

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

Pharmacy Based User Manual Radiopharmaceuticals

Version	: 10th EDITION
Document ID	: PB_U. MANUAL_RADIOPHARMACEUTICALS



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Reference ID : PB_U. MANUAL_RADIOPHARMACEUTICALS-10th EDITION

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

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1.0 Introduction

1.1 Overview of PhIS

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

There are 12 modules to assist service 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 (CDR), Parenteral Nutrition (PN), IV Admixture & Eye Drop, Radiopharmaceuticals and Extemporaneous
8. Adverse Drug Reaction & Drug Allergic Card (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 Radiopharmaceuticals module and its key features and functionalities. The primary objective is to guide users through the process of completing PhIS application process.

User will understand the following activities in details:

- Radiopharmaceuticals Appointment
- Radiopharmaceuticals Oder
- Radiopharmaceuticals Dispensing
- Radiopharmaceuticals Manufacturing





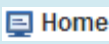











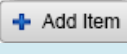
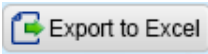





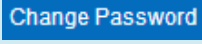











1.3 Organised Sections

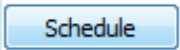

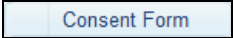

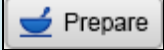



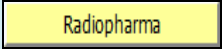

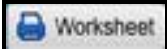

These are the sections within this document:

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

2.0 Application Standard Features

2.1 PhIS Legend

Standard Legend			
	Login to PhIS		Logout from PhIS
	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
	Export and Open Report in Excel Format		Automatically Display/Retrieve Box
	Request for Approval		Cancel the Request
	Send for Approval		Approve Transaction
	Change Login Password		Collapse Menu
	Collapse Module		Search Record
	Print		Search Icon
	Checkbox		Delete Record
	Delete Item from the list		Empty Text Box
	Dropdown Box		Reject Transaction

Module Legend			
	Schedule button		Confirmation button
	Consent form		Verification
	Preparation		Dispensing
	Submission Approval		Printing/Editing Label
	Radiopharmaceuticals		Calculation Activity Radiopharmaceuticals
	Generate the worksheet		Release Batch

Note

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

3.0 Radiopharmaceuticals

Overview

This module will be used by the user at the

User Group

This module is intended for Doctor, Specialist and Pharmacist (subject to user assigned by the facility).

Functional Diagram

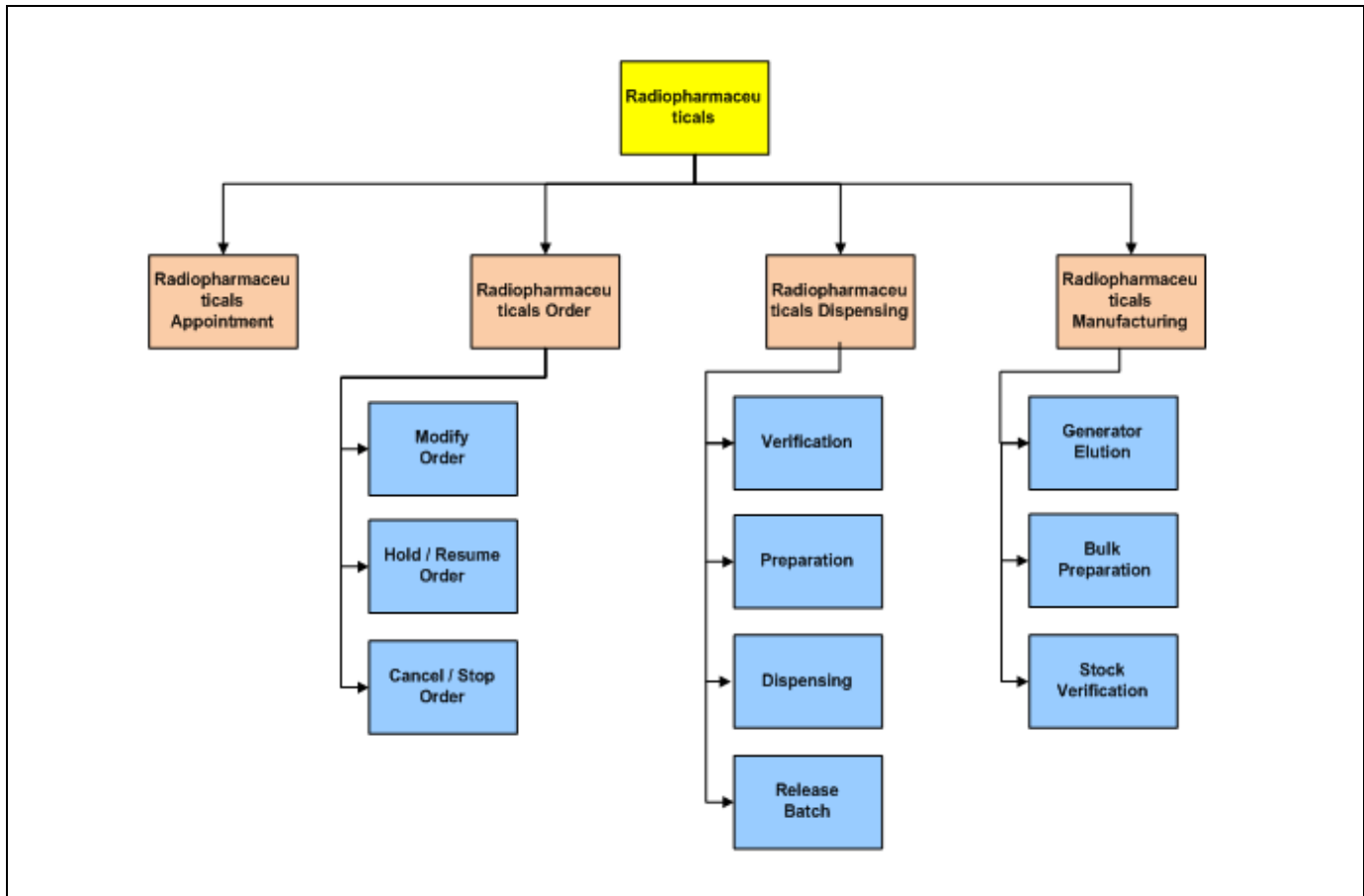


Figure 3.0-1

Functional Description

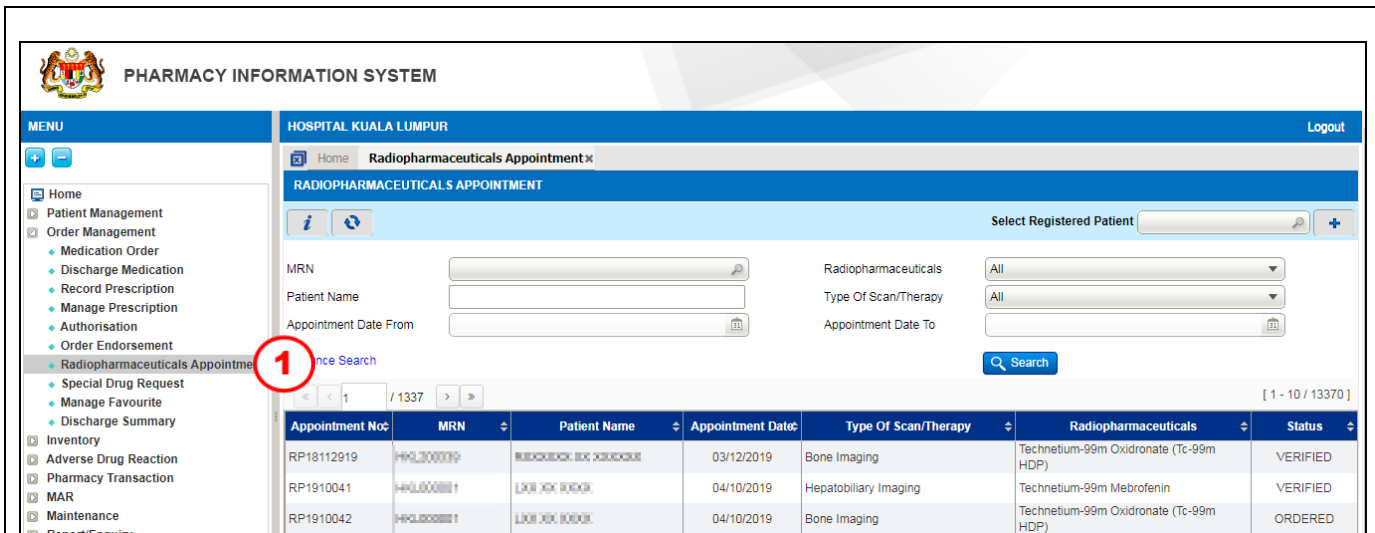
Slow Moving comprises of three (4) main functions:

- **Radiopharmaceuticals Appointment**
This function allows user to create an Appointment for the patient
- **Radiopharmaceuticals Order**
This function is used for user to create an order for Radiopharmaceutical
- **Radiopharmaceuticals Dispensing**
This function allows user to dispense Radiopharmaceutical order
- **Radiopharmaceuticals Manufacturing**

3.1 Radiopharmaceuticals

3.1.1 Create New Appointment

Radiopharmaceuticals Appointment screen will allow user to create appointment for the purpose of scanning and therapy for patient.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR Logout

Home Radiopharmaceuticals Appointment

RADIOPHARMACEUTICALS APPOINTMENT

Select Registered Patient

MRN Radiopharmaceuticals

Patient Name Type Of Scan/Therapy

Appointment Date From Appointment Date To

[Advanced Search](#)

[1 - 10 / 13370]

Appointment No	MRN	Patient Name	Appointment Date	Type Of Scan/Therapy	Radiopharmaceuticals	Status
RP18112919	HL00000000	REXEXEXEX XEXEXEX	03/12/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	VERIFIED
RP1910041	HL00000001	LIX XEX XEXEX	04/10/2019	Hepatobiliary Imaging	Technetium-99m Mebrofenin	VERIFIED
RP1910042	HL00000001	LIX XEX XEXEX	04/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	ORDERED

Figure 3.1-1 Radiopharmaceuticals Appointment Listing Page

STEP 1

Click on 'Order Management' and select 'Radiopharmaceuticals Appointment' sub-menu as per Figure 3.1-1

Note

- User have the options to view existing appointment records by clicking the check box :-
 - Show All
- Various search criteria is provided as below:
 - MRN
 - Radiopharmaceuticals
 - Patient Name
 - Appointment no
 - Status
 - Appointment Date From
 - Appointment Date To
- By default list of existing appointments will be displayed based on current system date
- Click on the [Advanced Search](#) hyperlink for advance search.

HOSPITAL KUALA LUMPUR Logout

Home Radiopharmaceuticals Appointment

RADIOPHARMACEUTICALS APPOINTMENT

MRN

Patient Name

Appointment Date From

Advance Search

1 / 1337

Select Registered Patient 2

Patient Search

Patient MRN 3 Patient Name 4

IC No/Other Identification

Search


1 / 23439 [1 - 10 / 234390]

Patient MRN	Patient Name	IC No/Other Identification
HL000001	LOK, EK XXXX	5-1130-185493
HL000002	SHROOUI, JOOI XXXX	
HL000003	SH, JOOXX	
HL000004	NOU, JOOXX	
HL000005	SH, JOO, JOO	978 107148008
HL000006	AJOXX	
HL000007	TKOXXOXX	1-11802141028
HL000008	LOK, JOO, JOO	9488 15185048
HL000009	LOO, JOOXX JOO	118804288208
HL000010	SHOXX JOO, JOO	588311085812

Appointment No	MRN	Patient Name	Ap
RP18112919	HL000009	SHROOUI, JOO, JOOXX	
RP1910041	HL000001	LOK, EK XXXX	
RP1910042	HL000001	LOK, EK XXXX	
RP1909121	HL000005	SH, JOOXX, JOOXX JOO, JOO	
RP1909031	HL0015511	COXX JOO, JOO	
RP1909041	HL0015512	COXX JOOXX JOO	
	HL00000000	SHROOUI, X JOOXXOXX	

Figure 3.1.1-2 Radiopharmaceuticals Appointment


STEP 2

Click on the  button to search for registered patient and system will be displayed as per Figure 3.1.1-2

STEP 3

Enter patient name at 'Patient name' field

STEP 4

Click on  button to search patient name and system will be displayed as per Figure 3.1.1-2

HOSPITAL KUALA LUMPUR Logout

Home Radiopharmaceuticals Appointment

RADIOPHARMACEUTICALS APPOINTMENT

MRN

Patient Name

Appointment Date From

Advance Search

1 / 1337

Select Registered Patient Select Registered Patient

Patient Search

Patient MRN Patient Name

IC No/Other Identification

Search

1 / 1 [1 - 1 / 1]

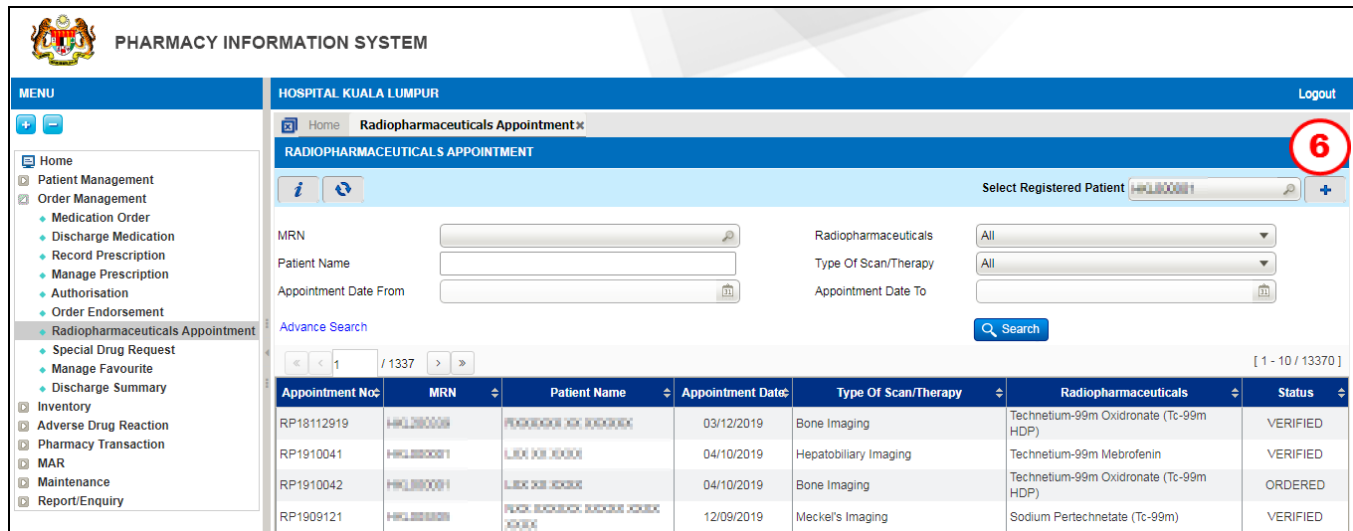
Patient MRN	Patient Name	IC No/Other Identification
HL000001	LOK, EK XXXX	5-1130-185493

Appointment No	MRN	Patient Name	Ap	Procedure	Radioisotope	Status
RP18112919	HL000009	SHROOUI, JOO, JOOXX	03/12/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	VERIFIED
RP1910041	HL000001	LOK, EK XXXX	04/10/2019	Hepatobiliary Imaging	Technetium-99m Mebrofenin	VERIFIED
RP1910042	HL000001	LOK, EK XXXX	04/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	ORDERED
RP1909121	HL000005	SH, JOOXX, JOOXX JOO, JOO	12/09/2019	Meckel's Imaging	Sodium Pertechnetate (Tc-99m)	VERIFIED
RP1909031	HL0015511	COXX JOO, JOO	04/09/2019	Pheochromocytoma imaging	Iodine-131 Metaiodobenzylguanidine (I-131 MIBG) 1 mCi	VERIFIED
RP1909041	HL0015512	COXX JOOXX JOO	04/09/2019	Neuroendocrine Tumor Therapy	Iodine-131 Metaiodobenzylguanidine (I-131 MIBG) 200mCi	VERIFIED

Figure 3.1.1-3 Radiopharmaceuticals Appointment

STEP 5

Double click on the patient name and system will be displayed as per Figure 3.1.1-3



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Logout

Home Radiopharmaceuticals Appointment

RADIOPHARMACEUTICALS APPOINTMENT

Select Registered Patient: [Patient Name] +

MRN: [Field] Radiopharmaceuticals: [All] Type Of Scan/Therapy: [All] Appointment Date To: [Field]

Advance Search [Search]

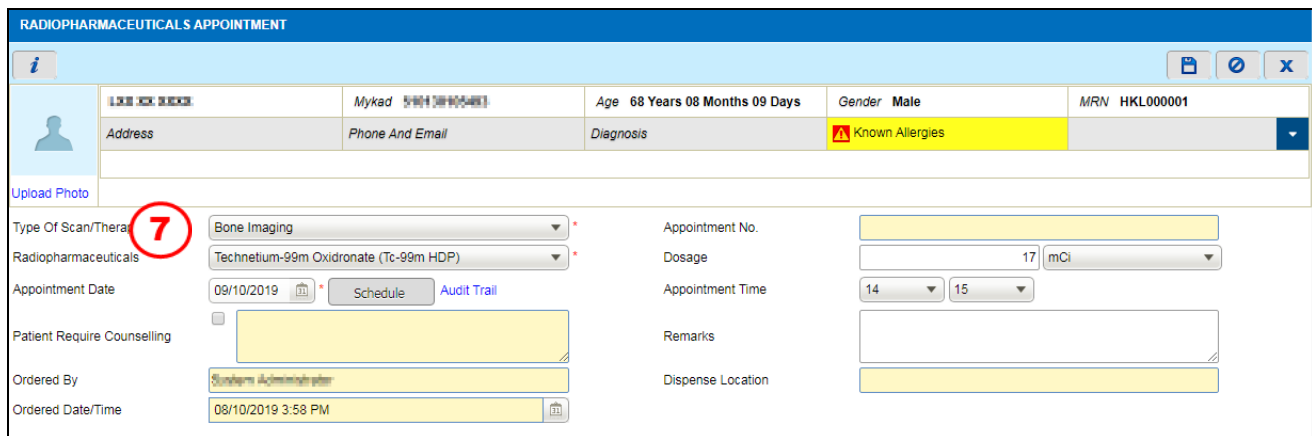
[1 - 10 / 13370]

Appointment No	MRN	Patient Name	Appointment Date	Type Of Scan/Therapy	Radiopharmaceuticals	Status
RP18112919	HKL000006	XXXXXXXXXX	03/12/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	VERIFIED
RP1910041	HKL000001	XXXXXX	04/10/2019	Hepatobiliary Imaging	Technetium-99m Mebrofenin	VERIFIED
RP1910042	HKL000001	XXXXXX	04/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	ORDERED
RP1909121	HKL000001	XXXXXXXXXX	12/09/2019	Meckle's Imaging	Sodium Pertechnetate (Tc-99m)	VERIFIED

Figure 3.1.1-4 Radiopharmaceuticals Appointment

STEP 6

Click on + button to create new radiopharma appointment record and system will be displayed as per Figure 3.1.1-4



RADIOPHARMACEUTICALS APPOINTMENT

Mykad: [Field] Age: 68 Years 08 Months 09 Days Gender: Male MRN: HKL000001

Address: [Field] Phone And Email: [Field] Diagnosis: [Field] Known Allergies: [Field]

Upload Photo

Type Of Scan/Therapy: [7] Bone Imaging Appointment No.: [Field]

Radiopharmaceuticals: [7] Technetium-99m Oxidronate (Tc-99m HDP) Dosage: [Field] 17 mCi

Appointment Date: 09/10/2019 Schedule Audit Trail Appointment Time: [Field] 14 [Field] 15

Patient Require Counselling: [Field] Remarks: [Field]

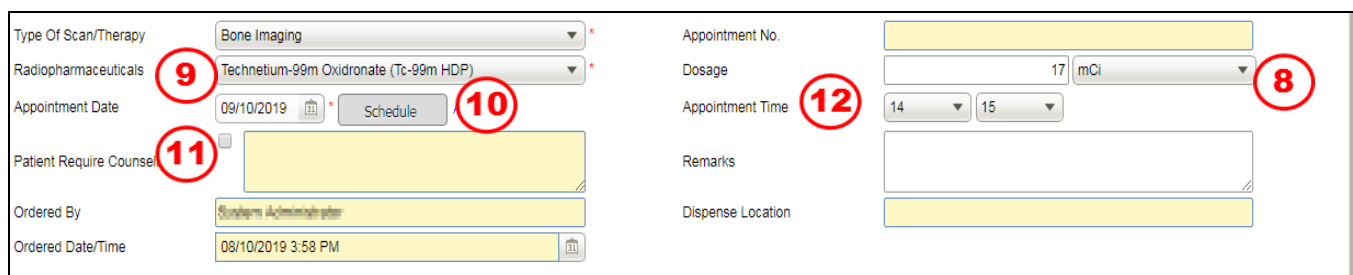
Ordered By: [Field] Dispense Location: [Field]

Ordered Date/Time: 08/10/2019 3:58 PM

Figure 3.1.1-5 Radiopharmaceuticals Appointment

STEP 7

Select **Type Of Scan/Therapy** from the drop down box and system will be displayed as per Figure 3.1.1-5



Type Of Scan/Therapy: [Field] Appointment No.: [Field]

Radiopharmaceuticals: [9] Technetium-99m Oxidronate (Tc-99m HDP) Dosage: [Field] 17 mCi [8]

Appointment Date: 09/10/2019 [10] Schedule Appointment Time: [12] 14 [Field] 15

Patient Require Counselling: [11] [Field] Remarks: [Field]

Ordered By: [Field] Dispense Location: [Field]

Ordered Date/Time: 08/10/2019 3:58 PM

Figure 3.1.1-6 Radiopharmaceuticals Appointment

Note

After enter **Type of Scan/Therapy** field, **Radiopharmaceuticals** field will be automatically displayed as per Figure 3.1.1-6.

STEP 8

Enter **Amount** MBq field. The UOM displayed will be based on the Radiopharmaceuticals SKU in Drug Master

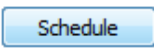
STEP 9

Select **Date** field for appointment

Note

Date field is mandatory field

STEP 10

Click on the  button to check for available date for appointment

STEP 11

Check on the  **Counseling Indicator** checkbox if applicable

STEP 12

Select **Appointment Time** for appointment (hours and minutes) from the drop down box

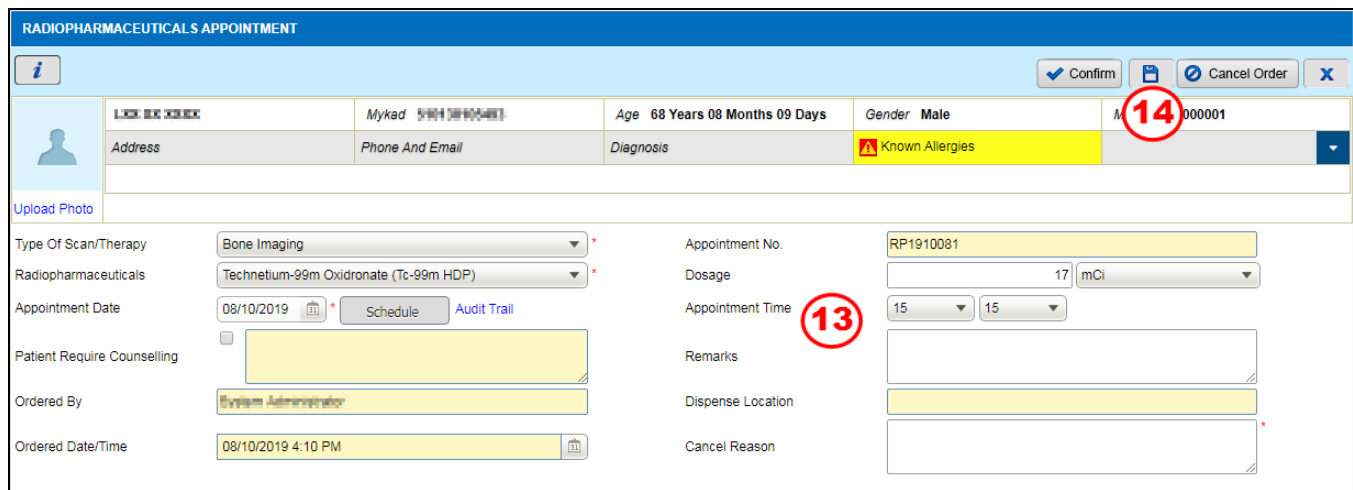


Figure 3.1.1-7 Radiopharmaceuticals Appointment


STEP 13

Enter **Remarks** if applicable

Note

- **Ordered By** and **Ordered Date/Time** will automatically generate by system.
- **Dispense Location** will only be automatically generated in Medication Order Radiopharmaceuticals screen. Not in Radiopharmaceuticals screen.

STEP 14

Click on the save  button to save record and alert message will be displayed as per Figure 3.1.1-7

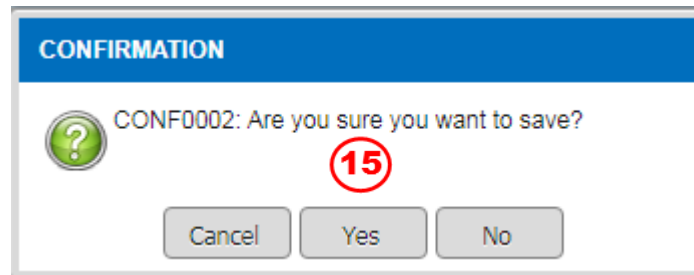



Figure 3.1.1-8 Save Record Alert Message

STEP 15

Click on the  button to generate number for scan appointment and alert message will be displayed as per Figure 3.1.1-8

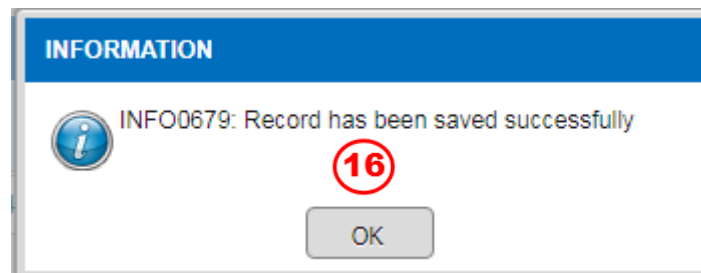


Figure 3.1.1-9 Save Record Alert Message

STEP 16

Click on the  button to save and update Radipharma Pharmaceuticals Appointment order


Note

Record status is updated to Draft.

RADIOPHARMACEUTICALS APPOINTMENT				
<div> <div> </div> <div> <div>Confirm</div> <div> </div> <div> Cancel Order </div> <div> </div> </div> </div>				
<div> </div> <div> <div> <div>XXXXXX</div> </div> <div> <div>Address</div> </div> </div> <div> Upload Photo </div>	<div> <div>Mykad XXXXXXXX</div> </div> <div> <div>Phone And Email</div> </div>	<div> <div>Age 68 Years 08 Months 09 Days</div> </div> <div> <div>Diagnosis</div> </div>	<div> <div>Gender Male</div> </div> <div> <div>Known Allergies</div> </div>	<div> <div>17</div> </div> <div> <div>MRN HKL000001</div> </div>
<div> <div>Type Of Scan/Therapy</div> <div>Bone Imaging</div> </div> <div> <div>Radiopharmaceuticals</div> <div>Technetium-99m Oxidronate (Tc-99m HDP)</div> </div> <div> <div>Appointment Date</div> <div>08/10/2019</div> <div> <div>Schedule</div> <div>Audit Trail</div> </div> </div> <div> <div>Patient Require Counselling</div> <div> <input type="checkbox"/> </div> </div> <div> <div>Ordered By</div> <div>System Administrator</div> </div> <div> <div>Ordered Date/Time</div> <div>08/10/2019 4:10 PM</div> </div>	<div> <div>Appointment No.</div> <div>RP1910081</div> </div> <div> <div>Dosage</div> <div>17 mCi</div> </div> <div> <div>Appointment Time</div> <div>15:15</div> </div> <div> <div>Remarks</div> <div></div> </div> <div> <div>Dispense Location</div> <div></div> </div> <div> <div>Cancel Reason</div> <div></div> </div>			

Figure 3.1.1-10 Radiopharmaceuticals Appointment

STEP 17

Click on the  button and system will display alert message as per Figure 3.1.1-11

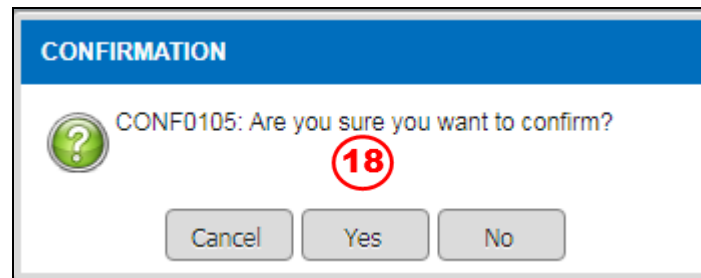


Figure 3.1.1-11 Confirm Order Alert Message

STEP 18

Click on the  button to confirm order

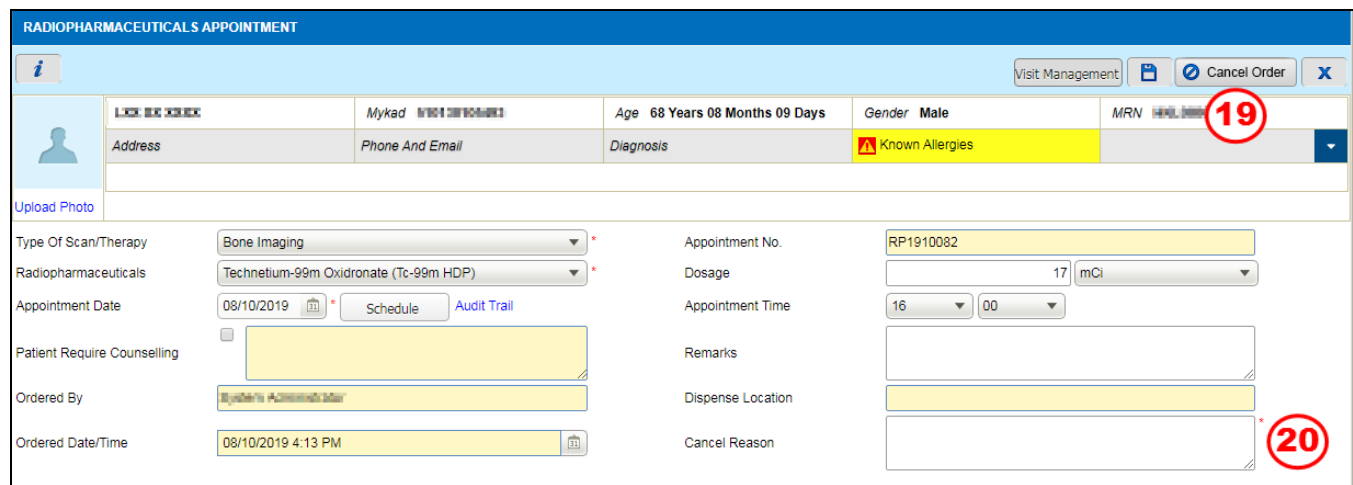




Figure 3.1-12 Radiopharmaceuticals Appointment

STEP 19

Click on the  button to cancel Radiopharmaceuticals Appointment

STEP 20

Enter cancel reason


PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR
Logout

Home Radiopharmaceuticals Appointment

RADIOPHARMACEUTICALS APPOINTMENT

Select Registered Patient

MRN

Patient Name

Appointment Date From 08/10/2019

Radiopharmaceuticals All

Type Of Scan/Therapy All

Appointment Date To 08/10/2019

Advance Search

Search

[1 - 2 / 2]

Appointment No	MRN	Patient Name	Appointment Date	Type Of Scan/Therapy	Radiopharmaceuticals	Status
RP1910081	H12345678	LIKH JIA SUKSI	08/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	DRAFT
RP1910082	H12345678	LIKH JIA SUKSI	08/10/2019	Bone Imaging	Technetium-99m Oxidronate (Tc-99m HDP)	NEW

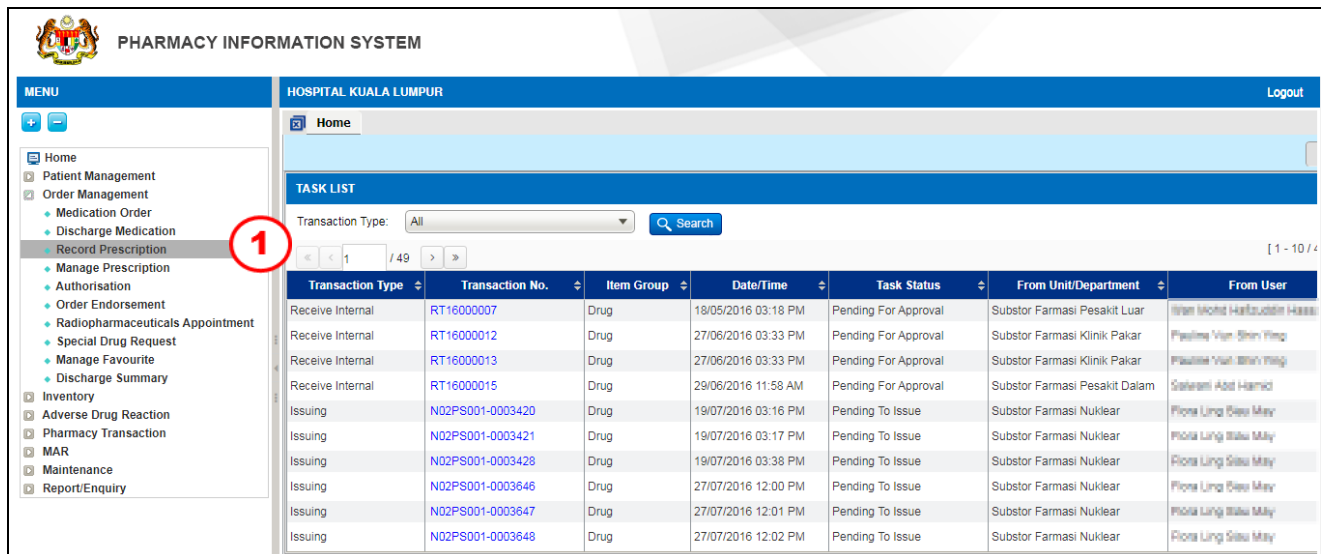
Figure 3.1.1-13 Radiopharmaceuticals Appointment

Note

Record status is updated to New as per Figure 3.1.1-13.

3.2 Search Registered Patient

To view an existing patient record, please perform the steps below.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR Logout

Home

TASK LIST

Transaction Type: All Search

<< < 1 > >> / 49 [1 - 10 / 4

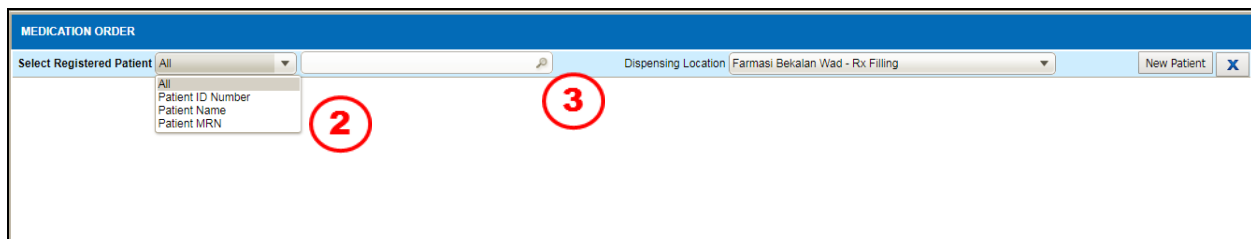
Transaction Type	Transaction No.	Item Group	Date/Time	Task Status	From Unit/Department	From User
Receive Internal	RT16000007	Drug	18/05/2016 03:18 PM	Pending For Approval	Substor Farmasi Pesakit Luar	Wan Mohd Hafizudin Hassan
Receive Internal	RT16000012	Drug	27/06/2016 03:33 PM	Pending For Approval	Substor Farmasi Klinik Pakar	Pauziah Yus-Sin Pong
Receive Internal	RT16000013	Drug	27/06/2016 03:33 PM	Pending For Approval	Substor Farmasi Klinik Pakar	Pauziah Yus-Sin Pong
Receive Internal	RT16000015	Drug	29/06/2016 11:58 AM	Pending For Approval	Substor Farmasi Pesakit Dalam	Saleem Abul-Hamid
Issuing	N02PS001-0003420	Drug	19/07/2016 03:16 PM	Pending To Issue	Substor Farmasi Nuklear	Piona Ling Siu May
Issuing	N02PS001-0003421	Drug	19/07/2016 03:17 PM	Pending To Issue	Substor Farmasi Nuklear	Piona Ling Siu May
Issuing	N02PS001-0003428	Drug	19/07/2016 03:38 PM	Pending To Issue	Substor Farmasi Nuklear	Piona Ling Siu May
Issuing	N02PS001-0003646	Drug	27/07/2016 12:00 PM	Pending To Issue	Substor Farmasi Nuklear	Piona Ling Siu May
Issuing	N02PS001-0003647	Drug	27/07/2016 12:01 PM	Pending To Issue	Substor Farmasi Nuklear	Piona Ling Siu May
Issuing	N02PS001-0003648	Drug	27/07/2016 12:02 PM	Pending To Issue	Substor Farmasi Nuklear	Piona Ling Siu May

Figure 3.2-1 PhIS Home page

This page is used to search for a registered patient

STEP 1

Click on 'Order Management' menu followed by 'Record Prescription' and screen will be displayed as per Figure 3.1-1



MEDICATION ORDER

Select Registered Patient: All Search

Dispensing Location: Farmasi Bekalan Wad - Rx Filling New Patient X

All
Patient ID Number
Patient Name
Patient MRN

Figure 3.2-2 Medication Order

STEP 2

Select registration type from dropdown box

STEP 3

Click on the  button to search for a registered patient based on the type selected

Note

If the patient is not registered, click on the New Patient button and the 'Patient Registration' screen will be displayed.

MEDICATION ORDER

Select Registered Patient: All | Dispensing Location: Farmasi Klinik Pakar | New Patient X

Patient Search

< 1 / 23440 > [1 - 10 / 234394]


MRN	ID Number	Patient Name
HKL1786229	888423728108	888423728108
HKL228475	551636025073	551636025073
HKL2378327	178215140206	888121189578
HKL234362	888800708888	888800708888
HKL088421	681132108906	681132108906
HKL281088	731124008935	731124008935
HKL154749	7311221128288	7311221128288
HKL154719	738100136115	738100136115
HKL188332	840325145251	840325145251
HKL213473	88880088118	888800881178

Figure 3.2-3 Search Patient

STEP 4

Double-click on the selected patient and the details will be displayed as per Figure 3.1-4

Note

- Click on the 'Renew Visit' hyperlink to renew a visit for the same location.
- Select the 'Visit Type' and 'Location' to create a new visit.
- Click on the  button to access to 'Visit Management' screen.

MEDICATION ORDER

Select Registered Patient: All | HKL00001 | Dispensing Location: Farmasi Klinik Pakar | New Patient X

Address: MyKad: 888888888888 | Age: 68 Years 08 Months 11 Days | Gender: Male | MRN: HKL00001

Phone And Email: | Known Allergies: |

Height: 180 cm | Weight: 65 kg | BMI/BSA: 20.1 / 1.8 m² | GSPD: | (Last Updated: 19/12/2018) | Nationality: Warganegara

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

VISIT/ADMISSION

Encounter No: | Visit Type: Outpatient | Location: | Department: | Clear | Save | Visit Management | Patient Label | Patient sticker

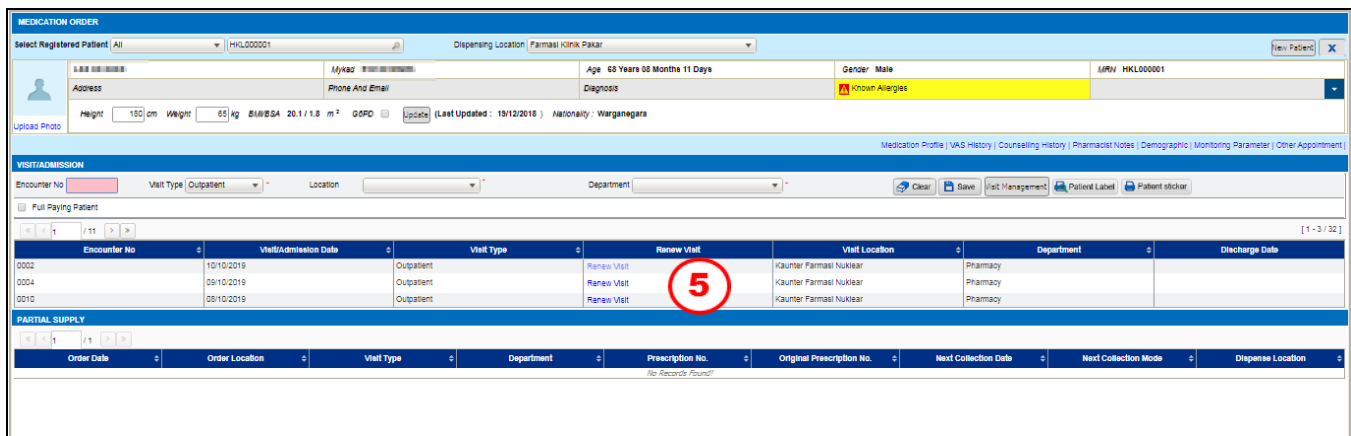
☐ Full Paying Patient

Encounter No	Visit/Admission Date	Visit Type	Renew Visit	Visit Location	Department	Discharge Date
0002	10/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	
0004	09/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	
0010	09/10/2019	Outpatient	Renew Visit	Kaunter Farmasi Nuklear	Pharmacy	

PARTIAL SUPPLY

Order Date	Order Location	Visit Type	Department	Prescription No.	Original Prescription No.	Next Collection Date	Next Collection Mode	Dispense Location
No Records Found!								

Figure 3.2-4 Medication Order Screen



MEDICATION ORDER

Select Registered Patient: All | HKL000001 | Dispensing Location: Farnasi Klinik Pakar | [New Patient]

Upload Photo | MyKad: [Redacted] | Age: 68 Years 08 Months 11 Days | Gender: Male | MRN: HKL000001

Address: [Redacted] | Phone And Email: [Redacted] | Diagnosis: [Redacted] | Known Allergies: [Redacted]

Height: 150 cm | Weight: 65 kg | BMI/BSA: 20.1 / 1.8 m² | GSPD: [Redacted] | Update (Last Updated: 15/12/2019) | Nationality: Warganegara

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

VISIT/ADMISSION

Encounter No: [Redacted] | Visit Type: Outpatient | Location: [Redacted] | Department: [Redacted] | Clear | Save | Visit Management | Patient Label | Patient sticker

☐ Full Paying Patient

Encounter No	Visit/Admission Date	Visit Type	Renew Visit	Visit Location	Department	Discharge Date
0002	10/10/2019	Outpatient	Renew Visit	Kaunter Farnasi Nuklear	Pharmacy	
0004	09/10/2019	Outpatient	Renew Visit	Kaunter Farnasi Nuklear	Pharmacy	
0010	09/10/2019	Outpatient	Renew Visit	Kaunter Farnasi Nuklear	Pharmacy	

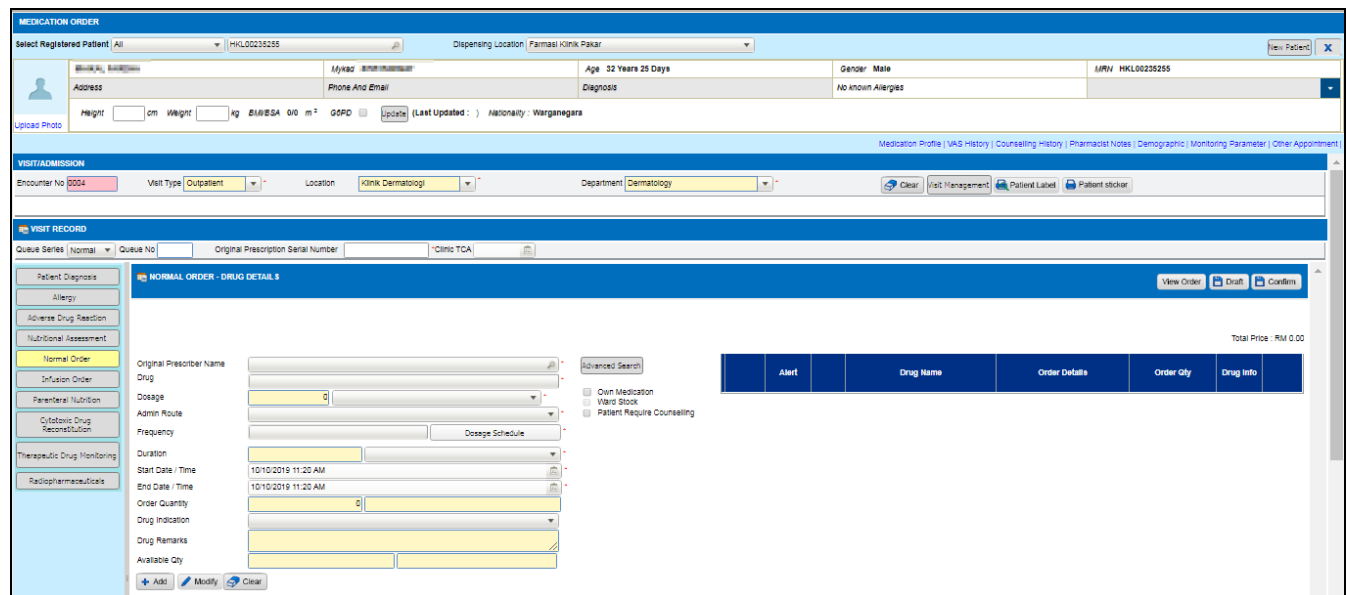
PARTIAL SUPPLY

Order Date	Order Location	Visit Type	Department	Prescription No.	Original Prescription No.	Next Collection Date	Next Collection Mode	Dispense Location
No Records Found!								

Figure 3.2-5 Visit/Admission Detail

STEP 5

Double-click on the selected visit and the details will be displayed as per Figure 3.1-6



MEDICATION ORDER

Select Registered Patient: All | HKL00035255 | Dispensing Location: Farnasi Klinik Pakar | [New Patient]

Upload Photo | MyKad: [Redacted] | Age: 32 Years 25 Days | Gender: Male | MRN: HKL00035255

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

Height: [Redacted] cm | Weight: [Redacted] kg | BMI/BSA: 0.0 m² | GSPD: [Redacted] | Update (Last Updated:) | Nationality: Warganegara

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

VISIT/ADMISSION

Encounter No: 0004 | Visit Type: Outpatient | Location: Klinik Dermatologi | Department: Dermatology | Clear | Visit Management | Patient Label | Patient sticker

VISIT RECORD

Queue Series: Normal | Queue No: [Redacted] | Original Prescription Serial Number: [Redacted] | Clinic TCA: [Redacted]

NORMAL ORDER - DRUG DETAILS

Original Prescriber Name: [Redacted] | Drug: [Redacted] | Dosage: [Redacted] | Admin Route: [Redacted] | Frequency: [Redacted] | Duration: [Redacted] | Start Date / Time: 10/10/2019 11:20 AM | End Date / Time: 10/10/2019 11:20 AM | Order Quantity: [Redacted] | Drug Indication: [Redacted] | Drug Remarks: [Redacted] | Available Qty: [Redacted]

Advanced Search: ☐ Own Medication ☐ Ward Stock ☐ Patient Require Counseling

Total Price: RM 0.00

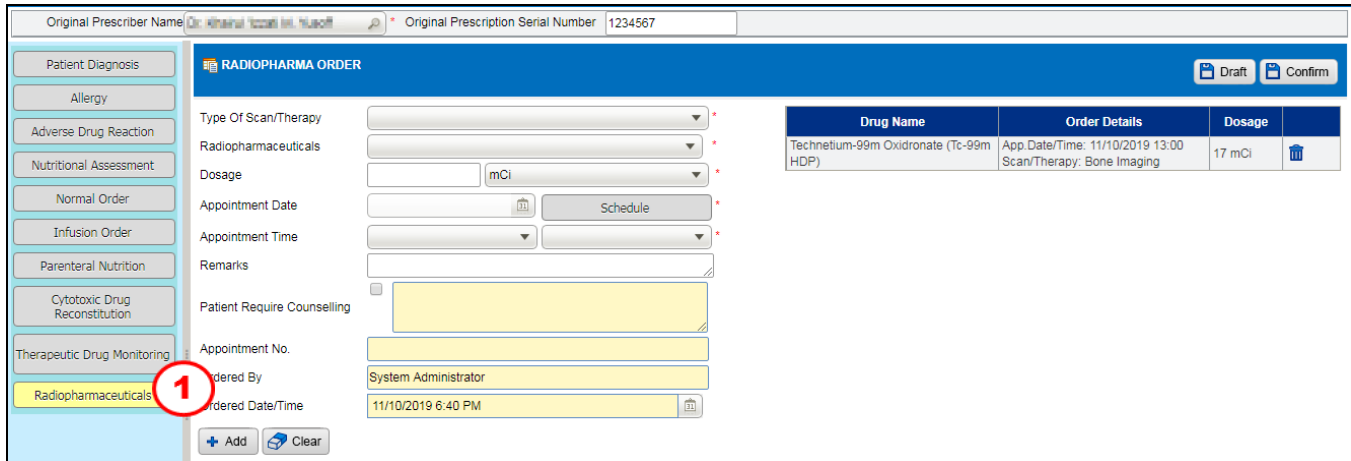
Alert | Drug Name | Order Details | Order Qty | Drug Info

+ Add | Modify | Clear

Figure 3.2-6 Medication Order Detail

3.3 Radiopharmaceuticals

Order Medication order for Radiopharmaceuticals screen will allow user to Confirm radiopharmaceuticals order



Drug Name	Order Details	Dosage
Technetium-99m Oxidronate (Tc-99m HDP)	App.Date/Time: 11/10/2019 13:00 Scan/Therapy: Bone Imaging	17 mCi

Figure 3.3-1 Medication Order –Radiopharmaceuticals

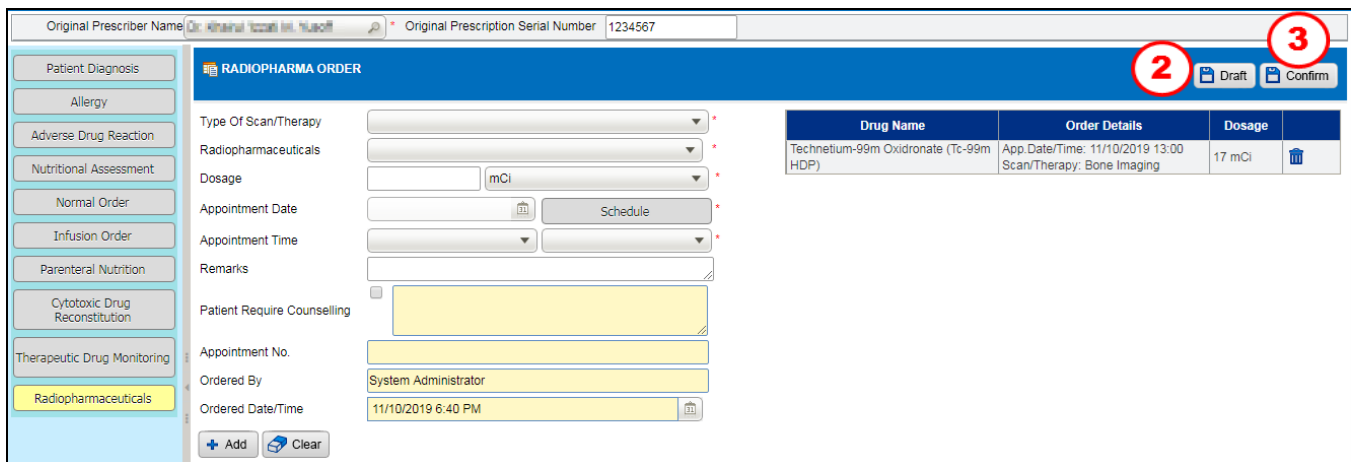
STEP 1

Click on the **Radiopharmaceuticals** button to display Radiopharmaceuticals medication order screen as per Figure 3.3-1

Note

Current Apoinment section :

This section will automatically display appointment records created in Appointment screen (if any). Only appointment records with 'New' status is displayed in this section.



Drug Name	Order Details	Dosage
Technetium-99m Oxidronate (Tc-99m HDP)	App.Date/Time: 11/10/2019 13:00 Scan/Therapy: Bone Imaging	17 mCi

Figure 3.3-2 Medication Order -Radiopharmaceuticals

STEP 2

Click on the **Draft** button to save record and alert message will be displayed as per Figure 3.3-3

STEP 3

Click on the **Confirm** button to confirm the record and alert message will be displayed as per Figure 3.3-4

Note

- Alert message will be displayed *be displayed after save the record.*

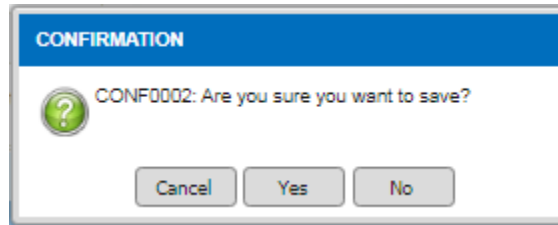


Figure 3.3-3 Alert Message

- Alert message will be displayed *be displayed after confirm the record.*

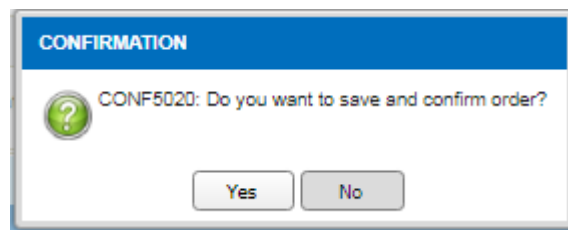



Figure 3.3-4 Alert Message

Note

Cancel function:

- Cancel is an optional function.
- Click on the  button to delete radiopharmaceuticals order
- Need to enter cancel reason once user click cancel function:

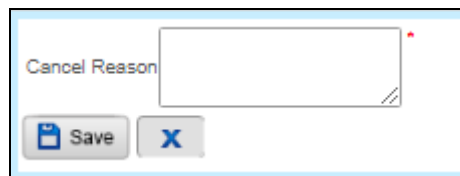
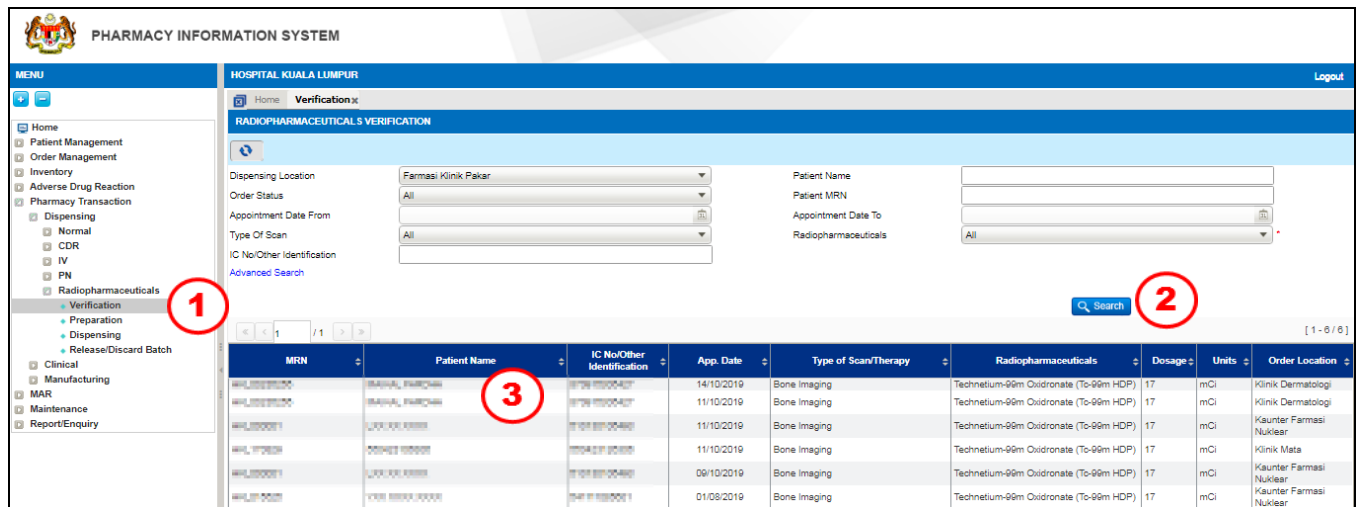


Figure 3.3-5 Cancel Order

- Once confirm the order, drug details will auto appear in screening stage

3.4 Radiopharmaceuticals Verification

Radiopharmaceuticals Verify screen allow user to screen prescription details and verify order.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

RADIOPHARMACEUTICALS VERIFICATION

Dispensing Location: Farmasi Klinik Pakar
Order Status: All
Appointment Date From:
Type Of Scan: All
IC No/Other Identification:
[Advanced Search](#)

Patient Name:
Patient MRN:
Appointment Date To:
Radiopharmaceuticals: All

Search

[1 - 6 / 6]

MRN	Patient Name	IC No/Other Identification	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
14101010	BAHARU, FAROUK	8728 000427	14/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
14101010	BAHARU, FAROUK	8728 000427	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
14101010	LOO KUI KIAN	8728 000480	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
14101010	OSMAN, ROSLI	8728 000427	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Mata
14101010	LOO KUI KIAN	8728 000480	09/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
14101010	LOO KUI KIAN	8728 000480	01/08/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear

Figure 3.4-1 Radiopharmaceuticals Verification Listing Page

STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Dispensing' and click on 'Radiopharmaceuticals Verification' sub-menu

Note

- Various search criteria is provided as below:
 - Dispense Location
 - Patient Name
 - Order Status
 - Patient MRN
 - Appointment Date From
 - Appointment Date To
 - Type of Scan
 - Radiopharmaceuticals
 - IC No/Other Identification
- Click on the [Advanced Search](#) hyperlink for advance search.

STEP 2

Click on the **Search** button and system will display related order

STEP 3

Double click on the selected patient record and system will display Radiopharmaceuticals Verification screen as per Figure 3.4-2

Encounter No: 0010 Actual Visit Date: 11/10/2019 Visit Location: Kaunter Farmasi Nuklear Rx No: FKP0000741017 Order By: System Administrator Transcribed By: System Administrator
Original Prescription Serial No: 1234567

PRESCRIPTION


1 / 1

Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Technetium-99m Oxidronate (Tc-99m HDP)	App Date/Time: 11/10/2019 13:00 Scan/Therapy: Bone Imaging	<input type="checkbox"/> Details	17 mCi	0 mCi	Remarks	Ordered

Verify

Figure 3.4-2 Radiopharmaceuticals Verification

STEP 4

Click on  button to verify order

Note

- **Drug Counselling** column is an optional function.
- Choose **Yes** if the patient need counselling or **No** if the patient do not need counselling.

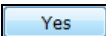
CONFIRMATION

CONF0081: Do you want to proceed with the verification?

Cancel Yes No

Figure 3.4-3 Information Alert Message

STEP 5

Click on the  button to proceed with the verification

INFORMATION

INFO0103: Your Record has been Verified Successfully

OK

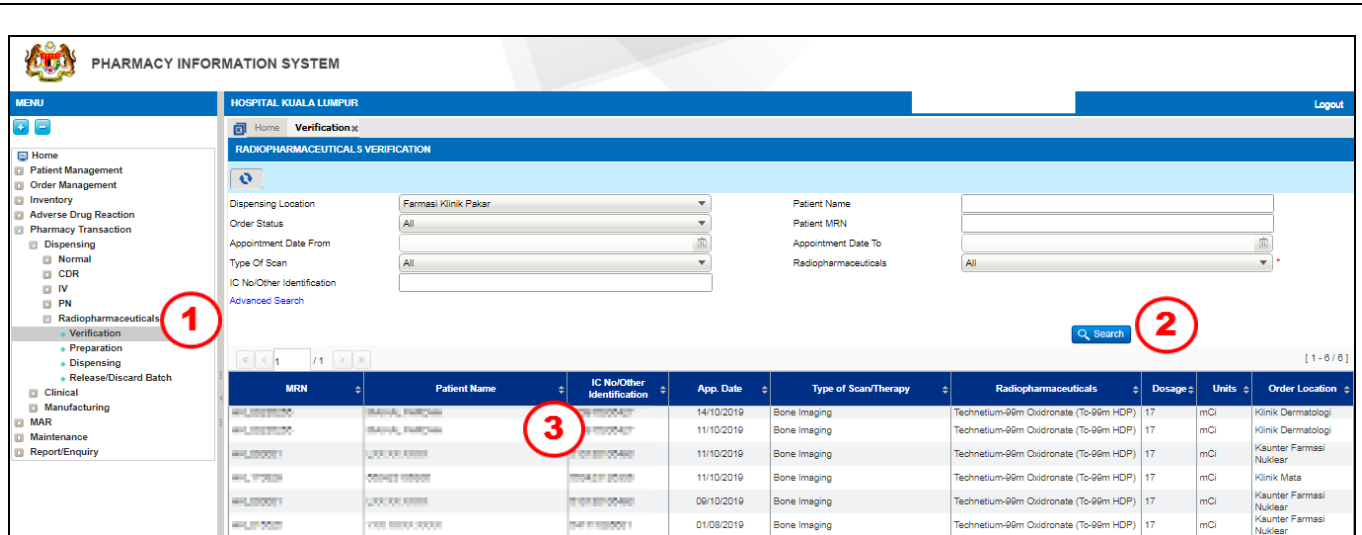
Figure 3.4-4 Verify Order Alert Message

STEP 6

Click on the  button to verify successfully

3.4.1 Intervention

Radiopharmaceuticals verification screen will allow user to verify prescription, before preparation and dispensing stage



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

RADIOPHARMACEUTICALS VERIFICATION

Dispensing Location: Farmasi Klinik Pakar
Order Status: All
Appointment Date From:
Appointment Date To:
Type Of Scan: All
IC No/Other Identification:
[Advanced Search](#)

Patient Name:
Patient MRN:
Appointment Date To:
Radiopharmaceuticals: All

Search

[1 - 6 / 6]

MRN	Patient Name	IC No/Other Identification	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
1410102019	BAHARU, FAROUK	1410102019	14/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
1110102019	BAHARU, FAROUK	1110102019	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
1110102019	LOK, KIRAN	1110102019	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
1110102019	LOK, KIRAN	1110102019	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Mata
0910102019	LOK, KIRAN	0910102019	09/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
0108102019	LOK, KIRAN	0108102019	01/08/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear

Figure 3.4.1-1 Radiopharmaceuticals Verification Listing Page

STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Dispensing' and click on 'Radiopharmaceuticals Verification' sub-menu

Note

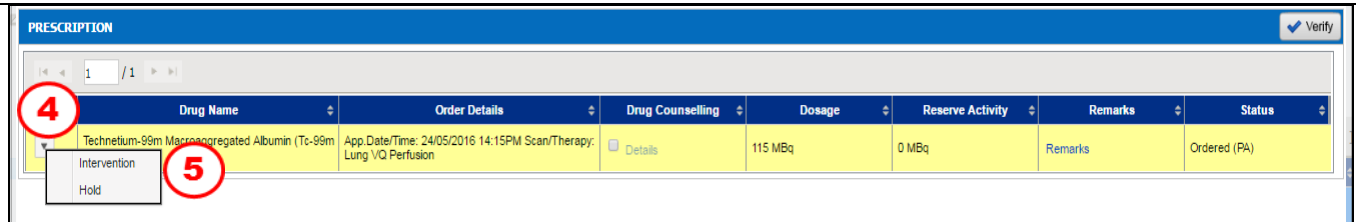
- Various search criteria is provided as below:
 - Dispense Location
 - Patient Name
 - Order Status
 - Patient MRN
 - Appointment Date From
 - Appointment Date To
 - Type of Scan
 - Radiopharmaceuticals
 - IC No/Other Identification
- Click on the [Advanced Search](#) hyperlink for advance search.

STEP 2

Click on the **Search** button and system will display related order

STEP 3

Double click on the selected patient record and system will be displayed Radiopharmaceuticals Verification screen as per Figure 3.3.1-2



Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Technetium-99m Macroaggregated Albumin (Tc-99m)	App.Date/Time: 24/05/2016 14:15PM Scan/Therapy: Lung V/Q Perfusion	Details	115 MBq	0 MBq	Remarks	Ordered (PA)

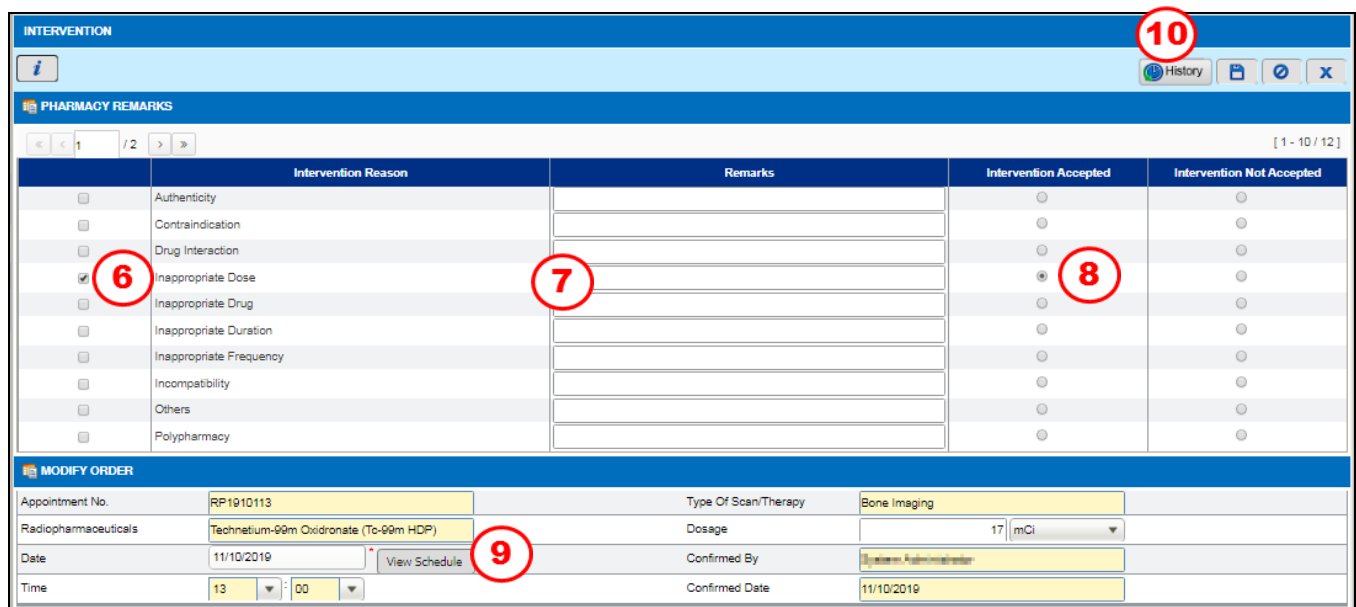
Figure 3.4.1-2 Radiopharmaceuticals Verification Listing Page

STEP 4

Right click in the  button to select either **Intervention** or **Hold Order** as per Figure 343.1-2

STEP 5

Click on the  button to modify drug details



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

MODIFY ORDER			
Appointment No.	RP1910113	Type Of Scan/Therapy	Bone Imaging
Radiopharmaceuticals	Technetium-99m Oxidronate (Tc-99m HDP)	Dosage	17 mCi
Date	11/10/2019	Confirmed By	System Administrator
Time	13:00	Confirmed Date	11/10/2019

Figure 3.4.1-3 Radiopharmaceuticals Intervention

STEP 6

Select **Intervention Reason** from list.

STEP 7

Enter **Remarks** if applicable.


STEP 8

Select **Intervention Status** radio button either **Accepted** or **Not Accepted** and edit **Amount** field

STEP 9

Click on the  button check appointment if fully booked for a particular date.

STEP 10

Click on the  button to save intervention record and alert message will display as per Figure 3.4.1-4.

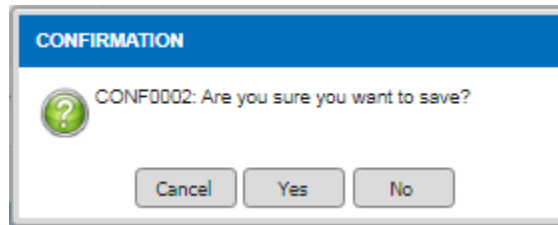


Figure 3.4.1-4 Save record Alert Message

Note

- Click on the  button to save intervention record.

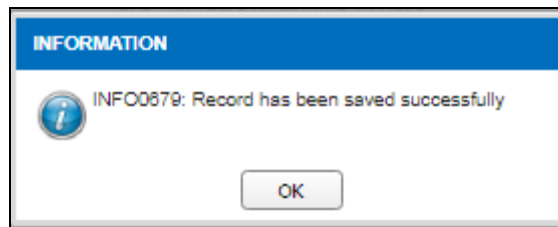


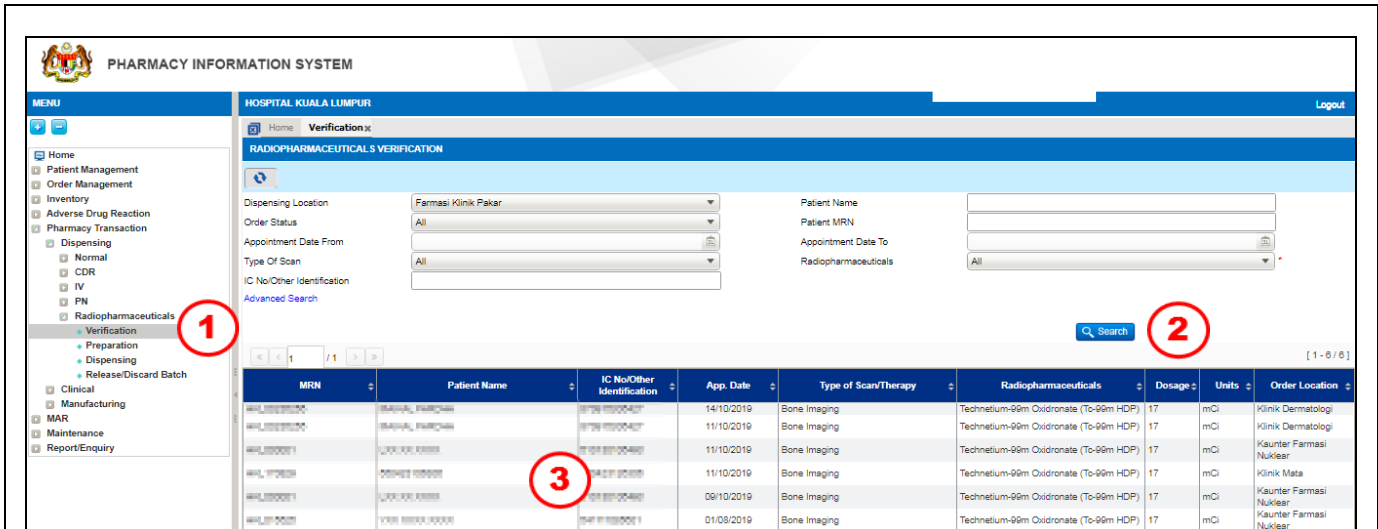
Figure 3.4.1-5 Modify Order Alert Message

Note

- Click on the  button to save modify order record.

3.4.2 Hold/Resume Order

Radiopharmaceuticals verification screen allow user to hold order and add reason for hold. User able to resume the order.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Logout

Home Verification

RADIOPHARMACEUTICALS VERIFICATION

Dispensing Location: Farmasi Klinik Pakar

Order Status: All

Appointment Date From:

Type Of Scan: All

IC No/Other Identification:

Advanced Search

Patient Name:

Patient MRN:

Appointment Date To:

Radiopharmaceuticals: All

Search

[1 - 6 / 6]

MRN	Patient Name	IC No/Other Identification	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
1111111111	ABANG, FARHAN	8728 1000427	14/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Dermatologi
1111111111	ABANG, FARHAN	8728 1000427	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
1111111111	ABANG, FARHAN	8728 1000427	11/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Klinik Mata
1111111111	ABANG, FARHAN	8728 1000427	09/10/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
1111111111	ABANG, FARHAN	8728 1000427	01/08/2019	Bone Imaging	Technetium-99m Oxidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear

Figure 3.4.2-1 Radiopharmaceuticals Verification Listing Page

STEP 1


Click on 'Pharmacy Transaction' menu followed by 'Dispensing' and click on 'Radiopharmaceuticals Verification' sub-menu

Note

Various search criteria is provided as below:

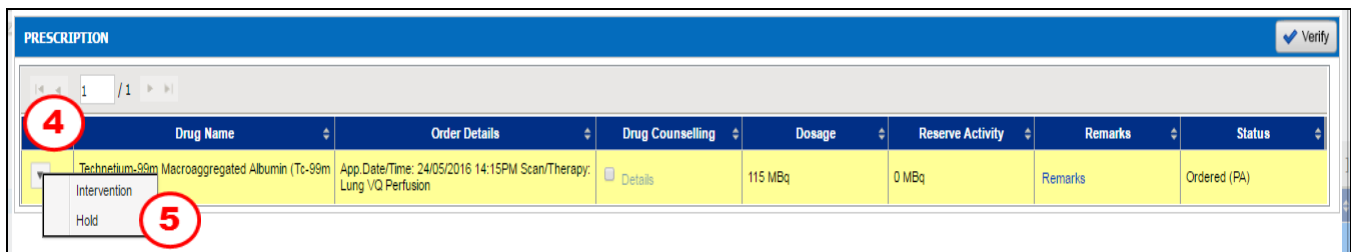
- Dispense Location
- Patient Name
- Order Status
- Patient MRN
- Appointment Date From
- Appointment Date To
- Type of Scan
- Radiopharmaceuticals
- IC No/Other Identification

STEP 2

Click on the  button and system will display related order

STEP 3


Double click on the selected patient record and system will be displayed Radiopharmaceuticals Verification screen as per Figure 3.4.2-2



Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Technetium-99m Macroaggregated Albumin (Tc-99m)	App.Date/Time: 24/05/2016 14:15PM Scan/Therapy: Lung V/Q Perfusion	Details	115 MBq	0 MBq	Remarks	Ordered (PA)

Figure 3.4.2-2 Radiopharmaceuticals Verification Listing Page

STEP 4

Right click in the  button to select either **Intervention** or **Hold Order**

STEP 5

Click on the  button to hold order

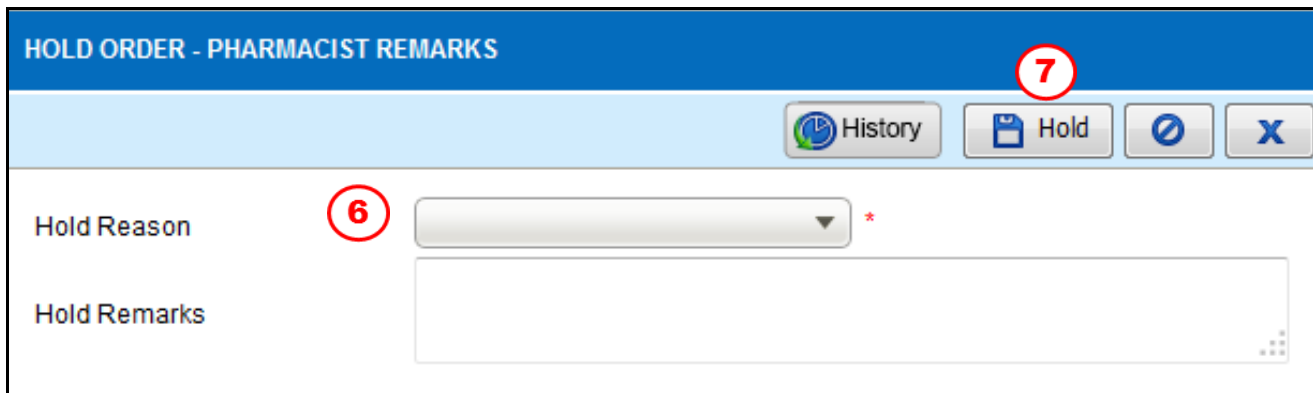



Figure 3.4.2-3 Hold Order – Pharmacist Remarks

STEP 6

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

- Authenticity
- Contraindication
- Drug Interaction
- Inappropriate Dose
- Inappropriate Drug
- Inappropriate Duration
- Inappropriate Frequency
- Incompatibility
- Intervention
- Others
- Polypharmacy
- Suggest to Monitor Vital Signs/Lab Result
- Wrong Patient

STEP 7

Enter **Hold Remarks** field. Click on the  button to hold order and alert message will display as per Figure 3.3.2-3

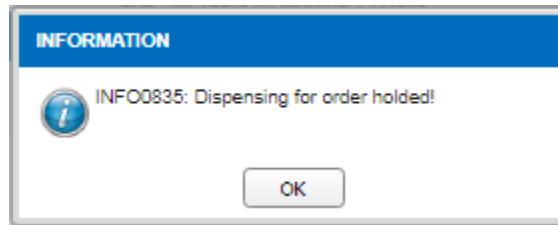
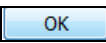


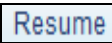


Figure 3.4.2-4 Information Alert Message



Figure 3.4.2-5 Radiopharmaceuticals Verification

Note

- Click on the  button to hold order.
- The  button is to cancel the entered data.
- Click on the  button to close Hold Order – Pharmacist Remarks screen.
- Status will change to Ordered Hold.
- Click on the  link to resume order as per Figure 3.3.2-6.

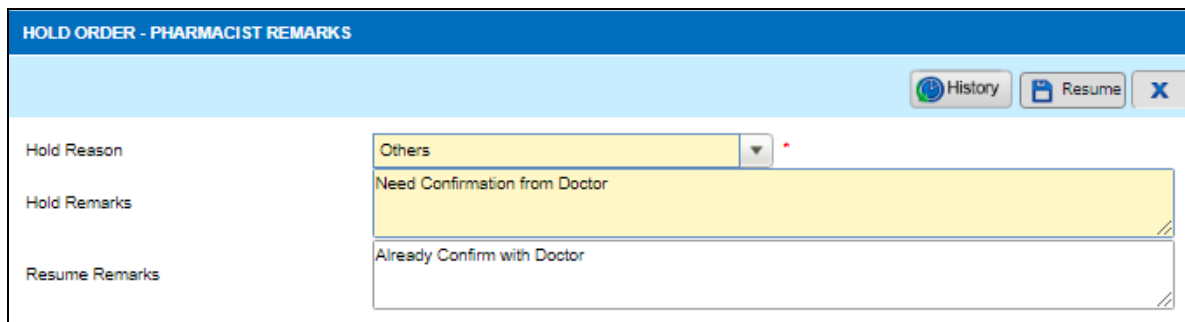
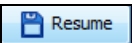


Figure 3.4.2-6 Hold Order – Pharmacist Remarks

Note

- Enter reason at **Resume Remarks** field
- Click on the  button to resume order.

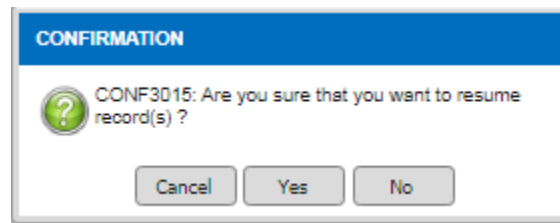


Figure 3.4.2-7 Hold/Resume Alert Message

Note

- Click on the  button to resume order.

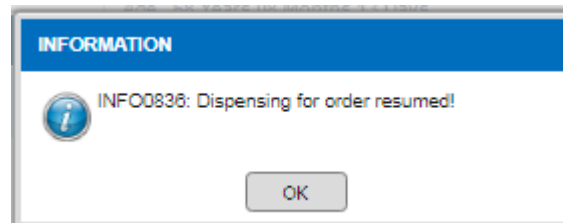
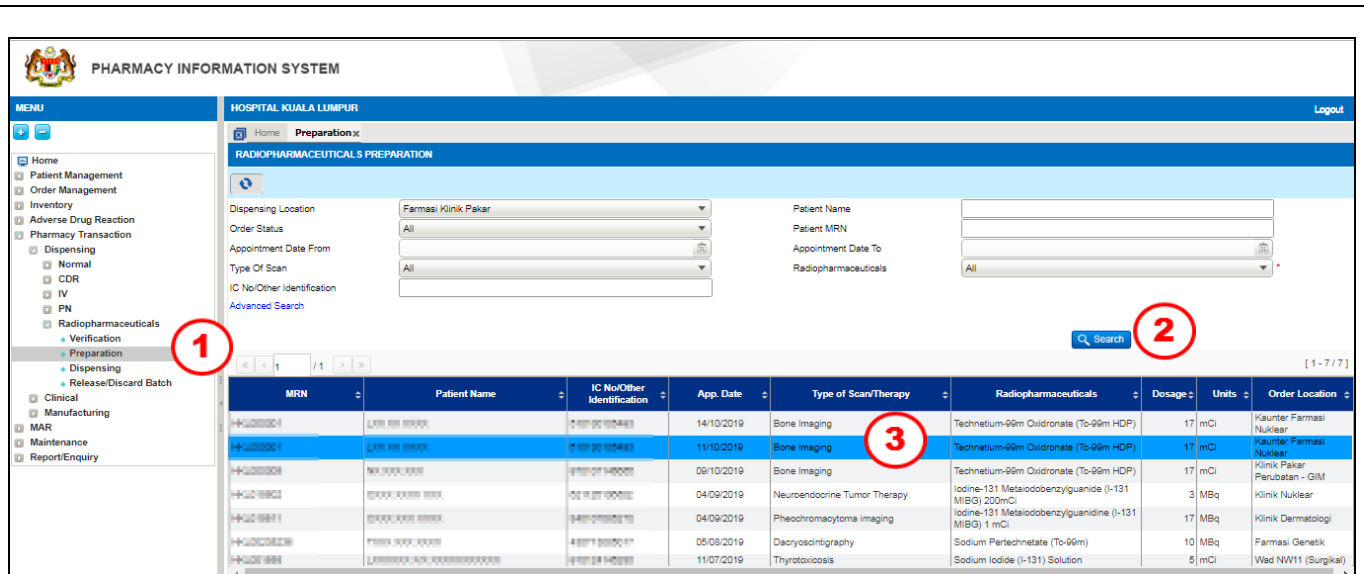


Figure 3.4.2-8 Information Alert Message

3.5 Radiopharmaceutical Preparation

Radiopharmaceuticals preparation screen allow user to allocate batch quantity before drug dispensed / administered to patient.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Home Preparation

RADIOPHARMACEUTICALS PREPARATION

Dispensing Location: Farmasi Klinik Pakar
Order Status: All
Appointment Date From:
Type Of Scan: All
IC No/Other Identification:
[Advanced Search](#)

Patient Name:
Patient MRN:
Appointment Date To:
Radiopharmaceuticals: All

[Search](#)

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MRN	Patient Name	IC No/Other Identification	App. Date	Type of Scan/Therapy	Radiopharmaceuticals	Dosage	Units	Order Location
HA000001	LIN AN ROSA	99090100483	14/10/2019	Bone Imaging	Technetium-99m Oidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
HA000001	LIN AN ROSA	99090100483	11/10/2019	Bone imaging	Technetium-99m Oidronate (To-99m HDP)	17	mCi	Kaunter Farmasi Nuklear
HA000004	SA ROSA ROSA	99090100000	09/10/2019	Bone Imaging	Technetium-99m Oidronate (To-99m HDP)	17	mCi	Klinik Pakar Perubatan - GIM
HA000002	ROSA ROSA ROSA	99090100000	04/09/2019	Neuroendocrine Tumor Therapy	Iodine-131 Metaiodobenzylguanide (I-131 MIBG) 200mCi	3	MBq	Klinik Nuklear
HA000001	ROSA ROSA ROSA	99090100000	04/09/2019	Pheochromocytoma imaging	Iodine-131 Metaiodobenzylguanide (I-131 MIBG) 1 mCi	17	MBq	Klinik Dermatologi
HA000008	ROSA ROSA ROSA	99090100000	05/08/2019	Dacryoscintigraphy	Sodium Pertechnetate (To-99m)	10	MBq	Farmasi Genetik
HA000009	ROSA ROSA ROSA	99090100000	11/07/2019	Thyroiditis	Sodium Iodide (I-131) Solution	5	mCi	Wad NW11 (Surgical)

Figure 3.5-1 Radiopharmaceuticals Preparation Listing Page

STEP 1

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

Note

- Various search criteria is provided as below:
 - Dispense Location
 - Patient Name
 - Order Status
 - Patient MRN
 - Appointment Date From
 - Appointment Date To
 - Type of Scan
 - Radiopharmaceuticals
 - IC No/Other Identification
- Click on the [Advanced Search](#) hyperlink for advance search.

STEP 2

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

STEP 3

Double click on the selected patient record and system will be displayed Radiopharmaceuticals Preparation screen as per Figure 3.5-2

Update Photo

Encounter No: 0632 Admission Date: 19/01/2016 Attending Practitioner: Visit Location: RADIOLOGI Rx No: RADIO0000180122 Order By: Pharmacist Radio

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

PRESCRIPTION Prepare Label Online Outsource

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Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Sodium Pertechnetate (Tc-99m)	App.Date/Time: 05/05/2016 13:00PM Scan/Therapy: Dacryoscintigraphy	Details	15 mCi	25 mCi (05/05/2016 11:29 AM)	Remarks	Verified

Figure 3.5-2 Radiopharmaceuticals Preparation

STEP 4

Click on the hyperlink at **Reserve Activity** to allocate quantity and Item Batch Details screen will be displayed as per Figure 3.5-3

ITEM BATCH DETAILS

Drug Code: RPH000003 Order Detail: 15.0 mCi, App.Date/Time: 05/05/2016 13:0 Scan/Therapy: Dacryoscintigraphy Default SKU: vial

Drug Name: Sodium Pertechnetate (Tc-99m) Dispense UOM: mCi

Element: Technetium-99m Half Life: 6.01 H Allocation Date/Time: 05/05/2016 11:29:23 AM

BATCH DETAIL

Batch No	Available Qty	Allocated Qty	Expiry Date/Time	Available Activity	Available Volume	Batch Details	Allocated Activity	Allocated Volume
45RP99	194 vial	0 vial	20/12/2016 06:03 PM	0 mCi	555 ml	Batch Details	0 mCi	ml
Total	194 vial	0 vial					0 mCi	

Figure 3.5-3 Item Batch Details

Note

- Item Batch Details screen will be displayed as per Figure 3.5-4.

BATCH DETAILS

1 / 1

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Calibration Activity	Calibration Date/Time	Dispensed Activity	Measured Activity	Measurement Date Time	Dispensed Volume	Volume	Allocated Volume
27 mCi	28/01/2016 11:00 AM	0 mCi	26.99 mCi	28/01/2016 11:00 AM	0 ml	555 ml	0 ml

Figure 3.5-4 Edit Batch Details

STEP 5

Click on [Edit Details](#) quantity to allocate quantity

RADIOPHARMACEUTICALS VERIFICATION

Date: 28/01/2016 Receipt No: R116018636

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	200	val	45RP99	02/01/2021	Accepted

Confirm

STOCK DETAILS

Calibration Activity	999 MBq	27 mCi	Calibration Date/Time	28/01/2016 11:00 AM
Expected Activity	999 MBq	27 mCi	Expiry Date/Time	20/12/2016 6:03 PM
Measured Activity	998.56 MBq	26.99 mCi	Measured Date/Time	28/01/2016 11:00 AM
Activity Variation	-0.04 %		Volume	555 ml

MEASUREMENT DETAILS

Label Packaging Type: White I [Guideline](#) **6**
Survey on Surface: 0
Survey at 1 Meter Distance: 0
Wipe Test: 0
Remarks:

VERIFICATION DETAILS

☒ Accept ☐ Reject
Reject Reason:
Done By: Pharmacist Radio Date/Time: 28/01/2016 11:00 AM
Updated By: MAIKAL FARDHA Updated Date/Time: 24/05/2016 9:59 PM

Figure 3.5-5 Sample of Item Batch Details

STEP 6

Click on guideline link to get details about measurement details

Note

- Label Packaging Type Guidelines as per Figure 6.0-6
- Verification can be Accept and Reject based verification

LABEL PACKAGING TYPE GUIDELINES		
Unit	Label Packaging Type	Description
mSv/hr	White I	Survey on Surface = Not more than (or equal) 0.005 mSv/hr
	Yellow II	Survey on Surface = More than 0.005 mSv/hr, not more than (or equal) 0.5 mSv/hr
	Yellow III	Survey on Surface = More than 0.5 mSv/hr, not more than (or equal) 2 mSv/hr
	Yellow III(a)	Survey on Surface = More than 2 mSv/hr, not more than (or equal) 10 mSv/hr
mR/hr	White I	White I : Survey on Surface = Not more than (or equal) 0.5 mR/hr
	Yellow II	Yellow II : Survey on Surface = More than 0.5 mR/hr, not more than (or equal) 50 mR/hr
	Yellow III	Yellow III : Survey on Surface = More than 50 mR/hr, not more than (or equal) 200 mR/hr
	Yellow III(a)	Yellow III(a) : Survey on Surface = More than 200 mR/hr, not more than (or equal) 1000 mR/hr

Figure 3.5-6 Label Packaging Type Guidelines

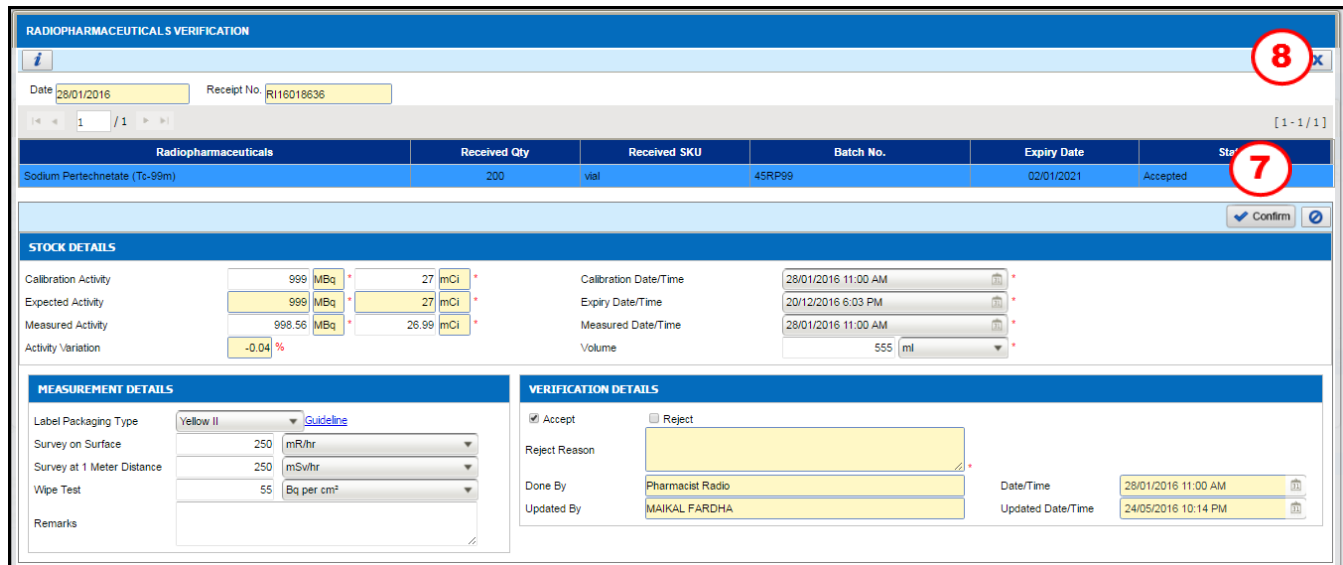


Figure 3.5-7 Batch Details

STEP 7

Click on  button to finalize batch details


STEP 8

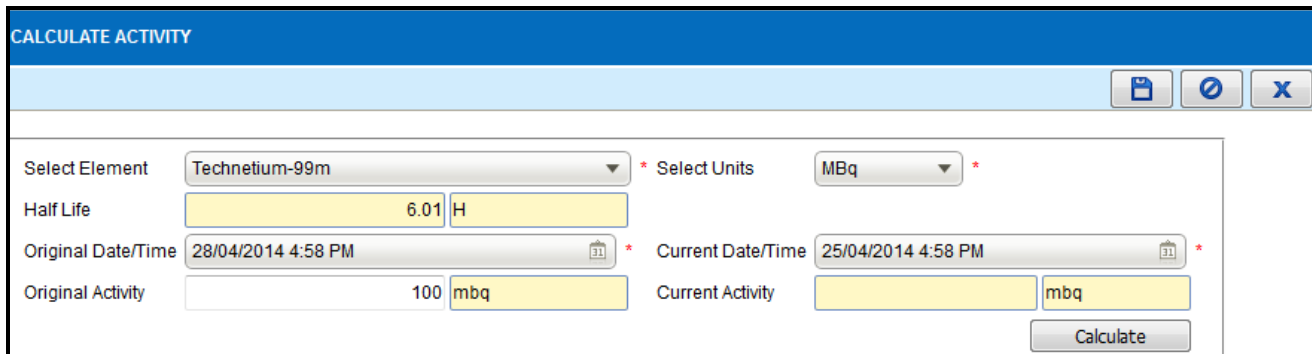
Click on  button to close Item Batch Details screen



Figure 3.5-8 Radiopharmaceuticals Preparation

Note

- User has the option to measure radiopharmaceuticals radioactivity in preparation screen, user need to click the calculate activity button.
- Click on the  button and new window will be displayed as figure 3.4-6.



CALCULATE ACTIVITY

Select Element: Technetium-99m * Select Units: MBq *

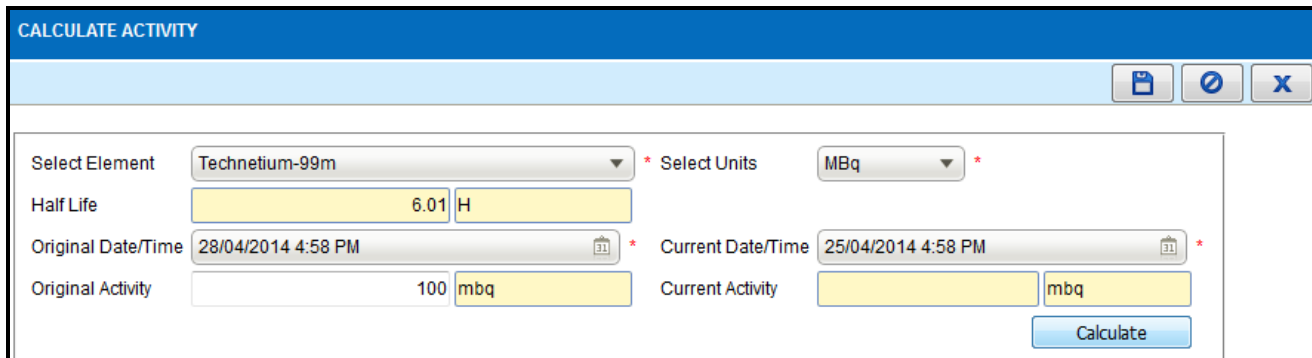
Half Life: 6.01 H

Original Date/Time: 28/04/2014 4:58 PM * Current Date/Time: 25/04/2014 4:58 PM *

Original Activity: 100 mbq Current Activity: mbq

Calculate

Figure 3.5-9 Radiopharmaceuticals Preparation



CALCULATE ACTIVITY

Select Element: Technetium-99m * Select Units: MBq *

Half Life: 6.01 H

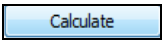
Original Date/Time: 28/04/2014 4:58 PM * Current Date/Time: 25/04/2014 4:58 PM *

Original Activity: 100 mbq Current Activity: mbq

Calculate

Figure 3.5-10 Calculate Activity

Note

- Select value for **Select Element** drop down box.
- **Half Life** field will be automatically displayed by system after user selects value in **Select Element** field.
- **Original Date/Time** is mandatory field.
- **Select Units** from drop down box.
- **Select Units** is mandatory field.
- Select **Current Date/Time** field.
- **Current Date/Time** is mandatory field.
- **Original Activity** field will automatically display value based on the ordered activity but user is allowed to edit the value.
- Click on the  button and **Current Activity** field will be automatically calculated by system as per Figure 3.5-11.

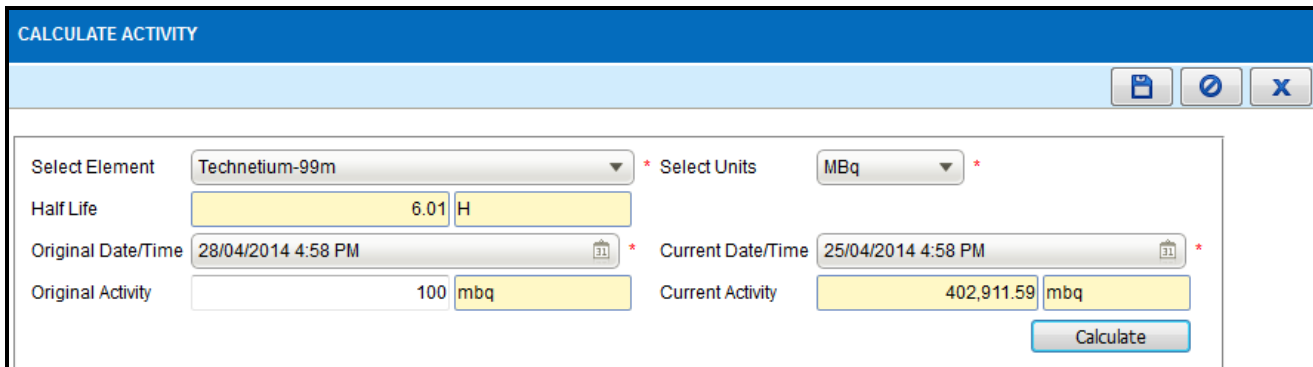



Figure 3.5-11 Calculate Activity

Note

- Click on the  button to save record as per Figure 3.5-12.

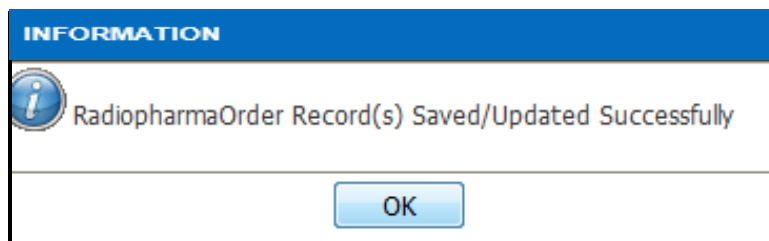
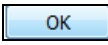


Figure 3.5-13 Save Record Alert Message

Note

- Click on the  button to save record as per Figure 3.5-12.

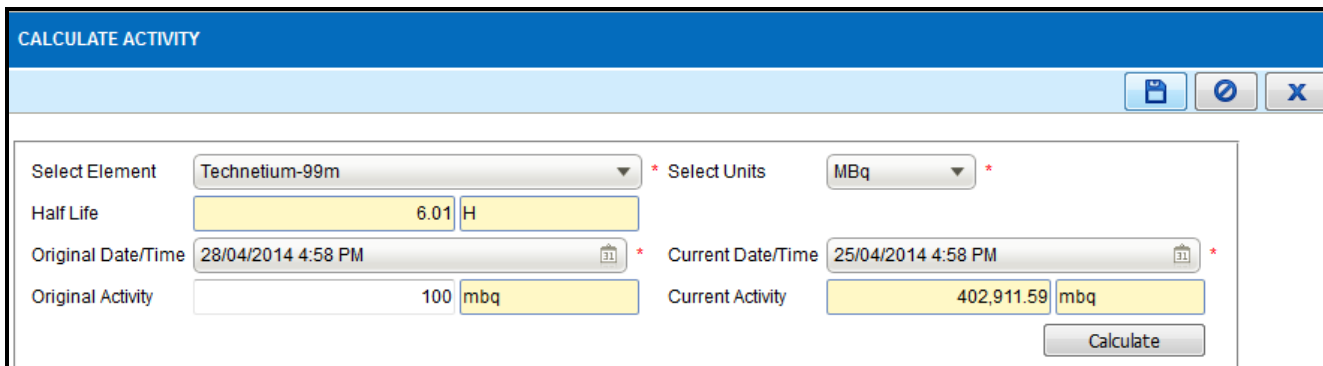




Figure 3.5-14 Calculate Activity

Note


Click on the  button to close Calculate Activity screen as per Figure 3.5-14.

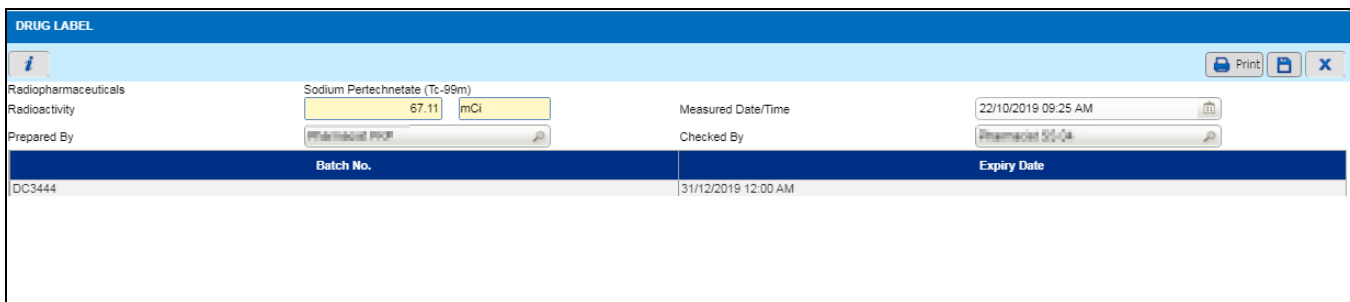


Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Sodium Pertechnetate (Tc-99m)	App.Date/Time: 05/05/2016 13:00PM Scan/Therapy: Dacryoscintigraphy	Details	15 mCi	25 mCi (05/05/2016 11:29 AM)	Remarks	Verified

Figure 3.5-15 Radiopharmaceuticals Preparation

Note


- Click on the  button to edit label as per Figure 3.5-16.
- Drug Label screen will be displayed as per Figure 3.5-17.



Batch No.	Expiry Date
DC3444	31/12/2019 12:00 AM

Figure 3.5-16 Drug Label

Note

- Radiopharmaceuticals, Batch No., Expiry Date and Administered field will be automatically displayed by system based on the selected drug batch.
- Enter **Radioactivity** amount. **Radioactivity UOM** will be automatically displayed based on the drug SKU.
- Select **Measured Date/Time** field.
- Select **Prepared By** and **Checked By** field.
- Click on the  button to save record as per Figure 3.5-16.

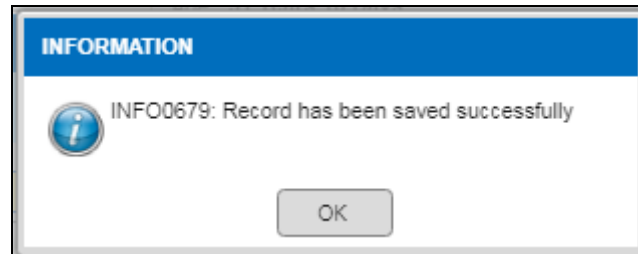


Figure 3.5-17 Alert Message


Note

- Click on the  button to save updated Radiopharmaceuticals Order Record as per Figure 3.5-18.

DRUG LABEL			
Radiopharmaceuticals		Sodium Pertechnetate (Tc-99m)	
Radioactivity	67.11 mCi	Measured Date/Time	22/10/2019 09:25 AM
Prepared By	Pharmacist FKP	Checked By	Pharmacist SS 04
Batch No.	Expiry Date		
DC3444	31/12/2019 12:00 AM		

Figure 3.5-18 Drug Label

Note

- Click on the  button to print label as per Figure 3.4-14 and label will be displayed as per Figure 3.4-18.


 Caution : Radioactive Material	HOSPITAL KUALA LUMPUR
	Drug Name : Sodium Pertechnetate (Tc-99m)
	Batch No : DC3444
XXXX XXXXXX XXX XXXXXXXXXXXX HKL018649	
Radioactivity : 67.11 mCi	
Measured Date/Time : 22/10/2019 09:25 AM	
Prepared By : Pharmacist FKP	
Checked By : Pharmacist SS 04	

Figure 3.5-19 Sample Radiopharmaceuticals Label

Note

Sample of Radiopharmaceuticals Label as per Figure 3.5-19.

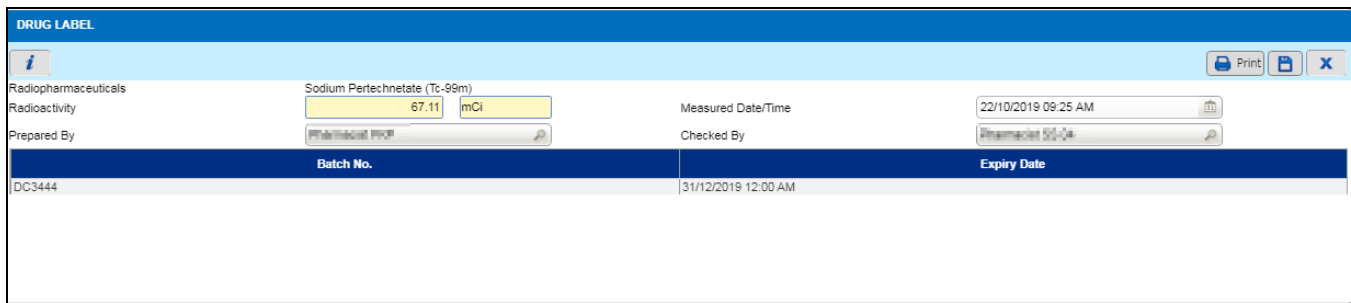



Figure 3.5-20 Drug Label

Note

Click on the  button to close Drug Label screen as per Figure 3.5-20.

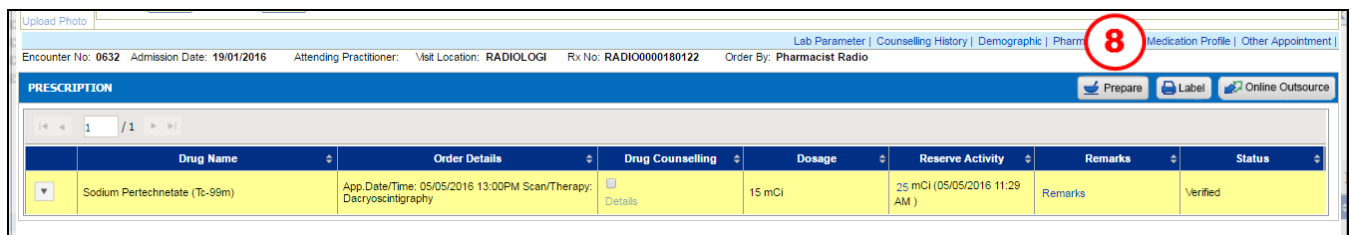
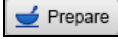


Figure 3.5-21 Radiopharmaceuticals Preparation

STEP 8 Click on the  button to prepare Radiopharmaceuticals order and alert message will be displayed as per Figure 3.5-21

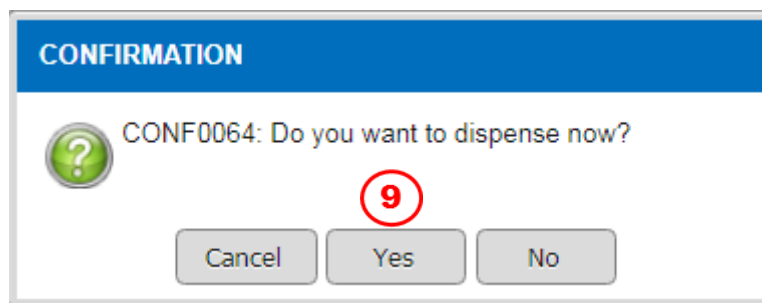


Figure 3.5-22 Ordered Prepared Alert Message

STEP 9

Click on the  button

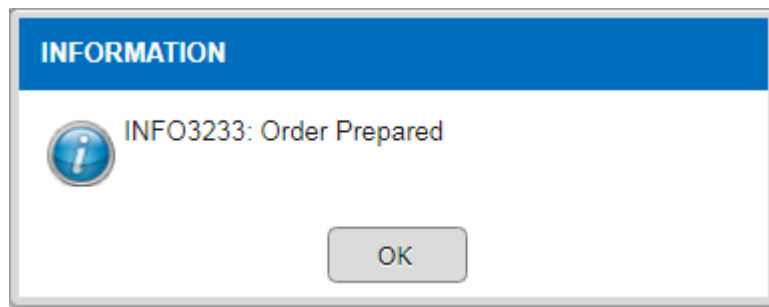
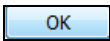


Figure 3.5-23 Ordered Prepared Alert Message

Note

- Click on the  button and order status will be updated to Prepared
- *User still allowed doing intervention and holding order in preparation stage.*

3.6 Radiopharmaceutical Dispensing

Radiopharmaceuticals dispensing screen allow user to dispense medication to patient, reprint drug label and record collection details.

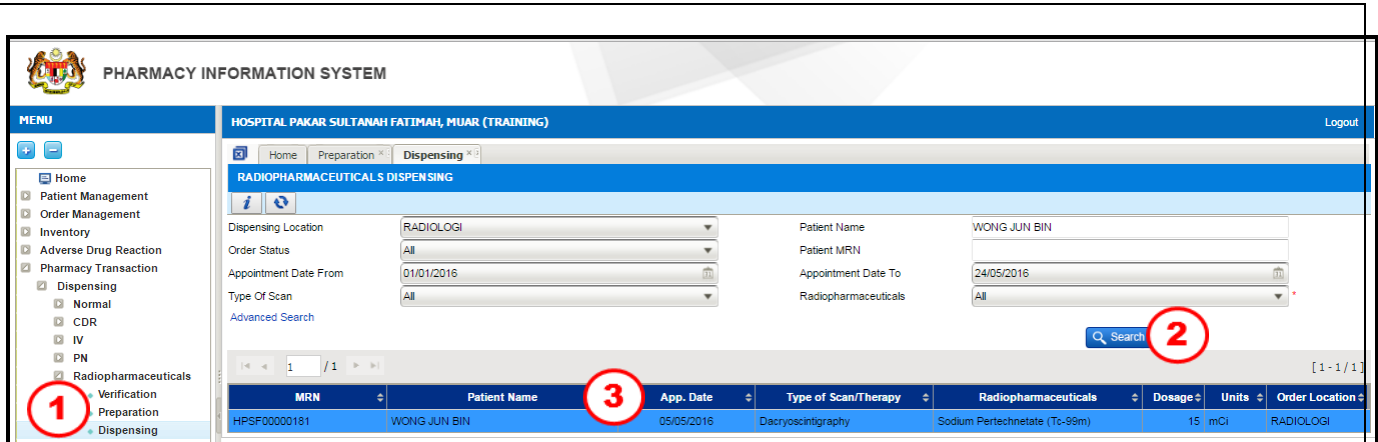


Figure 3.6-1 Radiopharmaceuticals Dispensing Listing Page


STEP 1

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

Note

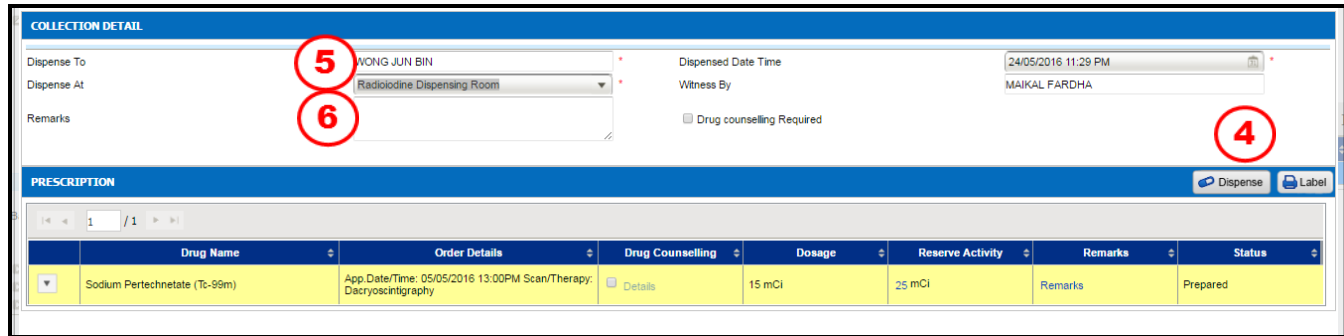
- Various search criteria is provided as below: Dispense Location
 - Patient Name
 - Order Status
 - Patient MRN
 - Appointment Date From
 - Appointment Date To
 - Type of Scan
 - Radiopharmaceuticals
- Click on the [Advanced Search](#) hyperlink for advance search.

STEP 2

Click on the  button and system will be displayed related order

STEP 3


Double click on the selected patient record and system will be displayed Radiopharmaceuticals Dispensing screen as per Figure 3.6-1

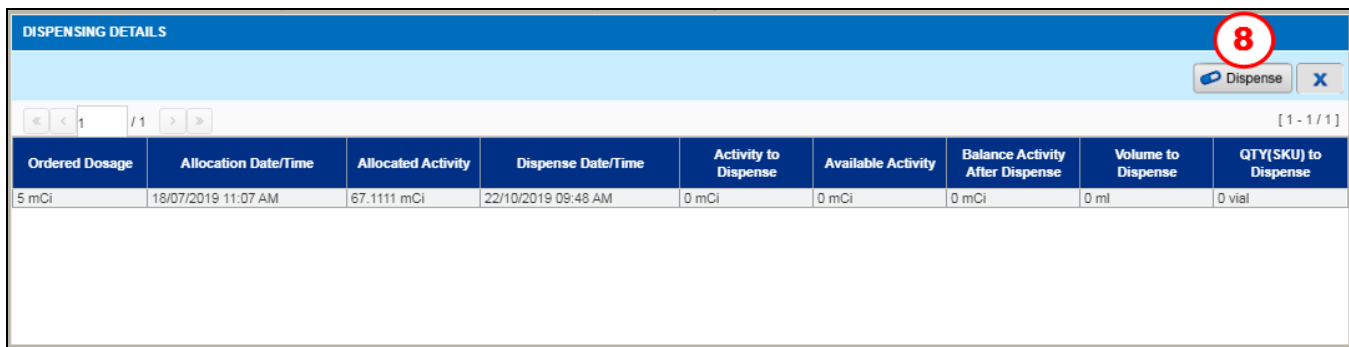


Drug Name	Order Details	Drug Counselling	Dosage	Reserve Activity	Remarks	Status
Sodium Pertechnetate (Tc-99m)	App.Date/Time: 05/05/2016 13:00PM Scan/Therapy: Dacryoscintigraphy	Details	15 mCi	25 mCi	Remarks	Prepared

Figure 3.6-2 Radiopharmaceuticals

STEP 4

Click on the  button to dispense Radiopharmaceuticals and Collection Detail screen will be displayed as per Figure 3.6-2



Ordered Dosage	Allocation Date/Time	Allocated Activity	Dispense Date/Time	Activity to Dispense	Available Activity	Balance Activity After Dispense	Volume to Dispense	QTY(SKU) to Dispense
5 mCi	18/07/2019 11:07 AM	67.1111 mCi	22/10/2019 09:48 AM	0 mCi	0 mCi	0 mCi	0 ml	0 vial

Figure 3.6-3 Dispensing Details Screen

STEP 8

Click on the  button to dispense Radiopharmaceuticals record as per Figure 3.6-3.

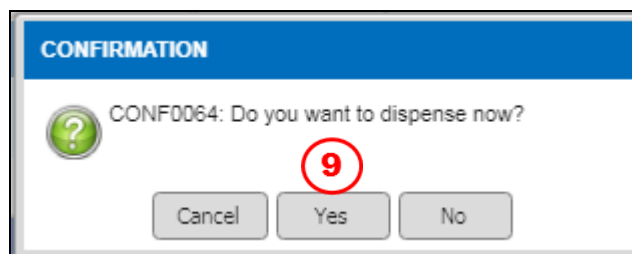
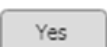


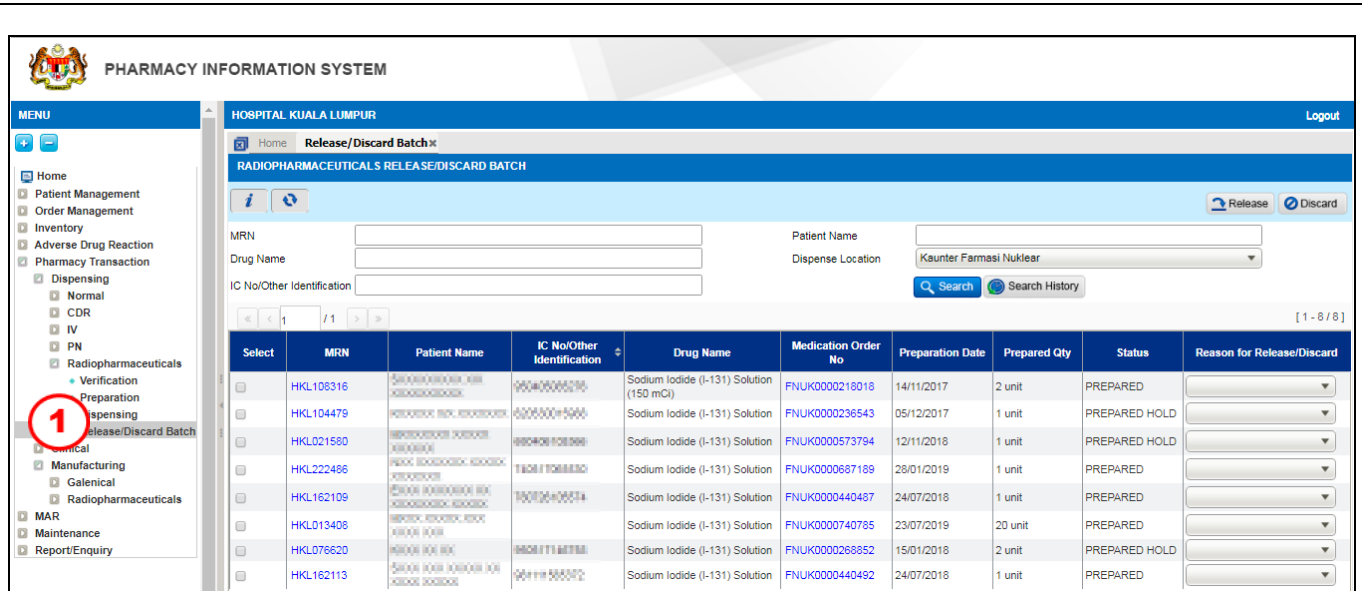
Figure 3.6-4 Information Alert Message

STEP 9

Click on the  button to proceed dispensing

3.7 Release Batch

Radiopharmaceuticals Release Batch Screen will allow user to release any reserved drug for the patient back into inventory.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Home Release/Discard Batch

RADIOPHARMACEUTICALS RELEASE/DISCARD BATCH

MRN: [] Patient Name: []
Drug Name: [] Dispense Location: Kaunter Farmasi Nuklear
IC No/Other Identification: [] Search Search History

Select	MRN	Patient Name	IC No/Other Identification	Drug Name	Medication Order No	Preparation Date	Prepared Qty	Status	Reason for Release/Discard
<input type="checkbox"/>	HKL106316	SHAHANNAH, RUM	000000000000	Sodium Iodide (I-131) Solution (150 mCi)	FNUK0000218018	14/11/2017	2 unit	PREPARED	[]
<input type="checkbox"/>	HKL104479	MOHAMMAD, MOHAMMAD	000000000000	Sodium Iodide (I-131) Solution	FNUK0000236543	05/12/2017	1 unit	PREPARED HOLD	[]
<input type="checkbox"/>	HKL021580	MOHAMMAD, MOHAMMAD	000000000000	Sodium Iodide (I-131) Solution	FNUK0000573794	12/11/2018	1 unit	PREPARED HOLD	[]
<input type="checkbox"/>	HKL222486	MOHAMMAD, MOHAMMAD	000000000000	Sodium Iodide (I-131) Solution	FNUK0000687189	28/01/2019	1 unit	PREPARED	[]
<input type="checkbox"/>	HKL162109	MOHAMMAD, MOHAMMAD	000000000000	Sodium Iodide (I-131) Solution	FNUK0000440487	24/07/2018	1 unit	PREPARED	[]
<input type="checkbox"/>	HKL013406	MOHAMMAD, MOHAMMAD	000000000000	Sodium Iodide (I-131) Solution	FNUK0000740785	23/07/2019	20 unit	PREPARED	[]
<input type="checkbox"/>	HKL078620	MOHAMMAD, MOHAMMAD	000000000000	Sodium Iodide (I-131) Solution	FNUK0000268852	15/01/2018	2 unit	PREPARED HOLD	[]
<input type="checkbox"/>	HKL162113	MOHAMMAD, MOHAMMAD	000000000000	Sodium Iodide (I-131) Solution	FNUK0000440492	24/07/2018	1 unit	PREPARED	[]

Figure 3.7-1 Radiopharmaceuticals Release Batch Listing Page


STEP 1

Click on 'Pharmacy Transaction' menu follow by 'Dispensing' and click on 'Radiopharmaceuticals Release Batch' sub-menu

Note

Various search criteria is provided as below:

- MRN
- Patient Name
- Drug Name
- Dispense Location
- IC No/Other Identification


PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR
Logout

Home
Release/Discard Batch

RADIOPHARMACEUTICALS RELEASE/DISCARD BATCH

Release
Discard

MRN:
Patient Name:
Drug Name:
Dispense Location:
IC No/Other Identification:

Search
Search History

1
/ 1

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Select	MRN	Patient Name	IC No/Other Identification	Drug Name	Medication Order No	Preparation Date	Prepared Qty	Status	Reason for Release/Discard
<input checked="" type="checkbox"/>	HKL108316	SARAH SARAH Binti SARAH SARAH	88040808278	Sodium Iodide (I-131) Solution (150 mCi)	FNUK0000218018	14/11/2017	2 unit	PREPARED	Change of Regimen
<input type="checkbox"/>	HKL104479	ROSA ROSA Binti ROSA ROSA	42080018888	Sodium Iodide (I-131) Solution	FNUK0000236543	05/12/2017	1 unit	PREPARED HOLD	Faulty Product
<input type="checkbox"/>	HKL021580	MUKHOMMAD MUKHOMMAD	48060403888	Sodium Iodide (I-131) Solution	FNUK0000573794	12/11/2018	1 unit	PREPARED HOLD	Patient Refused
<input type="checkbox"/>	HKL222486	HEIK HEIK Binti HEIK HEIK	1405110000000	Sodium Iodide (I-131) Solution	FNUK0000687189	28/01/2019	1 unit	PREPARED	Uncollected
<input type="checkbox"/>	HKL162109	MUKHOMMAD MUKHOMMAD	780728108814	Sodium Iodide (I-131) Solution	FNUK0000440487	24/07/2018	1 unit	PREPARED	Wrong Allocation
<input type="checkbox"/>	HKL013408	MUKHOMMAD MUKHOMMAD	0000000000000	Sodium Iodide (I-131) Solution	FNUK0000740785	23/07/2019	20 unit	PREPARED	
<input type="checkbox"/>	HKL078620	ROSA ROSA Binti ROSA ROSA	0000000000000	Sodium Iodide (I-131) Solution	FNUK0000268852	15/01/2018	2 unit	PREPARED HOLD	
<input type="checkbox"/>	HKL162113	SARAH SARAH Binti SARAH SARAH	88111888072	Sodium Iodide (I-131) Solution	FNUK0000440492	24/07/2018	1 unit	PREPARED	

Figure 3.7-2 Radiopharmaceuticals Release Batch

STEP 2

Select **Reason for Release** from drop down box:

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


PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR
Logout

Home
Release/Discard Batch

RADIOPHARMACEUTICALS RELEASE/DISCARD BATCH

Release
Discard

MRN:
Patient Name:
Drug Name:
Dispense Location:
IC No/Other Identification:

Search
Search History

1
/ 1

[1 - 8 / 8]


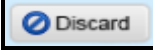
Select	MRN	Patient Name	IC No/Other Identification	Drug Name	Medication Order No	Preparation Date	Prepared Qty	Status	Reason for Release/Discard
<input checked="" type="checkbox"/>	HKL108316	SARAH SARAH Binti SARAH SARAH	88040808278	Sodium Iodide (I-131) Solution (150 mCi)	FNUK0000218018	14/11/2017	2 unit	PREPARED	Change of Regimen
<input type="checkbox"/>	HKL104479	ROSA ROSA Binti ROSA ROSA	42080018888	Sodium Iodide (I-131) Solution	FNUK0000236543	05/12/2017	1 unit	PREPARED HOLD	
<input type="checkbox"/>	HKL021580	MUKHOMMAD MUKHOMMAD	48060403888	Sodium Iodide (I-131) Solution	FNUK0000573794	12/11/2018	1 unit	PREPARED HOLD	
<input type="checkbox"/>	HKL222486	HEIK HEIK Binti HEIK HEIK	1405110000000	Sodium Iodide (I-131) Solution	FNUK0000687189	28/01/2019	1 unit	PREPARED	
<input type="checkbox"/>	HKL162109	MUKHOMMAD MUKHOMMAD	780728108814	Sodium Iodide (I-131) Solution	FNUK0000440487	24/07/2018	1 unit	PREPARED	
<input type="checkbox"/>	HKL013408	MUKHOMMAD MUKHOMMAD	0000000000000	Sodium Iodide (I-131) Solution	FNUK0000740785	23/07/2019	20 unit	PREPARED	
<input type="checkbox"/>	HKL078620	ROSA ROSA Binti ROSA ROSA	0000000000000	Sodium Iodide (I-131) Solution	FNUK0000268852	15/01/2018	2 unit	PREPARED HOLD	
<input type="checkbox"/>	HKL162113	SARAH SARAH Binti SARAH SARAH	88111888072	Sodium Iodide (I-131) Solution	FNUK0000440492	24/07/2018	1 unit	PREPARED	

Figure 3.7-3 Radiopharmaceuticals Release Batch

STEP 3

Check the ☒ **Select** checkbox

STEP 4

Click on the  button to release batch and  button to discard

Note

- Release function is to release and update back stock into inventory.
- Discard function is to discard stock from inventory even not doing dispensing.

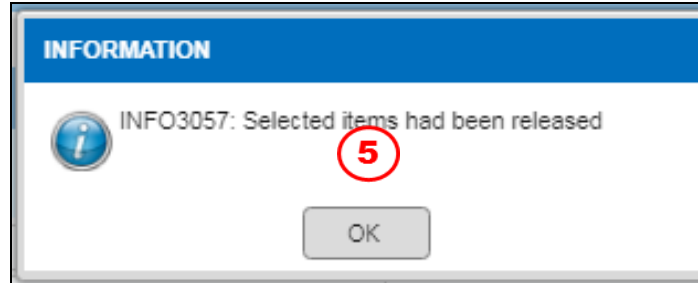


Figure 3.7-4 Information Alert Message

STEP 5

Click on the  button to release selected items

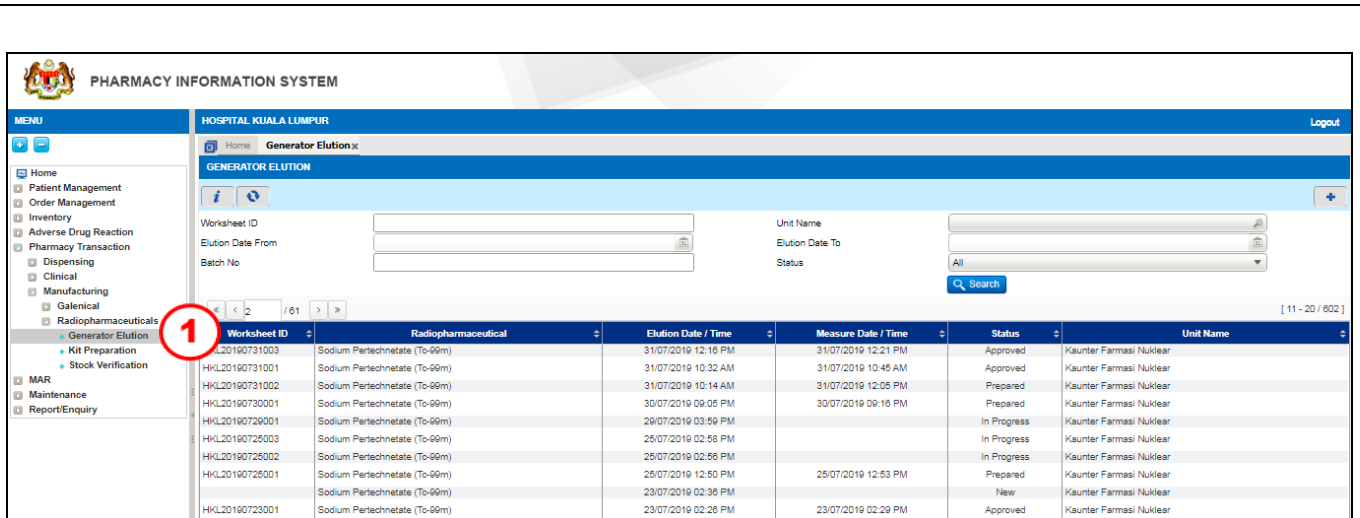
Note

Released order will flow back to Preparation screen for user to allocate new batch quantity.

3.8 Radiopharmaceutical Manufacturing

3.8.1 Generate Elution

Generator Elution screen allow user to create Technetium (99mTc) Sodium Pertechnetate which can be used to manufacture Kit based Radiopharmaceuticals in kit Preparation screen.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

GENERATOR ELUTION

Worksheet ID: Unit Name:

Elution Date From: Elution Date To:

Batch No: Status:

1

Worksheet ID	Radiopharmaceutical	Elution Date / Time	Measure Date / Time	Status	Unit Name
HLK20190731003	Sodium Pertechnetate (Tc-99m)	31/07/2019 12:16 PM	31/07/2019 12:21 PM	Approved	Kaunter Farmasi Nuklear
HLK20190731001	Sodium Pertechnetate (Tc-99m)	31/07/2019 10:32 AM	31/07/2019 10:45 AM	Approved	Kaunter Farmasi Nuklear
HLK20190731002	Sodium Pertechnetate (Tc-99m)	31/07/2019 10:14 AM	31/07/2019 12:05 PM	Prepared	Kaunter Farmasi Nuklear
HLK20190730001	Sodium Pertechnetate (Tc-99m)	30/07/2019 09:05 PM	30/07/2019 09:16 PM	Prepared	Kaunter Farmasi Nuklear
HLK20190729001	Sodium Pertechnetate (Tc-99m)	29/07/2019 03:59 PM		In Progress	Kaunter Farmasi Nuklear
HLK20190725003	Sodium Pertechnetate (Tc-99m)	25/07/2019 02:58 PM		In Progress	Kaunter Farmasi Nuklear
HLK20190725002	Sodium Pertechnetate (Tc-99m)	25/07/2019 02:58 PM		In Progress	Kaunter Farmasi Nuklear
HLK20190725001	Sodium Pertechnetate (Tc-99m)	25/07/2019 12:50 PM	25/07/2019 12:53 PM	Prepared	Kaunter Farmasi Nuklear
HLK20190725001	Sodium Pertechnetate (Tc-99m)	23/07/2019 02:35 PM		New	Kaunter Farmasi Nuklear
HLK20190723001	Sodium Pertechnetate (Tc-99m)	23/07/2019 02:29 PM	23/07/2019 02:29 PM	Approved	Kaunter Farmasi Nuklear


Figure 3.8.1-1 Generator Elution Listing Page

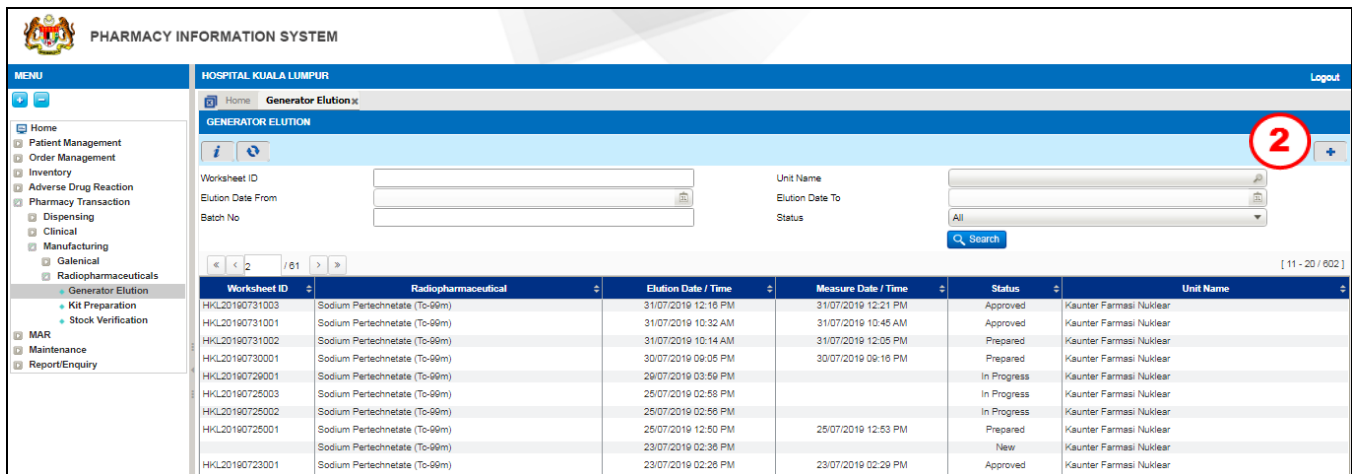
STEP 1

Click on 'Pharmacy Transaction' menu followed by 'Manufacturing' and click on 'Radiopharmaceuticals Generator Elution' sub-menu

Note

- Various search criteria is provided as below:
 - Worksheet ID
 - Date From
 - Date To
 - Batch No
 - Status

Click on the  button and system will display related record.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Logout

Home Generator Elution

GENERATOR ELUTION

Worksheet ID: [] Elution Date From: [] Elution Date To: [] Unit Name: [] Status: [All] Search


Batch No: []

[11 - 20 / 602]

Worksheet ID	Radiopharmaceutical	Elution Date / Time	Measure Date / Time	Status	Unit Name
HKL20190731003	Sodium Pertechnetate (Tc-99m)	31/07/2019 12:16 PM	31/07/2019 12:21 PM	Approved	Kaunter Farmasi Nuklear
HKL20190731001	Sodium Pertechnetate (Tc-99m)	31/07/2019 10:32 AM	31/07/2019 10:45 AM	Approved	Kaunter Farmasi Nuklear
HKL20190731002	Sodium Pertechnetate (Tc-99m)	31/07/2019 10:14 AM	31/07/2019 12:05 PM	Prepared	Kaunter Farmasi Nuklear
HKL20190730001	Sodium Pertechnetate (Tc-99m)	30/07/2019 09:05 PM	30/07/2019 09:10 PM	Prepared	Kaunter Farmasi Nuklear
HKL20190720001	Sodium Pertechnetate (Tc-99m)	29/07/2019 03:59 PM		In Progress	Kaunter Farmasi Nuklear
HKL20190725003	Sodium Pertechnetate (Tc-99m)	25/07/2019 02:58 PM		In Progress	Kaunter Farmasi Nuklear
HKL20190725002	Sodium Pertechnetate (Tc-99m)	25/07/2019 02:56 PM		In Progress	Kaunter Farmasi Nuklear
HKL20190725001	Sodium Pertechnetate (Tc-99m)	25/07/2019 12:50 PM	25/07/2019 12:53 PM	Prepared	Kaunter Farmasi Nuklear
HKL20190723001	Sodium Pertechnetate (Tc-99m)	23/07/2019 02:38 PM		New	Kaunter Farmasi Nuklear
HKL20190723001	Sodium Pertechnetate (Tc-99m)	23/07/2019 02:26 PM	23/07/2019 02:29 PM	Approved	Kaunter Farmasi Nuklear

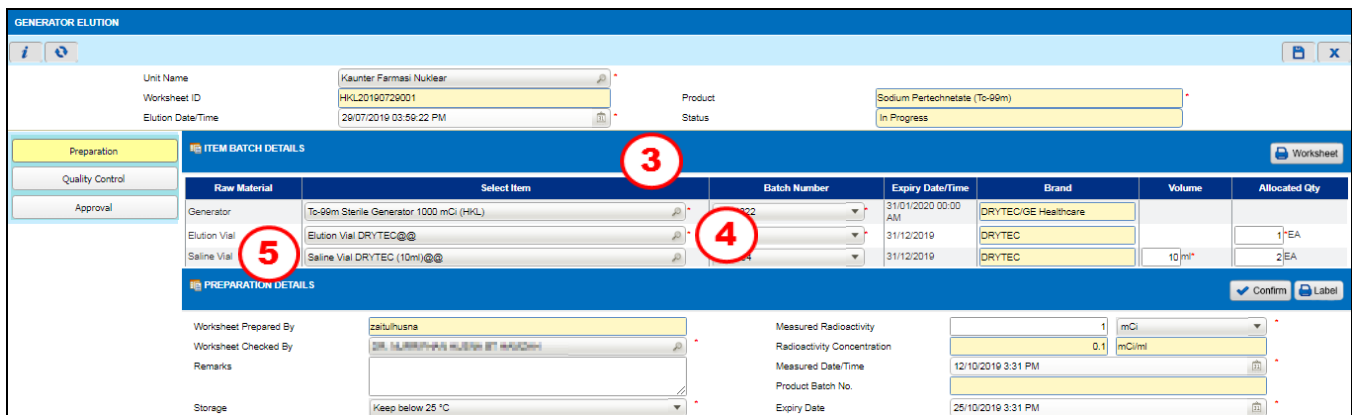
Figure 3.8.1-2 Generator Elution Listing Page

STEP 2

Click on  button to create new generator elution record and system will be automatically displayed screen as per Figure 3.8.1-3

Note

- System will be automatically displayed Preparation screen as per Figure 3.8.1-3.
- The **Product** field will be automatically displayed by system.



GENERATOR ELUTION

Unit Name: Kaunter Farmasi Nuklear

Worksheet ID: HKL20190723001

Elution Date/Time: 29/07/2019 03:56:22 PM

Product: Sodium Pertechnetate (Tc-99m)

Status: In Progress

Preparation

Quality Control

Approval

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand	Volume	Allocated Qty
Generator	To-99m Sterile Generator 1000 mCi (HKL)	22	31/01/2020 00:00 AM	DRYTEC/GE Healthcare		1 EA
Elution Vial	Elution Vial DRYTEC	4	31/12/2019	DRYTEC		2 EA
Saline Vial	Saline Vial DRYTEC (10ml)		31/12/2019	DRYTEC	10 ml	

PREPARATION DETAILS

Worksheet Prepared By: zahid/nuana

Worksheet Checked By: DR. HUSNAHUS HUSNA BT HUSNOR

Remarks: []

Storage: Keep below 25 °C

Measured Radioactivity: 1 mCi

Radioactivity Concentration: 0.1 mCi/ml

Measured Date/Time: 12/10/2019 3:31 PM

Product Batch No: []

Expiry Date: 25/10/2019 3:31 PM

Figure 3.8.1-3 Generator Elution

STEP 3

Select **Unit Name**, **Generator** from drop down box and **Batch Number** will be automatically displayed based on current available stock

STEP 4

Select **Elution Vial** from drop down box and **Batch Number** will be automatically displayed based on current available stock

STEP 5

Select **Saline Vial** from drop down box and **Batch Number** will be automatically displayed base on current available stock

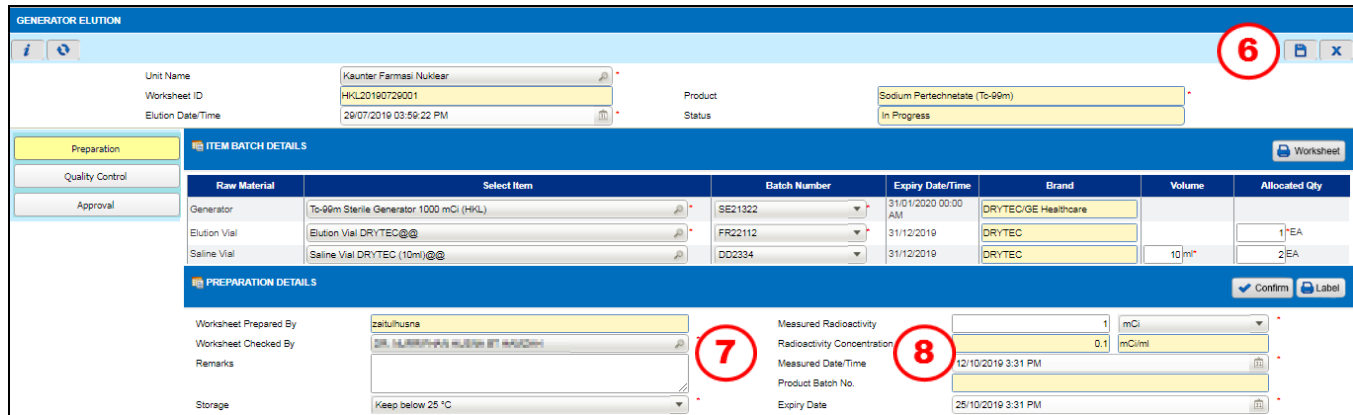


Figure 3.8.1-4 Generator Elution


STEP 6

Click on the  button to save record

STEP 7

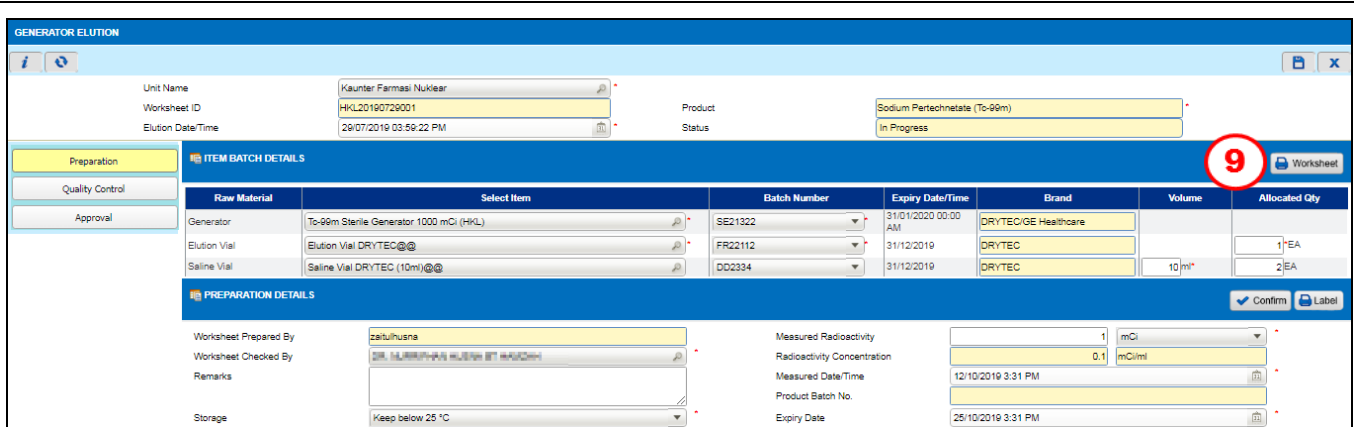
Enter **Measured Radioactivity** field and **Radioactivity Concentration** will be automatically calculated and displayed as per Figure 3.8.1-4

Note

- Enter **Volume** and **Allocated Qty** for Elution Vial and Saline Vial.
- **Status** will changed to New after saving.
- The  button will automatically activate after saving.

STEP 8

Enter **Measured Date/Time** field



GENERATOR ELUTION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20190726001
Elution Date/Time: 29/07/2019 03:59:22 PM
Product: Sodium Pertechnetate (Tc-99m)
Status: In Progress

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand	Volume	Allocated Qty
Generator	To-99m Sterile Generator 1000 mCi (HKL)	SE21322	31/01/2020 00:00 AM	DRYTEC/GE Healthcare		1 EA
Elution Vial	Elution Vial DRYTEC	FR22112	31/12/2019	DRYTEC		2 EA
Saline Vial	Saline Vial DRYTEC (10ml)	DD2334	31/12/2019	DRYTEC	10 ml	

PREPARATION DETAILS


Worksheet Prepared By: Zahid Husna
Worksheet Checked By: DR. HUSNAHUSNA HUSNAN BT HUSNAN
Remarks:
Storage: Keep below 25 °C

Measured Radioactivity: 1 mCi
Radioactivity Concentration: 0.1 mCi/ml
Measured Date/Time: 12/10/2019 3:31 PM
Product Batch No.:
Expiry Date: 25/10/2019 3:31 PM

9 Worksheet

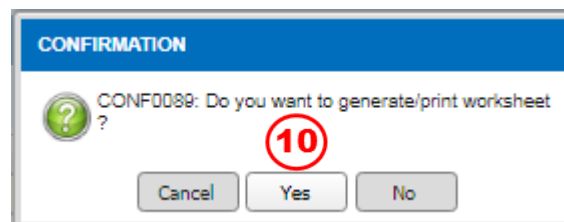
Figure 3.8.1-5 Generator Elution

STEP 9

Click on the  **Worksheet** button to generate the worksheet and alert message will be displayed as per Figure 3.8.1-5

Note

Enter **Remarks** if applicable.



CONFIRMATION


CONF0089: Do you want to generate/print worksheet?

10 Yes

Cancel Yes No

Figure 3.8.1-6 Generate Worksheet Alert Message

STEP 10

Click on the  **Yes** button to generate/print worksheet and worksheet will be displayed as per Figure 3.8.1-6

RADIOPHARMACEUTICALS WORKSHEET					
MINISTRY OF HEALTH HOSPITAL KUALA LUMPUR					
Generator Elution records for Sodium Pertechnetate (Tc-99m)					
Eluate Batch No:					
Worksheet ID: HKL20190729001					
Preparation of Sodium Pertechnetate (Tc-99m) Eluate					
Elution Date/Time	29/07/2019 03:59 PM		Generator Brand/Manufacturer	Worksheet Prepared By : zatu/husna	
Generator Batch No.	SE21322	Exp. Date	31/01/2020 00:00	Signature Name Date/Time	
Elution Vial Batch No.	FR22112	Exp. Date	31/12/2019	Signature Name Date/Time	
Saline Vial Batch No.	DD2334	Exp. Date	31/12/2019	Signature Name Date/Time	
Volume	10 ml		Remarks :	Worksheet Checked By : DR. NURRIFHAN HUSNA BT HAMZAH	
Elution BN				Preparation Done By :	
Measured Activity				Signature Name Date/Time	
Measured Date/Time					
Radioactivity Concentration	0.1 mCi/ml			Signature Name Date/Time	
Quality Control of Eluate					
Measure Mo-99 Activity		Limit		Pass/Fail	Quality Control Done By
Quality Control Test	Mo-99 Breakthrough	<0.15 µCi of Mo-99 per mCi of Tc-99m			Signature Name Date/Time
	Eluate pH	4.0-8.0			
	Alumina Breakthrough	Intensity less than Standard			
Approval of Eluate				Label	
Checklist for approval :			Approved By :		
Preparation done accordingly					
QC done accordingly and pass					
Label done accordingly					
Remarks					

Figure 3.8.1-7 Sample Of Worksheet

Note

Sample of worksheet as per Figure 3.7.1-7.

GENERATOR ELUTION

Unit Name: Kaunter Farmasi Nuklear

Worksheet ID: HKL20190729001

Elution Date/Time: 29/07/2019 03:59:22 PM

Product: Sodium Pertechnetate (Tc-99m)

Status: In Progress

Preparation

Quality Control

Approval

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand	Volume	Allocated Qty
Generator	Tc-99m Sterile Generator 1000 mCi (HKL)	SE21322	31/01/2020 00:00 AM	DRYTEC/GE Healthcare		1 EA
Elution Vial	Elution Vial DRYTEC	FR22112	31/12/2019	DRYTEC		2 EA
Saline Vial	Saline Vial DRYTEC (10ml)	DD2334	31/12/2019	DRYTEC	10 ml	

PREPARATION DETAILS

Worksheet Prepared By: zatu/husna

Worksheet Checked By: DR. NURRIFHAN HUSNA BT HAMZAH

Remarks:

Storage: Keep below 25 °C

Measured Radioactivity: 1 mCi

Radioactivity Concentration: 0.1 mCi/ml

Measured Date/Time: 12/10/2019 3:31 PM


Product Batch No:

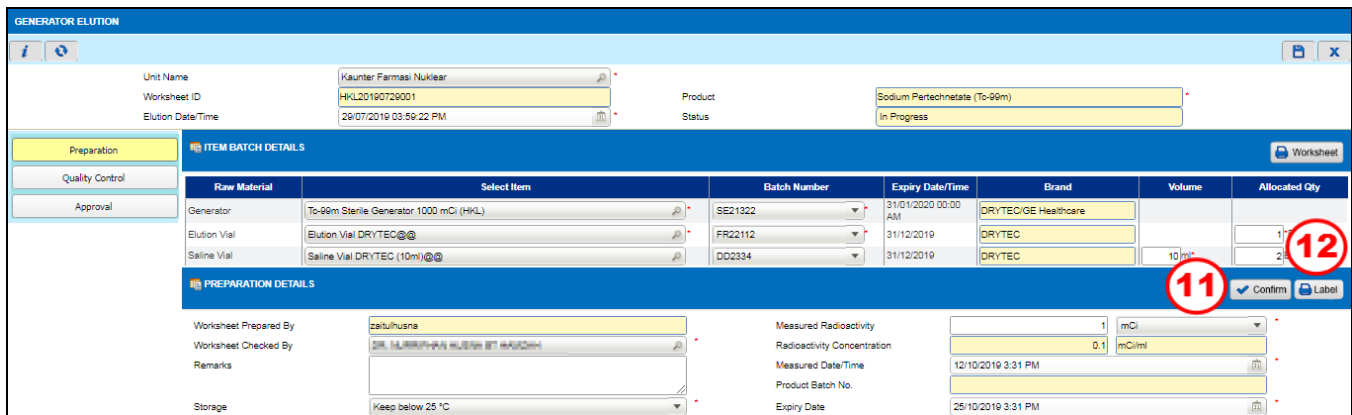
Expiry Date: 25/10/2019 3:31 PM

☒ Confirm ☐ Label

Figure 3.8.1-8 Generator Elution

Note

- **Worksheet ID** will automatically display after generate worksheet as per Figure 3.8.1-8.
- **Status** will change to In Progress after generate worksheet.
- The  button will activate after generate worksheet.



GENERATOR ELUTION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20190729001
Elution Date/Time: 29/07/2019 03:59:22 PM
Product: Sodium Pertechnetate (Tc-99m)
Status: In Progress

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand	Volume	Allocated Qty
Generator	To-99m Sterile Generator 1000 mCi (HKL)	SE21322	31/01/2020 00:00 AM	DRYTEC/GE Healthcare		1
Elution Vial	Elution Vial DRYTEC	FR22112	31/12/2019	DRYTEC		2
Saline Vial	Saline Vial DRYTEC (10ml)	DC2334	31/12/2019	DRYTEC	10 ml	

PREPARATION DETAILS

Worksheet Prepared By: zahulhusna
Worksheet Checked By: DR. NURHAFIZAH HUSSEIN BT. HAFIZAH
Remarks:
Storage: Keep below 25 °C

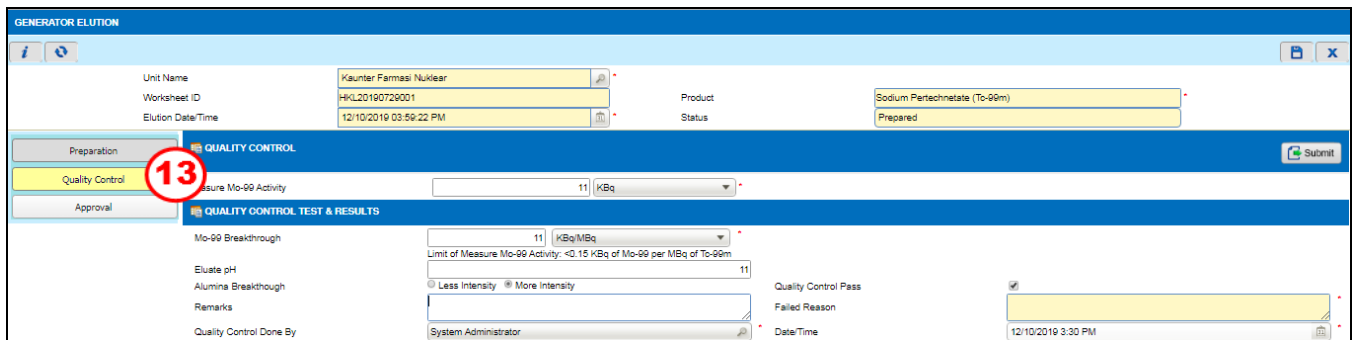
Measured Radioactivity: 1 mCi
Radioactivity Concentration: 0.1 mCi/ml
Measured Date/Time: 12/10/2019 3:31 PM
Product Batch No.:
Expiry Date: 25/10/2019 3:31 PM

Buttons: Confirm (11), Label (12)

Figure 3.8.1-9 Generator Elution

STEP 11

Click on the  button to confirm information preparation details



GENERATOR ELUTION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20190729001
Elution Date/Time: 12/10/2019 03:59:22 PM
Product: Sodium Pertechnetate (Tc-99m)
Status: Prepared

QUALITY CONTROL

Measure Mo-99 Activity: 11 KBq

QUALITY CONTROL TEST & RESULTS



Mo-99 Breakthrough: 11 KBq/MBq
Limit of Measure Mo-99 Activity: <0.15 KBq of Mo-99 per MBq of Tc-99m
Eluate pH: 11
Alumina Breakthrough: Less Intensity More Intensity
Remarks:
Quality Control Done By: System Administrator

Quality Control Pass: ☒
Failed Reason:
Date/Time: 12/10/2019 3:30 PM

Buttons: Submit, Label (13)

Figure 3.8.1-10 Generator Elution

Note

- The  button will activate after user confirmed the preparation details.
- Status** will change to Prepared and the  button will be activated.

STEP 12

Click on the  button to edit label

STEP 13

Click on the  button and system will be displayed screen as per Figure 3.8.1-10

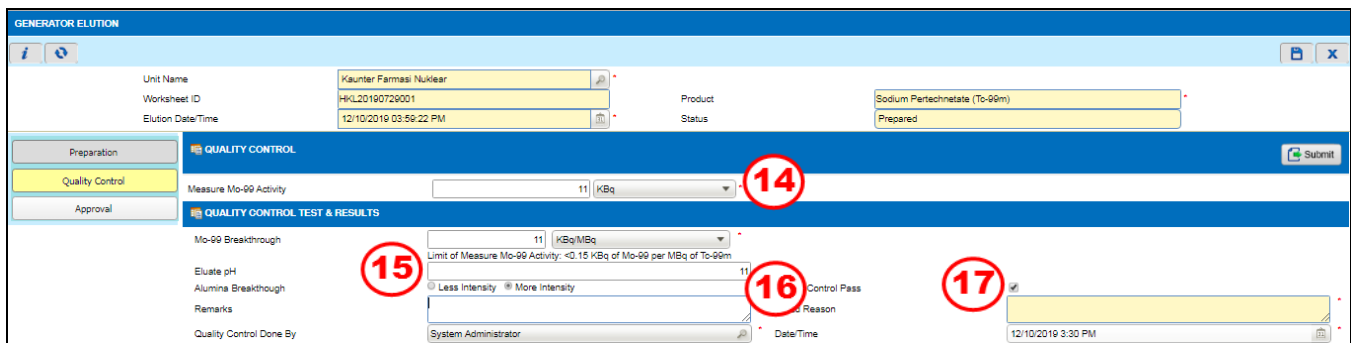


Figure 3.8.1-11 Generator Elution

STEP 14

Enter **Measure Mo-99 Activity kBq** field

Note

- The **Mo-99 Breakthrough kBq per MBq** field will be automatically displayed by system after enter **Measure Mo-99 Activity kBq**.
- **Date/Time** field will be automatically displayed by system.

STEP 15

Enter **Eluate pH** field

STEP 16

Select **Alumina Breakthrough** either **Less Intensity** or **More Intensity** radio button

STEP 17

Select **Quality Control Pass** either **Yes** or **No**

Note

If the selection of **Quality Control Pass, No; Failed Reason** field will be activated and user have to enter the reason of failure as per Figure 3.8.1-11.

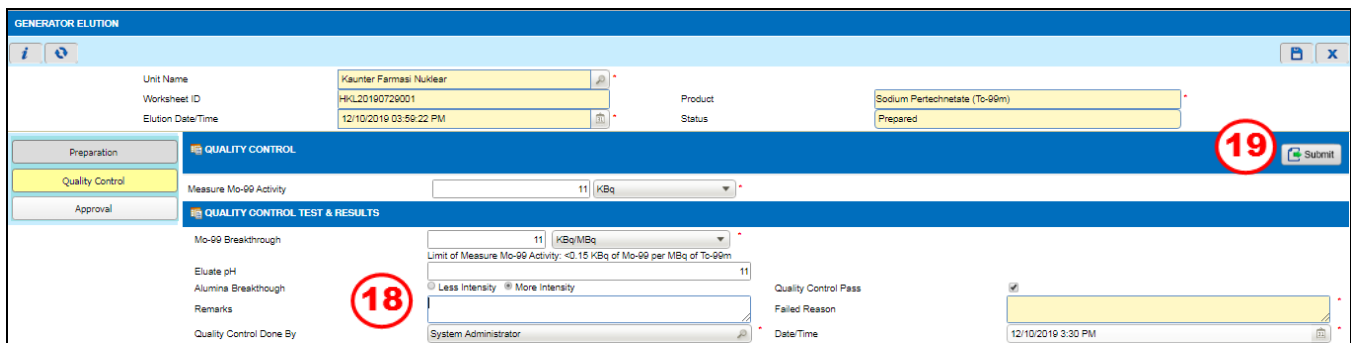


Figure 3.8.1-12 Generator Elution

Note

- If the selection of **Quality Control Pass, Yes**; **Failed Reason** field will not activate as per Figure 3.8.1-12.

STEP 18

Enter **Remarks** if applicable

STEP 19

Click on the  button to submit quality control results

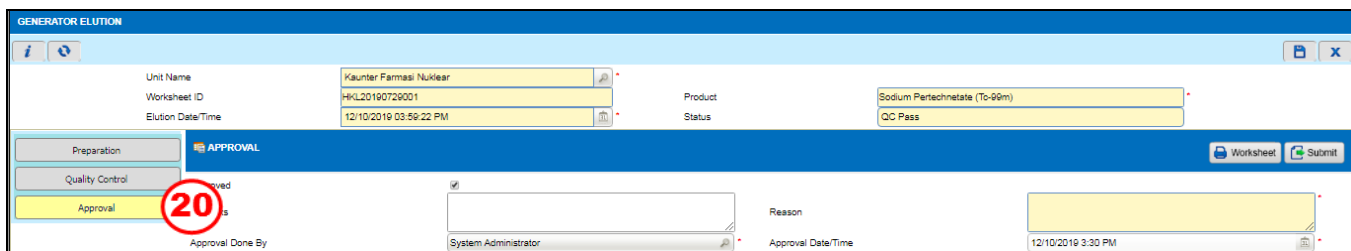


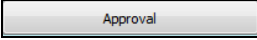


Figure 3.8.1-13 Generator Elution

Note

- The **Quality Control Done By** field will be automatically displayed after click on the  button.
- The  button will disable after done submitting the Quality Control record.
- The  button will be activated after the submission.

STEP 20

Click on the  button and system will be displayed screen as per Figure 3.8.1-13

Note

Status will be changed to QC Pass at Approval screen.

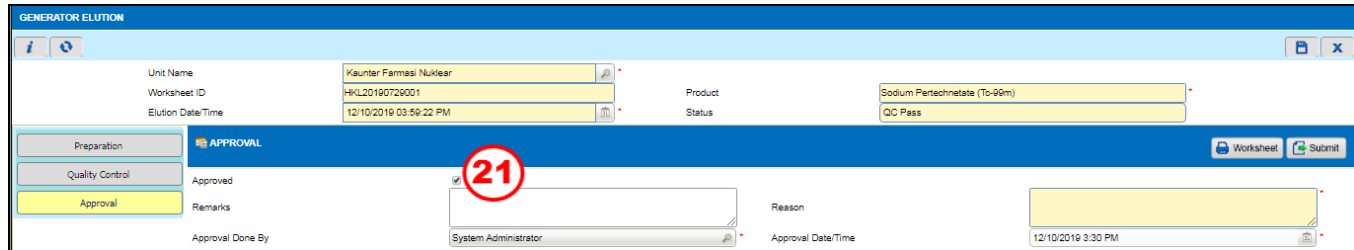



Figure 3.8.1-14 Generator Elution

STEP 21

Select **Approved** either **Yes** or **No**

Note

- If the selection of **Approved, No; Reason** field will be activated and user have to enter the reason of not approve as per Figure 3.8.1-14.
- If the selection of **Approved, Yes; Reason** field will not activate as per Figure 3.8.1-15.
- Enter **Remarks** if applicable.
- The **Date/Time** field will automatically default by system.
- The  **Worksheet** button is for user to reprint the worksheet.

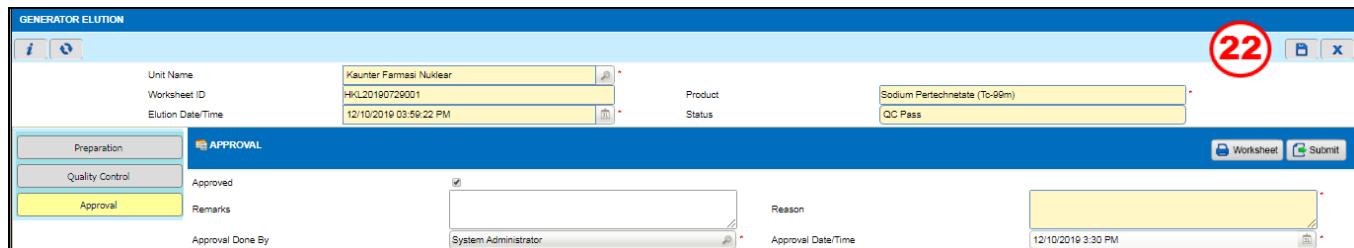


Figure 3.8.1-15 Generator Elution

STEP 22

Click on the  **Submit** button to submit the approval details

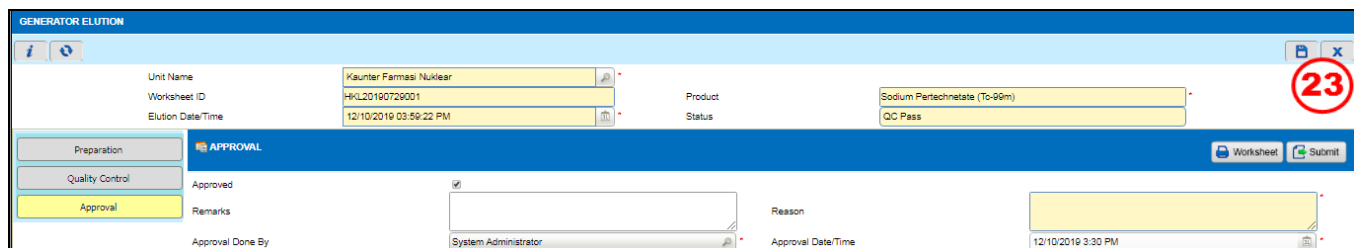



Figure 3.8.1-16 Generator Elution

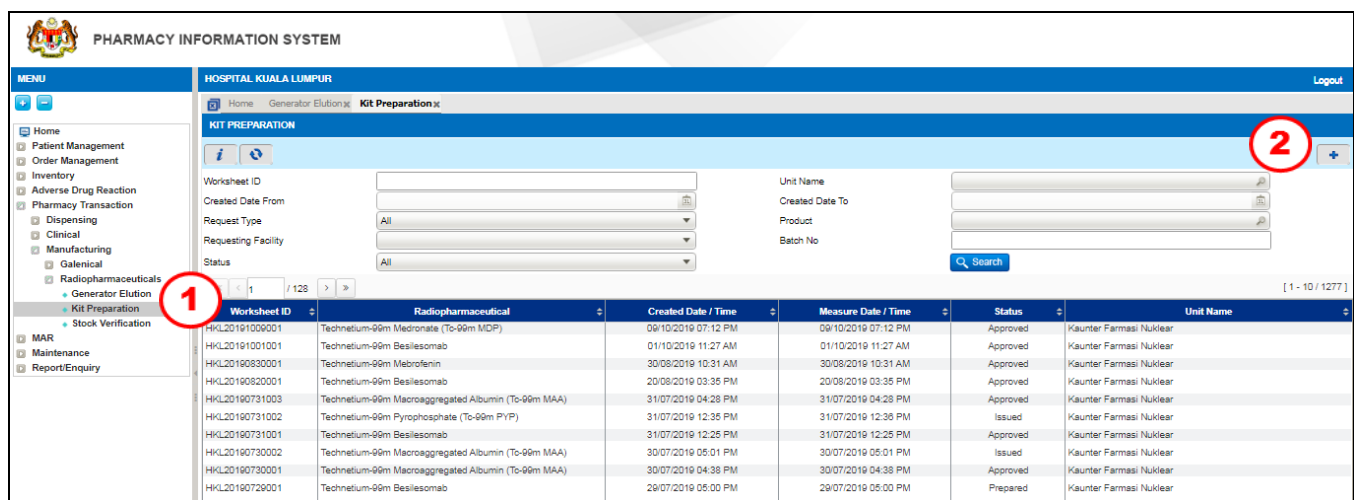
Note

- **Status** will change to *Approved* after the submission had done.
- The **Approval Done By** field will be automatically displayed after the submission had done.

STEP 23

Click on the  button to close generator elution screen

3.8.2 KIT Preparation



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Logout

Home Generator Elution **KIT Preparation**

KIT PREPARATION

Worksheet ID: Unit Name:

Created Date From: Created Date To:

Request Type: Product:

Requesting Facility: Batch No:

Status:

[1 - 10 / 1277]

Worksheet ID	Radiopharmaceutical	Created Date / Time	Measure Date / Time	Status	Unit Name
HWL20191006001	Techetium-99m Medronate (Tc-99m MDP)	09/10/2019 07:12 PM	09/10/2019 07:12 PM	Approved	Kaunter Farmasi Nuklear
HWL20191001001	Techetium-99m Besilesomab	01/10/2019 11:27 AM	01/10/2019 11:27 AM	Approved	Kaunter Farmasi Nuklear
HWL20190830001	Techetium-99m Mebrofenin	30/08/2019 10:31 AM	30/08/2019 10:31 AM	Approved	Kaunter Farmasi Nuklear
HWL20190830001	Techetium-99m Besilesomab	20/08/2019 03:35 PM	20/08/2019 03:35 PM	Approved	Kaunter Farmasi Nuklear
HWL20190731003	Techetium-99m Macroaggregated Albumin (Tc-99m MAA)	31/07/2019 04:28 PM	31/07/2019 04:28 PM	Approved	Kaunter Farmasi Nuklear
HWL20190731002	Techetium-99m Pyrophosphate (Tc-99m PYP)	31/07/2019 12:35 PM	31/07/2019 12:35 PM	Issued	Kaunter Farmasi Nuklear
HWL20190731001	Techetium-99m Besilesomab	31/07/2019 12:25 PM	31/07/2019 12:25 PM	Approved	Kaunter Farmasi Nuklear
HWL20190730002	Techetium-99m Macroaggregated Albumin (Tc-99m MAA)	30/07/2019 05:01 PM	30/07/2019 05:01 PM	Issued	Kaunter Farmasi Nuklear
HWL20190730001	Techetium-99m Macroaggregated Albumin (Tc-99m MAA)	30/07/2019 04:38 PM	30/07/2019 04:38 PM	Approved	Kaunter Farmasi Nuklear
HWL20190720001	Techetium-99m Besilesomab	29/07/2019 05:00 PM	29/07/2019 05:00 PM	Prepared	Kaunter Farmasi Nuklear

Figure 3.8.2-1 Kit Preparation Listing Page

STEP 1

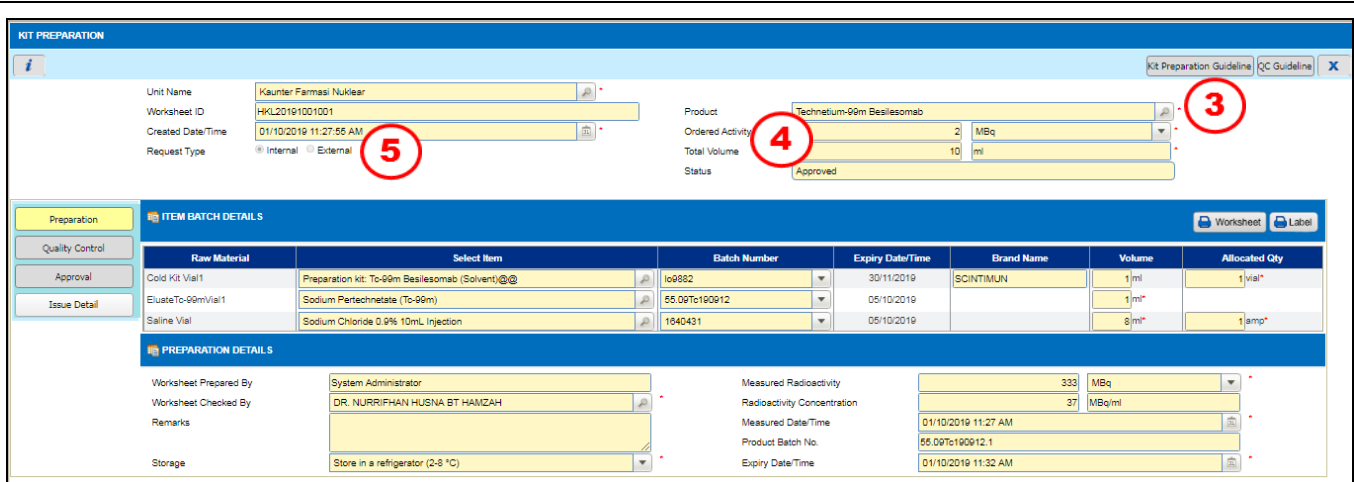
Click on 'Pharmacy Transaction' menu follow by 'Manufacturing' and click on 'Radiopharmaceuticals Kit Preparation' sub-menu

Note

- Various search criteria is provided as below:
 - Worksheet ID
 - Product
 - Ordered Date From
 - Ordered Date To
 - Batch No
 - Status
 - Request Type
 - Requesting Facility
- Click on the button and system will be displayed related record.

STEP 2

Click on button to create new bulk preparation record and system will be automatically displayed screen as per Figure 3.8.2-1



KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20191001001
Created Date/Time: 01/10/2019 11:27:55 AM
Request Type: ☒ Internal ☐ External

Product: Technetium-99m Besilesomab
Ordered Activity: 2 MBq
Total Volume: 10 ml
Status: Approved

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit, Tc-99m Besilesomab (Solvent)@@	109882	30/11/2019	SCINTIMUN	1 ml	1 vial*
Eluate Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	55.097c190912	05/10/2019		1 ml*	
Saline Vial	Sodium Chloride 0.9% 10mL Injection	1640431	05/10/2019		8 ml*	1 amp*

PREPARATION DETAILS

Worksheet Prepared By: System Administrator
Worksheet Checked By: DR. NURRIFFAH HUSNA BT HAMZAH
Remarks:
Storage: Store in a refrigerator (2-8 °C)

Measured Radioactivity: 333 MBq
Radioactivity Concentration: 37 MBq/ml
Measured Date/Time: 01/10/2019 11:27 AM
Product Batch No: 55.097c190912.1
Expiry Date/Time: 01/10/2019 11:32 AM

Figure 3.8.2-2 Kit Preparation

STEP 3

Click on the  button and select **Product** from the drop down box

Note

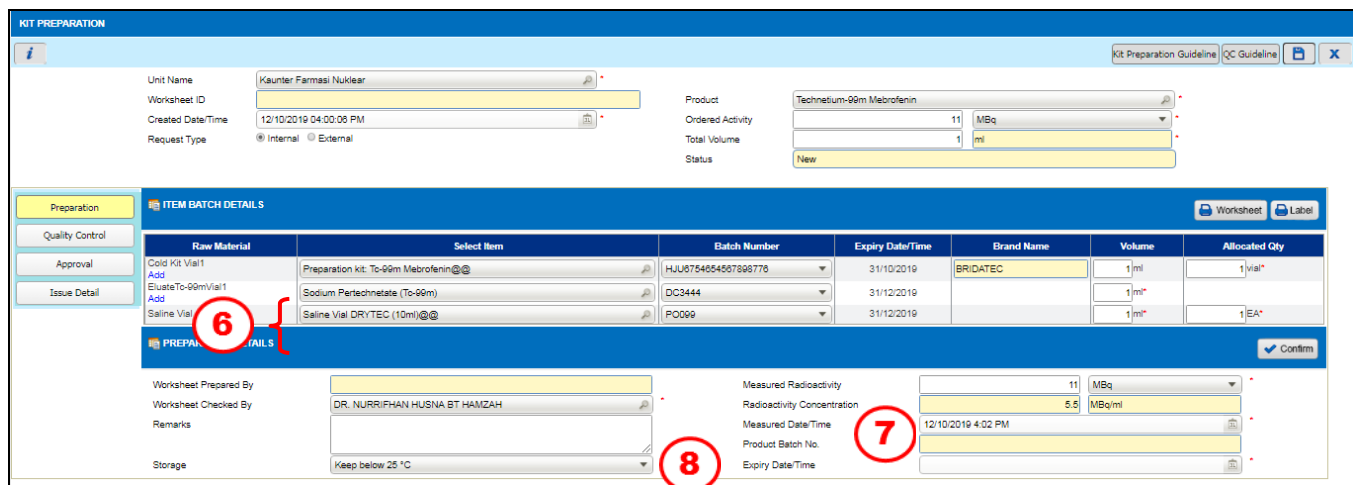
- The **Unit Name** field will automatically default to current date by system.
- The **Created Date** field will automatically default to current date by system.
- The **Request Type** will automatically default to **Internal** radiobutton.

STEP 4

Enter **Ordered Activity** and **Total Volume** field

STEP 5

Select **Request Type** either **Internal** or **External** radiobutton



KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: [Blank]
Created Date/Time: 12/10/2019 04:00:06 PM
Request Type: ☒ Internal ☐ External

Product: Technetium-99m Mebrofenin
Ordered Activity: 11 MBq
Total Volume: 1 ml
Status: New

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654587898776	31/10/2019	BRIDATEC	1 ml	1 vial*
Eluate Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	
Saline Vial	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1 EA*

PREPARATION DETAILS

Worksheet Prepared By: [Blank]
Worksheet Checked By: DR. NURRIHAN HUSNA BT HAMZAH
Remarks: [Blank]
Storage: Keep below 25 °C

Measured Radioactivity: 11 MBq
Radioactivity Concentration: 5.5 MBq/ml
Measured Date/Time: 12/10/2019 4:02 PM
Product Batch No.: [Blank]
Expiry Date/Time: [Blank]

Figure 3.8.2-4 Kit Preparation

STEP 6

Select the **Item** from drop down box for every **Raw Material** details

Note

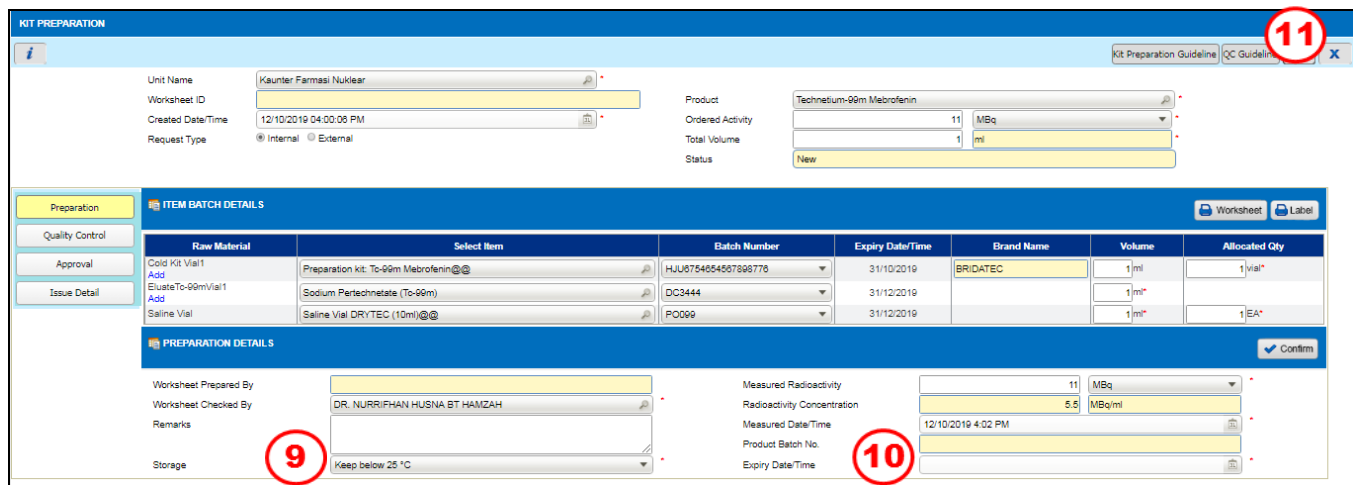
- **Batch Number, Expiry Date and Brand Name** will be automatically displayed after done the selection for **Item** field.
- **Enter Volume and Allocated Qty** field.
- **Cold Kit Vial1, Eluate Tc-99m Vial1 and Saline Vial** are mandatory field.

STEP 7

Enter **Measured Radioactivity** field and **Radioactivity Concentration** will be automatically calculated and displayed by system

STEP 8

Enter **Remarks** if applicable



KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: [Blank]
Created Date/Time: 12/10/2019 04:00:06 PM
Request Type: ☒ Internal ☐ External

Product: Technetium-99m Mebrofenin
Ordered Activity: 11 MBq
Total Volume: 1 ml
Status: New

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654587898776	31/10/2019	BRIDATEC	1 ml	1 vial*
Buista Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	
Saline Vial	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1 EA*

PREPARATION DETAILS

Worksheet Prepared By: [Blank]
Worksheet Checked By: DR. NURRIHAN HUSNA BT HAMZAH
Remarks: [Blank]
Storage: Keep below 25 °C

Measured Radioactivity: 11 MBq
Radioactivity Concentration: 5.5 MBq/ml
Measured Date/Time: 12/10/2019 4:02 PM
Product Batch No.: [Blank]
Expiry Date/Time: [Blank]

Figure 3.8.2-5 Kit Preparation

Note

- **Measured Date/Time** and **Worksheet Prepared By** will be automatically displayed by system.
- **Measured Date/Time** is mandatory field.

STEP 9

Select **Storage** from drop down box:

- Store in refrigerator (2-8°C)
- Keep below 25°C
- Keep in room temperature

Note

- **Storage** is mandatory field.

STEP 10

Select **Expiry Date** and this field is mandatory

STEP 11

Click on the  button to save record

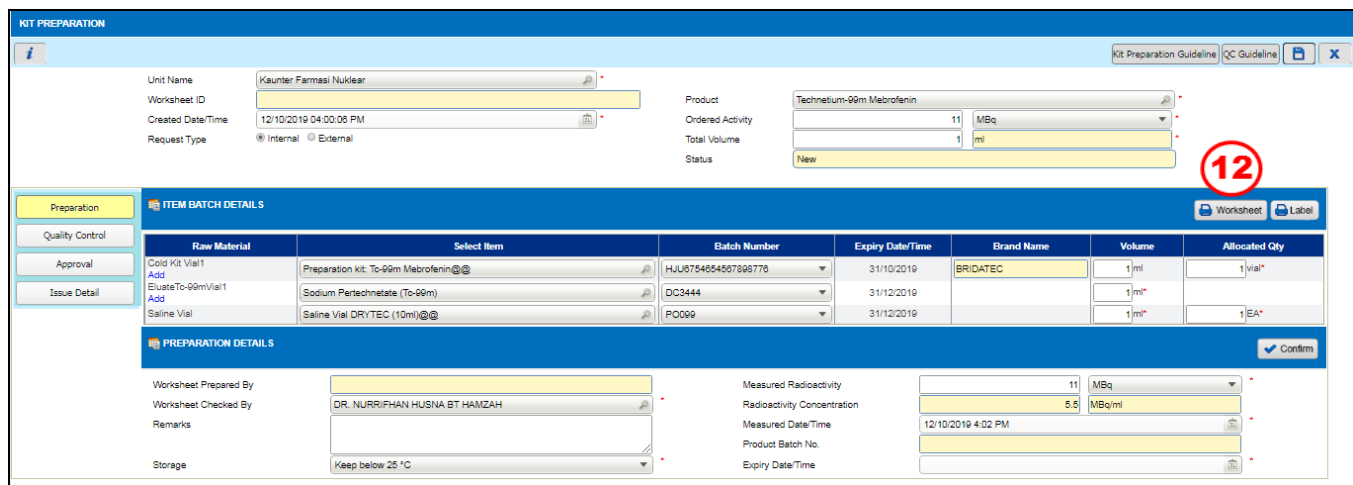
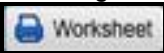



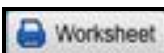
Figure 3.8.2-6 Kit Preparation

Note

Status will change to **New** after saving record.

- The  button will be activated after saving.
- The  button will be activated after generate worksheet.

STEP 12

Click on the  button to generate worksheet and alert message will be displayed as per Figure 3.7.2-6

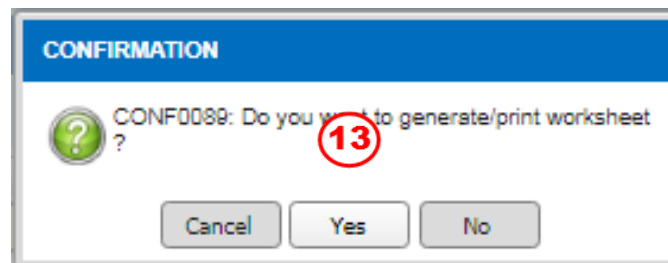



Figure 3.8.2-7 Bulk Preparation

STEP 13

Click on the  button to generate/print worksheet and worksheet will be displayed as per Figure 3.8.2-7

RADIOPHARMACEUTICALS WORKSHEET					
MINISTRY OF HEALTH HOSPITAL KUALA LUMPUR					
Kit Preparation records for Technetium-99m Mebrofenin					
Batch No:					
Worksheet ID: HKL20191012001					
Preparation of Technetium-99m Mebrofenin			Cold Kit Brand/Manufacturer Name:		Worksheet Prepared By : System Administrator
Date	12/10/2019	Expected Activity	11 MBq		
Raw Material	Batch Number/Expiry		Volume		Worksheet Checked By : DR. NURRIFFAH HUSNA BT HAMZAH
Cold Kit Vial	HJU6754654567898776 -		Total : 1 ml 1 ml		
Eluate Tc-99m Vial	DC3444 - 31/12/2019		1 ml		Preparation Done By :
Saline Vial	PC099 - 31/12/2019		1 ml		
Measured Activity					Remarks :
Measured Date/Time					
Radioactivity Concentration					
Quality Control of Technetium-99m Mebrofenin			Label		Approval of Technetium-99m Mebrofenin
QC Sampling Time	Measure		Actual	%	Checklist for approval :
First Strip	BG Reading	N/A			Preparation done accordingly
	1st Portion	N/A	N/A	N/A	QC done accordingly and pass
	2nd Portion	N/A	N/A	N/A	Label done accordingly
Second Strip	BG Reading	N/A			Remarks :
	3rd Portion	N/A	N/A	N/A	Approved By :
	4th Portion	N/A	N/A	N/A	
Radiochemical Purity					

Figure 3.8.2-8 Sample Worksheet

Note

Sample of worksheet as per Figure 3.8.2-8.

KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear

Worksheet ID:

Created Date/Time: 12/10/2019 04:00:05 PM

Request Type: ☒ Internal ☐ External

Product: Technetium-99m Mebrofenin

Ordered Activity: 11 MBq

Total Volume: 1 ml

Status: New

Preparation

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit: Tc-99m Mebrofenin	HJU6754654567898776	31/10/2019	BRIDATEC	1 ml	1 vial*
Eluate Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	
Saline Vial	Saline Vial DRY/TEC (10ml)	PC099	31/12/2019		1 ml*	1 EA*

PREPARATION DETAILS

Worksheet Prepared By:

Worksheet Checked By: DR. NURRIFFAH HUSNA BT HAMZAH

Remarks:

Storage: Keep below 25 °C

Measured Radioactivity: 11 MBq

Radioactivity Concentration: 5.5 MBq/ml

Measured Date/Time: 12/10/2019 4:02 PM

Product Batch No:

Expiry Date/Time:

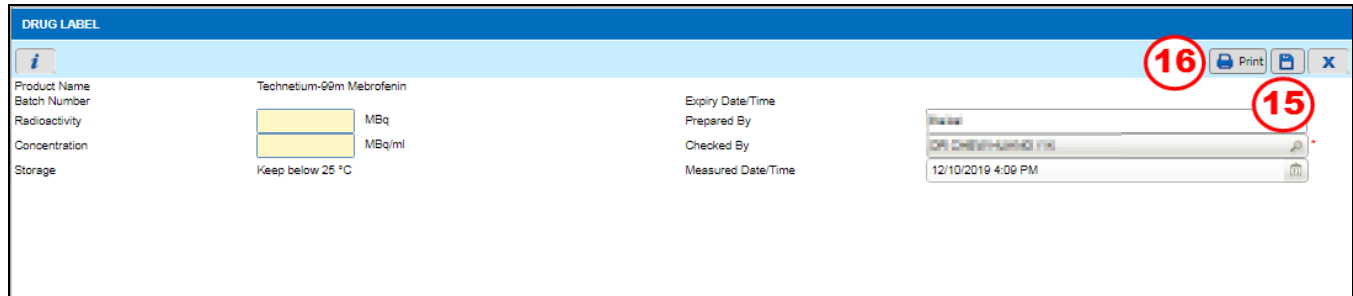
Figure 3.8.2-9 Bulk Preparation

STEP 14

Click on the  button to edit label and **Drug Label** screen will be displayed as per Figure 3.8.2-9

Note

Status will be changed to **In Progress** after generated worksheet as per Figure 3.8.2-9.



DRUG LABEL

Product Name: Technetium-99m Mebrofenin

Batch Number:

Radioactivity: MBq

Concentration: MBq/ml

Storage: Keep below 25 °C

Expiry Date/Time:

Prepared By:

Checked By:

Measured Date/Time: 12/10/2019 4:09 PM


Buttons: Print, Save, X


Figure 3.8.2-10 Drug Label

STEP 15

Click on the  button to save edited label

STEP 16

Click on the  button to print label as per Figure 3.8.2-10

 Caution : Radioactive Material	HOSPITAL KUALA LUMPUR	
	Product Name : Technetium-99m Mebrofenin	
	Batch No. :	
Radioactivity : 0 MBq		Volume : 1 ml
Concentration : 0 MBq/ml		
Measured Date : 12/10/2019		Time : 04:09 PM
Prepared By : Maikal		
Checked By : DR CHEW HUANG YIK		
Expiry Date :		Time :
Storage : Keep below 25 °C		


 Caution : Radioactive Material	HOSPITAL KUALA LUMPUR	
	Product Name : Technetium-99m Mebrofenin	
	Batch No. :	
Radioactivity : 0 MBq		Volume : 1 ml
Concentration : 0 MBq/ml		
Measured Date : 12/10/2019		Time : 04:09 PM
Prepared By : Maikal		
Checked By : DR CHEW HUANG YIK		
Expiry Date :		Time :
Storage : Keep below 25 °C		

Figure 3.8.2-11 Drug Label

Note

Sample of Drug Label as per Figure 3.8.2-11.

DRUG LABEL
Print X

Product Name : Technetium-99m Mebrofenin

Batch Number :

Radioactivity : MBq

Concentration : MBq/ml

Storage : Keep below 25 °C

Expiry Date/Time :

Prepared By :

Checked By : DR CHEW HUANG YIK

Measured Date/Time : 12/10/2019 4:09 PM


Maikal

DR CHEW HUANG YIK

12/10/2019 4:09 PM

Figure 3.8.2-12 Drug Label

STEP 17

Click on the  button to close **Drug Label** screen

KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20191012001
Created Date/Time: 12/10/2019 04:00:06 PM
Request Type: ☒ Internal ☐ External

Product: Technetium-99m Mebrofenin
Ordered Activity: 11 MBq
Total Volume: 1 ml
Status: New

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654587898776	31/10/2019	BRIDATEC	1 ml	1 vial*
Eluate Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	1
Saline Vial	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1

PREPARATION DETAILS

Worksheet Prepared By: DR. NURRIFFAH HUSNA BT HAMZAH
Worksheet Checked By: DR. NURRIFFAH HUSNA BT HAMZAH
Remarks:
Storage: Keep below 25 °C


Measured Radioactivity: 11 MBq
Radioactivity Concentration: 5.5 MBq/ml
Measured Date/Time: 12/10/2019 4:02 PM
Product Batch No.: DC3444.1
Expiry Date/Time: 12/10/2019 4:15 PM

18

Confirm

Figure 3.8.2-13 Drug Label

STEP 18

Click on the  button to confirm information preparation details

KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20191012001
Created Date/Time: 12/10/2019 04:00:06 PM
Request Type: ☒ Internal ☐ External

Product: Technetium-99m Mebrofenin
Ordered Activity: 11 MBq
Total Volume: 1 ml
Status: Prepared

ITEM BATCH DETAILS

Raw Material	Select Item	Batch Number	Expiry Date/Time	Brand Name	Volume	Allocated Qty
Cold Kit Vial1	Preparation kit: Tc-99m Mebrofenin@@	HJU8754654587898776	31/10/2019	BRIDATEC	1 ml	1 vial*
Eluate Tc-99m Vial1	Sodium Pertechnetate (Tc-99m)	DC3444	31/12/2019		1 ml*	1
Saline Vial	Saline Vial DRYTEC (10ml)@@	PO099	31/12/2019		1 ml*	1 EA*

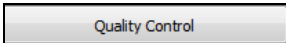

PREPARATION DETAILS

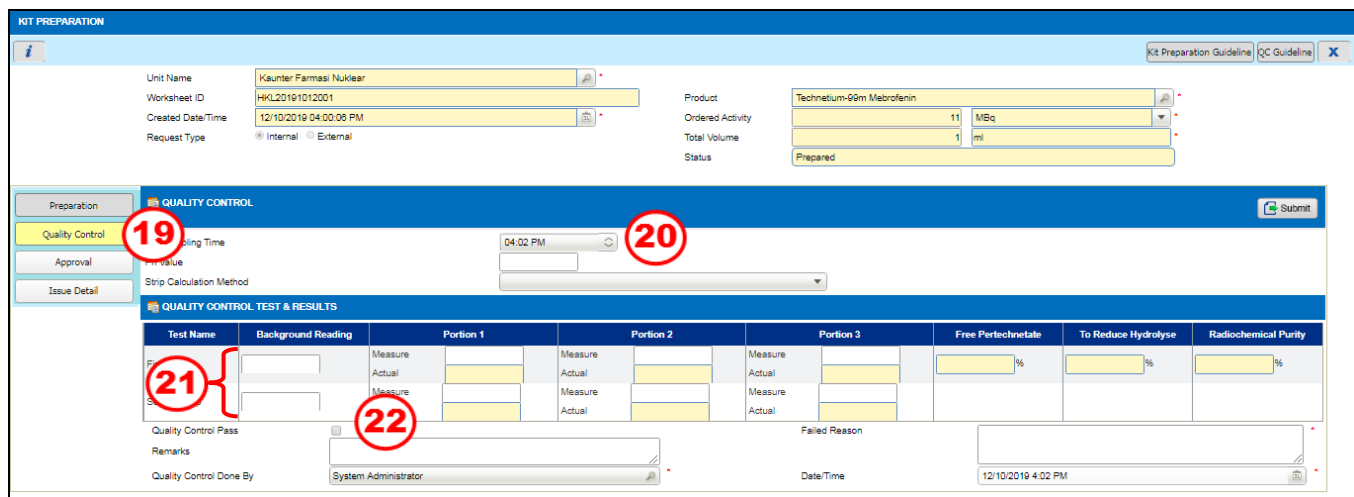
Worksheet Prepared By: System Administrator
Worksheet Checked By: DR. NURRIFFAH HUSNA BT HAMZAH
Remarks:
Storage: Keep below 25 °C

Measured Radioactivity: 11 MBq
Radioactivity Concentration: 5.5 MBq/ml
Measured Date/Time: 12/10/2019 4:02 PM
Product Batch No.: DC3444.1
Expiry Date/Time: 12/10/2019 4:15 PM

Figure 3.8.2-14 Kit Preparation

Note

- **Status** will change to **Prepared** after preparation details confirmation.
- The  button will be activated after preparation details confirmation
- The  button will disable after preparation details confirmation



KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20191012001
Created Date/Time: 12/10/2019 04:00:06 PM
Request Type: ☒ Internal ☐ External

Product: Technetium-99m Mebrofenin
Ordered Activity: 11 MBq
Total Volume: 1 ml
Status: Prepared

QUALITY CONTROL

Preparation Time: 04:02 PM
Ph Value:
Strip Calculation Method:
Submit

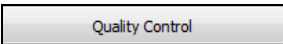
QUALITY CONTROL TEST & RESULTS

Test Name	Background Reading	Measure	Portion 1	Measure	Portion 2	Measure	Portion 3	Free Per technetate	To Reduce Hydrolyse	Radiochemical Purity
First Strip		Measure		Measure		Measure				
Second Strip		Actual		Actual		Actual				
		Measure		Measure		Measure				
		Actual		Actual		Actual				

Quality Control Pass:
Remarks:
Quality Control Done By: System Administrator
Failed Reason:
Date/Time: 12/10/2019 4:02 PM

Figure 3.8.2-15 Bulk Preparation

STEP 19

Click on the  button and system will be displayed screen as per Figure 3.8.2-15

STEP 20

Enter **Qc-Sampling Time** field. Default value is based on the current system time

STEP 21

Enter **First Strip, Second Strip, Radiochemical Purify** and **Ph Value** field as per Figure 3.8.2-15

STEP 22

Select **Quality Control Pass** either **approved** or **rejected**

Note

- If the selection of **Quality Control Pass, No; Failed Reason** field will be activated and user have to enter the reason of failure as per Figure 3.7.2-15.
- If the selection of **Quality Control Pass, Yes; Failed Reason** field will not activate.

KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20191012001
Created Date/Time: 12/10/2019 04:00:06 PM
Request Type: ☒ Internal ☐ External

Product: Technetium-99m Mebrofenin
Ordered Activity: 11 MBq
Total Volume: 1 ml
Status: Prepared

QUALITY CONTROL

QC Sampling Time: 04:02 PM
Ph Value: 11
Strip Calculation Method: Biodex

QUALITY CONTROL TEST & RESULTS

Test Name	Background Reading	Measure	Actual	Portion 1	Measure	Actual	Portion 2	Measure	Actual	Portion 3	Measure	Actual	Free PerTechnetate	To Reduce Hydrolyse	Radiochemical Purity
First Strip	100	Measure	37	Actual	-83	Actual		Measure		Actual			0%	100%	0%
Second Strip	23	Measure	11	Actual	-12	Actual		Measure		Actual					

Quality Control Pass: ☒
Remarks:
Quality Control Done By: System Administrator
Failed Reason:
Date/Time: 12/10/2019 4:02 PM

Figure 3.8.2-16 Bulk Preparation

STEP 23

Enter **Remarks** if applicable

Note

Quality Control Done By and **Date/Time** will be automatically displayed and default by system.

KIT PREPARATION

Unit Name: Kaunter Farmasi Nuklear
Worksheet ID: HKL20191012001
Created Date/Time: 12/10/2019 04:00:06 PM
Request Type: ☒ Internal ☐ External

Product: Technetium-99m Mebrofenin
Ordered Activity: 11 MBq
Total Volume: 1 ml
Status: Prepared

QUALITY CONTROL

QC Sampling Time: 04:02 PM
Ph Value: 11
Strip Calculation Method: Biodex

QUALITY CONTROL TEST & RESULTS

Test Name	Background Reading	Measure	Actual	Portion 1	Measure	Actual	Portion 2	Measure	Actual	Portion 3	Measure	Actual	Free PerTechnetate	To Reduce Hydrolyse	Radiochemical Purity
First Strip	100	Measure	37	Actual	-83	Actual		Measure		Actual			0%	100%	0%
Second Strip	23	Measure	11	Actual	-12	Actual		Measure		Actual					

Quality Control Pass: ☒
Remarks:
Quality Control Done By: System Administrator
Failed Reason:
Date/Time: 12/10/2019 4:02 PM

Figure 3.8.2-17 Bulk Preparation

Note

- User is allowed to click on the **Strip Guideline** hyperlink and system will be displayed as per Figure 3.8.2-17.

Note


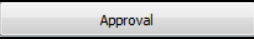
Sample of Strip Guideline as per Figure 3.8.2-18.

Figure 3.8.2-19 Bulk Preparation

STEP 24

Click on the button to submit quality control results

Note

- The  button will disable after done the submission.
- The  button will be activated after the submission.

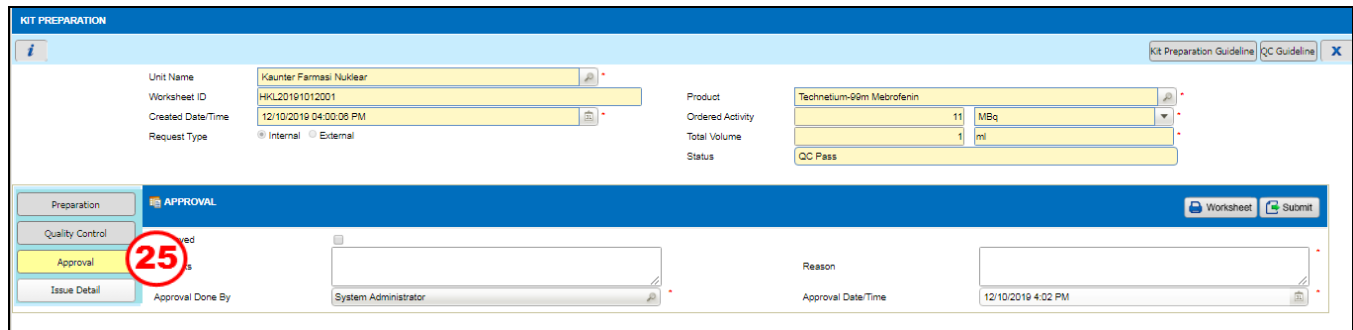



Figure 3.8.2-20 Bulk Preparation

STEP 25

Click on the  button and system will display screen as per Figure 3.8.2-20

Note

Status will be changed to QC Pass after done the submission.

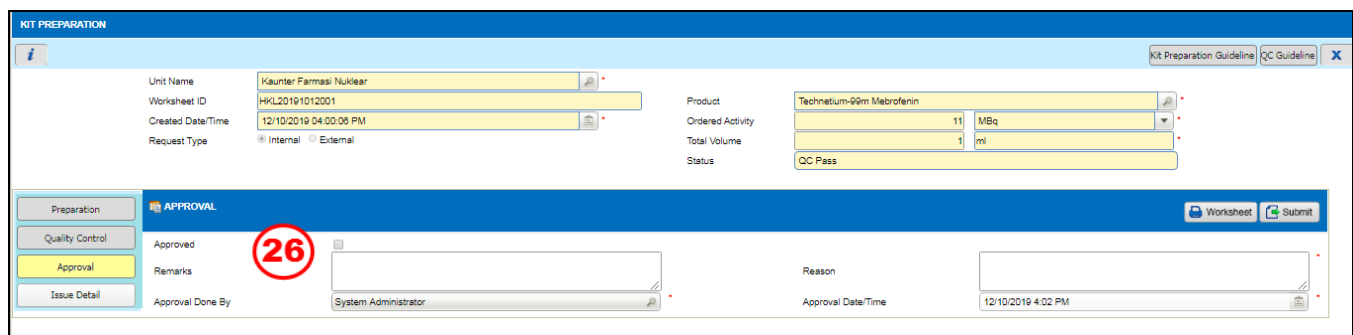



Figure 3.8.2-21 Bulk Preparation

STEP 26

Select **Approved** either **Yes** or **No**

Note

- If the selection of **Approved, No**; **Reason** field will be activated and user have to enter the reason of not approve as per Figure 3.8.2-21.
- If the selection of **Approved, Yes**; **Reason** field will not activate as per Figure 3.8.2-21.
- Enter **Remarks** if applicable.
- The **Approval Done By** and **Date/Time** field will automatically default by system.

- The  button is for user to reprint the worksheet.

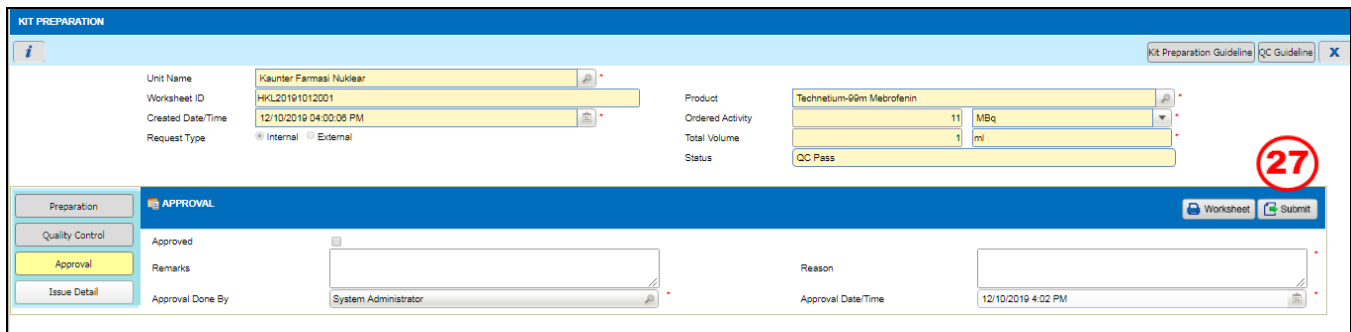



Figure 3.8.2-22 Bulk Preparation

STEP 27

Click on the  button to submit the approval details

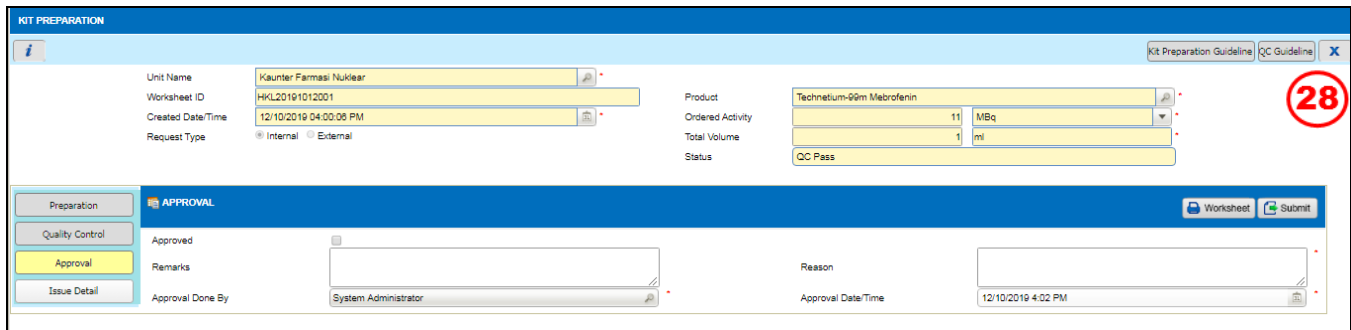



Figure 3.8.2-23 Bulk Preparation

Note

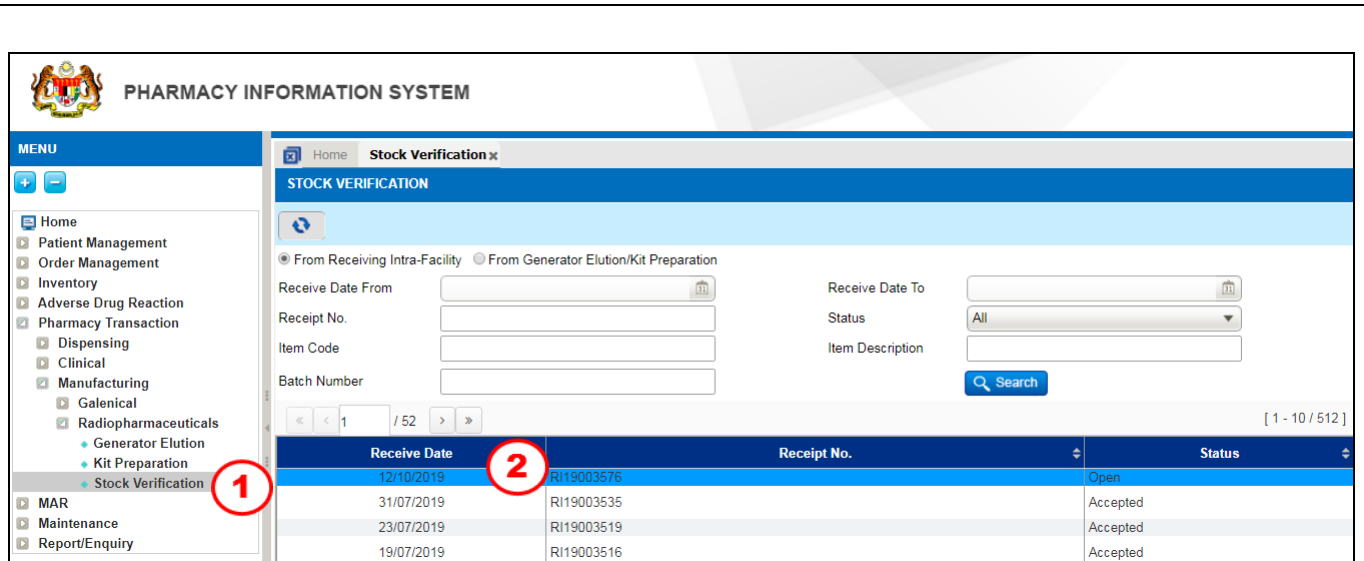
- Status** will change to **Approved** after the submission had done.

STEP 28

Click on the  button to close Bulk Preparation screen

3.8.3 Stock Verification

Stock Verification screen allow user to verify and measure radiopharmaceuticals stock received from pharmacy store.




Receive Date	Receipt No.	Status
12/10/2019	RI19003576	Open
31/07/2019	RI19003535	Accepted
23/07/2019	RI19003519	Accepted
19/07/2019	RI19003516	Accepted

Figure 3.8.3-1 Stock Verification Listing Page

STEP 1

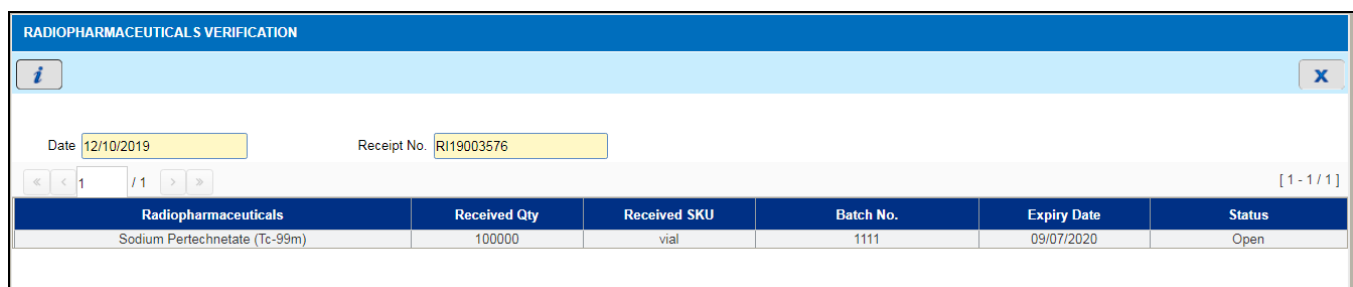
Click on 'Pharmacy Transaction' menu follow by 'Manufacturing' and click on 'Radiopharmaceuticals Stock Verification' sub-menu

Note

- Search criteria is provided for **Date** only.
- Click on the  button and system will be displayed related record.

STEP 2

Double click on the selected data and system will be displayed screen as per Figure 3.8.3-2



Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	100000	vial	1111	09/07/2020	Open

Figure 3.8.3-2 Stock Verification

Note

- Date and Receipt No** will be automatically displayed and default by system.
- By default, status is open.

RADIOPHARMACEUTICALS VERIFICATION

[1 - 1 / 1]

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	100000	vial	1111	09/07/2020	Open

STOCK DETAILS

Calibration Activity *

Expected Activity *

Measured Activity *

Activity Variation %

Calibration Date/Time *

Expiry Date/Time *

Measured Date/Time *

Volume ml

MEASUREMENT DETAILS

Label Packaging Type

Survey on Surface

Survey at 1 Meter Distance

Wipe Test

Remarks

VERIFICATION DETAILS

☐ Accept
 ☐ Reject

Reject Reason

Done By

Updated By

Date/Time

Updated Date/Time

Figure 3.8.3-3 Stock Verification

STEP 3

Click on the ☒ **Accept** link to verify stock and system will be displayed screen as per Figure 3.8.3-3

Note

- Enter and select **Calibration Activity**, **Calibration Date/Time**, **Measured Activity**, **Measured Date/Time**, **Wipe Test**, **Survey at 1 Meter Distance**, **Expiry Date/Time**, and **Volume** field. All these fields are mandatory.
- Enter and select **Label Packaging Type**, **Survey on Surface**, **Survey at 1 Meter Distance**, **Wipe Test** and **Remarks**.
- **Done By**, **Date/Time**, **Updated By**, and **Updated Date/Time** will be automatically displayed by system.

RADIOPHARMACEUTICALS VERIFICATION

i

X

Date: Receipt No.:

1 / 1

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	100000	vial	1111	09/07/2020	Open

Confirm

STOCK DETAILS

Calibration Activity: MBq * mCi *

Expected Activity: MBq * mCi *

Measured Activity: MBq * mCi *

Activity Variation: %

Calibration Date/Time:

Expiry Date/Time:

Measured Date/Time:

Volume: ml

MEASUREMENT DETAILS

Label Packaging Type: [Guideline](#)

Survey on Surface: mR/hr

Survey at 1 Meter Distance: mR/hr

Wipe Test: Bq per cm²

Remarks:

VERIFICATION DETAILS

☒ Accept ☐ Reject

Reject Reason:

Done By:

Updated By:

Date/Time:

Updated Date/Time:

Figure 3.8.3-4 Stock Verification

STEP 4

Check on the ☒ checkbox to accept or reject verification

STEP 5

Click on the button to save record

RADIOPHARMACEUTICALS VERIFICATION

Date:
Receipt No.:

[1 - 1 / 1]

Radiopharmaceuticals	Received Qty	Received SKU	Batch No.	Expiry Date	Status
Sodium Pertechnetate (Tc-99m)	100000	vial	1111	09/07/2020	Open

STOCK DETAILS

Calibration Activity: MBq * mCi *

Expected Activity: MBq * mCi *

Measured Activity: MBq * mCi *

Activity Variation: %

Calibration Date/Time:

Expiry Date/Time:

Measured Date/Time:

Volume: ml

MEASUREMENT DETAILS

VERIFICATION DETAILS

Label Packaging Type: [Guideline](#)

Survey on Surface: mR/hr

Survey at 1 Meter Distance: mR/hr

Wipe Test: Bq per cm²

Remarks:

☒ Accept ☐ Reject

Reject Reason:

Done By: Date/Time:

Updated By: Updated Date/Time:


Figure 3.8.3-5 Stock Verification

STEP 6

Click on the  button to close Radiopharmaceuticals Verification screen

Note

- Status will change to Accepted as per Figure 3.8.3-6 at Stock Verification Listing Page.
- Add explanation for Rejected.



PHARMACY INFORMATION SYSTEM

HOSPITAL KUALA LUMPUR

Logout

MENU

- Home
- Patient Management
- Order Management
- Inventory
- Adverse Drug Reaction
- Pharmacy Transaction
- Dispensing
- Clinical
- Manufacturing
- Galenical
- Radiopharmaceuticals
 - Generator Elution
 - Kit Preparation
 - Stock Verification
- MAR
- Maintenance
- Report/Enquiry

STOCK VERIFICATION

From Receiving Intra-Facility
From Generator Elution/Kit Preparation

Receive Date From:

Receipt No.:

Item Code:

Batch Number:

Receive Date To:

Status:

Item Description:

Receive Date	Receipt No.	Status
12/10/2019	RI19003576	Accepted
31/07/2019	RI19003535	Accepted
23/07/2019	RI19003519	Accepted
19/07/2019	RI19003516	Accepted
19/07/2019	RI19003515	Accepted
11/07/2019	RI19003504	Accepted
10/07/2019	RI19003501	Accepted
28/05/2019	RI19003476	Accepted
28/05/2019	RI19003474	Accepted
27/05/2019	RI19003469	Accepted

Figure 3.8.3-6 Stock Verification Listing Page

4.0 Acronyms

Abbreviation	Definition
MOH	Ministry of Health
KKM	Kementerian Kesihatan Malaysia
PhIS	Pharmacy Information System
CPS	Clinical Pharmacy System
PKU	Packaging Keeping Unit
SKU	Store Keeping Unit
TDM	Therapeutic Drug Monitoring
CDR	Cytotoxic Drug Reconstitution
APPL	Approved Product Purchase List
RPL	Recommended Purchase List
EPO	Electronic Purchase Order

5.0 Links to Inventory Modules

No	Module	PDF Links	No	Module	PDF Links
1	Finance	Click Here	15	Internal Indent	Click Here
2	Procurement Standard APPL	Click Here	16	Issue	Click Here
3	Procurement standard LP	Click Here	17	Receive From Supplier	Click Here
4	Procurement Standard Contract	Click Here	18	Receive Inter Facility	Click Here
5	Procurement Standard Quotation	Click Here	19	Receive Intra Facility	Click Here
6	Procurement Standard (RFQ)	Click Here	20	Return to Supplier	Click Here
7	Procurement Non Standard (Requisition Order)	Click Here	21	Return to Supplying Unit	Click Here
8	Quarantine	Click Here	22	Slow Moving	Click Here
9	Product Complaint	Click Here	23	Stock Taking And Verification	Click Here
10	Recalculate Buffer Level	Click Here	24	Stock Transfer	Click Here
11	Expiration And Condemn	Click Here	25	Year End	Click Here
12	Recall Product	Click Here	26	Penalty	Click Here
13	Payment	Click Here	27	IWP Budget	Click Here
14	External Indent	Click Here	28	IWP Order Authorization	Click Here