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

Full Based

User Manual
Therapeutic Drug Monitoring (TDM)

Version	**: 9th EDITION**
Document ID	**: FB_U. MANUAL_THERAPEUTIC DRUG MONITORING**

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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. PhIS implementation would transform most of current manual process to electronic system would benefit facility end user in the health care sector.

There are 12 modules to assist services delivery by the health care sector which comprises of:

1. Order Management
2. Inpatient Pharmacy
3. Outpatient Pharmacy
4. Medication Counselling
5. Ward Pharmacy
6. Pharmacy Inventory
7. Manufacturing of Cytotoxic Drug Reconstitution, Parenteral Nutrition, IV Admixture & Eye Drop, Radiopharmaceuticals and Extemporaneous
8. Adverse Drug Reaction & Drug Allergic (ADR & DAC)
9. Clinical Pharmacokinetics Services (TDM)
10. Drug Information & Consumer Education (DICE)
11. Medication Therapy Adherence Clinic (MTAC)
12. Data Mining (PhARM)

1.2 Purpose and Objectives

This user manual outlines the Clinical Pharmacokinetics Services (TDM) sub-module, its key features and functionalities. The primary objective is to guide users through the process of completing PhIS application process.

1.3 Organised Sections

These are the sections within this document:

- Section 1 : Introduction
- Section 2 : Application Standard Features
- Section 3 : Clinical Pharmacokinetics Services (TDM)
- 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
Change Password	Change Login Password		Reset Login Screen
	Expand Menu		Collapse Menu
Home	Display Home Tab		Expand Module
	Collapse Module		Close All Open Tabs
	Refresh Screen	Search	Search Record
	Add/Create New Record		Show Help
	Print	*	Mandatory Field
	Calendar Icon		Search Icon
	Close Window		Radio Button
	Checkbox		Edit Record
	Cancel		Delete Record
	Save	Export to Excel	Export and Open Report in Excel Format
Add Item	Add Item to the list	Delete	Delete Item from the list
Request	Request for Approval	Cancel Request	Cancel the Request
Approve	Approve Transaction	Reject	Reject Transaction
Send for Approval	Send for Approval		Dropdown Box
HPSF00088304	Automatically Display/Retrieve Box		Empty Text Box

Therapeutic Drug Monitoring Module Legend			
Acknowledge	To Acknowledge	Drug Info	Drug Info
New	To Do New Order	Verify	To Verify
Cancel Order	Cancel the Order	Add New Sample	To Add New Sample
Send	To send request	CP2	Ward Pharmacy

Note

To learn more about Login Information, kindly click Login Information module for descriptive steps.

2.2 Latest Enhancement and Updates

Latest Functions	Page
Tdm Order • New flow of ordering TDM Drug • Can do multiple TDM Drug in one time	5
Sample Management • Change Facility field from drop down menu to Auto complete search drop down	22
Sample Management • Add on reject reason from previous	23

3.0 Therapeutic Drug Monitoring (TDM) Order

TDM Order screen allows Prescriber to place TDM Services order. The order will be sent to Pharmacist for verification and reporting.

Figure 3.0-1 Medication Order Listing Page

STEP 1

Click on 'Order Management' module and click on 'Medication Order' sub-module

STEP 2

Search for patient records by:

a) MRN
b) Patient's Name
c) Location
d) Visit Date
e) IC No/Other Identification

Note

- *Location is defaulted to user's login ID but user is allowed to change to other assigned location.*
- *Select on* [Show All] *checkbox to display all patients' records based on user's assigned locations.*
- *Select on* [Show All By Location] *checkbox to display all patients' records based on user's login location.*

Figure 3.0-2 Medication Order Listing Page

STEP 3

Click on the Search button to search for patient records

STEP 4

Double-click on selected patient to display the Medication Order screen

Figure 3.0-3 Medication Order

STEP 5

Click on the Therapeutic Drug Monitoring button to create TDM order

Note

- *User have to enter patient's height and weight and click on the* Update *button and system will automatically calculate the BMI/BSA in m².*
- *Visit Record will display Breast Feeding and Pregnant checkboxes only if the patient is a female.*
- *User is allow to do multiple TDM Order*

Figure 3.0-4 TDM Order

STEP 6

Select ***Patient Condition*** checkbox(es):

- Oedema
- Burn
- Smoker
- Liver Disease
- Dialysis
- Dehydration
- Others

Note

- *User may select more than one condition.*
- *If 'Others' is selected, user needs to state the patient's condition in the text box provided.*
- *Fill in Order **Remarks** if applicable.*

STEP 7

Enter ***Latest Lab Result*** which consists of:

- Blood Urea
- Sodium
- Potassium
- Serum Creatinine
- Creatinine Clearance
- Albumin

Note

- *Creatinine Clearance will be automatically calculated by system in ml/min when Serum Creatinine is filled.*
- *Lab result data will be updated in the **Lab Result** hyperlink*

Figure 3.0-5 TDM Drug Details

STEP 8

Select ***Indication For Request*** from dropdown box:

- Non Compliance
- Poor Response
- Therapeutic Monitoring
- Suspected Toxicity

Note

- *Selected Indication For Request will be the search key for TDM Drug field.*

STEP 9

Click on the button to search for TDM drug based on:

- Current Medication
- Previous Medication
- All Drugs

Note

- *If the selected Indication for Request 'Non Compliance/ Poor Response/ Therapeutic Monitoring', TDM Drug search can be select from three (3) sources :*
- *Current Medication*
  - *Medication which patient still take and active in the system as drug classified as TDM drug only*
- *Previous Medication*
  - *Medication which patient taken before and completed in the system as drug classified as TDM drug only*
- *All Drugs*
  - *All medication classified in TDM drug*
- *If the selected TDM Drug is the Current Medication or Previous Medication, system will automatically display the Drug Details as per Figure 3.0-6.*
- *Click on* TDM Guidelines *hyperlink to view TDM Guideline details on the selected TDM Drug as per Figure 3.0-7.*
- *TDM Guideline master setup is controlled by HQ.*
- *If the selected Indication for Request is 'Suspected Toxicity', TDM Drug search will default to 'All drugs' which comes from drugs that have been set in TDM Guideline master.*
- *The Drug Details field will be a free text field for user to enter the current dosage and frequency as per Figure 3.0-8.*

Figure 3.0-6 TDM Drug Search

Figure 3.0-7 TDM Guidelines

Figure 3.0-8 TDM Drug Detail

Figure 3.0-9 Lab Result Hyperlink

Figure 3.0-10 Drug Details

STEP 10
Fill the **Order Remark** if neccesarily.

STEP 11
Fill the **Drug Detail**.

Note
- *Please specify current **Dosage,Frequency, Start Date & End Date** if choose '**All Drug'** for TDM Drug Request.*

STEP 12

Click on the button to added drug and will be display as Figure 3.0.10

Note
- *Click on the* *button to change any information.*
- *Click on the* *button to clear the drug detail part before added any new information.*

Figure 3.0-11 Sampling Details

STEP 13

Right click on the to fill in sampling details, sampling details screen will be displayed as Figure 3.0.11.

Note
- *There are several sampling type that can be choose*
  - *Post 1*
  - *Post 2*
  - *Post*
  - *Pre*
  - *Random*
- *Screen for Sampling Details will be displayed differently based on selected 'Indication For Request' below:*
- *Sampling Type will be displayed differently based on choosen medication together from TDM guideline Example:*
  - *Paracetamol for random and pre sampling .*
  - *Vancomycin for Pre ,post and random sampling*

- *If 'Suspected Toxicity', Sampling Type is defaulted to 'Random' and the 'Suggested Sampling Date/Time' field will be displayed as per Figure 3.0-12.*

STEP 14

Click on the button to select **Drug Administration Date/Time**

Note

Drug Administration Date/Time*" to be default as empty and change the time format to 12 Hour format*

STEP 15

Select ***Sampling Time*** from dropdown box and enter ***Interval*** and select Hours/Minutes

Note

The Interval field is only enable if user choose the Indication for Request as Non Compliance/Poor Response/Therapeutic Monitoring.

Figure 3.0-12 Sampling Details

STEP 16

Click on the to view the sampling details added as Figure 3.0.13

Figure 3.0-13 Drug Details

STEP 17

Click on the Confirm to confirm TDM order and TDM Order No. will be generated.

STEP 18

Click on the Yes button to save record

Figure 3.0-14 Confirmation alert message

STEP 19

Click on the Prescription button to print TDM Request Form as per Figure 3.0-15

Note

- *Click on the Clear button to clear all entered data.*
- *Click on the New button to create a new TDM Order and the system will reset all fields in TDM Order screen.*

CLINICAL PHARMACOKINETICS SERVICES

Therapeutic Drug Monitoring (TDM) Request Form

Ordered By [redacted] **TDM Order No** :TDM0000003311

Ordered Date/Time 09/01/2018 11:45

PATIENT DETAILS					
Name:	[redacted]	MRN NO:	[redacted]	IC:	[redacted]
				Race:	[redacted]
Age:	24 Years 06 Months	Sex:	Male	Ward/Unit:	WARD PSYCHIATRIC AND MENTAL HEALTH
Weight:	77 kg	Height:	177 cm		

LATEST LAB RESULT :

Blood Urea	Sodium	Potassium	Serum Creatinine	Creatinine Clearance	Albumin

PATIENT CONDITION					
Oedema:	YES	Smoker:	NO	Dehydration:	NO
Dialysis:	NO	Burn:	NO	Liver Disease:	NO
Others:	NO	Details:			

TDM DRUG DETAILS

No	TDM No	Drug Name	Drug Details	Indication Request	Remarks
1	TDM0000003311	Paracetamol 500 mg Tablet	500 mg Tablet	Suspected Toxicity	

Sample Type	Lab Test Order	Drug Administration Date/Time	Suggested Sampling Date/Time	Interval
RANDOM	Paracetamol Random	2018-01-09 11:41:00	2018-01-09 12:41:00	1 Hours

Figure 3.0-15 TDM Request Form

4.0 Therapeutic Drug Monitoring (TDM) Verification

TDM Verification module is for user to acknowledge and verify TDM order

Figure 4.0-1 TDM Verification Listing Page

STEP 1
Click on 'TDM' module and click on 'TDM Verification' function

STEP 2
Search for TDM orders by:

a) Ordered Date From
b) Order Date To
c) Location Type
d) Location
e) IC No./Others Identification

STEP 3
Click on the Search button to search for TDM orders

STEP 4
Double click on selected record to display TDM Verification screen

Note

- Click on Go To Advance Search hyperlink for advance search using below criteria:
  - TDM Order No
  - Status
  - TDM Drug
  - Ordered By
  - Acknowledged By
  - MRN
- Click on Back To Basic Search hyperlink for basic search as per Step 2.

Figure 4.0-2 Patient's Banner

Note

TDM Verification consists of:

a) Patient's Banner

- Patient's Banner display patient's profile. User can update patient's height and weight.

- Click on the Update button and system will automatically calculate the BMI/BSA in m^2.

Figure 4.0-3 Screening Details

b) Screening Details

- Screening Details consists of:
- TDM Order No.
- Drug Name
- Ordered By
- Indication For Request
- Order Remarks
- Patient Conditions
- Ordered Date/Time
- Latest Lab Result

Figure 4.0-4 Drug Details

c) Drug Details

- Drug Details consists of:
  - Rx. No. (Order No.)
  - Dosage
  - Frequency
  - Duration
  - Route
  - Start Date
  - End Date

Figure 4.0-5 Sampling Details

d) Sampling Details

- Sampling Details consists of:
  - Sampling Type
  - Drug Administration Date/Time
  - Interval
  - Suggested Sampling Date/Time
  - Lab Test Order

Figure 4.0-6 TDM Verification

STEP 5

Click on the button to edit record

Note

- User able to edit details in Screening Details section as below:
  - Order Remarks
  - Patient Condition
  - Latest Lab Result

- These are additional functions in TDM Verification (If applicable):
  - Edit Sampling Details
  - Add new sample
  - Reject sample
  - Cancel Order

Edit Sampling Details as per Figure 4.0-7:

- Double click on sample record to display sampling details.
- Click on the button to edit record as per Figure 4.0-8.

- Edit sampling details as below:
  - Sampling Type
  - Drug Administration Date/Time

- Interval

- Click on the button to save sampling details

Add New Sample

- Click on the Add New Sample button to add new sample

- Edit sampling details as below:
  - Sampling Type
  - Drug Administration Date/Time
  - Interval

- Click on the button to save new sample record.

- Click on the Cancel Order button to cancel order.

- Order Status will be changed to "Cancelled" and users not necessary to place new order.

Figure 4.0-7 Sampling Details

Figure 4.0-8 Edit Sampling Details

Figure 4.0-9 Reject and Cancel Order Function

Figure 4.0-10 Save and Acknowledge Function

Figure 4.0-11Confirmation alert message

STEP 6

Click on the

button to acknowledge order

STEP 7

Click on the

button to save record

Note

- Order Status changed from “Ordered” to “Acknowledge”.
- User still can update sampling details.
- Acknowledged By and Acknowledged Date/Time will be displays.

5.0 Sample Management

This sub-module is to record the movement of the sample.

Figure 5.0-1 Sample Management Listing Page

STEP 1
Click on 'TDM' module and click on 'Sample Management' function

STEP 2
Search for TDM order using basic search:

- Ordered Date From
- Order Date To
- Location Type
- Location
- MRN
- Status
- IC No./ Other Identification

Note
Click on the Go To Advance Search *hyperlink for advance search.*

STEP 3
Click on the Search button to search for records

STEP 4
Double-click on the record to display Sample Management screen

Figure 5.0-2 Sample Management

STEP 5
Double-click on the record to proceed to next step

Note
These fields are inserted by the Nurse for the sampling process:

- *Actual Admin Date/Time*
- *Actual Sampling Date/Time*
- *Sample Sent Date/Time*
- *Sent Through*
- *Sample Collected By*
- *Sent By*

Figure 5.0-3 Sampling Process

STEP 6
Enter details in these fields:

- Sample Accepted Date/Time
- Sample Accepted By
- Remarks

Note
These field are entered by Pharmacist/Assistant Pharmacist when receiving the sample.

STEP 7

Click on the Save button to save record

Note

The system will change order status from "Verified" to "Sample Accepted".

Figure 5.0-4 Confirmation alert message

Figure 5.0-5 Outsource

STEP 8

Note

- *If Process Type is "Outsource", the system will display **Send To** dropdown box and* Send *button.*
- ***Send To** dropdown box will list down all facilities that will receive the Outsource request.*

- *Select **Process Type** from dropdown box:*
  - *Pharmacy Based*
  - *Lab Based*
  - *Outsource*

Figure 5.0-6 Process Type

- *For Outsource the Change Facility field from drop down menu to Auto complete search drop down menu as Figure 5.0.7*

Figure 5.0-7 Search Other Facility

Figure 5.0-8 Outsource

STEP 9

Click on the Save button to save record (Repeat Step 8)

Note

- *If Process Type is "Outsource", in the Outsource column under Sampling Details will be set as "Yes". Otherwise Outsource will be set as "No".*
- *If "Outsource", user needs to select which facility to send the order to under Send To dropdown box and click on the Send button.*
- *Click on the Cancel Order button to cancel the order. User may not need to place new order.*

- *Click on the*

button to reject the sampling details. User needs to place a new order.
- *User can see hyperlink to view reject reason if the status is 'Reject'. Click on the Sample Rejected Hyperlink to view the reason such as below:*

Figure 5.0-9 Reject Reason

- *To add new data reject Reason as below:*

Figure 5.0-10 Add Reject Reason

6.0 TDM Reporting

TDM Reporting module is for user to record the TDM results and Pharmacist Recommendation.

Figure 6.0-1 TDM Reporting Listing Page

STEP 1

Click on 'TDM' module and click on 'TDM Reporting' function

STEP 2

Click on the button to search patient MRN

STEP 3

Enter Patient MRN or Patient Name or ID no and click on the Search button

STEP 4

Double click on patient name

Figure 6.0-2 TDM Reporting Listing Page

STEP 5

Click on the button

Note

Reporting screen will be displayed as Figure 6.0-3

Figure 6.0-3 TDM Reporting

STEP 6

Click on the [+ Add] button to display TDM Add Result screen

Figure 6.0-4 TDM Add Result

STEP 7

Select on ☐ checkbox(es) for selected TDM order

Note

The system will display all the active TDM order for the patient. User can combine the TDM orders in one reporting process.

STEP 8

Click on the [Select] button to proceed with TDM reporting process

Figure 6.0-5 Reporting Details Hyperlink

STEP 9

Click on [Details] hyperlink to display Reporting screen

Figure 6.0-6 Reporting

Note

- *User needs to enter sample details for pre sample, post sample or random sample based on TDM order.*

- *Latest Lab Result will display the latest lab results recorded for:*
  - *Blood Urea*
  - *Sodium*
  - *Potassium*
  - *Serum Creatinine*
  - *Creatinine Clearance*
  - *Albumin*

STEP 10

Enter sample details as below:

a. Result Value
b. Resulted By

Note

- *Click on* Details *hyperlink to view sample details as per Figure 6.0-7. Sample Details consists of:*
- *Reference Range*
- *Sample Collected Date/Time*
- *Actual Drug Admin Date/Time*
- *Outsource*

Figure 6.0-7 Sample Details

STEP 11

Select calculator from dropdown box. Please refer to TDM Calculator to view sample calculator calculation.

Figure 6.0-8 Reporting

STEP 12
Enter ***Pharmacokinetics Profile***

STEP 13
Select ***Recommendation Type*** from dropdown:

- Increase The Dose
- Maintain The Dose
- Reduce The Dose
- Refer to Pharmacist Notes
- Stop The Dose
- Withhold The Dose

Note
Recommendation Type will be copied and displayed in Pharmacist Notes.

STEP 14
Select ***Toxic***:

a. Yes
b. No

STEP 15
Click on the Ok button to proceed with TDM reporting process

Figure 6.0-9 TDM Reporting

Note

- *Pharmacist Notes field will automatically display:*
  - *Drug Name*
  - *Recommendation Type*
- *User may edit Pharmacist Note.*
- *Enter Remarks if applicable.*
- *Total Cost of Analysis will be based on TDM Guideline master setup.*

STEP 16

Click on the Save button to save report

Note

The status will be set as "In-Process".

STEP 17

Click on the Confirm button to confirm report

Note

- *The status will change to "TDM Completed".*
- Save *button and* Place TDM Order *button will be enabled.*

Figure 6.0-10 TDM Reporting

STEP 18

Click 'Yes' or 'No' at the Yes button under ***Recommendation accepted***

STEP 19

Click on the Save button to authorize the report

Note

- *The status will change to "Result Viewed".*
- *Click on the* Place TDM Order *button to place new TDM order.*
- User can click on the button to print the external TDM resulting as Figure 6.0-11. The TDM report will be display as in Figure 6.0-12.

Figure 6.0-11 Print Report

CLINICAL PHARMACOKINETICS SERVICES

Therapeutic Drug Monitoring (TDM) Report

Hospital Pakar Sultanah Fatimah, Muar

Report No: RPT0000002341

PATIENT DETAILS

Name : MRN NO : IC :

Age : 25 Years 08 Months 25 Days Sex : Female Race : Malay

Weight : 80 Kg Height : 155 Cm Ward/Unit : WAD 9 (MED - P)

No	TDM No	Drug Name	Drug Details	Indication Request	Recommendation Type	Recommendation Accepted	Toxic
1	TDM0000004684	Phenytoin Sodium 100 mg Capsule	300 mg, ON (every night), Oral Capsule, Oral, 26/03/2017 (7 Days), Start Date: 26/03/2017 End Date: 02/04/2017	Therapeutic Monitoring		Yes	No

Sampling Id	Sample Type	Actual Sampling Date Time	Actual Drug Admin Date Time	Result Value	Theraputic Range
HPSF/SM/0000004848	RANDOM	3/27/17 12:00 AM	3/27/17 3:28 PM		TROUGH : 10 – 20 mcg /ml

Pharmacist Note:

DRUG REGIMEN MEASURED LEVEL (mcg/ml) Adjusted level (mcg/ml)
LOADING DOSE IV PHENYTOIN 1G +5.7 14.61
100mg TDS
*Adjusted level was be calculated due to patient on dialysis and hypoalbumin
DESIRED THERAPEUTIC RANGE:
Phenytoin: 10-20 mcg/ml

Comments:
Adjusted level of phenytoin is WITHIN the therapeutic range.
May continue with maintenance of IV Phenytoin 100mg TDS.
Kindly monitor patient's liver function and albumin level.
Please repeat TDM (pre dose) only if patient fits.
Thank you.

Printed Date : 05/09/2017 Printed By Unit Name : Source : PhIS

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Figure 6.0-12 TDM Report

7.0 External TDM

7.1 External TDM Online

Figure 7.1-1 External Notification

External TDM module is for user to record external TDM resulting (Outsource) via online or offline.

It will be recorded online if both facilities use PhIS to perform TDM processes.

STEP 1

Click on the ***External TDM Result Received*** 1 button to view Outsource information

Figure 7.1-2 Oursource Listing

STEP 2

Click on ***Register*** hyperlink to register the patient in the system

Note

The status will change to 'Registered' as per Figure 7.1-2

Figure 7.1-3 Outsource Listing – Registered Patient

STEP 3

Click on the ☑ checkbox for selected patient

STEP 4

Click on the button to save the record

Note

Registered patient will be uploaded to the External TDM listing page.

Figure 7.1-4 External TDM Listing Page

STEP 5
Click on 'Pharmacy Transaction' menu follow by 'Clinical' sub-menu

STEP 6
Click on 'TDM' and click on 'External TDM' function

STEP 7
Search for patient records by:

a. External TDM No.
b. External Facility
c. External MRN
d. Patient Name
e. Receive Date From
f. Receive Date To
g. Others Facility
h. Status
   - Recorded
   - Rejected
   - Resulted

STEP 8
Click on the Search button to search for patient records

STEP 9
Double-click on the selected patient and External TDM Resulting screen will be displayed as per Figure 7.1-5

Note

Register Patient *button is for offline External TDM (refer to* section 7.2 External TDM Offline*)*

Figure 7.1-5 External TDM Resulting

STEP 10

Enter ***Delivery Details*** as below:

a) Sample Sent By
b) Sample Sent Date/Time
c) Sample Received By
d) Sample Received Date/Time

STEP 11

Enter ***Result Value*** and select ***UOM*** from dropdown box :

- mcg/ml
- mg/dl
- mmol/l
- ng/ml

Note

- *Select on ☐**Lab Based** checkbox if TDM resulting process is done at a laboratory.*
- *Select on ☐**Toxic**checkbox if TDM results show toxicity for selected patient.*
- *Select on ☐**Reject** checkbox to reject sampling received.*
- *Select on ☐**Delete** checkbox to delete TDM order.*
- *Enter **Remarks** if applicable.*

Figure 7.1-6 External TDM Resulting

STEP 12

Click on the Save button to save external TDM resulting

STEP 13

Click on the Confirm button to confirm external TDM resulting

Note

- *The status will change to "Resulted".*
- *Outsource TDM Resulting will be sent back to the requester.*
- *To receive an **External TDM Result Received:***
- *Click on the **External TDM Result Received** 2 button to view the outsource listing.*
- *Select on ☐checkbox(es) on selected outsource request.*
- *Click on the button to upload the patient record in order to proceed with TDM Reporting processes.(refer to [section 6.0 TDM Reporting](#))*

Figure 7.1-7 External Notification

Figure 7.1-8 Outsource Listing

7.2 External TDM Offline

External TDM module is for user to record external TDM received via offline.

Figure 7.2-1 External TDM Listing Page

STEP 1
Click on 'Pharmacy Transaction' menu follow by 'Clinical' sub-menu

STEP 2
Click on 'TDM' and click on 'External TDM' function

STEP 3
Click on the Register Patient button to register external patient

Figure 7.2-2 External TDM Registration

STEP 4

Enter details in the fields below:

a. External MRN
b. Patient Name
c. External Facility
d. Patient Id Number
e. Other Facility
   (If the sample come from private sector or facility which is not listed under MOH facilities)
f. Id Type

Note

Click on the External MRN button to search for registered patient and all fields will be automatically retrieved.

STEP 5

Click on the Manage Sample button and External TDM Resulting screen will be displayed as per Figure 7.2-3

Note

Click on the Save button to save the record

Figure 7.2-3 External TDM Resulting

STEP 6

Enter ***Delivery Details*** as below:

a. Sample Sent By
b. Sample Sent Date/Time
c. Sample Received By
d. Sample Received Date/Time

STEP 7

Click on the ***TDM Drug*** button to search for drug

STEP 8

Select ***Sampling Type*** from dropdown box:

- Pre
- Post
- Random

and click on the Add button to add the information

Figure 7.2-4 External TDM Resulting

STEP 9

Enter ***Result Value*** and select ***UOM*** from dropdown box :

- mcg/ml
- mg/dl
- mg/ml

Note

- *Select on ☐**Lab Based** checkbox if TDM resulting process is done at a laboratory.*
- *Select on ☐**Toxic**checkbox if TDM results show toxicity for selected patient.*
- *Select on ☐**Reject** checkbox to reject sampling received.*
- *Select on ☐**Delete** checkbox to delete TDM order.*
- *Enter **Remarks** if applicable.*

STEP 10

Click on the

button to save external TDM resulting

STEP 11

Click on the

button to confirm external TDM resulting

STEP 12

Click on the button to print the external TDM resulting as per Figure 7.2.5

MINISTRY OF HEALTH, MALAYSIA

Hospital Miri

External TDM Resulting

Patient Name : OXX XXXX XXX

Patient ID [redacted]

Age :

MRN : HLBG00005547

Gender :

Sample Sent :

External Facility : Hospital Limbang

Sample Received : 29/07/2016 03:20 PM

External TDM No : EXTDM00000001

NO.	Drug Name	Sample Type	Result Value	UOM
1	Paracetamol 500 mg Tablet	RANDOM	0.5	mcg/ml

Remarks:
OUTSOURCE

Resulted By [redacted]

Designation : PF

Department : Pharmacy

Page 1 of 1

Figure 7.2-5 External TDM Resulting

8.0 Acronyms

Abbreviation	Definition
PhIS	Pharmacy Information System
CPS	Clinical Pharmacy System
PM	Patient Management
eGL	Electronic Guarantee Letter
HRMIS	Human Resource Management Informasi System
MRN	Medical Record Number
MOH	Ministry Of Health

9.0 Links to Clinical Modules

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