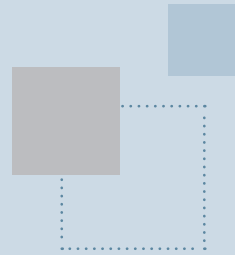


Performance Measurement

Phase II — A Framework for Action



Performance Measurement

Phase II — A Framework for Action

Foreword

In 2006, the Ontario Ministry of Finance supported publication of a groundbreaking document, “Performance Measurement — A Report by the Hospital Supply Chain Metrics Working Group.” This report proposed a series of metrics and standards that hospitals could use to evaluate their supply chain performance and target performance improvement.

The Working Group members — all healthcare supply chain specialists — strongly encouraged their supply chain colleagues to embrace the report’s findings and implement the proposed metrics and standards. The Group was aware, however, that many Ontario healthcare institutions would have difficulty implementing the recommendations. In many cases, business processes would need to be modified and management information systems would need to be upgraded to support supply chain performance measurement. As well, the Working Group needed to reconvene and expand on the definitions for the recommended metrics and standards to provide a clear implementation path and ensure performance data were consistent and comparable across institutions.

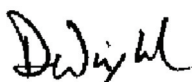
This second report, “Performance Measurement: Phase II — A Framework for Action,” makes a substantial contribution to closing the implementation gap. Both the report and accompanying User Guide set out, among other things, definitions, calculations, targets, data sources, accountabilities, benefits, and implementation challenges.

This work was carried out by the original Phase I volunteer Working Group members, most of whom were able and willing to build on the Phase I work, augmented by a few new and equally dedicated members. Their collective enthusiasm, professionalism and considerable knowledge were remarkable to observe and a pleasure for the Secretariat to support.

The Secretariat encourages Ontario healthcare administrators to adopt the framework recommended by the Working Group and to make the investments required to realize the substantial benefits that supply chain performance management can deliver.

My thanks to all the Working Group members, whose strong commitment and countless hours of work made this report possible. I would also like to thank the hardworking team at the Secretariat — in particular, Jim Hadjiyianni, Kate Huntly and Jennifer Ship.

Thank you all for doing your part to support the highest standard of patient care through comprehensive healthcare supply chain excellence.



Dan Wright

Assistant Deputy Minister
BPS Supply Chain Secretariat
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January 2009

Executive Summary

Supply chain transformation is complex. But improvement is possible. This report and its accompanying User Guide offer Ontario hospitals actionable tools for supply chain transformation and achieving results. It is the second report by the Hospital Supply Chain Metrics Working Group, which was invited by the Ministry of Finance to explore how Ontario hospitals could measure and improve their supply chain operations.

The 2006 Phase I report, “Performance Measurement — A Report by the Hospital Supply Chain Metrics Working Group,” set out key performance metrics, operating standards, and a framework for action for Ontario’s hospitals. This Phase II report and User Guide expand on 20 metrics and 12 standards — a subset of those introduced in the first report.

A Case for Change

Organizations that strategically invest in their supply chains by making improvements based on performance measurement data can reap substantial qualitative and quantitative benefits. For this reason, the supply chain function has been identified as a priority area by numerous hospital stakeholders, including the Ministry of Health and Long-Term Care (MOHLTC), Local Health Integration Networks (LHINs), the Ontario Auditor General and hospitals themselves.

The starting point for any performance improvement initiative is understanding and measuring current performance. Taking the first step is a challenge for many Ontario hospitals, which lack comprehensive supply chain measurement systems and documented operating processes. This can limit the potential for supply chain management to become a strategic partner in achieving healthcare excellence within their hospital. Proven benefits of supply chain transformation include improved patient care and customer service, enhanced risk management, and reduced costs — all of which contribute to providing the highest quality of healthcare. Within this document, stories of actual supply chain transformation initiatives are provided as evidence of performance improvements that have been made by participating hospitals.

By working together, hospitals can identify and share leading practices and challenges as well as implement system-wide solutions and improvements.

Purpose of Report

This report provides Ontario hospitals with information and an action plan to transform their supply chains by measuring supply chain performance and targeting performance improvements through the use of metrics and standards. This report builds on the supply chain excellence framework, which is in the form of a Balanced Scorecard that was introduced in the Phase I report, by providing an implementation structure to adopt this framework within an organization. It elaborates on the roles and responsibilities within the implementation structure that are required, including those of senior executives, supply chain leaders and supply chain professionals. To support the activities of these roles, a set of Technical Worksheets have been provided for the key metrics and standards, with specific details to make prioritization decisions and implement the metrics and standards within the hospital.

Supply Chain Excellence

To achieve supply chain excellence, hospitals need to:

- Establish and adhere to documented operating standards;
- Establish an organizational structure with committed resources and clear roles and responsibilities to support this transformation;
- Establish specific performance metrics; and
- Measure and assess current performance against established benchmarks.

The Supply Chain Excellence Framework

In Phase I, the Working Group developed a six-dimension Balanced Scorecard — a comprehensive approach to structuring, assessing and reporting on progress towards supply chain excellence. It addresses both the fundamental drivers of supply chain activities as well as key supply chain stakeholders.

To action this framework and systematically undertake supply chain transformation, this Phase II report outlines a structure of four critical roles with specific responsibilities:

- Executive leadership
- Supply chain leadership
- Improvement team
- Measurement team

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

The Technical Worksheets in the User Guide offer information on each metric and standard that supports the activities of all four roles. An overview of each metric and standard provided in Chapter 8 of this report focuses on details relevant to senior decision-makers, whereas the full worksheets provide more comprehensive information, including implementation details.

Looking Ahead

The Working Group will now move into Phase III — assessing the readiness of individual healthcare organizations to start implementing the metrics and standards identified as highest priority. This, and subsequent phases, will create examples and learning for other hospitals, as well as generate benchmarking performance data.

All hospitals, and more generally healthcare service providers, that have not already done so, should strongly consider establishing supply chain transformation initiatives within their organizations. This starts with assessing their current state and identifying a plan of action to implement metrics and standards. Using the valuable foundational work within this report, there has never been a better time for hospitals — and all Ontario public sector organizations — to start reaping the benefits of supply chain transformation.

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Introduction

Hospital administrators face numerous organizational issues, with significant effort and attention focused on the immediate needs of patient care, and related staffing and medical issues. Often, the performance of the supply chain and back-office processes is unintentionally given lesser priority. As a result:

1. Most hospitals lack comprehensive supply chain performance measurement systems.
2. Most hospitals fail to use what measures they do have to systematically drive improvement initiatives.
3. Ontario hospitals have not worked together to develop consistent supply chain measures, processes or a system for sharing information and leading practices.

Supply chain and back-office transformation in Ontario's broader public sector (BPS) is gaining more attention and investment — learning from benefits realized by the private sector over the past several years. Evidence exists that more efficient and effective back-office support services would allow BPS organizations to provide better customer service, while generating savings that could be redirected to front-line services. In 2004, the Province established the BPS Supply Chain Secretariat and its OntarioBuys funding program to facilitate and accelerate the adoption of integrated supply chain and other back-office leading practices across the BPS.

In 2006, the Secretariat helped establish the Hospital Supply Chain Metrics (HSCM) Working Group to assess the state of Ontario's healthcare supply chain performance measurement. The Working Group was asked to develop metrics and standards and an action plan to guide Ontario hospitals in supply chain transformation. This Phase II report builds on the framework developed by the Working Group in the Phase I report, "Performance Measurement — A Report by the Hospital Supply Chain Metrics Working Group." In this report, the Working Group further develops a subset of the Phase I performance metrics and operating standards and suggests a Supply Chain Excellence Framework that hospitals across the province should adopt.

Hamilton Health Sciences Centre

A nurse races to a supply cupboard to get an item needed for a sick patient. But the storage bin is empty, and the nurse must search elsewhere or make do with a substitute product. It's a familiar story in hospitals across the province. Why? A number of factors can lead to product shortages in hospitals. A common one is supply cupboards are not adequately managed and restocked and nurses don't have the time to monitor supply levels.

Fortunately, for the patients of Hamilton Health Sciences Centre (HHSC), this issue is unlikely to affect them.

Three years ago, the family of five hospitals and a cancer centre serving Hamilton and south-central Ontario implemented nine performance metrics to monitor the reliability and efficiency of its supply chain. The metrics track such things as the volume of product orders, rate of deliveries made on time, number of products on back order and number of emergency or stat orders. The information gathered led to improvements that eventually enabled the organization's materials management personnel to take on much of the responsibility for maintaining storage station supply levels and placing product orders as required.

"We've substantially reduced the load on our clinical staff," said Sue Smith, HHSC's director of clinical support services. "That's a big plus for our patients and our organization overall." The metrics have generated other benefits as well, including enhancements within product standardization and product substitution and increases in the volume of products purchased through bulk ordering. Smith summed it up by saying: "Bottom line, we're better able to make the case for change to both our internal customers and our suppliers because we have the data to support our direction."

Chapter 1: A Case for Change

Organizations that invest in their supply chain operations and make improvements based on performance measurement data can reap substantial benefits. For hospitals, these can include both qualitative benefits, such as improved patient care, better risk management, and higher-quality customer service, and quantitative ones, such as process efficiencies and reduced costs.

Hospitals are accountable to a variety of stakeholders, including patients and front-line staff – the supply chain customers. They also have a responsibility to be transparent and accountable for the effective stewardship of public funds. Given that supply chain-related costs can account for one-fifth or more of total operating expenditures, hospitals must be capable of examining the efficiency and effectiveness of their supply chain operations. Achieving this requires performance metrics, which enable the accurate measurement and evaluation of the supply chain, and documented operating standards to ensure processes are unambiguous and controlled.

Having comparable performance measurement data and processes also allows hospitals to evaluate themselves against their peers and identify areas for improvements. Implementing performance metrics and operating standards is a proven practice that Ontario's hospitals can use to realize the full benefits of supply chain transformation.

Purpose of Report

This report and the accompanying User Guide provide hospitals with guidance to embark on supply chain transformation within their organizations. Together they provide the necessary information to support implementing specific metrics and standards and suggest a systematic and disciplined approach to undertaking supply chain transformation. These documents were designed with three critical groups of stakeholders in mind. Each of these groups must understand the importance and benefits of supply chain transformation and is critical to success. This report aims to help each of these stakeholders do the following:

Senior Hospital Executives need to:

- Understand the need and benefit of supply chain transformation, performance metrics and operating standards.
- Endorse the Supply Chain Excellence Framework outlined within this report and adopt a structure to implement the framework within their organization by allocating appropriate responsibilities and resources.
- Guide and support the implementation of the metrics and standards in this report within their organization.

Hospital Supply Chain Senior Leaders need to:

- Communicate the Supply Chain Excellence Framework to other stakeholders and propose an action plan and resource requirements for the adoption of this framework within the organization.
- Lead the implementation of the metrics and standards in this report within their organization.

Supply Chain Professionals need to:

- Assess the current use of supply chain metrics and standards in this report and readiness to implement them within their organization.
- Drive supply chain transformation by implementing metrics and standards using the information provided in this report and accompanying User Guide.

Chapter 2: Understanding Supply Chain Management

What Is Supply Chain Management?

Supply chain management is the range of processes that manage the flow of goods and services, information and dollars between suppliers and customers, as well as the infrastructure needed to enable this flow. As shown in Figure 1, the supply chain can be divided into four core areas: Plan; Source and Procure; Move; and Pay, and three groups of supporting infrastructure: Structure and Staffing; Tools and Processes; and Organizational Alignment.

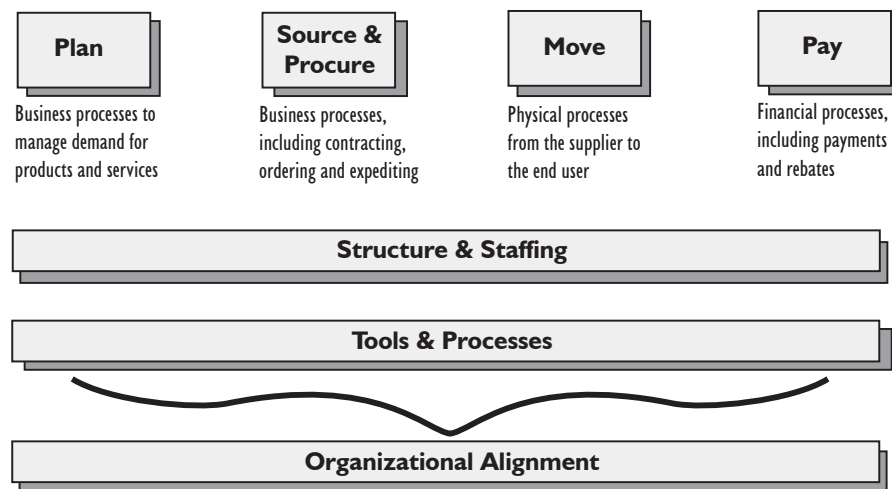


Figure 1: The seven-part supply chain model

Supply Chain Excellence

The Working Group's Vision: "Contributing to the highest standard of patient care through comprehensive supply chain excellence."

Putting this vision into practice calls for organizations to understand what defines supply chain excellence. Operationally excellent organizations continually refine their processes using an integrated approach. This includes:

- Operating Standards: developing and maintaining documented workflows and processes;
- Performance Metrics: implementing metrics that capture supply chain performance and measuring to track and report progress;
- Leading Practices: identifying and adopting leading practices;
- Technology and Automation: investing in technology to automate routine aspects of processes and capture transactional data at point of activity; and
- Skilled Staff: investing in skilled supply chain staff.

The focus of this report is operating standards and performance metrics, as these are critical to support and enable the other three elements.

Supply Chain Transformation

Supply chain excellence does not come easily; hence a staged approach is recommended. The Working Group identified three distinct stages on the path towards supply chain excellence (see Figure 2). This Phase II report is based on achieving Stage 1

STAGE 1 Core Supply Chain Operations	STAGE 2 Emerging Supply Chain Practices	STAGE 3 Supply Chain Excellence
<ul style="list-style-type: none">• Efficiency Focused• Transactional/Operational• Local• Contractual Compliance• Reactive Problem Resolution• Low Management Attention• Administrative Skill Set	<ul style="list-style-type: none">• Technology/Process Gains• Leverage/Tactical Buying• Regional/Coordinated• Spend Analysis• Performance Management• Stakeholder Engagement• Competence Development	<ul style="list-style-type: none">• Effectiveness Focused• Strategic Sourcing• Global/Differentiated Sourcing• Lifecycle Costs/Total Cost of Ownership• Innovation/Supplier Development• Executive Support & Integration• Highly Skilled in Sourcing

Figure 2: The three-stage evolution of supply chain transformation

Organizations should begin with Stage 1 metrics and standards, which drive transactional efficiency in core supply chain operations. Once this has been achieved, hospitals can progress to more strategic initiatives, further building their competencies, introducing new technology and adopting more advanced leading practices. Stages 2 and 3 are focused on a shift from being a “support service” to a comprehensive business stream, with subject matter expertise that delivers maximum value to the organization. The degree of sophistication that currently exists in Ontario hospitals’ supply chains varies, but most hospitals still have significant opportunities for transformation within Stage 1.

Chapter 3: The Supply Chain Excellence Framework

The Working Group developed a Supply Chain Balanced Scorecard with six critical performance dimensions. This tool provides Ontario hospitals with a comprehensive way to report on supply chain performance and transformation.

Each of the scorecard's dimensions captures a different aspect of supply chain excellence. As illustrated below, the top row captures three fundamental drivers of supply chain activities: governance and processes, financial, and transactions and technology. The bottom row focuses on three key stakeholder groups: the customers of the supply chain, namely the front-line staff and patients; the hospitals' suppliers; and the supply chain department's employees.



Figure 3: The balanced scorecard approach for the Supply Chain Excellence Framework

Supply Chain Metrics

The starting point for any performance improvement initiative is to measure current baseline performance. In the Phase I report, the Working Group developed 48 metrics critical to supply chain management, across the six scorecard dimensions and the three stages of evolution of supply chain transformation (see Figure 2). For Phase II, the Working Group further developed the 20 Stage 1 core supply chain operations metrics, which focus on transactional efficiency.

The group created Technical Worksheets for each of these 20 metrics to assist hospitals to prioritize the metrics and develop implementation plans geared to their organization. These worksheets, located in the User Guide, provide for each metric details on the definition, calculation, data sources, implementation challenges, and leading practices that will enable better performance.

Supply Chain Standards

Ensuring consistent high-quality supply chain operations requires that organizations establish and comply with operating standards. Standards support proper functioning of the supply chain by defining formalized policies and procedures with documentation, tools and templates. Implementing standards provides consistency within an organization and manages the risk of changing personnel.

The Working Group identified 21 supply chain standards in the Phase I report across the six dimensions of the Balanced Scorecard framework. For this report, the Working Group identified 12 standards that are most closely related to the 20 Stage 1 core supply chain metrics and therefore are the highest priorities for implementation. Many of the supply chain standards relate to Stage 1 (Figure 2) of the transformation process and must be adopted early in the transformation journey, as standards provide the foundational processes for supply chain transformation and performance measurement and to which leading practices can be applied. The Technical Worksheets in the User Guide for the 12 standards provide information for prioritization and implementation of each standard.¹



¹ The worksheets encompass 14 of the original Phase I standards since two standards were combined into other closely related ones.

Chapter 4: Supply Chain Metrics Table

The following highlights the 20 Stage 1 core supply chain performance metrics organized by Balanced Scorecard dimension. Chapter 8 provides an overview of each metric and illustrates how results could be displayed. The accompanying User Guide provides detailed Technical Worksheets on each metric, elaborating on the metric calculation and background.

1. Governance and Process

Goal: Control of the plan-to-pay process and use of leading practices

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

Metric 1.2 Purchasing Response Time

Objective — To improve the ability to quickly issue rush orders to suppliers

2. Financial

Goal: Reduce operating and purchasing costs of the supply chain

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

Metric 2.2 Inventory Turnover in One Month

Objective — To optimize the investment in inventory by balancing the cost of storing goods against the cost of replenishment, stock-outs and resulting service failures

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

3. Transactions and Technology

Goal: Reduce the transactional burden and improve information

Metric 3.1 Number of Purchase Orders in One Month

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

Metric 3.2 Percentage of Rush Purchase Orders

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

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

Metric 3.4 Average Lines per Purchase Order

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

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

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

Metric 3.7 Percentage of Invoice Matches

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

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

4. Customers

Goal: Improve service delivery through comprehensive understanding of patient and clinician's needs

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

Metric 4.2 Fill Rates to Customers

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

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

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

5. Suppliers

Goal: Leverage supplier expertise and resources to drive better supply chain outcomes

Metric 5.1 Percentage of Invoices Paid within Due Date

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

Metric 5.2 Supplier Performance

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

6. People

Goal: Invest in employees to improve their contribution and help make supply chain a profession of choice

Metric 6.1 Voluntary Turnover

Objective — To improve retention of quality supply chain staff

Chapter 5: Supply Chain Standards Table

The Working Group identified 12 supply chain operating standards associated with the performance metrics presented in Chapter 4 organized by Balanced Scorecard dimension. The accompanying User Guide provides detailed Technical Worksheets for the standards listed below and a summary of each is provided in Chapter 8 of this report.

1. Governance and Process

Goal: Control the plan-to-pay process and use of leading practices

Standard 1.1 Purchasing Policies and Procedures

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

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

Standard 1.3 Boilerplate Contracts and Key Legal Principles

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

2. Financial

Goal: Reduce operating and purchasing costs of the supply chain

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

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

3. Transactions and Technology

Goal: Reduce transactional burden and improve information

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

Standard 3.2 Low Dollar Value Transactions Strategy

Objective — To implement streamlined processes for low risk, low value purchases

4. Customers

Goal: Improve service delivery through comprehensive understanding of patient and clinician needs

Standard 4.1 Customer Survey Tools and Processes

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

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

5. Suppliers

Goal: Leverage supplier expertise and resources to drive better supply chain outcomes

Standard 5.1 Supplier Performance Management Process

Objective — To maximize supplier performance by effectively managing supplier relationships and interaction

6. People

Goal: Invest in employees to improve their contribution and help make supply chain a profession of choice

Standard 6.1 Job Roles and Specification

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

Standard 6.2 Performance Appraisal Process

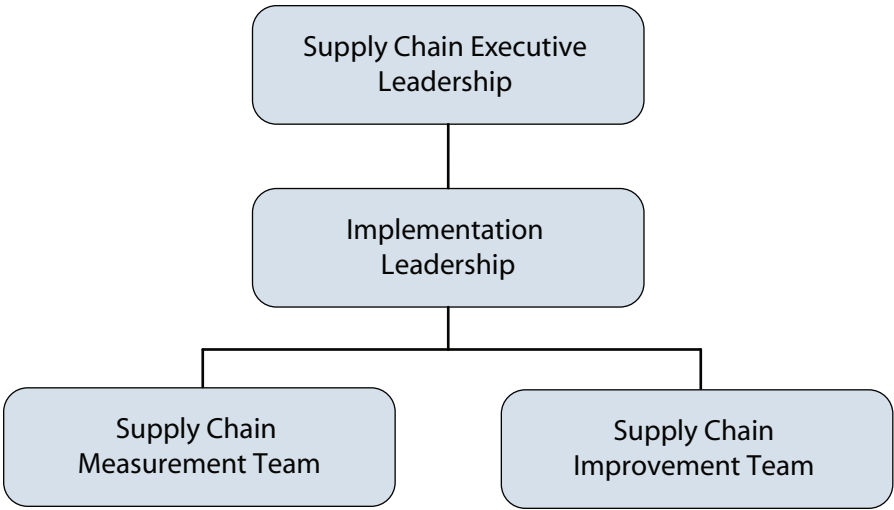
Objective — To implement a structured appraisal process for supply chain staff

Chapter 6: Implementing the Supply Chain Excellence Framework

Virtually every Ontario hospital can benefit from undertaking activities to move towards supply chain excellence. To transform a supply chain requires developing an organizational structure, committing resources and identifying the responsibilities and activities required. Each hospital is unique and at a different point in the journey, which may require different types of support, processes and resources to move forward. The Technical Worksheets in the User Guide are key tools any organization can use, regardless of its current circumstances and environment.

Organizational Structures, Resources and Activities

The typical roles required for supply chain transformation can be divided into four distinct groups:



Hospitals may implement this structure differently depending on their own internal structures, resources and processes. Each of the typical four roles identified above has distinct responsibilities and activities and calls for different positions and types of expertise within the organization. The following table elaborates on these typical roles and gives hospitals guidance on the type of expertise needed to achieve supply chain excellence.

Responsibility	Activities	Required Staff
Executive Leadership		
Responsible for senior leadership and oversight	Accountable for endorsing and approving: <ul style="list-style-type: none"> Supply Chain Excellence Framework Organizational structure and allocation of required resources to implement the framework Proposed measurement and improvement initiatives and ensuring they align with organizational priorities 	<ul style="list-style-type: none"> Executive(s) accountable for supply chain Senior clinical and other stakeholder(s) impacted by supply chain
Implementation Leadership		
Responsible for providing overall coordination and guidance on all aspects of supply chain transformation	Accountable for managing: <ul style="list-style-type: none"> Communication and endorsement of a Supply Chain Excellence Framework by all stakeholders Development of a framework adoption plan, including an organizational structure and required resources Decision-making regarding prioritization of measurement and improvement initiatives in consultation with the other roles Measurement team and improvement team activities Transformation progress and establishing metric targets 	<ul style="list-style-type: none"> Supply chain leader with authority to impact change and competency in project management
Supply Chain Measurement Team		
Responsible for implementing specific metrics and the underlying measurement system	Accountable for: <ul style="list-style-type: none"> Assessment of current usage of metrics and feasibility of implementing new metrics Development of a measurement system to calculate and report on progress to stakeholders Analysis and recommendations of the next one or two highest-priority metrics to implement based on current organizational and supply chain priorities Implementation of process changes and system reporting scripts to measure calculation variables 	<ul style="list-style-type: none"> Supply chain professional(s) Performance measurement professional(s) Information systems report writer Financial analyst
Supply Chain Improvement Team		
Responsible for implementing operating standards and other improvement initiatives	Accountable for performing: <ul style="list-style-type: none"> Assessment of current usage and compliance with operating standards and other leading practices and feasibility of implementing new improvement initiatives Analysis and recommendation of the next one or two highest-priority operating standards (or other improvement initiatives) to implement at a time, based on metrics performance implementation Communication of new standards, processes and compliance mechanisms tailored to the organization, in consultation with stakeholders Establishment of targets for metrics that will capture results of improvement initiatives and post-implementation analysis to determine actual impact 	<ul style="list-style-type: none"> Supply chain professional(s) Workflow analyst Standards or policy management professional(s)

Technical Worksheets

The Working Group developed Technical Worksheets to help hospitals with the above activities. These worksheets are tools that can be used to communicate, prioritize, define, plan, and implement metrics and standards.

The separate User Guide provides full worksheets for the 20 metrics and 12 standards outlined in Chapters 4 and 5. Chapter 8 of this report provides an overview of each metric and standard, focusing on details relevant to senior decision-makers.

Hospitals should use these worksheets as a starting point on the road to prioritizing metrics and standards. Prioritization will depend on each organization's current state and objectives. Hospitals can then use the worksheets to develop customized implementation plans. With the understanding that only a few metrics and standards can be implemented at a time, the Working Group identified the highest-priority metrics and standards, based on their assessment of the ease of implementation and value to hospitals. Please see Appendix A for more details.

The metrics and standards and the associated targets will evolve as hospitals move towards achieving greater supply chain excellence. Accordingly, they should be re-evaluated periodically to ensure they are meeting current needs and that the targets continue to fit the initiatives underway.

Using Supply Chain Metrics Worksheets

The table below outlines the components of the metrics' Technical Worksheets in the accompanying User Guide. It identifies how each component can support stakeholders in carrying out their activities. The metrics worksheets primarily support the supply chain measurement team, but are valuable tools for all roles. For instance:

- Executive Leadership should focus on the rationale and benefits to approve plans to implement prioritized metrics.
- The Supply Chain Improvement Team should mainly focus on the target section and the underlying leading practices to identify and prioritize improvement initiatives.
- The Supply Chain Measurement Team should mainly focus on the sections that help implementation, such as calculations and data sources.

Worksheet Component	Explanation
Scorecard Positioning	Dimension of the scorecard supported by the metric
Objective	Goal that implementing the metric will aim to achieve
Rationale	Importance of calculating the metric and the specific supply chain processes that it measures
Benefits	Benefits to the organization of meeting the performance targets for this metric
Underlying Leading Practices	Leading practices that should be implemented to support better performance and achieve target levels for this metric
Related Standards and Metrics	Metrics that impact on this metric or vice versa and standards that this metric relies on to provide consistent operating processes
Calculation	Equation for calculating the metric and specific parameters for each variable
Data Sources	Typical data sources for electronic means of collecting data and alternative manual options where electronic ones do not exist, with a rating on a scale of easy-challenging-difficult, indicating the expected level of difficulty in obtaining the data
Target	An initial target suggested by the Working Group, factors that may affect an organization's success in meeting the target or setting its own, and a sample graph for tracking the metric (for illustrative purposes only)
Implementation Challenges	Common challenges to consider when developing and executing implementation plans

Using Supply Chain Standards Worksheets

The table below outlines the components of the standard Technical Worksheets in the accompanying User Guide. It identifies how each component can help stakeholders carry out their activities. These worksheets primarily support the supply chain improvement team but, like metrics, have components relevant to all roles. For instance:

- Executive Leadership should focus on the rationale and benefits of establishing a specific standard for approving the development of prioritized standards.
- Implementation Leadership should focus on the objective and related metrics sections to help oversee and prioritize transformation initiatives.
- The Supply Chain Improvement Team should focus on the guiding principles, key components and implementation challenges sections to make decisions about processes to adopt into their documented standards.

Worksheet Component	Explanation
Scorecard Positioning	Dimension of the scorecard supported by the standard
Objective	Goal that establishing the standard will aim to achieve
Definition	Explanation of the standard
Rationale	Importance of documenting the standard and the areas of the supply chain the standard addresses
Benefits	Benefits to the organization of implementing this standard
Related Metrics	Metrics that rely on this standard to provide consistent operating processes
Guiding Principles	Direction on how this standard should be developed and structured
Key Components	Description of the critical elements of the standard and content to consider in each part
Implementation Challenges	Common challenges inherent to implementation and compliance with this standard that should be considered when developing and executing the standard

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 higher-level direction. The Technical Worksheets for the standards provide guidance regarding the type of information each standard should include and how organizations should begin to develop, document and implement each standard within their hospital.²

² Over the next several months, the Province will work closely with industry experts, the Working Group and other key BPS 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.

Chapter 7: Moving Forward

Readiness Assessment

This report provides clear direction for the next phase of supply chain transformation — conducting readiness assessments at individual institutions to create detailed implementation plans for adopting the metrics and standards identified as highest priority by the Working Group. In late 2008, the HSCM Working Group members will reconvene to develop the work plan for this Phase III initiative and engage external subject matter experts to facilitate the individual readiness assessments that will take place in their respective hospitals.

The goal is to implement a number of metrics and standards in these pilot hospitals throughout 2009–10 (Phase IV). These future phases will demonstrate that implementation is achievable and create examples and learning for other hospitals to follow. It will also begin to generate benchmark performance.

System-wide Implementation

The Province has identified the supply chain function in BPS organizations as a priority area. The Ministry of Health and Long-Term Care (MOHLTC), Local Health Integration Networks (LHINs) and the Auditor General are increasingly interested in how efficiently and effectively hospitals are operating.

Hospitals should strongly consider undertaking their own supply chain transformation initiatives to demonstrate they are actively pursuing supply chain excellence, and objectively and systematically assessing their organizational performance to drive improvements.

This report and accompanying User Guide provide a perfect opportunity for hospitals and other healthcare service providers to begin to reap the benefits of supply chain transformation. Hospitals can use this as a resource to conduct their own assessments of their current supply chain processes and use of metrics, standards and leading practices. Hospitals should then adopt a plan of action and commit the necessary resources to support and sustain transformation activities. Hospitals that determine that they are not effectively measuring their supply chain and are daunted by the task of implementing metrics and standards should begin by implementing one new metric at a time. This will help build expertise and understanding of the implementation limitations, considerations and requirements specific to their organization.

Hospital for Sick Children

Performance metrics are helping the Hospital for Sick Children get the most benefit from its automated Enterprise Resource Planning system. SickKids introduced 100 per cent electronic requisitions in 2002 and added electronic order processing in 2007. You won't find a paper requisition at SickKids. Shortly thereafter, it identified and began working towards implementing about 70 metrics to track performance across the system and highlight opportunities for enhanced efficiency and growth

One of the most significant improvements has occurred in the area of spend control. A metric for tracking requisitions placed through the electronic product catalogue revealed that a larger-than-expected percentage of items requested were off contract. Essentially, the hospital was paying higher-than-optimal prices because it was not taking advantage of the opportunity to negotiate more favourable rates from suppliers. Materials management staff moved immediately to address the problem, achieving a 20 per cent increase in items under contract in just three months. Other performance indicators have helped the hospital increase the number of purchase orders sent electronically and also monitor and reduce the number of keystrokes required to place an order.

"We've always identified and fixed deficiencies in our supply chain," said Wayne Coros, SickKids' director of materials management. "The difference we're finding with performance metrics in place is that we now have accurate measurements of how specific components of the supply chain are working, and when we make changes, we see the direct result of our actions. This motivates us to keep going and to try to make each part of the supply chain as efficient as it can be."

Chapter 8: Technical Worksheet Summaries

This section provides a summary for each of the 20 metrics and 12 standards.

Metrics

- 1.1: Percentage of Active Items under Contract
- 1.2: Purchasing Response Time
- 2.1: Average Cost to Issue a Purchase Order
- 2.2: Inventory Turnover in One Month
- 2.3: Operating Costs as a Percentage of Expenditure
- 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
- 3.5: 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 Invoice Matches
- 3.8: Percentage of Low Dollar Value Purchase Orders
- 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 from the Master File in One Month
- 5.1: Percentage of Invoices Paid within Due Date
- 5.2: Supplier Performance
- 6.1: Voluntary Turnover

Standards

- 1.1: Purchasing Policies and Procedures
- 1.2: Audit Standards and Processes
- 1.3: Boilerplate Contracts and Key Legal Principles
- 2.1: Segregated Approval and Authority Schedules
- 2.2: Inventory Policy
- 3.1: Contracts Database
- 3.2: Low Dollar Value Transactions Strategy
- 4.1: Customer Survey Tools and Processes
- 4.2: Item Master Management Policy and Processes
- 5.1: Supplier Performance Management Process
- 6.1: Job Roles and Specifications
- 6.2: Performance Appraisal Process

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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: $\geq 80\%$ under contract

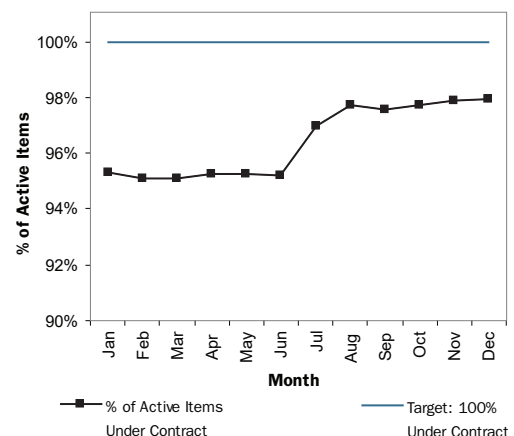
Benefits:

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 under contract enables a more efficient procurement process with documented contract information to issue orders.

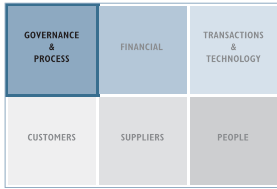
Risk Management: Contracting aids financial planning and reduces risk by establishing clear, agreed-upon terms for transactions with suppliers.

Percentage of Active Items under Contract — Stock



Underlying Leading Practices:

- Demand Management
- Identification of Product Standardization Opportunities
- Contract Centre of Excellence
- Comprehensive Understanding of Spend Data



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

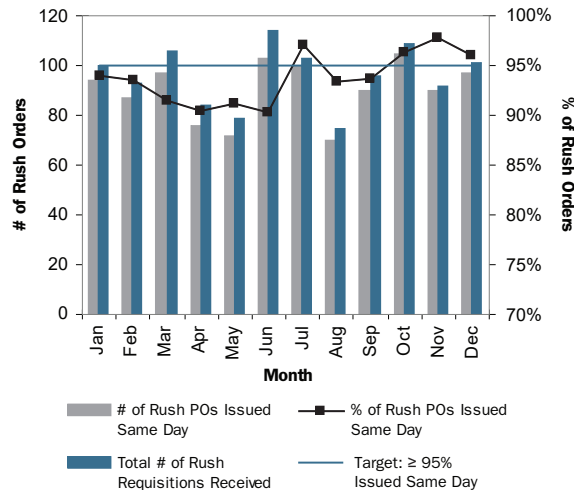
Benefits:

Patient Care: Fast response times for rush orders help ensure that customers, such as, doctors and nurses, have access to the right product at the right time, to maintain the highest quality of patient care.

Process Efficiency: Reducing the overall response time reduces the workload required to issue a rush order by improving the efficiency of the process.

Customer Service: Reducing response time improves the supply chain department's service level and relationships with their customers.

Purchasing Response Time



Underlying Leading Practices:

- Contract Centre of Excellence
- End-to-End eSupply Chain

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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:

Purchasing labour costs

Number of purchase orders

Target:

≤ \$20/PO

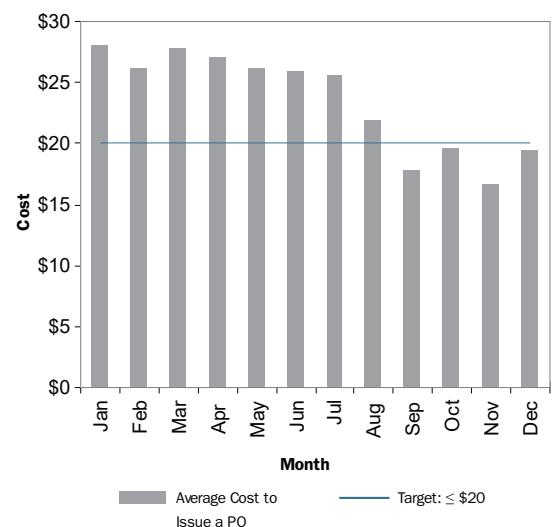
Benefits:

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: Streamlining the purchasing process by eliminating unnecessary steps and implementing technology to automate transactional processes will improve overall efficiency.

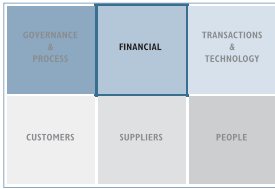
Employee Productivity/Satisfaction: Redesigning purchasing processes will result in increased staff productivity by eliminating duplication and reducing overall error rates.

Average Cost to Issue a Purchase Order



Underlying Leading Practices:

- Contract Centre of Excellence
- Purchasing Cards
- “End to End” eSupply Chain
- Process Productivity Tools



Metric 2.2: Inventory Turnover in One Month

Objective:

To optimize the investment in inventory 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:

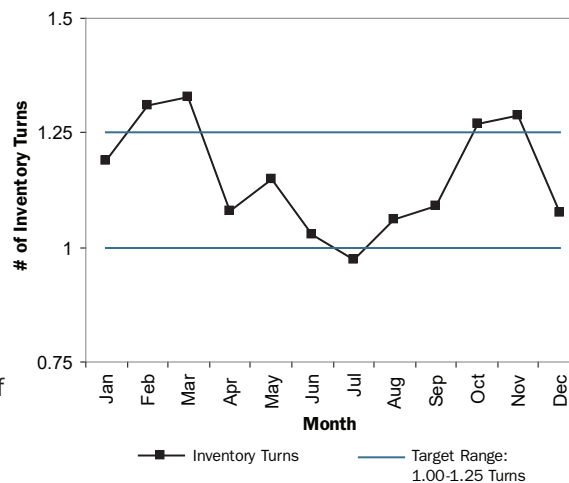
Central Stores — 12 to 15 annual turns (1 to 1.25 turns per month)
Stat Stores — 5 to 10 annual turns (0.5 to 1 turn per month)
Central Warehouse — 12 to 15 annual turns (1 to 1.25 turns per month)

Benefits:

Financial Stewardship: Managing inventory turnover rates correlates with an organization's ability to manage its assets and maximize return on investment. This is achieved by balancing the cost of carrying inventory with the cost of replenishment.

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.

Inventory Turnover — Central Stores



Underlying Leading Practices:

- Demand Management
- Baseline Forecasting
- Identification of Product Standardization Opportunities
- Centralized Inventory Warehousing
- Logistics Process Automation

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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:

Supply chain operating costs

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

Target:

Target will vary depending on the type and size of hospital

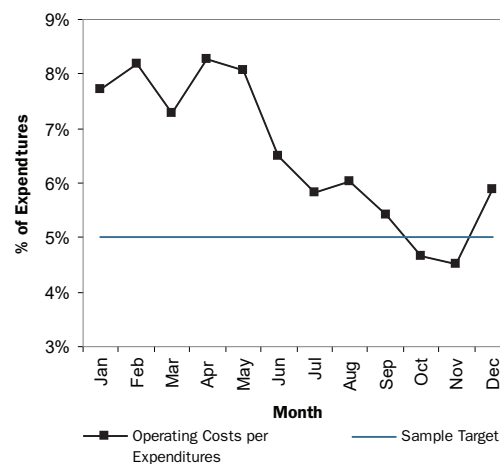
Benefits:

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: Redesign and automation of supply chain processes enable an organization to improve its overall efficiency.

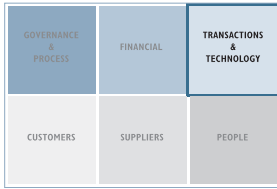
Employee Productivity/Satisfaction: Redirecting employee time towards strategic value-add activities versus transactional processing will improve the overall productivity of the supply chain department while also improving employee satisfaction.

Operating Costs as a Percentage of Expenditures



Underlying Leading Practices:

- Contract Centre of Excellence
- Logistics Process Automation
- Purchasing Cards
- "End to End" eSupply Chain
- Process Productivity Tools



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:

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

Target:

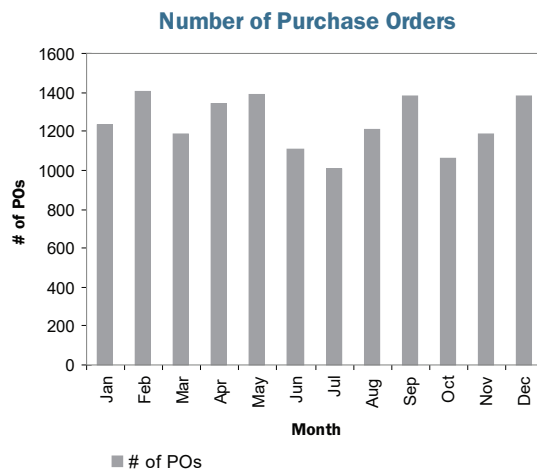
Not applicable; generally, organizations should aim to decrease the total number of purchase orders, although some initiatives may cause temporary increases

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 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
- Purchasing Cards
- Process Productivity Tools



GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

Metric 3.2:

Percentage of Rush Purchase Orders

Objective:

To reduce the number of unplanned and unscheduled rush 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

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.

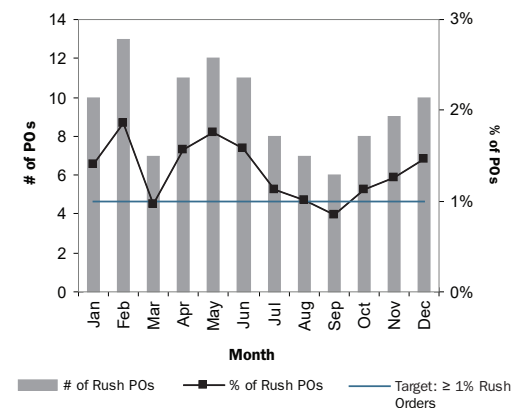
Financial Stewardship: Significant costs, both for the product and administration, are incurred when rush orders are placed.

Process Efficiency: Reducing the percentage of rush orders will yield significant efficiencies as processing rush orders is time consuming for both hospitals and suppliers.

Customer Service: Reducing the percentage of rush orders improves customer satisfaction by having the right product available at the right time.

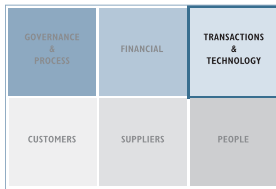
Risk Management: Reducing the percentage of rush orders reduces both clinical risks to the patient and financial risks to the organization.

Percentage of Rush Purchase Orders — Stock



Underlying Leading Practices:

- Baseline Forecasting
- Collaborative Planning
- Identification of Product Standardization Opportunities
- Strategic Sourcing
- “End to End” Supply Chain Partnerships



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

Benefits:

Process Efficiency: Eliminating or reducing paper handling and data entry activities through technology implementation will result in a decrease in manual transactions and reduce overall error rates.

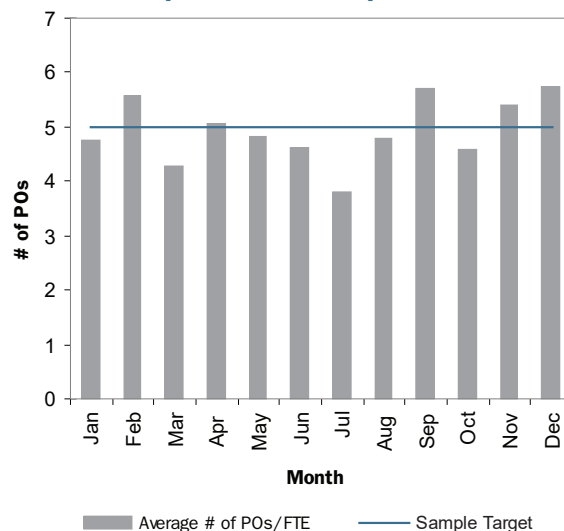
Employee Productivity/Satisfaction:

Redesigning purchasing processes will enable increased staff productivity by eliminating duplication and automating repetitive tasks. Establishing specialized roles with dedicated expertise will also support greater employee productivity and satisfaction.

Underlying Leading Practices:

- Contract Centre of Excellence
- “End to End” eSupply Chain
- Process Productivity Tools

Number of Purchase Orders per Full-Time Equivalent



GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

Metric 3.4:

Average Lines per Purchase Order

Objective:

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

Calculation:

Number of purchase order lines

Number of purchase orders

Target:

≥ 4 lines/PO

Benefits:

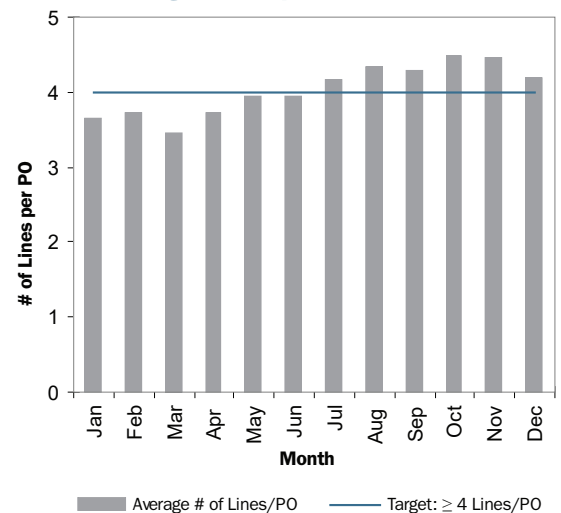
Financial Stewardship: Fewer purchase orders reduces the transactional costs associated with processing purchase orders.

Process Efficiency: Fewer purchase orders results in reduced workload for supply chain, receiving and accounts payable staff as well as suppliers.

Underlying Leading Practices:

- Identification of Product Standardization Opportunities
- Contract Centre of Excellence
- Automated Procurement Tools
- Transportation Planning & Delivery Frequency
- Logistics Process Automation

Average Lines per Purchase Order



GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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:

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

Target:

≤ 15 POs/month

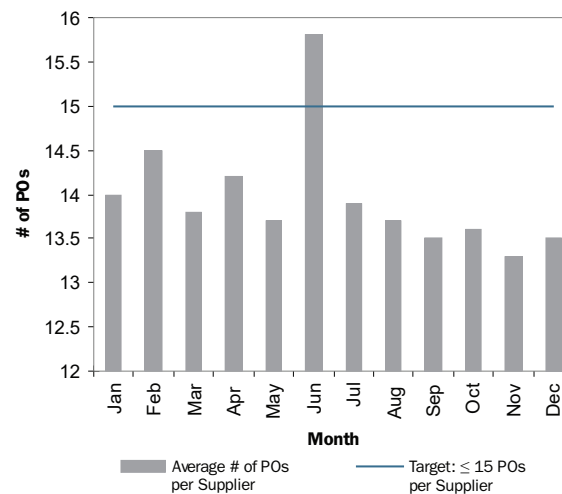
Benefits:

Financial Stewardship: Fewer purchase orders translates into lower transactional costs for the organization and suppliers.

Process Efficiency: Fewer purchase orders results in reduced workload for supply chain, receiving, accounts payable and suppliers.

Supplier Relationships: A focus on process improvements that are mutually beneficial for both the organization and suppliers support strong supplier relationships.

Average Number of Purchase Orders to Top 10 Suppliers



Underlying Leading Practices:

- Supplier Relationship Management
- Transportation Planning & Delivery Frequency
- Logistics Process Automation
- Process Productivity Tools

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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

Benefits:

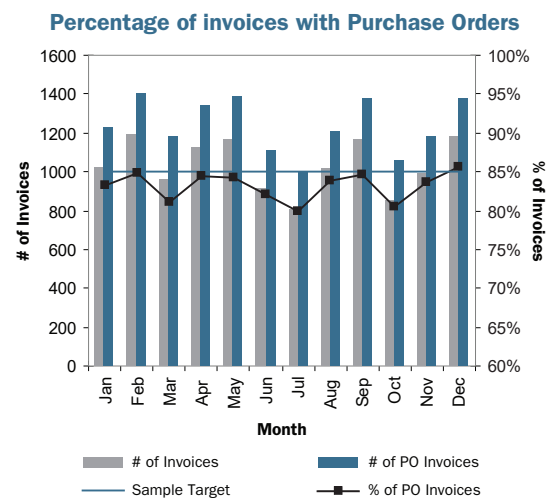
Financial Stewardship: Greater control by the supply chain department over the purchasing of goods and services will increase purchasing power and standardization.

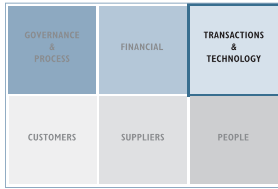
Process Efficiency: Purchases through the supply chain department (i.e., with purchase orders) are more likely to result in accurate receiving documents and invoices, reducing the time required by receiving and accounts payable departments to track down missing information, correct errors, and obtain appropriate approvals.

Risk Management: Using trained supply chain professionals to oversee the procurement and management of complex goods will reduce risk to the organization.

Underlying Leading Practices:

- Collaborative Planning
- Strategic Sourcing
- Tight Supply Chain/Accounts Payable Organizational Relationship
- “End to End” eSupply Chain





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

Benefits:

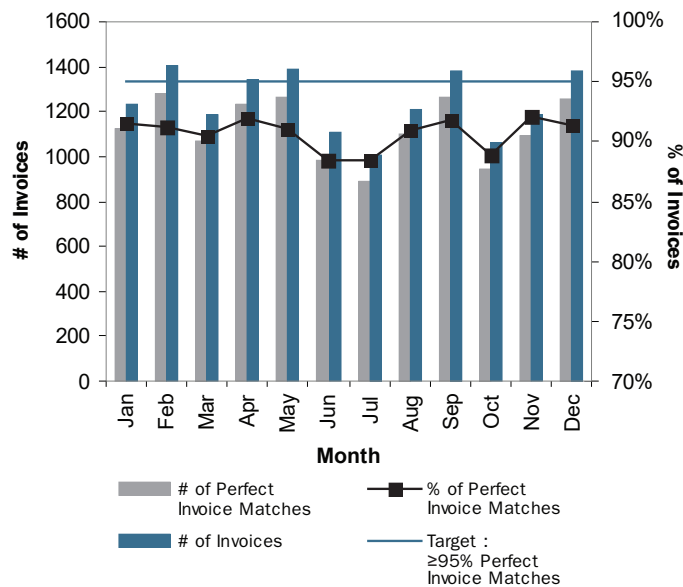
Financial Stewardship: Cost savings can be achieved through paying correct prices and taking advantage of early-payment discounts.

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
- Logistics Process Automation
- Tight Supply Chain/Accounts Payable Organizational Relationship
- “End to End” eSupply Chain

Percentage of Perfect Invoice Matches



GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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

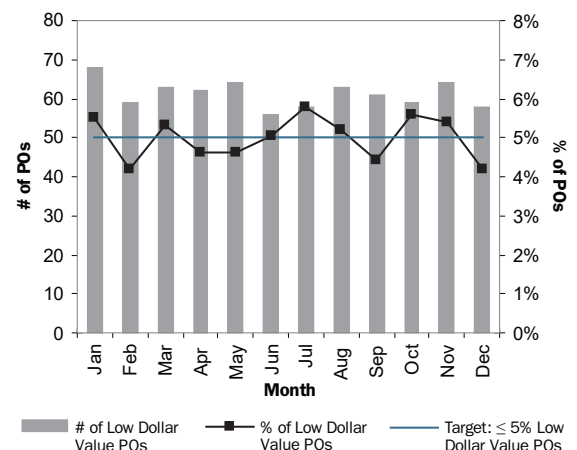
Benefits:

Financial Stewardship: Fewer purchase orders and associated invoices results in lower prices and transactional costs for the organization and suppliers.

Process Efficiency: The use of alternative processes for low dollar value transactions that are less labour-intensive for supply chain staff allows them to focus on strategic, higher-risk purchases.

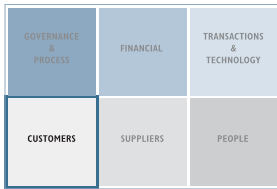
Supplier Relationships: Actively engaging key suppliers in identifying mutually beneficial alternative processes will improve supplier relationships.

Percentage of Low Dollar Value Purchase Orders



Underlying Leading Practices:

- Definition of Acquisition Strategy
- Strategic Sourcing
- Contract Centre of Excellence
- Purchasing Cards
- Strategic iSCM Leadership



Customers

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

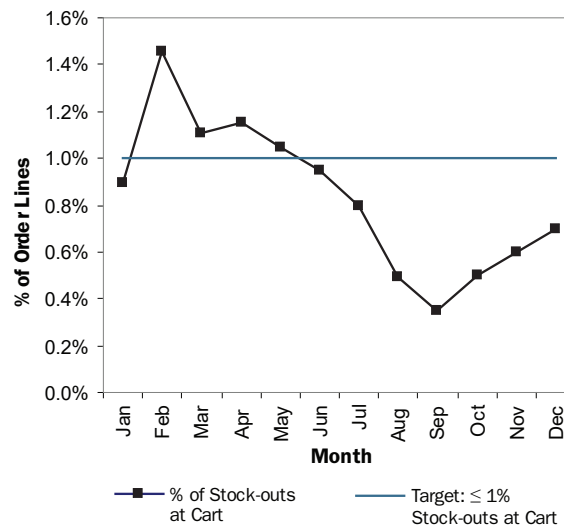
Benefits:

Patient Care: Ensuring the right product is available to customers when it is required enables them to provide the best possible patient care.

Process Efficiency: Improved planning processes, cart quotas and product standardization will reduce the number of purchase order transactions, especially rush purchase orders that are expensive and time consuming.

Customer Service: Monitoring stock-out rates at the point-of-use locations combined with open communication and periodic reviews supports customer service excellence through continuous improvement to cart quotas.

Stock-outs at the Cart Level



Underlying Leading Practices:

- Demand Management
- Identification of Product Standardization Opportunities
- Supplier Relationship Management
- Bar Coding/Scanning Technology

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

Benefits:

Patient Care: Contributing to the highest quality of patient care by ensuring supply chain customers (i.e., doctors and nurses) have access to the right product at the right time.

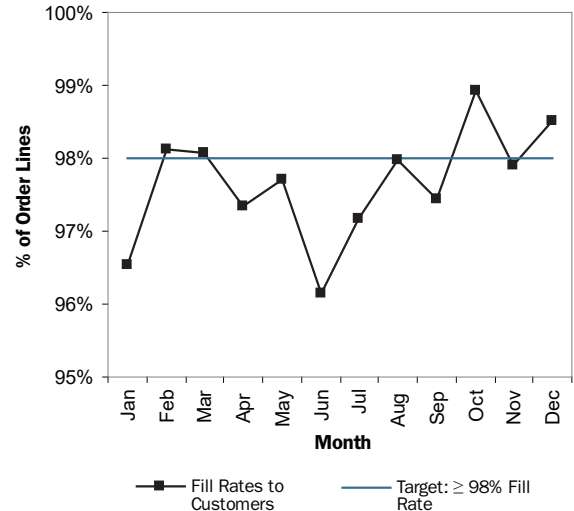
Process Efficiency: Better planning and collaboration with customers lead to more efficient internal inventory management processes.

Customer Service: Focusing on understanding and achieving customers supply needs will lead to improved service delivery.

Underlying Leading Practices:

- Demand Management
- Collaborative Planning
- Identification of Product Standardization Opportunities
- Bar Coding/Scanning Technology

Fill Rates to Customers



GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

Customers

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

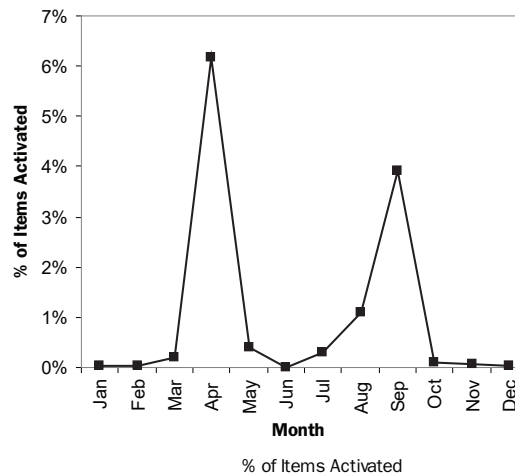
Benefits:

Customer Service: Maintaining an accurate item master with all frequently ordered items 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.

Percentage of Items Activated in the Item Master File



Underlying Leading Practices:

- RFP Development and Compliance Management
- Contract Centre of Excellence

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:

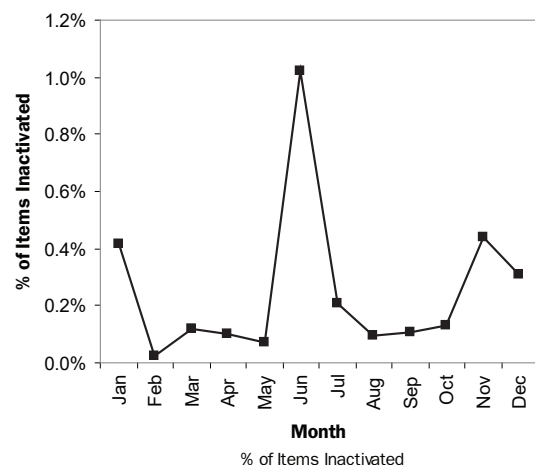
To be set by individual organizations depending on their size, circumstances, priorities and initiatives

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 supply chain.

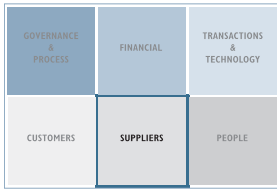
Customer Service: Eliminating duplicate and obsolete items in the item master will lead to an accurate database to simplify the ordering process for customers.

Percentage of Items Inactivated in the Master File



Underlying Leading Practices:

- Identification of Product Standardization Opportunities
- Contract Centre of Excellence
- Comprehensive Understanding of Spend Data



Suppliers

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

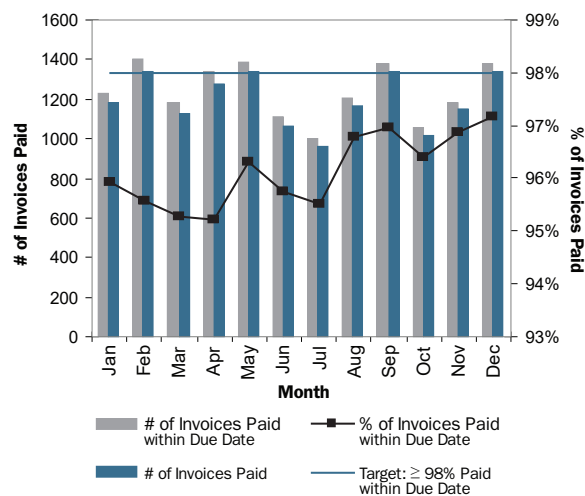
Benefits:

Financial Stewardship: By reliably complying with contract terms, organizations will be able to negotiate more favourable future contracts with suppliers.

Process Efficiency: Implementing automated invoicing and payment processes will speed up the payment cycle, capture efficiencies, and reduce accounts payable workload.

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

Percentage of Invoices Paid within Due Date



Underlying Leading Practices:

- RFP Development & Compliance Management
- Tight Supply Chain/Accounts Payable Organizational Relationship
- Rebate/Discount Management
- “End to End” eSupply Chain

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

Benefits:

Patient Care: Monitoring supplier performance ensures that customers have the right products at the right time to provide the best possible patient care.

Process Efficiency: Improved supplier performance results in less time spent managing stock-outs and expediting orders.

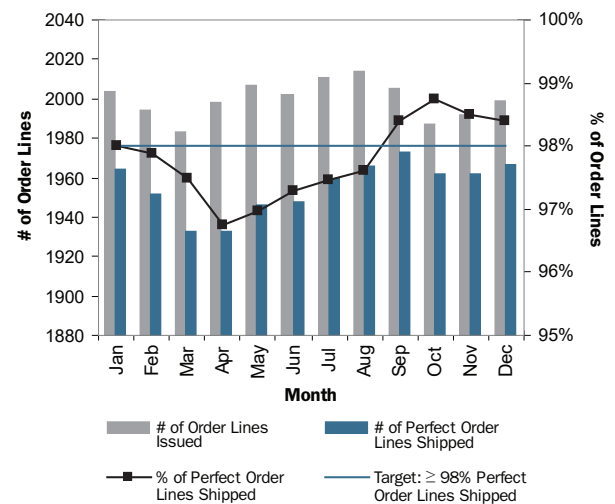
Customer Service: Measuring performance of key suppliers and ensuring that they are achieving acceptable fill rates is a critical component to providing customers with dependable high-quality service.

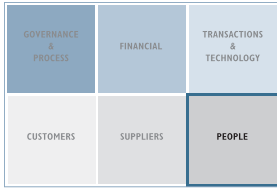
Supplier Relationships: Measuring supplier performance enhances supplier relationships by enabling organizations to set and communicate clear and consistent expectations for suppliers.

Underlying Leading Practices:

- Collaborative Planning
- Strategic Sourcing
- Supplier Relationship Management

Supplier Performance





People

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

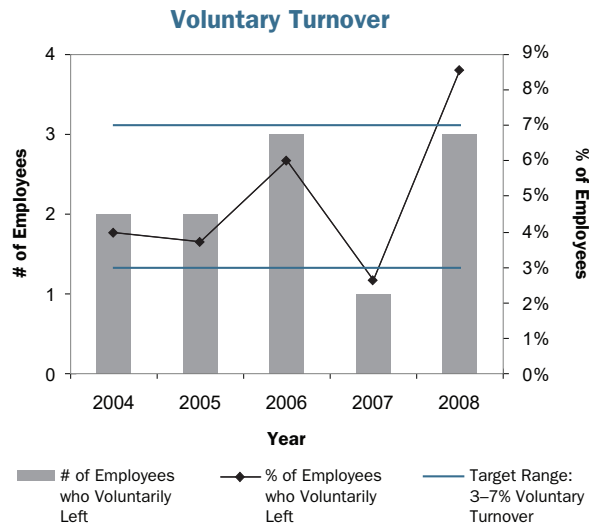
Summary of Benefits:

Financial Stewardship: Employee turnover adds to organizational recruitment and training costs.

Employee Productivity/Satisfaction: Employee turnover can have a negative impact on remaining staff. Satisfied, motivated employees are more productive and provide more effective customer service.

Underlying Leading Practices:

- Senior Management Support
- Transition from “Transaction to Interaction” Mindset
- Commodity Specialization
- Development of iSCM Skill Sets



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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
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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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
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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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
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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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
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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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
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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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

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:

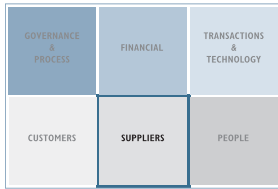
Management of the item master file ensures accurate information for supply chain management and better decision-making. An accurate item master file enables effective management of product usage, total cost of ownership and product recalls. It is also critical to have good item master management to manage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



Suppliers

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.

GOVERNANCE & PROCESS	FINANCIAL	TRANSACTIONS & TECHNOLOGY
CUSTOMERS	SUPPLIERS	PEOPLE

Benefits:

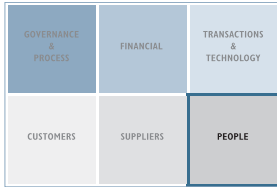
Patient Care: Proactively managing supplier performance facilitates improved supplier fill rates and decreases the instances of stock-outs, ensuring the right product is available when it is required for patient care.

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.



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.³

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 well-trained 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.

³ 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.

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.⁴

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.

⁴ 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.



Appendix A: Metrics and Standards Prioritization

In the Phase I report, the Hospital Supply Chain Metrics Working Group identified 48 metrics and 21 standards it considered essential for high-performing organizations. In Phase II, the Working Group further developed the 20 Stage 1 core supply chain operations metrics and 12 related standards that they believed would be the easiest to adopt and of most immediate value to hospitals.

Readiness Assessments

Eight Working Group hospitals conducted a small “readiness assessment” to gauge how prepared they were to implement the 20 stage 1 metrics. Their goal was to assess how viable implementation would be in the immediate future. The assessment focused on metrics since the implementation of metrics was thought to be more dependent on the hospitals’ current state and information systems than standards.

The Working Group’s readiness assessments of the eight hospitals included a survey and follow-up interviews at each site. The results of the assessment are summarized in the table below.

The following chart illustrates the results of the readiness assessments at each of the eight hospitals:

#	Performance Metric	Summary Metrics Readiness Scan by Hospital Site							
		1	2	3	4	5	6	7	8
1.1	Percentage of Active Items under Contract	B	B	B	B	B	B	B	A
1.2	Purchasing Response Time	A	B	C	B	C	B	C	C
2.1	Average Cost to Issue a Purchase Order	A	A	B	B	C	A	B	A
2.2	Inventory Turnover in One Month	A	B	A	A	A	A	A	A
2.3	Operating Costs as a Percentage of Expenditure	B	B	B	C	C	B	A	A
3.1	Number of Purchase Orders in One Month	A	A	A	A	B	A	B	B
3.2	Percentage of Rush Purchase Orders	C	B	B	C	C	C	B	B
3.3	Number of Purchase Orders Placed per Full-Time Equivalent in One Month	A	A	B	B	B	A	B	B
3.4	Average Lines per Purchase Order	A	A	A	A	B	A	B	B
3.5	Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month	A	B	B	C	B	B	C	B
3.6	Percentage of Invoices with Purchase Orders	A	B	B	A	C	B	B	A
3.7	Percentage of Perfect Invoice Matches	A	A	B	B	C	C	B	B
3.8	Percentage of Low Dollar Value Purchase Orders	B	C	C	B	B	B	C	C
4.1	Stock-outs at the Cart Level	B	B	C	C	B	A	A	A
4.2	Fill Rates to Customers	B	A	A	A	B	A	A	A
4.3	Percentage of Items Activated in the Master File in One Month	B	A	B	B	B	B	C	B
4.4	Percentage of Items Inactivated in the Master File in One Month	B	A	B	B	B	B	C	B
5.1	Percentage of Invoices Paid within Due Date	A	B	B	C	B	A	C	C
5.2	Supplier Performance	B	C	A	C	B	C	B	A
6.1	Voluntary Turnover	B	B	B	B	C	B	B	B

A	Data readily available and for the most part being tracked
B	Data available, but not being tracked on an ongoing basis
C	Data unavailable and no immediate plans for capture

Prioritization

The Working Group realized that implementing 20 metrics and 12 standards would be a huge undertaking for most hospitals. In order to distribute the work effort, they endeavoured to prioritize the metrics and standards within the Phase II subset.

The Working Group considered a number of factors when prioritizing the metrics and standards. In addition to ease of implementation and the results of the readiness assessment for metrics, they took into account (1) the estimated benefits they could generate; (2) the overall cost of implementation; and (3) metric interdependence, as some metrics generate maximum results only if used with other related metrics.

As this research is preliminary, the Working Group recommends that prioritization be revisited in 12 months; incorporating the findings generated by Phase III (a full-scale implementation readiness assessment and implementation planning).

Metrics and Standards Prioritization Matrices

#	Metric	Actionable
4.2	Fill Rates to Customers	1 st
2.2	Inventory Turnover in One Month	1 st
2.1	Average Cost to Issue a Purchase Order	1 st
3.3	Number of Purchase Orders Placed per Full-Time Equivalent in One Month	1 st
4.1	Stock-outs at the Cart Level	1 st
1.1	Percentage of Active Items under Contract	1 st
3.7	Percentage of Perfect Invoice Matches	1 st
2.3	Operating Costs as a Percentage of Expenditure	2 nd
3.4	Average Lines per Purchase Order	2 nd
3.1	Number of Purchase Orders in One Month	2 nd
3.2	Percentage of Rush Purchase Orders	2 nd
1.2	Purchasing Response Time	2 nd
3.5	Average Number of Purchase Orders Placed to Top 10 Suppliers in One Month	2 nd
5.2	Supplier Performance	2 nd
5.1	Percentage of Invoices Paid within Due Date	3 rd
3.6	Percentage of Invoices with Purchase Orders	3 rd
4.3	Percentage of Items Activated in the Master File in One Month	3 rd
4.4	Percentage of Items Inactivated in the Master File in One Month	3 rd
3.8	Percentage of Low Dollar Value Purchase Orders	3 rd
6.1	Voluntary Turnover	3 rd

1 st	First-priority metrics to implement
2 nd	Second-priority metrics to implement
3 rd	Third-priority metrics to implement

#	Standard	Actionable
1.1	Purchasing Policies and Procedures	1 st
2.1	Segregated Approval and Authority Schedules	1 st
1.3	Boilerplate Contracts and Key Legal Principles	1 st
2.2	Inventory Policy	1 st
3.1	Contracts Database	1 st
4.2	Item Master Management Policy and Processes	2 nd
6.1	Job Roles and Specifications	2 nd
3.2	Low Dollar Value Transactions Strategy	2 nd
5.1	Supplier Performance Management Process	2 nd
1.2	Audit Standards and Processes	2 nd
4.1	Customer Survey Tools and Processes	3 rd
6.2	Performance Appraisal Process	3 rd

The Technical Worksheets for each metric and standard included in the User Guide offer additional considerations for implementation. These are based on the interviews with the eight Working Group members and include the current state of management information systems (MIS). It is recommended that each hospital should perform its own readiness assessment and evaluate its ability to implement the 20 metrics and 12 standards.

Appendix B: Glossary

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.

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.

Commitment: Commitment is an agreement by one party to supply to or purchase goods or services from another party under specified conditions.

CSR/SPD: See Central Sterilization Reprocessing (CSR) or Sterile Processing Department (SPD).

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.

Low Dollar Value Transactions: Low dollar value is defined in this document to be purchases of less than \$100 before tax and surcharges.

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.

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.

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.

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”.

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.

Appendix C: Hospital Supply Chain Metrics Working Group



Cynthia Chesler is currently Executive Director of PROcure, a shared services organization focused on delivery of Supply Chain Services for the Erie St. Clair LHIN. She joined Chatham-Kent Health Alliance in 1997 where she served as Peri-operative Material Manager, Director, Material Management, and Interim Vice President of Corporate Services. Her portfolio also includes the Pharmacy Department. She began her career as an accountant with Peat Marwick; entered the healthcare field in 1988 at the Windsor Metropolitan General Hospital; sits on the boards of CareNet and CMEPP; is Co-Chair of the Healthcare Supply Chain Network (HSCN) Board; is a member of the Association for Healthcare Resource & Materials Management (AHRMM); is a Past Chair of Medbuy's Material Management committee; and is actively involved in various OHA education projects.



Wayne Coros is Director of Materials Management at the Hospital for Sick Children in Toronto, one of the largest pediatric academic health centres in the world. Wayne has almost 20 years of experience in supply chain management in the healthcare field and at the municipal level. He is currently leading an e-Supply Chain Project for the hospital, which proposes to automate the supply chain process by focusing on electronic requisitioning and purchase orders, point-of-use data capture, warehouse automation, electronic funds transfer and other priorities.



Don Cummer is Director of the Integrated Technology Solution Project with Plexxus, a provider of supply chain and transactional finance, human resources and payroll services to 12 major Toronto area hospitals. He has more than 25 years of experience in purchasing, materials management, and supply chain systems in the telecommunication and healthcare sectors, and has been very active in the targeted use of technology to further business goals and objectives. Don has been previously involved in supply chain transformation projects, including Manugistics Demand Forecasting and Distribution Resource Planning, SAP ERP systems and several eSupply Chain projects. He holds an Honours Bachelor of Art degree in Economics from McMaster University, and is a member of both the Council of Supply Chain Professionals and Supply Chain and Logistics.



Derek Gascoigne is Director, Environmental Services, for the Thunder Bay Regional Health Sciences Centre, and has been involved in healthcare material management for 23 years, since graduating from Lakehead University with an Honours Bachelor of Commerce Degree. He is a two-time past president of the Ontario Hospital Material Management Association, and has been involved in a number of federal and provincial committees — including the Ontario Health Plan for an Influenza Pandemic in 2005. He enjoys working “for the betterment of our profession, and of supply chain management principles and best practices.”



Ken Gazdic is Director of Materials Management at the Hôpital régional de Sudbury Regional Hospital, a multi-site regional referral and teaching centre serving northeastern Ontario. His professional background includes 10 years in public finance, policy and planning at the federal and provincial government levels, and five years of private-sector business and management consulting. He is a member of the Association for Healthcare Resource & Materials Management (AHRMM), Healthcare Supply Chain Network (HSCN) and Ontario Hospital Association CUPE Central Bargaining Team, and has served as lead on several northeastern Ontario projects involving e-Supply and Integrated Supply Chain Management.



Kathy Jameson is Facilities and Materials Manager at the St. Thomas Elgin General Hospital, with responsibility for supply chain management, building maintenance and security. The St. Thomas Elgin General is a 166-bed, full-service community hospital in southwestern Ontario. She has worked at the St. Thomas hospital for the past 19 years. Before entering the healthcare field, Kathy was an inventory coordinator for a major food distribution centre. She is currently leading a project to implement integrated supply chain management leading practices. The project's main focus is to automate and streamline processes associated with purchasing, warehousing and distribution of supplies.



David Makila's work as Director of Material Management at Windsor Regional Hospital has helped establish the institution as a client-focused healthcare organization; recent initiatives have emphasized the Erie–St. Clair region's Local Health Integration Network (LHIN), whose hospitals are committed to transforming current supply chain practices into an integrated supply chain model for the province. He earned a Master of Science in Administration from Central Michigan University, after obtaining undergraduate degrees in Commerce and Economics from the University of Windsor.



Tim Prokopetz has been Manager of Materials and Biomedical Engineering for Timmins and District Hospital for eight years; he has worked in the materials management field for over 15 years, including employment for nine years as materials manager for a Tier 1 automotive manufacturer. His manufacturing background was instrumental in the re-engineering of materials processes within the Timmins and District Hospital, where the implementation of strict spending policies and authorization levels assisted the hospital in its planning functions, reduced operating costs and aided in streamlining the payables function. Tim has served on various working groups and is a member of several committees.



Scott Pruyn is ERP Solution Consultant for San Francisco-based McKesson's Healthcare Resource Planning Division, with 15 years' experience in healthcare supply chain automation at McKesson, Medibuy, Medline and Enterprise Systems Inc. His more recent work involves an emphasis on materials management, information systems and analytical tools — including McKesson's Pathways Materials Management software, whose Horizon Business Insight component analyzes supply chain usage, including usage from surgical procedures to determine which products provide the best value, giving hospitals greater perspective on asset management and on how seemingly disparate activities are interrelated.



Liana Scott is Vice President of Member Support for HealthPRO Procurement Services Inc., Canada's largest Group Purchasing Organization for healthcare. During her 25 years at Baxter and Source Medical, she was solely focused on healthcare supply chain, including implementation of the first Canadian stockless inventory programs and development of value-added supply chain services for hospitals. Currently she is Co-Chair of Healthcare Supply Chain Network (HSCN) and a past board member and executive of CareNET. Liana holds a Bachelor of Science from Laurentian University.



Kerry Smith is Director of Strategic Alliances & Logistics for Hotel Dieu Hospital (HDH), encompassing all Material Management departments, Corporate Contracts, Capital Equipment as well as assisting in planning and redevelopment for HDH as an Ambulatory Care Centre. He has held various positions over the past 25 years within Supply Chain at HDH and Kingston General Hospital (KGH). Kerry was the Manager of Procurement Services and Accounts Payable at KGH before rejoining HDH in his current role.



Lynne Trott is Corporate Director of Logistical Services for The Ottawa Hospital, with responsibility for supply management, linen management, central processing, mail services and patient transportation. She has been involved with healthcare material management both within the hospital and in the private sector for more than 20 years, and is co-chair for the Champlain Regional Supply Chain Management Committee and a member of the Healthcare Supply Chain Network (HSCN).

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