time (13/10/2016 05:00 PM), End Date/Time (14/10/2016 05:00 PM), Indication for PN (Atresia), Infusion Line (Central), Duration (1 Days), Infusion Over (24 hours), Dispense Location (UNIT NUTRISI PARENTERAL)
- 10:** Remarks field
- 11:** Remarks field (continued)
- 12:** Prescription table

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	29.85 (2000)	30.19 (2023)	24	1 BAG	OD	1 Days	13/10/2016 05:00 PM	14/10/2016 05:00 PM											
Phosphate mmol per kg (mmol)	0.6 (40.2)	Sodium mmol per kg (mmol)	1 (67)	Potassium mmol per kg (mmol)	1 (67)	Calcium mmol per kg (mmol)	0.1 (6.7)	Magnesium mmol per kg (mmol)	0.05 (3.35)	Acetate mmol per kg (mmol)	NA	Trace Element ml per kg (ml)	0.15 (10)	Fat Soluble Vit. ml per kg (ml)	0.15 (10)	Water Soluble Vit. ml per kg (ml)	0.15 (10)	Multi Vitamin ml per kg (ml)	NA
Protein g per kg (g)	2 (134)	Carbohydrate g per kg (g)	3 (201)	Carbohydrate %	NA	Lipid g per kg (g)	1 (67)	L-Glutamin ml per kg (ml)	1.49 (100)	Calorie Calculator	NA	Infusion Line	Central						

Figure 3.1.5-1 PN Medication Order

STEP 1

Select on **Compounded** radio button for **Type of PN**

STEP 2

Select on **Adult** radio button for **PN for Adult**

STEP 3

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**.

STEP 4

Select **Use Fluid Calculator** check box

STEP 5

Enter value for **Total volume required per day (ml)**

Note

Value **By Weight** will be automatically calculated and displayed after enter the **Total volume required per day (ml)**.

STEP 6

Enter value for **Total Oral Feeding**

Note

TPN Volume will be automatically calculated by system.

STEP 7

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

Note

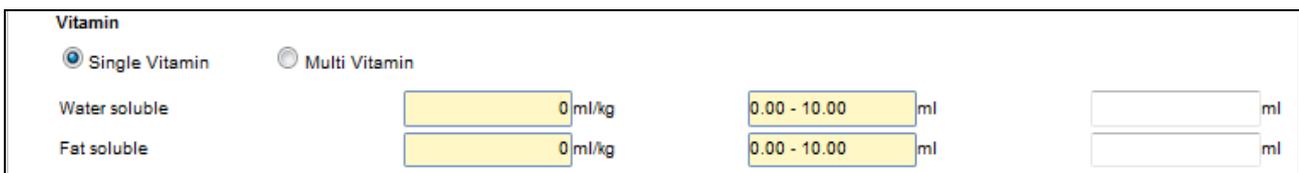
- All entered value must between the **Recommended Range (per kg)**.
- All value **Per day** and **Energy(per day)** will automatically calculate and display.
- L-Gutamin is an optional function. Value of **By weight** and **Energy(per day)** will automatically display.
- Value of **Carbohydrate:Lipid(kcal) 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 8

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

Single Vitamin Multi Vitamin

Water soluble 0 ml/kg 0.00 - 10.00 ml ml

Fat soluble 0 ml/kg 0.00 - 10.00 ml ml

Figure 3.1.5-2 PN Component-Single Vitamin

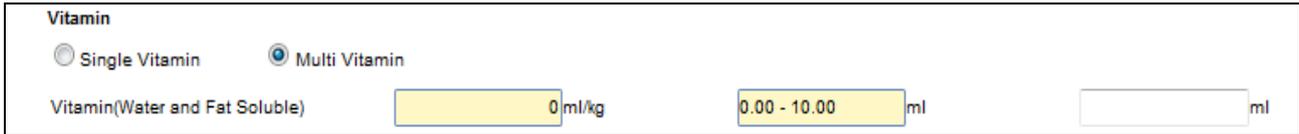


Figure 3.1.5-3 PN Component-Multi Vitamin

Note

- Select either **Single Vitamin** or **Multivitamin** radio button.
- Vitamin have 2 types vitamin:
 - Single Vitamin
 - Multi Vitamin
- If user select **Single Vitamin** radio button; **Water soluble** and **Fat soluble** field will automatically display by system as per Figure 3.1.5-2.
- If user select **Multi Vitamin** radio button; **Vitamin(Water and Fat Soluble)** field will automatically display by system as per Figure 3.1.5-3.

STEP 9

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

STEP 10

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

Note

Infusion Line will automatically default to **Central** but user is allow to change at this field and select type of **Infusion Line** from the dropdown box.

Administration Info Section

- **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.
- **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 11

Enter **Remarks** if applicable

STEP 12

Click on the  button to add prescription

Note

Prescription will display as per Figure 3.1.5-4.

MEDICATION ORDER

Age 69 Years 04 Months 30 Days Gender Male M/RN HPSF00060046

Address Phone And Email Diagnosis No known Allergies

Height 160 cm Weight 59 kg BMI/BSA 23 / 1.64 m² Update (Last Updated : 05/12/2014)

Encounter No: 0020 Admission Date: 05/12/2014 Attending Practitioner: Visit Location: WAD 3 (ORTO - L)

Lab Results Counselling History Demographic Pharmacist Notes Medication Profile Other Appointment

PN ORDER

Calorie Calculator

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

PN for: Adult Paediatric Paediatric Infant Neonate

Body weight type: Actual Ideal Adjusted

Body weight: 59kg

PN COMPONENT

ADMINISTRATION INFO

PRESCRIPTION

Refresh 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	45.25 (2870)	14 (828)		241 BAG	OD	1 Days	05/12/2014 05:00 PM	08/12/2014 05:00 PM	
Phosphate mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Sodium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Potassium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Calcium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Magnesium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Acetate mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Trace Element ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA	
Fat Soluble Vit. ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA	
Water Soluble Vit. ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA	
Multi Vitamin ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA	
Protein g per kg (g)	0.5 (29.5)	Carbohydrate g per kg (g)	3 (177)	Carbohydrate %	NA	Lipid g per kg (g)	NA	L-Glutamin ml per kg (ml)	NA
Calorie Calculator								Infusion Line	Central

Figure 3.1.5-4 PN Prescription

STEP 13

Click on the button to save prescription

INFORMATION

INFO3214: Order saved

14

Figure 3.1.5-5 Information Alert Message

STEP 14

Click on the button to save order record

Note

After saving the record, button, button, button and button will be displayed as per Figure 3.1.5-6.

MEDICATION ORDER

Age 69 Years 04 Months 30 Days Gender Male M/RN HPSF00060046

Address Phone And Email Diagnosis No known Allergies

Height 160 cm Weight 59 kg BMI/BSA 23 / 1.64 m² Update (Last Updated : 05/12/2014)

Encounter No: 0020 Admission Date: 05/12/2014 Attending Practitioner: Visit Location: WAD 3 (ORTO - L)

Lab Results Counselling History Demographic Pharmacist Notes Medication Profile Other Appointment

PN ORDER

Calorie Calculator

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

PN for: Adult Paediatric Paediatric Infant Neonate

Body weight type: Actual Ideal Adjusted

Body weight: 59kg

PN COMPONENT

ADMINISTRATION INFO

PRESCRIPTION

Refresh Prescription Confirm Order Delete Print Edit

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	45.25 (2670)	14 (826)	241 BAG	OD		1 Days	05/12/2014 05:00 PM	08/12/2014 05:00 PM			
Phosphate mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Sodium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Potassium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Calcium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Magnesium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Acetate mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Trace Element ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA			
Fat Soluble Vit. ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA			
Water Soluble Vit. ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA			
Multi Vitamin ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA			
Protein g per kg (g)	0.5 (29.5)	Carbohydrate g per kg (g)	3 (177)	Carbohydrate %	NA	Lipid g per kg (g)	NA	L-Glutamin ml per kg (ml)	NA	Calorie Calculator	Infusion Line
Central											

Figure 3.1.5-6 PN Prescription

STEP 15

Click on the button to confirm prescription

Note

- The button to delete prescription.
- The button to print prescription. Sample prescription as per Figure 3.1.5-8.
- The button to edit information after saved record.

CONFIRMATION

CONF3219: Are you sure want to confirm the order?

Figure 3.1.5-7 Confirmation Alert Message

STEP 16

Click on the button to confirm record order

Ministry Of Health, Malaysia
Hospital Pakar Sultanah Fatimah
PARENTERAL NUTRITION

Patient Name: [Redacted] **Age:** 69 Years 04 Months 30 Days **ID No:** [Redacted]
MRN: HPSF00060046
Gender: Male **Prescription :** PEDC0000070679
Height / Weight / BSA: 160 cm/59 kg/1.54 **Order Date / Time**
Room No / Bed: 1 **Location:** WAD 3 (ORTO - L)
Allergy: **Diagnosis:** lung cancer

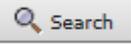
TPN Order: PN Compounded Adult **Order Quantity:** 1 bag
Start Date/Time: 05/12/2014 05:00 PM **End Date/Time:** 05/12/2014 05:00 PM

	Content / bag
Volume (ml)	2670
Calorie (kCal)	5900
Protein (g)	29.5
Carbohydrate (g)	177
Lipid (g)	NA
Sodium (mmol)	NA
Potassium (mmol)	NA
Calcium (mmol)	NA
Magnesium (mmol)	NA
Phosphate (mmol)	NA
Chloride (mmol)	NA
Acetate (mmol)	NA
Trace Element (ml)	NA
Multivitamin (ml)	NA
Water Soluble Vitamin (ml)	NA
Fat Soluble Vitamin (ml)	NA
L-Glutamin (ml)	NA

Infusion Over: 24 hr **Infusion Route:** Central
Frequency: QD **Remarks:**
Prescriber: [Redacted]
Designation: Pegawai Perubatan Pelatih
Order Date/Time: 05/12/2014 04:38 PM

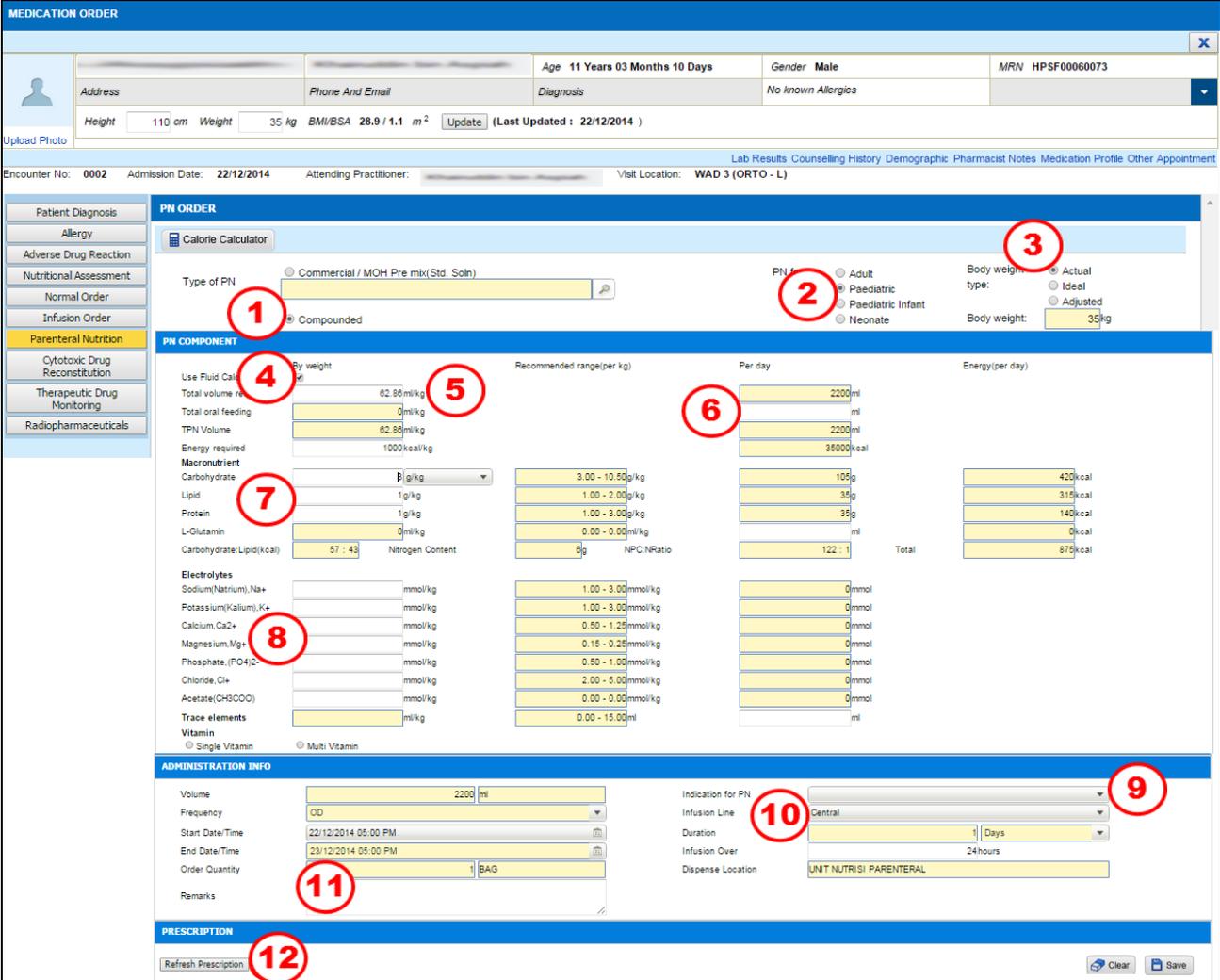
Figure 3.1.5-8 Sample of PN Prescription

Note

- Additional field at Prescription screen is the **Assign To** field.
- Click on the  button to search and assign prescriber.
- Search existing prescriber as below:
 - Department/Disipline
 - Doctor
- Click on the  button to search the prescriber.
- Double click on the listing prescriber record.

3.1.6 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 displays the 'MEDICATION ORDER' interface for a 'PN ORDER'. The patient information at the top includes: Age 11 Years 03 Months 10 Days, Gender Male, MRN HPSF00060073, Height 110 cm, Weight 35 kg, and BMI/BSA 28.9 / 1.1 m². The 'PN ORDER' section is divided into several parts:

- PN ORDER:** Type of PN is set to 'Compounded' (1). PN for is set to 'Paediatric' (2). Body weight type is set to 'Actual' (3).
- PN COMPONENT:** Use Fluid Cal is set to 'By weight' (4). Total volume is 2200 ml (5). Total oral feeding is 0 ml/kg (6). TPN Volume is 2200 ml (6). Energy required is 36000 kcal (6).
- Macronutrient:** Carbohydrate is 105g (7). Lipid is 35g (7). Protein is 35g (7). L-Glutamin is 0 ml/kg (7). Carbohydrate:Lipid(kcal) is 57 : 43 (7). Nitrogen Content is 6g (7). NPC:N(Ratio) is 122 : 1 (7). Total energy is 875 kcal (7).
- Electrolytes:** Sodium(Natrium),Na+ is 0 mmol/kg (8). Potassium(Kalium),K+ is 0 mmol/kg (8). Calcium,Ca2+ is 0 mmol/kg (8). Magnesium,Mg+ is 0 mmol/kg (8). Phosphate,(PO4)2- is 0 mmol/kg (8). Chloride,Cl+ is 0 mmol/kg (8). Acetate,(CH3COO) is 0 mmol/kg (8). Trace elements is 0 ml/kg (8). Vitamin is set to 'Single Vitamin' (8).
- ADMINISTRATION INFO:** Volume is 2200 ml (11). Frequency is 'OD' (11). Start Date/Time is 22/12/2014 05:00 PM (11). End Date/Time is 23/12/2014 05:00 PM (11). Order Quantity is 1 BAG (11). Remarks is empty (11). Indication for PN is 'Central' (9). Duration is 1 Days (9). Infusion Over is 24 hours (9). Dispense Location is 'UNIT NUTRISI PARENTERAL' (9).
- PRESCRIPTION:** Refresh Prescription button (12).

Figure 3.1.6-1 PN Order

STEP 1

Select on **Compounded** radio button

for **Type of PN**

STEP 2

Select on **Paediatric** radio button for **PN for Paediatric**

STEP 3

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**.

STEP 4

Select **Use Fluid Calculator** check box

STEP 5

Enter value for **Total volume required by weight (ml/kg)**

Note

Value **Per Day(ml)** will be automatically calculated and displayed after enter the **Total volume required by weight (ml/kg)**.

STEP 6

Enter value for **Total Oral Feeding Per Day (ml)**

Note

- **Total Oral Feeding By Weight** will be automatically calculated and displayed after enter the **Total Oral Feeding Per Day (ml)**.
- **TPN Volume** will be automatically calculated by system.

STEP 7

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 8

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.

Note

- Select either **Single Vitamin** or **Multivitamin** radio button.
- Vitamin have 2 types vitamin:
 - Single Vitamin
 - Multi Vitamin
- If user select **Single Vitamin** radio button; **Water soluble** and **Fat soluble** field will automatically display by system as per Figure 3.1.6-2.
- If user select **Multi Vitamin** radio button; **Vitamin(Water and Fat Soluble)** field will automatically display by system as per Figure 3.1.6-3.

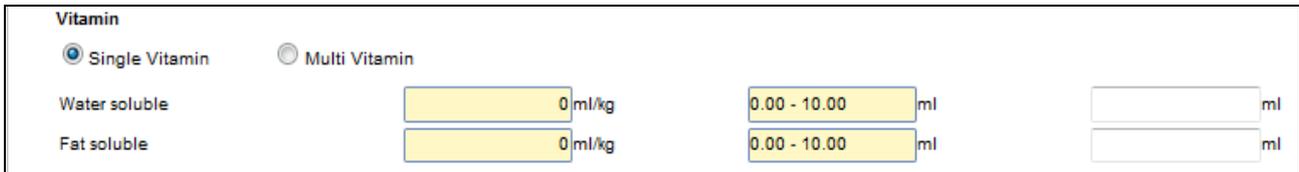


Figure 3.1.6-2 PN Component-Single Vitamin

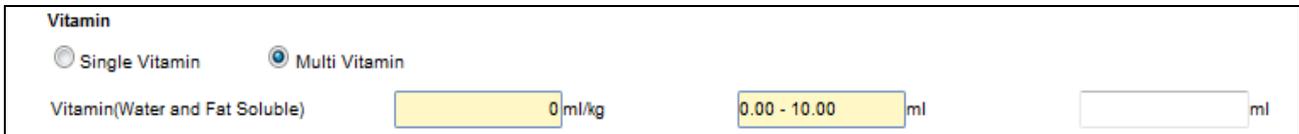


Figure 3.1.6-3 PN Component-Multi Vitamin

STEP 9

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

STEP 10

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

Note

Infusion Line will automatically default to Central but user is allow to change at this field and select type of **Infusion Line** from the dropdown box.

Administration Info Section

- **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.
- **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 11

Enter **Remarks** if applicable

STEP 12

Click on the  button to add prescription

Note

Prescription will display as per Figure 3.1.6-4.

MEDICATION ORDER

Age 11 Years 03 Months 10 Days Gender Male M/RN HPSF00060073

Address Phone And Email Diagnosis No known Allergies

Height 110 cm Weight 35 kg BMI/BSA 28.9 / 1.1 m² Update (Last Updated : 22/12/2014)

Encounter No: 0002 Admission Date: 22/12/2014 Attending Practitioner: Visit Location: WAD 3 (ORTO - L)

PN ORDER

Calorie Calculator

Type of PN: Commercial / MOH Pre mix(Std. Soln) Compounded PN for: Adult Paediatric Paediatric Infant Neonate Body weight type: Actual Ideal Adjusted Body weight: 35kg

PN COMPONENT

ADMINISTRATION INFO

PRESCRIPTION 13

Refresh 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 Paediatric	62.86 (2200)	25 (875)	241 BAG	OD		1 Days	22/12/2014 05:00 PM	23/12/2014 05:00 PM	
Phosphate mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Sodium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Potassium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Calcium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Magnesium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Acetate mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA	
Trace Element ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA	
Fat Soluble Vit. ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA	
Water Soluble Vit. ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA	
Multi Vitamin ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA	
Protein g per kg (g)	1 (35)	Carbohydrate g per kg (g)	3 (105)	Carbohydrate %	NA	Lipid g per kg (g)	1 (35)	L-Glutamin ml per kg (ml)	NA
							Calorie Calculator	Infusion Line	Central

Figure 3.1.6-4 PN Prescription

STEP 13

Click on the button to save prescription

INFORMATION

INFO3214: Order saved

14

Figure 3.1.6-5 Information Alert Message

STEP 14

Click on the button to save order record

Note

After saving the record, button, button, button and button will be displayed as per Figure 3.1.6-6.

MEDICATION ORDER

Age 11 Years 03 Months 10 Days Gender Male M/RN HPSF00060073

Address Phone And Email Diagnosis No known Allergies

Height 110 cm Weight 35 kg BMI/BSA 28.9 / 1.1 m² Update (Last Updated : 22/12/2014)

Encounter No: 0002 Admission Date: 22/12/2014 Attending Practitioner: Visit Location: WAD 3 (ORTO - L)

Lab Results Counselling History Demographic Pharmacist Notes Medication Profile Other Appointment

PN ORDER

Calorie Calculator

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

PN for: Adult Paediatric Paediatric Infant Neonate

Body weight type: Actual Ideal Adjusted

Body weight: 35kg

PN COMPONENT

ADMINISTRATION INFO

PRESCRIPTION

Refresh Prescription Confirm Order Delete Print Edit

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 Paediatric	62.86 (2200)	25 (875)		241 BAG	OD	1 Days	22/12/2014 05:00 PM	23/12/2014 05:00 PM			
Phosphate mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Sodium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Potassium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Calcium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Magnesium mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Acetate mmol per kg (mmol)	NA	NA	NA	NA	NA	NA	NA	NA			
Trace Element ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA			
Fat Soluble Vit. ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA			
Water Soluble Vit. ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA			
Multi Vitamin ml per kg (ml)	NA	NA	NA	NA	NA	NA	NA	NA			
Protein g per kg (g)	1 (35)	Carbohydrate g per kg (g)	3 (105)	Carbohydrate %	NA	Lipid g per kg (g)	1 (35)	L-Glutamin ml per kg (ml)	NA	Calorie Calculator	Infusion Line
											Central

Figure 3.1.6-6 PN Prescription

STEP 15

Click on the button to confirm prescription

Note

- The button to delete prescription.
- The button to print prescription. Sample prescription as per Figure 3.1.6-8.
- The button to edit information after saved record.

CONFIRMATION

CONF3219: Are you sure want to confirm the order?

Figure 3.1.6-7 Confirmation Alert Message

STEP 16

Click on the button to confirm record order

Ministry Of Health, Malaysia
Hospital Pakar Sultanah Fatimah
PARENTERAL NUTRITION

Patient Name: [Redacted]
 Age: 11 Years 03 Months 10 Days MRN: HPSF00060073
 Gender: Male Prescription : PEDC0000070856
 Height / Weight / BSA: 110 cm/35 kg/1.1 Order Date / Time: 22/12/2014 12:56 PM
 Room No / Bed: [Redacted] Location: WAD 3 (ORTO - L)
 ID No: [Redacted] Diagnosis: neck injured
 Allergy:

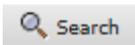
TPN Order: PN Compounded Paediatric Order Quantity: 1 bag
 Start Date/Time: 22/12/2014 05:00 PM End Date/Time: 23/12/2014 05:00 PM

	Content / bag
Volume (ml)	2200
Calorie (kCal)	35000
Protein (g)	35
Carbohydrate (g)	105
Lipid (g)	35
Sodium (mmol)	NA
Potassium (mmol)	NA
Calcium (mmol)	NA
Magnesium (mmol)	NA
Phosphate (mmol)	NA
Chloride (mmol)	NA
Acetate (mmol)	NA
Trace Element (ml)	NA
Multivitamin (ml)	NA
Water Soluble Vitamin (ml)	NA
Fat Soluble Vitamin (ml)	NA
L-Glutamin (ml)	NA

Infusion Over: 24 hr Infusion Route: Central
 Frequency: OD Remarks:
 Prescriber: [Redacted]
 Designation: Pegawai Perubatan Pelatih
 Order Date/Time: 22/12/2014 12:47 PM

Figure 3.1.6-8 Sample of PN Prescription

Note

- Figure 3.1.6-9 and Figure 3.1.6-10 only for Pharmacist to make PN Order :
- Additional field at Prescription screen is the **Assign To** field.
- Click on the  button to search and assign prescriber.
- Search existing prescriber as below:
 - Department/Disipline
 - Doctor
- Click on the  button to search the prescriber.
- Double click on the listing prescriber record.

PRESCRIPTION									
Refresh Prescription		Assign To <input type="text"/>			Confirm Order		Delete	Print	Edit
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 Paediatric	100 (6500)	29 (1885)	24	1 BAG	OD	1 Days	07/04/2014 05:00:00 PM	08/04/2014 05:00:00 PM	
Phosphate mmol per kg (mmol)	Sodium mmol per kg (mmol)	Potassium mmol per kg (mmol)	Calcium mmol per kg (mmol)	Magnesium mmol per kg (mmol)	Acetate mmol per kg (mmol)	Trace Element ml per kg (ml)	Fat Soluble Vit. ml per kg (ml)	Water Soluble Vit. ml per kg (ml)	Multi Vitamin ml per kg (ml)
0.6 (39)	1 (65)	1 (65)	0.5 (32.5)	0.16 (10.4)	NA	NA	NA	NA	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				
1 (65)	4 (260)	NA	1 (65)	NA	NA				

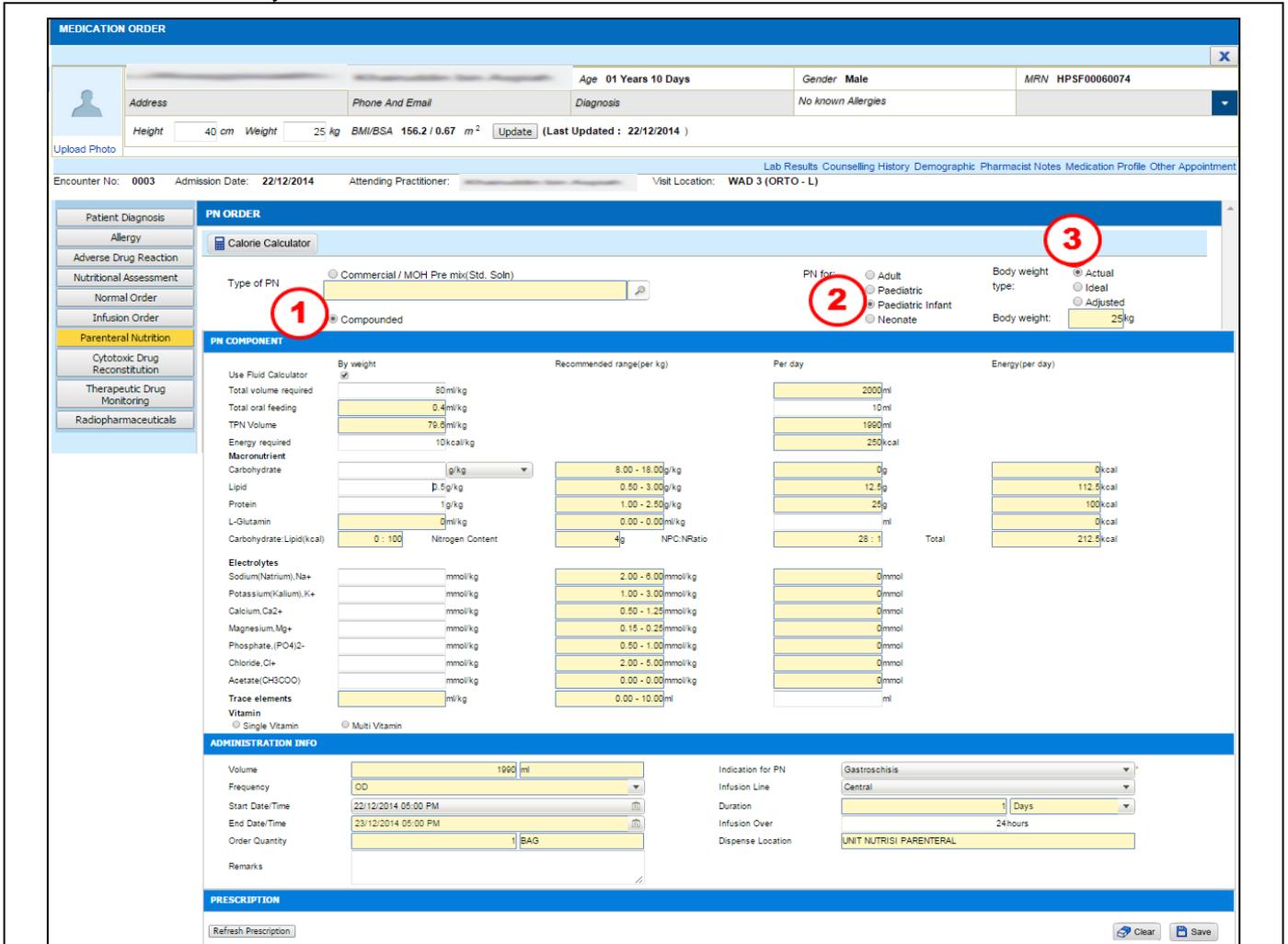
Figure 3.1.6-9 Prescription

Search Prescriber	
Department	<input type="text"/> <input type="button" value="Search"/>
Discipline	<input type="text"/>
Doctor	<input type="text"/>
<input type="button" value="1"/> / <input type="button" value="20"/> [1 - 20 / 394]	
Department Discipline	Doctor
Anaesthesiology	Dr. [blurred]
Anaesthesiology	Dr. [blurred]
Anaesthesiology	[blurred]
Anaesthesiology	Dr. [blurred]
Anaesthesiology	Dr. [blurred]
Anaesthesiology	Dr. [blurred]

Figure 3.1.6-10 Search Prescriber

3.1.7 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 'MEDICATION ORDER' interface for a patient named 'WAD 3 (ORTO - L)'. The patient's age is 01 Years 10 Days, gender is Male, and MRN is HPSF00060074. The patient's height is 40 cm, weight is 25 kg, and BMI/BSA is 156.2 / 0.67 m². The admission date is 22/12/2014, and the attending practitioner is 'WAD 3 (ORTO - L)'. The PN order is for a 'Compounded' type of PN, specifically 'Commercial / MOH Pre mix (Std. Soln)'. The PN is for a 'Paediatric Infant' with a 'Body weight type' of 'Actual' (25 kg). The PN component table is as follows:

PN COMPONENT	By weight	Recommended range (per kg)	Per day	Energy (per day)
Total volume required	80 ml/kg		2000 ml	
Total oral feeding	0 g/kg		10 ml	
TPN Volume	70 g/ml/kg		1990 ml	
Energy required	10 kcal/kg		250 kcal	
Macronutrient				
Carbohydrate	g/kg	8.00 - 18.00 g/kg	0 g	0 kcal
Lipid	g/kg	0.50 - 3.00 g/kg	12.5 g	112.5 kcal
Protein	g/kg	1.00 - 2.50 g/kg	25 g	100 kcal
L-Glutamin	ml/kg	0.00 - 0.00 ml/kg	ml	0 kcal
Carbohydrate:Lipid(kcal)	0 : 100	Nitrogen Content	4g	NPC:NRatio
			28 : 1	Total
				212.5 kcal
Electrolytes				
Sodium (Natrium), Na+	mmol/kg	2.00 - 6.00 mmol/kg	0 mmol	
Potassium (Kalium), K+	mmol/kg	1.00 - 3.00 mmol/kg	0 mmol	
Calcium, Ca2+	mmol/kg	0.50 - 1.25 mmol/kg	0 mmol	
Magnesium, Mg+	mmol/kg	0.15 - 0.25 mmol/kg	0 mmol	
Phosphate, (PO4)2-	mmol/kg	0.50 - 1.00 mmol/kg	0 mmol	
Chloride, Cl-	mmol/kg	2.00 - 5.00 mmol/kg	0 mmol	
Acetate (CH3COO)	mmol/kg	0.00 - 0.00 mmol/kg	0 mmol	
Trace elements				
Vitamin				
Single Vitamin				
Multi Vitamin				

The 'ADMINISTRATION INFO' section shows a volume of 1990 ml, frequency of OD, start and end dates of 22/12/2014 05:00 PM, and an order quantity of 1 BAG. The indication for PN is 'Gastroschisis', the infusion line is 'Central', the duration is 1 Day, and the infusion over is 24 hours. The dispense location is 'UNIT NUTRISI PARENTERAL'.

Figure 3.1.7-1 PN Order

STEP 1

Select on **Compounded** radio button for **Type of PN**

STEP 2

Select on **Paediatric Infant** radio button for **PN for Paediatric**

STEP 3

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**.

PRESCRIPTION									
<div style="display: flex; justify-content: space-between; align-items: center;"> Refresh Prescription <div> Confirm Order Delete </div> </div>									
Drug Name	Total Volume ml per kg (ml)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date		
PN Compounded Neonate	100 (125)	24	1 BAG	OD	1 Days	30/09/2016 05:00 PM	01/10/2016 05:00 PM		
Phosphate mmol per kg (mmol)	Sodium mmol per kg (mmol)	Potassium mmol per kg (mmol)	Calcium mmol per kg (mmol)	Magnesium mmol per kg (mmol)	Acetate mmol per kg (mmol)	Trace Element ml per kg (ml)	Fat Soluble Vit. ml per kg (ml)	Water Soluble Vit. ml per kg (ml)	Multi Vitamin ml per kg (ml)
1 (1.25)	3 (3.75)	2 (2.5)	1 (1.25)	0.2 (0.25)	NA	1 (1.25)	1 (1.25)	1 (1.25)	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 (2.5)	NA	10	2 (2.5)	NA	NA	Central			

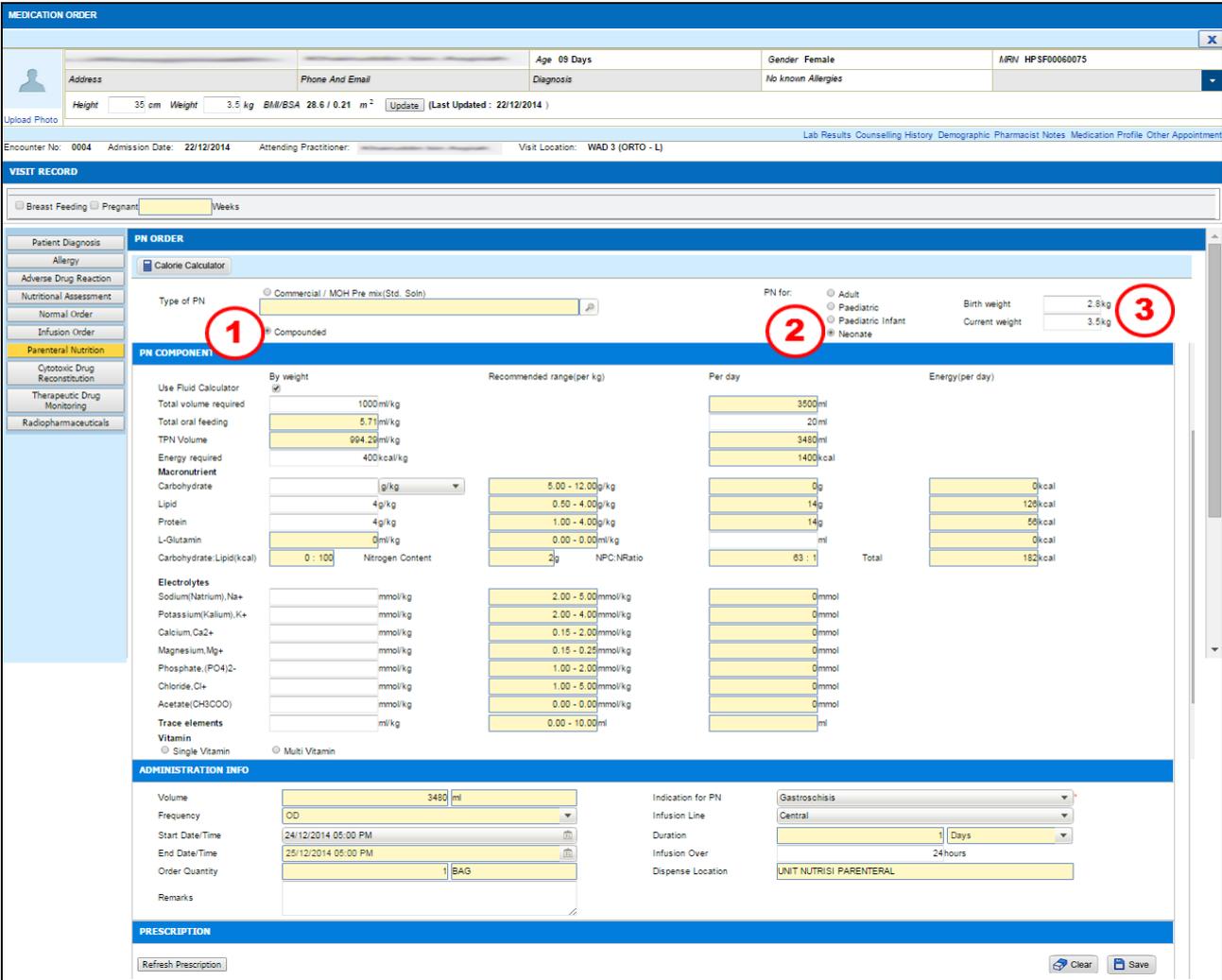
Figure 3.1.7-2 PN Order

Note

STEP 4 – STEP 16 please refer section **3.1.6 Compounded for Paedriatic** (from Page 35 – Page 40).

3.1.8 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 COMPONENT

Use Fluid Calculator	By weight	Recommended range(per kg)	Per day	Energy(per day)
Total volume required	1000ml/kg		3500ml	
Total oral feeding	5.71ml/kg		20ml	
TPN Volume	994.29ml/kg		3480ml	
Energy required	400kcal/kg		1400kcal	
Macronutrient				
Carbohydrate	g/kg	5.00 - 12.00g/kg	0g	0kcal
Lipid	4g/kg	0.50 - 4.00g/kg	14g	126kcal
Protein	4g/kg	1.00 - 4.00g/kg	14g	56kcal
L-Glutamin	0ml/kg	0.00 - 0.00ml/kg	ml	0kcal
Carbohydrate:Lipid(kcal)	0 : 100	Nitrogen Content	2g	NPC:NRatio
			63 : 1	Total
				182kcal
Electrolytes				
Sodium(Natrium),Na+	mmol/kg	2.00 - 5.00mmol/kg	0mmol	
Potassium(Kalium),K+	mmol/kg	2.00 - 4.00mmol/kg	0mmol	
Calcium,Ca2+	mmol/kg	0.15 - 2.00mmol/kg	0mmol	
Magnesium,Mg+	mmol/kg	0.15 - 0.25mmol/kg	0mmol	
Phosphate,(PO4)2-	mmol/kg	1.00 - 2.00mmol/kg	0mmol	
Chloride,Cl-	mmol/kg	1.00 - 5.00mmol/kg	0mmol	
Acetate(CH3COO)	mmol/kg	0.00 - 0.00mmol/kg	0mmol	
Trace elements	ml/kg	0.00 - 10.00ml	ml	
Vitamin				
<input type="radio"/> Single Vitamin				
<input checked="" type="radio"/> Multi Vitamin				

ADMINISTRATION INFO

Volume: 3480 ml
 Frequency: OD
 Start Date/Time: 24/12/2014 05:00 PM
 End Date/Time: 25/12/2014 05:00 PM
 Order Quantity: 1 BAG
 Remarks:

Indication for PN: Gastrosthis
 Infusion Line: Central
 Duration: 1 Days
 Infusion Over: 24hours
 Dispense Location: UNIT NUTRISI PARENTERAL

PRESCRIPTION

Refresh Prescription [Clear] [Save]

Figure 3.1.8-1 Medication Order

STEP 1

Select on **Compounded** radio button for **Type of PN**

STEP 2

Select on **Neonate** radio button for **PN for Paediatric**

STEP 3

Enter **Birth weight (kg)** and **Current weight (kg)**

PRESCRIPTION									
Refresh Prescription									
<input type="button" value="Confirm Order"/> <input type="button" value="Delete"/> <input type="button" value="Print"/> <input type="button" value="Edit"/>									
Drug Name	Total Volume ml per kg (ml)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date		
PN Compounded Neonate	100 (125)	24	1 BAG	OD	1 Days	30/09/2016 05:00 PM	01/10/2016 05:00 PM		
Phosphate mmol per kg (mmol)	Sodium mmol per kg (mmol)	Potassium mmol per kg (mmol)	Calcium mmol per kg (mmol)	Magnesium mmol per kg (mmol)	Acetate mmol per kg (mmol)	Trace Element ml per kg (ml)	Fat Soluble Vit. ml per kg (ml)	Water Soluble Vit. ml per kg (ml)	Multi Vitamin ml per kg (ml)
1 (1.25)	3 (3.75)	2 (2.5)	1 (1.25)	0.2 (0.25)	NA	1 (1.25)	1 (1.25)	1 (1.25)	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 (2.5)	NA	10	2 (2.5)	NA	NA	Central			

Figure 3.1.8-2 Medication Order

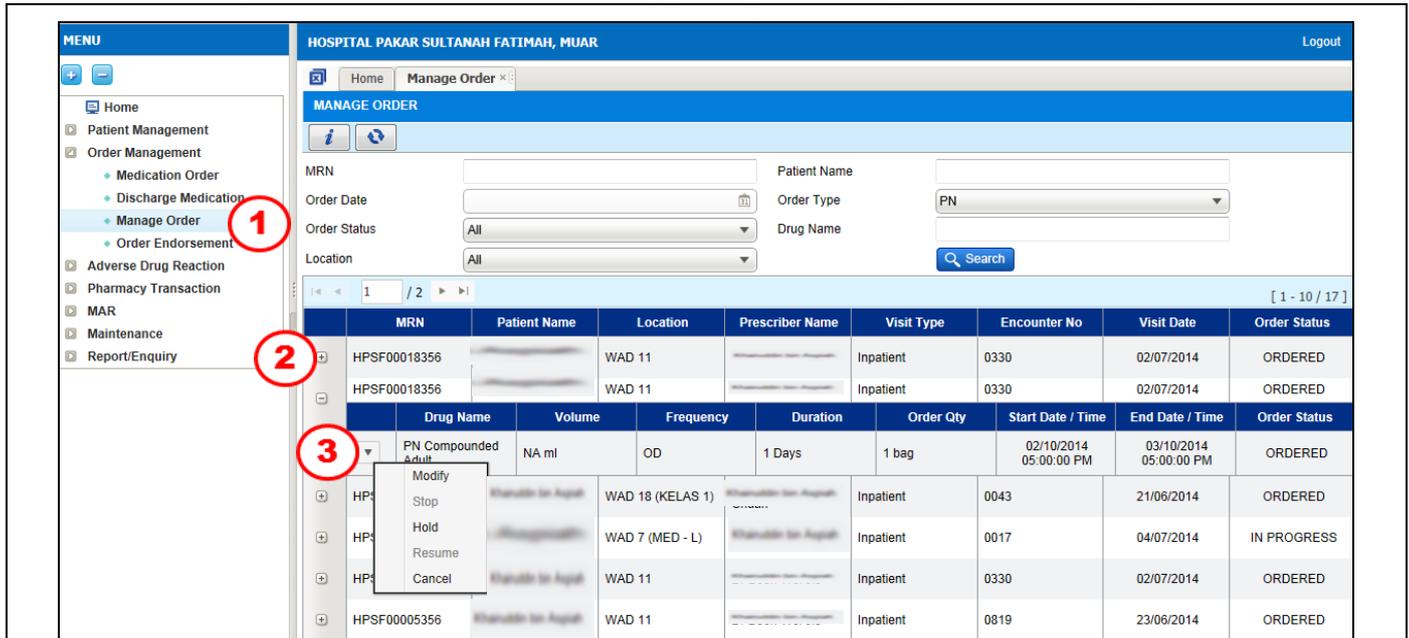
Note

- PN order will be calculated base on the highest weight between **Birth weight** and **Current weight**.
- **STEP 4 – STEP 16** please refer section **3.1.6 Compounded for Paedriatic** (from Page 35 – Page 40).

3.2 Manage Order

3.2.1 Modify Order

Modify Order screen allow user to modify prescription or drugs details before verify the order.



The screenshot shows the 'MANAGE ORDER' screen for Hospital Pakar Sultanah Fatimah, Muar. The interface includes a search bar with filters for MRN, Patient Name, Order Date, Order Status, and Location. A table lists orders with columns for MRN, Patient Name, Location, Prescriber Name, Visit Type, Encounter No, Visit Date, and Order Status. A context menu is open over one of the orders, showing options: Modify, Stop, Hold, Resume, and Cancel.

MRN	Patient Name	Location	Prescriber Name	Visit Type	Encounter No	Visit Date	Order Status	
HPSF00018356	[Redacted]	WAD 11	[Redacted]	Inpatient	0330	02/07/2014	ORDERED	
HPSF00018356	[Redacted]	WAD 11	[Redacted]	Inpatient	0330	02/07/2014	ORDERED	
	PN Compounded Adult	NA ml	OD	1 Days	1 bag	02/10/2014 05:00:00 PM	03/10/2014 05:00:00 PM	ORDERED
HPSF00018356	[Redacted]	WAD 18 (KELAS 1)	[Redacted]	Inpatient	0043	21/06/2014	ORDERED	
HPSF00018356	[Redacted]	WAD 7 (MED - L)	[Redacted]	Inpatient	0017	04/07/2014	IN PROGRESS	
HPSF00018356	[Redacted]	WAD 11	[Redacted]	Inpatient	0330	02/07/2014	ORDERED	
HPSF00005356	[Redacted]	WAD 11	[Redacted]	Inpatient	0819	23/06/2014	ORDERED	

Figure 3.2.1-1 Manage Order

STEP 1

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

Note

- Prescriber have the options to view patient by click the check box :-
 - a) Show All
- By default list of patient will be displayed according to prescriber location access.
- 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

STEP 2

Click on the  expand button to display order details as per Figure 3.2.1-1

STEP 3

Right click mouse on the  button and select **Modify** as per Figure 3.2.1-1

Note

- Drug Details screen will be displayed as per Figure 3.2.1-2.
- User can modify PN Order details that have been made in PN Order transaction previously.

PN ORDER INTERVENTION

MODIFY ORDER

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

PN for: Adult Paediatric Paediatric Infant Neonate

Body weight type: Actual Ideal Adjusted

Body weight: kg

PN COMPONENT

Use Fluid Calculator:

Total volume required: <input type="text" value="43.08"/> ml/kg	Per day: <input type="text" value="2800.2"/> ml
Total oral feeding: <input type="text" value="1.54"/> ml/kg	<input type="text" value="100"/> ml
TPN Volume: <input type="text" value="41.54"/> ml/kg	<input type="text" value="2700.2"/> ml
Energy required: <input type="text" value="120"/> kcal/kg	<input type="text" value="7800"/> kcal

Macronutrient	By weight	Recommended range(per kg)	Per day	Energy(per day)
Carbohydrate	<input type="text" value=""/> g/kg	<input type="text" value="3.00 - 10.50"/> g/kg	<input type="text" value="0"/> g	<input type="text" value="0"/> kcal
Lipid	<input type="text" value=""/> g/kg	<input type="text" value="1.00 - 2.00"/> g/kg	<input type="text" value="0"/> g	<input type="text" value="0"/> kcal
Protein	<input type="text" value="1"/> g/kg	<input type="text" value="1.00 - 3.00"/> g/kg	<input type="text" value="65"/> g	<input type="text" value="260"/> kcal
L-Glutamin	<input type="text" value="0"/> ml/kg	<input type="text" value="0.00 - 0.00"/> ml/kg	<input type="text" value=""/> ml	<input type="text" value="0"/> kcal
Carbohydrate:Lipid (kcal)	<input type="text" value="0 : 0"/>	Nitrogen Content	<input type="text" value="11"/> g	NPC:NRatio
			<input type="text" value="0 : 1"/>	Total
				<input type="text" value="260"/> kcal

Electrolytes	By weight	Recommended range(per kg)	Per day
Sodium(Natrium),Na+	<input type="text" value=""/> mmol/kg	<input type="text" value="1.00 - 3.00"/> mmol/kg	<input type="text" value="0"/> mmol
Potassium(Kalium),K+	<input type="text" value="2"/> mmol/kg	<input type="text" value="1.00 - 3.00"/> mmol/kg	<input type="text" value="130"/> mmol
Calcium,Ca2+	<input type="text" value=""/> mmol/kg	<input type="text" value="0.50 - 1.25"/> mmol/kg	<input type="text" value="0"/> mmol
Magnesium,Mg+	<input type="text" value=""/> mmol/kg	<input type="text" value="0.15 - 0.25"/> mmol/kg	<input type="text" value="0"/> mmol
Phosphate,(PO4)2-	<input type="text" value=""/> mmol/kg	<input type="text" value="0.50 - 1.00"/> mmol/kg	<input type="text" value="0"/> mmol
Chloride,Cl+	<input type="text" value=""/> mmol/kg	<input type="text" value="2.00 - 5.00"/> mmol/kg	<input type="text" value="0"/> mmol
Acetate(CH3COO)	<input type="text" value=""/> mmol/kg	<input type="text" value="0.00 - 0.00"/> mmol/kg	<input type="text" value="0"/> mmol
Trace elements	<input type="text" value=""/> ml/kg	<input type="text" value="0.00 - 15.00"/> ml	<input type="text" value=""/> ml

Vitamin: Single Vitamin Multi Vitamin

ADMINISTRATION INFO

Volume: <input type="text" value="2700"/> ml	Indication for PN: <input type="text" value="Acute Pancreatitis"/>
Frequency: <input type="text" value="OD"/>	Infusion Line: <input type="text" value="Central"/>
Start Date/Time: <input type="text" value="20/10/2016 05:00 PM"/>	Duration: <input type="text" value="1"/> Days
End Date/Time: <input type="text" value="21/10/2016 05:00 PM"/>	Infusion Over: <input type="text" value="24"/> hours
Order Quantity: <input type="text" value="1"/> BAG	Dispense Location: <input type="text" value="PHARMACY OUTPATIENT"/>

Remarks:

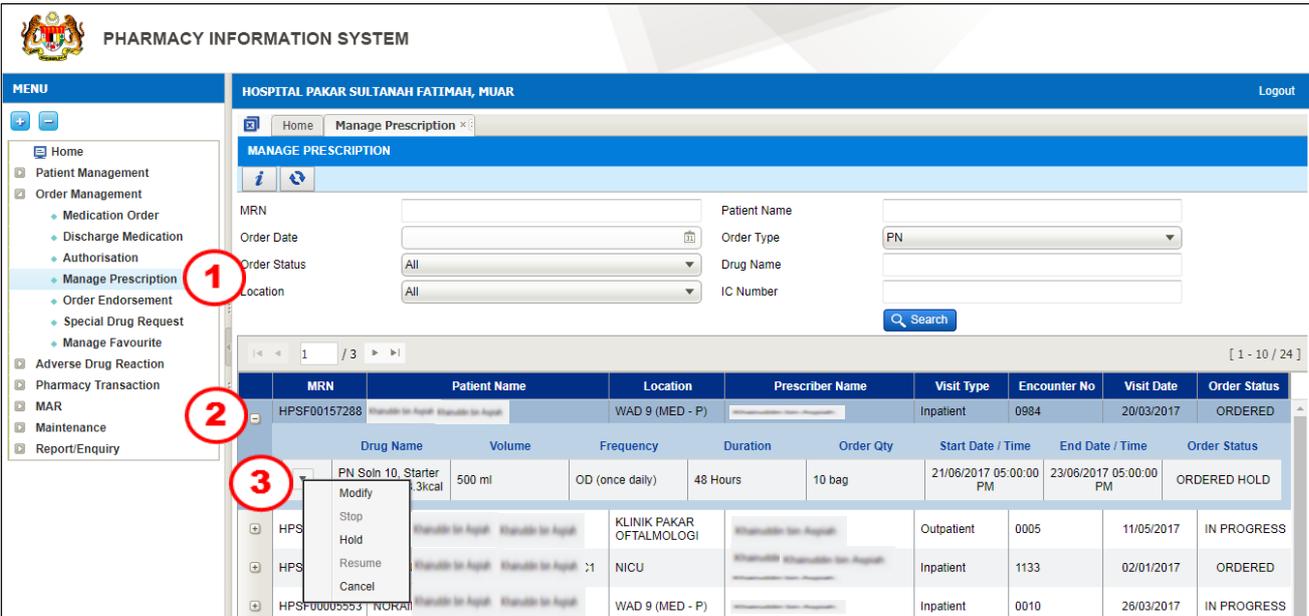
PRESCRIPTION

Drug Name	Total Volume ml per kg (ml)	Total calorie kcal per kg (kcal)	Infusion Over (hour)	Quantity	Freq	Duration	Start date	End date	
PN Compounded Paediatric	41.54 (2700)	4 (260)	24	1 BAG	OD	1 Days	20/10/2016 05:00 PM	21/10/2016 05:00 PM	
Phosphate mmol per kg (mmol)	Sodium mmol per kg (mmol)	Potassium mmol per kg (mmol)	Calcium mmol per kg (mmol)	Magnesium mmol per kg (mmol)	Acetate mmol per kg (mmol)	Trace Element ml per kg (ml)	Fat Soluble Vit. ml per kg (ml)	Water Soluble Vit. ml per kg (ml)	Multi Vitamin ml per kg (ml)
NA	NA	2 (130)	NA	NA	NA	NA	NA	NA	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			
1 (65)	NA		NA	NA	NA	Central			

Figure 3.2.1-2 Drug Details

3.2.2 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.



PHARMACY INFORMATION SYSTEM

HOSPITAL PAKAR SULTANAH FATIMAH, MUAR Logout

Home Manage Prescription ×

MANAGE PRESCRIPTION

MRN: Patient Name:
 Order Date: Order Type:
 Order Status: Drug Name:
 Location: IC Number:

MRN	Patient Name	Location	Prescriber Name	Visit Type	Encounter No	Visit Date	Order Status																
HPSF00157288	Shahzidi bin Asyraf Shahzidi bin Asyraf	WAD 9 (MED - P)		Inpatient	0984	20/03/2017	ORDERED																
<table border="1"> <thead> <tr> <th>Drug Name</th> <th>Volume</th> <th>Frequency</th> <th>Duration</th> <th>Order Qty</th> <th>Start Date / Time</th> <th>End Date / Time</th> <th>Order Status</th> </tr> </thead> <tbody> <tr> <td>PN Soln 10, Starter 1.3kcal</td> <td>500 ml</td> <td>OD (once daily)</td> <td>48 Hours</td> <td>10 bag</td> <td>21/06/2017 05:00:00 PM</td> <td>23/06/2017 05:00:00 PM</td> <td>ORDERED HOLD</td> </tr> </tbody> </table>								Drug Name	Volume	Frequency	Duration	Order Qty	Start Date / Time	End Date / Time	Order Status	PN Soln 10, Starter 1.3kcal	500 ml	OD (once daily)	48 Hours	10 bag	21/06/2017 05:00:00 PM	23/06/2017 05:00:00 PM	ORDERED HOLD
Drug Name	Volume	Frequency	Duration	Order Qty	Start Date / Time	End Date / Time	Order Status																
PN Soln 10, Starter 1.3kcal	500 ml	OD (once daily)	48 Hours	10 bag	21/06/2017 05:00:00 PM	23/06/2017 05:00:00 PM	ORDERED HOLD																
HPS	Stop	Shahzidi bin Asyraf Shahzidi bin Asyraf	KLINIK PAKAR OFTALMOLOGI	Shahzidi bin Asyraf	Outpatient	0005	11/05/2017	IN PROGRESS															
HPS	Hold	Shahzidi bin Asyraf Shahzidi bin Asyraf	NICU	Shahzidi bin Asyraf	Inpatient	1133	02/01/2017	ORDERED															
HPSF00005553	NORAI	Shahzidi bin Asyraf Shahzidi bin Asyraf	WAD 9 (MED - P)	Shahzidi bin Asyraf	Inpatient	0010	26/03/2017	IN PROGRESS															

Figure 3.2.2-1 Manage Order

STEP 1

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

Note

- Prescriber have the options to view patient by click the check box :-
 - Show All
- By default list of patient will be displayed according to prescriber location access.
- Various search criteria is provided as below:
 - MRN
 - Patient Name
 - Order Date
 - Order Type
 - Order Status
 - Drug name
 - Location

STEP 2

Click on the  expand button to display order details as per Figure 3.2.2-1

STEP 3

Right click mouse on the  button and select **Hold** as per Figure 3.2.2-1



Note

- System will hold order from dispensing and changed **Order Status** to Hold.
- To resume hold order, repeat step 1 to 3 but instead of selecting **Hold** function, select **Resume** function. System will allow order for dispensing.

3.2.3 Cancel / Stop Order

Cancel and Stop Order screen allow user to cancel and stop prescription which is wrongly prescribe or need to stop the medication.

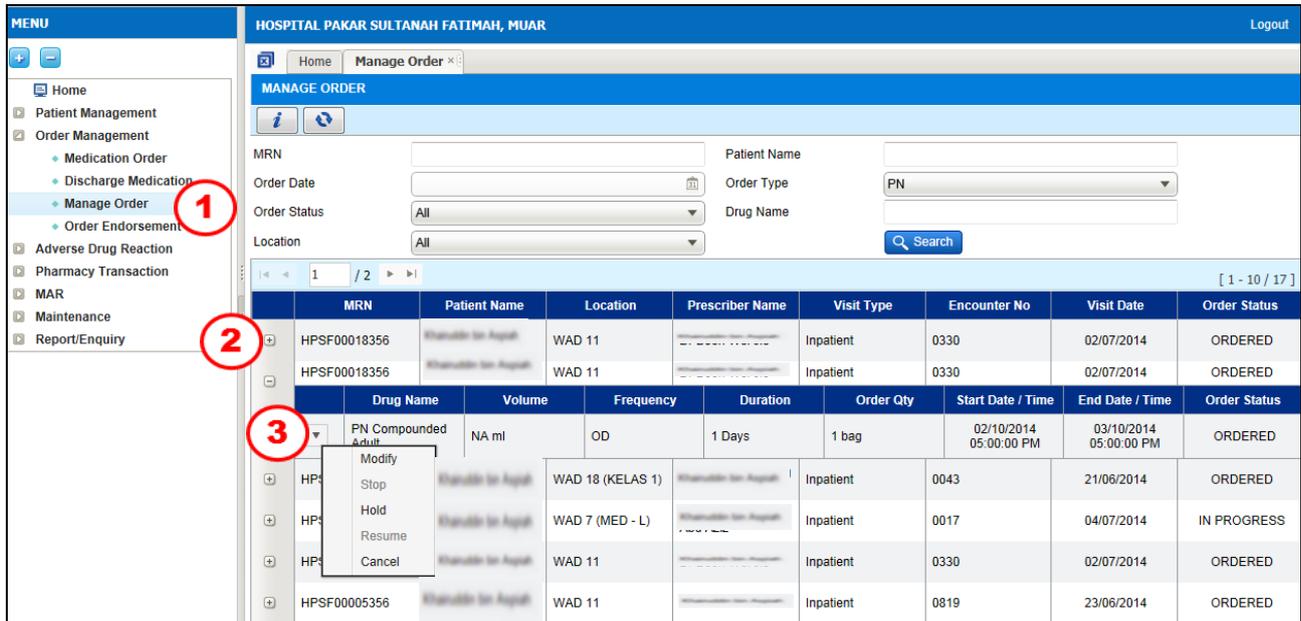


Figure 3.2.3-1 Manage Order

MRN	Patient Name	Location	Prescriber Name	Visit Type	Encounter No	Visit Date	Order Status
HPSF00018356	Available for Approval	WAD 11	Available for Approval	Inpatient	0330	02/07/2014	ORDERED
HPSF00018356	Available for Approval	WAD 11	Available for Approval	Inpatient	0330	02/07/2014	ORDERED

Drug Name	Volume	Frequency	Duration	Order Qty	Start Date / Time	End Date / Time	Order Status
PN Compounded Adult	NA ml	OD	1 Days	1 bag	02/10/2014 05:00:00 PM	03/10/2014 05:00:00 PM	ORDERED
HPF	Available for Approval	WAD 18 (KELAS 1)	Available for Approval	Inpatient	0043	21/06/2014	ORDERED
HPF	Available for Approval	WAD 7 (MED - L)	Available for Approval	Inpatient	0017	04/07/2014	IN PROGRESS
HPF	Available for Approval	WAD 11	Available for Approval	Inpatient	0330	02/07/2014	ORDERED
HPSF00005356	Available for Approval	WAD 11	Available for Approval	Inpatient	0819	23/06/2014	ORDERED

Figure 3.2.3-1 Manage Order

STEP 1

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

Note

- Prescriber have the options to view patient by click the check box :-
 - a) Show All
- By default list of patient will be displayed according to prescriber location access.
- 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

STEP 2

Click on the  expand button to display order details as per Figure 3.2.3-1

STEP 3

Right click mouse on the  button and select **Cancel** as per Figure 3.2.3-1

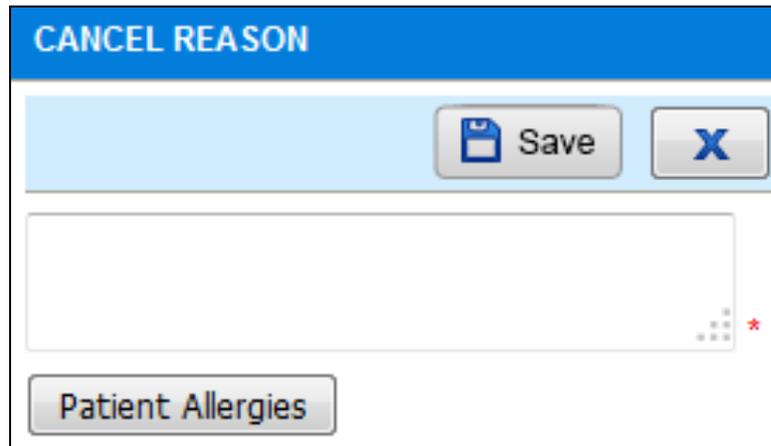


Figure 3.2.3-2 Cancel Reason

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 3.2.3-2.
- Enter reason for cancel order and click on the  Save button to save record.
- Select **Stop** function to stop order that has dispensed to patient as per Figure 3.2.3-1.

3.3 Order Endorsement

Order Endorsement screen allow user to endorse the prescription.

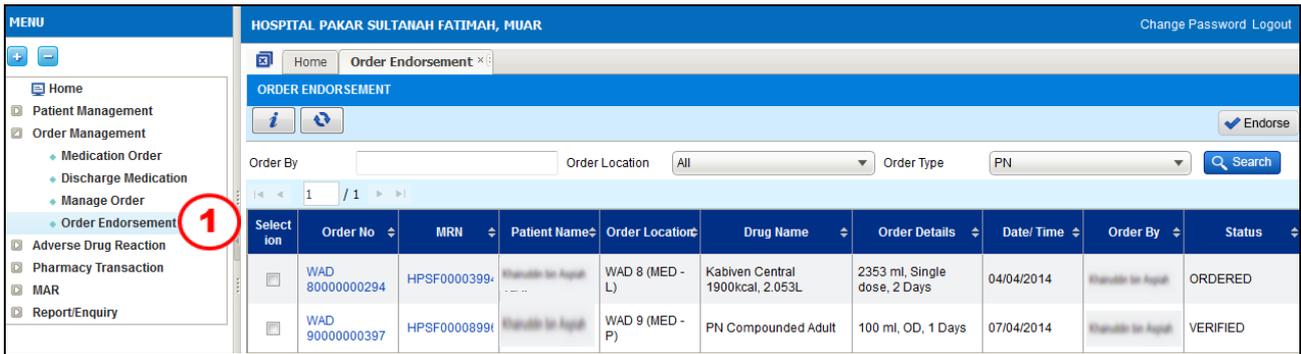


Figure 3.3-1 Medication Order Endorsement

STEP 1

Click on 'Order Management' menu and click on 'Order Endorsement' sub-menu

Note

- Prescriber have the options to view patient by click the check box :-
 - Show All
- By default list of patient will be displayed according to prescriber location access.
- Various search criteria is provided as below:
 - Order By
 - Order Location
 - Order Type

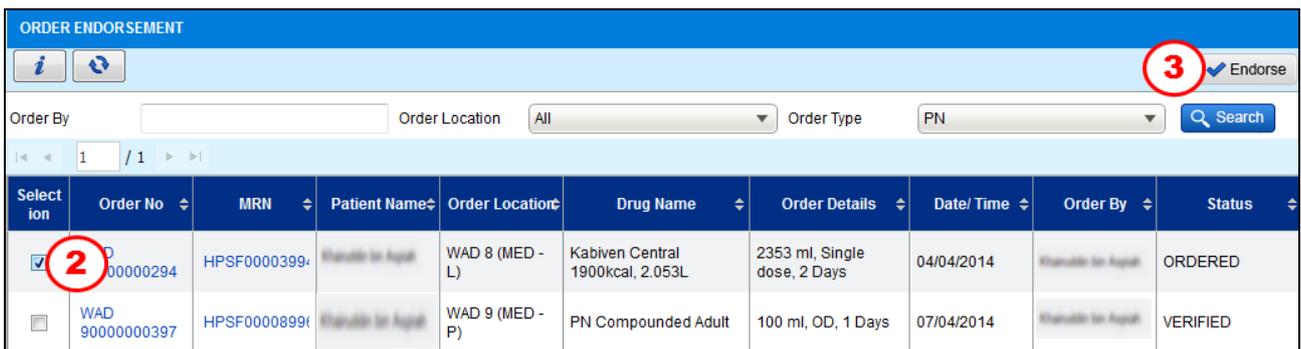


Figure 3.3-2 Medication Order Endorsement

STEP 2

Click the selection checkbox as per Figure 3.3-2

STEP 3

Click on the button to confirm endorsement order

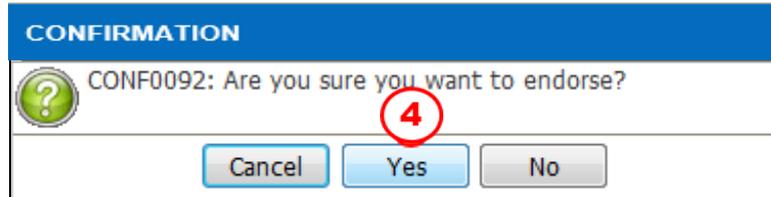


Figure 3.3-3 Confirm Order Endorsement Alert Message

STEP 4

Click on the button to endorse the order

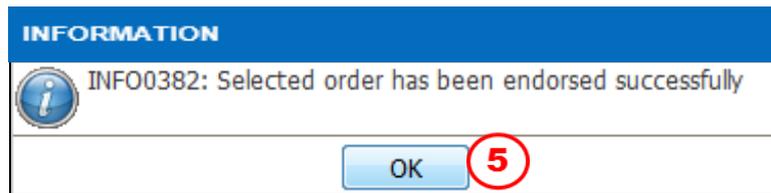


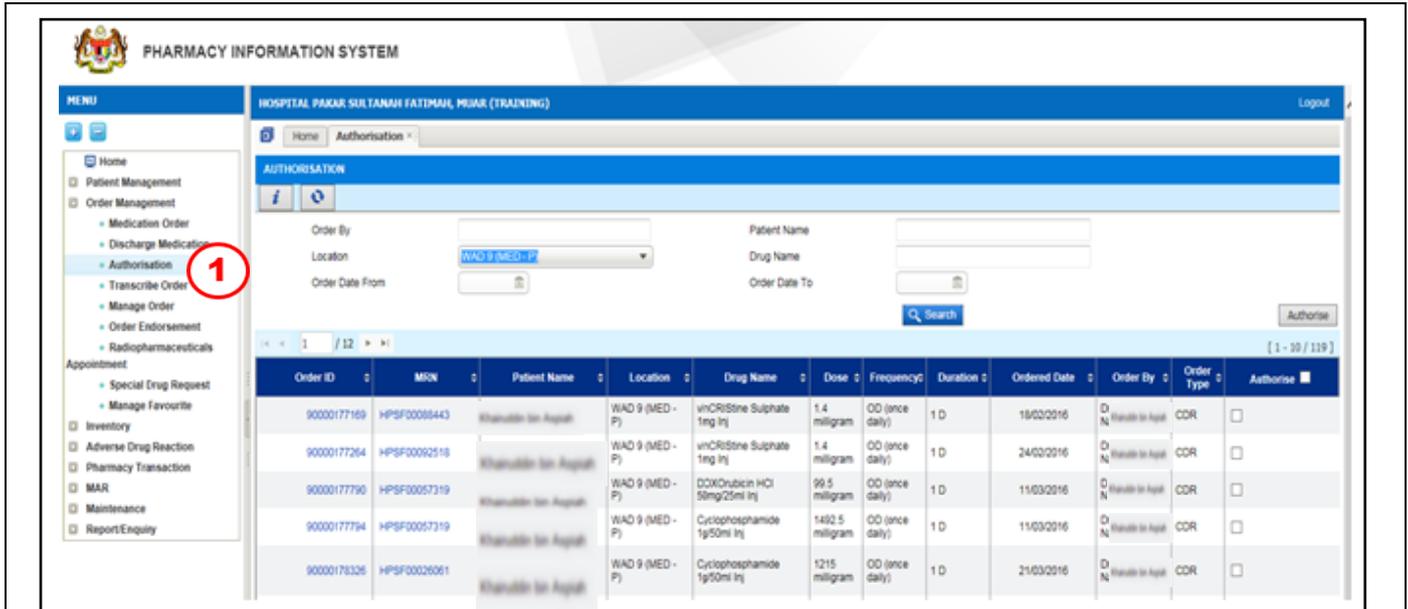
Figure 3.3-4 Information Alert Message

STEP 5

Click on the button to successfully endorsed the order

3.4 Authorization

Authorisation screen allow user to authorise the drugs.



Order ID	MRN	Patient Name	Location	Drug Name	Dose	Frequency	Duration	Ordered Date	Order By	Order Type	Authorise
90000177169	HPSF00086443	Khanabir bin Asyraf	WAD 9 (MED - P)	vinCRStine Sulphate 1mg Inj	1.4 milligram	OD (once daily)	1 D	18/02/2016	D N Khanabir bin Asyraf	CDR	<input type="checkbox"/>
90000177264	HPSF00092518	Khanabir bin Asyraf	WAD 9 (MED - P)	vinCRStine Sulphate 1mg Inj	1.4 milligram	OD (once daily)	1 D	24/02/2016	D N Khanabir bin Asyraf	CDR	<input type="checkbox"/>
90000177790	HPSF00057319	Khanabir bin Asyraf	WAD 9 (MED - P)	DOXOrubicin HCl 50mg/25ml Inj	99.5 milligram	OD (once daily)	1 D	11/03/2016	D N Khanabir bin Asyraf	CDR	<input type="checkbox"/>
90000177794	HPSF00057319	Khanabir bin Asyraf	WAD 9 (MED - P)	Cyclophosphamide 1g/50ml Inj	1492.5 milligram	OD (once daily)	1 D	11/03/2016	D N Khanabir bin Asyraf	CDR	<input type="checkbox"/>
90000178326	HPSF00026061	Khanabir bin Asyraf	WAD 9 (MED - P)	Cyclophosphamide 1g/50ml Inj	1215 milligram	OD (once daily)	1 D	21/03/2016	D N Khanabir bin Asyraf	CDR	<input type="checkbox"/>

Figure 3.4-1 Order Authorisation

STEP 1

Click on 'Order Management' menu and click on 'Authorisation' sub-menu

Note

- Prescriber have the options to view patient by click the check box :-
 - a) Show All
- By default list of patient will be displayed according to prescriber location access.
- Various search criteria is provided as below:
 - a) Order By
 - b) Patient Name
 - c) Location
 - d) Drug Name
 - e) Order Date From
 - f) Order Date To

AUTHORISATION

Order By:

Location: WAD 9 (MED - P)

Order Date From:

Patient Name:

Drug Name:

Order Date To:

Order ID	MRN	Patient Name	Location	Drug Name	Dose	Frequency	Duration	Ordered Date/Time	Order By	Order Type	Authorise
WAD 9000000176	HPSF0000332	Available to Input	WAD 9 (MED - P)	Kabiven Central 1400kcal, 1.54L	1540.0 ml		1 Days	28/03/2014 02:10:23 PM	Available to Input	PN	<input checked="" type="checkbox"/>
WAD 9000000221	HPSF0000499	Available to Input	WAD 9 (MED - P)	Mesna 400mg/4ml Inj	200.0 mg		Days: 1,2,3,4,5	31/03/2014 05:32:26 PM	Available to Input	CDR	<input type="checkbox"/>
WAD 9000000221	HPSF0000499	Available to Input	WAD 9 (MED - P)	Etoposide 100mg/5ml Inj	100.0 mg		Days: 1,2,3	31/03/2014 05:32:26 PM	Available to Input	CDR	<input type="checkbox"/>

Figure 3.4-2 Authorisation

STEP 2

Check the authorise checkbox as per Figure 3.4-2

STEP 3

Click on the button to approve order

CONFIRMATION

CONF2004: Do you want to authorise the order?

Figure 3.4-3 Authorize Order Alert Message

STEP 4

Click on the button to authorise 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		