Procurement Performance Indicators Guide

Using Procurement Performance Indicators to Strengthen the Procurement Process for Public Health Commodities

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Abstract
This guide provides procurement managers with performance indicators and information on how to implement and use them to monitor and improve procurement system performance.

Cover photo: Logistics staff person at supply closet in Nepal.

Contents

Introduction

Audience

This guide is intended for procurement managers at ministries of health and central medical stores who are responsible for procuring public health commodities and who want to improve the performance of the procurement system. This is intended to ensure that these commodities are provided to programs in a timely manner that supports program objectives.

Purpose

The purpose of this guide is to provide procurement managers with a small set of performance indicators and information on how to implement and use the performance indicators to monitor and improve procurement system performance.

Monitoring procurement system performance provides managers with the information they need to evaluate how well the system is functioning and to identify areas where additional measures may be required to improve the overall procurement performance. To effectively monitor procurement performance, appropriate performance monitoring indicators must be in place and they must be supported by both management and operational personnel.

Content

The procurement performance indicators presented in this guide are drawn from a larger body of performance indicators identified through a review of several publications and documents on the use of performance indicators. These indicators were selected based on their ability to provide procurement managers key performance information on different aspects of a procurement system, including cost, quality, timeliness of processes, system productivity, and system integrity. They are designed to provide timely, relevant, and concise information for procurement managers to use to assess progress in achieving pre-established procurement performance goals and targets. This document is complemented by a Microsoft Excel spreadsheet that captures performance data and graphically summarizes results for each indicator in a dashboard format. The *Procurement Performance Indicators Dashboard* can be found on the USAID | DELIVER PROJECT website here: http://deliver.jsi.com/dlvr_content/resources/allpubs/guidelines/ProcPerfIndiTemplate.xlsx.

A summary list of the procurement performance indicators can be found in table 1.

Approach

While establishing performance indicators and gathering data from them is an important first step, monitoring and recording data alone does not improve performance. Monitoring should be accompanied by an evaluation of the data and findings to identify the system's strengths and weaknesses, which is then followed by developing a plan for addressing the identified weaknesses. It is the active step of moving from *performance measurement* to *performance management* that ensures a continuously improving procurement process that will effectively support health care program supply needs.

Additional Resources

For procurement managers who want to implement a more comprehensive set of performance indicators, or to learn how other countries have used such indicators to improve procurement performance, additional resources can be found in appendix D.

Procurement Performance Indicators

Table 1. Summary of Procurement Performance Indicators

No	Indicator Name	How It Can Improve Performance	Description	Performance Category
1	Product Price Variance	Prices paid for focus goods are in alignment with international prices	Percentage price variance between contract unit price and international unit price for focus products	Cost
2	Effective Contract Utilization	Efficient procurement mechanisms are being used	Percentage by value of purchases made under simple purchase orders, annual contracts, and multi-year contracts	Cost
3	Expiration Management	Good supply chain practices are being used, including inventory management, demand management, and the timely supply of good quality products	Annual dollar value of expired products or percentage value of expired products	Quality
4	Supplier Performance	A) Supplier delivers the correct goods	Percentage of orders in compliance with contract criteria	Quality
		B) Supplier delivers goods on time	Percentage of orders delivered on time	Timeliness
5	Procurement Cycle Time	There are no delays in executing procurements	Percentage of procurements completed (placed) within standard time guidelines	Timeliness
6	Payment Processing Time	There are no delays in processing payments to suppliers	Percentage of supplier payments made within the payment period called for in the contract	Timeliness
7	Emergency Procurement	Good supply planning practices are being used	Percentage, by value and number, of purchase orders or contracts issued as emergency orders	Systems Productivity
8	Procurement Cost	Level of efficiency of operations in procurement unit	Ratio of annual procurement unit cost-to-value of annual purchases	Systems Productivity
9	Staff Training	An effective training program is in place to improve procurement staff skills	Key training program components are in place and the percentage of staff who receive training annually	Systems Productivity
10	Transparent Price Information	The level of product pricing information that is available to the public	Percentage of products with prices posted on publicly accessible website	Integrity

No	Indicator Name	How It Can Improve Performance	Description	Performance Category
11	Transparent Tendering	The level of competition achieved through a competitive bidding process	Percentage of total value of contracts that were awarded through an open and competitive process	Integrity

In the following pages, additional information is provided for each of the indicators identified in table 1, including the formula for calculating the indicator, guidance on setting an appropriate target level, and where to find the data needed to calculate the indicator.

1. Product Price Variance: Are Competitive Prices Paid for Focus Products?

This indicator measures the percentage price variance between the contract unit price paid and the international reference unit price for focus products, over the annual spend period.

Frequency: Annually

Formula	Target
$$\frac{\text{Price paid for focus item}[1]}{\text{International Reference Price}[2] \text{ (IRP) of item}} \times 100$$	Less than (<) or equal to (=) 100%

How to Use the Results	
For each item with a result greater than 100% (> 100%): the price paid is higher than the IRP	**Action:** Investigate where changes can be made in procurement practices to achieve more competitive pricing for selected focus items
For each item with a result less than or equal to 100% (< or = 100%): the price paid is aligned with the IRP	**Action:** No action needed; however, prices should continue to be monitored

Data Needed	Data Sources
For a specific evaluation period (e.g., Jan.–Dec.): • Contracted prices for focus items • IRP for focus items	Purchase orders or contracts issued by procurement unit during evaluated time period. *For IRP sources, see appendix B.*

How to Illustrate the Results

Product Price Variance

Items with prices higher than IRP

← *IRP = 100%*

Items with prices the same or lower than IRP

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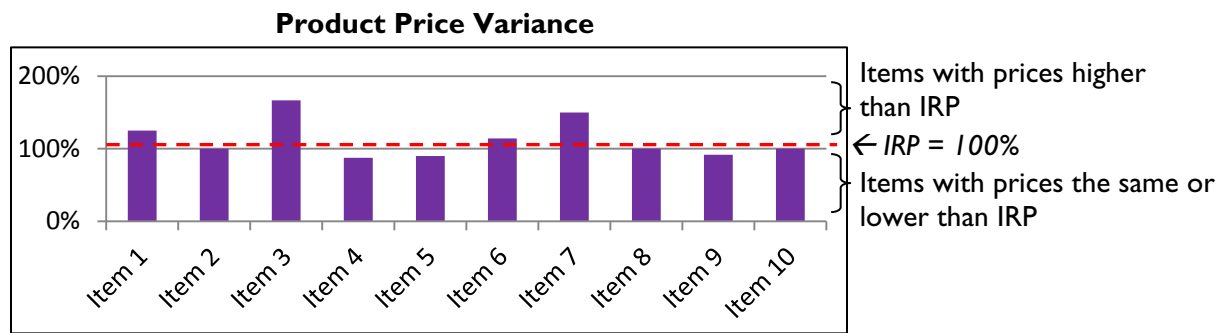
[1] See appendix A for guidance on selecting focus products.

[2] See appendix B for guidance on using IRPs.

2. Effective Contract Utilization: Are Efficient Procurement Mechanisms Being Used?

This indicator measures the percentage, by value, of three categories of purchases (purchase order, annual contract, and multi-year contract) to assess the procurement entity's use of efficient contracting mechanisms. The use of annual contracts and multi-year contracts has been shown to provide procuring entities with cost savings through better product pricing from suppliers, economies of scale achieved by a more efficient procurement process (fewer bidding exercises), and fewer contracts and suppliers to manage. The overall goal is to create a culture and process where the periodic review of purchased commodities is conducted to evaluate opportunities for improving purchasing through more efficient contract utilization.

Frequency: Annually

Formula	Target
$$\frac{\text{Annual spend for purchase category}}{\text{Total annual spend of all purchases}^3} \times 100$$ *The sum of the percentages of the three purchase categories must equal 100%*	Baseline (historical) performance to be determined by procurement unit
Setting the Target	

The procurement manager should review the purchasing history to establish the baseline percentages for each of the three general categories of purchases identified in table 2. Ideally, multi-year contracts and annual contracts will have the largest percentages. A higher percentage of simple purchase orders (without underlying contracts) indicates that less efficient procurement mechanisms are being used for most purchases. Target rates for multi-year contracts and annual contracts should be set at a level above the current baseline to create an incentive to increase their use, while minimizing ad hoc purchasing if no contract is in place.

It would be inappropriate to assign multi-year contracts or annual contracts with a target ratio of 100% because some products are not suitable for these contracts. For example, low-value items, offered from multiple suppliers, and which are only purchased intermittently, would not warrant the additional effort required to purchase them under a multi-year contract;, given the low purchase value, infrequent need, and competitive marketplace for such items. Similarly, purchase orders should not have a target of 0%.

See the *Notes* section below for information on segmenting and reviewing the purchasing history.

Table 2. Purchase Categories

Purchase Category	Description
Purchase order	Single order, single delivery, no underlying contract
Annual contract	Single order or contract, multiple deliveries, single year
Multi-year contract	Single contract, multiple orders and/or multiple deliveries, multiple years; includes framework contracts.[4]

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[3] Total annual spend of all purchase orders and contracts issued during the designated time period.

[4] A framework agreement is an arrangement between the buyer and supplier where both parties agree to the terms of future dealings between them (e.g., volume, price, etc.), without committing to or guaranteeing a specific purchase.

How to Use the Results	
The percentage of purchase order value is greater than the annual contract and multi-year contract value: this indicates that purchasing is primarily ad hoc rather than planned, and that few contracts are in place.	**Action:** Review purchase orders to identify products that can be considered for annual contracts or multi-year contracts. • Conduct an 80/20 analysis[5] of annual purchases to identify priority value items that could be considered for annual contracts or multi-year contracts. • Group like priority items identified in the 80/20 analysis into procurement packages for bidding purposes. *Note: See appendix A for guidance on conducting an 80/20 analysis of purchased products.*
The percentage of multi-year contracts is zero: no multi-year contracts (including framework contracts) are in use.	**Action:** Investigate and identify steps needed to introduce and use multi-year (or framework) contracts. This may include the following: • Review national procurement regulations to ensure that policy barriers limiting the use of this type of contract do not exist. • Identify sample contracts that can be adapted for use. • Identify funding and technical resources to support staff training on how to use this type of contract.

Data Needed	Data Sources
For a specific evaluation period (e.g., Jan.–Dec.): • Value of each item purchased • Value of goods procured under each purchase category • Total value of goods procured	• Purchase orders or contracts issued by the procurement unit during the evaluated time period

How to Illustrate the Results

Contract Utilization

Stacked bar chart showing Contract Utilization: Purchase Order 61%, Annual Contract 24%, Multi-Year Contract 15%.

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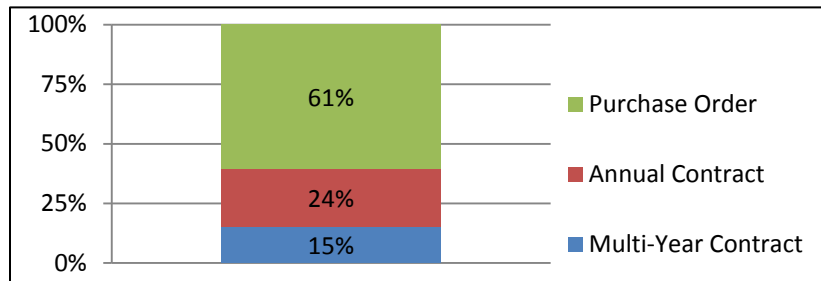
[5] An 80/20 analysis looks at the total value of each item procured, assuming that approximately 80% of the total annual spend is covered by 20% of the items procured. Focusing on fewer high-priority items allows the procurement unit to concentrate their efforts on those items that matter the most.

Notes on segmenting and analyzing purchase history:

Because requirements for goods and services are constantly changing, an analysis of the purchase history should take place annually.

1. Collect the annual purchasing data indicated and group purchases into the three general categories of contracts: purchase orders, annual contracts, and multi-year contracts.

2. Calculate the percentage by value for each category using the formula given above.

3. Review the results. Initially, purchase orders will likely have the largest percentage, followed by annual contracts and multi-year contracts. Over time, the percentage of purchase orders should decrease, thereby minimizing the use of the less efficient purchase types (purchase orders) in favor of more efficient types (annual contracts and multi-year contracts).

4. To identify items that could be considered for annual contracts or multi-year contracts, conduct an 80/20 analysis of annual purchases. In the top 80 percent of the value of items, which items were purchased under purchase orders rather than under a contract? Identify all these items, as well as other priority items that could be considered for purchase under a contract. *See appendix A for guidance on conducting an 80/20 analysis of purchased products.*

The objective of this approach is to, over time, move the higher value or priority purchases to more efficient contracting mechanisms. The higher the percentage of annual contract or multi-year contract utilization (including framework contracts), the more likely the benefits and cost savings of these contracting mechanisms will be realized.

3. Expiration Management: Can Product Expiration be Reduced through Good Procurement Practices?

This indicator measures the annual dollar value of products purchased by the procurement unit that expired before use. This indicator may also be expressed as a percentage of total value.

Note: For programs that receive donated products, this indicator can also be adapted to measure the annual value and percentage of donated products that expire before use. To do so, limit the calculations to the values of the donated products, rather than calculating the values of all products procured.

Frequency: Annually

Formula	Target
Sum of Expired Product Value: The total value of products purchased by the procurement unit that have expired before usage.	$0.00
Percentage of Expired Product Value: $$\frac{\text{Total value of expired product}}{\text{Total value of products procured annually}} \times 100$$	0%

Setting the Target
The ideal target for annual expired product value would be $0.00 or 0%. This may be difficult to achieve, however, given the various factors that contribute to product expiration. The inventory management unit should review historical information on annual product expiration values and establish a relevant target value for annual product expiration. This value should be set at a level that is below the identified historical expiration value levels so that it provides an incentive for the supply units (planning/ procurement/inventory management) to engage in a process of continuous improvement to review and improve practices. Over time, the target should be reduced as the product expiration values decrease.

How to Use the Results	
Results are higher than pre-determined target	**Action:** Working together, the planning/ procurement/ inventory management units should identify activities where problems contributing to product expiration might occur, such as— - forecasting accuracy - inventory practices, such as first in-first out (FIFO) - accuracy stock on hand against inventory records - supplier adherence to expiration date requirements - supplier adherence to delivery dates, etc. This information can be used to identify areas where improvements can be made. For effective corrective action to occur, it is important to identify the root cause of product expiration.

	For donated products, it is important to identify the root cause of product expiration and the *donor* of the product. If expiration is due to receiving donated goods with a short shelf life, the supporting documentation should be shared with the donor, including a request to comply with good donations practices, as stipulated by the World Health Organization (WHO).
Results are lower than pre-determined target or are $0.00 (0%)	**Action:** Provide positive feedback to the planning/procurement/ inventory management units to acknowledge the good/improving performance and to encourage the continued use of good procurement practices.

Data Needed	Data Sources
For a specific evaluation period (e.g., Jan.–Dec.): • Date that expired product was removed from inventory* • Original purchase order value of expired product* • Total value of products procured annually* *To calculate expiries for donated products, limit inventory counts to donated product only.	• Stores inventory records • Purchase orders or contracts issued by procurement unit during evaluated time period.

How to Illustrate the Results	

Total Annual Value of Expired Product Purchased by Procurement Unit
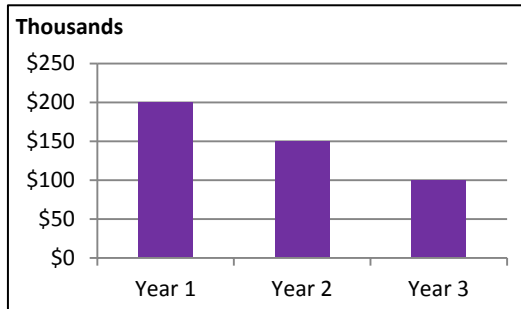
Value of Expired Product as % of Total Annual Value of Products Purchased by Procurement Unit
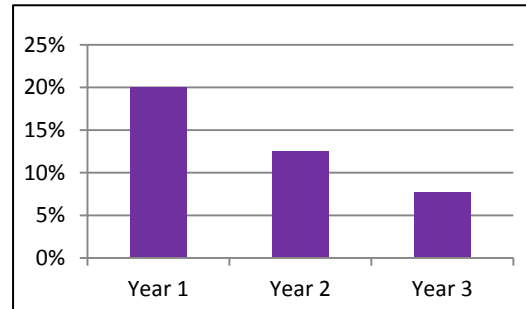
4. Supplier Performance: Are Suppliers Delivering the Right Goods at the Right Time?

These indicators measure a supplier's compliance with the product and performance criteria identified in the purchase order or contract. By monitoring and documenting supplier performance, procurement personnel are in a stronger position to require corrective action from suppliers when they are not in compliance with order/contract requirements. Supplier performance monitoring also provides historical information to help inform the supplier evaluation and selection process for future tenders.

A) The product order compliance indicator measures the percentage of orders for each supplier that met the product and performance criteria identified in the purchase order or contract.

B) The lead time performance indicator measures whether the orders for each supplier were received on time, according to the contract delivery schedule, whether the correct quantity was received (shipment was fully delivered), and whether the correct shipping documents were received on time.

This indicator is measured for an individual supplier.

Frequency: Monthly. For each supplier, record the data in monthly time segments. The monthly data can be added and reported back to the supplier as a performance indicator for a given month, quarter, or year.

Formula*	Target
A. Product order compliance: $$\frac{\text{No. of orders meeting all product criteria}}{\text{Total number of orders received}[6]} \times 100$$	100%
B. Lead time performance: $$\frac{\text{No. of orders received on time}}{\text{Total number of orders scheduled for delivery}[7]} \times 100$$	100%
Setting the Target	

The ideal target for supplier product performance is 100%. However, some suppliers may not be achieving this target. In these cases, the procurement unit should review past performance and establish a baseline target rate for the supplier's performance. This rate should be set at a level above the current performance level so that it raises the supplier's performance expectations and encourages a process of continuous improvement. The target level should be raised appropriately as performance improves, aiming to achieve 100% over time.

*See notes below for additional information on calculating these indicators

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[6] Total number of orders received during a designated time period.

[7] Total number of orders received during a designated time period.

How to Use the Results	
Results are less than 100%	**Action:** Identify the areas of non-compliance to the supplier with a request for a corrective action plan and implementation schedule. For supplier performance information to be useful and effective, it needs to be shared with the supplier on a routine basis, such as once a month or once a quarter.
Results are 100%	**Action:** Provide positive feedback to the supplier to acknowledge the good/improving performance and encourage continued supplier commitment to providing product quality and service.

For a specific evaluation period:
Product order compliance
- Order criteria as specified in purchase order or contract
- Order receipt confirmation
- Details of shipment received

Lead time performance
- Order criteria, as specified in purchase order or contract
- Purchase order delivery schedules
- Order receipt confirmation
- Details of shipment received

- Purchase orders or contracts issued by procurement unit during time period evaluated
- Inspection/test reports
- Shipment invoice
- Receiving reports/goods received voucher

Percentage of Orders in Compliance

Lead Time Performance

Notes on calculating product order compliance
1. Identify the criteria that will be used to monitor the product order compliance. The criteria should be drawn from the purchase order or contract because that document legally binds the supplier to the performance criteria. This criteria can include—

   a. correct product received

   b. correct amount received

c. product correctly packaged and labeled

　　d. product received undamaged

　　e. product received with adequate shelf life remaining

　　f. product passes any quality testing identified as a requirement.

2. This activity requires information from shipping/receiving personnel at the warehouse, such as a receiving report, test report, or shipment invoice. Procurement personnel must coordinate with warehouse receiving personnel and quality assurance/regulatory personnel to obtain the required documents needed to validate the shipment information.

3. Review the shipment information against the stated product criteria and record findings on a supplier performance scorecard. See appendix C for an example of a supplier performance scorecard.

4. Data from the supplier performance scorecard is then used to determine the number of units accepted that meet all product criteria defined in the purchase order or contract.

Notes on calculating lead time performance

1. Identify the criteria that will be used to monitor lead time performance. This criteria should be drawn from the purchase order/contract and can include—

　　a. shipment received on time according to contract schedule

　　b. all goods on the order were received (shipment was fully delivered)

　　c. correct shipping documents were received on time.

2. Review the product purchase order or contract and/or shipping schedule to identify the required delivery date. This will often be the delivery date to the purchaser's main warehouse; however, this may vary according to country or the procuring entity.

3. Obtain a copy of the receiving report or shipment invoice that identifies the dates the products were received.

4. Review the dates the product was received against the required delivery dates stated in the purchase order/contract and record the findings on a supplier performance scorecard. See appendix C for an example of a supplier performance scorecard.

5. Review compliance with other delivery schedule criteria and record findings.

6. Data from the supplier performance scorecard is then used to determine the number of orders delivered that meet the criteria defined in the purchase order or contract.

5. Procurement Cycle Time: Are There any Delays in the Procurement Cycle?

This indicator measures the average length of the procurement cycle and the percentage of procurements that were completed within a standard procurement cycle time guideline.

The procurement cycle time is measured for contracts and purchase orders using historical data. It measures the number of days required to complete the procurement cycle, beginning with the date a requisition is submitted until the date the contract or the purchase order is issued to the selected vendor.

Frequency: Annually. However, the data can also be recorded and monitored in monthly or quarterly time segments, depending on the volume of purchasing transactions handled by the procurement unit, and the desired performance objectives.

Formula	Target
$\dfrac{\text{Number of purchase orders or contracts completed within the procurement cycle time guideline}}{\text{Total number of purchase orders or contracts awarded[8]}} \times 100$	100%

Setting the Target

To set the target, the procurement unit must first review past performance to measure the number of days in the procurement cycle. A historical baseline can be established by reviewing the procurements completed during the last 12 months. The procurement cycle time guidelines can be set according to this, and future procurement performance will be measured against it. See *Notes* at the end of this section for information on establishing time guidelines.

How to Use the Results	
Results are less than 100%	**Action:** Review the delayed purchases and identify at which stage of the procurement cycle the delay occurred. Meet with the appropriate personnel responsible for that stage to determine the cause of the delay and develop possible solutions to prevent future delays.
Results are 100%	**Action:** Provide positive feedback to acknowledge the good/improving performance and to encourage continued timely preparation, submission, approval, and placement of purchase orders and contracts.

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[8] Total number of orders received during a designated time period.

Data Needed	
For a specific evaluation period: • Dates purchase requisition submitted by requester/department for approval • Date purchase requisition approved • Dates bidding process initiated and closed • Dates bids evaluated and supplier selected • Date purchase order/contract created • Date purchase order/contract signed by both parties • Date purchase order/contract issued to vendor and order placed	• Purchase requisitions • Purchase order and contract records • Tender documents • Purchase or tender committee meeting notes

Percentage of Purchases Completed Within Procurement Cycle Time Guidelines

Standard Time Guideline	
Purchase Orders	30 days
Contracts	60 days

Note on establishing procurement cycle time guidelines

1. **Identify key transactions in the procurement cycle:** Review the standard procurement process from the submission of the requisition for approval to the contract or purchase order issue; and identify the key transactions that occur during this period, such as requisition approved, bidding process initiated, bidding process closed, etc. See the Procurement Cycle Time Monitoring Worksheet example below for a list of transactions to consider.

2. **Review historical data to establish baseline:** Review procurement records for the previous 12 months and record the key dates. Determine the number of days required to complete each transaction stage identified and the average number of days for all transactions during the 12-month period. Total the average days for each stage; this becomes the average procurement cycle time for the product.

   For goods that are procured on an annual basis (annual tendering process), review procurement records for the last three years and calculate cycle times using the same method described above.

3. **Set standard guideline:** The average cycle times calculated in step 1 can be used as the standard guideline. However, the average days for each stage in the cycle should also be reviewed to identify areas for improvement. For example, if the average number of days between requisition submission and approval is found to be very high, the standard guideline for this stage can be set at a lower number of days; this will act as a performance improvement target. Setting the standard guidelines should be a consultative process with the departments/units that carry out the particular function.

4. **Record procurement performance:** Record and monitor the total number of days required for each stage of the procurement cycle, using a worksheet similar to the example below.

Procurement Cycle Time Monitoring Worksheet Example

Task	Responsible Group	Date	Actual Time (days)	Standard Guideline (days)	Difference (days)
Requisition submitted					
Requisition approved					
Bidding process initiated					
Bidding process closed					
Bids evaluated					
Supplier selected					
PO/contract created					
PO/contract approved					
PO/contract placed					
Total Number Days					

6. Payment Processing Time: Are There any Delays in Processing Payments?

This indicator measures the percentage of supplier payments that were made within the payment period called for in the contract. By paying suppliers on time, procurement units can better plan and control spending, and they may be able to negotiate more favorable price agreements or payment terms.

Frequency: Quarterly or Semi-annually

Formula	Target
$\dfrac{\text{Number of supplier invoices paid on time}}{\text{Total number of supplier invoices paid}^9} \times 100$	100%

Setting the Target
Payment terms are typically agreed to in the contract or purchase order. The ideal target for on-time payments is 100%. However, some organizations may have difficulty achieving this target. In these cases, a historical baseline for payment performance must be established first. To establish a baseline, the procurement unit should review the number of supplier invoices that were paid on time and compare that to the total number of supplier invoices paid within the designated time period. Then, the target rate should be set at a level that is above the baseline rate for supplier invoices paid on time; this will act as an incentive for the accounts payable department to improve performance and ensure more supplier invoices are paid on time. The target rate should be increased appropriately as performance improvements in payment processing time are achieved, aiming to achieve 100% over time.

How to Use the Results	
Results are lower than the pre-determined target	**Action:** Review late payments to determine the cause for delays; i.e., delays in processing paperwork, delays in approvals (signatures), etc. Meet with the appropriate departments to share information on the number of late payments and the cause of the delays, to encourage efforts to improve on-time payments.
Results are above the pre-determined target	**Action:** Provide positive feedback to acknowledge the good/improving performance and encourage continued timely payment of supplier invoices.

Data Needed	Data Sources
For a specific evaluation period: • Date invoice received • Invoice due date • Actual payment date	• Contracts or purchase orders that identify payment terms • Goods received notice • Accounts payable information that identifies date invoice paid

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[9] Total number of orders received during a designated time period.

Percentage of Supplier Invoices Paid on Time
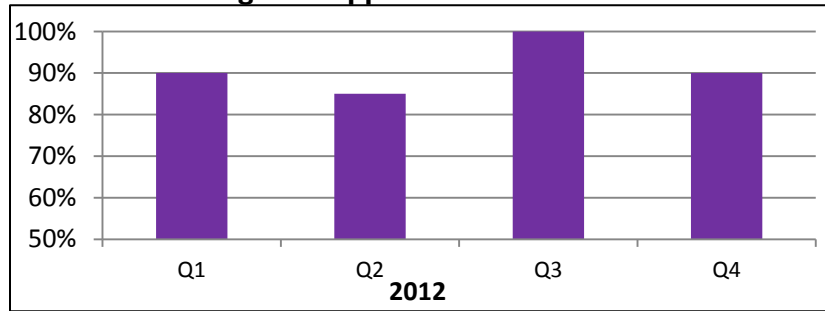
7. Emergency Procurement: Are Emergency Orders Frequently Used to Prevent Stockouts?

This indicator measures the percentage of purchase orders or contracts that are issued as emergency orders, out of the total purchase orders or contracts placed during a defined period of time. This indicator can be expressed as a percentage of the value of orders or of the number of orders.

Frequency: Annually

Formula	Target
% Value of Emergency Orders[10] placed: $$\frac{\text{Total value of emergency orders}}{\text{Total value of all orders placed}^{11}} \times 100$$	To be determined by procurement unit based on historical performance
% of Number of Emergency Orders placed: $$\frac{\text{Total number of emergency orders}}{\text{Total number of all orders placed}^{12}} \times 100$$	To be determined by procurement unit based on historical performance

Setting the Target
The procurement unit should review past performance and establish baselines for the percentage value for emergency orders placed and the percentage of the number of emergency orders placed. A low percentage indicates that the procurement unit is issuing few emergency orders; which, generally, do not achieve the best value for the money. Target rates should be set somewhere below the current baselines so they raise performance expectations and encourage a process of continuous improvement.

How to Use the Results	
Results are above pre-determined target	**Action:** Investigate the reasons why emergency purchase orders were issued. This could be due to a lack of planning, delay in budget approval, natural disaster, etc. Identify situations where remedial action can be taken to avoid issuing emergency orders and implement recommended solutions.
Results are below pre-determined target	**Action:** Provide positive feedback to the departments to acknowledge the good/improving performance and to encourage the continued use of good procurement practices.

Data Needed	Data Sources
For a specific evaluation period (e.g., Jan.–Dec.): • Value of orders placed as emergency orders • Total value of orders placed • Number of orders placed as emergency orders • Total number of orders placed	• Purchase orders or contracts • Purchase requisition • Procurement log (database)

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[10] If an official definition of an emergency order does not exist, then, to implement this indicator, an emergency order will be considered to be an order with a lead time of one month or less.

[11] Total number of orders received during a designated time period.

[12] Total number of orders received during a designated time period.

How to Illustrate the Results

Percentage of Value of Emergency Orders Placed by Procurement Unit

	Year 1	Year 2	Year 3
40%			
30%			
20%			
10%			
0%			
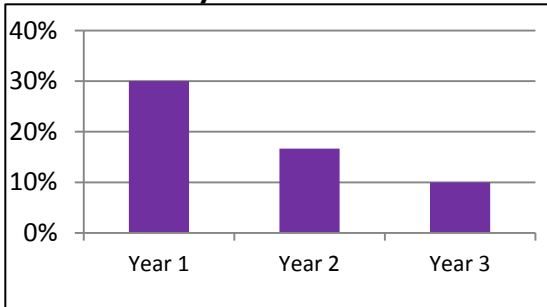
Percentage of Number of Emergency Orders Placed by Procurement Unit

	Year 1	Year 2	Year 3
40%			
30%			
20%			
10%			
0%			
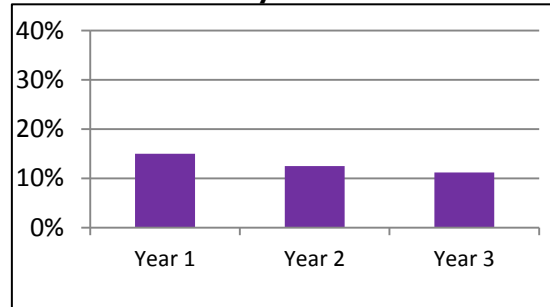
8. Procurement Cost: Is the Procurement Unit Operating Efficiently?

This indicator measures the average cost associated with procuring goods against the *total value* of goods purchased within a designated period of time; i.e., how much it costs the procurement unit to process U.S.$1.00 worth of orders. The cost of procurement can also be measured against the *total number* of orders processed during the designated period; this number would be the average cost to process one order.

Frequency: Annually

Formula	Target
Procurement Unit Cost by Value of Purchases: $$\frac{\text{Total costs allocated to procurement}^{13}}{\text{Total value of annual purchases}} \times 100$$	To be determined by procurement unit based on historical performance
Procurement Unit Cost by Number of Purchases: $$\frac{\text{Total costs allocated to procurement}}{\text{Total number of annual purchases}} \times 100$$	To be determined by procurement unit based on historical performance

Setting the Target
The procurement manager should review past procurement unit costs and establish a baseline value for procurement unit costs. The lower the value, the more efficient the procurement operation is in implementing procurement. However, caution should be taken so as not to set a target that is too low and unrealistic, because reducing procurement resources too much could jeopardize the ability of the procurement unit to provide quality procurement services. The target should be periodically reviewed and adjusted to reflect changes in the procurement unit structure and purchase volumes.

How to Use the Results	
Results are above pre-determined target	**Action:** Procurement management should investigate why the cost of procurement has increased, or look for efficiencies to reduce procurement costs; but, not at the expense of compromising the unit's ability to provide timely and effective procurement services.
Results are below pre-determined target	**Action:** No action needed. Target rate should be adjusted appropriately, over time, as efficiencies are achieved. Changes to the structure and responsibilities of the procurement unit should also be considered.

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[13] Costs allocated to procurement of goods include procurement staff time, a portion of facilities cost, and utilities cost. Allocated procurement costs do not include freight charges, brokerage charges, tariffs, or taxes.

Data Needed	Data Sources

For a specific evaluation period (e.g., Jan.–Dec.):
• Procurement costs annualized and prorated appropriately
• Labor costs for all procurement personnel
• Appropriate facilities costs prorated for the procurement unit
• Utility costs prorated for procurement unit
• Annual value and number of purchases processed by the procurement unit
	• Procurement records
	• Annual reports
	• Costs:
	  - human resource records (labor costs)
	  - facilities records
	  - accounting department

How to Illustrate the Results

Procurement Unit Cost by Value of Purchases (cost per dollar)

	Year 1	Year 2	Year 3
$0.20			
$0.15			
$0.10			
$0.05	▉	▉	▉
$0.00			
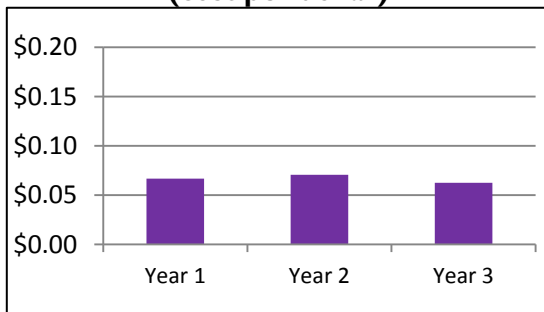
Procurement Unit Cost by Number of Purchases (cost per purchase order or contract)

	Year 1	Year 2	Year 3
$1,150			
$1,100			▉
$1,050		▉	
$1,000	▉		
$950			
$900			
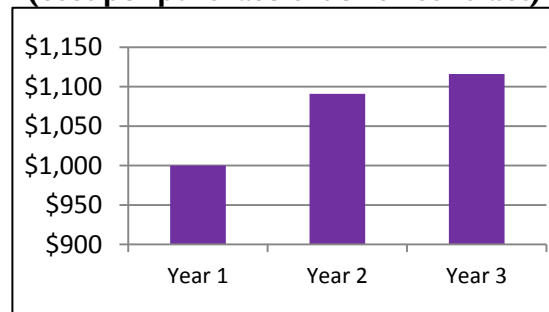
9. Staff Training: Is a Funded, Operational Training Program in Place that Provides Staff with Appropriate Training to Maintain or Upgrade their Procurement Skills?

This indicator measures whether an effective training program is in place and whether the program is providing annual training to staff to improve their procurement skills.

Three key components need to be in place for an effective training program:

- A budget line item that is approved and adequately funded

- An organizational chart with up-to-date job descriptions that are used to guide staff development

- A formal training plan and schedule that offers appropriate training for each cadre

With these components in place, management must also ensure that training is provided to all levels of staff, on an annual basis.

Frequency: Annually

Formula	Target

Total the percentages assigned to each training component, and for provision of training
 	
Training Components (25% each):
1. Budget line item (Yes = 12.5%, No = 0%)*
  a. Budget line item exists ………………...……. ___%
  b. Budget line item funded ………………………... ___%
2. Organizational chart and current job descriptions (Yes = 12.5%, No = 0%)*
  a. Organization chart exists …………………..… ___%
  b. Current job descriptions exist for all roles ..…….. ___%
3. Formal training plan and schedule by cadre[14] (Yes = 12.5%, No = 0%)*
  a. Formal training plan and schedule exist ………… ___%
  b. Training plans offered for different roles ………. ___%
Provision of Training (25%):
  Percentage of staff receiving required annual training
  This percentage is assigned proportionally according to the percentage of staff receiving annually required training:
    % of staff receiving training × 25% …..……….. ___%
 	
Total ………………………………………………….. ___%
	Training components
	
	+ Provision of training
	
	= 100%

*Select *Yes* if the component is fully met; select *No* if the component is partially met or not met. This will signal when follow-up action is required.

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[14] It is recommended that a role-based training program be developed that addresses skill requirements at three levels: entry level, mid-level, and senior-level staff, with curriculum and materials appropriate for each level. A separate training program should be established for managers.

How to Use the Results	
Results are below target	**Action:** Identify the reasons why key components of the training program are not in place. Identify and implement the actions that need to take place to put a functional staff training program in place.
Results meet target	**Action:** No action required. However, to ensure they meet the current requirements of the procurement organization, the three components should be reviewed on an annual basis, or when policy changes are implemented.

Data Needed	Data Sources
• Confirmation of budget line item and funding for training • Organizational chart and job descriptions • Training plans and schedules • Number of staff trained annually	• Procurement management records • Human resources records • Training logs

How to Illustrate the Results

Funded and Operational Procurement Staff Training Program is in Place

24
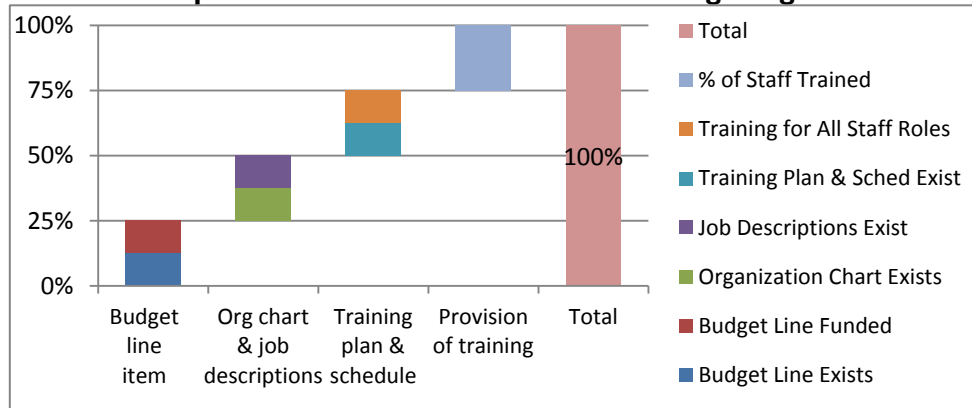
10. Transparent Price Information: Are Procurement Prices Available to the Public?

This indicator measures the number of products purchased by the procurement unit, whose purchase price is posted on a publicly accessible website. The higher the percentage of product prices available to the public, the greater the opportunity for public scrutiny of procurement results, which can create a broader base of public-sector accountability against which the procurement unit performs its purchasing activities. Greater public scrutiny and accountability can create additional incentive for procurement units to perform their functions in an open, transparent, and effective manner.

Frequency: Annually

Formula	Target
$\dfrac{\text{Total number of prices publicly posted}^{15}}{\text{Total number of products purchased}} \times 100$	100%

How to Use the Results	
Results are below target	**Action:** Investigate the reasons for the limited posting of product prices on the public website. Identify any remedial actions that could be taken to increase the number product prices posted on the public website.
Results are at target	**Action:** No action needed.

Data Needed	Data Sources
- List of items procured - URL for website where procurement information is posted for the public	- Purchase orders/contracts - Central files/database - Ministry website

How to Illustrate the Results	

Percentage of Product Prices Posted on a Publicly Accessible Website

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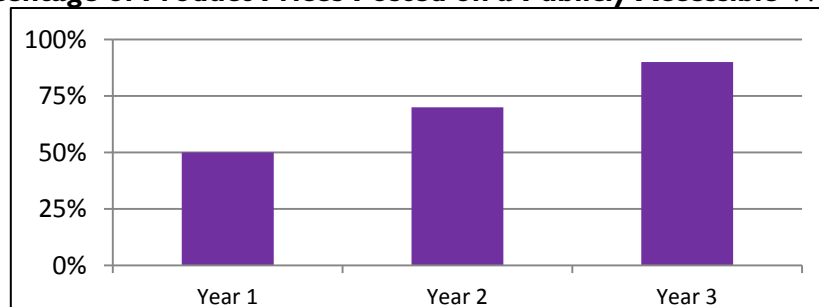
[15] The total number of products with their purchase price posted on a publicly accessible website. Depending on the number of items procured, this indicator may be limited to those priority and focus items identified in Indicator 1.

11. Transparent Tendering: Are Procurement Methods Being Used that Promote Competition?

This indicator measures the total value of purchase orders and contracts issued on a competitive basis against the total value of purchase orders and contracts issued within a designated period of time. Measuring the percentage of contracts awarded through a competitive process helps the procurement unit keep track of the effective level of competition it is achieving.

Frequency: Annually

Formula	Target
$$\frac{\text{Total award value of each competitive method}^{16}}{\text{Total annual value of awards}} \times 100$$	To be determined by procurement unit based on historical performance

Setting the Target

The procurement unit should review procurement records for the last one-to-three years to determine baseline rates for using the following types of competitive procurement methods:
- international competitive bidding
- national competitive bidding
- request for proposal/quotation.

The formula above can be used to calculate baseline rates for the percentage of the value of contracts awarded through each type of competitive method. The sum of the three percentages will indicate the overall level of competition. The higher the percentage, the more the procurement unit is using competitive procurement methods, which increases the likelihood of program savings through competitively priced products. The target rate should be set at a level higher than the baseline rate to create an incentive for increased use of competitive procurement methods. The target level should be monitored and periodically adjusted to reflect changes in the use of competitive methods.

Note: Not every purchase warrants competitive bidding because of the additional cost of labor and advertising. Most organizations have a threshold policy that dictates the value of products that should be purchased using a competitive bidding process.

How to Use the Results	
Results are below pre-determined target	**Action:** Investigate the reasons for the limited use of competition. Identify any remedial actions that could be taken to increase the number and value of competitive procurements.
Results are above pre-determined target	**Action:** No action needed. Consider raising the target level following two consecutive periods of results above the target level.

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[16] Total value of contracts awarded through a competitive procurement method.

Data Needed	Data Sources
For a specific evaluation period (e.g., Jan.–Dec.): • Contract documentation showing whether or not competition was used • Total value of contracts issued for each competitive method • Total value of all contracts issued	• Contract master files • Central files/database • Procurement thresholds Note: To ensure data for this indicator is easy to collect, there should be a discipline and tracking method to record whether or not competition was conducted.

How to Illustrate the Results

Percentage of Contract Value Awarded through a Competitive Procurement Method
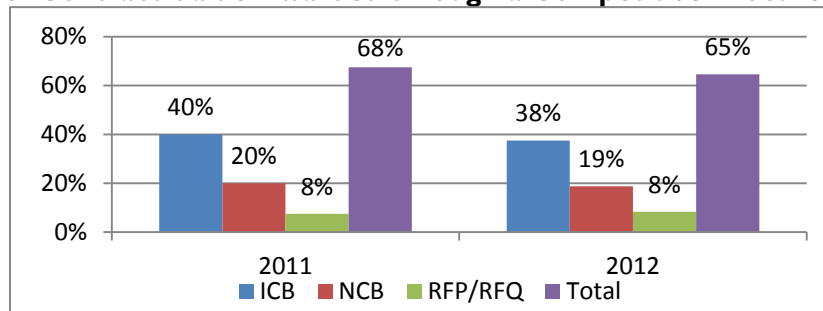
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Appendix A

Identifying and Creating a Basket of Focus Products

Some procurement performance indicators require the collection of data on the products that are being procured. The procurement unit likely has the responsibility for hundreds, if not thousands, of product line items. Tracking performance on each and every item would be too cumbersome for the procurement unit. The use of a smaller *basket* of goods that represents a good percentage of the annual spend is an acceptable approach for measuring performance.

How to Create a Basket of Focus Products

One method of creating a shorter list of *focus products* involves using the 80/20 rule—that 80 percent of expenditures are generated by 20 percent of the products procured. The ideal way to develop a list of focus products is to put the products into a sortable spreadsheet, for example a Microsoft Excel spreadsheet, using the following steps:

1. Make sure the product catalog data has item numbers, descriptions of products, unit prices, and annual purchase quantity prior to performing the analysis.

2. Import this data into a spreadsheet.

3. Create an extended value column that multiplies unit price by purchase quantity for each item in the catalog.

4. Sort the entire spreadsheet by extended value—highest to lowest.

5. Create a column to assign a number to the items as they are now sorted. Assign number 1 to the highest value item, 2 to the second highest, 3 to the third highest, and so on.

6. Create a column that calculates the cumulative percentage (%) of items. For example, in a list of 100 items, the first seven items would be 7 percent of the total number of items.

7. Create a column that calculates the cumulative value of the items, from highest to lowest. The cumulative value adds the extended values down the list.

8. Create a column that calculates the percentage (%) of the cumulative value. For example, if the first three line items total $120,000 and the total value is $1,000,000 the percentage of cumulative value of the first three line items is 12 percent of the total spend (120,000/1,000,000).

9. Identify the top 20 percent of the total items. These should represent 80 percent or more of the total value. If not, continue down the list until the items capture 80 percent of the total value. In some cases, a percentage of items lower than 20 percent captures a larger percentage of the annual value. In those cases, pick a range that seems reasonable. In the example below, focusing data collection on the top 25 items was only 13.9 percent of the total items, but captured 90.4 percent of the total value.

10. Look carefully at the items to make sure that they are a good representation of what the procurement unit purchases. For instance, ensuring that vaccines, pharmaceuticals, hospital supplies, and diagnostics are all represented. If needed, consider adding a few of the missing products to the focus products list.

Focus Product List Example

Code No.	Unit Of Issue	Item Description	Unit Price	Purchase Quantity	Extended Value	# of Items	% of Items**	Cumulative Value	% of Total Value*
0173	1000	Erythromycin 250mg	$16.33	166,400	$2,717,312	1	1%	$2,717,312	15%
0405	1000	Co-trimoxazole tabs 480m	$6.52	380,000	$2,477,600	2	1%	$5,194,912	28%
0012	Each	Depo-Provera	$0.90	1,800,000	$1,618,200	3	2%	$6,813,112	37%
0242	500g	Cotton wool	$1.29	800,000	$1,032,000	4	2%	$7,845,112	42%
0414	1000	Doxycycline Hyclate 100m	$6.10	120,000	$732,000	5	3%	$8,577,112	46%
0296	1000	Paracetamol 500mg tabs	$2.42	280,000	$677,600	6	3%	$9,254,712	50%
0170	100	Gauze swabs 8 ply	$0.98	630,000	$617,400	7	4%	$9,872,112	53%
0450	Each	Sodium chloride 0.9%	$0.74	800,000	$592,000	8	4%	$10,464,112	56%
0256	Each	Sodium chloride 0.9%	$0.74	800,000	$592,000	9	5%	$11,056,112	60%
0406	1000ml	Dextrose 5%	$0.74	750,000	$555,000	10	6%	$11,611,112	63%
0407	Each	Dextrose 5%	$0.74	750,000	$555,000	11	6%	$12,166,112	66%
0261	1000	Metronidazole tabs 200m	$2.96	185,000	$547,600	12	7%	$12,713,712	68%
0162	Each	Gauze roll 90cmx40m	$2.50	210,000	$525,000	13	7%	$13,238,712	71%
0428	100	Gloves surgeon 7	$0.14	3,000,000	$420,000	14	8%	$13,658,712	74%
0024	12	POP 15cm by 2.7m	$3.99	105,000	$418,950	15	8%	$14,077,662	76%
0165	Each	Gauze roll 90cmx100m	$5.40	70,000	$378,000	16	9%	$14,455,662	78%
0102	1000	Chloramphenicol caps	$11.26	32,000	$360,320	17	9%	$14,815,982	80%
0222	Each	Benzyl penicillin Injection	$0.15	2,300,000	$345,000	18	10%	$15,160,982	82%
0336	1000	Praziquantel 600mg	$56.02	5,500	$308,110	19	11%	$15,469,092	83%
0118	Each	Insulin Soluble*	$5.42	54,000	$292,410	20	11%	$15,761,502	85%
0454	Each	Half-Strength Darrows	$1.10	240,000	$264,000	21	12%	$16,025,502	86%
0426	100	Gloves surgeon 6	$0.14	1,750,000	$245,000	22	12%	$16,270,502	88%
0110	Each	Insulin zinc*	$5.42	32,400	$175,446	23	13%	$16,445,948	89%
0856	50	Cefriaxone	$4,371.95	40	$174,878	24	13%	$16,620,826	90%
0053	100	X-Ray Films 18X43	$30.68	5,500	$168,740	25	14%	$16,789,566	90%
0098	10	Bandage WOW 15cmx4m	$0.68	220,000	$149,600	26	14%	$16,939,166	91%
0234	Each	Pethidine 2ml	$0.27	480,000	$131,040	27	15%	$17,070,206	92%
0249	1000	Methyldopa 250m coated	$15.38	8,000	$123,040	28	16%	$17,193,246	93%
0224	Each	Benzathine 2.4MGU	$0.15	760,000	$114,000	29	16%	$17,307,246	93%
0430	100	Gloves surgeon 8	$0.14	800,000	$112,000	30	17%	$17,419,246	94%
0318	1000	Phenobarbitone 30mg	$1.92	55,000	$105,600	31	17%	$17,524,846	94%
0020	12	POP 7.5cm by2.7m	$1.96	42,000	$82,320	32	18%	$17,607,166	95%
0202	Each	Adhesive tape 5cmx5m	$0.40	157,500	$63,000	33	18%	$17,670,166	95%
0779	200	Cuvettes	$96.29	600	$57,776	34	19%	$17,727,942	95%
0987	25 runs	Facs count control kits	$325.00	120	$39,000	35	19%	$17,766,942	96%
0482	1000ML	ABX Minilyse	$115.15	338	$38,920	36	20%	$17,805,863	96%
0210	Each	Oxytocin 10 IU Injection	$0.11	315,000	$34,335	37	21%	$17,840,198	96%

*80% of the total purchase value is captured by the top 17 items, representing only 9% of items purchased.

**The top 25 items (14% of items) were selected as the basket of focus items, capturing 90% of the total purchase value.

Appendix B

Using International Reference Prices to Identify Price Variances

Evaluating the prices a procurement unit pays for pharmaceuticals, contraceptives, and medical supplies against international reference prices for such products is an important tool that procurement managers can use to help their department improve efforts to procure quality products at the lowest possible price. In making these comparisons, it is important to identify and use international reference prices that are as comparable as possible to the product purchased and are updated on an annual basis. Sources for international reference prices include—

- Management Sciences for Health (MSH) *International Drug Price Indicator Guide*
  Website: http://erc.msh.org/priceguide

- World Health Organization and Health Action International (WHO/HAI) Project on Medicine Prices and Availability
  Website: http://www.haiweb.org/MedPriceDatabase

- The Global Fund Price and Quality Reporting (PQR) Tool
  Website: http://www.theglobalfund.org/en/procurement/pqr/

The International Drug Price Indicator Guide (the Guide) is the most commonly used reference price guide; it provides an indication of prices for more than 1,100 items, focusing on essential products on the international market for selected pharmaceuticals, contraceptives, diagnostic tests, and medical supplies.

Following is an example of how to determine price variance using the Guide.

Procedure for Determining Price Variances from International Reference Prices

1. Select a product from the list of focus products. Record the product name; for medicines, the strength of the medicine, unit of measure (dosage form for medicines), number of units per package, price paid, and payment terms. For example—

   Amoxicillin, 250 mg, capsule, 1,000 per package, $16.12 per package, CIF

2. Access the guide at: http://erc.msh.org/priceguide.

3. Click on the *Search the Guide* heading.

4. Type in the product name in the *search by name* box—in this case, *amoxicillin*—then click *search now.*

5. A list of amoxicillin products will appear. Identify the product that matches the strength and dosage form of your product (250 mg, capsule-tablet).

6. Click on that product and a list of supplier prices and buyer prices will appear.

7. The supplier prices are from organizations (usually non-profit) experienced in delivering medicines to the developing world. The buyer prices are usually from government organizations that conducted international competitive bidding to obtain the product. The Guide recommends using the *Supplier* prices for comparison purposes. Buyer prices should not be used as international reference prices because they may only be available to the organization that conducted the tender or procurement.

8. Identify the median price for the supplier price list. For price comparison, the Guide recommends using the median price as a reference price rather than the mean or *average* price. For amoxicillin, 250 mg capsules-tablets, the median unit price is $0.0171 per capsule-tablet.

9. Compare price terms of products purchased with the Guide supplier price terms; adjust, as needed.

   The purchaser's payment terms are cost, insurance, and freight (CIF) so the cost of the product includes shipping and insurance. The supplier terms in the Guide are primarily ex works[17] and do not include shipping and insurance.

   To adjust for this difference, the Guide recommends adding 10 to 15 percent to the supplier price as an estimate to allow for shipping and insurance costs and to make a more appropriate price comparison. For amoxicillin, adding an additional 10 percent would bring the median unit price to $0.01881 per capsule-tablet.

10. Divide the purchaser's unit price ($0.01612) by the guide median suppliers price ($0.01881– adjusted for payment terms) to determine the price variance from international reference prices.

    $0.01612/$0.01881 = 0.857

    A ratio less than 1 indicates that the purchaser is paying a price that is lower than the international median reference price.

    It should be noted that factors, such as the number of units procured, number of shipments requested, and other factors, can impact product price; this indicator is used as a general guide to assess procurement effectiveness in obtaining competitive prices.

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[17] The seller makes the goods available to the buyer at the seller's premises, e.g., works, factory, warehouse, plant. All charges and risk from there on, such as delivery, distribution, commissions, etc., are to be borne by the buyer. For more information, see Incoterms® – International Commercial Terms (http://www.iccwbo.org/incoterms).

Appendix C

Supplier Performance Scorecard

Supplier Name:			
Contract Number:			
Scorecard Month:			

Scorecard Item

DELIVERY	Numerator	Denominator	Total Score %
	# of on time shipments	Total # shipments	
1. Percentage of shipments delivered on time	88	100	88.0%
	# of full shipments	Total # shipments	
2. Percentage of shipments fully delivered	88	100	88.0%
	# with adequate documents	Total # shipments	
3. Percentage of shipments that had adequate documents received on time	95	100	95.0%
QUALITY	**Numerator**	**Denominator**	**Total Score %**
	# of products with correct pack size and quantity	Total # of products	
4. Percentage of products with correct pack size and quantity	192	200	96.0%
	# of products undamaged	Total # of products	
5. Percentage of products received undamaged due to adequate packaging	194	200	97.0%
	# of products passed QC testing	Total # of products	
6. Percentage of products that passed quality control testing	198	200	99.0%
	# of products in compliance	Total # of products	
7. Percentage of products that comply with shelf life requirements	188	200	94.0%
CUSTOMER SERVICE	**Numerator**	**Denominator**	**Total Score %**
	# of correct invoices	Total # of invoices	
8. Percentage of invoices that comply with contract pricing and terms	97	100	97.0%
Supplier Rating			**94.3%**

Appendix D

Additional Resources

Key Performance Indicators Strengthen Procurement in Latin America
(http://deliver.jsi.com/)

This brief describes the evolution of contraceptive procurement in the Latin America and Caribbean region to highlight the importance of monitoring and evaluating key data to improve performance, over time. Ultimately, these procurement improvements have helped ensure a more continuous supply of contraceptives for the men and women that need them, and they have saved government resources that could then be invested in other parts of the supply chain or health programs.

Measuring Supply Chain Performance: Guide to Key Performance Indicators for Public Health Managers
(http://deliver.jsi.com/)

A comprehensive guide to help managers and logisticians focus on key logistics areas that they want to improve, including procurement, and to provide them with a selection of metrics to monitor performance.

Performance-Based Incentives to Strengthen Public Health Supply Chains
(http://deliver.jsi.com/)

Performance-based incentives (PBIs) (also known as performance-based financing) could strengthen supply chains by linking performance to rewards. PBIs aim to motivate the people and teams that comprise a supply chain to perform their function well to achieve specific targets.

Procurement Capacity Toolkit: Tools and Resources for Procurement of Reproductive Health Supplies
(http://www.path.org/publications)

Developed by PATH and the World Health Organization (WHO), this comprehensive toolkit is focused on strengthening the capacity of the personnel responsible for public-sector procurement of contraceptives and reproductive health supplies.

Procurement Performance Indicators Dashboard
http://deliver.jsi.com/dlvr_content/resources/allpubs/guidelines/ProcPerfIndiTemplate.xlsx

A Microsoft Excel-based tool that complements the Procurement Performance Indicators Guide, to capture performance data and graphically summarize the results in a concise dashboard format.

For more information, please visit deliver.jsi.com.