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

User Manual
Radiopharmaceuticals

Version	**: 11th Edition**
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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
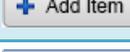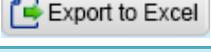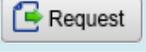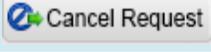- Radiopharmaceuticals Dispensing
- Radiopharmaceuticals Manufacturing
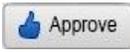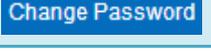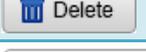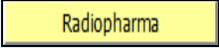
1.3 Organised Sections

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	Login to PhIS	**Logout**	Logout from PhIS
C	Reset Login Screen	+	Expand Menu
Home	Display Home Tab	▷	Expand Module
⊠	Close All Open Tabs	↻	Refresh Screen
+	Add/Create New Record	*i*	Show Help
*	Mandatory Field	31	Calendar Icon
X	Close Window	○	Radio Button
✎	Edit Record	⊘	Cancel
💾	Save	+ Add Item	Add Item to the list
Export to Excel	Export and Open Report in Excel Format		Automatically Display/Retrieve Box
Request	Request for Approval	Cancel Request	Cancel the Request
Send for Approval	Send for Approval	👍 Approve	Approve Transaction
Change Password	Change Login Password	−	Collapse Menu
◸	Collapse Module	🔍 Search	Search Record
🖨	Print	🔎	Search Icon
☐	Checkbox	🗑	Delete Record
🗑 Delete	Delete Item from the list		Empty Text Box
▼	Dropdown Box	👎 Reject	Reject Transaction

Module Legend
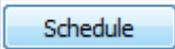
Schedule	Schedule button	Confirm	Confirmation button
Consent Form	Consent form	Verify	Verification
Prepare	Preparation	Dispense	Dispensing
Submit	Submission Approval	Label	Printing/Editing Label
Radiopharma	Radiopharmaceuticals	Calculate Activity	Calculation Activity Radiopharmaceuticals
Worksheet	Generate the worksheet	Release	Release Batch

Note

To learn more about Login Information, kindly click <u>Login Information</u> _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
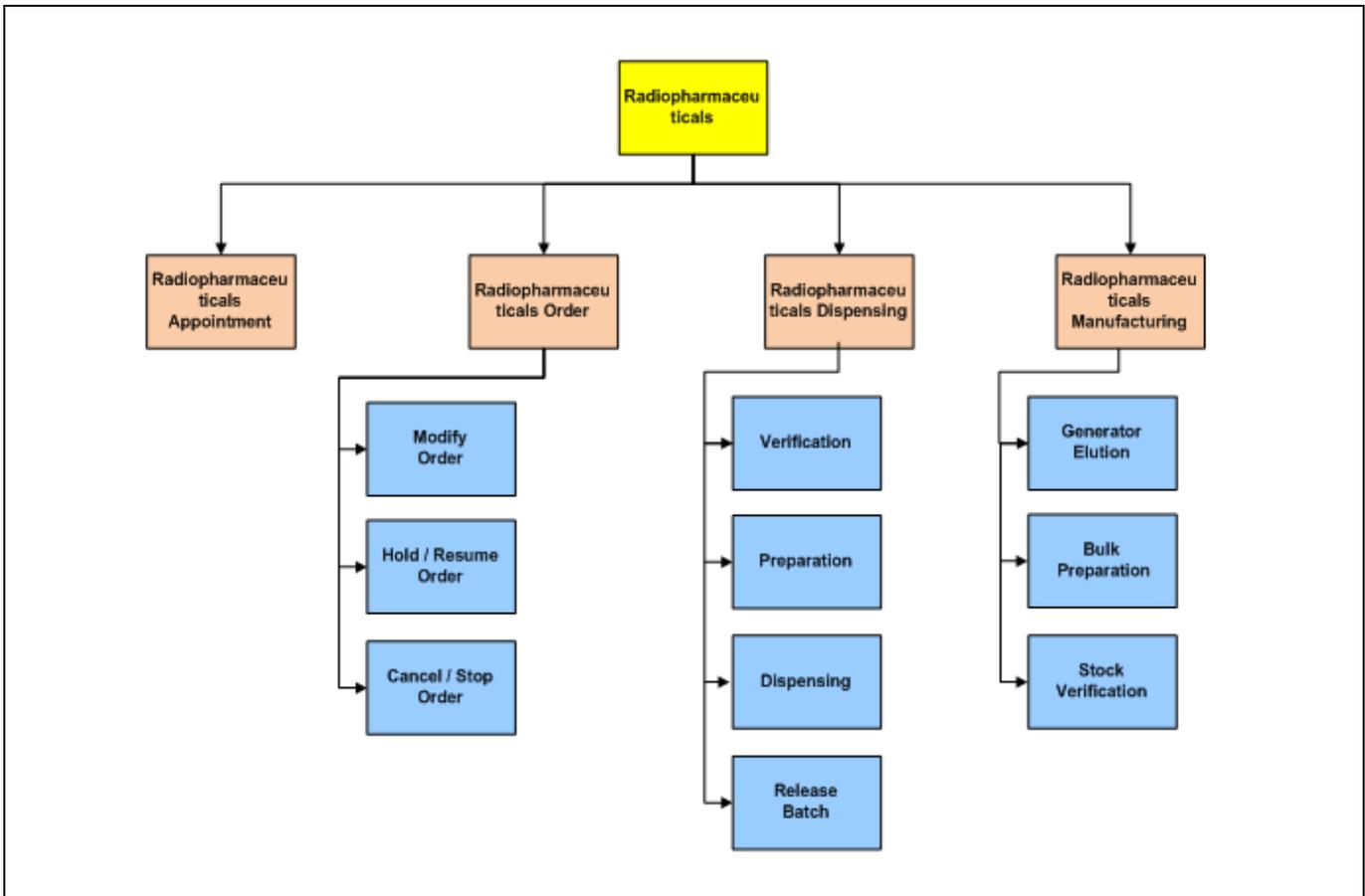
Figure 3.0-1

Functional Description
Slow Moving comprises of four (4) main functions:

- **Radiopharmaceuticals Appointment**
  This function allows user to create a 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.
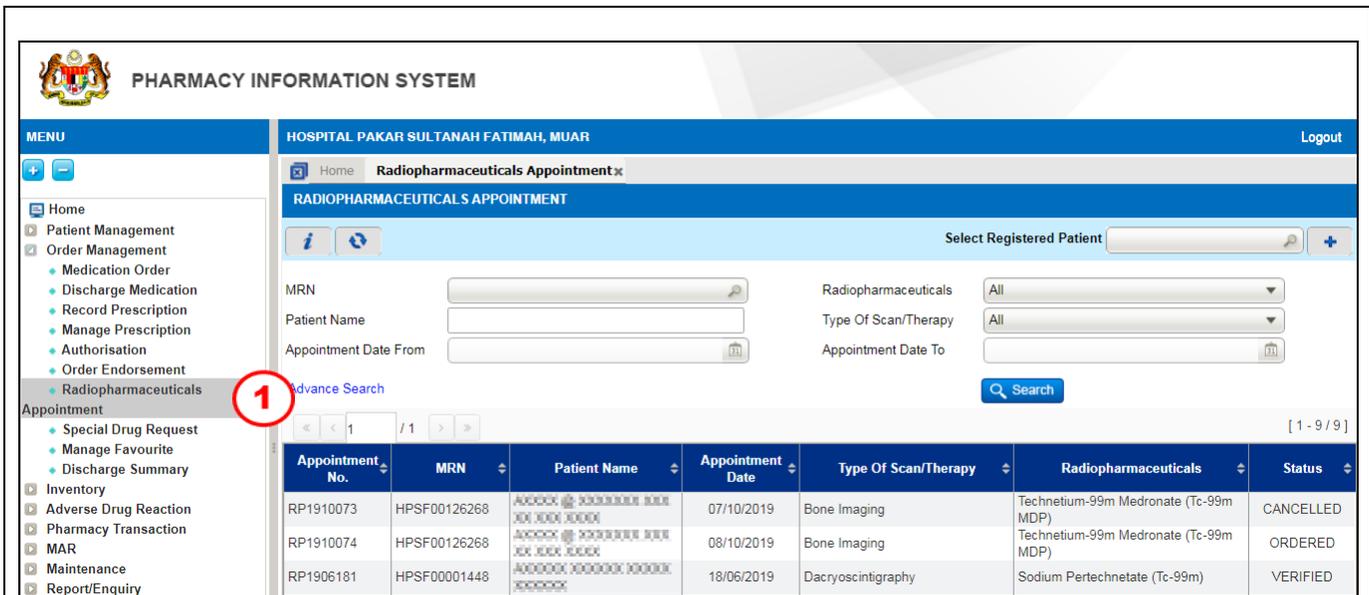
Figure 3.1-1 Radiopharmaceuticals Appointment Listing Page

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 :-*
  a) Show All

- *Various search criteria is provided as below:*
  a) MRN
  b) Radiopharmaceuticals
  c) Patient Name
  d) Appoitnment no
  e) Status
  f) Appointment Date From
  g) 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.*

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 [🔍 Search] button to search patient name and system will be displayed as per Figure 3.1.1-2

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

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

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

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 **_Dosage_** 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 mandotary field

STEP 10

Click on the [Schedule] 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.*
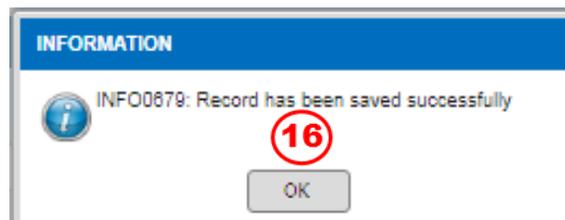
STEP 14

Click on the save [💾] button to save record and alert message will be displayed as per Figure 3.1.1-7
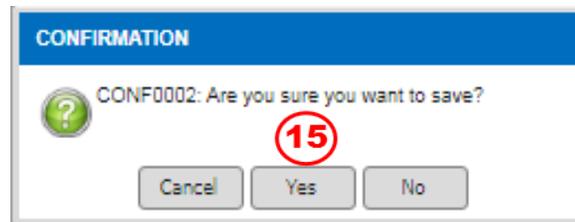
Figure 3.1.1-8 Save Record Alert Message

STEP 15

Click on the [OK] 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 [OK] button to save and update Radipharmaceuticals Appointment order

Note

Record status is updated to Draft.
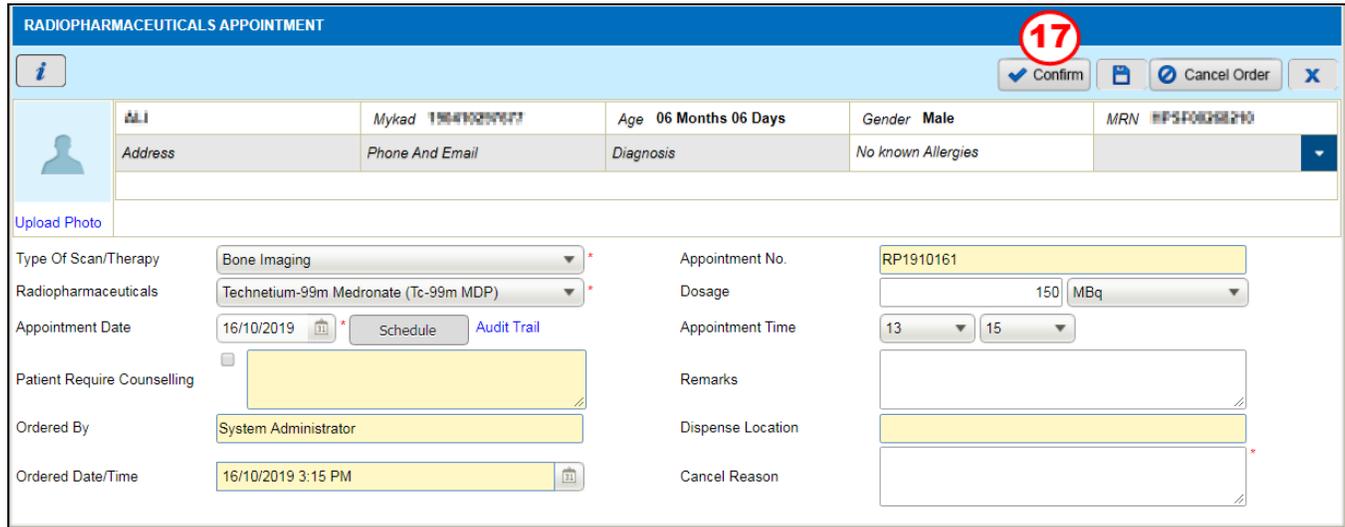
Figure 3.1.1-10 Radiopharmaceuticals Appointment

STEP 17

Click on the [✔ Confirm] button and system will display alert message as per Figure 3.1.1-11
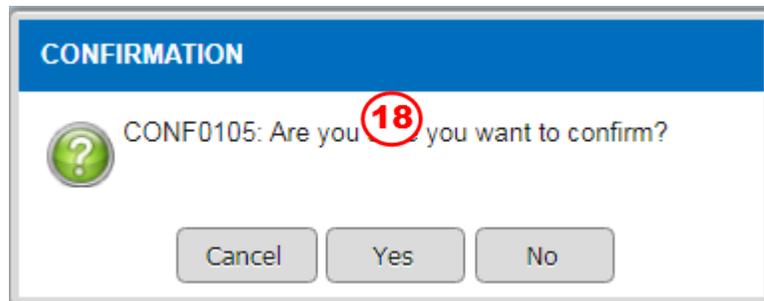
Figure 3.1.1-11 Confirm Order Alert Message

STEP 18

Click on the [Yes] button to confirm order

Figure 3.1-12 Radiopharmaceuticals Appointment

STEP 19

Click on the [Cancel Order] button to cancel Radiopharmaceuticals Appoinment

STEP 20
Enter cancel reason

Figure 3.1.1-13 Radiopharmaceuticals Appointment

Note

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

3.2 Radiopharmaceuticals

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

Figure 3.2-1 Medication Order Listing Page

STEP 1

Click on 'Order Management' and select 'Medication Order' sub menu

Note

- *User have the options to view patient by clicking the check box :-*
  a) *Show All*
  b) *Show All By Location*

- *Various search criteria is provided as below:*
  a) *MRN*
  b) *Patient name*
  c) *Location*

- *By default list of patient will be displayed according to user location access.*

- *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 Order screen as per Figure 3.2-1

Figure 3.2-2 Medication Order

STEP 4

Click on the | Radiopharmaceuticals | button to display Radiopharmaceuticals medication order screen as per Figure 3.2-3

Note
Current Appoinment 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.

Figure 3.2-3 Medication Order –Radiopharmaceuticals

Note
Consent Form:

- *Right click in the* ▼ *button and select* [Consent Form] *button.*

- *Click on the* [Consent Form] *link and screen will display as per Figure 3.2-4*

CONSENT FORM

GILLY THOMAS	Mykad ▓▓▓▓▓	Age 26 Years 01 Months 24 Days	Gender Male	MRN ▓▓▓▓▓
Address	Phone And Email	Diagnosis	⚠ Known Allergies	

Height 170 cm Weight 70 kg BMI/BSA 24.2 / 1.82 m² *G6PD* [Update] (Last Updated : 27/09/2019) Nationality : Warganegara

Consent Form

I, [   ] ,ID No: [   ] ,hereby Consent to the submission of myself/my child

GILLY THOMAS ,ID No: aa06200n5565 MRN , ▓▓▓▓▓

To undergo the examination/procedure [Bone Imaging] Of which the nature has been explained by [System Administrator]

I also consent to administration of contract medium/media for the examination
No assurance has been given to me that the examination will be performed by any particular practitioner.

Witness name [   ] ID No : [   ]

Printing options
◉ Malay Version ○ English Version

Figure 3.2-4 Consent Form

Note
Consent Form:

- *Consent Form is an optional function.*

- *Enter Patient Name, ID. No.,Witness Name and ID. No. of witness in the consent form.*

- *Consent form has two printing options:*
  - *Malay Version*
  - *English Version*
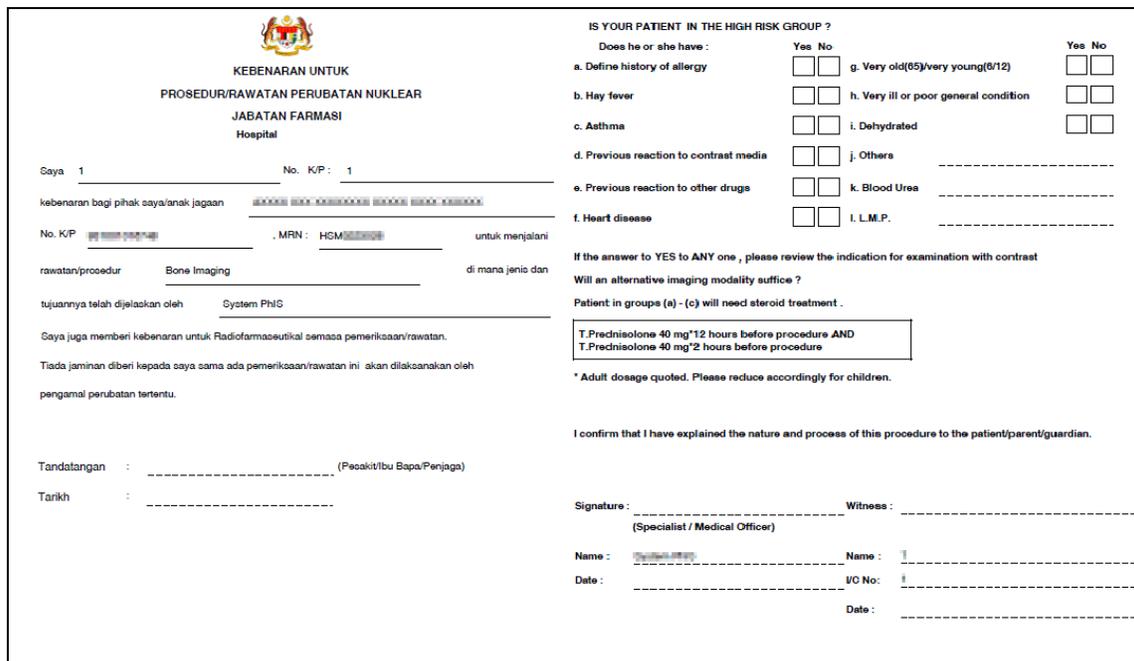
Figure 3.2-5 Sample Consent Form

Note

Sample of Consent Form as per Figure 3.2-5.

Figure 3.2-6 Sample Consent Form

Note

Cancel function:

- *Cancel is an optional function.*

- *Click on the* **Cancel** *link to cancel radiopharmaceuticals order and alert message will be displayed as per Figure 3.2-7.*

- *Click on the* **Yes** *button to cancel order.*

Figure 3.2-7 Cancel Order Alert Message

- *Need to enter cancel reason once user click cancel function:*

Figure 3.2-8 Cancel Order

Figure 3.2-9 Medication Order -Radiopharmaceuticals

STEP 5

Click on the [Draft] button to save record and alert message will be displayed as per Figure 3.2-09

Note

The [Confirm Order] _button will be displayed after save record._
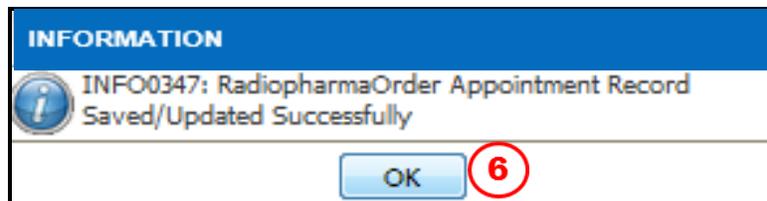
Figure 3.2-10 Alert Message

STEP 6

Click on the [OK] button to save data

Figure 3.2-11 Medication Order -Radiopharmaceuticals

STEP 7

Click on the [Confirm Order] button to confirm radiopharmaceuticals order and alert message will be displayed as per Figure 3.2-11

Figure 3.2-12 Alert Message

STEP 8

Click on the [Yes] button to confirm record and alert message will be displayed as per Figure 3.2-12

Figure 3.2-13 Alert Message

STEP 9

Click on the [OK] button to confirm order successfully

3.3 Radiopharmaceuticals Verification

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

Figure 3.3-1 Radiopharmaceuticals Verification Listing Page

STEP 1
Click on 'Pharmacy Transaction' menu followed by 'Dispensing' and click on 'Radiopharmaceuticals Verification' sub-menu
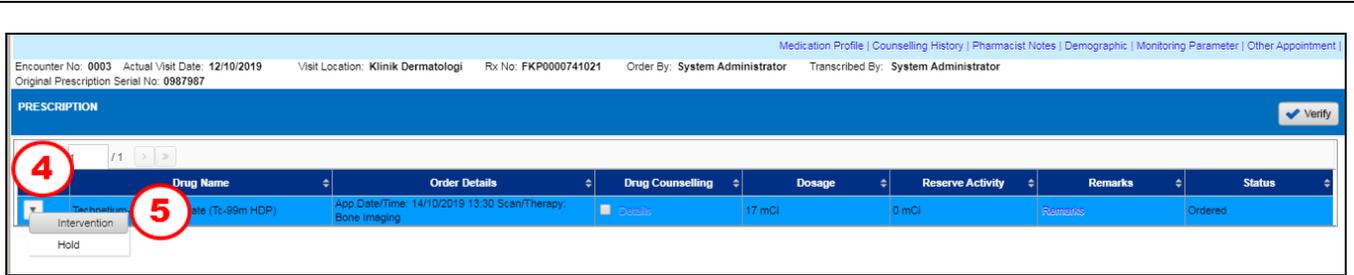
Note
- *Various search criteria is provided as below:*
    a) *Dispense Location*
    b) *Patient Name*
    c) *Order Status*
    d) *Patient MRN*
    e) *Appoinment Date From*
    f) *Appoinment Date To*
    g) *Type of Scan*
    h) *Radiopharmaceuticals*

- *Click on the* Advanced Search *hyperlink for advance search.*

STEP 2

Click on the Q 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 3.3-2

Figure 3.3-2 Radiopharmaceuticals Verification

STEP 4

Click on [✔ Verify] 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.*
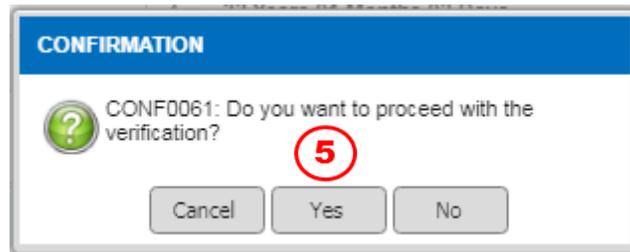
Figure 3.3-3 Information Alert Message

STEP 5
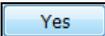
Click on the [Yes] button to proceed with the verification
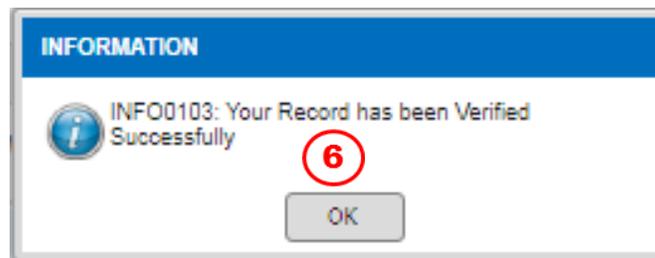
Figure 3.3-4 Verify Order Alert Message

STEP 6
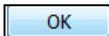
Click on the [OK] button to verify successfully

3.3.1 Intervention

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

Figure 3.3.1-1 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:*
  - *a) Dispense Location*
  - *b) Patient Name*
  - *c) Order Status*
  - *d) Patient MRN*
  - *e) Appoinment Date From*
  - *f) Appoinment Date To*
  - *g) Type of Scan*
  - *h) Radiopharmaceuticals*
  - *i) 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

Figure 3.3.1-2 Radiopharmaceuticals Verification Listing Page

STEP 4

Right click in the [▼] button to select either *Intervention* or *Hold Order* as per Figure 3.3.1-2

STEP 5

Click on the [Intervention] button to modify drug details

Figure 3.3.1-3 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
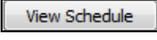
Click on the View Schedule *button check appointment if fully booked for a particular date.*

STEP 10

Click on the 🖫 *button to save intervention record and alert message will display as per Figure 3.3.1-4.*

CONFIRMATION

CONF0002: Are you sure you want to save?

Cancel   Yes   No
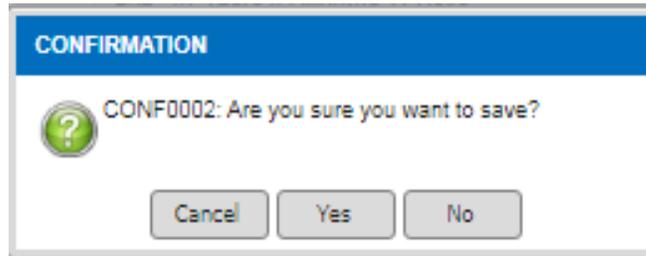
Figure 3.3.1-4 Save record Alert Message

Note
- *Click on the* Yes *button to save intervention record.*

INFORMATION

INFO0679: Record has been saved successfully

OK
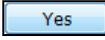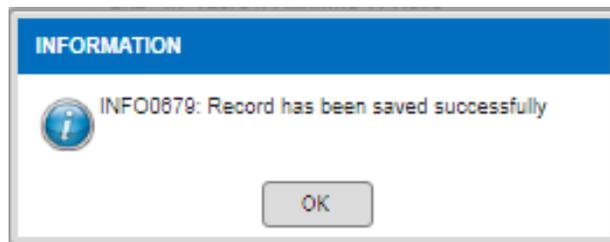
Figure 3.3.1-5 Modify Order Alert Message
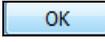
Note
- *Click on the* OK *button to save modify order record.*

3.3.2 Hold/Resume Order

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

Figure 3.3.2-1 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:
   a) Dispense Location
   b) Patient Name
   c) Order Status
   d) Patient MRN
   e) Appoinment Date From
   f) Appoinment Date To
   g) Type of Scan
   h) Radiopharmaceuticals

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 3.3.2-2

Figure 3.3.2-2 Radiopharmaceuticals Verification Listing Page

STEP 4

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

STEP 5

Click on the [Hold] button to hold order

HOLD ORDER - PHARMACIST REMARKS

⑦

🕐 History   💾 Hold   ⊘   ✕

⑥ Hold Reason   [▼] *
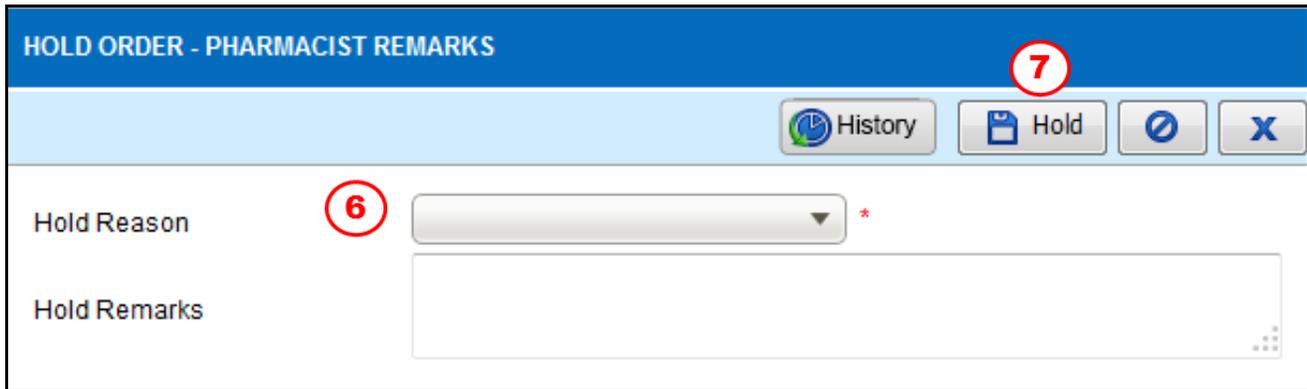
Hold Remarks   [   ]

Figure 3.3.2-3 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*
- *Patient Refuse*
- *Others*
- *Polypharmacy*
- *Suggest to Monitor Vital Signs/Lab Result*
- *Wrong Patient*

STEP 7

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

INFORMATION

ℹ️ INFO0835: Dispensing for order holded!

OK
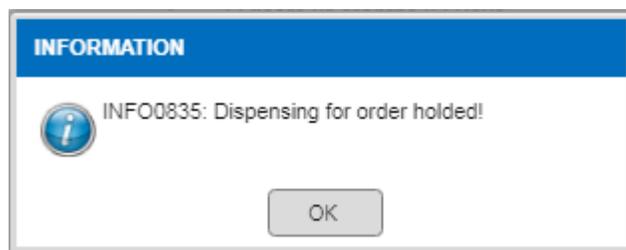
Figure 3.3.2-4 Information Alert Message

Figure 3.3.2-5 Radiopharmaceuticals Verification

Note

- *Click on the* OK *button to hold order.*

- *The* ⊘ *button is to cancel the entered data.*

- *Click on the* X *button to close Hold Order – Pharmacist Remarks screen.*

- *Status will change to Ordered Hold.*

- *Click on the* Resume *link to resume order as per Figure 3.3.2-6.*

Figure 3.3.2-6 Hold Order – Pharmacist Remarks

Note

- *Enter reason at* **Resume Remarks** *field*

- *Click on the* Resume *button to resume order.*
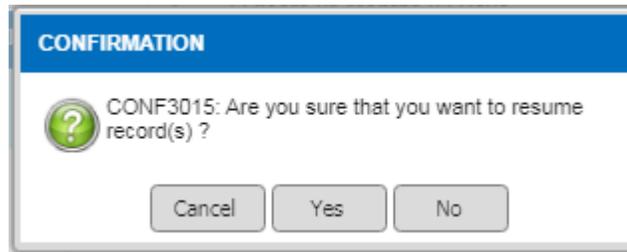
Figure 3.3.2-7 Hold/Resume Alert Message

Note
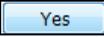
- *Click on the* [Yes] *button to resume order.*
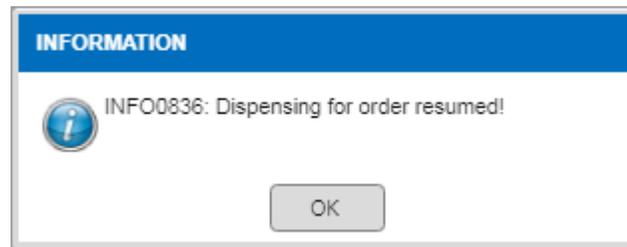
Figure 3.3.2-8 Information Alert Message

3.4 Radiopharmaceutical Preparation

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

Figure 3.4-1 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:*
  a) *Dispense Location*
  b) *Patient Name*
  c) *Order Status*
  d) *Patient MRN*
  e) *Appoinment Date From*
  f) *Appoinment Date To*
  g) *Type of Scan*
  h) *Radiopharmaceuticals*

- *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 3.4-2

Figure 3.4-2 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 3.4-3

Figure 3.4-3 Item Batch Details

Note
- *Item Batch Details screen will be displayed as per Figure 3.4-4.*

Figure 3.4-4 Edit Batch Details

STEP 5

Click on [Edit Details] quantity to allocate quantity

Figure 3.4-4 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*

Figure 3.4-5 Label Packaging Type Guidelines

Figure 3.4-6 Batch Details

STEP 7

Click on ✔ Confirm button to finalize batch details

STEP 8

Click on X button to close Item Batch Details screen

Figure 3.4-5 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* Calculate Activity *button and new window will be displayed as figure 3.4-6.*
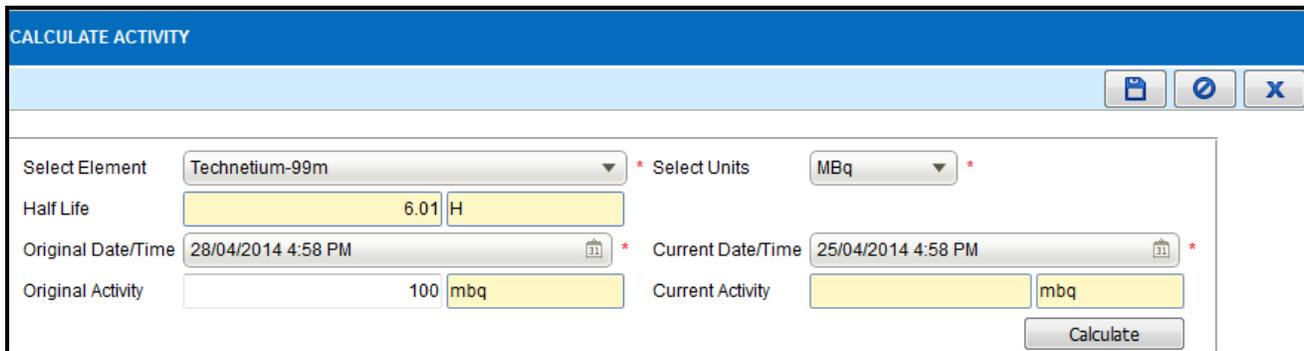
Figure 3.4-6 Radiopharmaceuticals Preparation
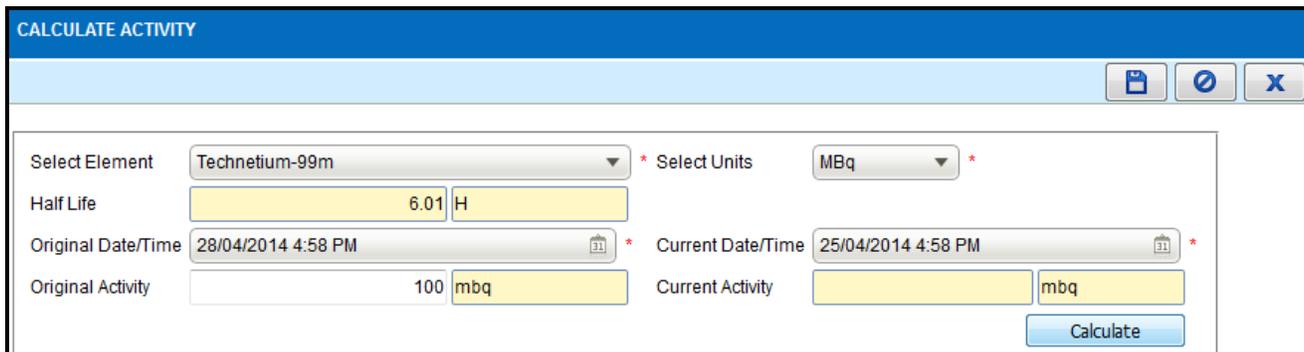
Figure 3.4-7 Calculate Activity

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 [Calculate] button and **Current Activity** field will be automatically calculated by system as per Figure 3.4-8.*
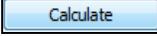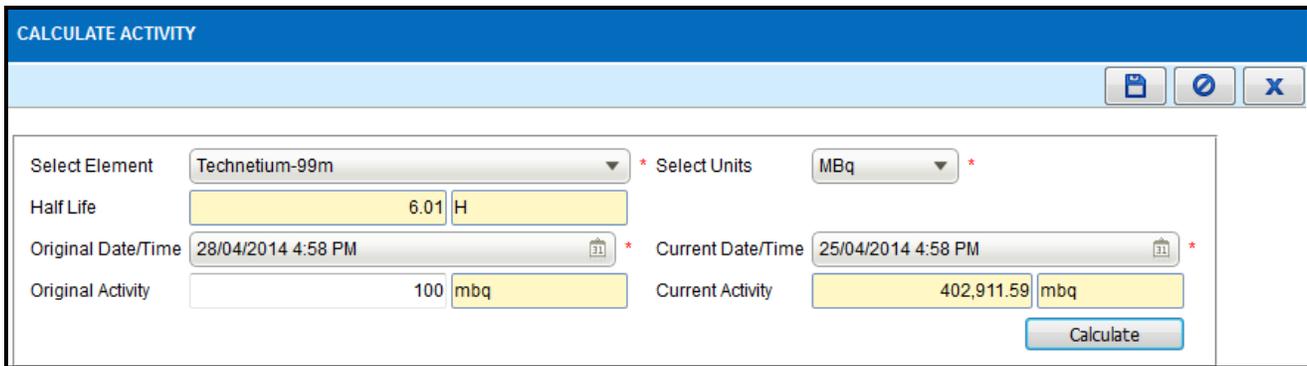
Figure 3.4-8 Calculate Activity

Note

- *Click on the [💾] button to save record as per Figure 3.4-8.*
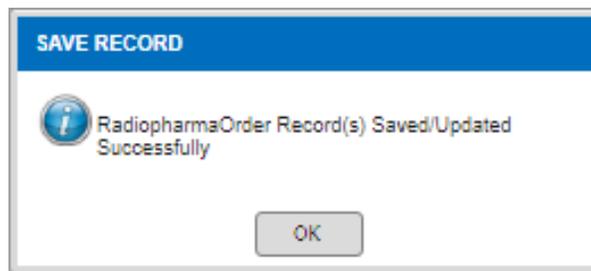
Figure 3.4-9 Save Record Alert Message
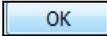
Note

- *Click on the [OK] button to save record as per Figure 3.4-9.*
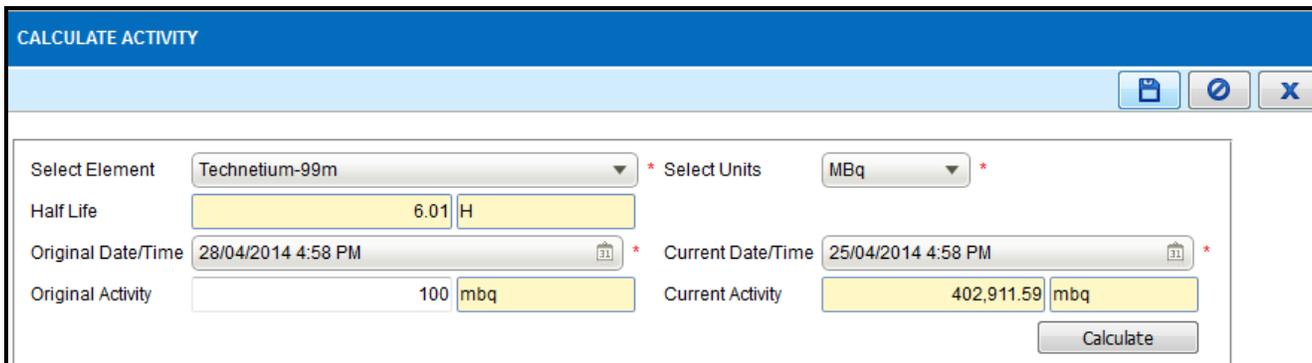
Figure 3.4-10 Calculate Activity

Note

Click on the [X] button to close Calculate Activity screen as per Figure 3.4-10.

Figure 3.4-11 Radiopharmaceuticals Preparation

Note

- *Click on the* [Label] *button to edit label as per Figure 3.4-11.*

- *Drug Label screen will be displayed as per Figure 3.4-12.*
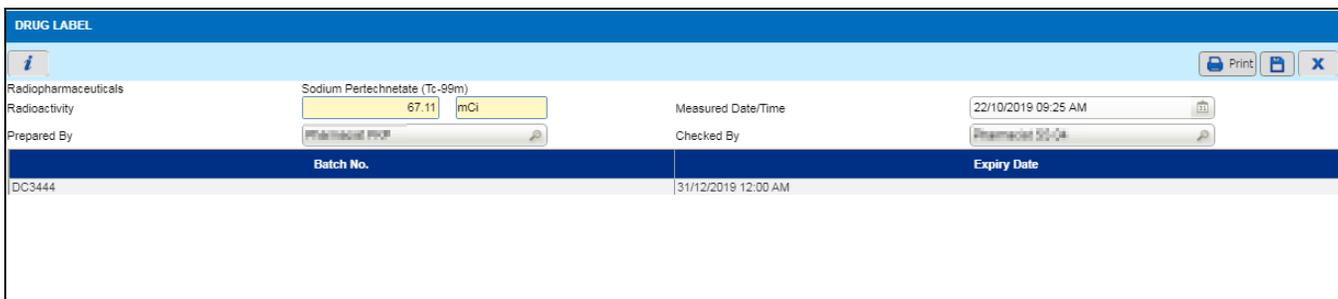
Figure 3.4-12 Drug Label

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 3.4-12.*
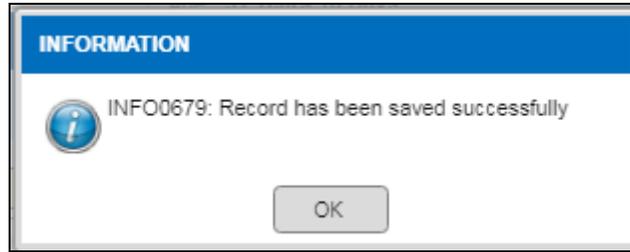
Figure 3.4-13 Alert Message

Note
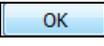
- *Click on the* OK *button to save updated Radiopharmaceuticals Order Record as per Figure 3.4-13.*

Figure 3.4-14 Drug Label

Note

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

Figure 3.4-15 Sample Radiopharmaceuticals Label

Note

Sample of Radiopharmaceuticals Label as per Figure 3.4-15.

Figure 3.4-16 Drug Label

Note

Click on the [X] button to close Drug Label screen as per Figure 3.4-16.

Figure 3.4-17 Radiopharmaceuticals Preparation
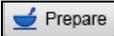
STEP 8 Click on the [Prepare] button to prepare Radiopharmaceuticals order and alert message will be displayed as per Figure 3.4-17
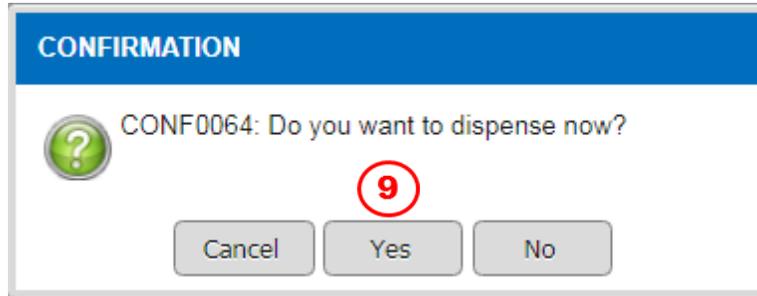
Figure 3.4-18 Ordered Prepared Alert Message

STEP 9

Click on the [Yes] button
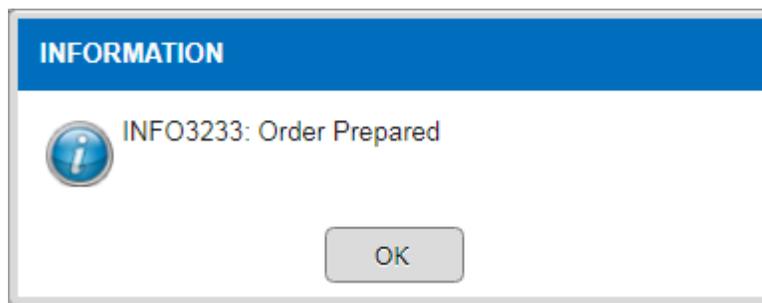
Figure 3.4-19 Ordered Prepared Alert Message

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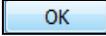
- Click on the [OK] button and order status will be updated to Prepared
- *User still allowed doing intervention and holding order in preparation stage.*

3.5   Radiopharmaceutical Dispensing

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

Figure 3.5-1 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*
  a) *Patient Name*
  b) *Order Status*
  c) *Patient MRN*
  d) *Appoinment Date From*
  e) *Appoinment Date To*

  f) *Type of Scan*
  g) *Radiopharmaceuticals*

- *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   Dispensing screen as per Figure 3.5-1
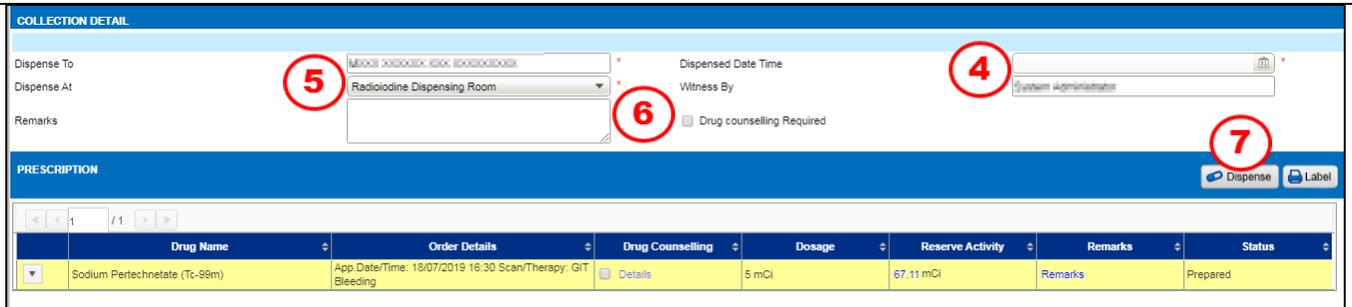
Figure 3.5-2 Radiopharmaceuticals

Note

Dispense To and **_Witness By_** *will be automatically displayed by system but still can modify the details.*

STEP 4

Select **_Dispensed Date Time_** field.

STEP 5

Select **_Dispense At_** from drop down box:

- Administration Room

- Radioiodine Dispensing Room

STEP 6

Enter **_Remarks_** field

Note

Check on the ☑ **_Drug Counseling Required_** *checkbox if counseling required.*

STEP 7

Click on the [🔵 Dispense] button to dispense Radiopharmaceuticals and Dispensing Detail screen will be displayed as per Figure 3.5-3
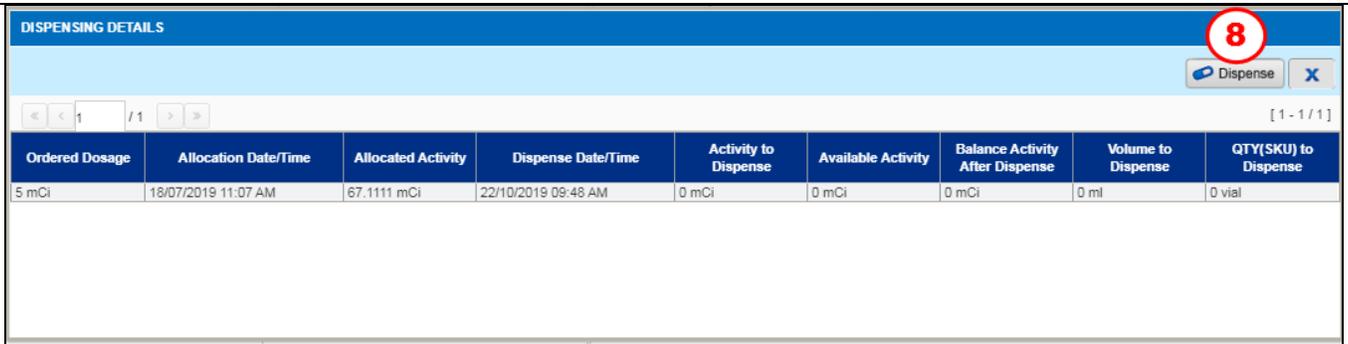
DISPENSING DETAILS							**8**
						Dispense	X
« ‹ 1 / 1 › »							[1 - 1 / 1]
Ordered Dosage	Allocation Date/Time	Allocated Activity	Dispense Date/Time	Activity to Dispense	Available Activity	Balance Activity After Dispense	Volume to Dispense	QTY(SKU) to Dispense
5 mCi	18/07/2019 11:07 AM	67.1111 mCi	22/10/2019 09:48 AM	0 mCi	0 mCi	0 mCi	0 ml	0 vial

Figure 3.5-3 Dispensing Details Screen

STEP 8

Click on the [Dispense] button to dispense Radiopharmaceuticals record as per Figure 3.5-3.

CONFIRMATION

CONF0064: Do you want to dispense now?

9

Cancel   Yes   No
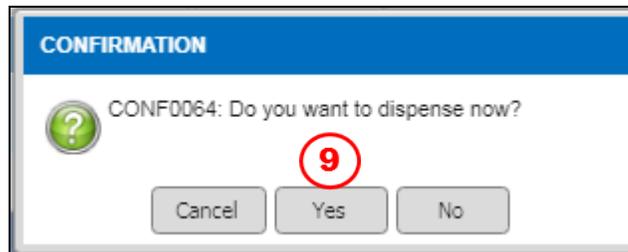
Figure 3.5-4 Information Alert Message

STEP 9

Click on the [Yes] button to proceed dispensing

3.6 Release Batch

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

Figure 3.6-1 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:
   a) MRN
   b) Patient Name
   c) Drug Name
   d) Dispense Location
   e) IC No/Other Identification

Figure 3.6-2 Radiopharmaceuticals Release Batch

STEP 2

Select *Reason for Release* from drop down box:
- Uncollected
- Wrong Allocation
- Change of Regimen
- Patient Refused
- Intervention
- Faulty Product

Figure 3.6-3 Radiopharmaceuticals Release Batch

STEP 3

Check the ☑ *Select* checkbox

STEP 4

Click on the [Release] button to release batch and [Discard] button to discard
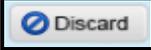
__Note__

- *Release function is to release and update back stock into inventory.*
- *Discard function is to discard stock from inventory even not doing dispensing.*
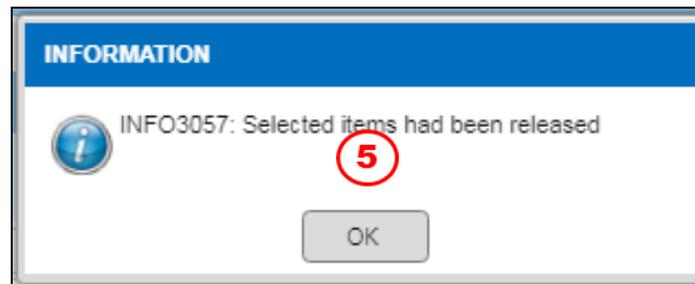
Figure 3.6-4 Information Alert Message

STEP 5
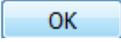
Click on the [OK] button to release selected items

__Note__

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

3.7 Radiopharmaceutical Manufacturing
3.7.1 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.

Figure 3.7.1-1 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:*
    - a) *Worksheet ID*
    - b) *Date From*
    - c) *Date To*
    - d) *Batch No*
    - e) *Status*

Click on the [🔍 Search] *button and system will display related record.*

Figure 3.7.1-2 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 3.7.1-3

Note

- *System will be automatically displayed Preparation screen as per Figure 3.7.1-3.*
- *The **Product** field will be automatically displayed by system.*

Figure 3.7.1-3 Generator Elution

STEP 3

Select **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
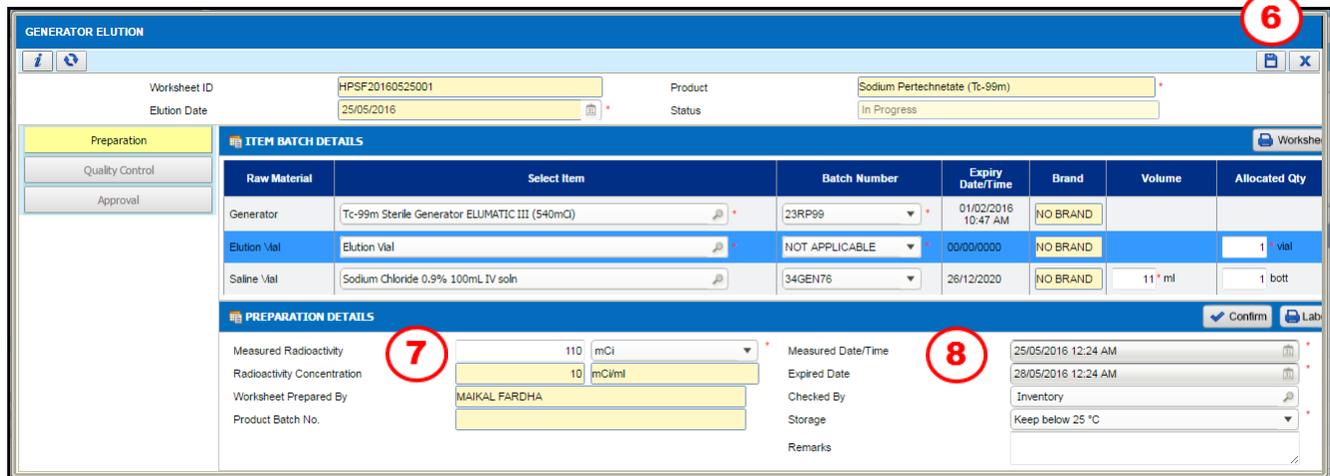
Figure 3.7.1-4 Generator Elution

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 3.7.1-4

Note

- *Enter **Volume** and **Allocated Qty** for Elution Vial and Saline Vial.*

- ***Status** will changed to New after saving.*

- *The [🖨 Worksheet] button will automatically activate after saving.*

STEP 8

Enter **Measured Date/Time** field

Figure 3.7.1-5 Generator Elution

STEP 9

Click on the [🖶 Worksheet] button to generate the worksheet and alert message will be displayed as per Figure 3.7.1-5

Note

Enter **Remarks** *if applicable.*
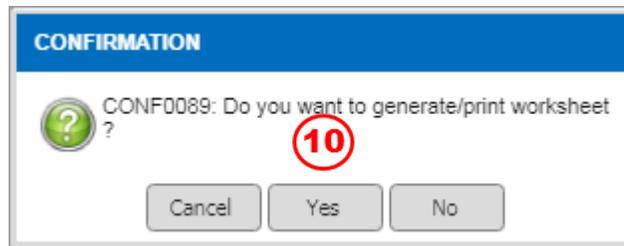
Figure 3.7.1-6 Generate Worksheet Alert Message

STEP 10

Click on the [Yes] button to generate/print worksheet and worksheet will be displayed as per Figure 3.7.1-6

Figure 3.7.1-7 Sample Of Worksheet

Note

Sample of worksheet as per Figure 3.7.1-7.

Figure 3.7.1-8 Generator Elution

Note

- **Worksheet ID** will automatically display after generate worksheet as per Figure 3.7.1-8.
- **Status** will change to In Progress after generate worksheet.
- The **Confirm** button will activate after generate worksheet.
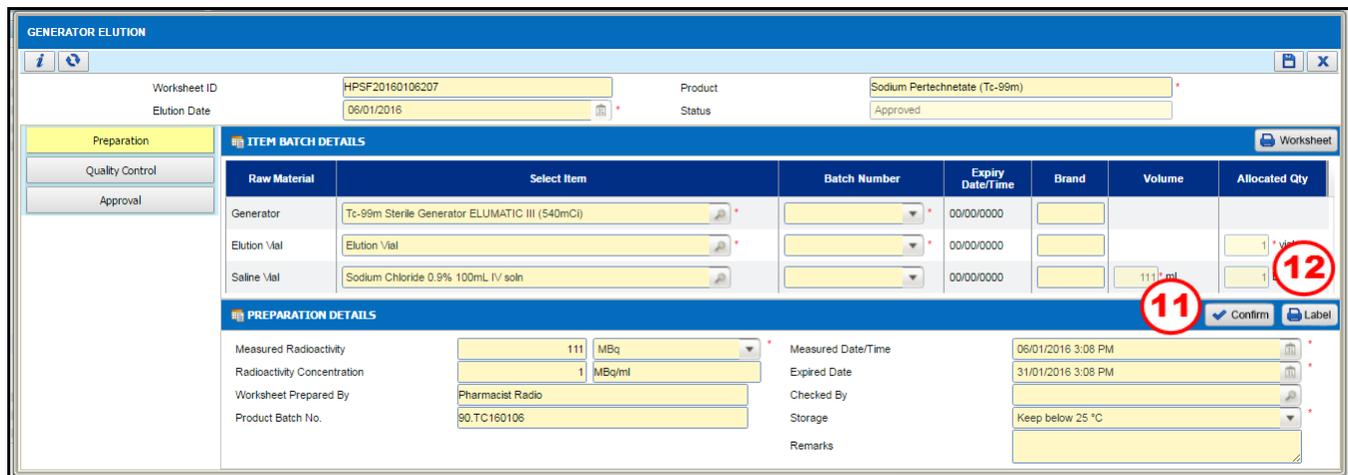
Figure 3.7.1-9 Generator Elution

STEP 11

Click on the **Confirm** button to confirm information preparation details
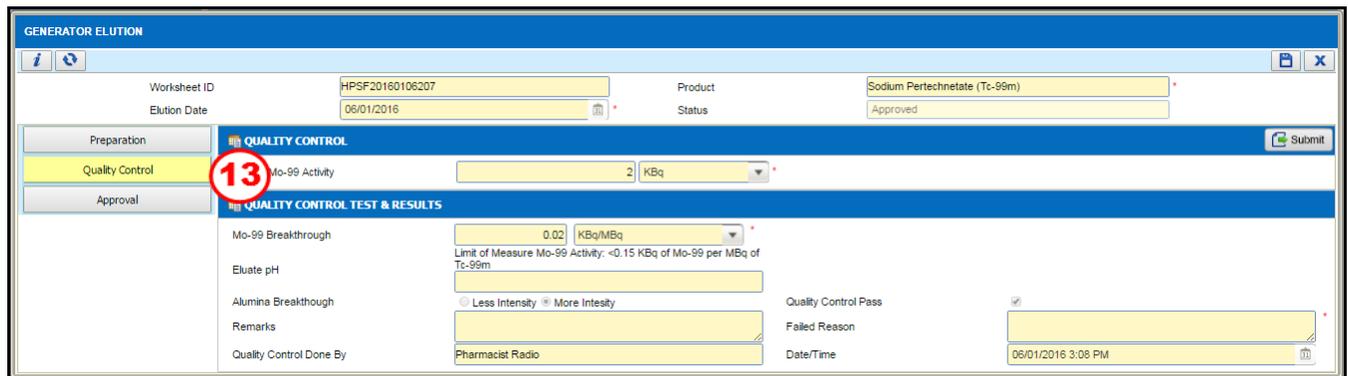
Figure 3.7.1-10 Generator Elution

Note

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

STEP 12

Click on the **Label** button to edit label

STEP 13

Click on the [Quality Control] button and system will be displayed screen as per Figure 3.7.1-10
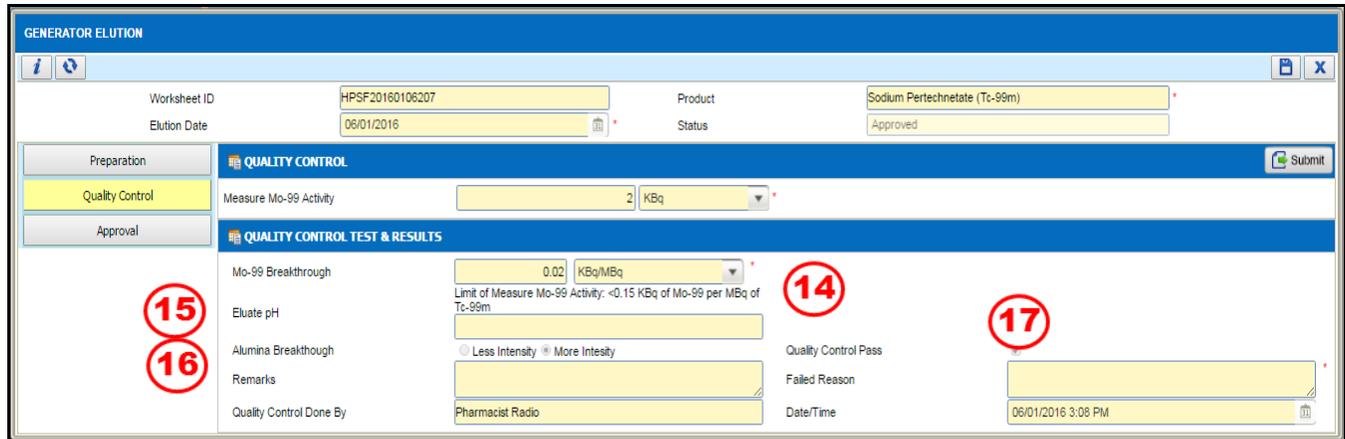
Figure 3.7.1-11 Generator Elution

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 3.7.1-11.*
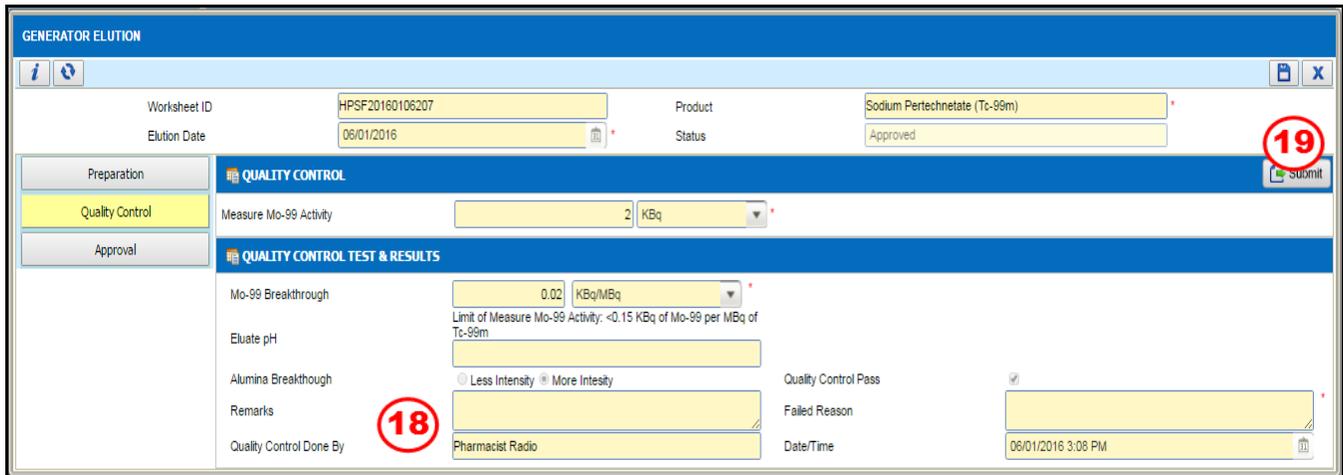
Figure 3.7.1-12 Generator Elution

Note

- *If the selection of **Quality Control Pass**, **Yes**; **Failed Reason** field will not activate as per Figure 3.7.1-12.*

STEP 18

Enter **Remarks** if applicable

STEP 19

Click on the [Submit] button to submit quality control results
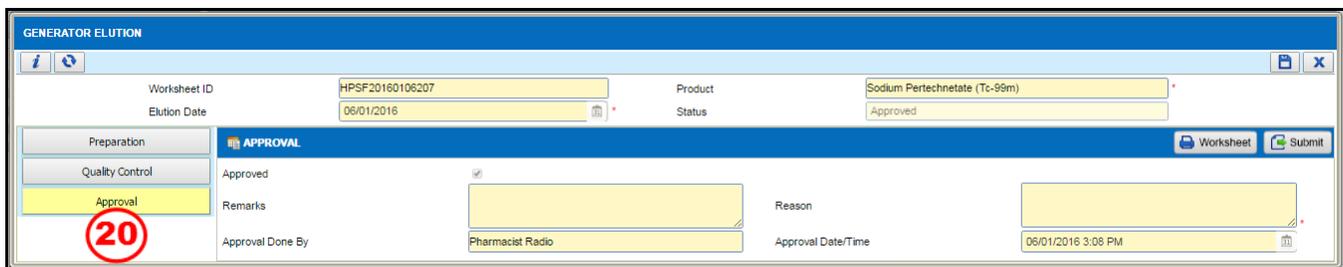
Figure 3.7.1-13 Generator Elution

Note

- *The **Quality Control Done By** field will be automatically displayed after click on the [Submit] button.*

- *The [Submit] button will disable after done submitting the Quality Control record.*
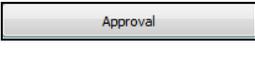
- *The [Approval] button will be activated after the submission.*

STEP 20
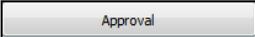
Click on the [Approval] button and system will be displayed screen as per Figure 3.7.1-13

Note

Status will be changed to QC Pass at Approval screen.
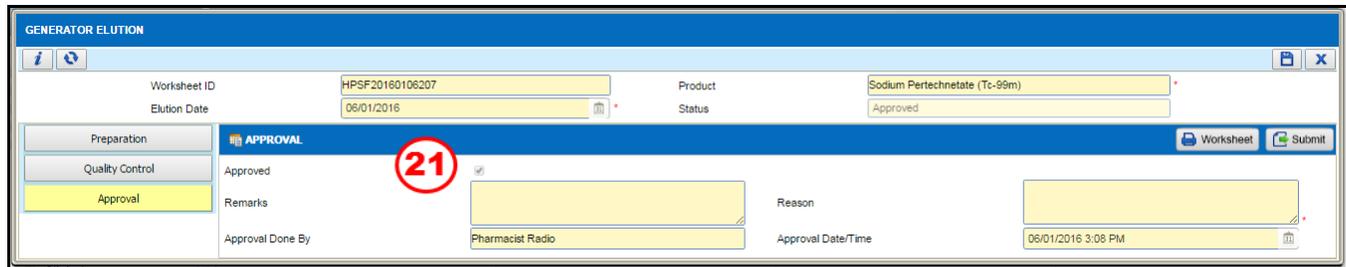
Figure 3.7.1-14 Generator Elution

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 3.7.1-14._

- _If the selection of **Approved**, **Yes**; **Reason** field will not activate as per Figure 3.7.1-15._

- _Enter **Remarks** if applicable._

- _The **Date/Time** field will automatically default by system._

- _The [Worksheet] button is for user to reprint the worksheet._

Figure 3.7.1-15 Generator Elution

STEP 22

Click on the [Submit] button to submit the approval details
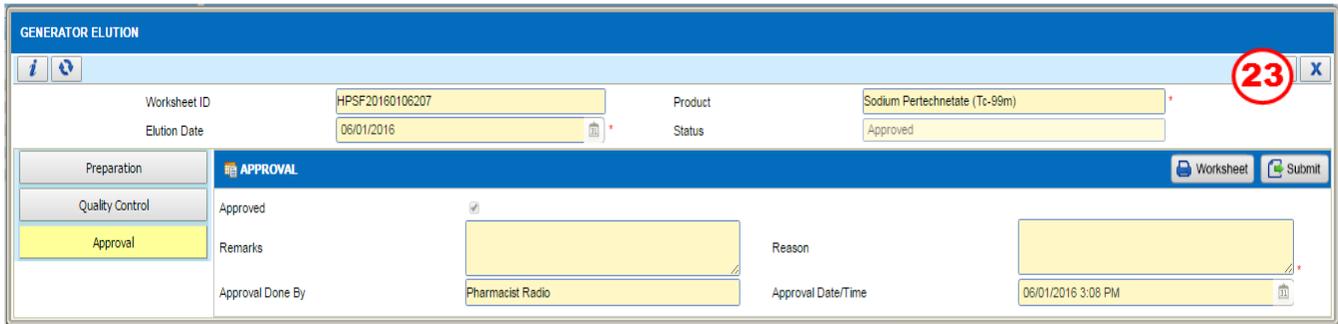
Figure 3.7.1-16 Generator Elution

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 [X] button to close generator elution screen

3.7.2 KIT Preparation

Figure 3.7.2-1 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:*
    a) *Worksheet ID*
    b) *Unit Name*
    c) *Product*
    d) *Created Date From*
    e) *Created Date To*
    f) *Batch No*
    g) *Status*
    h) *Request Type*
    i) *Requesting Facility*

- *Click on the* **Q Search** *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 3.7.2-1

Figure 3.7.2-2 Kit Preparation

STEP 3

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

Note

- *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

Figure 3.7.2-3 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-99mVial1*** *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

Figure 3.7.2-4 Kit Preparation

Note

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

STEP 8

Enter *Remarks* if applicable

STEP 9

Select *Storage* from drop down box:

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

Note

- *Storage* is mandatory field.

STEP 10

Select *Expiry Date* and this field in mandatory

STEP 11

Click on the [save icon] button to save record

Figure 3.7.2-5 Kit Preparation

Note

Status *will change to* **New** *after saving record.*
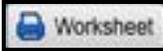
- *The* Worksheet *button will be activated after saving.*

- *The* Label *button will be activated after generate worksheet.*

STEP 12

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

Figure 3.7.2-6 Sample Worksheet

Note

Sample of worksheet as per Figure 3.7.2-7.

Figure 3.7.2-7 Bulk Preparation

STEP 14

Click on the [Label] button to edit label and **Drug Label** screen will be displayed as per Figure 3.7.2-8

Note

Status will be changed to **_In Progress_** after generated worksheet as per Figure 3.7.2-9.
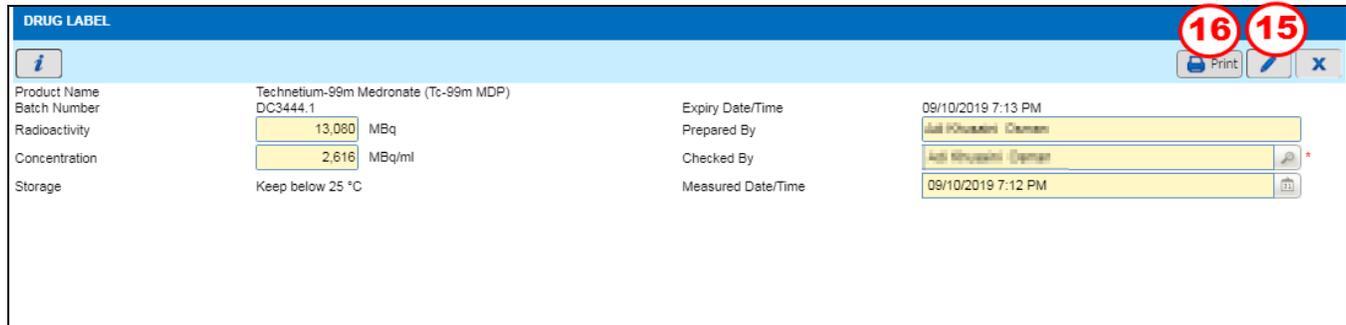
DRUG LABEL

Product Name	Technetium-99m Medronate (Tc-99m MDP)		
Batch Number	DC3444.1	Expiry Date/Time	09/10/2019 7:13 PM
Radioactivity	13,080 MBq	Prepared By	
Concentration	2,616 MBq/ml	Checked By	
Storage	Keep below 25 °C	Measured Date/Time	09/10/2019 7:12 PM

Figure 3.7.2-8 Drug Label

STEP 15

Click on the [💾] button to save edited label

STEP 16

Click on the [🖨 Print] button to print label as per Figure 3.7.2-9

Figure 3.7.2-9 Drug Label

Note

Sample of Drug Label as per Figure 3.7.2-10.

Figure 3.7.2-10 Drug Label

STEP 17

Click on the [X] button to close ***Drug Label*** screen

Figure 3.7.2-11 Drug Label

STEP 18

Click on the [Confirm] button to confirm information preparation details

Figure 3.7.2-12 Kit Preparation

Note

- **_Status_** _will change to_ **_Prepared_** _after preparation details confirmation._

- _The_ [Quality Control] _button will be activated after preparation details confirmation_

- _The_ [Confirm] _button will disable after preparation details confirmation_

Figure 3.7.2-13 Bulk Preparation

STEP 19

Click on the [Quality Control] button and system will be displayed screen as per Figure 3.7.2-13

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 3.7.2-13

STEP 22

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

<u>***Note***</u>

- *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.*

Figure 3.7.2-14 Bulk Preparation

STEP 23

Enter *Remarks* if applicable

Note

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

Figure 3.7.2-15 Bulk Preparation

Note

- *User is allows to click on the **Strip Guideline** hyperlink and system will be displayed as per Figure 3.7.2-16.*

Note

Sample of Strip Guideline as per Figure 3.7.2-17.

Figure 3.7.2-17 Bulk Preparation

STEP 24
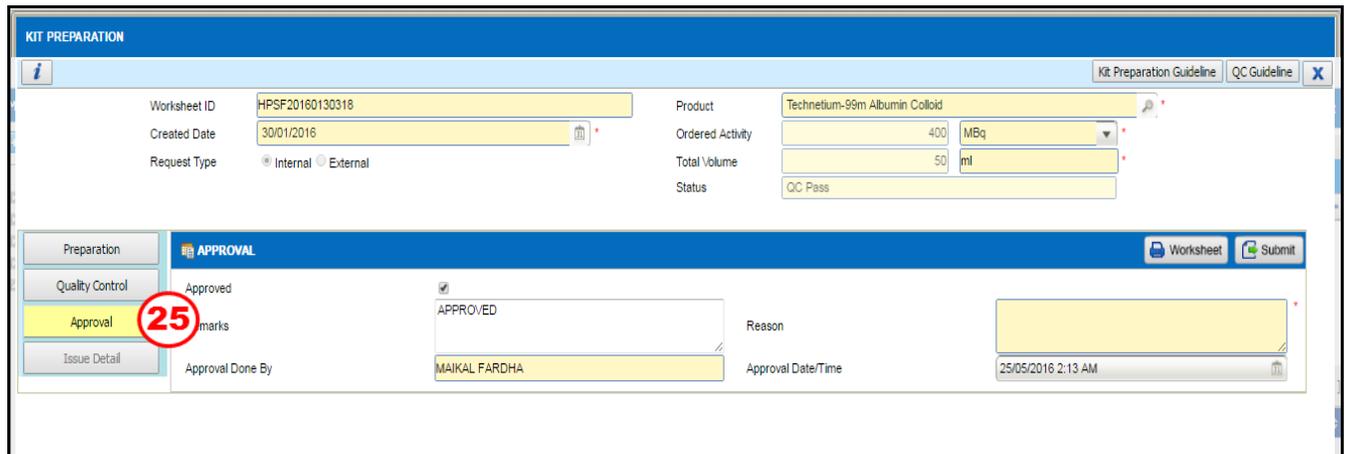
Click on the [Submit] button to submit quality control results

Note

- *The [Submit] button will disable after done the submission.*

- *The [Approval] button will be activated after the submission.*
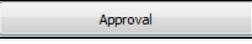
Figure 3.7.2-18 Bulk Preparation

STEP 25

Click on the [Approval] button and system will display screen as per Figure 3.7.2-19

Note

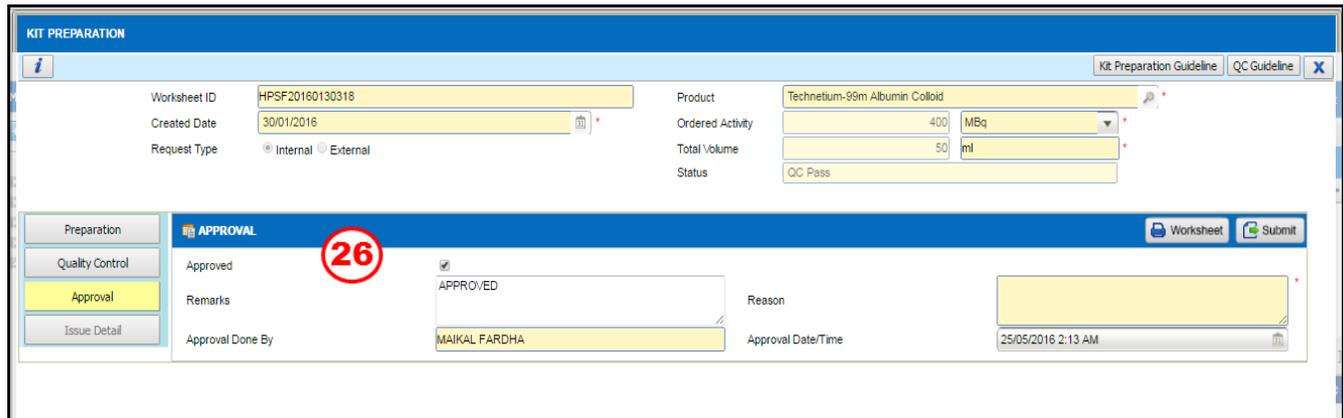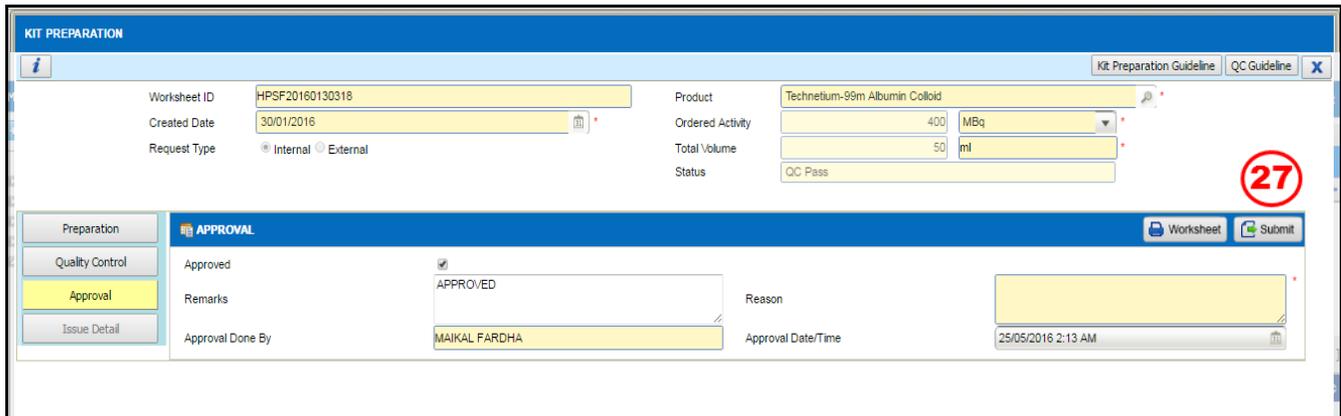*Status will be changed to QC Pass after done the submission.*

Figure 3.7.2-19 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 3.7.2-20.*

- *If the selection of **Approved**, **Yes**; **Reason** field will not activate as per Figure 3.7.2-20.*

- *Enter **Remarks** if applicable.*

- *The **Approval Done By** and **Date/Time** field will automatically default by system.*

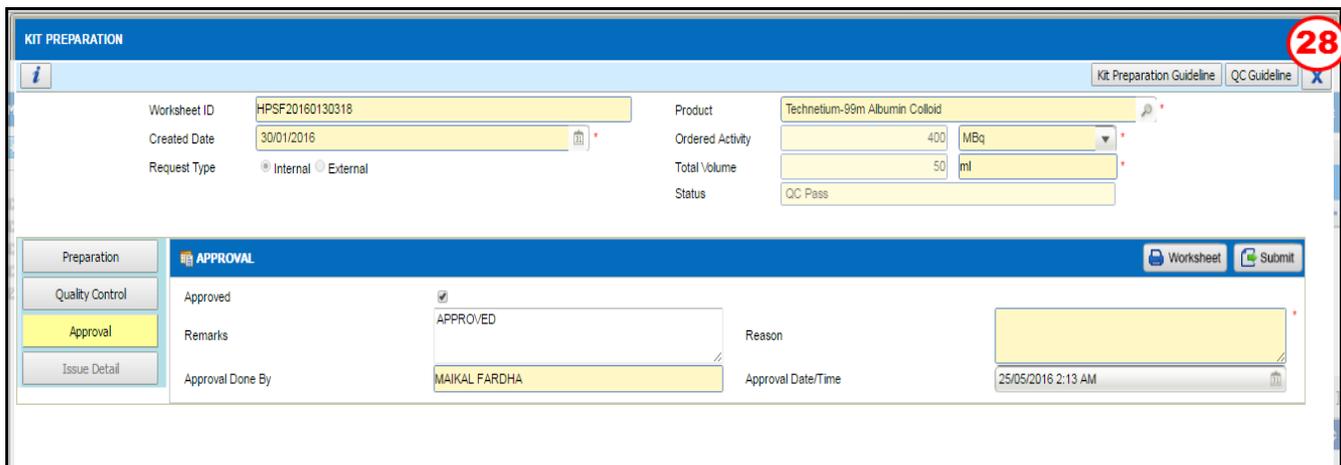- *The [Worksheet] button is for user to reprint the worksheet.*

Figure 3.7.2-20 Bulk Preparation

STEP 27

Click on the [Submit] button to submit the approval details

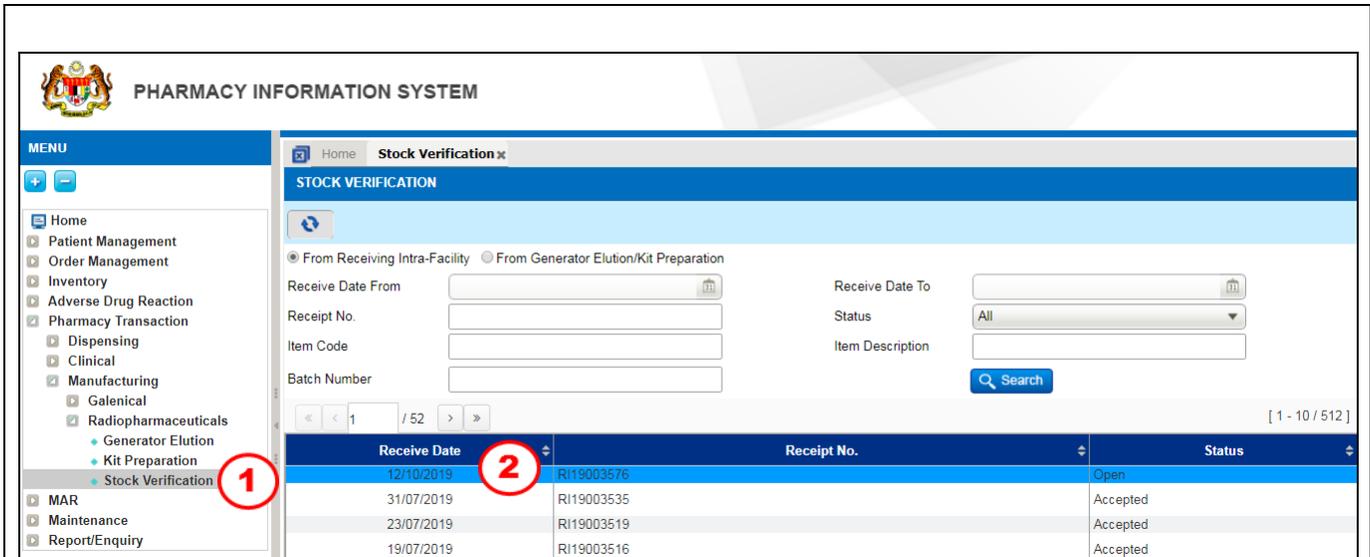**Figure 3.7.2-21 Bulk Preparation**

Note

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

STEP 28

Click on the [X] button to close Bulk Preparation screen

3.7.3 Stock Verification

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

**Figure 3.7.3-1 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* 🔍 Search *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 3.7.3-2
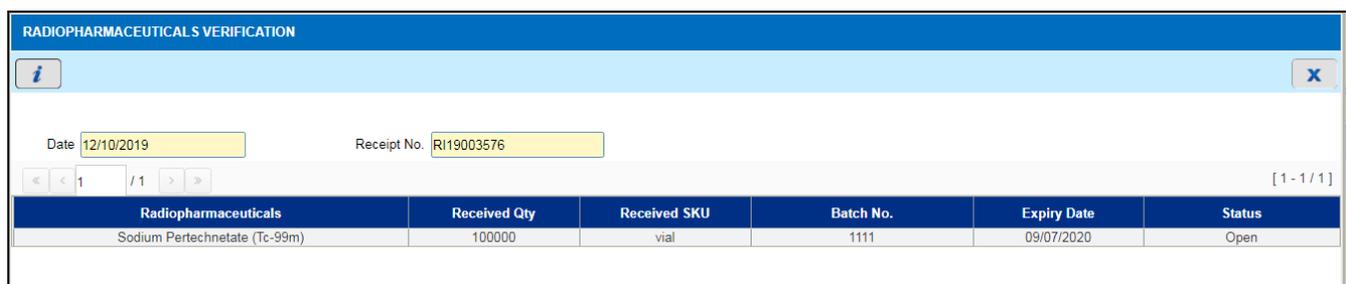
Figure 3.7.3-2 Stock Verification

Note

- ***Date** and **Receipt No** will be automatically displayed and default by system.*

- *By default, status is open.*

Figure 3.7.3-3 Stock Verification

STEP 3

Click on the [✓ Accept] link to verify stock and system will be displayed screen as per Figure 3.7.3-3

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.*

  .

Figure 3.7.3-4 Stock Verification

STEP 4

Check on the ☑ Accept checkbox to accept verification

STEP 5

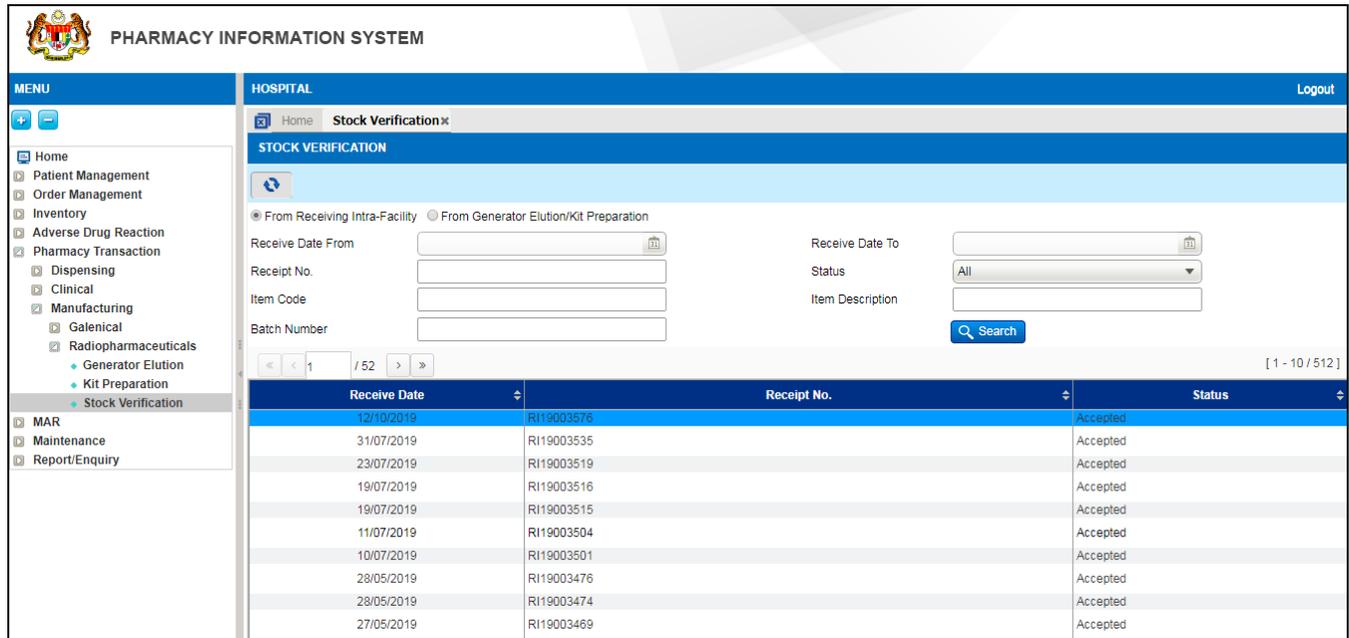Click on the ✔ Confirm button to save record

Figure 3.7.3-5 Stock Verification

STEP 6

Click on the [X] button to close Radiopharmaceuticals Verification screen

Note

- *Status will change to Accepted as per Figure 3.7.3-6 at Stock Verification Listing Page.*

- Add explanation for Rejected.

Figure 3.7.3-6 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