



PROCUREMENT AND INVENTORY MANAGEMENT

Facilitator Guide (FG1)



SUMMARY OF MODULE AT A GLANCE

Purpose of module:	To provide participants with an overview of procurement and inventory management of consumables for the Xpert MTB/RIF (Ultra)* tests	
Total time of module	2 hours 45 minutes	
CONTENT OUTLINE		
Power point: TB Diagnostics Global Policies and Strategies	<p>Aim: to provide participants with an overview of procurement and inventory management of consumables for the Xpert MTB/RIF (Ultra) tests</p> <p>Learning objectives:</p> <ul style="list-style-type: none"> ▪ List all supplies required for performing the Xpert MTB/RIF (Ultra) tests ▪ Forecast supplies needed based on the number of tests performed during a specific period ▪ Describe the procurement processes ▪ Explain the use and importance of the stock log book in maintaining an adequate inventory ▪ Explain storage and shelf life requirements of Xpert MTB/RIF (Ultra) kits 	2 hours
Discussion Questions	<ol style="list-style-type: none"> 1. What is included in supply chain management? 2. Why is a physical stock count necessary? 3. List two items provided with the GeneXpert MTB/RIF (Ultra) kit? 4. List two items NOT provided with the GeneXpert MTB/RIF (Ultra) kit? 	15 minutes
Exercise 1: Forecasting	Aim: to correctly forecast reagent testing requirements for Xpert MTB/RIF (Ultra)	30 minutes
Handout and exercise/practicals in module	<ol style="list-style-type: none"> 1. Worksheet (W1:M3): Forecasting 2. Worksheet (W2: M3): Forecasting 3. Worksheet (W3: M3): Forecasting 4. Handout (H1: M3): Forecasting 5. Handout (H2: M3): Forecasting 6. Handout (H3: M3): Forecasting 	

* Refers to either Xpert MTB/RIF and / or Xpert MTB/RIF Ultra

Additional resources or references:

- Logistics supply management tool. TB CARE I. www.tbcare1.org/publications/toolbox/lsm/
- Guidance for countries on the specifications for managing TB laboratory equipment and supplies. Geneva, World Health Organisation. 2011. http://whqlibdoc.who.int/publications/2011/9789241503068_eng.pdf
- Guidelines for Managing the Laboratory Supply Chain: Version 2. Arlington, Va.: USAID | DELIVER PROJECT, Task Order 1 2008. http://deliver.jsi.com/dlvr_content/resources/allpubs/guidelines/GuidManaLabSC_v2.pdf

MODULE NOTES

Slides 6 a diagrammatic representation of main areas within supply chain management. Selection, compromising product specification and forecasting, proceed the ordering process. Distribution may be managed through various mechanisms, but must ensure the correct products are adequately delivered to the laboratory for use. Within the laboratory, storage and stock management ensure the quality of products for testing

Slide 9 & 11 these slides must be customized to describe the supply chain systems in your country

Slide 17 a diagrammatic representation of distribution networks. Use the slide to discuss the distribution network in your country

Slide 21 if Xpert MTB/RIF Ultra is not available in your country, this slide can be skipped

Slides 25-43 systematically take participants through the calculations for forecasting Xpert MTB/RIF Ultra supplies. Ensure that participants fully understand the concepts, as they will be required to repeat the example in the following exercise. It may be necessary to support some participants who require held with the math of this example.

EXERCISE: FORECASTING

Purpose of exercise:	To correctly forecast reagent testing requirements for Xpert MTB/RIF
Preparation:	<ul style="list-style-type: none"> ▪ Work in pairs ▪ Review the information provided for each calculation ▪ Perform the calculations to forecast the reagent testing requirements for Xpert MTB/RIF
Materials required:	<p>Full list of materials participants need:</p> <ul style="list-style-type: none"> ▪ Pens ▪ Calculator or phone ▪ Worksheet- Calculation #1 (W1:M3) ▪ Worksheet- Calculation #2 (W2:M3) ▪ Worksheet- Calculation #3 (W3:M3) ▪ Handout- Calculation #1 (H1:M3) ▪ Handout- Calculation #2 (H2:M3) ▪ Handout- Calculation #3 (H3:M3)
Total time of exercise:	30 minutes
Feedback expected:	<ul style="list-style-type: none"> • Ask participants to complete one exercise at a time • Observe the answers as pairs complete the exercise & choose a pair with the correct answer • When all pairs are complete, allow the pair to share their answers with the participants • Provide the participants with the Handout for the exercise • Check that all other pairs have the correct answer, or understand their mistake(s) • Proceed to the following exercise & repeat

CONDUCTING THE EXERCISE

Read out instructions (shown above in “preparation”)	2 minutes
Break into pairs	2 minutes
Perform the exercise (on exercise at a time)	5 minutes × 3 = 15 minutes
Report back to full group (on exercise at a time)	2 minutes per exercise (6 minutes)

KEY MESSAGES FROM EXERCISE/PRACTICAL

Forecasting of supplies is generally under control of a national system. However, supply chain managers must be familiar with ALL the items required to perform a test. Knowledge of the number of tests performed & good inventory control ensure that accurate numbers of stock-in-hand can inform forecasting requirements.

Worksheet FORECASTING (W1:M3)

Instructions calculation #1:

- Time period of order = Quarterly
- Number of Xpert MTB/RIF tests site performs per day = 10
- The lab works 21 days a month
- The lab uses 0.0015L bleach /test

Quarterly Supply requirements for Xpert MTB/RIF testing							
Laboratory Regional reference laboratory							
Region Western Region				Supply Quarter 3			
District Urban				Year 2016			
Total tests performed in previous quarter, including failed tests (A)							
Items	Quantity needed per test (B)	Stock for one month (C) = (A/3)*B	Stock for quarter with 1 month buffer (D)= C*4	Stock on hand (E)	Calculated request (F) = D-E	Order unit (G)	Actual order (H) = F/G and round up
Sputum container				30		100 pack	
Xpert MTB/RIF				100		50 kit	
Concentrated bleach (L)				0.25L		1L bottle	

Worksheet FORECASTING (W2:M3)

Instructions calculation #2:

- Time period of order = Quarterly
- Number of Xpert MTB/RIF Ultra tests site performs per day = 5
- The lab works 25 days a month
- The lab uses 0.0015L bleach /test

Quarterly Supply requirements for Xpert MTB/RIF testing							
Laboratory Regional reference laboratory							
Region Western Region				Supply Quarter 3			
District Urban				Year 2016			
Total tests performed in previous quarter, including failed tests (A)							
Items	Quantity needed per test (B)	Stock for one month (C) = (A/3)*B	Stock for quarter with 1 month buffer (D) = C*4	Stock on hand (E)	Calculated request (F) = D-E	Order unit (G)	Actual order (H) = F/G and round up
Sputum container				75		100 pack	
Xpert MTB/RIF				20		50 kit	
Concentrated bleach (L)				1L		1L bottle	

Worksheet FORECASTING (W3:M3)

Instructions calculation #3:

- Time period of order = Quarterly
- Number of Xpert MTB/RIF Ultra tests site performs per day = 12
- The lab works 21 days a month
- The lab uses 0.0015L bleach /test

Quarterly Supply requirements for Xpert MTB/RIF testing							
Laboratory Regional reference laboratory							
Region Western Region				Supply Quarter 3			
District Urban				Year 2016			
Total tests performed in previous quarter, including failed tests (A)							
Items	Quantity needed per test (B)	Stock for one month (C) = (A/3)*B	Stock for quarter with 1 month buffer (D)= C*4	Stock on hand (E)	Calculated request (F) = D-E	Order unit (G)	Actual order (H) = F/G and round up
Sputum container				250		100 pack	
Xpert MTB/RIF				175		50 kit	
Concentrated bleach (L)				3L		1L bottle	

Handout FORECASTING (H1:M3)

Quarterly Supply requirements for Xpert MTB/RIF testing							
Laboratory Regional reference laboratory							
Region Western Region				Supply Quarter 3			
District Urban				Year 2016			
Total tests performed in previous quarter, including failed tests (A) 630							
Items	Quantity needed per test (B)	Stock for one month(C) = $(A/3)*B$	Stock for quarter with 1 month buffer (D)= $C*4$	Stock on hand (E)	Calculated request (F) = D-E	Order unit (G)	Actual order (H) = F/G and round up
Sputum container	1	210	840	30	810	100 pack	9 packs
Xpert MTB/RIF	1	210	840	100	740	50 kit	15 kits
Concentrated bleach (L)	0.0015	0.315	1.26	0.25L	1.01	1L bottle	2 bottles

Handout FORECASTING (H1:M3)

Quarterly Supply requirements for Xpert MTB/RIF Ultra testing							
Laboratory Regional reference laboratory							
Region Western Region					Supply Quarter 3		
District Urban					Year 2016		
Total tests performed in previous quarter, including failed tests (A) 375							
Items	Quantity needed per test (B)	Stock for one month (C) = (A/3)*B	Stock for quarter with 1 month buffer (D) = C*4	Stock on hand (E)	Calculated request (F) = D-E	Order unit (G)	Actual order (H) = F/G and round up
Sputum container	1	125	500	75	425	100 pack	5 packs
Xpert MTB/RIF Ultra	1	125	500	20	480	10 kit	48 kits
Bleach (L)	0.0015	0.1875	0.75	1L	-0.25	4L bottle	0 bottles

Handout FORECASTING (H3:M3)

Quarterly Supply requirements for Xpert MTB/RIF Ultra testing							
Laboratory Regional reference laboratory							
Region Western Region				Supply Quarter 3			
District Urban				Year 2016			
Total tests performed in previous quarter, including failed tests (A) 756							
Items	Quantity needed per test (B)	Stock for one month (C) $= (A/3) * B$	Stock for quarter with 1 month buffer (D) $= C * 4$	Stock on hand (E)	Calculated request (F) $= D - E$	Order unit (G)	Actual order (H) $= F/G$ and round up
Sputum container	1	252	1,008	250	758	100 pack	8 packs
Xpert MTB/RIF Ultra	1	252	1,008	175	833	10 kit	84 kits
Bleach (L)	0.015	0.378	1.512	3L	-1.488	4L bottle	0 bottles

MODULE ANSWERS

1. What is included in supply chain management?

A process that includes:

- Product selection, specification & forecasting
- Procurement and ordering
- Distribution
- Onsite stock management

2. Why is a physical stock count necessary?

To determine how much to order to avoid stock-outs and expiring of cartridges or other perishable consumables

3. List two items provided with the GeneXpert MTB/RIF (Ultra) kit?

Any two of the following:

- Assay Cartridges
- Sample Reagent
- Disposable transfer pipettes
- CD containing the Assay Definition File

4. List two items NOT provided with the GeneXpert MTB/RIF (Ultra) kit?

Any two of the items listed on slides:

- Biohazard supplies (Slide 13)
- PPE & lab supplies (Slide 14)
- Stationary supplies (Slide 15)