Improving productivity and outcomes through actionable analytics

Inventory Management

OVERVIEW

Healthcare organizations have historically spent a tremendous amount of time and resources to recognize and reduce costs associated with effective inventory management. Despite numerous departmental initiatives to help understand inventory usage and reduce the surplus of high cost inventory, there still remains a gap in understanding the full scope of inventory management and how it can lead to more profitable procedures.

FRAMING THE PROBLEM

There are many inventory management systems (IMS) that offer capabilities and allow departments to better understand inventory consumption. However, effective inventory management can also be used to determine profitability of procedures by comparing the cost of inventory used to the billed costs of inventory. Obtaining this insight requires a multi-dimensional approach of aggregating data from IMS as well as the clinical systems used during procedures. A bi-directional interface between the two systems is often a rare occurrence and therefore, the department is left with no other option but to estimate the profitability of procedures on an aggregate level.

SOLUTION

To address inventory management in an efficient manner, a solution that actively integrates with multiple systems in real-time to provide actionable insight, in the appropriate context, should be deployed. In addition to inventory count and count of expiring inventory, Foundations™ allows management, and inventory staff to actively monitor the use of individual supplies and their costs associated with each case. Since case logs provide the most accurate representation of the quantity and details of the supplies used–users of an integrated analytics solution can correlate frequency of inventory usage with case type, physician and other clinical parameters. By closely monitoring the profitability of procedures, department management can also make important inventory selection decisions that can also reduce the cost of care paid by the patient.
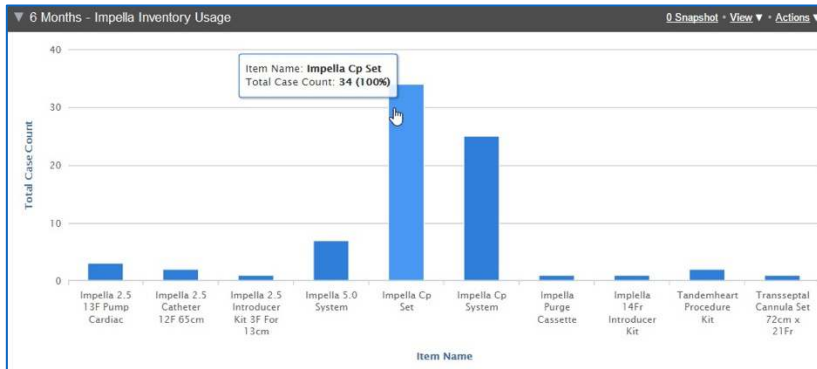
Figure 1:
Inventory management becomes more effective when staff and department managers can obtain procedure-level usage details while associating costs incurred vs. billed charges.

Case Inventory					
Case Number	Item Name	Type	Maker	Inv Id	Cost
34f678	6F 45cm Fast-Cath	Sheath	Tru Cath, Inc.	357688	50
34f678	8F 10cm Pinnacle Sheath	Biopsy	Smithson Medical	8776778	500
34f678	Braun Micropuncture 5F 10cm	Sheath	Smithson Medical	6h6676	50
34f678	Procure Bioptome 50cm	Biopsy	HeartVascular	898989	500
34f678	Procure Bioptome 50cm	Biopsy	HeartVascular	78j8980	500

INPUT—DATA PLANNING

Relevant information is possible when clinical, financial and operational data is combined. The below table presents a sampling of data points with examples that lead to derived measures in Foundations.

For example: The inventory section of a hemodynamic system, such as GE Maclab can provide the following information:

Field Name	Field ID
Inventory Item Description	EventSupply.SupplyName
Inventory Item Part Number	EventSupple.PartNum
Inventory Item Size	EventSupply.Size
Inventory Manufacturer	EventSupply.Manufacturer
Inventory Item Serial Number	EventSupply.SieralNum
Inventory Item Lot Number	EventSupply.LotNum
Inventory Barcode	EventSupply.Barcode
Inventory Category	EventSupply.FolderName
Inventory APC/Billing Code	EventSupply.APCCode
Date/time of Inventory Consumption	YYMMDDHHMMSS

OUTPUT—MEASURES PLANNING

Analytics on inventory and supplies is available in real-time with comparison to historical trends, to better plan for future needs. Management and staff can utilize Foundations to obtain in-depth insight through ad-hoc reports such as:

1. Profitability of individual procedures based on costs of inventory vs. billed costs

2. Inventory waste and added costs due to unplanned procedures

3. Inventory usage by case type, manufacturer, & supply name

4. Total cost breakdown by inventory type, or specific supply name

5. Historical comparison of inventory used vs. inventory ordered

6. Daily, weekly, monthly email notifications to keep track of expiring inventory

7. Correlate device alerts and recalls with inventory and cases in which it was used

CONCLUSION

Our customers have discovered that by understanding inventory consumption on an individual procedure, as well as an aggregate level, they are better equipped with the actionable insight required to make decisions that can lead to more profitable procedures. In fact, physician engagement in such situations is key since CMS reimbursements are reduced based on the Multiple Procedures Payment Reduction policy. Integrated analytics that provide clinical information in relation to inventory usage allows management and staff to obtain the complete picture of their department from an operational and financial perspective.