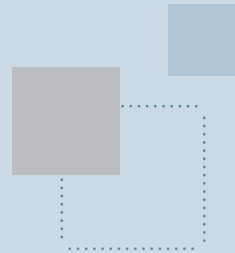


# Performance Measurement

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Phase II — User Guide





# Performance Measurement

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Phase II — User Guide



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# Introduction

This user guide accompanies the report “Performance Measurement: Phase II — A Framework for Action.” It contains 32 Technical Worksheets with detailed descriptions and implementation information to assist hospitals in implementing 20 performance metrics and 12 operating standards. The Technical Worksheets enable supply chain professionals to:

- Assess the current use of supply chain metrics and standards within their organization;
- Assess readiness to implement metrics and standards;
- Prioritize metrics and standards to be implemented;
- Develop specific implementation plans for metrics; and
- Begin to develop standards tailored to the organization.

Users of this guide are encouraged to first read the report to better understand (1) the overall objective of the guide and (2) the recommended framework for adopting metrics and standards.

## Getting Started

Knowing where to begin is often the most difficult task. The following is a list of recommendations to enable successful implementation of performance metrics and standards.

### **1. Define the Opportunity**

Supply chain leaders should begin by reviewing the current state of their supply chains to develop a clear understanding of the critical areas that need to be addressed. For each area they select for improvement, they must develop and communicate a clear case for change. This should include an outline of the costs and benefits to the organization and the metrics and standards that align with the objective.

### **2. Senior Management Support**

To successfully implement any transformation project, it is critical to secure full endorsement of senior management. Management should be prepared to engage in communication activities to ensure their endorsement is conveyed to all staff and relevant hospital stakeholders. This is especially important for metrics and standards that require implementation across multiple departments.

Support from senior management is not simply about endorsement; it must also include approval for sufficient funding and resources. The investment should be adequate to ensure that the initiatives are properly adopted and maintained over time.

### **3. Project Champions**

In addition to senior management support, internal project champions are essential. Employees selected for these roles should be highly regarded by their peers and strongly support the initiative. The project champions will encourage support among their peers and help facilitate effective implementation. This should be done in conjunction with a structured, formal communications plan.

### **4. Communications and Stakeholder Management**

The goals of the initiative must be clearly communicated to all employees and stakeholders. A formal communications plan should be developed, outlining how the initiative will be communicated to staff, internal stakeholders and suppliers. The communications plan should address the overall initiative as well as its key implications. It is critical that all employees and stakeholders understand the benefits and impact of upcoming changes.

As with any project, the individuals responsible for implementation should identify and manage stakeholders in departments outside the supply chain who are impacted. This can be done by conducting working sessions with stakeholders from purchasing, receiving and accounts payable as well as customers to develop improvement goals that meet the needs and expectations of all of these groups. It is also recommended that regular update meetings are scheduled to review progress towards the goals.

## **5. Training**

All employees affected by changes in the supply chain process must be offered appropriate training. This is critical for any transformation initiative and will ensure the program is effectively adopted and complied with.

## **6. Maintaining a Customer Focus**

To maintain support throughout the organization, it is critical that the initiatives do not negatively impact service levels. While implementing improvements in efficiency, the organization must be equally focused on quality of service to avoid increased errors and delays. Employing spot audits and tracking service quality indicators should help mitigate these concerns.

## **7. Demonstrating Quick Wins and Early Successes**

Identifying and delivering quick, low-risk wins is essential for building confidence in any initiative within an organization. Quick wins usually involve small changes implemented with focus and discipline rather than major system changes. Choosing a small number of metrics and/or standards that are easiest to implement and have visible benefits can best demonstrate the overall value to the organization.

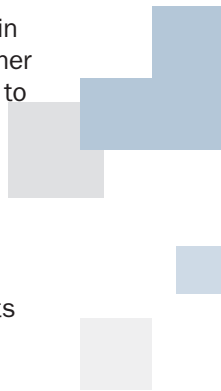
Results should be reported to stakeholders on a monthly basis to maintain visibility and demonstrate progress.

## **8. Using the Worksheets in this Report**

Finally, take full advantage of this user guide. The information in the following Technical Worksheets can help support all of the above processes.

It is important to note that while the Technical Worksheets for the performance metrics contain specific implementation directions, such as which data to collect and how to collect them, the standards have been developed to provide just higher-level direction. The Technical Worksheets for the standards should provide guidance on the types of information that each standard should include and how organizations should begin to develop and implement the standard within their hospital.

Over the next several months, the Province will work closely with industry experts, the Working Group and other key broader public sector stakeholders to develop and publish detailed standards that can be adopted by hospitals. This work has already been initiated for two standards: 1.1 Purchasing Policies and Procedures and 1.3 Boilerplate Contracts and Key Legal Principles.





GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
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# Metric 1.1: Percentage of Active Items under Contract

## Objective:

To improve the control of supply chain spending by increasing the number of items bought under a negotiated contract

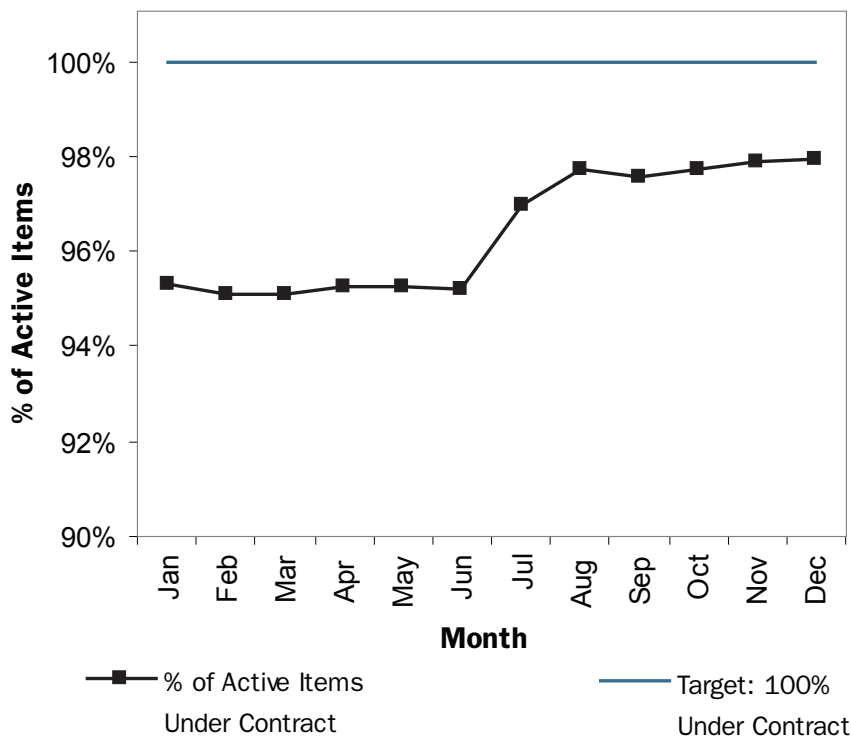
## Calculation:

$$\frac{\text{Number of active items under contract}}{\text{Total number of active items in master file}} \times 100\%$$

## Target:

Stock: 100% under contract  
Non-stock: ≥ 80% under contract

## Percentage of Active Items under Contract — Stock



# Background Details

## Rationale

It is important to have a significant proportion of expenditures under contract as this reduces risk to an organization, enables more efficient processes, and helps ensure the organization is getting the best value. In addition, purchasing goods and services on contracts provides information to organizations about what products are being used and how frequently they are being ordered. This, in turn, can be used to more effectively forecast spend, plan ahead and identify future opportunities for savings.

## Benefits

### **Financial Stewardship**

Increasing the number of items under contract ensures that items are purchased at the best total value by reducing product and transaction costs.

### **Process Efficiency**

Purchasing items on contract enables a faster ordering process and reduces error by documenting agreed-upon information about the products, prices, shipping and billing, thus reducing the activities required by supply chain staff to gather this information and issue orders.

### **Risk Management**

Contracting aids financial planning and reduces risk by establishing clear, agreed-upon terms for transactions with suppliers.

## Underlying Leading Practices

### **Demand Management**

The ability to determine the organizational demand requirement helps the supply chain department develop strategic contracts for the right products and services.

### **Identification of Product Standardization Opportunities**

Rationalization of suppliers and products, while respecting clinical needs, enables an organization to increase the percentage of products under contract with fewer suppliers.

### **Contract Centre of Excellence**

A common repository of contract knowledge facilitates the development of comprehensive contracts with suppliers with more favourable terms and pricing.

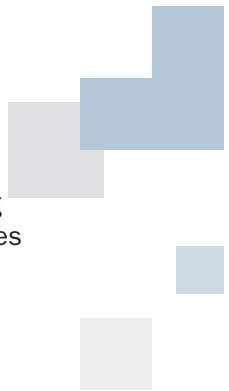
### **Comprehensive Understanding of Spend Data**

Comprehensive analysis of spend data helps the organization identify items in the master file that would realize the largest benefits from contract development.

## Target Considerations

### **Establishment**

Targets for stock items will generally be higher than targets for non-stock items. Stock items are typically high-use commodities, which are easily contracted and standardized, and are often covered by group purchasing organizations. Items that are handled as non-stock are generally those that are specialized and/or with highly variable usage, making them difficult to put under contract.



## Related Metrics and Standards

### Related Metrics:

- 1.2 Purchasing Response Time
- 2.1 Average Cost to Issue a Purchase Order
- 2.3 Operating Costs as a Percentage of Expenditures
- 3.3 Number of Purchase Orders Placed per Full-Time Equivalent in One Month
- 3.7 Percentage of Invoice Matches
- 4.3 Percentage of Items Activated in the Master File in One Month
- 4.4 Percentage of Items Inactivated in the Master File in One Month

### Related Standards:

- 1.1 Purchasing Policies and Procedures
- 1.3 Boilerplate Contracts and Key Legal Principles
- 3.1 Contracts Database
- 4.2 Item Master Management Policy and Processes

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Number of active items under contract}}{\text{Total number of active items in master file}} \times 100\%$$

Variable	Include	Exclude
Number of active items under contract (2 values: 1. stock and 2. non-stock)	Include items with activity in the last 12 months and a contract (pricing agreement, prime vendor agreement) in place, documented in the information system, with all of the following: <ul style="list-style-type: none"> <li>• Start and end dates</li> <li>• Defined pricing</li> <li>• Dual signature (customer and vendor)</li> </ul> Report two separate measures for: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> </ul>	Do not include items with any of the following: <ul style="list-style-type: none"> <li>• No activity in the last 12 months</li> <li>• No mutually signed contract in place</li> <li>• No start or end date</li> <li>• Non-priced items</li> </ul>
Total number of active items in master file (2 values: 1. stock and 2. non-stock)	Include number of items in item master with activity in the last 12 months  Report two separate measures for: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> </ul>	Do not include items in item master with no activity in the last 12 months <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>• Capital</li> <li>• Services</li> <li>• Pharmacy</li> <li>• Food</li> </ul> <b>OR</b> for: <ul style="list-style-type: none"> <li>• Punch-out orders</li> </ul>

### Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

## Possible Data Sources

### Electronic

Procurement and Inventory Modules:

Organizations are usually able to generate reports on use of stock items to determine the *Total number of active items in master file (Stock)*. Some information systems are unable to track the use and generate reports on the *Total number of active items in master file (Non-stock)*. If these functions are unavailable, hospitals should consider custom reporting.

Contract Management Modules:

Organizations with contract management modules should be able to generate purchase-agreement contract reports to determine the *Number of active items under contract* for both stock and non-stock items. Organizations that lack this capability could create a custom report at month-end. The report should flag for each item whether a price exists and whether it is valid (i.e., not expired).

### Manual

If electronic reporting is unavailable, a manual check of all active items in the master file is not realistic. The organization could consider using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to report the number of line items purchased that were under contract compared to the total number of line items purchased. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

## Implementation Challenges

### Challenges

Healthcare organizations might focus on year-end pricing agreements and miss out on opportunities to develop longer-term strategic sourcing strategies. Monthly monitoring of this metric in conjunction with 4.3 Percentage of Items Activated in the Master File in One Month and 4.4 Percentage of Items Inactivated in the Master File in One Month will help organizations determine whether equal effort is being devoted to contract development over the year.

Many organizations currently do not have contract database modules as part of their information systems but instead keep separate hard-copy files of contracts. As a workaround, these organizations could incorporate contract pricing in their Item Master to improve order processing efficiency and help minimize invoice discrepancies.

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# Metric 1.2: Purchasing Response Time

## Objective:

To improve the ability to quickly issue rush orders to suppliers

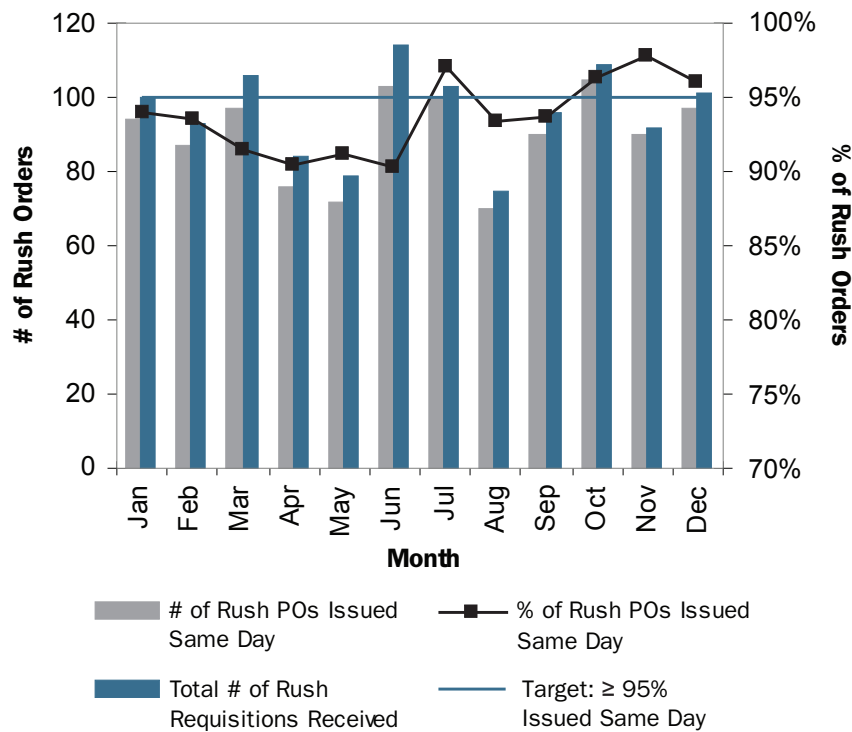
## Calculation:

$$\frac{\text{Number of rush purchase orders issued to suppliers in the same day}}{\text{Total number of rush requisitions received}} \times 100\%$$

## Target:

≥ 95% of orders issued to supplier in same day

Purchasing Response Time



# Background Details

## Rationale

Rapid response to customers' rush orders by the supply chain department is critical in the healthcare setting. If customers do not have access to the supplies they need, patient care may suffer. For this reason, the department's performance in this area should be monitored regularly.

## Benefits

### **Patient Care**

Supporting patient care requires that customers, i.e., doctors and nurses, have access to the right product at the right time. Ensuring that rush orders are quickly issued will directly support the customers' ability to provide patient care by minimizing the number and length of stock-outs.

### **Process Efficiency**

Reducing the response time of supply chain staff requires establishing streamlined and efficient processes for receiving rush requests from customers and issuing rush orders to suppliers.

### **Customer Service**

Ensuring appropriate mechanisms for processing rush orders quickly and monitoring and addressing customer' concerns provides a higher level of customer service.

## Underlying Leading Practices

### **Contract Centre of Excellence**

A common repository for supplier contract data, including current pricing and lead-time requirements, provides a central location to obtain the information required to place rush orders.

### **"End to End" eSupply Chain**

Automated processes from requisition to purchase order (PO) generation enable supply chain staff to issue rush orders more quickly.

## Target Considerations

### **Establishment**

This metric is difficult to monitor. The few hospitals that are currently measuring it are using different calculation methods, which made it difficult for the Working Group to establish an initial target. It is therefore recommended that a review of the proposed target take place six to twelve months after implementing this common metric definition to establish an appropriate target level.

## Related Metrics and Standards

### Related Metrics:

- 1.1 Percentage of Active Items under Contract
- 2.1 Average Cost to Issue a Purchase Order
- 3.2 Percentage of Rush Purchase Orders
- 4.2 Fill Rates to Customers

### Related Standards:

- 3.1 Contracts Database
- 4.1 Customer Survey Tools and Processes
- 4.2 Item Master Management Policy and Processes

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Number of rush purchase orders issued to suppliers in the same day}}{\text{Total number of rush requisitions received}} \times 100\%$$

Variable	Include	Exclude
Number of rush purchase orders (POs) issued to suppliers in the same day	Include the number POs issued in a single day that are both for: <ul style="list-style-type: none"> <li>• Rush order requisitions for the categories below</li> </ul> <b>AND</b> <ul style="list-style-type: none"> <li>• Where the requisition for the rush order was received on the same day by close of business</li> </ul>	Do not include POs issued on this day that are either for: <ul style="list-style-type: none"> <li>• Out-of-scope requisitions as outlined below</li> </ul> <b>OR</b> <ul style="list-style-type: none"> <li>• A rush order, where requisition was not received in this same day</li> </ul>
Total number of rush requisitions received	Include the number of purchase requisitions received by the supply chain department on this day that are both for: <ul style="list-style-type: none"> <li>• Rush orders – defined as orders that are placed within the minimum required lead time</li> </ul> <b>AND</b> the following categories: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> <li>• Services</li> </ul>	Do not include requisitions received by the supply chain department on this day that are either for: <ul style="list-style-type: none"> <li>• Regular lead time POs</li> <li>• Ad-hoc orders</li> <li>• Departmental stock requisitions</li> <li>• Punch-out orders</li> </ul> <b>OR</b> the following commodities: <ul style="list-style-type: none"> <li>• Capital</li> <li>• Pharmacy</li> <li>• Food</li> </ul>

### Data Accessibility Rating

DIFFICULT – Data do not exist and are difficult to obtain

## Possible Data Sources

### **Electronic**

Procurement Module:

To automatically measure and report the *Number of rush purchase orders issued to suppliers in the same day* and *Total number of rush requisitions received*, an organization's information system must be able to (1) flag rush orders and (2) time stamp when a requisition was received and a PO released. This functionality is often lacking. Organizations could consider installing a customized software solution and specialty reports.

### **Manual**

If customized reporting is not available, the organization could consider using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

## Implementation Challenges

### Challenges

Data may be unavailable from current information systems. Due to the importance of this metric, organizations should consider a manual process to monitor performance, such as implementing a logging system or investigate adding the dates to requisition and PO input fields to enable automatic reporting.



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# Metric 2.1: Average Cost to Issue a Purchase Order

## Objective:

To maximize the productivity of supply chain staff associated with purchasing goods and services, including supplier management, contract management, order processing and problem resolution

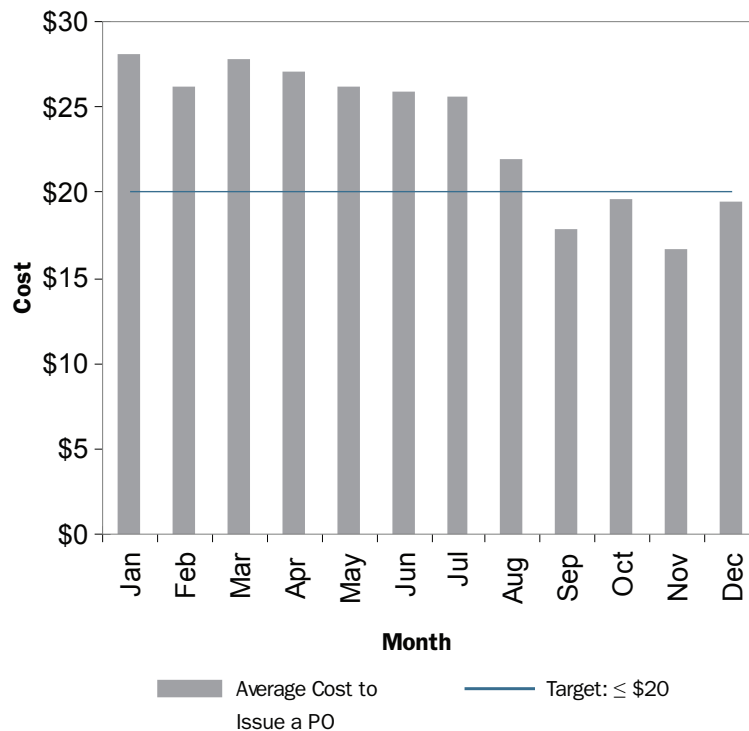
## Calculation:

$$\frac{\text{Purchasing labour costs}}{\text{Number of purchase orders}}$$

## Target:

≤ \$20/PO

**Average Cost to Issue a Purchase Order**



# Background Details

## Rationale

Measuring the labour costs relative to the number of purchase orders (POs) provides insight into progress towards modernizing supply chain processes. Improvements in such areas as product sourcing, supplier development and contract management should result in a reduction in the cost to issue a PO.

This metric is a similar measure to metric 3.3 Number of Purchase Orders Placed per Full-Time Equivalent in One Month, but it is broader in scope, encompassing not only the processes involved in issuing a PO, but also the labour costs of the full range of sourcing and purchasing activities.

## Benefits

### **Financial Stewardship**

Savings achieved from reduced administrative costs can free up labour capacity to be redeployed into strategic value-add or other activities.

### **Process Efficiency**

Creating efficiencies through redesign and automation of purchasing processes reduces manual transactional processing tasks. In addition, by centralizing sourcing and contracting activities and implementing a contract database, the number of active items under contract will increase and the time required to create POs will be reduced.

### **Employee Productivity/Satisfaction**

Productivity will be increased by redesigning purchasing processes to eliminate duplicate and unnecessary tasks. In addition, assigning responsibility for specific types of activities or commodities under staff with specialized knowledge will allow staff to develop greater expertise in a specific area, resulting in staff being more productive and achieving greater work satisfaction.

## Underlying Leading Practices

### **Contract Centre of Excellence**

Establishing a contract centre of excellence with staff with specialized knowledge and focus enables an organization to negotiate strategic longer-term contracts with qualified suppliers efficiently and effectively.

### **Purchasing Cards**

Use of purchasing cards and other alternative solutions for low dollar value transactions reduces the workload on purchasing and accounts payable staff, allowing time for more strategic, value-added activities.

### **“End to End” eSupply Chain**

Electronic commerce (EDI/XML) transactions enable faster, more streamlined processing of POs.

### **Process Productivity Tools**

On-line requisitioning and automation of POs and workflow approvals reduce errors and improve turnaround time for order fulfillment.



## Target Considerations

### **Establishment**

Currently, significant discrepancies exist among the members of the Working Group in measuring the cost of issuing POs. Many organizations include one or more secondary or peripheral elements, such as inventory management, shipping and receiving, central storeroom, printing and linen services in addition to core elements of the process. As a result, their calculations for the actual cost of issuing a PO range from \$5 to \$50. Based on their expert experience, the Working Group recommends an initial target cost of \$20 per PO. The target should be re-evaluated in six to twelve months.

To arrive at an accurate cost of issuing a PO, organizations might have to break out these secondary and peripheral expenses. A common approach is necessary to enable consistent measurements and set appropriate targets across multiple organizations.

### **Future Opportunities**

In the future, this metric could be expanded to include shipping and receiving and accounts payable. Inefficiencies and errors inherent to, or caused by, purchasing processes can have a profound negative impact on these downstream functional areas. Including the costs of the related function would help identify inefficiencies to drive improvements in the purchasing process that would have a resulting positive effect on the overall process.

### **Impact of Other Metrics**

Hospitals will not become practice leaders in supply chain management through cost reduction initiatives alone; processes and service quality must also be improved. Accordingly, this metric should be considered in conjunction with metrics such as 1.2 Purchasing Response Time and 4.2 Fill Rates to Customers to ensure that cost efficiency is balanced with the delivery of high-quality service.

## Related Metrics and Standards

### **Related Metrics:**

- 1.1 Percentage of Active Items under Contract
- 1.2 Purchasing Response Time
- 2.3 Operating Costs as a Percentage of Expenditures
- 3.1 Number of Purchase Orders in One Month
- 3.2 Percentage of Rush Purchase Orders
- 3.3 Number of Purchase Orders Placed per Full-Time Equivalent in One Month
- 3.4 Average Lines per Purchase Order
- 4.2 Fill Rates to Customers

### **Related Standards:**

- 1.1 Purchasing Policies and Procedures
- 3.1 Contracts Database

# Implementation

## Calculation Parameters

### Calculation

$$\frac{\text{Purchasing labour costs}}{\text{Number of purchase orders}}$$

Variable	Include	Exclude
Purchasing labour costs	<p>Include all supply chain labour costs associated with purchasing, including:</p> <ul style="list-style-type: none"> <li>• Developing sourcing strategies</li> <li>• Product standardization initiatives</li> <li>• Selecting suppliers</li> <li>• Maintaining the Item Master</li> <li>• Developing and maintaining contracts</li> <li>• Ordering goods and services related to commodities determined as in scope in number of POs as indicated below</li> </ul>	<p>Do not include non-purchasing-related labour costs including:</p> <ul style="list-style-type: none"> <li>• Information systems support</li> <li>• Accounts payable</li> <li>• Inventory management</li> <li>• CSR/SPD</li> <li>• Shipping and receiving</li> <li>• Rebates</li> <li>• Printing</li> <li>• Linen services</li> </ul> <p><b>OR</b> non-labour expenses</p>
Number of purchase orders (POs)	<p>Include all orders released to suppliers in a one-month period that are both the following types of orders:</p> <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases</li> </ul> <p><b>AND</b> for the following categories:</p> <ul style="list-style-type: none"> <li>• Stock</li> <li>• Non-stock</li> <li>• Capital</li> <li>• Services</li> </ul>	<p>Do not include orders that are either the following types of orders:</p> <ul style="list-style-type: none"> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <p><b>OR</b> for the following categories:</p> <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>

## Data Accessibility Rating

EASY – Data are available for computation

## Possible Data Sources

### Electronic

Financial Reporting Module:

The staff expenses portion of the *Purchasing labour costs* is available in the supply chain department's monthly financial reports. Estimates may be required for managers and staff with jobs involving multiple responsibilities. Ontario hospitals submit this information to the Ontario Ministry of Health and Long-Term Care annually in their Ontario Hospital Reporting System (OHRS) submissions.

Procurement Module:

The *Number of purchase orders* would be tracked automatically by the healthcare organization's electronic procurement system and can be retrieved in month-end standard reports. Some systems may be unable to break out data by the specified categories. -

**Manual**

If electronic reporting is unavailable for the *Number of purchase orders*, the organization could consider conducting manual counts, using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data to extrapolate for the month. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

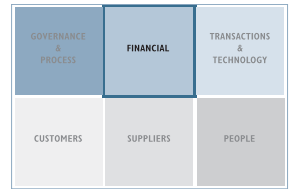
The supply chain department's monthly financial reports should provide data on staff expenses, but estimates may be required for managers and staff with jobs involving multiple responsibilities to determine the final *Purchasing labour costs* corresponding to the in-scope and out-of-scope costs described in the table above.

**Implementation Challenges**

**Challenges**

Supply chain modernization pays dividends in the long term through improved processes, better service and lower costs, but it does require upfront investment. These initiatives could temporarily raise the average cost of issuing POs. Organizations should not be deterred. For a broader picture of the costs and benefits of supply chain transformation, this metric should be viewed in conjunction with metrics such as 2.3 Operating Costs as a Percentage of Expenditures and 3.4 Average Lines per Purchase Order.





# Metric 2.2: Inventory Turnover in One Month

## Objective:

To optimize the total capital invested by balancing the cost of storing goods against the cost of replenishment, stock-outs and resulting service failures

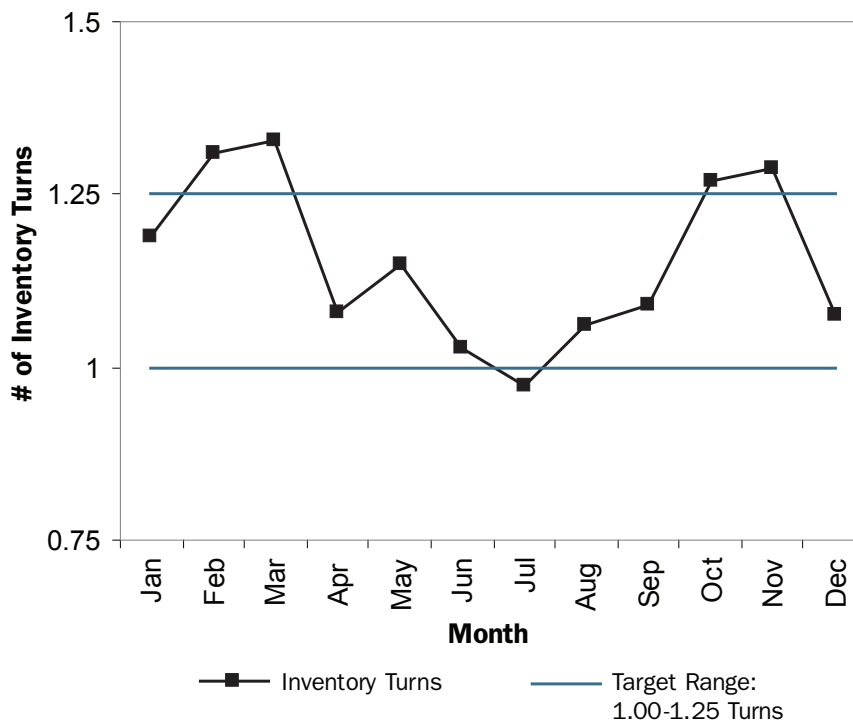
## Calculation:

$$\frac{\text{Total inventory issued}}{\text{Value of in-stock inventory}} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}}$$

## Target:

Central Stores — 12 to 15 annual turns (1 to 1.25 turns per month)  
 Stat Stores — 5 to 10 annual turns (0.5 to 1 turn per month)  
 Central Warehouse — 12 to 15 annual turns (1 to 1.25 turns per month)

**Inventory Turnover — Central Stores**



# Background Details

## Rationale

Stock inventory acts as a buffer between suppliers and customers for high-use items. A central store replenishes point-of-use inventories by breaking down cases and supplying items to point-of-use locations in low units of measure for easy access. Monthly monitoring of inventory turnover allows organizations to track and balance opposing factors: the financial costs of carrying inventory and minimizing stock-outs.

Inventory carrying costs includes the level of capital investment in inventory plus expenses for overhead items such as space and utilities. On the other hand, every time a replenishment order is placed regardless of the size of the order, expenses are incurred in the form of issuing the order, receiving and put-away costs. Supply chain departments must ensure that the target balances the carrying costs with the costs of replenishment.

Ensuring a product is available when it is needed has a direct impact on patient care. The rate of inventory turns must be calibrated to minimize stock-outs. In addition to putting patients at risk, stock-outs lead to reduced customer confidence in the supply chain department. As a consequence, clinicians could begin creating unofficial inventories within their departments, leading to overcrowded wards, increased inventory investment, and higher obsolescence rates.

Another factor in setting appropriate inventory target levels is the need for slow-moving items — items that are critical to patient care but for which demand forecast is uneven must still be kept in inventory. Every healthcare organization has different clinical needs that will affect its decisions in this area.

## Benefits

### **Financial Stewardship**

Managing inventory turnover rates correlates with an organization's ability to manage its assets and maximize return on investment. Ensuring controls are in place to optimize inventory turnover rates balances replenishment costs and carrying costs, including upfront capital investment, space requirements, overhead costs, and write-offs due to damaged or obsolete products.

### **Customer Service**

Optimal cycling of inventory ultimately results in less point-of-use storage space being required. This space can be reallocated to more value-add clinical functions. This must be balanced with minimizing the risk of stock-outs.

## Underlying Leading Practices

### **Demand Management**

Comprehensive understanding of an organization's requirements for stock and non-stock items is a critical component to help the supply chain department optimize inventory levels, improve service levels, and reduce stock-outs.

### **Baseline Forecasting**

Better forecast information communicated from the customer through to the supplier improves the accuracy of inventory planning and supports inventory-reduction initiatives.

### **Identification of Product Standardization Opportunities**

Product standardization contributes to lower inventories and, by extension, higher inventory turnover because less variety of supplies needs to be stored.



### **Centralized Inventory Warehousing**

Consolidating the inventory functions of multiple hospitals in one site provides opportunities for demand levelling and implementation of leading inventory management practices, all managed by trained supply chain professionals.

### **Logistics Process Automation**

Automated inventory replenishment and electronic receiving capability speed up the order processing cycle, reduce errors, and lower the need for safety stock inventories.

## **Target Considerations**

### **Establishment**

Targets will vary depending on the location and size of the hospital. Rural hospitals might require higher inventory levels to act as a buffer against longer lead times and higher transportation charges. Smaller organizations may also carry higher inventory levels as a consequence of meeting minimum order and packing requirements.

Organizations using third-party warehouses or “stockless” service providers could have only stat stores left on site. The turns for these inventories will typically be lower than traditional on-site inventories, and the targets should be adjusted accordingly.

Specialized inventory types, such as operating room and pharmacy inventories, may also require different targets.

### **Impact of Other Metrics**

Inventory turnover should be closely monitored in conjunction with metrics 4.1 Stock-outs at the Cart Level and 4.2 Fill Rates to Customers to ensure customer needs are still being adequately met.

### **Adjustment Factor**

Due to the different lengths of months and the presence of holidays, the number of working days per month varies from 19 to 23. This could have an impact of over 20 per cent difference from month to month, making comparisons difficult. To avoid the issue, the calculation includes an adjustment factor (20 divided by the number of working days in the month) to normalize each month’s data to a 20-day month (four full work weeks).

## **Related Metrics and Standards**

### **Related Metrics:**

- 2.3 Operating Costs as a Percentage of Expenditures
- 3.1 Number of Purchase Orders in One Month
- 3.2 Percentage of Rush Purchase Orders
- 4.1 Stock-outs at the Cart Level
- 4.2 Fill Rates to Customers

### **Related Standards:**

- 2.2 Inventory Policy

# Implementation

## Calculation Parameters

### Calculation

$$\frac{\text{Total inventory issued}}{\text{Value of in-stock inventory}} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}}$$

Variable	Include	Exclude
Total inventory issued	Include monthly value of inventory issued from: <ul style="list-style-type: none"> <li>• Central stores</li> <li>• Stat stores</li> <li>• Hospital-owned central warehouse</li> </ul>	Do not include monthly value of inventory issued from <ul style="list-style-type: none"> <li>• Consignment</li> <li>• Par locations</li> <li>• Pandemic/strike contingency</li> <li>• Operating room/cath lab, etc.</li> <li>• Laboratory</li> </ul>
Value of in-stock inventory	Include month-end inventory value for all items in: <ul style="list-style-type: none"> <li>• Central stores</li> <li>• Stat stores</li> <li>• Hospital-owned central warehouse</li> </ul>	Do not include month-end inventory value for all items in: <ul style="list-style-type: none"> <li>• Consignment</li> <li>• Par locations</li> <li>• Pandemic/strike contingency</li> <li>• Operating room/cath lab, etc.</li> <li>• Laboratory</li> </ul>
Number of workdays in the month	Include all regularly scheduled working days in the month	Exclude: <ul style="list-style-type: none"> <li>• Weekends</li> <li>• Holidays</li> </ul>
20 days	Days in month adjustment factor	

## Data Accessibility Rating

EASY – Data are available for computation

## Possible Data Sources

### Electronic

Inventory Module:

Information systems typically offer standard month-end inventory transactions reports. These reporting modules provide the *Total inventory issued* and the *Value of in-stock inventory* required to calculate inventory turnover.

Business intelligence tools could be used to collect data from multiple systems for consolidated reporting of multiple sites and inventory locations.

### Manual

A manual method is not feasible but should not be required.

The calculation for the *Number of workdays in the month* should be based only on standard workdays — exclude statutory holidays and other organization-wide acknowledged days off.

## Implementation Challenges

### Challenges

Organizations must maintain a focus on meeting customer needs while optimizing inventory levels. Inventory reduction should be supported by process or technology improvements to avoid service delivery issues. It is vital to implement monthly monitoring of service-related metrics with inventory turns to quickly identify and resolve issues as they arise.

For some items, the inventory replenishment costs (ordering, receiving, put-away) may be higher than the actual inventory carrying costs. Items should be evaluated by type, with decisions about optimal ordering quantities based on packaging, size and value.

Some hospitals may currently be measuring this metric using a different calculation. Organizations may need to change their reporting methodologies to be able to benchmark with other hospitals.

Most hospitals exclude inventory at the point-of-use locations. In the future, organizations should ideally include this inventory in their measurements.



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# Metric 2.3: Operating Costs as a Percentage of Expenditures

## Objective:

To optimize the overall operating costs of the supply chain department relative to the expenditures on goods and services

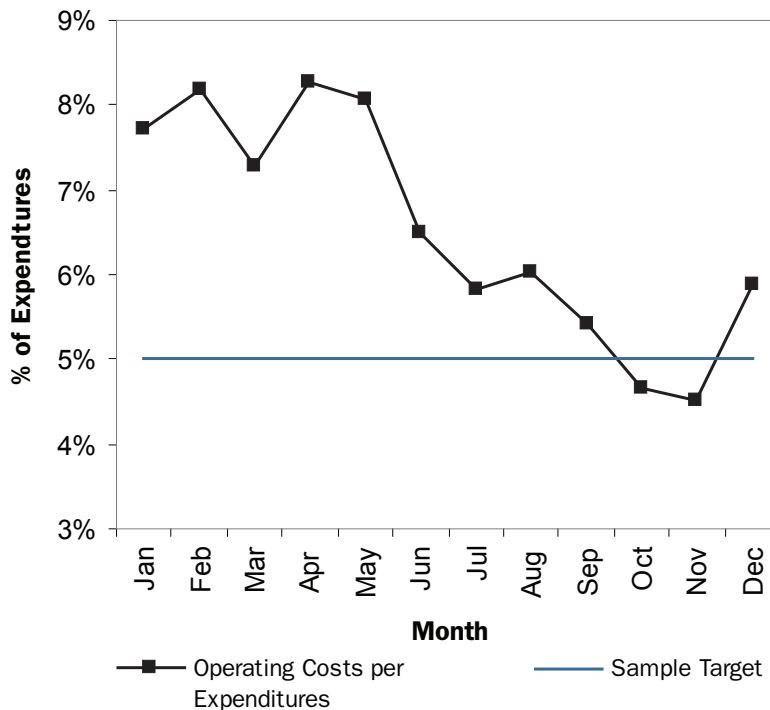
## Calculation:

$$\frac{\text{Supply chain operating costs}}{\text{Total value of all goods and services procured by supply chain}} \times 100\%$$

## Target:

Target will vary depending on the type and size of hospital

## Operating Costs as a Percentage of Expenditures



# Background Details

## Rationale

This metric provides a high-level indicator to compare the efficiency of the supply chain department across like organizations and internally over time. Ontario hospitals are currently required to measure the cost of supply chain processes per expenditures for the Ministry of Health and Long-Term Care (MOHLTC) annually in their Ontario Hospital Reporting System (OHRS) submissions.

This metric is broad in scope, encompassing sourcing, contract management, purchasing, receiving and shipping, inventory control, central stores and internal and external distribution of supplies, thus giving an organization a complete look at the cost to bring supplies through the supply chain department to customers.

## Benefits

### **Financial Stewardship**

Increasing the productivity per dollar spent will generate savings that, among other options, could be used to increase the supply chain department's capacity to provide additional services to the hospital.

### **Process Efficiency**

Transactional efficiencies can be created through the redesign and automation of supply chain processes by transitioning from manual to automated processes to eliminate or reduce paper handling, data entry and error rates in procurement, receiving and inventory management.

### **Employee Productivity/Satisfaction**

Redirecting employee time towards more strategic value-add activities versus transactional processing will improve the overall productivity of the supply chain department while also improving employee satisfaction through specialization of roles.

## Underlying Leading Practices

### **Contract Centre of Excellence**

Establishing a centre of excellence for contracting creates efficiencies in the sourcing and contract management aspects of the supply chain and value-add activities that increase the overall productivity and effectiveness of the supply chain department.

### **Logistics Process Automation**

The use of electronic capabilities in the warehouse improves the efficiency of receiving, put-away and picking processes, and reduces overall receiving costs.

### **Purchasing Cards**

The use of purchasing cards and other alternate methods for handling low dollar value purchases reduces the need for the supply chain department to process purchase orders and accounts payable to pay invoices.

### **“End to End” eSupply Chain**

Using electronic commerce (EDI/XML) for sending information between the hospital and suppliers, such as purchase orders, ship notification, and invoices, improves the efficiency of both the hospital's and suppliers' processes.

### **Process Productivity Tools**

Automated requisition, PO and invoicing processes lower labour requirements in purchasing, receiving and accounts payable to process orders.

## Target Considerations

### **Establishment**

The Working Group did not have much experience measuring this metric and recommends six to twelve months of data collection and reporting before targets are established. Different targets could be set based on factors such as hospital type and size.

### **Impact of Other Metrics**

Implementing leading practices, such as a contract centre of excellence that reduces spending on goods and services, may appear to reduce performance on this metric. For a more complete picture of overall supply chain performance, this metric should be viewed in conjunction with metrics 2.1 Average Cost to Issue a Purchase Order and 3.4 Average Lines per Purchase Order.

## Related Metrics and Standards

### **Related Metrics:**

- 1.1 Percentage of Active Items under Contract
- 2.1 Average Cost to Issue a Purchase Order
- 2.2 Inventory Turnover in One Month
- 3.1 Number of Purchase Orders in One Month
- 3.2 Percentage of Rush Purchase Orders
- 3.3 Number of Purchase Orders Placed per Full-Time Equivalent in One Month
- 3.4 Average Lines per Purchase Order
- 3.8 Percentage of Low Dollar Value Purchase Orders

### **Related Standards:**

- 1.1 Purchasing Policies and Procedures
- 1.3 Boilerplate Contracts and Key Legal Principles
- 2.2 Inventory Policy
- 3.1 Contracts Database
- 3.2 Low Dollar Value Transactions Strategy

# Implementation

## Calculation Parameters

### Calculation

$$\frac{\text{Supply chain operating costs}}{\text{Total value of all goods and services procured by supply chain}} \times 100\%$$

Variable	Include	Exclude
Supply chain operating costs	<p>Include all supply chain labour costs for one-month period associated with the following activities:</p> <ul style="list-style-type: none"> <li>• Sourcing strategies</li> <li>• Standardization efforts</li> <li>• Selecting suppliers</li> <li>• Item master maintenance</li> <li>• Developing/maintaining contracts</li> <li>• Ordering goods and services</li> <li>• Receiving orders</li> <li>• Inventory control</li> <li>• Third-party service provider fees</li> <li>• General stores</li> <li>• Distribution of goods (External and internal)</li> </ul> <p>This should correspond to the following OHRS supply chain functional centres:</p> <ul style="list-style-type: none"> <li>7113505 – Administration</li> <li>7113510 – Purchasing</li> <li>7113515 – Capital Asset Control</li> <li>7113520 – Receiving &amp; Shipping</li> <li>7113530 – Stores</li> <li>7113560 – Distribution Internal</li> <li>7113570 – Distribution External</li> </ul>	<p>Do not include supply chain labour costs associated with the following activities:</p> <ul style="list-style-type: none"> <li>• Expenses</li> <li>• Information systems support</li> <li>• Accounts payable</li> <li>• CSR/SPD</li> <li>• Patient portering</li> <li>• Printing</li> <li>• Linen/Laundry</li> <li>• Rebates</li> </ul> <p>The supply chain excluded functional centres are:</p> <ul style="list-style-type: none"> <li>7113540 – Reprocessing</li> <li>7113550 – Printing</li> <li>7113555 – Contract Management</li> <li>7113599 – Combined</li> </ul>
Total value of all goods and services procured by supply chain	<p>Include total expenses in the following categories:</p> <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> <li>• Capital</li> <li>• Services</li> </ul>	<p>Do not include expenses in the following categories:</p> <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>

## Data Accessibility Rating

EASY – Data are available for computation



## Possible Data Sources

### **Electronic**

Financial Reporting Module:

Monthly financial reports provide data on staff expenses that can be used to calculate the *Supply chain operating costs*. Ontario hospitals submit this information to the Ontario MOHLTC annually in their OHRS submissions. Organizations may opt to calculate it with a query to the OHRS dataset, with the functional centre and secondary code definitions.

Accounts Payable Module:

The accounts payable system should be able to report on total expenditures, sorted by expense code to calculate the *Total value of all goods and services procured by supply chain* for the included expenditure categories, as listed above.

### **Manual**

To calculate the *Supply chain operating cost* for the in-scope activities in the table above, organizations with employees with both in-scope and out-of-scope responsibilities will need to estimate the proportion of each employee's job related to the in-scope activities and allocate labour and other costs associated with those activities.

## Implementation Challenges

Challenges
Organizations must be sure to maintain a focus on quality of service while implementing cost-cutting initiatives. This metric should be considered in conjunction with effectiveness metrics such as 1.1 Percentage of Active Items under Contract and service-oriented metrics like 1.2 Purchasing Response Time and 4.2 Fill Rates to Customers to ensure a balanced perspective.
Organizations implementing process improvements may experience short-term spikes in this metric due to implementation costs. The metric should restabilize or even improve in the long term. Hospitals should not be deterred from making these positive changes.



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# Metric 3.1: Number of Purchase Orders in One Month

## Objective:

To create efficiencies and reduce costs by optimizing the number of purchase orders

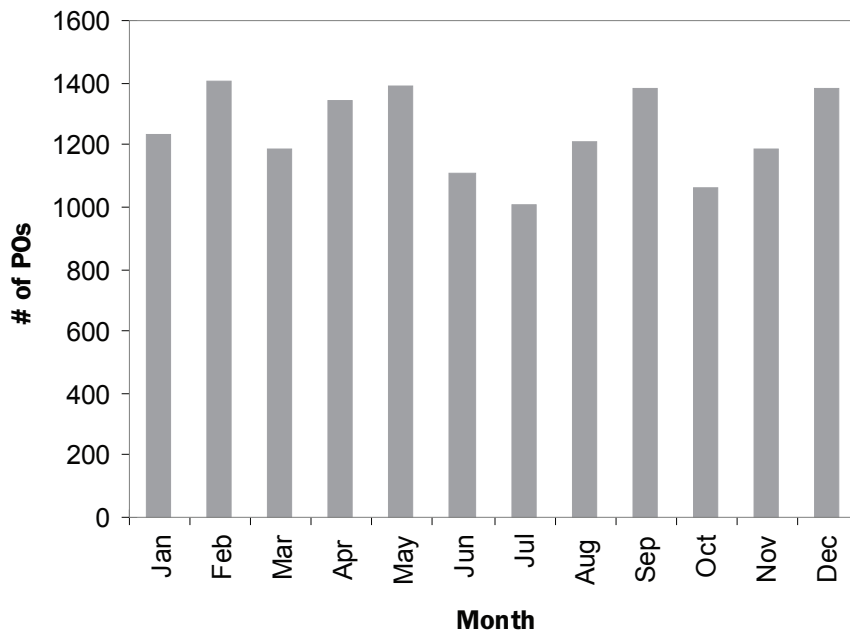
## Calculation:

$$\text{Number of purchase orders placed in the month} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}}$$

## Target:

Not applicable

Number of Purchase Orders



# of POs

# Background Details

## Rationale

This measure is required for many other metrics and provides limited value as a standalone metric.

The success of a number of types of improvement initiatives will be reflected in this measure, for instance:

- Increasing the average number of lines per purchase order (PO) will reduce the total number of POs;
- Implementing automated reordering systems may increase the number of POs if not accompanied by system PO consolidation; -
- Standardizing products and rationalizing suppliers will reduce the number of POs; and
- Adopting alternative low dollar value solutions such as purchasing cards will reduce the number of POs.

This metric can also be useful as a starting point to compare to other like organizations to identify differences in the number of POs and investigate why there may be differences and if these differences are the result of inefficiencies.

## Benefits

This is an umbrella metric. The number of purchase orders issued by the supply chain department will be directly impacted by initiatives that improve the other metrics. Since a wide range of improvements can affect this metric, a list of benefits specific to this metric is not provided as it encompasses the benefits of all related metrics. The value of this metric is as an indicator to compare to other like organizations and more broadly track improvement initiatives within an organization.

## Underlying Leading Practices

### **Identification of Product Standardization Opportunities**

Product standardization initiatives will decrease the number of POs by reducing the variety of products purchased so that greater volumes of a common product can be ordered. Standardization also focuses on consolidating the supplier base and reducing the number of single-line orders for infrequent products or infrequently used suppliers. It enables the supply chain department to convert from smaller orders from more suppliers to larger orders from fewer suppliers.

### **Purchasing Cards**

Purchasing cards and other low dollar value solutions provide alternative methods of placing orders that require fewer supply chain resources to process than POs.

### **Process Productivity Tools**

Automated PO release often increases the number of POs, but reduces the number of POs that require supply chain staff attention to process, thereby improving efficiency. This increase can be reversed with system batching and consolidating of POs, which improves efficiency for suppliers and accounts payable.

## Target Considerations

### **Establishment**

A specific target is not required for this metric, as it simply reflects the improvements of a number of other more specific metrics. Generally, organizations should aim to decrease the total number of purchase orders, although some initiatives may cause temporary increases. It is a useful measure to track changes over time within an organization.

### **Adjustment Factor**

Due to the different lengths of months and the presence of holidays, the number of working days per month varies from 19 to 23. This could have an impact of over 20 per cent difference from month, to month making comparisons difficult. To avoid the issue, the calculation includes an adjustment factor (20 divided by the number of working days in the month) to normalize each month's data to a 20-day month (four full work weeks).

## Related Metrics and Standards

### Related Metrics:

- 2.1 Average Cost to Issue a Purchase Order
- 3.4 Average Lines per Purchase Order
- 3.5 Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month
- 3.6 Percentage of Invoices with Purchase Orders
- 3.8 Percentage of Low Dollar Value Purchase Orders
- 4.3 Percentage of Items Activated in the Master File in One Month
- 4.4 Percentage of Items Inactivated in the Master File in One Month

### Related Standards:

- 1.1 Purchasing Policies and Procedures
- 3.1 Contracts Database
- 3.2 Low Dollar Value Transactions Strategy
- 4.2 Item Master Management Policy and Processes

## Implementation

### Calculation Parameters

#### Calculation

$$\text{Number of purchase orders placed in the month} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}}$$

Variable	Include	Exclude
Number of purchase orders (POs) placed in the month	Include all orders released to suppliers in a one-month period that are both for the following types of orders: <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases</li> </ul> <b>AND</b> for the following categories: <ul style="list-style-type: none"> <li>• Stock</li> <li>• Non-stock</li> <li>• Capital</li> <li>• Services</li> </ul>	Do not include orders that are either for the following types of orders: <ul style="list-style-type: none"> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>
Number of workdays in the month	Include all regularly scheduled working days in the month	Exclude: <ul style="list-style-type: none"> <li>• Weekends</li> <li>• Holidays</li> </ul>
20 days	Days in month adjustment factor	

### Data Accessibility Rating

EASY – Data are available for computation

## Possible Data Sources

### **Electronic**

Procurement Module:

The *Number of purchase orders placed in the month* would be tracked automatically by the hospital's electronic procurement system and can be retrieved in month-end standard reports. Some systems may be unable to break out data by the specified categories.

### **Manual**

If electronic reporting is unavailable, the organization could consider conducting manual counts, using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data to extrapolate for the month. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

The calculation for the *Number of workdays in the month* should be based only on standard workdays — exclude statutory holidays and other organization-wide acknowledged days off.

## Implementation Challenges

### Challenges

Organizations choosing to collect data on pharmacy and food POs should report them separately to ensure consistency across multiple organizations.

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CUSTOMERS	SUPPLIERS	PEOPLE

# Metric 3.2: Percentage of Rush Purchase Orders

### Objective:

To reduce the number of unplanned and unscheduled purchase orders by improving planning and demand management

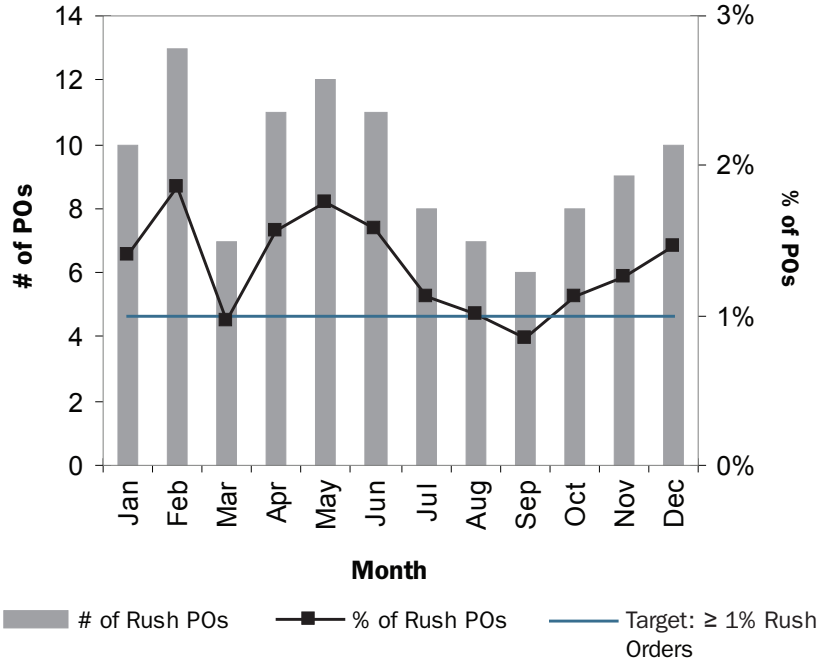
### Calculation:

$$\frac{\text{Number of purchase orders that require rush delivery}}{\text{Number of purchase orders}} \times 100\%$$

### Target:

Stock: ≤ 1% rush orders  
Non-stock: ≤ 5% rush orders

### Percentage of Rush Purchase Orders — Stock



# Background Details

## Rationale

Rush orders are necessary when an item is required in less than the minimum lead time required by suppliers. These orders require a separate process and individualized attention, resulting in both higher processing costs within the organization and higher prices and shipping costs charged by suppliers. Although a certain number of rush orders are inevitable, high proportions of rush orders may be an indication of inadequate demand planning and communication with customers. Rush orders occur for a variety of reasons, mainly:

- Usage spikes;
- Overreaction to perceived supply shortages; and
- Inaccurate par levels and reorder parameters for inventories.

Consistent tracking of the number of rush orders and the reasons they occurred, rather than relying on anecdotal information, enables the supply chain department to demonstrate its service-level performance to customers.

Rush orders may be reduced in an organization by:

- Increasing the scope of stocking areas managed by the supply chain department;
- Performing periodic reviews of regular use items and upgrading to stock as appropriate;
- Assisting areas that independently manage their point-of-use inventories to regularly review their departmental replenishment schedules and processes; and
- Optimizing inventory management processes and systems for Central Stores.

## Benefits

### **Patient Care**

Reducing the percentage of rush orders helps ensure that customers have access to the right product at the right time when treating patients.

### **Financial Stewardship**

Purchasing items through rush orders adds significant cost to the price of an item relative to the normal ordering processing. Reducing the number of avoidable rush orders reduces the amount of money unnecessarily spent due to improper inventory management planning and processes.

### **Process Efficiency**

Processing rush orders is time consuming for both hospitals and suppliers. Within the hospital, expediting rush orders creates inefficiencies for staff in issuing purchase orders and receiving and distributing items through the hospital.

### **Customer Service**

The percentage of rush purchase orders is a good indicator of whether the supply chain department is meeting customer needs. Consistent tracking of the metric and identifying and resolving causes for rush orders enables the supply chain department to demonstrate its customer service focus.

Addressing customer concerns regarding rush orders and building trusting relationship with customers will support continuous improvement efforts in other areas, including enhanced communication with users on changing requirements, demand planning and expansion of service to new areas.

### **Risk Management**

Reducing the percentage of rush orders reduces both clinical risks to the patient and financial risks to the organization.



## Underlying Leading Practices

### **Baseline Forecasting**

Comprehensive understanding of an organization's requirements for stock and non-stock items helps to reduce the need for rush orders and improves quality of service and customer satisfaction.

### **Collaborative Planning**

Collaborative planning with customers will reduce the number of unscheduled orders by ensuring rapid communication of, and response to, changes. This requires having access to the right information to forecast departmental needs.

### **Identification of Product Standardization Opportunities**

By reducing the variety of products used in the hospital, higher levels of each product can be maintained, reducing the probability of urgent supply requests.

### **Strategic Sourcing**

Optimizing the supplier base and focusing on strong supplier relationships will result in improved supplier performance and reduces the likelihood for rush orders.

### **“End to End” Supply Chain Partnerships**

Strong supply chain partnerships from customers through to suppliers will ensure good communication and sharing of information to proactively communicate new requirements and forecast changes to reduce the incidences of rush orders.

## Target Considerations

### **Future Opportunities**

This is a difficult metric to monitor. The few organizations that are currently measuring it are using different calculation methods. It is therefore recommended that a review of the proposed targets for stock and non-stock take place six to twelve months after implementing to further refine the target levels.

### **Frequency**

Reporting frequency may depend on the number of overall rush orders and the level of customer satisfaction. In the case of customer complaints or if the supply chain department detects an issue, they may consider reporting on a weekly basis until the root causes are identified and resolved.

## Related Metrics and Standards

### **Related Metrics:**

- 1.2 Purchasing Response Time
- 2.1 Average Cost to Issue a Purchase Order
- 3.4 Average Lines per Purchase Order
- 4.2 Fill Rates to Customers

### **Related Standards:**

- 2.2 Inventory Policy
- 4.1 Customer Survey Tools and Processes
- 5.1 Supplier Performance Management Process

# Implementation

## Calculation Parameters

### **Calculation**

$$\frac{\text{Number of purchase orders that require rush delivery}}{\text{Number of purchase orders}} \times 100\%$$

Variable	Include	Exclude
Number of purchase orders that require rush delivery	<p>Include all rush purchase orders during a one-month period</p> <ul style="list-style-type: none"> <li>• Defined as orders that are placed within the minimum required lead time for the types of orders and categories below</li> </ul>	<p>Do not include regular lead time orders or any of the types of orders or categories below</p>
Number of purchase orders (POs)	<p>Include all orders released to suppliers in a one-month period that are both for the following types of orders:</p> <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases</li> </ul> <p><b>AND</b> for the following categories:</p> <ul style="list-style-type: none"> <li>• Stock</li> <li>• Non-stock</li> <li>• Capital</li> <li>• Services</li> </ul>	<p>Do not include orders that are either for the following types of orders:</p> <ul style="list-style-type: none"> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <p><b>OR</b> for the following categories:</p> <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>

## Data Accessibility Rating

DIFFICULT – Data do not exist and are difficult to obtain

## Possible Data Sources

### Electronic

Procurement Module:

The *Number of purchase orders* would be tracked automatically by the hospital's electronic procurement - system and can be retrieved in month-end standard reports. Some systems may be unable to break out - data by the specified categories.

Few purchasing applications have tracking capabilities to flag rush orders. To obtain the *Number of purchase orders that require rush delivery* electronically, the organization could consider installing a customized software solution and specialty reports.

### Manual

Most hospitals will need to collect the data for this metric manually. The organization could consider using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

## Implementation Challenges

Challenges
Increasing inventory levels is one way to reduce stock-outs and the corresponding rush orders. To ensure leading inventory management practices are still being followed, this metric must to be reviewed in conjunction with metric 2.2 Inventory Turnover in One Month.
Monitoring this metric is not enough to improve performance. If an organization is not meeting the targets or sees an increasing trend month over month, a root-cause analysis must be undertaken. Analysis should be repeated in conjunction with more frequent reporting of the metric until the cause has been identified and a solution implemented.
Data may be unavailable from current information systems. Due to the importance of this metric, organizations should consider a manual process to monitor performance, such as implementing a logging system.
This metric is customer service focused, so it is important to give customers an opportunity to contribute to developing the reporting method to ensure they feel it is credible and meets their needs and expectations.

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CUSTOMERS	SUPPLIERS	PEOPLE

# Metric 3.3:

## Number of Purchase Orders Placed per Full-Time Equivalent in One Month

### Objective:

To improve the productivity of the supply chain department in creating and issuing purchase orders

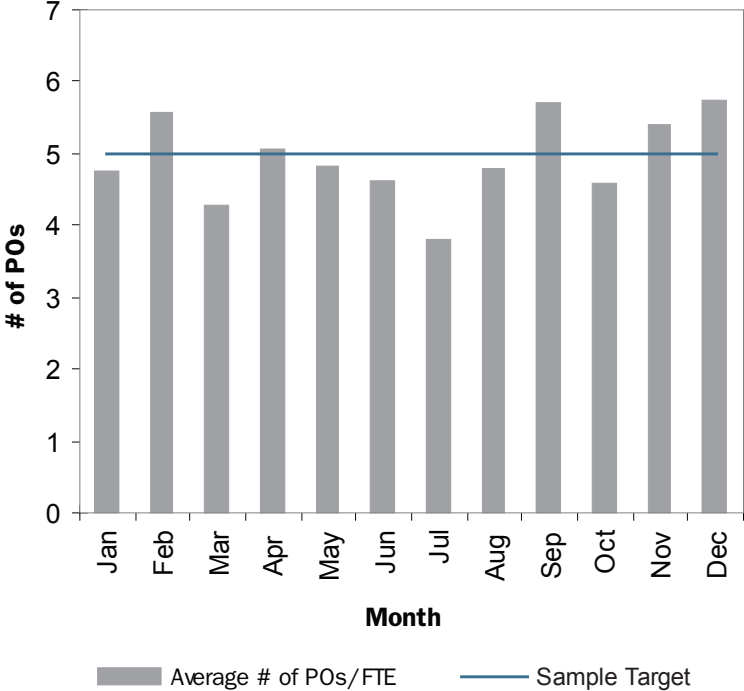
### Calculation:

$$\frac{\text{Number of purchase orders}}{\text{Number of full-time equivalent employees}} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}}$$

### Target:

To be determined after establishing a baseline

### Number of Purchase Orders per Full-Time Equivalent



# Background Details

## Rationale

This is a measure of process efficiency and employee productivity. This metric allows organizations to more effectively monitor and evaluate the success of process redesign and technology implementation initiatives affecting the issuing of purchase orders (POs). The time and resources saved would enable supply chain staff to devote more attention to customer services and strategic issues, thereby providing better value to the organization.

Through work-effort analysis, automation and process redesign, organizations can identify opportunities to enhance inefficient purchasing activities, generate increased staff productivity, and streamline the purchasing process.

## Benefits

### **Process Efficiency**

By transitioning from manual to automated processes for purchasing activities, significant efficiencies can be achieved. Electronic processes will eliminate or reduce paper handling, data entry, entry errors, and phone calls to vendors and customers.

### **Employee Productivity/Satisfaction**

Productivity can be increased by redesigning purchasing processes to streamline activities to remove duplicate and unnecessary tasks.

## Underlying Leading Practices

### **Contract Centre of Excellence**

Establishing a contract centre of excellence to develop contracts and maintain a common repository of contract information enables electronic PO generation, allowing staff to be more productive.

### **“End to End” eSupply Chain**

Electronic commerce (EDI/XML) transactions enable faster, more streamlined issuing of POs.

### **Process Productivity Tools**

On-line requisitioning, automation of POs, scheduling and workflow approvals reduce errors and the time required to generate and issue a PO.

## Target Considerations

### **Establishment**

To be determined after examination of baseline measures obtained over a period of six to twelve months.

### **Impact of Related Metrics**

It is important to note the number of lines per PO would affect target consideration, measurement and results. A higher number of lines in a PO would translate into more time required to create the order. Accordingly, this metric should be evaluated in conjunction with metric 3.4 Average Lines per Purchase Order.

### **Future Opportunities**

Eventually, new metrics should be introduced to capture information that is more specific; for example, the number of PO lines processed per productive hour.

### **Adjustment Factor**

Due to the different lengths of months and the presence of holidays, the number of working days per month varies from 19 to 23. This could have an impact of over 20 per cent difference from month to month, making comparisons difficult. To avoid the issue, the calculation includes an adjustment factor (20 divided by the number of working days in the month) to normalize each month's data to a 20-day month (four full work weeks).

## Related Metrics and Standards

### Related Metrics:

- 1.1 Percentage of Active Items under Contract
- 3.1 Number of Purchase Orders in One Month
- 3.2 Percentage of Rush Purchase Orders
- 3.4 Average Lines per Purchase Order

### Related Standards:

- 1.1 Purchasing Policies and Procedures
- 3.1 Contracts Database

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Number of purchase orders}}{\text{Number of full-time equivalent employees}} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}}$$

Variable	Include	Exclude
Number of purchase orders (POs)	<p>Include all orders released to suppliers in a one-month period that are both the following types of orders:</p> <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases</li> </ul> <p><b>AND</b> for the following categories:</p> <ul style="list-style-type: none"> <li>• Stock</li> <li>• Non-stock</li> <li>• Capital</li> <li>• Services</li> </ul>	<p>Do not include orders that are either the following types of orders:</p> <ul style="list-style-type: none"> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <p><b>OR</b> for the following categories:</p> <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>
Number of full-time equivalent employees	<p>Include the average number of full-time equivalent (FTE) employees in a one-month period (for example, four full-time staff plus holiday relief = 4.2 FTEs) that are involved in the following activities related to POs:</p> <ul style="list-style-type: none"> <li>• Requisition receipt</li> <li>• Query follow-up</li> <li>• PO generation and issue</li> <li>• Standing order releases</li> <li>• Expediting</li> <li>• Pricing errors, problem resolution</li> <li>• (include percentage of time spent by management on the above activities)</li> </ul> <p>for following types of orders:</p> <ul style="list-style-type: none"> <li>• Regular generation POs</li> <li>• Blanket order releases</li> </ul> <p><b>AND</b> for the following categories:</p> <ul style="list-style-type: none"> <li>• Stock</li> <li>• Non-stock</li> <li>• Capital equipment</li> <li>• Services</li> </ul> <p>Allocate FTE time to within 0.2 accuracy</p>	<p>Exclude FTEs involved in:</p> <ul style="list-style-type: none"> <li>• Contract development and management</li> <li>• Management of the department</li> <li>• Other activities not listed as in-scope</li> </ul> <p><b>OR</b> for the activities associated with the following types of orders:</p> <ul style="list-style-type: none"> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <p><b>OR</b> for the activities associated with the following categories:</p> <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul> <p>Allocate FTE time to within 0.2 accuracy</p>
Number of workdays in the month	<p>Include all regularly scheduled working days in the month</p>	<p>Exclude:</p> <ul style="list-style-type: none"> <li>• Weekends</li> <li>• Holidays</li> </ul>
20 days	<p>Days in month adjustment factor</p>	

## Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

### Possible Data Sources

#### Electronic

Procurement Module:

The *Number of purchase orders* would be tracked automatically by the hospital's electronic procurement system and can be retrieved in month-end standard reports. Some systems may be unable to break out data by the specified categories.

Payroll Module:

Month-end payroll reports the *Number of full-time equivalent employees* involved in issuing POs.

Organizations will need to make the following adjustments:

- Calculate and include the percentage of management hours spent on in-scope activities;
- Calculate and adjust for employees who enter or depart from in-scope roles in the supply chain department within the month; for example, count an employee who works half of the month as 0.5 FTE; and
- Calculate and deduct the percentage of employee time spent on:
  - Non-direct PO processing such as contract management (see chart above); and
  - Categories of orders not included in the calculation parameters (see chart above).

#### Manual

If electronic reporting is unavailable for the *Number of purchase orders*, the organization could consider conducting manual counts, using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data to extrapolate for the month. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

If the *Number of full-time equivalent employees* is not available in the month-end payroll report, annual budget data could be used. Please note, however, that budget data are not preferred as they tend to be less accurate than month-end payroll data.

Manual assessment and deduction of time spent by FTEs on out-of-scope activities and categories or addition of management time spent on in-scope activities may be difficult to assess. Estimate FTE time to within a range of 0.2 FTE accuracy. This may require subjective judgment, which will potentially add a degree of inaccuracy to this metric.

The calculation for the *Number of workdays in the month* should be based only on standard workdays — exclude statutory holidays and other organization-wide acknowledged days off.

### Implementation Challenges

#### Challenges

The amount of time that management and staff with multiple job responsibilities dedicate to issuing POs will have to be estimated. This introduces variability that could lead to inconsistencies across organizations. Organizations should strive for estimates that are accurate within 0.2 FTE.

Many hospitals are currently measuring some form of efficiency metric. To achieve consistent reporting across organizations, hospitals should convert to the new metric with the standardized measurement described above.

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# Metric 3.4: Average Lines per Purchase Order

### Objective:

To reduce transactional costs by consolidating purchase order lines into fewer purchase orders

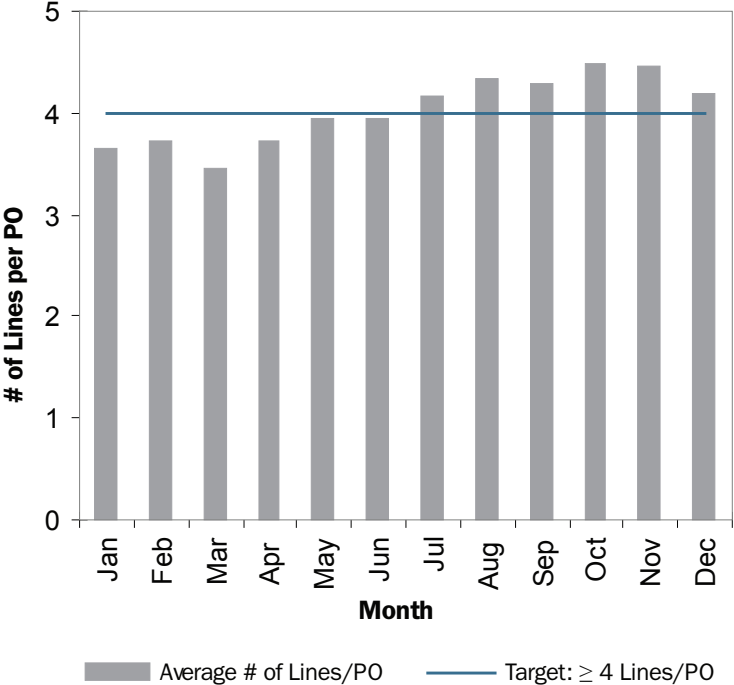
### Calculation:

$$\frac{\text{Number of purchase order lines}}{\text{Number of purchase orders}}$$

### Target:

≥ 4 lines/PO

Average Lines per Purchase Order



# Background Details

## Rationale

This metric is important to better understand how well the supply chain department is utilizing its purchase orders (POs), which is a reflection of how effective the upfront planning and supply chain systems are. Consolidation of multiple lines into fewer POs will result in savings by reducing the number of PO transactions processed through purchasing, receiving and accounts payable.

## Benefits

### **Financial Stewardship**

Savings from fewer POs will result in:

- Reduced transactional processing costs for the organization; and
- Reduced processing costs for suppliers, providing the opportunity for the organization to negotiate shared partnership agreements into supplier contracts to share supplier savings.

### **Process Efficiency**

Consolidation of purchase order lines into fewer POs will result in efficiencies from reduced workload for:

- Supply chain staff to issue POs;
- Suppliers to process POs, deliver items and issue invoices;
- Receiving staff handling packing slips and filling in header information; and
- Accounts payable to process fewer invoices.

## Underlying Leading Practices

### **Identification of Product Standardization Opportunities**

Standardizing the selection of products and suppliers reduces the number of single-line orders for infrequent products or infrequently used suppliers. This allows the supply chain department to convert from smaller orders from more suppliers to larger orders from fewer suppliers.

### **Contract Centre of Excellence**

A single repository of contracts and contract knowledge enables the supply chain department to procure multiple products and services from a smaller number of strategic suppliers, resulting in increased number of lines per PO.

### **Automated Procurement Tools**

For electronic requisitions for supplies and services, new technologies or enhancements to existing information systems are necessary to facilitate consolidating orders.

### **Transportation Planning & Delivery Frequency**

To optimize the number of PO lines, organizations should consolidate POs to match scheduled delivery times and minimum lead times for ordering products (not including rush orders) for each vendor.

### **Logistics Process Automation**

Electronic receiving capability reduces the burden on receiving staff and error rates associated with manually receiving POs with many lines. Because electronic receiving eliminates manual line-by-line matching of packing slips to POs, receiving staff can process POs with 10 or more lines with few errors.



## Target Considerations

### Establishment

The healthcare sector is gradually adopting automated technologies, such as bar coding, to significantly improve receiving efficiencies. While manual processes continue to dominate, the minimum target for this metric is an average of four lines per PO. Once organizations transition to more automated technologies, the target for this metric should be significantly increased.

## Related Metrics and Standards

### Related Metrics:

- 2.1 Average Cost to Issue a Purchase Order
- 3.1 Number of Purchase Orders in One Month
- 3.2 Percentage of Rush Purchase Orders
- 3.3 Number of Purchase Orders Placed per Full-Time Equivalent in One Month -
- 3.5 Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month

### Related Standards:

- 1.1 Purchasing Policies and Procedures
- 3.1 Contracts Database

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Number of purchase order lines}}{\text{Number of purchase orders}}$$

Variable	Include	Exclude
Number of purchase order lines	Include the number of lines on all of the POs as indicated below	Do not include lines from excluded orders as indicated below
Number of purchase orders (POs)	Include all orders released to suppliers in a one-month period that are both for the following types of orders: <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases</li> </ul> <b>AND</b> for the following categories: <ul style="list-style-type: none"> <li>• Stock</li> <li>• Non-stock</li> <li>• Capital</li> <li>• Services</li> </ul>	Do not include orders that are either for the following types of orders: <ul style="list-style-type: none"> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>

### Data Accessibility Rating

EASY – Data are available for computation

## Possible Data Sources

### Electronic

Procurement Module:

The *Number of purchase orders* and the *Number of purchase order lines* are typically tracked automatically by an electronic procurement system and can be retrieved in month-end standard reports. Many systems track the metric for average lines per PO as part of standard reporting. However, these systems might not break out the data by the specified categories.

### Manual

If electronic reporting is unavailable, the organization could consider conducting manual counts, selecting a representative sample, or using a logging method throughout the month. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

## Implementation Challenges

Challenges
Some organizations have information systems that do not allow consolidation of stock and non-stock on the same PO. When reporting against their peers, these organizations should document their system's limitations.
Some organizations may have difficulty excluding POs for food and pharmacy. These organizations should document the resulting inconsistencies.
Receivers using manual receiving processes generally begin having difficulty managing POs with 10 or more lines. Electronic receiving capability will allow organizations to increase receiving capacity while also enhancing accuracy.
Scheduled ordering from suppliers must be adequately managed to maintain service levels to customers and avoid an increase in number of rush orders.

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# Metric 3.5: Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month

## Objective:

To consolidate and reduce the number of purchase orders issued to the top 10 most active suppliers

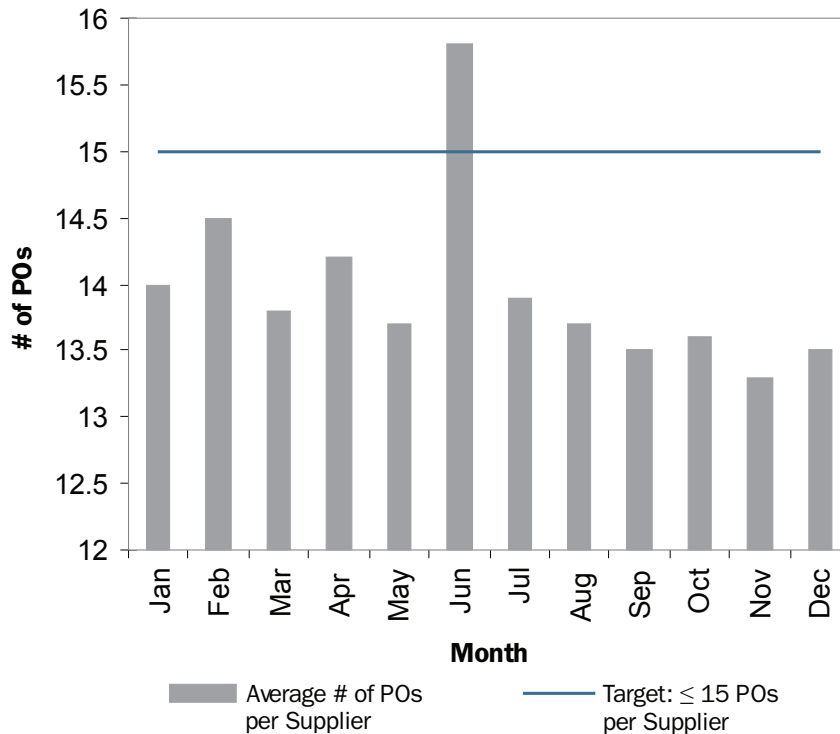
## Calculation:

$$\frac{\sum_{x = \text{Top 10 suppliers}} \text{Number of purchase orders issued to "supplier x"}}{10} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}}$$

## Target:

≤ 15 POs/month

## Average Number of Purchase Orders to Top 10 Suppliers



# Background Details

## Rationale

Reducing the number of individual purchase orders (POs) issued to the most active suppliers represents a significant opportunity for savings. By scheduling and consolidating POs to the same supplier, the total number of transactions can be reduced. As a result, ordering and invoicing costs are reduced for both the organization and suppliers.

This metric may also be useful as an indicator for the number of rush orders processed outside of regular shipments. A high rate of POs per supplier may suggest a high incidence of rush orders issued to that supplier.

## Benefits

### **Financial Stewardship**

By consolidating purchase transactions into fewer POs for the top 10 suppliers, savings can be achieved through:

- Reduced transactional processing costs for the organization; and
- Reduced processing costs for suppliers, providing the opportunity for the organization to share the supplier savings by negotiating shared partnership agreements into supplier contracts.

### **Process Efficiency**

Fewer POs result in efficiencies from reduced workload for:

- Supply chain staff to issue POs;
- Suppliers in areas such as processing, delivery and invoicing;
- Receiving staff to process packing slips and fill in header information; and
- Accounts payable staff to process the smaller number of invoices received.

### **Supplier Relationships**

Reducing the number of POs sent to an organization's top 10 suppliers not only has a positive effect on the supplier's finances and efficiency, but also contributes to a strong supplier relationship. This demonstrates the organization's focus on supply chain improvement and respect for their suppliers. It encourages communication and collaboration on further enhancements to the supply chain processes.

## Underlying Leading Practices

### **Supplier Relationship Management**

Collaboration with suppliers for mutual process improvements contributes to supplier relationship management. This sets the basis for future process improvements, technology incorporation, better scheduling of orders and deliveries, and easier conflict resolution. Strong relationships with key suppliers can have a profound impact on cost reductions, other savings and risk management.

### **Transportation Planning & Delivery Frequency**

Organizations can consolidate their POs by scheduling specific times for ordering products (not including rush orders) from specific vendors. Scheduling of supplier order days and delivery days reduces order processing and transportation costs.

### **Logistics Process Automation**

Implementation of electronic receiving capability permits a greater number of purchase order lines per PO to be processed. POs with many lines can be difficult for receiving to manage using manual

matching of packing slip items to PO line items. Electronic receiving capability facilitates the receiving process, allowing hospitals to increase the number of purchase order lines per PO with minimal effect on the logistics process.

**Process Productivity Tools**

On-line requisitioning, automated requisition consolidation, electronic POs and automated scheduling processes can be implemented to help reduce the overall number of POs and labour resource requirements. Orders of supplies and services are typically communicated to supply chain staff through a mix of manual and electronic requisitions. For manual orders, consolidation targets can be reached readily through changes in practice. For electronic requisitions, implementing these tools or enhancements to existing information systems will assist in achieving these targets.

**Target Considerations**

**Establishment**

The Working Group has limited experience with measurements that focus on a designated group of suppliers. Leading practice suggests that the target should be three to five POs per week for top suppliers.

**Impact of Other Metrics**

Improvements to the number of POs issued to top 10 suppliers should support metric 3.4 Average Lines per Purchase Order. Benefits will also flow to accounts payable department and suppliers.

**Adjustment Factor**

Due to the different lengths of months and the presence of holidays, the number of working days per month varies from 19 to 23. This could have an impact of over 20 per cent difference from month to month, making comparisons difficult. To avoid the issue, the calculation includes an adjustment factor (20 divided by the number of working days in the month) to normalize each month's data to a 20-day month (four full work weeks).

**Related Metrics and Standards**

**Related Metrics:**

- 3.1 Number of Purchase Orders in One Month
- 3.2 Percentage of Rush Purchase Orders
- 3.4 Average Lines per Purchase Order
- 3.8 Percentage of Low Dollar Value Purchase Orders

**Related Standards:**

- 1.1 Purchasing Policies and Procedures
- 2.2 Inventory Policy
- 5.1 Supplier Performance Management Process

**Implementation**

**Calculation Parameters**

**Calculation**

$$\frac{\sum_{x = \text{Top 10 suppliers}} \text{Number of purchase orders - issued to "supplier x"}}{10} \times \frac{20 \text{ days -}}{\text{Number of workdays in the month}}$$

Variable	Include	Exclude
Top 10 suppliers	Include the top 10 suppliers ranked by activity (i.e., highest number of POs issued in a month) for stock and non-stock items	Do not include all other suppliers
Number of purchase orders (POs) issued to “supplier x”	Include all POs issued in a month for each of the suppliers above that are both for the following types of orders: <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases</li> </ul> <b>AND</b> for the following categories: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> </ul>	Do not include POs issued to all other suppliers <b>OR</b> the following types of orders: <ul style="list-style-type: none"> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>• Capital</li> <li>• Services</li> <li>• Pharmacy</li> <li>• Food</li> </ul>
Number of workdays in the month	Include all regularly scheduled working days in the month	Exclude: <ul style="list-style-type: none"> <li>• Weekends</li> <li>• Holidays</li> </ul>
20 days	Days in month adjustment factor	

## Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

## Possible Data Sources

### Electronic

Procurement Module:

For electronic reporting of *Number of purchase orders issued to “supplier x”*, the organization’s information systems must be able to report on the number of POs issued each week to individual suppliers. The information system must be able to sort these data by activity to determine the *Top 10 suppliers*. For most of the information systems currently in use, this would require custom reporting.

### Manual

If organizations were unable to pull this information from their information systems, they could consider asking suppliers to provide the number of POs issued. However, caution is advised with this approach as suppliers would likely use different reporting methods, which would lead to inconsistencies in the data.

The organization could also consider conducting manual counts, using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data to extrapolate for the month. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

The calculation for the *Number of workdays in the month* should be based only on standard workdays — exclude statutory holidays and other organization-wide acknowledged days off.

## Implementation Challenges

Challenges
Severely reducing the number of POs per supplier may result in reduced and unacceptable service levels to customers. By monitoring the incidences of and reasons for rush orders and stock-outs, the organization can set appropriate targets for this metric.
An organization’s information system and technological capacity will affect its ability to meet the target. Each hospital should examine and attempt to minimize the impact of the following issues: <ul style="list-style-type: none"> <li>• ability of the organization’s information system to consolidate requisitions;</li> <li>• ability of the information system to manage combining stock and non-stock purchase lines on a single PO; and</li> <li>• ability to receive deliveries with many PO lines on a single packing slip.</li> </ul>

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# Metric 3.6: Percentage of Invoices with Purchase Orders

## Objective:

To reduce the number of invoices processed without a purchase order to properly control and manage organizational spending centrally through the supply chain department

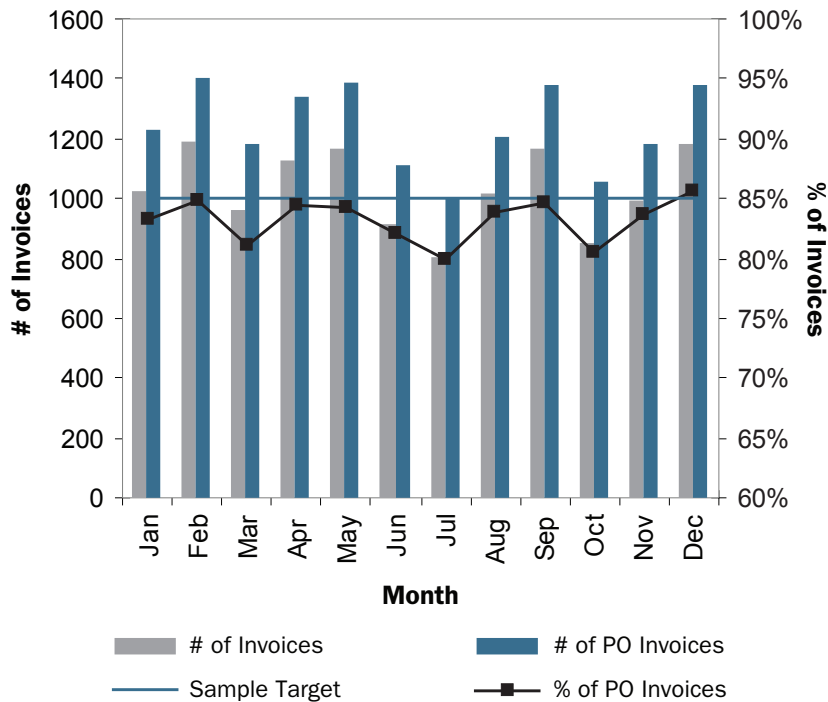
## Calculation:

$$\frac{\text{Number of invoices with purchase orders}}{\text{Total number of invoices}} \times 100\%$$

## Target:

To be determined after establishing a baseline

Percentage of invoices with Purchase Orders



# Background Details

## Rationale

Purchasing activity not controlled by the supply chain department is often purchased inefficiently, carrying a higher cost and degree of risk to the organization. This excludes low dollar value purchases procured through established alternate methods. Potential issues and problems that may arise from departments managing their own spending without sufficient supply chain expertise include:

- Rogue buying, or buying off contract, which impedes contract compliance and undermines product standardization efforts — in turn increasing costs to the organization;
- Compromised patient safety — for instance, if orders are placed without providing sufficient information for device licences, recalls or Material Safety Data Sheets (MSDS) tracking;
- Inefficient processes and high error rates, which has downstream implications for accounts payable and receiving, which are responsible for verifying the accuracy of documented receipts and invoices without a purchase order (PO) to match against; and
- Unprofessional or unethical business practices — for instance, supplier kickbacks — if the department is unaware of and not compliant with the purchasing policies and procedures and the supply chain code of ethics.

Expanding the scope of goods and services issued centrally by the supply chain department and covered by a PO will provide greater opportunities for savings and process efficiencies throughout the organization.

## Benefits

### **Financial Stewardship**

Greater control by the supply chain department over the purchasing of goods and services will increase purchasing power and standardization.

### **Process Efficiency**

Accounts payable staff will spend less time obtaining approvals and verifying invoice information from individual departments for invoices that do not have a purchase order. This is a far more time-consuming activity than simply conducting a three-way match with the PO and receiving slip.

Similar efficiencies can be expected in the receiving department, since delivery information on a non-PO packing slip can sometimes be inaccurate or missing departmental information typically found on the receiving document for an item purchased with a PO.

### **Risk Management**

The risk to the hospital will be reduced by centralizing and increasing control of spending under trained supply chain professionals. The supply chain department should have processes in place to manage and track device licences, recalls and MSDS, which all directly affect patient and employee safety.

## Underlying Leading Practices

### **Collaborative Planning**

The supply chain department must work collaboratively with their customers to understand their requirements and transition more goods and services under the supply chain department's control, thus reducing non-PO spending.

### **Strategic Sourcing**

By rationalizing the supplier base through purchasing volumes and spend analysis, organizations can focus on selecting strategic suppliers and maximizing relationships. For this to be effective, purchases must be made by issuing purchase orders and be controlled centrally through the supply chain department.



### **Tight Supply Chain/Accounts Payable Organizational Relationship**

Working collaboratively, the supply chain and accounts payable departments can implement processes to reduce the number of invoices received without a PO. Accounts payable can identify departments that are not compliant based on the non-PO invoices received, and the supply chain department can work with these areas to assume responsibility for purchases.

### **“End to End” eSupply Chain**

Automation of procurement processes increases the ease of use for customers, which will support compliance with the standard PO process and reduce labour costs associated with purchasing, receiving, and accounts payable.

## **Target Considerations**

### **Establishment**

No members of the Working Group are currently tracking this metric in their organization. Consequently, setting an appropriate target is not possible at this time. The Working Group recommends that the metric be reviewed after six to twelve months once a baseline has been established to determine an appropriate target.

## **Related Metrics and Standards**

### **Related Metrics:**

- 3.1 Number of Purchase Orders in One Month
- 4.3 Percentage of Items Activated in the Master File in One Month
- 5.1 Percentage of Invoices Paid within Due Date

### **Related Standards:**

- 1.1 Purchasing Policies and Procedures
- 1.2 Audit Standards and Processes
- 2.1 Segregated Approval and Authority Schedules
- 3.2 Low Dollar Value Transactions Strategy

# **Implementation**

## **Calculation Parameters**

### **Calculation**

$$\frac{\text{Number of invoices with purchase orders}}{\text{Total number of invoices}} \times 100\%$$

<b>Variable</b>	<b>Include</b>	<b>Exclude</b>
Number of invoices with purchase orders (POs)	Include total number of invoices entered into the accounts payable system in a one-month period that have a corresponding PO <b>AND</b> for the types of orders and categories below	Do not include invoices that do not have a PO <b>OR</b> the types of orders or categories below
Total number of invoices	Include total number of invoices entered into the accounts payable system in a one-month period (regardless of whether they have a corresponding PO or not) that are both for the following types of orders: <ul style="list-style-type: none"><li>• POs</li><li>• Blanket order releases</li></ul> <b>AND</b> for the following categories: <ul style="list-style-type: none"><li>• Stock items</li><li>• Non-stock items</li><li>• Capital</li><li>• Services</li></ul>	Do not include invoices that are either for the following types of orders: <ul style="list-style-type: none"><li>• Standing order releases</li><li>• Purchasing card transactions</li></ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"><li>• Pharmacy</li><li>• Food</li><li>• Travel</li><li>• Expenses</li><li>• Benefits</li><li>• Research specialty consignment (i.e., bio-bar)</li><li>• Utilities</li></ul>

## Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

### Possible Data Sources

#### **Electronic**

Accounts Payable Module:

Most financial reporting systems should be able to provide monthly reports on the *Number of invoices with purchase orders* and *Total number of invoices received*. Custom reporting could be required.

#### **Manual**

If electronic reporting is unavailable, the organization could consider conducting manual counts, selecting a representative sample, or using a logging method throughout the month. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

### Implementation Challenges

Challenges
<p>If supply chain staff are unable to absorb the extra workload from independently purchased non-purchase order spend, the costs and benefits of the following options should be considered:</p> <ul style="list-style-type: none"><li>• Reviewing the supply chain department's workload to assess spare capacity;</li><li>• Prioritizing categories of spend and departments' ordering to be absorbed;</li><li>• Introducing new technology to automate processes;</li><li>• Implementing time-savings initiatives such as purchasing cards for low dollar value items; and</li><li>• Requesting additional staff to help manage workload.</li></ul>
<p>Organizations should review spending by all departments over the previous year to find out how much non-PO spending took place. This information will help the organization to prioritize which departments' ordering should be absorbed into the supply chain department.</p>
<p>Organizations might be hesitant to increase supply chain resources to centrally manage all purchasing activity. The cost of these additional resources should be compared to the savings achieved from process efficiencies, improved pricing and the reallocation of clinician time to patient care.</p>

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CUSTOMERS	SUPPLIERS	PEOPLE

# Metric 3.7: Percentage of Invoice Matches

### Objective:

To improve accuracy in the information contained in purchase orders, receiving slips and supplier invoices

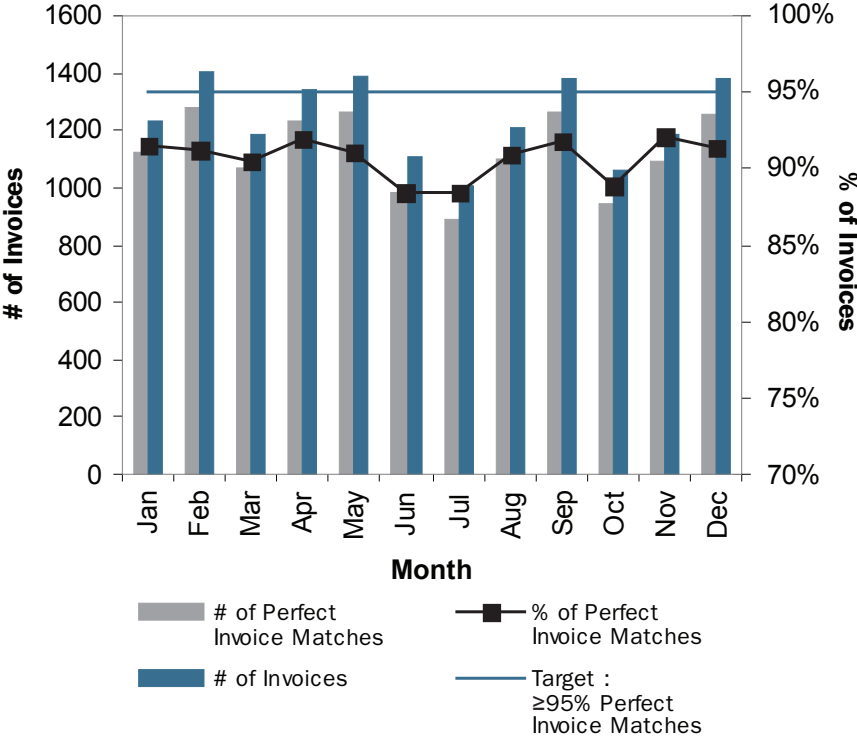
### Calculation:

$$\frac{\text{Number of perfect invoice matches}}{\text{Total number of invoices}} \times 100\%$$

### Target:

≥ 95% perfect invoice matches

Percentage of Perfect Invoice Matches



# Background Details

## Rationale

Three-way matching is the process of reconciling each invoice with its related purchase order and receiving receipt. Any discrepancies between the three mean that an error has occurred and it must be investigated and corrected. Fixing even a single mistake can be time-consuming and costly. To the extent that organizations are able to minimize or eliminate errors, they can redirect resources to more strategic activities.

There are numerous causes of invoice matching failure, including:

- Data-entry errors by:
  - - Supply chain staff in creating the purchase order;
  - - Suppliers in creating the shipping receipt or invoice;
  - - Receiving staff in entering receiving information; or
  - - Accounts payable staff in entering the invoice into the system;
- Pick/ship errors by supplier staff;
- Count errors by receiving staff;
- Expired, incorrect or incomplete pricing information in either the item master or in the supplier's system; and
- Incomplete/incorrect documenting of miscellaneous costs (e.g., transportation charges, tax coding) on purchase orders.

## Benefits

### **Financial Stewardship**

Increasing the number of perfect invoice matches will generate savings by reducing the number of items purchased at incorrect prices. Perfect invoice matching also supports attaining early payment discounts from suppliers.

### **Process Efficiency**

Increasing the number of perfect invoice matches will create efficiencies by reducing time spent by supply chain and accounts payable staff resolving errors.

## Underlying Leading Practices

### **Contract Centre of Excellence**

When contracts are developed with centralized contracting expertise, a process can be put in place to ensure accurate pricing and miscellaneous charges are automatically included in POs.

### **Logistics Process Automation**

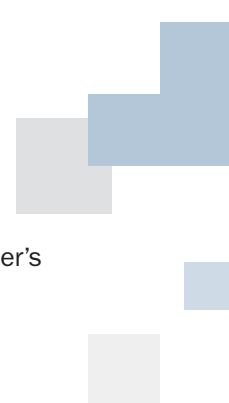
Automated logging and processing of deliveries improves the accuracy of receipt information.

### **Tight Supply Chain/Accounts Payable Organizational Relationship**

Strong relationships and regular communication between departments help to resolve any issues quickly and identify root causes to prevent repeated issues.

### **“End to End” eSupply Chain**

Implementing electronic and automated procurement processes for requisitioning, issuing purchase orders and processing invoices reduces potential data-entry errors. Electronic commerce (EDI/XML) transactions enable accurate transfer of information between organizations and suppliers, eliminating the need for re-keying, which is another potential source of data-entry errors.



## Target Considerations

### **Effect of Tolerance**

Accounts payable typically establishes match variance tolerance levels to reduce the effort spent resolving small-dollar-value errors. The target will change depending on the tolerance levels set by the organization. For the metric to be implemented and used effectively, standard tolerance levels must be set appropriately and closely monitored.

Typically, a percent discrepancy and a dollar value discrepancy are assigned for tolerances. Tolerances are sometimes set by category and/or purchase type. For instance, for non-stock one-time orders, the tolerance could be \$25 or five per cent, but for a contract stock item, the tolerance could be zero.

Each organization should set tolerances that balance risk versus cost to manage.

- If tolerance levels are too generous, the percentage of perfect-match invoices will be improved, but the organization will miss out on savings.
- Conversely, if tolerance levels are too stringent, the organization will avoid paying incorrect invoice, but the time and cost spent resolving issues could outweigh the savings.

The Working Group recommends that the metric be reviewed after six to twelve months once a baseline has been established to re-evaluate the target and make recommendations for tolerance levels to enable comparability between organizations.

### **Future Opportunities**

It is important that existing tolerance levels are reviewed and updated periodically.

### **Impact of Other Metrics**

The higher the average number of purchase order lines per purchase order, the greater the difficulty in achieving a perfect match. Initiatives to improve metric 3.4 Average Lines per Purchase Order may have a detrimental effect on this metric. Targets need to be considered for both metrics in conjunction.

## Related Metrics and Standards

### **Related Metrics:**

- 1.1 Percentage of Active Items under Contract
- 3.4 Average Lines per Purchase Order
- 5.1 Percentage of Invoices Paid within Due Date

### **Related Standards:**

- 1.1 Purchasing Policies and Procedures
- 2.1 Segregated Approval and Authority Schedules
- 3.1 Contracts Database
- 4.2 Item Master Management Policy and Processes

## Implementation

### Calculation Parameters

#### **Calculation**

$$\frac{\text{Number of perfect invoice matches}}{\text{Total number of invoices}} \times 100\%$$

Variable	Include	Exclude
Number of perfect invoice matches	Include for a one-month period all purchase order invoices where the three-way matching agrees within the tolerance levels as set by the organization (see Target Considerations for guidance) <b>AND</b> for the types of orders and categories below	Do not include invoices with pricing, quantity, miscellaneous charges and tax discrepancies that are outside the tolerance levels <b>OR</b> the types of orders and categories below
Total number of invoices	Include all purchase order invoices that are both for the following types of orders: <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases</li> </ul> <b>AND</b> for the following categories: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> <li>• Capital</li> <li>• Services</li> </ul>	Do not include invoices that are either for the following types of orders: <ul style="list-style-type: none"> <li>• Non-purchase order invoices</li> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>

## Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

## Possible Data Sources

### Electronic

Accounts Payable Module:

Most financial reporting systems will provide the *Total number of invoices* received by an organization. -

Some financial reporting systems will be able to track data on the number of three-way-match exceptions, - which can be subtracted from the *Total number of invoices* to determine the *Number of perfect invoice matches*. -

### Manual

If electronic reporting is unavailable, the organization could consider conducting manual counts, selecting a representative sample, or using a logging method throughout the month. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

## Implementation Challenges

Challenges
Organizations may be tempted to increase the tolerance levels for invoice match exceptions to meet targets. This would introduce unnecessary risk to the organization. To support consistency across the province, standard tolerance levels may be recommended as part of this metric at a later date.
Accounts payable staff may view invoice mismatches as a failure of the supply chain department. Accounts payable department should be encouraged to participate in the improvement initiative. Senior management commitment and support may be required for implementation across existing departmental boundaries.
Organizations that issue a large number of zero-cost purchase orders will have difficulty meeting the targets; they should consider reviewing their reasons for issuing these types of orders and consider adopting alternate methods.
To achieve good results on this metric, it is critical that the item master is cleansed and then properly maintained to keep all product, supplier and contract information as well as tax-code data up to date.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
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# Metric 3.8: Percentage of Low Dollar Value Purchase Orders

### Objective:

To increase the use of alternative, easy-to-use purchasing methods for low dollar value purchases

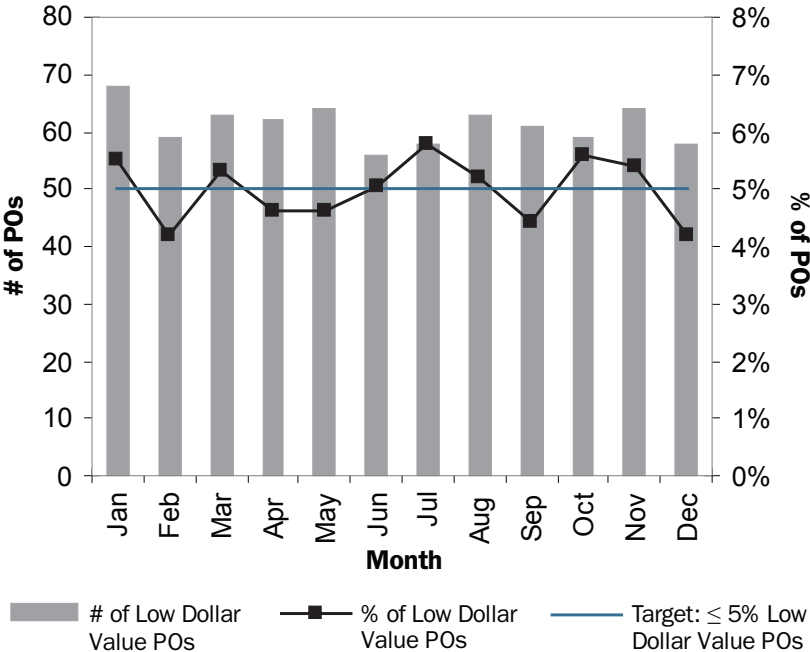
### Calculation:

$$\frac{\text{Number of low dollar value purchase orders}}{\text{Number of purchase orders}} \times 100\%$$

### Target:

≤ 5% low dollar value purchase orders

### Percentage of Low Dollar Value Purchase Orders



# Background Details

## Rationale

Using alternative methods for placing low dollar value orders will reduce the number of low dollar value purchase orders (POs) being issued by the supply chain department. Low dollar value orders are generally low risk and require less control by the supply chain department. The supply chain department should retain central control of the process for low dollar value orders, but ordering can be decentralized and be made directly from customers. This improves efficiencies and reduces the workload for supply chain and accounts payable staff.

## Benefits

### **Financial Stewardship**

Reducing the number of POs, by using alternative methods for low dollar value orders, results in savings to the organization by:

- Establishing system contracts for low dollar item with more favourable pricing;
- Reducing PO transactional processing costs; and
- Reducing costs for suppliers to process POs, providing the opportunity for the organization to share the supplier savings by including mechanisms for shared partnership agreements with suppliers.

### **Process Efficiency**

Processing fewer POs will reduce the workload for:

- Supply chain staff to issue POs;
- Suppliers to process POs, deliver items and issue invoices;
- Receiving staff handling packing slips and filling in header information; and
- Accounts payable to process fewer invoices.

### **Supplier Relationships**

A focus on strong supplier relationships and encouraged communication and collaboration with suppliers will facilitate establishing alternative methods that are favourable for the organization and the supplier for placing low dollar value orders.

## Underlying Leading Practices

### **Definition of Acquisition Strategy**

Determining appropriate purchasing methods for low dollar, low risk items will result in freed-up capacity in the supply chain and accounts payable departments to focus on more strategic activities related to higher-risk purchases.

### **Strategic Sourcing**

Reducing the number of suppliers and standardizing products encourages consolidation of orders to fewer suppliers and reduces the number of single-line, low dollar value orders.

### **Contract Centre of Excellence**

Negotiating organization-wide contracts, or system contracts, for low dollar value items, such as paper and office supplies, is a useful tool for reducing low dollar value POs. Contract terms should provide favourable pricing and allow customers to place orders directly with the supplier. The supplier sends a summary invoice periodically for all purchases made in that period by the organization. This significantly reduces both the number of POs issued, by allowing direct ordering, and the number of invoices received and processed by consolidating orders onto a summary invoice.



### **Purchasing Cards**

Distributing purchasing cards for departments that have frequent low dollar value, one-off supply needs will dramatically reduce the number of low dollar value POs that the organization is issuing and the number of corresponding invoices it is processing.

### **Strategic ISCM Leadership**

Policies that need to be executed across the organization, such as the implementation of systems contracts and purchasing cards, require senior management support to be universally adopted and achieve their intended outcomes.

## **Target Considerations**

### **Establishment**

The target of <5 per cent for this metric assumes that organizations implement a number of suitable solutions, such as purchasing cards and systems contracts, to reduce the number of low dollar value POs.

### **Impact of Other Metrics**

Initiatives to reduce the number of low dollar value transactions will lower the overall number of POs. This will have a positive effect on a number of other metrics, including 3.1 Number of Purchase Orders in One Month, 3.4 Average Lines per Purchase Order and possibly 3.5 Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month.

## **Related Metrics and Standards**

### **Related Metrics:**

- 2.1 Average Cost to Issue a Purchase Order
- 2.3 Operating Costs as a Percentage of Expenditures
- 3.1 Number of Purchase Orders in One Month
- 3.3 Number of Purchase Orders Placed per Full Time Equivalent in One Month
- 3.4 Average Lines per Purchase Order
- 3.5 Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month
- 4.4 Percentage of Items Inactivated in the Master File in One Month

### **Related Standards:**

- 1.1 Purchasing Policies and Procedures
- 1.2 Audit Standards and Processes
- 3.2 Low Dollar Value Transactions Strategy

# **Implementation**

## **Calculation Parameters**

### **Calculation**

$$\frac{\text{Number of low dollar value purchase orders}}{\text{Number of purchase orders}} \times 100\%$$

Variable	Include	Exclude
Number of low dollar value purchase orders	Include all POs that are both for low dollar value: total PO amount is less than \$100 before tax and surcharges <b>AND</b> for the types of orders and categories below	Do not include POs that are either for greater than \$100 before tax and surcharges <b>OR</b> the types of orders and categories below
Number of purchase orders	Include all orders released to suppliers in a one-month period that are both for the following types of orders: <ul style="list-style-type: none"> <li>POs</li> <li>Blanket order releases</li> </ul> <b>AND</b> for the following categories: <ul style="list-style-type: none"> <li>Stock items</li> <li>Non-stock items</li> <li>Capital</li> <li>Services</li> </ul>	Do not include orders that are either for the following types of orders: <ul style="list-style-type: none"> <li>Standing order releases</li> <li>Purchasing card transactions</li> </ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>Pharmacy</li> <li>Food</li> </ul>

## Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

## Possible Data Sources

### Procurement Module:

The information systems in most hospitals do not offer standard reporting for the *Number of low dollar value purchase orders*. Custom reporting may be required. E-commerce providers may be able to provide data on the value of POs sent electronically.

The *Number of purchase orders* would be tracked automatically by the healthcare organization's electronic procurement system and can be retrieved in month-end standard reports. Some systems may be unable to break out data by the specified categories.

### Manual

If electronic reporting is unavailable, the organization could consider conducting manual counts, selecting a representative sample, or using a logging method throughout the month. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

## Implementation Challenges

Challenges
Alternative low dollar value solutions could be used inappropriately if not adequately monitored. It is critical that appropriate controls are established and user training and periodic audits are conducted to ensure adherence to policies and procedures. Although fewer resources will be required to issue POs, resources must be assigned to manage the alternative solutions and ensure that these methods are not misused. See standard 3.2 Low Dollar Value Transactions Strategy for recommendations.
To ensure that the low dollar value measures adopted by the organization have appropriate controls in place, ensure the financial department auditors are closely involved in initiatives to provide guidance.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

# Metric 4.1: Stock-outs at the Cart Level

## Objective:

To optimize stock levels at point-of-use storage locations across the healthcare organization to safeguard patient safety and improve customer service

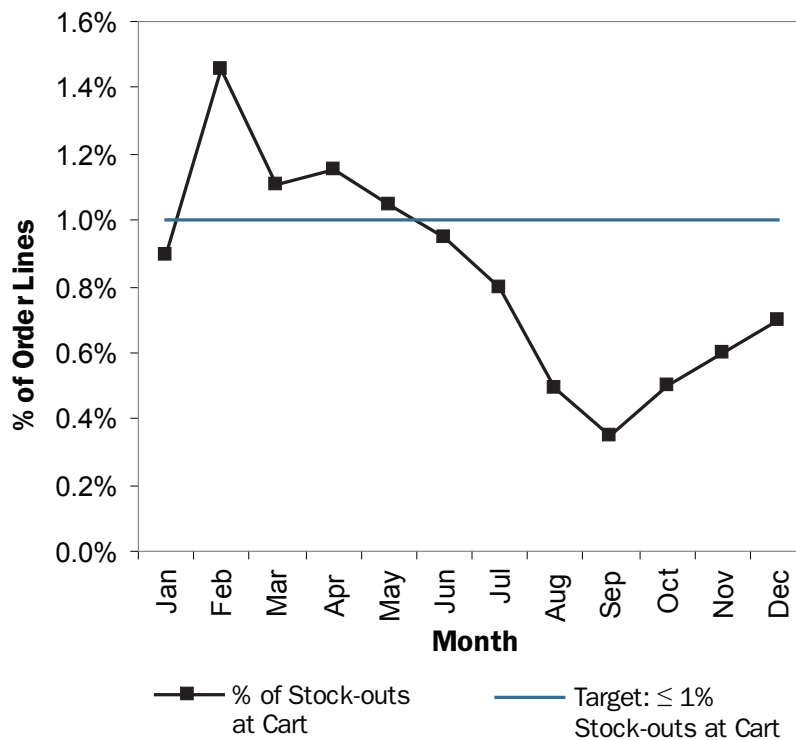
## Calculation:

$$\frac{\text{Number of lines ordered where there is a stock-out at point-of-use location}}{\text{Total number of lines ordered at point-of-use locations}} \times 100\%$$

## Target:

≤ 1% stock-out rate

### Stock-outs at the Cart Level



# Background Details

## Rationale

Stock-outs represent the highest level of service delivery failure. If supplies are not available when they are needed, patient care and safety can be jeopardized. Stock-outs occur for a variety of reasons, including:

- Supplier backorders and delivery issues;
- Supply usage spikes;
- Uneven demand from customer departments; and
- Inaccurate reorder parameters.

The following steps will help maintain an uninterrupted supply of inventory:

- Regularly review par levels and replenishment schedules;
- Monitor the number of incidents of stock-outs at the customer level;
- Conduct root-cause analyses to determine reasons for service deliveries failures; and
- Implement recommended improvements.

Consistent tracking of the number of, and reasons for, stock-outs rather than relying on anecdotes enables the supply chain department to demonstrate its service-level performance to customers.

## Benefits

### **Patient Care**

Meeting the stock-out rate target ensures that the right products are available at the right places at the time they are required for providing the best possible patient care.

### **Process Efficiency**

Through better management of cart quotas, improved planning processes and product standardization initiatives, the number of purchase order (PO) transactions will be reduced, as well as the number of rush POs.

### **Customer Service**

Monitoring stock-out rates at the customer level supports continuous improvement efforts in areas such as enhanced communication with customers on changing requirements and demand planning as well as periodic reviews to determine optimal cart quotas. If monitoring reveals increasing rates of stock-outs, a root-cause analysis should be conducted immediately and reporting frequency should be increased until the problem is solved.

## Underlying Leading Practices

### **Demand Management**

A comprehensive understanding of the organization's demand requirements will result in improved service at the cart level and increased customer satisfaction.

### **Identification of Product Standardization Opportunities**

Reducing the variety of supplies frees up space to store optimum levels of standardized supplies at the cart level as well as freeing up shelving space that that can be reassigned for other purposes.

### **Supplier Relationship Management**

Developing strong relationships with strategic suppliers supports more reliable performance and fewer backorders, enabling the supply chain department to meet their customers' supply needs more effectively.

### **Bar Coding/Scanning Technology**

The use of an electronic data collection system enables the supply chain department to more efficiently and accurately monitor product usage at the cart level.



## Target Considerations

### Establishment

This metric is difficult to monitor. The members of the Working Group that do measure it use a number of different methods. Consequently, the group recommends that a review be conducted in six to twelve months to further refine the target levels and confirm the definition and method of data collection.

### Reporting Frequency

Reporting frequency could be scheduled based on the level of customer satisfaction. If customer complaints are high or monitoring reveals increased rates of stock-outs, the organization should consider reporting on a weekly basis (or more frequently) until the root cause has been identified and resolved.

## Related Metrics and Standards

### Related Metrics:

- 1.2 Purchasing Response Time
- 2.2 Inventory Turnover in One Month
- 3.2 Percentage of Rush Purchase Orders
- 4.2 Fill Rates to Customers
- 5.2 Supplier Performance

### Related Standards:

- 2.2 Inventory Policy
- 4.1 Customer Survey Tools and Processes
- 5.1 Supplier Performance Management Process

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Number of lines ordered where there is a stock-out at point-of-use location}}{\text{Total number of lines ordered at point-of-use locations}} \times 100\%$$

Variable	Include	Exclude
Number of lines ordered where there is a stock-out at point-of-use location	Include the number of lines ordered that meet all of the following criteria: <ul style="list-style-type: none"> <li>• Point-of-use or cart orders initiated via a quota management system</li> <li>• Orders for product with zero stock at point-of-use location</li> <li>• For stock items</li> </ul>	Do not include orders for product where there is one or more of the items remaining at the point-of-use location or for the types of orders or categories below
Number of lines ordered at point-of-use location	Include all lines ordered at point-of-use or cart orders initiated via a quota management system for stock items	Do not include orders that are either for the following types of order: <ul style="list-style-type: none"> <li>• Ad-hoc orders</li> <li>• Departmental stock requisitions</li> <li>• PO requisitions</li> </ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>• Non-stock</li> <li>• Capital</li> <li>• Services</li> <li>• Pharmacy</li> <li>• Food</li> </ul>

## Data Accessibility Rating

DIFFICULT – Data do not exist and are difficult to obtain

### Possible Data Sources

#### **Electronic**

Inventory and/or Cart Management Modules:

Many hospital information systems track *Number of lines ordered at point-of-use location*, but do not monitor stock-out incidents to determine the *Number of lines ordered where there is a stock-out at point-of-use location*. This is because the supply chain department usually expenses out items as they are issued to the point-of-use locations and does not monitor use. To determine the *Number of lines ordered where there is a stock-out at point-of-use location*, the information system would need to compare order quantities to the par level for that item. When the order quantity equals the par level, a stock-out has occurred.

For hospitals with closed-cabinet point-of-use systems, in which users indicate withdrawals of inventory, stock-outs are communicated automatically to the supply chain department for follow-up. This would allow the organization to determine the *Number of lines ordered where there is a stock-out at point-of-use location*.

#### **Manual**

If electronic tracking of stock-out incidents is unavailable, the hospital will have to collect the data manually. However, this metric would be very difficult to track at many organizations due to the large number of point-of-use POs and lines per PO. Organization could select a representative time period (one day, one week, etc.) to collect a subset of data, particularly to measure fill-rate performance to critical departments.

### Implementation Challenges

Challenges
Par levels may be increased excessively to avoid stock-outs to meet this target, leading to overcrowded wards and suboptimal inventory levels. Organizations should conduct periodic reviews of item usage, and adjust par levels and replenishment schedules as necessary to ensure optimal par levels.
It is important to give customers an opportunity to contribute to development of the reporting method to ensure they perceive it to be accurate, credible and representative.
To calculate this metric accurately, organizations need to include in the stock-out count the number of incidences where stock is immediately transferred from one area to another to fill a stock-out.
Although the data may be difficult to collect, this is a very important measure to see whether the supply chain department is meeting basic customer needs. Organizations should consider periodical manual measurement of performance in critical departments.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

# Metric 4.2: Fill Rates to Customers

## Objective:

To improve customer satisfaction at point-of-use storage locations across the healthcare organization

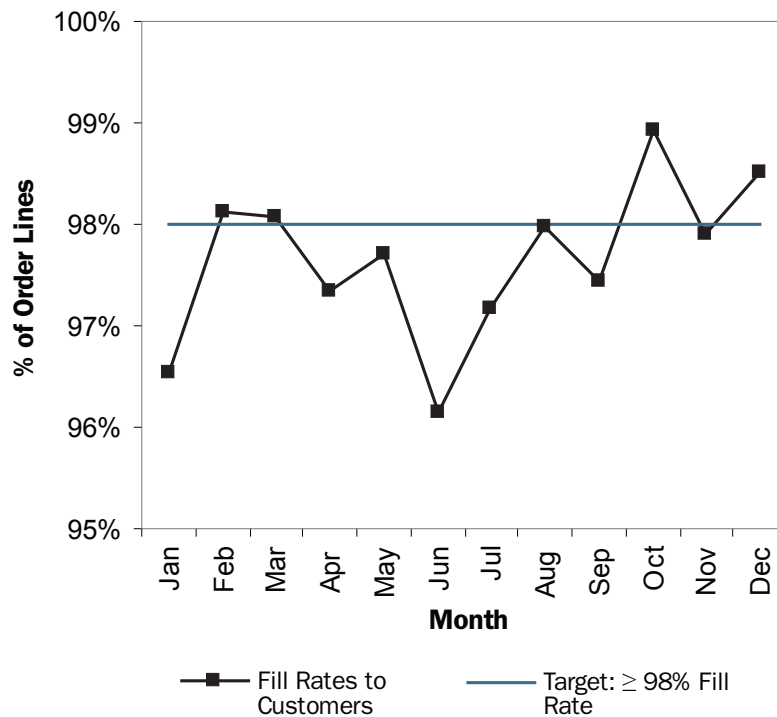
## Calculation:

$$\frac{\text{Number of lines replenished at point-of-use locations}}{\text{Total number of lines ordered at point-of-use locations}} \times 100\%$$

## Target:

≥ 98% fill rate

Fill Rates to Customers



# Background Details

## Rationale

The supply chain department in healthcare organizations plays a key role in the delivery of patient care. At the cart or point-of-use location, the supply chain department must achieve high levels of dependability and accuracy by closely monitoring its fill rate performance and continuously improving its processes and technologies. By monitoring fill rates, service delivery issues can be identified quickly and root-cause analyses can be conducted to resolve the issue.

## Benefits

### **Patient Care**

High fill rates ensure supply chain customers (i.e., physicians, nurses and non-clinical departments) have access to the right product at the right time. This contributes directly to their performance and ultimately affects the quality of patient care that the healthcare organization provides.

### **Process Efficiency**

Through better planning of internal inventories, optimization of cart quotas and standardization of products, process efficiencies will be generated by reducing the number of supply transactions, especially the number of rush orders.

### **Customer Service**

Monitoring and improving fill rates leads to enhanced customer service delivery through better demand planning and increased communication with customers on changing requirements and understanding customers' supply needs.

## Underlying Leading Practices

### **Demand Management**

Comprehensive understanding of an organization's requirements for stock and non-stock items helps reduce stock-outs and improve service levels.

### **Collaborative Planning**

Immediate communication across the supply chain from customer to supplier about changes to requirements supports better understanding, faster response times and improved customer satisfaction.

### **Identification of Product Standardization Opportunities**

Reducing the variety of products encourages larger volume purchases, which results in simplified inventory and data management and reduced risk of stock-outs.

### **Bar Coding/Scanning Technology**

Bar code scanning and point-of-use inventory management systems improve customer service through closer monitoring of inventory levels and quota management.

## Target Considerations

### **Establishment**

A number of hospitals and third-party providers have already begun measuring fill rates. The members of Working Group that measure fill rates report, on average, just over a 98 per cent fill rate. Accordingly, the group has set a minimum fill rate of 98 per cent as an initial target for this metric, with 98.5 per cent as a future target.



### Reporting Frequency

This metric should be regularly monitored and if low fill rates are identified, root-cause analysis should be conducted immediately and fill rates should be closely monitored until the problem is resolved.

### Related Metrics and Standards

#### Related Metrics:

- 1.2 Purchasing Response Time
- 2.1 Average Cost to Issue a Purchase Order
- 3.2 Percentage of Rush Purchase Orders
- 4.1 Stock-Outs at the Cart Level
- 5.2 Supplier Performance

#### Related Standards:

- 2.2 Inventory Policy
- 4.1 Customer Survey Tools and Processes
- 5.1 Supplier Performance Management Process

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Number of lines replenished at point-of-use locations}}{\text{Total number of lines ordered at point-of-use locations}} \times 100\%$$

Variable	Include	Exclude
Number of lines replenished at point-of-use locations	Include the number of lines filled completely	Do not include: <ul style="list-style-type: none"><li>• Partially filled lines</li><li>• Incorrect items/substitutions</li><li>• Backordered line shipments</li></ul>
Total number of lines ordered at point-of-use locations	Include the number of individual point-of-use or PAR cart orders initiated via a quota management system for: <ul style="list-style-type: none"><li>• Stock items</li></ul>	Do not include either the following types of orders: <ul style="list-style-type: none"><li>• Ad-hoc orders</li><li>• Departmental stock requisitions</li><li>• Purchase order requisitions</li></ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"><li>• Non-stock items</li><li>• Capital</li><li>• Services</li><li>• Pharmacy</li><li>• Food</li></ul>

## Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

### Possible Data Sources

#### **Electronic**

Inventory and/or Cart Management Modules: -

Many information systems track both *Number of lines replenished at point-of-use locations* and *Total number of lines ordered at point-of-use locations* through their cart management or inventory modules and can retrieve the data in month-end standard reports. -

If the data are not available in a standard report or the calculation method provided is different from the - method described in this document, the data can typically be retrieved by programming a custom report.

#### **Manual**

In many organizations, this metric would be difficult to track manually due to the large number of point-of-use orders and purchase order lines per purchase order. If electronic reporting is unavailable, the organization could consider using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

### Implementation Challenges

Challenges
If data are unavailable from the current information system and resources are not available for complete manual measurement, the organization should consider periodical manual measurement of fill-rate performance in critical departments.
Hospitals with offsite warehouses tend to experience longer order replenishment cycles than those with onsite facilities. For organizations with offsite warehouses, monitoring of stock-out occurrences might provide a better measure of the supply chain department's performance than fill rates, which can be affected by the warehouse's performance in responding to orders.
Fill rates are used to evaluate customer service and are important to maintaining good customer relationships. It is therefore important to involve customers in developing the reporting method to ensure they perceive it to be accurate, credible and representative.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

# Metric 4.3: Percentage of Items Activated in the Master File in One Month

## Objective:

To increase the scope of goods and services purchased by the supply chain department to include new products and suppliers

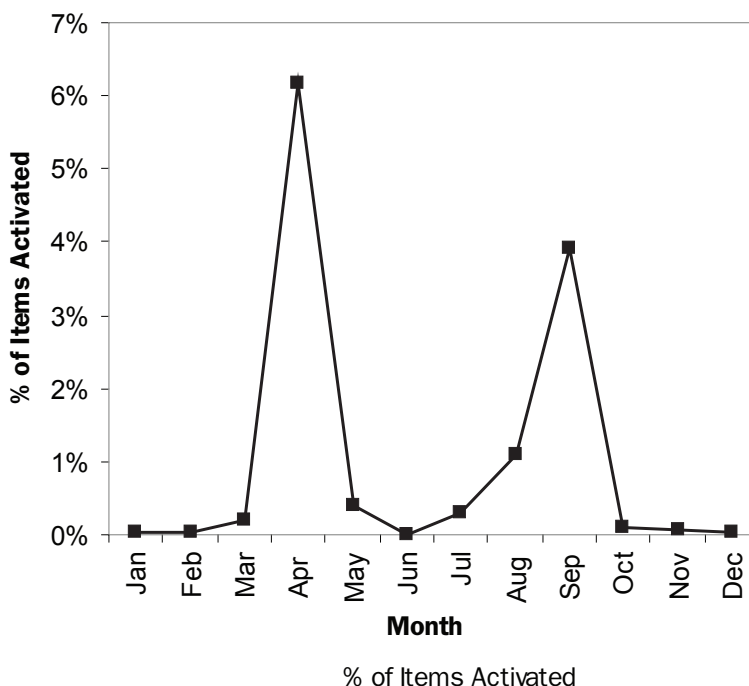
## Calculation:

$$\frac{\text{Total number of items activated}}{\text{Total number of active items at start}} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}} \times 100\%$$

## Target:

To be set by individual organizations depending on their size, circumstances, priorities and initiatives

## Percentage of Items Activated in the Item Master File



# Background Details

## Rationale

A comprehensive, up-to-date item master file is critical to manage frequently ordered products and track and report usage statistics. Leading practices suggest that efficiencies and savings can be maximized by ensuring the item master contains all frequently ordered items. Centralizing this information supports better contract management and increases ease of use for customers, leading to greater contract compliance.

## Benefits

### **Customer Service**

Maintaining an accurate item master with clear consistent nomenclature and all frequently ordered items will lead to a comprehensive database that allows customers to order products more efficiently and with fewer mistakes. This will lead to greater customer satisfaction and contract compliance.

### **Employee Productivity/Satisfaction**

A comprehensive database and more efficient item master management will reduce the time required by supply chain staff to place orders by providing access to centralized and accurate product and contract information.

## Underlying Leading Practices

### **RFP Development and Compliance Management**

Establishing policies for RFP development and limiting the use of non-contract suppliers leads to better product ordering information and enhanced contract compliance.

### **Contract Centre of Excellence**

Centralized contract management activities facilitate the development of contracts for new additions to the item master, providing a source for comprehensive pricing and contract information.

## Target Considerations

### **Establishment**

Targets will be unique to individual organizations as the appropriate percentage of new items to be added are dependent on a number of factors. These include:

- Size and scope of the organization;
- Stage of existing centralization, standardization and strategic sourcing initiatives;
- Criteria for adding items; and
- IT-system functionality.

This metric is useful to help individual hospitals meet their internal targets but has little comparability across organizations. Before implementing this metric, organizations should collect data for six to twelve months and then establish appropriate goals based on current improvement initiatives.

### **Adjustment Factor**

Due to the different lengths of months and the presence of holidays, the number of working days per month varies from 19 to 23. This could have an impact of over 20 per cent difference from month to month, making comparisons difficult. To avoid the issue, the calculation includes an adjustment factor (20 divided by the number of working days in the month) to normalize each month's data to a 20-day month (four full work weeks).

## Related Metrics and Standards

### Related Metrics:

- 1.1 Percentage of Active Items under Contract
- 2.1 Average Cost to Issue a Purchase Order
- 3.6 Percentage of Invoices with Purchase Orders

### Related Standards:

- 1.1 Purchasing Policies and Procedures
- 2.2 Inventory Policy
- 3.1 Contracts Database
- 4.2 Item Master Management Policy and Processes

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Total number of items activated}}{\text{Total number of active items at start}} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}} \times 100\%$$

Variable	Include	Exclude
Total number of items activated	Include number of new items added in master file for: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> <li>• Capital</li> <li>• Services</li> </ul>	Do not include number of new items added in master file for: <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>
Total number of active items at start	Include number of active items in master file at the beginning of the month for the categories above	Do not include inactive items <b>OR</b> active items in master file at the beginning of the month for the categories above
Number of workdays in the month	Include all regularly scheduled working days in the month	Exclude: <ul style="list-style-type: none"> <li>• Weekends</li> <li>• Holidays</li> </ul>
20 days	Days in month adjustment factor	

### Data Accessibility Rating

EASY – Data are available for computation

## Possible Data Sources

### Electronic

Procurement and Inventory Modules:

Many supply chain information systems generate new sequential numbers when items are added.

*Total number of items activated* can be calculated from the ID number for last item in the master file at the end of the month less the ID number for last item in the master file at the beginning of the month.

A custom report may be required to identify the number of deactivated items at the beginning of the month to determine the *Total number of active items at start*.

A number of hospitals follow the practice of reusing numbers; the Working Group strongly discourages this practice as it not only results in lost history for the older items, but also inhibits measurement of this metric.

### Manual

If custom reporting is not possible, the organization could conduct a manual comparison of the item master at the beginning and the end of the month to calculate this metric.

The calculation for the *Number of workdays in the month* should be based only on standard workdays — exclude statutory holidays and other organization-wide acknowledged days off.

## Implementation Challenges

### Challenges

Organizations often lack processes and defined responsibilities associated with the item master. Inadequate controls on item additions could result in duplicate and obsolete items, causing contract compliance to suffer. It is important to ensure a comprehensive item master management policy and process are in place, including a standard nomenclature for items and assigned responsibilities for restricting access to the item master before making improvements to this metric.

Some organizations may have challenges excluding food and pharmacy items if they are maintained within the same system. If possible, the numbers should be manually adjusted; otherwise, the organizations should document the resulting inconsistencies.

Many hospitals reuse product numbers, resulting in lost history for older items. This procedure should be discontinued to ensure the item master file is accurate and contains all product usage data.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

# Metric 4.4: Percentage of Items Inactivated in the Master File in One Month

## Objective:

To rationalize the number of duplicate and alternate products, services and suppliers used across the organization

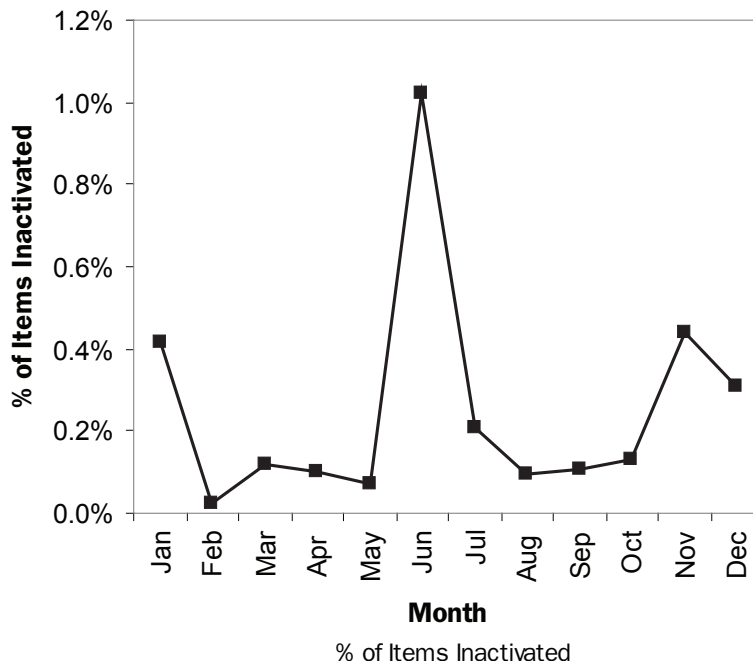
## Calculation:

$$\frac{\text{Total number of items inactivated}}{\text{Total number of active items at start}} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}} \times 100\%$$

## Target:

To be set by individual organizations depending on their size, circumstances, priorities and initiatives

## Percentage of Items Inactivated in the Master File



# Background Details

## Rationale

A comprehensive up-to-date item master file is critical to manage frequently ordered products and track and report usage statistics. Usage data are required to support product standardization efforts and better contract management.

## Benefits

### **Process Efficiency**

Database management drives more effective contract management and product standardization, reducing the variety of products ordered and the associated administrative burden on the supply chain department.

### **Customer Service**

Eliminating duplicate and obsolete items in the item master will lead to an accurate database to simplify the ordering process for customers.

## Underlying Leading Practices

### **Identification of Product Standardization Opportunities**

Reducing the variety of items in the master file through standardization and rationalization of products enables better pricing through higher volume purchasing and reduced administrative burden.

### **Contract Centre of Excellence**

A common repository of contract knowledge and centralized contract development enables an organization to negotiate optimal pricing and contract conditions to support the standardization of items.

### **Comprehensive Understanding of Spend Data**

Analyzing the product usage history by item, category and cost centre enables an organization to reduce items in the item master by standardizing items and deactivating infrequently ordered items.

## Target Considerations

### **Establishment**

Targets will be unique to individual organizations as the appropriate percentage of items to be deactivated is dependent on a number of factors. These include:

- Size and scope of the organization;
- Stage of existing centralization, standardization and strategic sourcing initiatives;
- Criteria for item deactivation; and
- IT-system functionality.

This metric is useful to help individual hospitals meet their internal targets but has little comparability across organizations. Before implementing this metric, organizations should collect data for six to twelve months and then establish appropriate goals based on current improvement initiatives.

### **Adjustment Factor**

Due to the different lengths of months and the presence of holidays, the number of working days per month varies from 19 to 23. This could have an impact of over 20 per cent difference from month to month, making comparisons difficult. To avoid the issue, the calculation includes an adjustment factor (20 divided by the number of working days in the month) to normalize each month's data to a 20-day month (four full work weeks).



## Related Metrics and Standards

### Related Metrics:

- 1.1 Percentage of Active Items under Contract
- 3.1 Number of Purchase Orders in One Month

### Related Standards:

- 1.1 Purchasing Policies and Procedures
- 2.2 Inventory Policy
- 4.2 Item Master Management Policy and Processes

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Total number of items inactivated}}{\text{Total number of active items at start}} \times \frac{20 \text{ days}}{\text{Number of workdays in the month}} \times 100\%$$

Variable	Include	Exclude
Total number of items inactivated	Include number of items deactivated in the master file for: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> <li>• Capital</li> <li>• Services</li> </ul>	Do not include number of items deactivated in the master file for: <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>
Total number of active items at start	Include number of active items in master file at the beginning of the month for the categories above	Do not include inactive items <b>OR</b> active items in master file at the beginning of the month for the categories above
Number of workdays in the month	Include all regularly scheduled working days in the month	Exclude: <ul style="list-style-type: none"> <li>• Weekends</li> <li>• Holidays</li> </ul>
20 days	Days in month adjustment factor	

### Data Accessibility Rating

EASY – Data are available for computation

## Possible Data Sources

### **Electronic**

Procurement and Inventory Modules:

Many supply chain information systems generate new sequential numbers when items are added. To calculate the *Total number of active items at start*, organizations must subtract the number of deactivated items from the ID number of the last item in the master file at the beginning of the month. However, the Working Group identified that many information systems have difficulty tracking deactivated items. As a result, a custom report may be necessary. To determine *Total number of items inactivated*, the number of deactivated items at the beginning of the month must be subtracted from the total at the end of the month.

### **Manual**

If custom reporting is not possible, the organization could conduct a manual comparison of the item master at the beginning and the end of the month to calculate this metric.

The calculation for the *Number of workdays in the month* should be based only on standard workday exclude statutory holidays and other organization-wide acknowledged days off.

## Implementation Challenges

Challenges
Organizations often lack processes and defined responsibilities associated with the item master. Ensure an item master management policy and process for deactivation are in place, and responsibilities for managing the item master must be assigned before implementing this metric.
Some organizations may have challenges excluding food and pharmacy items if they are maintained within the same system. If possible, the numbers should be manually adjusted; otherwise, the organizations should document the resulting inconsistencies.
Many hospitals reuse product numbers, resulting in lost history for older items. This procedure should be discontinued to ensure the item master file is accurate and up to date.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	<b>SUPPLIERS</b>	PEOPLE

# Metric 5.1: Percentage of Invoices Paid within Due Date

## Objective:

To increase compliance with agreed-upon payment terms to maintain good supplier relationships

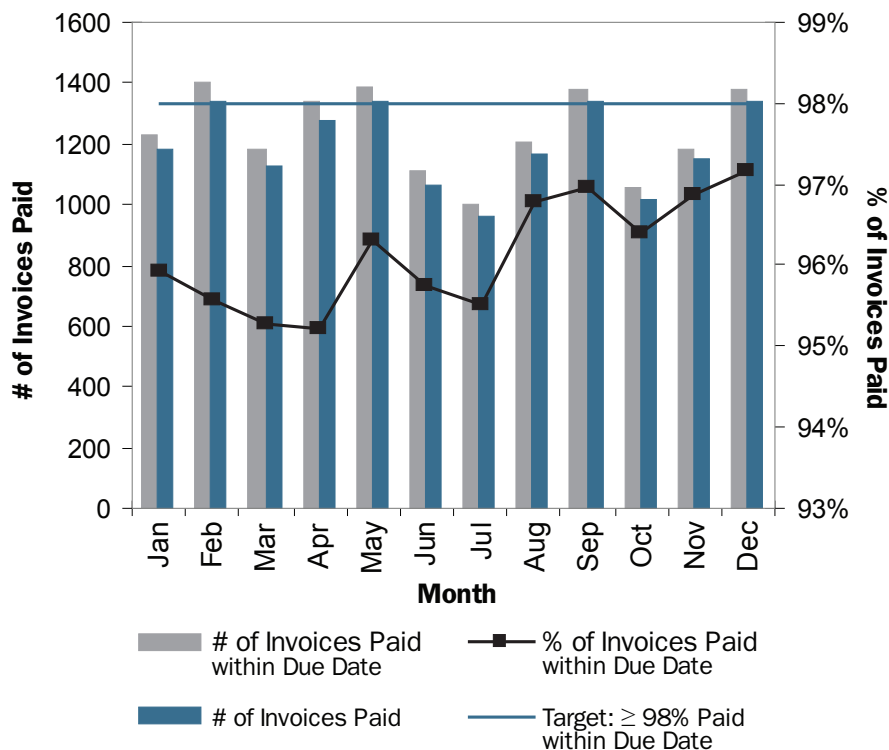
## Calculation:

$$\frac{\text{Number of invoices paid within agreed-contract terms}}{\text{Total number of invoices}} \times 100\%$$

## Target:

≥ 98% by net invoice date

Percentage of Invoices Paid within Due Date



# Background Details

## Rationale

Paying suppliers on time generates numerous benefits for hospitals, including cost savings through discounts and rebates, improved overall supplier relationships and an increased likelihood that future contract terms and pricing will be favourable.

Late payment can occur for a variety of reasons, including inefficient processes and manual systems, inaccurate data entry and invoice mismatches, and errors due to outdated contract information in the system. Unfortunately, late payment of supplier invoices is often overlooked as a key metric as many organizations just view this as the supplier's issue since the negative affects to the organization are not often immediately apparent. However, the longer-term consequence of consistently making late payments is that the supplier base will become discontented and lose trust in the organization. Eventually, suppliers will raise their costs to recoup past losses and defend against future loss.

In addition, hospitals that fail to track payment due dates will miss potential savings from discounts and rebates that can be a significant source of funding and financing of hospital operations. Not taking advantage of these savings increases the overall cost of hospital operations.

## Benefits

### **Financial Stewardship**

By reliably complying with contract terms, organizations will be able to negotiate more favourable future contracts with suppliers. In addition, the organization could monitor compliance with early payment discounts, although capturing those discounts may be difficult with hospital constraints.

### **Process Efficiency**

By changing accounts payable policies and implementing electronic commerce processes with suppliers, the organization can speed up the payment cycle, capture efficiencies, and reduce accounts payable workload by:

- Receiving electronic invoices from suppliers directly into accounts payable system for immediate completion of automatic three-way invoice matching;
- Paying suppliers through electronic funds transfer, rather than writing manual cheques, to speed up the payment cycle; and
- Considering options for implementing payment-on-receipt to reduce the need for invoice matching and speed up the payment cycle.

### **Supplier Relationships**

Paying invoices according to negotiated contract terms improves supplier relations and supports potential future preferential contract terms and pricing.

## Underlying Leading Practices

### **RFP Development & Compliance Management**

Defining payment processes and terms explicitly in requests for proposals and in the supplier contracts contributes to greater compliance with these payment terms, leading to future preferential contract terms and pricing.

### **Tight Supply Chain/Accounts Payable Organizational Relationship**

Regular communication and a strong working relationship between the supply chain and accounts payable departments supports timely reconciliation of invoices with purchase orders. This allows accounts payable to pay invoices in compliance with contract commitments and capture more early payment discounts.

### **Rebate/Discount Management**

Electronic tracking of payment due dates for invoice supports timely payments to suppliers. It allows the organization to track and capture savings through early payment discounts as well as improving supplier relationships.

### **“End to End” eSupply Chain**

Implementing electronic invoicing and electronic funds transfer will reduce payment cycle times and improve compliance with contracted payment terms. Electronic invoicing allows electronic invoices to be received from suppliers directly into accounts payable system for immediate completion of automatic three-way invoice matching. Electronic funds transfer allows organizations to pay suppliers electronically without cutting and mailing cheques.

## **Target Considerations**

### **Establishment**

The Working Group has limited experience with this measure and few people are currently tracking it. The group recommends setting an initial target of 98 per cent, with a review six to twelve months after implementation.

### **Impact of Other Metrics**

To pay suppliers on schedule, hospitals require access to accurate payment term information and a short payment cycle process. Automated processes such as three-way matching of invoices can increase payment speed, but these processes rely on error-free data to work effectively. Initiatives to improve this metric should be considered in conjunction with metric 3.7 Percentage of Invoice Matches.

## **Related Metrics and Standards**

### **Related Metrics:**

- 1.1 Percentage of Active Items under Contract
- 3.6 Percentage of Invoices with Purchase Orders
- 3.7 Percentage of Invoice Matches

### **Related Standards:**

- 1.1 Purchasing Policies and Procedures
- 1.3 Boilerplate Contracts and Key Legal Principles
- 5.1 Supplier Performance Management Process

# **Implementation**

## **Calculation Parameters**

### **Calculation**

$$\frac{\text{Number of invoices paid within agreed-contract terms}}{\text{Total number of invoices}} \times 100\%$$

<b>Variable</b>	<b>Include</b>	<b>Exclude</b>
Number of invoices paid within agreed-contract terms	Include PO invoices for which payment is sent to suppliers by the due date for the types of orders and categories below	Do not include invoices with late payments or for the types of orders or categories below
Total number of invoices	Include invoices that are both for the following types of orders: <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases</li> </ul> <b>AND</b> for the following categories: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> <li>• Capital</li> <li>• Services</li> </ul>	Do not include invoices that are either for the following types of orders: <ul style="list-style-type: none"> <li>• Non-purchase order invoices</li> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>• Pharmacy</li> <li>• Food</li> </ul>

## Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

### Possible Data Sources

#### **Electronic**

Procurement and Accounts Payable Modules:

For automated reporting of *Invoices paid within agreed-contract terms*, information systems must be able to report on the contracted payment terms for every contract purchase order issued. The information systems in many hospitals lack the capability of reporting the contracted versus non-contracted status of items in purchase orders. If this function is unavailable, organizations may wish to establish a default term on all non-contracted POs (for instance, payment within 45 days) to include them in this metric. At a minimum, the accounts payable module must track payments to suppliers issued at or before payment due dates for all contract purchase orders. Custom reporting may be required.

Most financial reporting systems will provide the *Total number of invoices* received by an organization.

#### **Manual**

If electronic reporting is unavailable, the organization could consider using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

### Implementation Challenges

#### Challenges

Accounts payable may not see this as an important initiative. The accounts payable department should be encouraged to participate in the improvement initiative. Senior management commitment and support may be required for implementation across existing departmental boundaries.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

# Metric 5.2: Supplier Performance

## Objective:

To ensure reliable delivery performance from an organization's top 10 suppliers

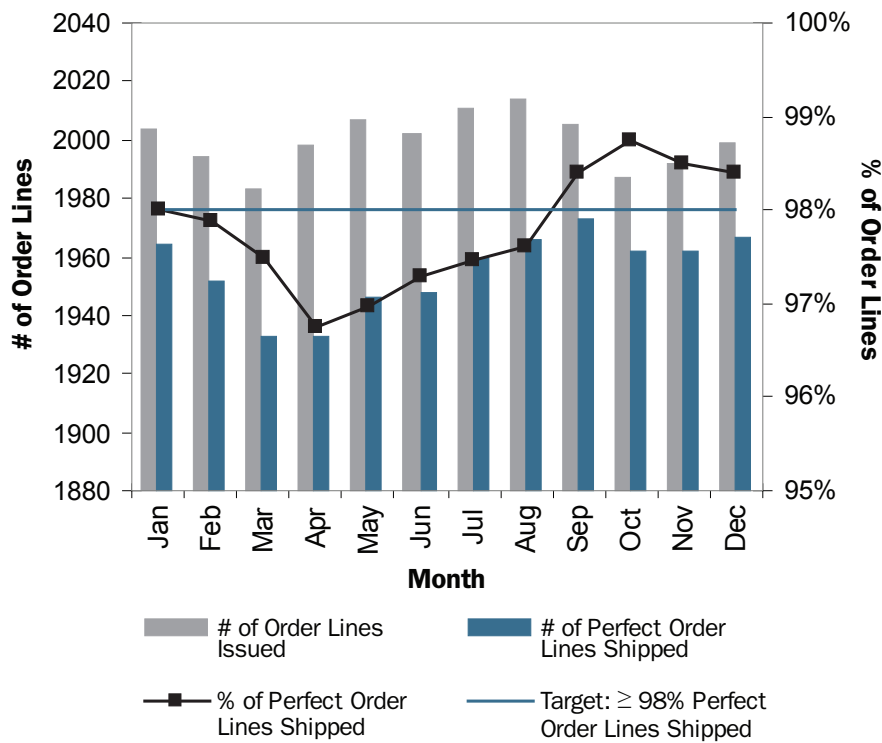
## Calculation:

$$\frac{\sum_{x = \text{Top 10 suppliers}} \text{Number of perfect purchase order lines shipped on time for "supplier x"}}{\sum_{x = \text{Top 10 suppliers}} \text{Total number of purchase order lines for "supplier x"}} \times 100\%$$

## Target:

≥ 98% perfect order lines shipped

## Supplier Performance



# Background Details

## Rationale

The supply chain department's goal is to provide a high standard of customer service to satisfy customer and patient requirements while optimizing supply chain costs. Supplier performance is an important external driver for the supply chain department to achieve this. Poor supplier performance in filling purchase orders (POs) completely and on time affects an organization's ability to provide high quality service and increases its workload.

Organizations should monitor supplier performance regularly and perform root-cause analysis when needed to continuously improve fill rates. Better demand planning and communication will help suppliers improve their service levels. Each hospital's goal should be to have all major suppliers meet the minimum required service level.

## Benefits

### **Patient Care**

Patient care excellence requires that customers have access to the right product at the right time. Ensuring reliable delivery from suppliers means that customers are less often short of supplies, and therefore able to provide the best care for their patients.

### **Process Efficiency**

Improved supplier performance required fewer supply chain resources to expedite shipments, source alternative suppliers or products and resolve problems related to back orders and missed shipments.

### **Customer Service**

Supplier delivery problems have a direct impact on customers, causing them to lose trust in the supply chain department and possibly begin ordering excess stock to compensate. Monitoring the performance of key suppliers supports continuous improvement efforts in areas such as enhanced communication with customers on changing requirements and demand planning.

### **Supplier Relationships**

Measuring supplier performance supports stronger supplier relationships as it establishes expectations for service levels and provides a consistent approach for all organizations to measure supplier performance of all their key suppliers, resulting in a levelling of the supplier playing field.

## Underlying Leading Practices

### **Collaborative Planning**

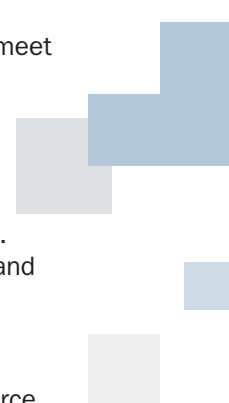
Proactive communication regarding changes in supply requirements from customer through to supplier supports better service from suppliers.

### **Strategic Sourcing**

Reducing the supplier base and selecting strategic suppliers to develop high-value relationships and alliances supports improved supplier performance.

### **Supplier Relationship Management**

Ongoing collaboration between the hospital and its suppliers enables performance that is more reliable, opportunities for process improvements, improved problem resolution, potential cost reductions and other savings.





## Target Considerations

### **Establishment**

The members of the Working Group have limited experience with metrics related to measuring individual suppliers. The Working Group recommends that the target be reviewed six to twelve months after implementation.

### **Future Opportunities**

Organizations may wish to measure critical and non-critical items separately, though collecting the data separately may be difficult. Targets for critical items should be set at  $\geq 99$  per cent, with targets for non-critical items set at  $\geq 98$  per cent.

### **Reporting Frequency**

If regularly monthly measurement reveals declining fill rates, a root-cause analysis should be conducted immediately and reporting frequency should be increased until the problem is solved and the customer is satisfied.

## Related Metrics and Standards

### **Related Metrics:**

- 3.2 Percentage of Rush Purchase Orders
- 3.4 Average Lines per Purchase Order
- 3.5 Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month
- 4.1 Stock-outs at the Cart Level
- 4.2 Fill Rates to Customers

### **Related Standards:**

- 1.3 Boilerplate Contracts and Key Legal Principles
- 5.1 Supplier Performance Management Process

# Implementation

## Calculation Parameters

### Calculation

$$\frac{\sum_{x = \text{Top 10 suppliers}} \text{Number of perfect purchase order lines shipped on time for "supplier x"}}{\sum_{x = \text{Top 10 suppliers}} \text{Total number of purchase order lines for "supplier x"}} \times 100\%$$

Variable	Include	Exclude
Top 10 suppliers	Include the top 10 ranked suppliers based on activity (total number of POs) and spending (total value of POs).	Do not include all other suppliers
Number of perfect purchase order lines shipped on time for "supplier x"	For each of the above suppliers, include all lines that meet all of the following criteria in one month: <ul style="list-style-type: none"> <li>• Correct item is shipped</li> <li>• Total amount is shipped completely</li> <li>• Shipped on time</li> </ul> <b>AND</b> for the types of orders and categories below	Do not include lines that meet any of the following criteria: <ul style="list-style-type: none"> <li>• Incorrect item shipped</li> <li>• Incorrect quantity or partial line shipped</li> <li>• Back-ordered lines shipped</li> <li>• Late shipments</li> </ul> or for the types of orders or categories below
Total number of purchase order lines for "supplier x"	For each of the above suppliers, include all of the following types of orders in one month: <ul style="list-style-type: none"> <li>• POs</li> <li>• Blanket order releases lines</li> </ul> <b>AND</b> for the following categories: <ul style="list-style-type: none"> <li>• Stock items</li> <li>• Non-stock items</li> </ul>	Do not include orders issued to any other supplier <b>OR</b> for the following types of orders: <ul style="list-style-type: none"> <li>• Standing order releases</li> <li>• Purchasing card transactions</li> </ul> <b>OR</b> for the following categories: <ul style="list-style-type: none"> <li>• Capital</li> <li>• Services</li> <li>• Pharmacy</li> <li>• Food</li> </ul>

## Data Accessibility Rating

CHALLENGING – Data are available but require analysis and custom reporting

## Possible Data Sources

### **Electronic**

Procurement Module:

The procurement system must be able to provide spend data and number of POs per supplier to determine the *Top 10 Suppliers* by activity and spend.

In order to use an automated method of reporting the *Total number of purchase order lines for "supplier x"*, the procurement system must provide number of lines per PO and due dates per line. This would likely require custom reporting.

Receiving Module: -

To determine the *Number of perfect purchase order lines shipped on time for "supplier x"*, the information system would have to report the lines shipped complete and on time sorted by supplier. For most of the current systems in use, this would require custom reporting.

Many organizations currently rely on suppliers to provide performance information. This leads to inconsistent reporting methods between suppliers to an organization as well as between organizations.

### **Manual**

If electronic reporting is unavailable, the organization could consider using a logging method throughout the month or selecting a representative time period (one day, one week, etc.) to collect a subset of data. Organizations should select the option that balances the cost of collecting the data and the associated accuracy with the benefit of reporting the metric.

Organizations should develop a weighting/decision-making system to determine which suppliers to include in the *Top 10 suppliers*. The list of suppliers should be established based on activity (i.e., number of POs) and spend (i.e., combined value of POs).

## Implementation Challenges

### Challenges

If organizations are not already doing so, they will need to establish lead-time requirements in supplier contracts and indicate item due dates on the POs to be able to measure on-time shipments. Due dates on POs must be consistent with the lead time from the supplier contracts.



GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
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# Metric 6.1: Voluntary Turnover

## Objective:

To improve retention of quality supply chain staff

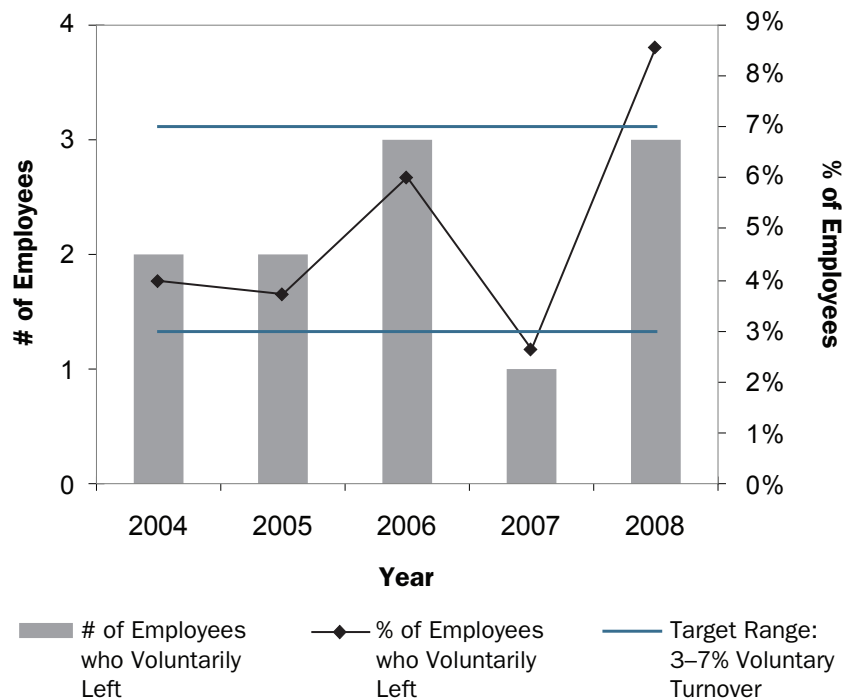
## Calculation:

$$\frac{\text{Number of supply chain staff who voluntarily left the department}}{\text{Average number of supply chain staff in the year}} \times 100\%$$

## Target:

3-7% voluntary turnover

Voluntary Turnover



# Background Details

## Rationale

Like any hospital department, the supply chain department is only as good as its people. The rate of voluntary turnover of employees reflects the supply chain department's ability to keep its valuable workers.

Employees voluntarily leave a department or organization for a variety of reasons, including:

- Job role is not challenging or interesting;
- Lack of support from supervisors or senior executives;
- Better career opportunities and/or compensation elsewhere; and
- Lack of ongoing training and skills development or limited job progression opportunities.

Monitoring the rate of employee turnover and conducting exit interviews to determine reasons for departures allows organizations to identify and implement improvements to reduce the incidence of employees voluntarily leaving the organization.

## Benefits

### **Financial Stewardship**

Recruitment and training costs represent a significant expense for hospitals, which tend to have fewer recruitment and training resources internally than private industry. As a result, there is a significant financial benefit in cost avoidance of retaining valuable employees.

### **Employee Productivity/Satisfaction**

Employee turnover can have a negative impact on remaining staff. Satisfied, motivated employees provide better customer service and help attract higher-quality recruits to the organization. Employees who are engaged are also much more productive than those who are bored or frustrated in their positions.

## Underlying Leading Practices

### **Senior Management Support**

Senior management's consistent, visible support for the supply chain department and any improvement initiatives contributes to greater organization-wide understanding and appreciation of the supply chain department's role. This contributes to supply chain staff's success and pride in their work.

### **Transition from "Transaction to Interaction" Mindset**

The focus of the supply chain department needs to be shifted from processing transactions to serving and providing specialized expertise to customers and building relationships with customers and suppliers. This will create more satisfying work for supply chain staff, identify strategic opportunities for process improvements, and provide better overall value to the organization.

### **Commodity Specialization**

Establishing buyers as specialists responsible for specific product types as well as specialized roles improves staff knowledge and expertise, allowing them to provide better customer service to customers. This enhances the customer's respect for their supply chain colleagues and the supply chain employee's satisfaction with their role.

### **Development of iSCM Skill Sets**

Organizations should encourage and support additional training to ensure individuals are reaching their potential for growth and establishing expertise in supply chain leading practices. Investing in employees to improve their skill sets enables them to contribute on a strategic level, providing more opportunity for staff to challenge themselves, contribute to the organization's success and advance their careers.

## Target Considerations

### Establishment

Targets may need to be revised depending on an organization's size. Large, often urban, organizations tend to have large departments with regular employee turnover, while smaller, remote organizations often have smaller departments with infrequent turnover. When an employee leaves a small department, the percentage change spikes dramatically relative to years with no turnover. This can make comparisons between large and small hospitals difficult and insignificant. As a result, it might be appropriate to consider hospital size in setting targets for this metric.

## Related Metrics and Standards

### Related Metrics:

- 2.1 Average Cost to Issue a Purchase Order
- 2.3 Operating Costs as a Percentage of Expenditures
- 3.3 Number of Purchase Orders Placed per Full-Time Equivalent in One Month

### Related Standards:

- 1.1 Purchasing Policies and Procedures
- 1.3 Boilerplate Contracts and Key Legal Principles
- 4.1 Customer Survey Tools and Processes
- 6.1 Job Roles and Specifications
- 6.2 Performance Appraisal Process

## Implementation

### Calculation Parameters

#### Calculation

$$\frac{\text{Number of supply chain staff who voluntarily left the department}}{\text{Average number of supply chain staff in the year}} \times 100\%$$

Variable	Include	Exclude
Number of supply chain staff who voluntarily left the department	Include all individuals who voluntarily resigned from a role in the supply chain department (defined below) either to leave the organization or to transfer to another department within the organization and all retiring employees	Do not include: <ul style="list-style-type: none"> <li>• Individuals terminated or laid off</li> <li>• Individuals promoted or transferred within the supply chain department</li> <li>• Employees from the excluded departments below</li> </ul>
Average number of supply chain staff in the year	Include the average number of employees (include full-time, part-time and casual employees) in a one-year period within the following supply chain areas: <ul style="list-style-type: none"> <li>• Purchasing</li> <li>• Central stores</li> <li>• Shipping/receiving</li> <li>• Internal and external distribution</li> </ul>	Do not include employees from the following areas: <ul style="list-style-type: none"> <li>• CSR/SPD</li> <li>• Linen</li> <li>• Patient portering</li> <li>• Printing</li> </ul>

## Data Accessibility Rating

EASY – Data are available for computation

### Possible Data Sources

#### **Electronic**

Human Resources Module:

Human Resources should track and be able to provide in budget reports, the number of employees working in the supply chain department at the beginning and end of the year, to determine the *Average number of supply chain staff in the year*.

Human Resources should also track the number of employees who leave voluntarily to determine *Number of supply chain staff who voluntarily left the department*.

#### **Manual**

The *Average number of supply chain staff in the year* can be measured manually by taking a head count at the beginning and end of each year to calculate the average number of employees.

Human Resources or the supply chain department administration should be able to manually track the *Number of supply chain staff who voluntarily left the department*.

### Implementation Challenges

Challenges
For small organizations where there are fewer supply chain staff doing multiple roles, it may be difficult to separate out the true number of full-time equivalent staff involved in only supply chain roles. To provide consistency both year over year and across multiple organizations, hospitals should adopt a common method of calculating the average total supply chain employees in a year.
Some supply chain staff might lack the abilities or motivation to learn the new skills required for success in more strategic roles. Annual employee performance appraisals are an important mechanism for assessing the alignment of personal and organizational goals. If misalignment is found, a change in duties for the individual or additional training should be considered.
Initiatives to change an individual's duties could contravene union employee contracts. It is important to keep open lines of communication with human resources, especially in any initiatives involving changes to employee roles where they should be consulted.
Organizations undertaking significant change initiatives should consider more frequent measurement of this metric to track the impact of these changes on employee morale.



GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

# Standard 1.1: Purchasing Policies and Procedures

## Objective:

To ensure quality service delivery and value-for-money through ethical, transparent and standardized processes

## Definition

The purchasing policies and procedures outline the principles and practices that govern how the organization conducts purchasing activities across the plan-to-pay cycle. The policies address such areas as commitment authority, conflicts of interest, ethics, gifts and hospitality, jurisdiction, law, payment terms, relationships, risk, roles and responsibilities, and supplier evaluation and approvals.

This is an umbrella standard that guides and governs many related standards.

## Rationale

Documented purchasing policies and procedures support effective execution of purchasing tasks and mitigate risk, helping organizations achieve their operational and financial goals.

## Benefits

### **Patient Care**

Purchasing policies and procedures improve the performance of the purchasing process, helping to ensure that a consistent level of service is provided in support of patient care.

### **Financial Stewardship**

Purchasing policies and procedures should maintain a focus on ensuring value-for-money, both in processes and transactions.

### **Process Efficiency**

Purchasing policies and procedures can eliminate redundant, non-value-add activities within the overall procurement cycle, maximizing service efficiency.

### **Customer Service**

Documented policies and procedures provide customers with confidence in the purchasing process.

### **Risk Management**

Transparent policies and procedures reduce potential risk and conflict across the organization.

### **Employee Productivity/Satisfaction**

Purchasing policies and procedures provide clear direction and expectations for employees, improving both productivity and satisfaction.

### **Supplier Relationships**

Purchasing policies and procedures establish consistent process and expectations for working with suppliers, enhancing relationships.

## **Related Metrics**

- 1.1 Percentage of Active Items under Contract
- 2.1 Average Cost to Issue a Purchase Order
- 2.3 Operating Costs as a Percentage of Expenditures
- 3.1 Number of Purchase Orders in One Month
- 3.3 Number of Purchase Orders Placed per Full-Time Equivalent in One Month
- 3.4 Average Lines per Purchase Order
- 3.5 Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month
- 3.6 Percentage of Invoices with Purchase Orders
- 3.7 Percentage of Perfect Invoice Matches
- 3.8 Percentage of Low Dollar Value Purchase Orders
- 4.3 Percentage of Items Activated in the Master File in One Month
- 4.4 Percentage of Items Inactivated in the Master File in One Month
- 5.1 Percentage of Invoices Paid Within Due Date
- 6.1 Voluntary Turnover



## **Guiding Principles**

The purchasing policies and procedures should be developed with four major guiding principles in mind.

### **Quality Service Delivery**

Patient care depends on having the right product, at the right time, in the right place.

### **Value-for-Money**

Hospitals must maximize the value they receive from the use of public funds. A value-for-money approach aims to deliver products and services at a lower cost while maintaining a high standard.

### **Ethics and Transparency**

Public trust is critical. Hospitals must conduct purchasing activities ethically and transparently. They must be efficient, effective and open to all stakeholders.

### **Standardized Process**

A standardized process removes inefficient variability, which saves money and time. Hospitals should use standardized processes that have been developed using leading practices established and tested in both private and public sectors.

Policies and procedures should be designed for use across the entire organization and should contain instructions for internal customers on how to work effectively with purchasing staff and maximize the value provided by the purchasing function. Compliance with the policies and procedures must be tracked. Relevant policies and procedures should also be provided to suppliers, who are encouraged to adopt and actively communicate them within their organizations.

Purchasing policies and procedures should act as primary references for developing other purchasing documents. All other purchasing-related policies and documents should act in accordance with standard purchasing policies and procedures.

## Key Components

There are three key components in ensuring the success of any set of purchasing policies and procedures.

### Establishing the Organization's Purchasing Policies and Procedures

Many different policies are required to govern purchasing activities. Some policies will be applicable to all organizations. These universal policies will be defined within the publication of a "Supply Chain Guideline" document to be completed by the Province in consultation with broader public sector stakeholders by the end of the fiscal year 2008-09. This document will clearly outline policies to govern subjects such as procurement methods, the competitive process, and dollar value tolerances. It will also provide guidance on the procedures to support these policies.

Each organization should customize its purchasing policies with the addition of any other applicable policies to meet the needs of their hospital. Attachment 1.1a comprises a list of additional purchasing policies to consider. This list is not inclusive of every potential policy, nor is every policy listed relevant to all organizations.

Purchasing procedures should provide specific instructions on how to operate within the purchasing policies.

### Compliance

Compliance with the purchasing policies and procedures will be highest when hospital employees understand why the policies are being put in place and the associated benefits to the organization. There are three steps to be considered in ensuring compliance with purchasing policies and procedures across the entire organization.

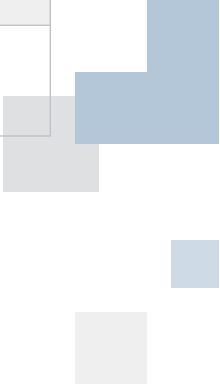
1. Support — involve key stakeholders in the review of the purchasing policies and procedures before they are implemented. Key stakeholders to be considered could be those using the policies and procedures as well as those most impacted by the purchasing process.
2. Communication — ensure that all key stakeholders within the hospital are aware of the purchasing policies and procedures and their impact on the organization. Most importantly, ensure that the benefits to the organization have been clearly identified. Senior hospital executives should strongly encourage the use of these policies and procedures across the entire organization.
3. Follow-up — once the policies and procedures have been implemented, follow up with hospital staff and gather feedback. The organization should be continuously improving the purchasing policies and procedures to fit the needs of the business.

### Accountability

It is important to identify who will be accountable for compliance with the purchasing policies and procedures. These policies and procedures, while owned by the supply chain department, should be endorsed by the senior executive(s) of the hospital. It is the responsibility of senior management to work with the supply chain department to ensure compliance with these policies and procedures and determine appropriate measures in the event of non-compliance.

# Implementation Challenges

Challenges
Internal customers may not consider purchasing policies and procedures a priority. Purchasing policies and procedures must be clearly seen to have the full endorsement and approval of senior executives and implemented throughout the hospital.
Supply chain staff may not feel the process supports or adds appreciable value to their roles. Senior commitment is necessary to ensure appropriate resources are invested to develop the policies and procedures. All supply chain employees should be engaged in the development and ongoing review as it relates to their role.
Resources must also be allocated to maintain the policies and procedures. Document versions should be tracked to ensure that all stakeholders are referencing the most current version of the policies and procedures.



# Attachment 1.1a – List of Additional Purchasing Policies

	Applicable?		In Place?
	Yes	No	
<b>Legal</b>			
1. Payment Terms			
2. Patient/Physician Confidentiality			
3. Contract Management			
4. Organizational Confidentiality			
5. Intellectual Property			
6. Lending/Borrowing Agreement			
<b>Purchasing/Inventory</b>			
7. Role Definition and Responsibilities			
8. Capital Policy			
9. Product Evaluation and Standardization Process Policy			
10. Requisition to Payment Process			
11. Product Recall Policy			
12. Product Returns Policy			
13. Technical Competencies			
<b>Technology/Data</b>			
14. Data Protection and Electronic Communication			
15. Data Hosting and Security, Including Location of Data Storage			
16. eCommerce Policy			
<b>Compliance</b>			
17. Medical Device Licensing			
18. Internal Audit and Process Control			
19. Health and Safety			
20. Use of Key Allergens (e.g., Latex or Scents)			
<b>Others</b>			
21. Branding			
22. Risk			
23. External Communications			
24. Procurement in Foreign Currency			
25. Taxation			



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# Standard 1.2:

## Audit Standards and Processes

### Objective:

To establish a systematic and disciplined review process of the supply chain department designed to add value, improve operations, and provide assurance to management that hospital resources are being used efficiently and effectively

### Definition

The supply chain department should have an internal audit or self-assessment process to provide assurance that the department is meeting its business objectives, promote the consistent and effective application of existing policies and procedures, and contribute to the continuous improvements of the hospital supply chain processes. Self-assessments bring a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, internal controls and information systems, and governance processes.

Where applicable, supply chain audit standards and processes should be aligned with, and build on, the organization's existing audit standards and processes, and internal audit activities should be coordinated with the external auditor.

### Rationale

Effective use of audit standards and processes are not dependent on organizations having an internal audit department. Organizations can derive direct benefits from a self-assessment process focusing on the plan-to-pay supply chain functions. This process will provide assurance that risk is effectively managed, policies and procedures are adhered to, findings are reported to management, timely corrective actions are taken to improve supply chain operations, and appropriate audit trails and supporting documentation for all business transactions exist.

### Benefits

#### **Patient Care**

Audit standards and processes help ensure that the supply chain department operations are effective and contribute to a high standard of patient care.

#### **Financial Stewardship**

Audits help ensure the organization is receiving appropriate value-for-money both in operating costs and expenditures.

#### **Risk Management**

Audit standards and processes ensure adequate controls are in place to minimize risks across the supply chain department.

## Related Metrics

3.6 Percentage of Invoices with Purchase Orders

3.8 Percentage of Low Dollar Value Purchase Order Transactions

## Guiding Principles

Audit standards and processes should be viewed as an enabler, providing proactive guidance to improve the operations of the department. Conducting reviews, or self-assessments, allow an organization to maximize efficiency and effectiveness, while minimizing risk. Effective auditing of the supply chain management process should ensure:

- Supply chain activities are undertaken consistently and to a high quality established by the organization;
- The plan-to-pay process is monitored and controlled, reducing the possibility for fraud or errors;
- The organization is operating consistently with its Code of Ethics and performs supply chain activities in line with any corporate and social responsibility requirements;
- Suppliers meet the standards required by the organization and are treated fairly and objectively;
- Controls and mechanisms are maintained for managing financial and contractual risk; and
- Financial and contractual commitments are made by those with appropriate authority and are duly documented.

The scope of audit standards and processes should cover all supply chain-related activities performed within the organization. The degree of scrutiny applied to specific supply chain processes should reflect the organization's exposure to financial and contractual risk. Organizations should also consider conducting regular audits of the supply chain procedures used by third-party service providers.

## Key Components

### Format

The supply chain department should develop and implement periodic self-assessments to proactively evaluate its own processes, risk management, and ongoing compliance. An effective audit process is based on appropriate planning, execution, report writing, and follow-up procedures. The audit process should address the following areas:

- Provide clear procedures to ensure supply chain audits are done regularly and effectively;
- Direct staff in focusing on areas of greatest importance or risk, which, where appropriate, should align with the audit plan of the external auditors; and
- Provide standard templates for consistency to document audit scope, methodology and findings.

An effective audit strategy should also include use of varied audit tools and methodologies, including audit questionnaires, risk assessments, controls testing, interviewing and discussions, and performing financial and trend analyses.



## Resources

Supply Chain Management needs to identify internal resources, i.e., assessors to conduct the self-assessment. Wherever possible, the assessors should be independent of the activities they audit and of the management directly responsible for the activities they audit. The assessors should work with management and staff involved in the activity they are auditing to identify and assess business risks and mitigation strategies.

## Frequency

Self-assessments should be undertaken in accordance with a schedule determined by supply chain management. Frequency should be based on (1) the intrinsic risk of the supply chain activities, (2) historical performance and (3) a focus on proactively improving supply chain operations. Self-assessments may also be scheduled on short notice to assess the rigour and sustainability of procedures in action.

## Results and Implementing Corrective Action

Self-assessments should culminate with a final report. The reports should focus on areas of substantive risk in supply chain management and identify any gaps in the current processes and potential compliance issues. The supply chain department needs to develop a process and timeline for addressing and resolving the identified issues.

# Implementation Challenges

### Challenges

To gain support from their staff, management needs to foster an environment of continuous improvement and make it clear that this is not an exercise meant to highlight flaws in individuals, but rather to identify process gaps.

Implementing audit standards requires training for all staff. Staff needs to understand that identifying and resolving issues through this process will help to reduce potentially significant risks.



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# Standard 1.3:

## Boilerplate Contracts and Key Legal Principles

### Objective:

To simplify the process of establishing contracts and reduce risk to the organization

### Definition

Boilerplate contracts and key legal principles are a standard set of contract terms and conditions used for all normal purchases. These terms and conditions address all the legal and commercial matters pertaining to the relationship between the organization and supplier. Boilerplate text is widely used in the legal profession, where phrases, paragraphs and clauses can be used repeatedly in contracts with little or no modification. The organization should also create standard contract templates for key expenditure categories such as capital, IT, services and commodities, reflecting the specific requirements of each.

### Rationale

Boilerplate contracts and key legal principles enable organizations to consistently apply legal diligence to multiple similar contracts. This improves the effectiveness of the contracting process, reduces unnecessary repetition, and reduces the need for costly legal advice.

### Benefits

#### **Financial Stewardship**

The use of boilerplate contracts and key legal principles minimizes the use of expensive legal resources by reusing standard templates.

#### **Process Efficiency**

Using standard contract templates reduces the time required for the supply chain department and legal experts to draft, review and manage contracts.

#### **Risk Management**

Standard contract templates reduce the organization's exposure to unknown and unnecessary contractual risks by establishing standard clauses that state all legal, regulatory, tax, insurance, Health and Safety (H&S) or Central Sterile Reprocessing (CSR) obligations between the organization and supplier to protect both parties.

#### **Supplier Relationships**

Boilerplate contracts and key legal principles maintain consistent terms and conditions in contracts with suppliers and establish standard expectations in contractual responsibilities between the buyer and supplier.

## Related Metrics

- 1.1 Percentage of Active Items under Contract
- 2.3 Operating Costs as a Percentage of Expenditures
- 5.1 Percentage of Invoices Paid within Due Date
- 5.2 Supplier Performance
- 6.1 Voluntary Turnover

## Guiding Principles

Boilerplate contract clauses and standard contract templates should be approved by the organization's legal representatives. Additional approvals should also be provided by departments with relevant specialized expertise, as well as taxation and health and safety.

Standard contract templates should be aligned with the amount of commercial risk involved, and not unduly restrict suppliers from competing for the organization's business or restrict continuous improvement.

In addition to providing legal protection to both parties, contract templates must clearly communicate the commercial principles and intent of the agreement in question.

For complex contracts, the appropriate specialists in numerous departments should be consulted such as patient care, legal, taxation, auditing, technology, and health and safety. The processes for establishing contracts and using the templates should be included in the Purchasing Policies and Procedures.

## Key Components

Typically, organizations will have at least one set of contract clauses for purchase of goods and another for purchase of services. Organizations may also consider establishing separate contract templates for common expenditure categories, such as capital and information technology.

Some examples of the types of boilerplate clauses that would be in a contract template include:

- Scope
- Price, payment terms, and invoicing
- *Force majeure*
- Conflict of interest
- Order of precedence of documents
- Termination
- Notices
- Law and jurisdiction
- Insurance
- Liability and indemnity
- Confidentiality
- Assignment and subcontracting
- Intellectual property rights and licenses
- Warranties
- Supply and delivery
- Performance incentives and penalties
- Contract changes

## Province-Wide Common Tendering and Contract Management

Even greater efficiencies can be gained by developing and standardizing contract clauses and templates across organizations. The Province is working with organizations and suppliers and gathering existing documents to develop a common contract document.

The Province will be publishing a two-part Common Tendering and Contract Management document. Part I, the Common Tendering framework, will outline the process for a common approach to tendering. Part II, Contract Management, will provide the terms, conditions and specific legalities to support this framework. The framework and associated standard contract terms and conditions will facilitate the contracting process for all broader public-sector (BPS) organizations, including hospitals, and create consistency across the Ontario BPS.

## Implementation Challenges

### Challenges

The clauses and principles may occasionally not be applicable. Best efforts should be made to use the standard templates. If material changes are required, the supply chain department should consult legal and other experts.

Boilerplate contracts and key legal principles may become less relevant over time. Periodic reviews of the clauses and principles should be performed to remain current.

The standard clauses may not be accepted by suppliers. If a supplier demands material changes, legal representatives from both organizations should be consulted to resolve the issue. Providing the standard contract template in the RFP may reduce such changes.



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## Standard 2.1: Segregated Approval and Authority Schedules

### Objective:

To manage the risk associated with hospital purchasing processes by establishing appropriate segregation of duties and delegation of authority

### Definition

Effective internal control in an organization includes both the segregation of duties and delegation of authority across functions and individuals. Within the organizational supply chain function, segregation of duties prevents any one person from controlling the entire purchasing process by segregating the approvals for the key stages of the supply chain process, such as requisitions, commitments and payments.

An organization's delegation of authority defines approval levels corresponding to job roles within the organization's hierarchical structure and ensures that every individual's approval authority is commensurate with the responsibility level for each job.

### Rationale

Segregation of duties and delegation of authority are essential controls within the plan-to-pay process. Together, they ensure integrity of the process by reducing exposure to inappropriate, unauthorized or unlawful expenditures.

### Benefits

#### **Financial Stewardship**

A standardized purchasing approval process provides the necessary financial controls to ensure expenditures are appropriate and authorized.

#### **Risk Management**

Segregation of duties and delegation of authority minimize risk to an organization of unauthorized and inappropriate spending.

### Related Metrics

- 3.6 Percentage of Invoices with Purchase Orders
- 3.7 Percentage of Invoice Matches

# Guiding Principles

Roles and responsibilities for authorizing purchases must be clearly assigned and delineated. The board of directors/executive committee should formally delegate approval authority to the appropriate employees throughout the organization and ensure that adequate segregation of duties exists for all purchasing activities. Assigned authority levels should be commensurate with the responsibility level of each job and the level of risk to the organization.

Procedures should be in place to ensure that authority levels are kept current and reflect any changes in organizational structure, functional alignment and roles.

## Key Components

### Segregation of Duties

There are typically five supply chain functions that require approval:

Function	Explanation	Who
<b>Requisition</b>	Authorize the supply chain department to place an order	Customer requesting the product or service
<b>Budget</b>	Authorize that funding is available to cover the cost of the order	Departmental budget holder
<b>Commitment</b>	Authorize release of the order to the supplier and commitment to agreed contract terms	Purchasing role in the supply chain department
<b>Receipt</b>	Authorize that the order was received and was correct and complete	Individual receiving the goods
<b>Payment</b>	Authorize release of payment to the supplier	Accounts payable role within the finance team

It is considered leading practice to segregate at least three of these functions: commitment, receipt and payment. Responsibilities for these functions should lie with different departments or at a minimum by different individuals. Where an individual making a requisition also has responsibility for the budget, the receipt should be the responsibility of someone in a separate part of the organization.

### Delegation of Authority

Proper delegation of authority should be in place to support the organization's supply chain management objectives. Dollar value levels for authorization of each of the above functional areas by job role should be established by the organization. For instance, the senior supply chain executive normally has a high level of authority to commit the organization to purchases. To maintain adequate control, however, it is considered good practice to ensure that the signature of a co-approver is required for transactions over certain thresholds.

Even when individuals are assigned a high level of authority, the segregation of duties should ensure that no one individual can have complete and unlimited authority over an entire transaction life cycle.



### **Commitment**

Commitment is a critical authority as it binds the organization to pay the supplier providing the goods or services according to the agreed terms. Whereas payment authority is generally assigned to one area — the finance department — commitment authority may be assigned to individuals in many different areas. Across an organization, commitment levels should be documented and agreed to according to job function and responsibilities.

Commitment levels would normally be organized into two distinct types.

- Purchase expenses covering goods and services. Commitment levels for these types of expenses are often divided into capital and non-capital expenditures.
- Departmental expenses covering travel, accommodation and sundries.

Commitment documents such as purchase orders or supply contracts must be signed and approved by employees with delegated financial authority sufficient to cover the total transaction cost.

Some organizations will establish distinct commitment levels for goods versus services, reflecting the fact that ensuring proper receipt of services is more complex than physical goods. Authority for departmental expenses is often delegated to multiple employees, with commitment levels varying according to job function and role.

### **Method of Authorization**

Effective organizations establish a specific authorization process for purchases. For example, a buyer with adequate authority would be required to sign the face of the purchase order to confirm commitment and provide authorization to the supplier. Similarly, an individual with commitment authority in the supply chain department would be required to sign a supplier contract to authorize the commitment. The methods adopted should be outlined in the purchasing policies and procedures and also communicated to suppliers.

Exceptions should be documented and included in the purchasing policies and procedures. Organizations will likely have provisions for emergency situations and low dollar value policies. For instance, financial authority is not required for payment of individual purchases made via blanket orders, provided the blanket order itself has been approved.

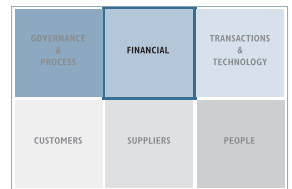
## **Implementation Challenges**

### **Challenges**

Supply chain staff should revisit current authority and approvals to ensure consistency with standard and put procedures in place to ensure compliance. The standard should not create complex processes so as to encourage “work around” and non-compliance. The process should be created with the intent of creating minimal extra work.

Appropriate communication is required organization-wide on authority and approval limits to ensure staff understands policies and procedures, implications and penalties for non-compliance, and that the policy is also for their protection.





## Standard 2.2: Inventory Policy

### Objective:

To balance the benefits of physical inventory versus inventory costs to ensure an organization can meet its patient care needs while obtaining value-for-money from its supply chain expenditures

### Definition

The inventory policy addresses how inventory is to be managed across the organization. It is intended to maximize the key elements of the inventory cycle by establishing optimal levels and location through effective demand planning, forecasting and replenishment.

### Rationale

The purpose of inventory management is to ensure that customers have access to the right product at the right time in the right place and at the right cost. This must be balanced with ensuring appropriate risk management. In hospitals, effective inventory management minimizes excess inventory levels while ensuring patient needs are met. A clearly defined inventory policy enables the supply chain department to be accountable for the management of inventory items and ensures that the organization's resources are committed effectively.

### Benefits

#### **Patient Care**

Establishing appropriate inventory levels and locations ensures that medical staff have the required items to provide the highest level of patient care.

#### **Financial Stewardship**

An effective inventory policy helps organizations manage their assets and their return on investment, as well as manage down expenses by decreasing the amount of products procured.

#### **Customer Service**

Maintaining adequate inventory levels is a key element of customer service to ensure supplies are available when needed. The inventory policy should establish optimal inventory levels by minimizing the risks associated with stock-outs and stale-dates, without overcrowding point-of-use storage space.

## Related Metrics

- 2.2 Inventory Turnover in One Month
- 2.3 Operating Costs as a Percentage of Expenditures
- 3.2 Percentage of Rush Purchase Orders
- 3.5 Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month
- 4.1 Stock-Outs at the Cart Level
- 4.2 Fill Rates to Customers
- 4.3 Percentage of Items Activated in the Master File in One Month
- 4.4 Percentage of Items Inactivated in the Master File in One Month

## Guiding Principles

An inventory policy should establish a process to determine what to stock, the optimal quantity and locations. Determining factors include inventory and replenishment costs, cost of shortages, inventory classification, and product usage patterns.

### Cost

#### **Inventory Costs**

Inventory holding and management costs, or carrying costs, can be divided into fixed and variable costs.

Fixed Costs include:

- Cost of warehouse space and support equipment; and
- Weighted average cost of capital (WACC).

Variable Costs include:

- Value of inventory;
- Operating working capital employed;
- Annual operating costs such as heat, electricity and insurance;
- Inventory shrinkage, obsolescence and expiry; and
- Transportation.

#### **Replenishment Costs**

To determine replenishment costs, the following should be considered:

- Expected number of times the item is requested annually;
- Average quantity requested each time of use;
- Minimum Order Quantities (MOQ);
- Cost to process a purchase order (from requisition to payment); and
- Transportation costs.

#### **Cost of Shortages**

Shortages include both financial and non-financial costs. Financial costs include rush order costs and shipping and non-financial costs include reduced patient care.

## Inventory Classification

Categorizing inventory in order of importance (by usage, revenue, profitability, etc.) will aid in determining order quantities and patterns and whether the product should be included as inventory, or as a special order on a case-by-case basis. Priority categories (“Category A”) should have tighter controls and be monitored more frequently than those items that fall in lower-priority categories. Categorizing inventory will also help determine resource allocation – i.e., how much time one spends on managing that class of inventory.

## Product Usage Patterns

Product volumes, type and number of customers, and consumption patterns should be considered when determining inventory levels and locations.

Inventory protects against unanticipated events. If an organization can manage its processes or forecast better, then inventory can be reduced. One aspect of this is an IT system that provides inventory visibility along the supply chain.

## Key Components

### **Stock**

Stock is defined as products that are kept in central stores inventory that is tracked and input into the costing system.

### **Non-stock**

Non-stock is defined as products that are special order items, and not usually part of the normal set of inventory. Non-stock is usually not tracked in an organization’s inventory system. In theory, non-stock items should be received and distributed immediately. They should have high turnover. However, in practice, non-stock inventory ends up being stored in local locations. If this is not tracked, then cost metrics are misrepresented, as non-stock items tend to become stock. Thus, non-stock items should be entered into the system as non-stock, but tracked as any other inventory item.

## Inventory Decisions

The following factors should be considered in determining whether to stock an item.

***Is the item already in stock and, if so, is the correct quantity being stocked?***

***Is an acceptable alternative already in stock?***

- If a new stock item can replace an existing stock item in its entirety, consider removing or depleting the existing item. Likewise, if a proposed new stock item is equivalent to an existing one, consider whether the value of stocking the new one is worth it.

### **Ordering versus stocking**

- Review the economics of stocking frequently ordered items. An item should only be stocked if the cost and risk of not having the item exceeds the cost of stocking it.

### **Order cycle time**

- Evaluate the cycle time (including supplier lead time, ordering time, shipping time, and receiving time) versus the urgency with which the item is required.

### **Cost of non-availability versus stocking**

- Analyze the importance of an item and the risks associated with not having it available. Pareto analysis can be used to help determine which items to stock. This process involves ranking items in order of importance to identify the 20 per cent that are of most significance and the 80 per cent that are of less importance. Organizations should consider stocking the most important items.

### **Limited lives of products and special handling and storage conditions**

- Given that some healthcare products have limited lives, due to expiration or technology changes, and/or have special handling and storage requirements, special consideration must be given as to whether to stock these items. Analysis of the frequency of usage will be a key factor.

### **Are there other arrangements?**

- Consider cost avoidance measures such as vendor-managed inventory, consigned inventory, and sharing inventory with another institution (risk pooling). -

## **Optimal Inventory Levels**

Once a stocking decision has been made, the following should be considered to determine the appropriate inventory level.

### **Usage Patterns**

Baseline forecasting plus potential demand growth and demand fluctuations should all be considerations in determining optimal inventory levels.

### **Effective Order Quantities**

The effective order quantity should be determined for each item by balancing inventory holding costs, replenishment costs, inventory space availability, consumption patterns, product shelf life, and supplier minimum order quantities.

### **Inventory Buffers**

Inventory buffers are designed to protect against sudden increases in demand, especially for critical use items. The most important factor is the “cost” of outages in terms of service levels. Other factors to consider are holding cost, replenishment cost, ordering times, product shelf life, and consumption. The greater the desired level of customer service, the greater the required inventory.

### **Replenishment**

Replenishment and inventory levels are directly correlated. Lower inventory means more frequent replenishment and vice versa. An organization needs to balance the level of inventory with the desired frequency of replenishment, taking into consideration inventory holding cost, replenishment cost and replenishment lead time.



## Inventory Risk Management

This component of the inventory policy should outline the processes involved in the event of a disruption in the procurement and inventory management process. The contingency plans should include alternative suppliers, product substitution, sourcing/borrowing from secondary facilities (such as other hospitals), guidelines regarding buffer stock, insurance, contractual terms regarding the bearer of risks, and policies regarding premium expedited transportation. As in the case of inventory management during normal operations, costs associated with inventory risk management should be tracked and monitored on a regular basis.

Inventory risk management must also include procedures to prevent pilferage and theft of inventory.

## Other Components of Inventory Management

An organization should have documented procedures for the following inventory processes:

- Receiving — systematic regulated stock receiving and replenishment;
- Storage/inventory visibility — maintenance of clean, organized storage locations with appropriate labelling and proper storage of items to support ease of access;
- Audits — regular reconciliation checks;
- Release/return — returns of defective goods;
- Recall and product tracking — tracking of stock in inventory to support replenishment and tracking of serial numbers to enable product recall;
- Classification — categorizing inventory by importance — important, average or relatively unimportant — to ensure resources are focused appropriately;
- Sale/disposal — selling off or safely disposing items no longer being used;
- Loss/redundancy — minimizing loss and redundancy;
- Asset management — keeping proper inventory records;
- Quality management — stock rotation to ensure older stock is used before supplying new items; and
- Handling of “special” inventory — those requiring specialized handling and storage.

## Implementation Challenges

### Challenges

Staff may not understand the importance of using a policy to manage inventory. Staff should receive adequate training to understand the potential risks and benefits of managing inventory.

The trade-off between investment and service delivery may become unbalanced overtime. This policy must be designed and monitored to effectively balance all the aspects that go into inventory decision making.





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# Standard 3.1: Contracts Database

## Objective:

To maintain a comprehensive contracts database to track, record and manage an organization's contractual commitments in a timely and accurate fashion

## Definition

A contracts database is a comprehensive repository recording an organization's contractual commitments with its suppliers. Ideally, contract information should be stored in an electronic database that allows for quick and accurate information retrieval.

## Rationale

A contracts database allows the organization to quickly save contracts in an organized manner, enables fast referencing, and facilitates contract changes and renewals. A central database of contract information allows the supply chain department to efficiently engage with suppliers and internal customers on contract matters, thus improving service to the organization.

## Benefits

### **Financial Stewardship**

A contracts database enables organizations to track items under contract and their associated expiry dates to support initiatives to increase control over expenditures. It also facilitates item procurement at the contracted price.

### **Process Efficiency**

A central contracts database reduces administrative effort by having accurate contract information readily accessible to supply chain staff, thus enabling fast placement of purchase orders and a reduction in the number of accounts payable variations.

### **Risk Management**

Tracking of all contracts and contract milestones is vital in the effective monitoring of contractual obligations to enable timely interventions and the mitigation of associated risks. A contract database also enables compliance with any Group Purchasing Organization (GPO) contracts.

## Related Metrics

- 1.1 Percentage of Active Items under Contract
- 1.2 Purchasing Response Time
- 2.1 Average Cost to Issue a Purchase Order
- 2.3 Operating Costs as a Percentage of Expenditures
- 3.1 Number of Purchase Orders in One Month
- 3.3 Number of Purchase Orders Placed per Full-Time Equivalent in One Month
- 3.4 Average Lines per Purchase Order
- 3.7 Percentage of Invoice Matches
- 4.3 Percentage of Items Activated in the Master File in One Month

## Guiding Principles

Effective contract management includes maintaining up-to-date contract information, tracking savings and ensuring contract agreements and conditions are met. Each organization must determine their contract database requirements. The following are scope questions that organizations should consider.

- What does the organization need in a contracts database and what functionality is required? Is the organization seeking to create a simple register of contracts, or is it looking for a variety of contract creation and management solutions, including templates, alerts, auto links to content catalogues, auto item price changes, compliance statistics workflow, etc.?
- Does the organization currently have the capability to implement the necessary controls and processes to limit who can authorize contractual agreements and ensure compliance in the use of these contracts? If not, it will be difficult to ensure the database remains current and complete.
- Which individuals/groups need to access the information in the database and for what purposes? Using security access controls, designated people can be given permission to make changes to the database, while others can be limited to read-only rights.

## Key Components

### Format

Contract information can be stored in a variety of formats, including manual registers, spreadsheet applications, and relational database management systems. The optimal format for an organization should be determined by weighing factors such as number of active items, number of contracts, number of requisitioning points, required access levels, required level of functionality, and available investment.

Off-the-shelf spreadsheets and relational databases have limited ability to provide all the functions and sophistication required to support effective contract management. Contract management modules, available with most supply chain management systems, provide considerable benefits such as superior functionality and, if web-based, wider accessibility, although they tend to be a more expensive option. The following is a list of examples of additional functionality that can be obtained with a contract management module.

- Contract template development
- Contract overview data field creation
- Contracting process definition
- Workflow and approval management
- Repository searches
- Alerting services including for contract renewals, milestones, etc.

- Contracts reporting
- Storage of standard clauses and pre-approved legal content
- Contract negotiation management including tracking of offline negotiations, versions and comparing contract language between multiple presented contracts
- Internal and supplier invoice compliance
- Pricing compliance — milestone payments, tiered pricing, formula-based pricing
- Transaction execution compliance including links to content catalogues to change item pricing as per new/revised contract terms

Original paper-based contracts should be kept in a secure location such as a fireproof safe; however, the use of only electronic contracts with legally approved electronic signatures can be explored as an alternative.

### Contract Information

A contracts database typically contains the following basic information about each contract.

- Contract title and reference number
- Category/sub-category information
- Description of the contract and goods/services available
- Electronic copy of the contract
- Status — current or terminated
- Contract scope — geographic, business unit or user limitations
- Contract start date
- Contract end date
- Date for new Request for Proposal or contract extension discussions to start
- Contract type
- Supplier name
- Supplier details
- Estimated annual value or limits
- Key terms and conditions, milestones or restrictions
- Pricing, price breaks, rebates, etc.
- Responsible contract manager or supply chain employee and contact details
- Specific instructions for the supply chain employee who maintains the contract or purchases through the contract

### Use of Contracts Database

Organizations should only allocate database access to those required to safeguard the system and the hospital. Only designated supply chain staff responsible for maintaining the database should have full read-write access. Other supply chain staff and customers, if appropriate, may have read-only access. The organization may also consider posting the database on a secure intranet site or portal if greater accessibility is required.

The organization should design a process for identifying opportunities for contracts for new item requests or increased usage of items. It is also important to provide mechanisms for customers to communicate their supply needs and provide feedback to support continuous improvement.

# Implementation Challenges

Challenges
Any project that involves implementing new software is subject to many challenges. An information technology specialist or team must be engaged to draw up the functional requirements, select the right software, and develop a detailed implementation plan that identifies and mitigates the associated risks.
The process to input all contract information in a single place is time-consuming and has significant room for error. This task requires that adequate resources are employed to ensure attention to detail to minimize errors.



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## Standard 3.2: Low Dollar Value Transactions Strategy

### Objective:

To implement streamlined processes for low risk, low value purchases

### Definition

The organization should establish alternative processes for ordering specific types of low risk, low value goods and services that require fewer resources than the normal purchase order (PO) process.

A strategy for low value transactions could include:

- Alternative acquisition processes:
  - Purchasing cards;
  - Standing orders and blanket orders; and
  - Online supplier catalogues.
- Strategies to reduce low value transactions:
  - Invoice consolidation; and
  - Minimum order quantity/minimum order value.

### Rationale

Implementing alternate processes for low risk, low value transactions can free up supply chain resources for strategic purchasing of high risk, high dollar value transactions, which generate greater returns — in cost savings and risk mitigation — than comparable investments in low value transactions.

### Benefits

#### **Financial Stewardship**

Alternative purchasing processes for low risk, low value transactions result in increased contract compliance and savings through better pricing than ad-hoc buying.

#### **Process Efficiency**

Alternative acquisition processes reduce the workload on supply chain staff, allowing them to focus on more value-added activities.

#### **Customer Service**

Efficient acquisition processes improve customer service and allow the supply chain department to focus on areas that deliver greater value to their customers.

### **Risk Management**

Using alternative, less time-consuming processes for low value transactions allows supply chain resources to focus on high risk, high value items, reducing overall operational and financial risk to the hospital.

### **Supplier Relationships**

Establishing alternative acquisition processes that are more efficient for the organization also creates process efficiencies for suppliers, resulting in improved supplier relationships.

### **Related Metrics**

- 2.3 Operating Costs as a Percentage of Expenditures
- 3.1 Number of Purchase Orders in One Month
- 3.6 Percentage of Invoices with Purchase Orders
- 3.8 Percentage of Low Dollar Value Purchase Orders

## **Guiding Principles**

Organizations should conduct a spend analysis to identify the quantity and frequency of low value transactions. Based on this analysis, the organization can prioritize those areas that would deliver the greatest benefits from both an efficiency and risk management perspective.

Alternative strategies do not necessarily involve major system changes and could be as simple as authorizing specific employees to make purchases online from preferred suppliers without obtaining a signed requisition. The goal is to implement streamlined, less resource-intensive processes.

Customers and suppliers may be excellent resources for identifying alternate purchasing processes. The spend analysis should identify which departments or service areas in the organization are making low value purchases. Staff in these areas may already have recommendations for making these purchases more efficient. Additionally, suppliers may also have preferred processes that have been executed with other customers.

Organizations should ensure the amount of diligence applied to the selected purchasing process is appropriate for the level of risk to the organization (extremely high levels of risk may be associated with some low value items).

Spend analysis should be conducted at regular intervals, especially with the introduction of new items to centralized purchasing, to ensure that alternative purchasing processes are still appropriate.

Compliance monitoring is also critical to the management of low value processes. The spend analysis process and the alternative acquisition processes should be part of the supply chain department's documented procedures. The internal audit team should be involved in validating new processes and ensuring procedures are followed. A risk assessment may be helpful to identify potential risk areas and mitigation strategies for any new processes.



# Key Components

## Alternate Acquisition Processes

### **Purchasing Cards**

Purchasing cards are a common solution for ad-hoc low value purchases. They enable cardholders to make product choices, shorten lead times, and reduce administrative burden (including supplier management). Purchasing cards also provide clear audit trails and detailed spend information to track compliance.

As an alternative to issuing a card to each staff member, it is possible to issue purchasing cards that only can be used with preferred suppliers (such as catering providers or building maintenance suppliers). Two benefits of this approach are (1) the card will be held centrally and (2) potential compliance issues are minimized since the card can only be used with select suppliers.

### **Standing Orders and Blanket Orders**

Blanket and standing orders are normally used when there is a recurring need for expendable goods. They have the benefit of allowing organizations to carry lower inventory while still avoiding the administrative cost of processing separate POs each time supplies are needed and capturing favourable pricing through volume commitments.

A standing order is a type of PO covering repeated deliveries of goods or services in specified quantities, at specified prices, and according to a specified schedule. One PO is issued to cover the total volume over a predetermined time period. Deliveries are scheduled with defined volumes at regular intervals or on fixed dates.

A blanket order allows the supply chain department to create one PO for multiple deliveries of a specified good or service for a fixed period and/or quantity at an agreed price. A blanket order differs from a standing order in that the deliveries' schedules are not predetermined, but are on an as-required basis.

### **Online Supplier Catalogues**

Buying online directly from preferred suppliers is an ideal way to empower employees, reduce administration costs and encourage contract compliance. The supply chain department must negotiate clear terms and conditions, including rebate terms, with the supplier and establish consistent payment and invoicing processes. -

Suppliers should provide electronic statements to support the organization's trend analysis. The suppliers' systems might also support allocation of budget codes for each transaction to enhance future spend analyses.

## Strategies to Reduce Low Value Transactions

### **Invoice Consolidation**

Requesting suppliers to consolidate invoice lines for individual POs into fewer invoices can reduce administration costs for both the supplier and the organization. This approach should only be considered if (1) an approach is established for resolving issues; (2) it does not result in loss of valuable information; and (3) the consolidated invoice can be approved by a single individual (as opposed to requiring approvals by authorized individuals for each invoice line).

### **Minimum order quantity/minimum order value**

The supply chain department should establish minimum order quantities or values for low value items that are used in high volumes. This requires a policy for batching requisitions and waiting until minimum quantities are reached before issuing the PO.

# Implementation Challenges

Challenges
The supply chain department must retain control over all alternate acquisition processes. Organizations have had issues with purchasing cards in the past, but lessons have been learned and the general consensus is that purchasing cards can be useful as long as the proper controls are in place.
The starting point for implementing alternative strategies requires some upfront analysis of spending. This may be a difficult process if consolidated information is unavailable, i.e. disparate information held by finance, supply chain (purchasing card systems), and/or suppliers.
Developing and fully implementing strategies for managing low value transactions can take considerable time. Support from all stakeholders must be gained to be successful in introducing changes to the practices for ordering low value items across the organization.
As with all new policies and procedures, proper training is essential to ensure that users understand the alternative procedures and the risks and benefits.



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# Standard 4.1: Customer Survey Tools and Processes

## Objective:

To gather customer feedback of the supply chain department's performance for service improvement opportunities

## Definition

Customer survey tools and processes are used to understand customers' needs and expectations, measure performance, and gather valuable feedback from the customers' perspective.

## Rationale

Implementation of customer survey tools and processes to regularly obtain and assess customer feedback is a key element of managing customer relationships and ensuring supply chain excellence.

## Benefits

### **Patient Care**

Customer surveys enable management to target supply chain improvements based on clinician input and ultimately enhance patient care.

### **Process Efficiency**

Input from customers on the efficiency of the supply chain department and opportunities for improvement is vital in developing efficient processes that effectively meet customers' needs and requirements.

### **Customer Service**

Feedback from customers allows the supply chain department to identify opportunities to improve their performance and to understand their customers' perspective and better meet their needs.

## Related Metrics

- 1.2 Purchasing Response Time
- 3.2 Percentage of Rush Purchase Orders
- 4.1 Stock-outs at the Cart Level
- 4.2 Fill Rates to Customers
- 6.1 Voluntary Turnover

# Guiding Principles

Customer surveys, or other formal feedback mechanisms, enable service departments to determine customer expectations and experiences and benchmark performance improvements where possible.

To maximize the benefits of customer surveys and feedback, the supply chain department needs to ensure:

- Surveys are conducted at regular intervals, or as close to time of transaction as possible;
- Feedback is received from key organizational areas and users and sampled from other departments at differing intervals;
- Participation and survey methodology is actively encouraged and supported throughout the organization;
- Issues that are identified are promptly confronted and resolved; and
- The supply chain department's performance on customer service measures is communicated back to customers either through supply chain performance reporting or corporate-level reporting.

## Key Components

### Scope

A typical survey would gather feedback on the people, processes and systems that the supply chain department uses to conduct its business. The following is a list of subjects that may be included in supply chain customer surveys.

#### 1. People

- a. Courteous and professional
- b. Knowledgeable
- c. Responsive
- d. Helpful in resolving problems
- e. Complete activities within agreed timelines
- f. Communicate effectively, responsively and in a timely fashion
- g. Provide guidance in understanding commercial issues

#### 2. Processes

- a. Effectiveness of the purchasing policies and procedures
- b. Efficiency of the approval process
- c. Effectiveness of budgeting and forecasting with respect to the supply chain department's contribution
- d. Effectiveness of the supply chain department's guidance for usage of these processes

#### 3. Systems

- a. Ease of use of plan-to-pay systems
- b. Availability and effectiveness of technical support
- c. Accuracy of system information
- d. Ease of use of purchasing card and other low-value purchasing processes
- e. Effectiveness of problem resolution

## Format of Surveys

There are two common forms for customer surveys. Traditional customer surveys were paper based but these surveys are resource intensive for both the surveyed participants and surveyor. On-line surveys can be automatically sent to the customer when a service is received. This may require resources upfront for development but the benefits include less administrative time required to code and report the survey information and less commitment or time required on behalf of the surveyed participants, hence improving the response rate.

As a starting point before the implementation of a formal process, it is worthwhile to coordinate a working group with key users and gather feedback on current performance issues and areas for improvement.

## Frequency of Measurement

Ideally, feedback should be obtained at time of service provision. However, typically, formal customer surveys or assessments are undertaken on an annual basis. Care must be taken to avoid making too many requests to customers for feedback. In addition, the cost and administrative burden of undertaking surveys needs to be balanced against the value derived from the feedback.

## Implementation Challenges

Challenges
This initiative will require upfront resources to establish a formal process. Establishing a working group is also an effective starting point to determine baseline performance of the supply chain department.
A common challenge with customer surveys is ensuring sufficient response rates. The supply chain department should select a survey method that will generate the highest response levels. Surveys should be promoted as an opportunity for customers to voice concerns and provide input regarding how to better meet their needs.
The supply chain department must ensure that the survey is not too cumbersome for its customers, while still soliciting valuable feedback.
Feedback can sometimes be too subjective and not reflect objective measures of performance. Surveys must be designed to solicit specific and objective responses.
Customers may give feedback about supply chain operations that is inconsistent with strategic direction. If this occurs, the supply chain department should investigate further to determine why this misalignment exists and try to resolve any misconceptions, lack of understanding or performance gaps.



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## Standard 4.2: Item Master Management Policy and Processes

### Objective:

To maintain a complete and accurate item master file with contract and purchasing information to enable effective contract management and product standardization initiatives

### Definition

An item master management policy covers item master file maintenance, including how information and items are added or deleted in the master file. The associated processes should document the related responsibilities, authorities and procedures for maintaining an accurate, up-to-date master file.

### Rationale

Management of the item master file ensures accurate information for supply chain management and better decision-making. An accurate item master file enables effective management of product usage, total cost of ownership and product recalls. It is also critical to have good item master management to manage contract compliance and product standardization initiatives.

### Benefits

#### **Financial Stewardship**

Proper management of the item master file enables organizations to retrieve data that can be analyzed to identify opportunities for savings through product standardization.

#### **Process Efficiency**

Item master file management supports improved contract management and more efficient purchasing processes by reducing the variety of products being ordered. Maintaining accurate information also creates efficiencies by reducing errors downstream in the receiving and accounts payable departments.

#### **Customer Service**

One record per item with all the required information facilitates faster and more accurate transactions between hospitals and suppliers. This results in fewer errors and stock-outs, which ensures that customers have the required products when they are needed.

## Related Metrics

- 1.1 Percentage of Active Items under Contract
- 1.2 Purchasing Response Time
- 2.2 Inventory Turnover in One Month
- 3.1 Number of Purchase Orders in One Month
- 3.7 Percentage of Invoice Matches
- 4.3 Percentage of Items Activated in the Master File in One Month
- 4.4 Percentage of Items Inactivated in the Master File in One Month

## Guiding Principles

Organizations may encounter challenges if their item master file is not complete, up to date and accurate. The goal of the policy and processes should be to ensure consistency and accuracy in the item master.

The item master management policy and processes are intended to support hospitals by:

- Centralizing supply chain control and risk management;
- Ensuring items on contract are ordered according to contract terms;
- Enabling more efficient transactions with fewer errors;
- Helping maintain accuracy of records for traceability of items and spend analysis;
- Minimizing waste due to obsolescence, redundancy and date expiration;
- Managing the number of items and approved suppliers to control the administrative burden of supply chain;
- Managing choice of products for customers and ensuring new items, alternatives and substitutes are introduced in accordance with the agreed-on procedures; and
- Ensuring items are assessed based on factors such as efficacy, value, regulatory approvals, approved suppliers and group purchasing contracts.

# Key Components

## Format and Content of Item Master File

The item master file contains the master record for all purchased items. It is typically part of an organization's enterprise resource planning (ERP) system. In some systems, the information is organized into a basic item master file and a dynamic item master file. The former usually remains static from period to period, whereas the latter changes to reflect inventory status and modifications. All pertinent contract and supply information is maintained in the master file and typically will contain:

- Product identification or part number
- Description
- Classification or category code
- Associated equipment number (if appropriate)
- Recommended supplier
- Financial coding (for charge to functional centres, and appropriate secondary code, expense or capital classification)
- Minimum/maximum stock levels including safety stock levels
- Lead time
- Units of measure for purchase (minimum order quantities/volumes)
- Economic order quantity information
- Shelf life
- Stock type and classification (disposable, repairable etc.)
- Tax status (and, as appropriate, bonded items)
- Location code
- Any other pertinent information (i.e. substitute items)

The item master file should be able to link item numbers to other alternatives or substitutes where appropriate.

## Item Master Management Policy and Processes

Clear, well-communicated policy and processes for adding or deleting items in the master file must be documented and adhered to. The policy and processes should address the following:

### **Responsibilities and Authorities**

1. Assign appropriate access and authority levels.

This step is essential to control the size of the item master file and ensure that the information is accurate. To give the organization better control, only a small group of individuals should have access to change information.

2. Assign ownership of item master file to supply chain personnel.

Supply chain department ownership of the item master file ensures that changes to approved suppliers, prices or other contract terms cannot be made by customers without approval by the supply chain department. For some products, it may be feasible to delegate authority to departments for setting up technical and product information but centralization of supply chain control ensures supply chain excellence.

3. Ensure proper segregation of authority.

Segregation of authority must exist between those who have responsibility for setting up the item master file and those who can requisition or purchase goods and services from the master file.

## Activation and Deactivation Processes

### 4. Use standard nomenclature.

It is important to use consistent naming conventions (for example, based on ANSI or UNSPSC standards) for each unique item. The standard naming conventions should provide details for how to add the name of a new product and how to classify different sizes or types of that product as separate entries.

Development of a clear, comprehensive nomenclature system is critical to ensure accurate and searchable information. A future initiative may be to create a standardized nomenclature system to be used across all Ontario hospitals.

### 5. Establish a product evaluation committee.

This committee should include representation of all key stakeholders, users and supply chain staff. Its purpose would be to assess and approve new items and agree on what items should be deactivated, based on established criteria. The committee could also outline exception criteria and processes for medical emergencies and other unplanned events.

### 6. Establish a review process of supply inventory.

A periodic review of old items or unusual usage patterns should be established.

## Implementation Challenges

### Challenges

Staff may have difficulty adjusting to changes in item master file access and authority levels. The goal of the initiative, which is to ensure an efficient and effective item master file, must be clearly articulated and communicated to all stakeholders. Executive support is critical to gain organization-wide commitment for centralized creation and deletion of item master records.

A cumbersome process may encourage users to circumvent the process. Supply chain management should ensure that the item master management process does not become a hindrance within the purchasing process, but rather show that a centralized approach produces tangible benefits. A fast response time for item set-up is essential for the success of this standard.

The supply chain department must monitor the process and ensure compliance with policies and procedures. Organizational support is required so that supply chain staff can take corrective action if non-compliance occurs. This may require changes to policies and procedures, authority levels, or additional audit and review processes.



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# Standard 5.1: Supplier Performance Management Process

## Objective:

To maximize supplier performance by effectively managing supplier relationships and interaction

## Definition

A supplier performance management process is a structured process that defines how an organization measures, monitors and manages the performance of its suppliers. The process should include regular reporting and problem resolution monitoring, but, more importantly, proactive relationship management. An effective supplier performance management process should accomplish the following four goals:

- Communicate to suppliers how their performance will be measured;
- Generate performance reports to measure supplier performance and identify new opportunities to improve supplier relationships and performance;
- Proactively identify trends and potential problem areas so that appropriate action can be taken in a timely manner; and
- Outline standard processes for resolving issues with suppliers.

The process should also identify and address the hospital's performance in areas critical to the success of the supply arrangements.

## Rationale

To achieve supply chain excellence, the supply chain department should actively manage its supplier base, with a focus on relationship management and the performance of its suppliers. Poor supplier performance affects an organization's ability to provide high quality service and increases workload for the supply chain department. An effective performance management process enables suppliers and organizations to jointly commit to new and continuous improvement opportunities.

## Benefits

### **Patient Care**

Proactively managing supplier performance facilitates improved supplier fill rates and decreases the instances of stock-outs, ensuring the right product is available when it is required for patient care.

### **Process Efficiency**

Maximizing supplier performance results in reduced workload for supply chain staff and suppliers by decreasing the need to manage stock-outs, expedite orders and follow up on discrepancies.

### **Customer Service**

Reliable performance of key suppliers is critical to ensure dependable customer service by ensuring the right supplies are available when they are required.

### **Risk Management**

Monitoring supplier performance provides awareness of emerging trends and developing problems, allowing the supply chain department to proactively avoid unplanned, unexpected and potentially critical supply issues.

### **Supplier Relationships**

A standard supplier management process strengthens the working relationships with suppliers by setting clear expectations and a consistent approach to measurement across all suppliers.

### **Related Metrics**

- 3.2 Percentage of Rush Purchase Orders
- 3.5 Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month
- 4.1 Stock-Outs at the Cart Level
- 4.2 Fill Rates to Customers
- 5.1 Percentage of Invoices Paid within Due Date
- 5.2 Supplier Performance

## **Guiding Principles**

Organizations should establish a formal supplier performance evaluation process and ensure all suppliers understand the expectations.

Management of supplier performance is often understood to be a “downstream” activity, undertaken after the contract is awarded. However, proactive “upstream” planning is essential to creating a foundation for subsequent performance appraisals. Upstream performance management involves introducing the process and expectations to potential suppliers at the point of tendering and establishing agreement within the contract to participate in this process.

For high-risk and/or significant dollar value investments, a supplier performance management process should begin at the tendering process, with service commitments and metrics built into the supplier contract. For low-risk and low-value supplier arrangements, the performance management process can be less formal, with internal evaluations of supplier performance.

Periodic reviews are required to assess the supplier performance measurement process and any enhancements or modifications should be incorporated into the process.

## **Key Components**

### **Upstream Planning and Key Performance Indicators**

The specifications outlined within the tendering process should clearly outline the supplier and contractor requirements to meet the needs of the organization. The invitation to tender should outline the performance expectations and key performance indicators (KPIs) that will be used to measure supplier performance.

The required criteria for supplier performance measurement should be agreed to by the supplier before the contract is awarded. The contract should outline the process for collecting, evaluating and reviewing performance data. The criteria will vary depending on the nature of the supply arrangement in terms of value and business risk.



The following table outlines examples of KPIs that could be used to measure supply arrangements with different combinations of contract value and business risk.

		Dollar Value	
		LOW	HIGH
Risk	HIGH	<b>Low Dollar Value/High Risk: Strategic Security</b> Purchasing Objective: Secure Supply Typical Key Performance Indicators: <ul style="list-style-type: none"> <li>• Delivery performance</li> <li>• Supplier responsiveness</li> <li>• Timely provision of essential information</li> <li>• Quality of joint performance reviews</li> </ul>	<b>High Dollar Value/High Risk: Strategic Critical</b> Purchasing Objective: Manage Supplier Typical Key Performance Indicators: <ul style="list-style-type: none"> <li>• Delivery performance</li> <li>• Supplier responsiveness</li> <li>• Timely provision of essential information</li> <li>• Quality of joint performance reviews</li> <li>• Market competitiveness</li> </ul>
	LOW	<b>Low Dollar Value /Low Risk: Tactical Acquisition</b> Purchasing Objective: Easy to Purchase Typical Key Performance Indicators: <ul style="list-style-type: none"> <li>• Delivery performance</li> <li>• Process efficiency</li> <li>• Customer satisfaction</li> <li>• Supplier responsiveness</li> </ul>	<b>High Dollar Value/Low Risk: Tactical Profit</b> Purchasing Objective: Drive Price Typical Key Performance Indicators: <ul style="list-style-type: none"> <li>• Delivery performance</li> <li>• Price performance</li> <li>• Market competitiveness</li> <li>• Supplier responsiveness</li> </ul>

### Supplier Performance Appraisal Process

Key performance indicators, measures and processes should be included in supplier contracts and associated service level agreements. It is essential to secure the supplier's agreement and commitment to these requirements before awarding the contract.

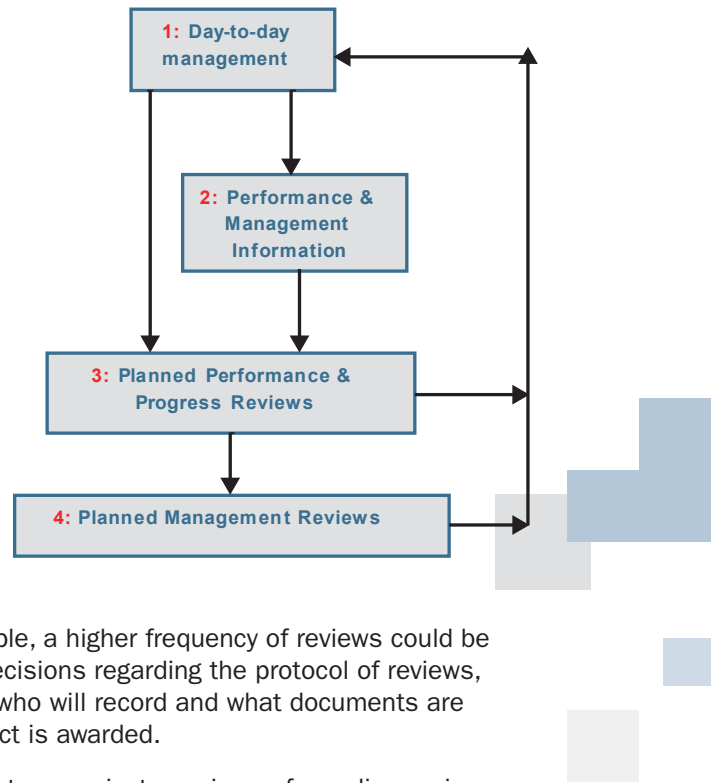
The depth and extent of the structured supplier performance appraisal process should depend on the size and complexity of the supply arrangement. The following diagram depicts a model of a structured supplier performance monitoring and management process for a large contract with significant risk.

1. Day-to-Day Management — Any issues that arise during day-to-day operations should be documented and tracked for discussion at planned future performance reviews. Major issues may need to be dealt with more immediately.

2. Performance and Management Information — Organizations can choose either to collect continuous or periodic data to measure suppliers against the agreed KPIs. This decision should balance the effort to collect data versus the risk associated with the significance of the products provided by the supplier. The KPIs should be reviewed and discussed during planned performance reviews.

3. Planned Performance and Progress Reviews — Planned periodic performance and progress reviews should be established before the contract is awarded. Frequency will depend on the timing and nature of the contract. For example, a higher frequency of reviews could be necessary during the early stages of a contract. Decisions regarding the protocol of reviews, including who should attend, who will act as chair, who will record and what documents are required, should also be agreed on before a contract is awarded.

4. Planned Management Reviews — For major contracts or projects, reviews of supplier senior level management may be appropriate. These reviews, though less frequent, provide a strategic overview of progress, issues and future plans.



Outcomes of each review should be documented, including decisions made and agreed-on action plans, responsibilities, timelines and milestones.

### Supporting Tools and Templates

Organizations should establish standard templates for managing supplier performance. Attachments 5.1a-c provide examples of Supplier Performance Management templates. As a future initiative, Ontario hospitals may want to adopt a common/consistent supplier performance management process and templates.

## Implementation Challenges

Challenges
The supplier performance measurement process could be viewed as complex and administratively burdensome, but, once established, it will aid an organization in the management of operational and financial risk of supplier non-compliance. The process should be adaptable for each supplier depending on the nature of the relationship and supply items and the associated risk.
Staff may not feel the process supports or adds appreciable value to their roles. Supply chain managers need to communicate the importance of proactively managing supplier performance.
The organization must act on the information generated by the process to improve supplier performance and obtain better outcomes. The performance reviews and associated action plans are critical components of supplier performance. Processes must be in place to implement recommendations or take appropriate action identified in supplier appraisals.

# Attachments

## Supplier Performance Monitoring Template

Attachment 5.1a: This template is an example of performance evaluation that could be used before a contract is awarded to detail aspects of supplier performance to be monitored, specific key performance indicators, frequency of reporting and reporting format. The desired outcome is that the hospital and supplier would agree on the program, which would then be included in the formal contract.

## Supplier Performance Reporting Template

Attachment 5.1b: This template can be used in planned review meetings to provide an overview of the supplier's performance in the period since the previous review. Actual performance in each key performance indicator can be readily compared against the target. A scoring system could also be incorporated such as the following:

Actual Performance	Performance Rating
Performance above target	3
Performance at target level	2
Performance below target but not causing major problems	1
Performance below target and unacceptable	0

## Action Planning Template

Attachment 5.1c: This template can be used in planned review meetings to capture agreed-on action plans and assigning accountabilities following the performance review. Progress against the plans can be jointly monitored and discussed at the next planned review.

## Attachment 5.1a – Sample Supplier Performance Joint Monitoring Program Template

Contract:

Supplier:

Performance Area	Criteria	Key Performance Indicator (KPI)	Reporting Frequency	Format
Quality	Adherence to Specification	% and number of non-conformances	Monthly	Exception report, statistics and graphics, including trends
	Program Delivery	% of programmed maintenance jobs fully completed	Monthly	Exception report, statistics and graphics, including trends
Service	Responsiveness	% of unplanned jobs responded to within contractual response time	Monthly	Exception report, statistics and graphics, including trends
	Customer Satisfaction	Customer survey via selected sample of face-to-face interviews with key customers	Biannually	Report
Administration	Invoicing Accuracy	% and number of invoices approved	Monthly	Exception report, statistics and graphics, including trends
Contractual	Compliance with Agreed Terms and Conditions	Number of contractual problems encountered first time without query	Quarterly	Report
Management Information	Timely Provision of Data	Provision of the full management information “pack” one week ahead of the planned quarterly joint reviews	Quarterly	Agreed “management pack” including all KPI data and trend graphs

## Attachment 5.1b – Sample Supplier Performance Reporting Template

Contract:

Review Date:

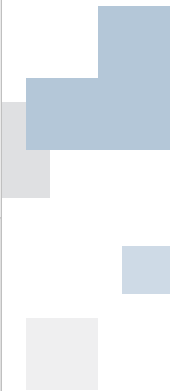
Performance Area	Criteria	Key Performance Indicator (KPI)	Performance		Performance Rating
			Target	Actual	
Quality	Adherence to Specification	% and number of non-conformances	< 1%		
	Program Delivery	% of programmed maintenance jobs fully completed	> 95%		
	Responsiveness	% of unplanned jobs responded to within contractual response time	> 90%		
Administration	Customer Satisfaction	Customer survey via selected sample of face-to-face interviews with key customers	Good		
	Invoicing Accuracy	% and number of Invoices approved	85%		
Contractual	Compliance with Agreed Terms and Conditions	Number of contractual problems encountered first time without query	100%		
Management Information	Timely Provision of Data	Provision of the full management information “pack” one week ahead of the planned quarterly joint reviews	100%		

**Attachment 5.1 c – Sample Joint Action Planning**

Contract:

Review Date:

Performance Area	Comments/Issues	Agreed Action	Responsibility for Delivery	Deadline
Quality				
Service				
Administration				
Contractual				
Management Information				





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# Standard 6.1: Job Roles and Specifications

## Objective:

To ensure job roles and responsibilities for supply chain staff are documented and communicated

## Definition

Job roles and specifications define the requirements of each position in the supply chain department, covering the position's purpose, scope and accountability, and necessary qualifications.

In addition, organizations should have a competence framework, which aligns each of the defined supply chain roles to a set of technical and behavioural competencies and the competence level required for each.<sup>1</sup>

## Rationale

Documented, well-structured and up-to-date job roles and specifications help ensure that each staff member understands his or her role in the organization and the responsibilities of the job. By creating a competency framework for each job role, the supply chain department is in a position to identify skill gaps between the jobholder and the requirements of the job. Clear understanding of the expectations of their job enables completion of the performance appraisal process and employee training and development plans (i.e., standard 6.2 Performance Appraisal Process).

## Benefits

### **Process Efficiency**

A qualified team with clear roles and specifications will operate more efficiently and effectively.

### **Risk Management**

Providing the team with clear specifications and responsibilities will mitigate the risk of staff inadvertently operating outside the boundaries of their authority, thereby placing the institution at risk.

### **Employee/Productivity Satisfaction**

Clear direction, objectives and training plans will result in more satisfied and productive staff.

## Related Metrics

6.1 Voluntary Turnover

<sup>1</sup> This standard is directly linked with the "Competence Frameworks" standard developed in the original Phase I report. Due to this interdependence, the Competence Frameworks standard has been integrated within the Job Roles and Specifications standard.

# Guiding Principles

Every supply chain position should be supported by a documented job role, clearly outlined specifications and a competency profile. These should be:

- In a standard template format;
- Up to date, with regular reviews;
- A component of the jobholder's formal appointment documentation; and
- Discussed and agreed to by the incumbent, particularly when beginning a new position.

These documents form the foundation for standard 6.2 Performance Appraisal Process. Employees should be assessed periodically against their job requirements and the associated competency profile to identify gaps. This facilitates personal development and enables the creation of training plans to address gaps and encourage performance improvements.

The job roles and specifications and competence framework for each role in the supply chain department should be living documents. Managers must work with the Human Resource (HR) department to establish a process to review and update these documents periodically.

## Key Components

### Job Role

A job role and specification document should comprise, at a minimum, the following elements:

<b>1. Job Purpose and Relationships</b>	The purpose of the job, its relevance to the organization and employer expectations, along with reporting lines and key internal and external relationships
<b>2. Job Scope</b>	The scope of the job and its associated responsibilities
<b>3. Accountability</b>	The jobholder's accountabilities, including delegated authority levels, reporting requirements, and legal or other requirements such as compliance with a corporate code of conduct
<b>4. Deliverables and Key Performance Criteria</b>	Daily, weekly, monthly or annual deliverables for the role with associated metrics and targets used to measure the employee's success in meeting deliverables and objectives
<b>5. Qualifications</b>	The basic qualifications for the job plus any higher-level desired qualifications

### Competency Framework

Every job role and specifications should be accompanied by a competency profile. Competency profiles provide guidance on the personal and professional skills and competencies required to be effective for each job in the supply chain department.

Understanding the competency requirements of a particular job is important for two reasons.

1. When recruiting for supply chain positions, the skills and competencies of candidates should be compared against those required to be successful in that position. Competency fit and gaps can be identified and used in the candidate selection process. These benefits apply for both internal and external recruiting.
2. Competency requirements provide a framework for evaluating the skills and competencies of the current jobholder both in terms of fit in current role and potential for growth. This evaluation, in turn, supports identification of gaps in skills that should be addressed in training and development plans.

Competencies can be divided into two generic categories as outlined below.

### **1: General Skills and Personal Attributes**

Examples include:

- Management competencies, such as stakeholder management, strategic planning, oversight and innovation
- Building relationships
- Communication skills
- Team skills
- Problem solving
- Negotiation
- Risk management
- Presentation
- Managing self

### **2: Technical Skills and Professional Knowledge**

Examples include:

- The fundamentals of supply chain management
- Purchasing/procurement
- Strategic sourcing/contract management
- Logistics/warehousing/distribution
- Supply market analysis
- Tools and techniques
- A structured approach to the development and effective implementation of supply chain management strategies -
- Knowledge and application of supply chain-related information technology (eCommerce)

### **Competency Levels**

Each of the competencies above should be assigned a minimum competency level required for each role in the supply chain department. This becomes the competency framework from which to evaluate jobholders or new candidates.

In fulfilling standard 6.2 Performance Appraisal Process, the jobholder can be evaluated and assigned a competency level. Any competency where the jobholder receives a rating lower than the minimum required competency level indicates a gap.

The following table outlines an approach for quantifying competency levels. This basic approach divides competency levels into four ratings with descriptions of the degree of competency required for each rating.

<b>Competency Levels</b>	
<b>1. Basic</b>	Has basic awareness but likely to need guidance.
<b>2. Good</b>	Able to deal with a variety of issues but may need limited guidance.
<b>3. Strong</b>	Proven ability, confident in dealing with complex issues; regularly demonstrates ability.
<b>4. Excellent</b>	High level of ability with advanced knowledge and the ability to pass this on to others — recognized as a business expert.

# Implementation Challenges

Challenges
Union review and input may become a factor when defining job roles and specifications and setting competency levels. Unions should be involved throughout the development of the process, again using the assistance of HR professionals in the organization.
The competency framework must be established and used consistently and rigorously to formulate development plans. This is a joint responsibility including both the HR department and supply chain staff.



GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

## Standard 6.2: Performance Appraisal Process

### Objective:

To implement a structured appraisal process for supply chain staff

### Definition

A performance appraisal process is used to provide formal feedback to employees on their performance; identify any performance gaps and future training needs or opportunities; set goals for upcoming periods; and review career aspirations.

Organizations should have training and development curriculum to support continuous improvement and development of human capital within the organization and provide motivation to employees.<sup>2</sup>

### Rationale

A structured personal performance and development review process is an essential component of high-performing organizations. This process helps ensure that:

- Employees understand expectations and feel they are valued contributors to the organization's success;
- Employees have opportunities to discuss with management their aspirations and any job- or performance-related issues or concerns;
- Individuals reach their full potential in the organization, through ongoing reviews of performance, constructive feedback and structured personal development and training; and
- Good performance is recognized and potential challenges are identified early so that appropriate action can be taken.

### Benefits

#### **Patient Care**

Well-trained motivated staff will help the supply chain department to support their customers to provide the highest level of patient care.

#### **Customer Service**

Strong morale and employee satisfaction within the supply chain department will result in motivated employees and better customer relationships, leading to higher quality of service to customers.

#### **Employee Productivity/Satisfaction**

Performance appraisals increase employee satisfaction by providing timely constructive feedback and creating actionable performance plans. Organizational support for employees' personal and professional development improves motivation and staff retention. Increased morale will, in turn, improve employee productivity.

### Related Metrics

#### 6.1 Voluntary Turnover

<sup>2</sup> This standard is directly linked with the "Training and Development Curriculum" standard developed in the original Phase I report. Due to this interdependence, the Training and Development Curriculum standard has been integrated within the Performance Appraisal Process standard.

# Guiding Principles

The performance appraisal process should be documented and clearly communicated. Standard templates should be developed in cooperation with the central Human Resources (HR) department to ensure that appraisals are done consistently. The appraisal form should be appropriately sized to allow for capture of all key information, but not so large that it discourages participation.

The process should be consistently and rigorously applied across the supply chain department. Reviews of each jobholder's performance and progress against job requirements and personal objectives should be conducted annually, with less formal interim reviews occurring more frequently to maintain a focus on goals and targets for the year and provide the jobholder with feedback on how to achieve them.

Performance reviews should be scheduled with sufficient advance notice to allow the jobholder appropriate thought and preparation. Usually, managers conduct appraisals of their staff, although peers may also appraise each other. Managers can also be appraised by their staff through 360-degree appraisals. The review process should be designed to gather feedback from the manager, the individual being appraised, and any other stakeholder deemed to have valuable input.

The performance appraisal process is aligned with standard 6.1 Job Roles and Specifications. Managers and employees should use the job role and specifications to help form the employee's objectives and targets for the performance period. The competency framework, addressed in standard 6.1, should be used to help assess and direct the employee's training and development plans.

## Key Components

### Performance Appraisal Process

Performance reviews have four main objectives:

1. Review of past period — The manager and staff member should discuss the jobholder's performance against his or her personal objectives and targets for the previous period. -
2. Expectations for upcoming period — The manager and staff member will negotiate and agree to personal performance goals and objectives for the upcoming period against which performance will be monitored and assessed at the next appraisal.
3. Training and development plan — The manager and staff member reassess jobholder's competency levels against those required for the position, as defined by the role's competency framework, as outlined in standard 6.1. This enables manager and employee to identify and agree on competency gaps and put in place targeted training and development plans.
4. Goals and other concerns — The staff member has the opportunity to discuss with management his or her career aspirations and any other concerns or issues.

The output of the annual performance review should be documented and agreed to by both the jobholder and manager. Furthermore, performance appraisals should not be limited to annual reviews, but be a continuous process throughout the year.

### Key Performance Appraisal Indicators

Key performance appraisal indicators provide a structured format to assess and communicate an employee's work performance with regard to knowledge, behaviour and skills that are applicable to both the organization as a whole and the supply chain department specifically. Attachment 6.2a provides a sample list of indicators to consider for supply chain employees.

## Training and Development Curriculum

Organizations should have a training and development curriculum to address all of the competencies required in the supply chain department. It should be aligned and fully consistent with the competency framework. The curriculum could be available in several formats from both internal and external formal training courses to on-the-job development opportunities. It should also offer employees the opportunity to obtain professional designations, as appropriate.

The curriculum is intended to address the development needs of all employees in the supply chain department. It should support the jobholder's efforts to:

- Fully achieve the skill level set out in the competency profile for the position; and
- Progressively develop his or her competencies in preparation for planned advancement to more challenging assignments.

Once a jobholder's assessment has been completed using the competence framework, a targeted training and development plan should be established. This process is an integral part of the annual performance appraisal and development cycle for every employee.

## Implementation Challenges

Challenges
In a unionized environment, the union should be involved throughout the development of the process to ensure that the union accepts the process and criteria for appraisals as well as use of the output information.
Urgent and immediate business challenges could take precedence over the implementation of the performance appraisal process or the thoroughness of annual employee appraisals and the development of training plans. Senior executives must establish the performance appraisal process as a high priority and stress the importance of training and development as a method to maximize the value of the supply chain department.
Implementing a formal incentive program tied to the performance evaluation can enhance the effectiveness of a performance appraisal process and outcomes. Successfully implementing this requires a high degree of organizational alignment and due process.

# Attachment 6.2a – Key Performance Appraisal Indicators

The following performance indicators may be used as input to the performance appraisal process for supply chain employees.

## **Organizational Alignment**

1. Demonstrates support for organizational core values and adheres to spirit of mission/vision statements, in particular towards improving patient care
2. Understands the organization's overall goals and structures
3. Shows fiscal responsibility for the organization's assets and funds
4. Actively participates in cross-functional teams
5. Brings an innovative approach to the organization, both challenging the organization to improve and suggesting efficiencies

## **Performance Measures**

6. [Personal objectives specific to each job role]

## **Behavioural Attributes**

7. Communicates effectively
8. Demonstrates teamwork
9. Manages relationships — for example, arranges and participates in meetings with other departments, customers and suppliers -
10. Demonstrates professionalism and respect for others
11. Responds to change and adapts well to new processes
12. Challenges ideas responsibly and appropriately
13. Demonstrates leadership — for example, implementing new processes or leading practices
14. Makes decisions affecting own area and provides input to support decision making in other areas

## **Technical Capabilities**

15. Plan-to-Pay processes — understands processes relevant to the role for the plan-to-pay cycle, including the knowledge of which tool to apply in specific instances
16. Legal — understands the implications of different contract terms and conditions and the areas that require support from the legal team
17. Negotiation skills — plans and manages negotiations in a structured and category-sensitive manner
18. Contract management — understands the importance of contract and supplier management and of working with suppliers to establish key performance indicators and continuous improvement targets; liaises with stakeholders to ensure that their organizational needs are met
19. Supply base analysis — evaluates suppliers to ensure appropriate alignment between supplier and client, consistent with the acquisition strategy
20. Supply chain analysis — applies knowledge and awareness of supply chain processes to improve operations and reduce costs -
21. Risk management — manages contractual, reputation, ethical and other risks associated with the supply chain process with the aim of ensuring that undesirable consequences are mitigated
22. Finance for supply chain — undertakes meaningful financial appraisal and assessment of suppliers and product costs; understands financial ratios and their ability to provide useful indicators of supplier performance
23. Customer management — builds and manages appropriate internal relationships to ensure that the supply chain department fulfills the organizational needs





# Appendix A:

## Technological and Organizational Constraints

Hospitals are intrinsically complex organizations that come in all shapes and sizes. They have different areas of clinical specialty, different patient populations, and different needs based on geographical location. As a result, each Ontario hospital has unique supply chain requirements and faces unique challenges in upgrading and modernizing its supply chain operations.

Adding to the complexity, each hospital in the province is at a different point in its journey to achieving optimum supply chain performance. Many have already made decisions and investments regarding key technologies, processes and supplier relationships. Many are involved in regional integration initiatives to consolidate their supply chain and back offices. All of this makes the task of measuring supply chain performance across all Ontario hospitals formidable.

The Working Group has identified a number of areas in the hospital supply chain where obstacles to implementing the metrics and standards could be encountered. In general, these obstacles are caused either by technological or organizational constraints.

### Technological Constraints

#### ***Limitations of Management Information Systems (MIS)***

A small number of Management Information Systems (MIS) suppliers have captured a high percentage of the market for supply chain-related technology platforms in Ontario hospitals. As hospital administrators move to implement performance metrics, they will discover that each system has strengths and weaknesses.

Manual or paper-based — as opposed to automated — supply chain departments are disadvantaged as measuring performance is more time-consuming and prone to errors. In some cases, hospitals that use manual processes will be able to apply workarounds and fixes that provide the desired automation. In other cases, solutions might not be available, and hospitals will have to collect and/or report data manually.

Hospitals that employ electronic supply chain processes will find it easier to implement the metrics and standards. Key e-supply chain processes include electronic requisitioning, electronic contract management, electronic invoicing, electronic funds transfer, and automated warehousing and inventory management.

#### ***Differences among Hospitals in Collection, Storage and Reporting of Data***

One obstacle to measuring performance between hospitals is the inherent differences in how the various MIS collect, store and report data. These differences include variations in collection intervals and information fields — both of which directly affect input data for calculations and reporting results. These factors can complicate the comparison of performance results between hospitals and hinder the ability to establish a centralized repository for supply chain performance data.

The Working Group has built flexibility into the metrics and standards to accommodate differences between the MIS. Still, hospitals could in some cases have to modify their data collection or reporting practices to ensure their performance measurement results can be compared with peer hospitals.

#### ***Centralized Product Catalogue***

Every Ontario hospital has a centralized product catalogue, or “item master.” Centralized electronic catalogues are searchable databases of contract and supplier information, including pricing and product purchasing history expiry dates. For many of the metrics, a key implementation success factor is the presence of a well-maintained centralized product catalogue.

There are three key components in effectively maintaining centralized product catalogues: (1) hospitals should work with their suppliers to introduce ways of keeping their centralized product catalogues up to date with new products and prices; (2) hospitals must ensure that consistent nomenclature is used throughout the database so that information can be accurately analyzed and reported; and (3) hospitals need to have policies in place to keep the data clean and accurate to ensure it is free of errors, does not contain duplicate items, and uses standardized units of measure. One way to achieve this is to limit the number of staff authorized to make changes to the catalogue and ensure that employees receive appropriate training.

Hospitals can also work in groups to realize benefits from consolidating and then jointly standardizing and cleaning their item master data. A number of Ontario hospitals participating in a data-management project with MedBuy Corporation have improved their item master performance in this way. The result has been a reduction in order errors and the time required to rework orders.

Hospitals face an additional challenge in organizing and maintaining clean centralized product catalogues due to product tax codes. Depending on how a product is used in the hospital environment, it may or may not be subject to Ontario provincial sales tax. Consequently, these items require two entries in the catalogue. This duplication of information increases the difficulty in measuring performance accurately.

### **Business Intelligence**

Business intelligence (BI) refers to the tools and techniques organizations use to collect, store and report data, including supply chain data. Hospitals that leverage BI systems are better able to monitor their supply chain operations and detect emerging issues and problems. Early detection is critical because it allows supply chain staff to take corrective action and manage issues before they expand. BI systems support:

- Collection of data from multiple sources, including suppliers;
- Real-time performance monitoring;
- Online data-mining, with specialized analytical tools, graphical reporting and email notification; and
- Creation of balanced scorecards to track supplier performance.

A few Ontario hospitals have implemented BI systems that allow comprehensive tracking of supply chain performance metrics. However, most hospitals have only a limited number of BI tools in place. The Working Group firmly believes that the use of appropriate BI tools is critical to effective automated measurement of hospital supply chain performance.

## **Organizational Constraints**

### **Collaboration between the Supply Chain and Accounts Payable Departments**

Implementing supply chain leading practices, including performance metrics and standards, calls for close collaboration between the supply chain and accounts payable departments. In many hospitals, staff in these departments are managed separately and report to different senior executives. Achieving improved supply chain performance means fostering closer working relationships between these two critical departments. In fact, the Working Group strongly recommends aligning the two departments under common management. While this organizational change requires an upfront investment of financial resources and staff time, the result is a more effective supply chain that supports better patient care and generates benefits far into the future.

### **Hospital Size/Financial Cost**

For each performance metric and standard, a minimum investment of financial resources and staff time is needed. For this reason, implementing performance metrics and standards is generally more challenging for smaller hospitals with limited resources compared to larger hospitals.

### ***Investment Focus***

In the hospital sector, the number one priority is patient care. And to meet the expectations of government and the public, hospitals must continuously improve the areas of their operations that directly affect the patient, for example, staffing, clinical equipment and bed capacities. In this environment, it can be difficult for hospital administrators to justify investing resources in areas traditionally considered a lower priority, such as the supply chain.

However, outside the hospital sector, private industry has demonstrated that investment in more effective supply chain practices leads to improved service levels — and reduced costs. Hospitals have an opportunity to capture similar benefits. Implementing performance metrics can help identify areas for improvement across their supply chains and do cost-benefit analyses to support their investment decisions.



# Appendix B:

## Glossary

**360-Degree Appraisal:** A 360-degree appraisal refers to multi-source employee development feedback collected from subordinates, peers and managers in the organization, as well as a self-assessment, and in some cases external sources such as customers, suppliers or other interested stakeholders.

**Ad-Hoc Order:** Ad-hoc orders are one-time, user-generated point-of-use orders for items not typically ordered on a regular basis.

**ANSI:** The America National Standards Institute (ANSI) is a private non-profit organization that coordinates the development and use of voluntary consensus standards in the United States for products, services, processes, systems and personnel.

**Automated Requisitioning:** Automated requisitioning allows customers to place requisitions on-line, which then directly feed through the approval and purchase order generation processes in the supply chain's information system.

**Blanket Order:** A blanket order is a type of purchase order for multiple deliveries of a specified good or service from one supplier for a fixed period and/or quantity at an agreed price and under specific terms and conditions. A blanket order differs from a standing order in that the delivery schedules are not predetermined, but are on an as-required basis. The organization requests deliveries to be made on the blanket order through blanket order releases.

**Blanket Order Release:** A blanket order release authorizes the delivery of goods or services identified on a pre-established blanket order. Each release quantity is deducted from the total order quantity stipulated on the blanket order.

**Capital Expenditures:** Capital expenditures are monetary expenditures made in order to acquire new or improve existing capital assets.

**Cart Management Application:** A cart management application (or quota management system) is an information system module used for the management of point-of-use inventory replenishment.

**Cart Quotas:** Cart quotas are the predetermined maximum amount of each item stocked in a cart location and the amount to which items are replenished (or "Topped up"). (See Par-levels.)

**Central Sterilization Reprocessing (CSR) or Sterile Processing Department (SPD):** The departments in which personnel perform the cleaning, disinfecting and sterilizing, packaging and storing of reusable supplies and instruments for hospitals.

**Clause Library:** A clause library is a database of standard contract clauses pre-approved for use.

**Closed-Cabinet Point-of-Use Systems:** A closed-cabinet point-of-use storage system is a type of cabinet storage for which users must key in an access or identification code. Usually they also must key in the product they would like to take before they can either open the cabinet or the cabinet dispenses the item. The type of system may be used to control access to items requiring a higher security level and/or to track inventory.

**Commitment:** Commitment is an agreement by one party to supply to or purchase goods or services from another party under specified conditions.

**Consignment:** Consignment refers to goods provided to a purchaser by a supplier where the supplier maintains inventory on the premises of the purchaser and maintains ownership of the goods until the goods are drawn from stock.

**CSR/SPD:** See Central Sterilization Reprocessing (CSR) or Sterile Processing Department (SPD).

**Departmental Stock Requisition:** Departmental stock requisitions are user-initiated point-of-use orders generated on a regular basis on an ordering template.

**Economic Order Quantity:** The economic order quantity (EOC) is the amount of an item that optimizes the total costs associated with the acquisition, storage, handling and inventory investment.

**Force Majeure:** *Force majeure* is a common contract clause to excuse a party from liability if some unexpected and uncontrollable event prevents it from performing its obligations. Typically, *force majeure* clauses cover natural disasters or other “acts of God,” war, or the failure of third parties for whom the parties are not responsible.

**Inventory Application:** An inventory application is an information system module used for the management of stock and non-stock items within an organization’s materials management system.

**Item Master:** Item master is a database that contains information describing each individual item purchased by the supply chain. Alternatively, it may refer to each item within the database.

**Lead Time:** Lead time is the period of time from date of requisitioning to date of delivery, including the time required to process the purchase request internally and for the supplier to manufacture or prepare the goods for shipment.

**Low Dollar Value Transactions:** Low dollar value is defined in this document to be purchases of less than \$100 before tax and surcharges.

**MSDS:** A Material Safety Data Sheet (MSDS) is a document containing data regarding the properties of a hazardous substance that identifies the volume and common names of the ingredients, the physical and chemical characteristics, the hazards of the chemicals and the emergency and first aid procedures to be considered when working with the substance. It is a critical component of product stewardship and workplace safety and is intended to provide workers and emergency personnel with product information and procedures for handling or working with that substance in a safe manner.

**Par Levels:** A par level is defined as a maximum supply, based on predetermined quotas originating from historical consumption data for a particular area of activity within a defined time period.

**Pareto Analysis:** Pareto analysis is a process that involves ranking items in order of importance to identify the 20 per cent that are of most significance and should be of focus and the 80 per cent that are of lesser importance.

**Perfect Invoice Matches:** Perfect invoices refer to purchase order invoices where the three-way match between purchase order, receipt and invoice quantities, and prices agree within the tolerance.

**Physical Count:** The most basic method to determine the actual volume of inventory is to physically count the items in stock.

**Point-of-Use (POU):** Point-of-use refers to cart- or shelf-based storage locations for supplies. Point-of-use storage is found in departments where significant quantities of the same supplies are required, and customers need access to them quickly and easily.

**Punch-out Order:** Punch-out orders allow buyers to securely access a supplier’s website from their own procurement application. The procurement application builds the items selected from the supplier’s website into a requisition, which is processed and approved through the normal route.

**Purchase Order (PO):** A purchase order is a commercial document issued by a buyer to a seller, indicating the type, quantities and agreed prices for products or services that the seller will provide to the buyer. Purchase orders usually also specify additional conditions such as terms of payment, liability and freight responsibility, and required delivery date.

**Purchase Order Line:** Every item or service that the buyer wishes to order from a seller appears on a different line on the purchase order.

**Purchasing Card:** A purchasing card, or p-card, is a payment card assigned to a group or an individual for the purpose of purchasing business-related items. It may have designated transaction and monthly limits and has restrictions as to commodities that can be purchased. The purchasing card provides an alternative to acquiring goods and services through the supply chain for low dollar value, low risk goods and services.

**Quota Management System:** See Cart Management Application.

**Radio Frequency Identification Device (RFID):** RFID is an automatic identification method involving the use of radio frequency responders attached to the product or product packaging and remote scanning hardware to identify and track movement of the item.

**Replenishment Schedule:** The replenishment schedule is the set frequency or timing of supply item ordering.

**Reorder Parameter:** See PAR Levels.

**Reorder Point:** The inventory level at which a replenishment order is placed. Analysis to determine an item's reorder point takes into account user demand and order lead time.

**RFx:** RFx, or Request for x, is the generic term for the competitive processes to obtain a response from suppliers. It covers request for information (RFI), request for proposal (RFP) and request for quote (RFQ).

**Risk Pooling:** Risk pooling is the combining of inventory management that would otherwise be controlled separately so that variability in demand can be handled with less safety stock (i.e., five sites sharing one warehouse).

**Rush Order:** An order that is marked rush by the customer must be issued to and processed by the supplier outside of regular ordering, lead times and delivery schedules.

**Standing Order:** A standing order is a purchase order covering repeated deliveries of goods or services in specified quantities, at specified prices, and according to a specified schedule.

**Stat Stores:** When an organization has moved inventory offsite into a centralized warehouse, there may be a small emergency inventory left on site referred to as "Stat Stores."

**Stockless/JIT:** In a stockless or just-in-time (JIT) system, stock in a warehouse is eliminated, freeing up storage space. This is accomplished by significantly increasing the frequency of deliveries by suppliers. In effect, the items are warehoused by the suppliers instead of the organization.

**Stock-out:** A stock-out is a situation where the demand or requirement for an item cannot be fulfilled from the current inventory.

**Three-Way Matching:** Three-way matching is the process of reconciling each invoice with its related purchase order and receiving receipt.

**Tolerance Levels:** Tolerance levels are dollar values for three-way matching discrepancies set by an organization under which an investigation is not considered to be cost-effective and the documents are, therefore, considered to match.

**Weighted Average Cost of Capital (WACC):** Inventory is normally financed through equity (grants, other forms of revenue) and debt (loans). WACC is the cost of capital that takes into account the proportion of each used (i.e., equity vs. debt) and is a measure of the opportunity cost of employing the funds used for inventory that could have been employed elsewhere.

**Universal Product Code (UPC):** A unique code, usually stored as a bar code that identifies the product, product package size and supplier.

**UNSPSC:** The United Nations Standard Products and Services Code® (UNSPSC®) is a standard coding system to classify both products and services for use in eCommerce.

**Zero Dollar or Zero Cost Purchase Order:** Purchase orders are issued for zero dollar value when the supplier has provided the item at no cost for evaluation, or when an item is being sent for repair under warranty at no cost.

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