Overcoming Challenges of Consignment Inventory Management in ERP System Implementations

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Effective management of consignment inventory is an important aspect of a healthcare provider's supply chain strategy. Due to the differences in how transactions are handled between owned and consigned items, most ERP systems do not manage consignment inventory well. This leads to manual processes and workarounds in all stages of the consignment item life cycle resulting in data quality issues and potential liabilities for the hospital. This includes issues such as having items incorrectly identified as consignment, inaccurate item balances in the ERP system, and expenses resulting from unused or damaged items while under the hospital's roof. To maximize the potential benefits of an ERP implementation in transformation projects, it is important to implement rigorous controls when manual processes are necessary and to customize the ERP systems when possible.

By examining prior ERP implementations, we identified the most frequently encountered problems that arise in consignment management. Typically, those issues relate to poor management of complex manual processes.

This paper is organized into seven sections that correspond with different stages of the consignment management process. In each section, we will review the operational and technological challenges that are faced in that stage and discuss potential solutions based on previous client experiences and industry best practices. This information can help to determine a set of process guidelines, configurations and customizations that can lead to proper management of consignment inventory and easily applied to future ERP implementations.
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Consignment Inventory Process Flow in an ERP System

Initial consignment set up
- Create Consignment Agreement
- Track Agreement in ERP System
- Set up Consignment Inventory Location
- Receive Consigned Item for First Time

Use consigned item

Maintain system on hand balance

Replenish consigned item

Pay for consigned item

Receive replacement item

The Consignment process, as with traditional inventory management, can be broken into two primary steps in which the seven topics of this paper reside:
1. Initial setup of the consigned item
2. Maintenance and replenishment of the consignment items.
### 7 Common Roadblocks in the Consignment Management Process

The table below highlights different steps of the consignment management process and the unique challenges that consignments presents in that particular phase of the item life cycle.

<table>
<thead>
<tr>
<th>Process</th>
<th>Potential issue</th>
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| Creating the Consignment Agreement | • Determining what items should be consigned  
• Dealing with physician preference items  
• Defining detailed formal consignment policies and contracts |
| Tracking Consignment Agreements in the ERP System | • Lack of visibility into what is on an agreement include: item level detail, inventory levels and payment terms |
| Receiving a consigned item into inventory the first time | • PO is not created for the initial consignment causing inventory receiving issues |
| Setting up inventory locations | • The items are usually stored near care delivery areas (OR, Cath Lab), so storage is not set up like normal perpetual location  
• Consignment items can be confused with owned inventory  
• Vendor access to consignment inventory locations must be controlled |
| Replenishment | • Automatic replenishment can be prohibited if vendor requires case information or lot/serial ID when product is used |
| Maintaining ERP system on hand balances | • Must keep system on hand balance accurate and equal to consignment agreement levels  
• Items that are adjusted up or returned after use cannot go back on shelves as consignment |
| Payment of item after use | • Automatic creation of voucher after item use, before an invoice is received, can cause confusion for suppliers |
Creating Consignment Agreements

“Discussions between supply chain and clinicians need to focus on which item categories should be considered for consignment opportunity, while value analysis committees should put that same rigor in place for identifying what items should be considered for consignment.”

Control of consignment begins prior to the products arriving on the loading dock. While consignment inventory is frequently used as a means to provide new products and technology to requesting physicians without the initial expense, it often comes at a premium. Suppliers include additional fees in the price of consigned items to cover their risk of item obsolescence and their increased role of managing these products. Discussions between supply chain and clinicians need to focus on which item categories should be considered for consignment opportunity, while value analysis committees should put that same rigor in place for identifying what items should be considered for consignment. Each organization should have an overall strategic approach that includes several key issues supported by departmental policy and procedural practice regardless of specific ERP systems.

Due to the overall financial impact and liability of carrying these items under one roof, a formal organization policy supported by practice guidelines is of the utmost importance. The policy serves as a general statement throughout the organization and to the vendors as to how consigned items are treated. Many institutions negotiate consignment agreements/contracts that insufficiently address the full range of internal problems that consignment can create.

A strong organizational policy will support consignment agreements/contracts between the hospital and the supplier. The agreement should be thoroughly vetted through legal channels and supply chain leadership so that overall risk is minimized and include at a minimum:

- All products included in the agreement with pricing
- Statements regarding access by the vendor
- Location and security of storage space
- Product liability and ownership
- Specifics surrounding the consignment reconciliation process

Lastly, the agreement should include the steps the supplier needs to take in both initiating and replacing consigned items into the specific system. This may include information regarding the handling of expired products or potential upgrades in product changes or technology.
Tracking Consignment Agreements in ERP Systems

It is difficult enough to effectively track and pay for consignment inventory in an ERP system, but what about tracking the consignment agreement itself? Traditionally, health systems limit contract monitoring to price and delivery, missing opportunities to get a true picture of a supplier’s performance in terms of contract compliance. There are many important aspects to these contracts that a health system would benefit from having better visibility, such as items on the contract, agreed upon inventory levels, payment terms, and more. The answer to how to effectively manage this lies in a multi-prong approach and the participation of individuals across the Supply Chain.

There are two key components to effectively measuring consignment inventory balances and compliance: (1) accurately tracking transactions on a day to day basis while applying the same inventory management rigor that is put in place for owned inventory, and (2) specifying the items and agreed upon balances as data elements associated with the agreement. This can be done in many forms, including specifying details on a line item contract with the consignment supplier and setting periodic or perpetual inventories at contract levels. Once these two pieces are in place, reporting can provide insight at any point in time regarding how balances are tracking against agreed upon consignment inventory levels.

PeopleSoft 9.2 Procurement Contract
There are many reasons why a health system may enter into a consignment agreement (freeing up capital or reducing supply expense). Without effective monitoring of the agreements, many of the desired benefits are lost.

Manually managing paper copies of contracts practically ensures that contracts will be inaccurate, ignored, lost, and ultimately expire. ERP and third party systems are beginning to provide term-based monitoring and workflow solutions for managing these types of contracts. Individuals responsible for consignment agreements should take full advantage of these solutions. Ultimately, automation of the contract approval and maintenance processes allow administrators to focus on more value added tasks like ensuring supplier service level agreements are being met. This shift to value-add activities help ensure contracting departments get the most value out of every transaction and interaction they perform.

**PeopleSoft 9.2 SLA Agreement Monitoring**
Receiving Initial Consigned Items into Inventory

Because consigned items are not purchased until they are consumed, purchase orders are not typically created for the initial items that are brought in under a new consignment agreement. After an agreement is signed, the supplier will send products to the hospital without a purchase order. This creates a lack of visibility at the receiving dock when the items are delivered. The receiving staff will not know if the items received match the quantities or models that are specified on the contract.

ERP systems allow non-PO receipts and other methods to create an initial on-hand balance in order to get these items into inventory, however, this does not help the receiving staff know they are accepting the correct product. In order to provide more visibility, many hospitals have tried creating no-charge purchase orders for the first shipment of the consigned items. After the system creates the no-charge PO, the number is given to the supplier so that it can be included on the packing slip. This helps facilitate tracking and visibility for the transaction, but does not create a cost in the system.

While the no-charge PO does provide the visibility necessary for the receiving staff to ensure the correct product has been delivered, this solution creates another manual step in the process when a purchase order has to be closed. ERP systems close purchase orders after they have been matched to invoices. Suppliers will not create an invoice for the no-charge PO, so manual intervention from the purchasing staff is needed to ensure the PO is properly closed once the item is received.

The recommended alternative to the no-charge PO is to load the line item details of the consignment contract into the ERP system and then dispatch the contract to the supplier. The supplier can then include the contract ID on the packing slip, in lieu of a purchase order number. This process requires that the receiving staff understand the contract nomenclature so that the items can be delivered and put away in the correct location after it is received.

“Utilizing contracts eliminates the need to track and manually close no-charge POs and provides proper visibility to the receiving staff.”

PeopleSoft 9.2 Procurement Contract details dispatched to supplier
Setting up Physical Consignment Inventory Locations

Consignment inventory is generally stored in close proximity to care delivery areas such as the OR, sterile processing, and the cardiac catheterization lab. Because of this, proper space utilization, physical layout, and staging of the consignment area is critical to ensure quick access and identification for hospital staff, physicians, and vendors while maintaining security for the consigned items.

Ideally, items on consignment are stored in centralized secure areas (locked doors, cabinets or storage cases) within the perpetual inventory environment. Consigned items must be separate from owned inventory (including vendor owned inventory) in all physical locations (by row, rack and shelf level) to ensure appropriate physical tracking of the goods. Color-coded labels or placards are commonly used to help quickly identify consignment items and to ensure they are separated from owned inventory.

Sterile surgical trays may contain both owned and consigned items. It is important to identify those items within the trays and track them separately. Sterile and non-sterile consigned items may also be stored on mobile carts, further complicating the situation. Internal processes must ensure that the consignment carts are staged appropriately, both pre-case and post-case, to maintain separation and isolation from non-consigned products. The greater the physical separation between owned and consigned items, the easier it is to physically identify and track the two different types of inventory.

With regard to vendor access, hospitals should have a standardized policy that is applicable to all vendors and is defined in detail in the consignment agreements. Many hospitals tend to have issues with suppliers bringing in extra items as “trunk stock” and leaving those items on the hospital shelves. Suppliers will attempt to leverage hospital space as warehouse space for their own convenience. This creates unnecessary liability for the hospital that the supply chain team is unable to properly monitor. Inventory staff members should assist or escort badged vendor representatives into consignment areas when vendors need to replenish, substitute, or validate the consignment inventory. It is important to communicate to vendors on a consistent basis the access policy and all product, PAR level, or on-hand quantity changes to the items.

“The greater the physical separation between owned and consigned items, the easier it is to physically identify and track the two different types of inventory.”

Consignment shelves in care delivery areas with colored labels to identify items as consigned.
**Replenishing Consignment Items**

Business owners often find that they have difficulty setting up their ERP or other replenishment solutions to manage their consignment inventory. Due to federal requirements for implanted medical devices, suppliers often require that the lot and serial number of the item be provided to them upon consumption. This is done by entering both numbers on the PO before it is sent to the vendor. This data requirement results in a manual step being built into the business process. Often, some sort of customization and/or business process is required in order to handle the consignment business process.

While each healthcare entity will have their own specific business needs and requirements for their technology solutions, a pattern of managing consignment inventory through par locations is starting to become prevalent. The consignment items are setup in the par location and are configured to only replenish a requested quantity that the user requires (usually one unit at a time). Workflow can be established to require approval for any order with a consignment item on it. This allows for a break point in the business process to enter any relevant serial or lot number information. Once the item specific lot number information is entered on the requisition, it is approved for PO creation.

Some hospitals have experimented with customizing their ERP system to capture serial and lot information through barcode scans using mobile devices. If a supplier can provide barcoded information, the lot and serial number of an item could be captured during receipt and/or usage of the consigned item. The ERP or other technology solution can simplify the entry of item specific information, but it cannot create the structured replenishment processes required to properly manage consignment inventory. Proficient managerial oversight is required to establish those processes.

As ERP systems continue to move to a SaaS model which calls for overall reduction of extensions and customizations, hospitals are starting to pushback on suppliers that require them to capture item specific information in the purchasing system before a new item is shipped. Larger hospital systems are especially able to leverage their purchasing power and their supplier relationships to remove this complexity and customization from their supply chain. Hospital systems should push back on suppliers if they ask for lot/serial information on POs. The details on items used during a procedure are typically entered in surgical systems and the information could be obtained from this system. Requiring this information on POs leads to unnecessary extra steps and potential HIPAA violations as users may enter inappropriate patient identifying information on a PO.
Maintaining System On Hand Balances

The cost and perishable nature of consignment inventory often requires a higher level of management oversight. Daily checks or counts of current on hand stock are recommended in order to ensure that product has not been consumed without proper documentation being filled out, and additionally that no product has been damaged and disposed. Rotational counting responsibilities often work best as employees are cross trained to manage the inventory, and at the same time accountability for the items is dispersed over several individuals.

While the frequency of counting is a critical aspect of consignment management, the timing of these counts is also very important. If counts are performed while surgical procedures are being performed, there is a possibility that consignment items may be counted down by the supply chain team and then items are returned to the shelf. Before the procedure, a doctor or supplier representative may grab multiple versions of an item. After the procedure is complete, the unused versions will be returned to the shelf. If a consigned item has been counted down, it will be marked as consumed by the ERP system. Once the item has been consumed, in some ERP systems items returned to the shelf are identified as owned inventory.

To prevent these inventory counting errors, consignment item locations should only be counted when no clinical procedures are being performed in that department. Some ERP systems have recognized this shortfall and are in the process of providing solutions to this problem in their core products (i.e. Oracle Cloud includes a ‘Return to Consigned’ functionality).

Hospitals using point of use, surgical systems, or any other type of third party system that captures item usage can utilize the information generated by these systems to update item balances in the ERP system. Item usage data from the third party system can be interfaced to the ERP system, where the item is issued out of inventory and the on-hand quantity in the system is updated. This eliminates the need for manually issuing items in and out of the ERP system, and often help ease the burden of consignment inventory management.
Payment of Consignment Items

Because consigned items are not paid for until they are used, suppliers will not send invoices immediately following the shipment of those items. The supplier relies on some form of notification that the item has been used before the payment process can begin.

ERP systems can be configured to automatically send payment to suppliers once an item is used. For example, the PeopleSoft Voucher Build process automatically creates a voucher and sends payment to the supplier after an item has been consumed and costed. This automation of payment can be helpful for the hospital’s accounts payable team, but can cause problems for suppliers.

Because invoices are not created until the supplier is aware that consigned items have been used, suppliers will be unable to reconcile incoming payments that were automatically dispatched by a hospital without proper notification.

The key to overcoming this potential road block of how and when consignment items are paid for requires planning how to communicate to suppliers what consigned items have been used, especially if serial/lot tracking is required.

In order to resolve these invoicing issues with suppliers a significant number of providers are moving to a bill and replace consignment business process. When using the bill and replace purchase order, the automatic creation of vouchers after usage needs to be disabled. When an item is used and the replenishment process triggers the creation of a purchase order for the replacement, information on what item was used can manually be added to the purchase order. When the supplier receives the replacement purchase order, they are aware of what item was used and will send an invoice. Even though this invoice is for the item used, it can be matched to the replacement purchase order and receipt in the hospital’s ERP system. As a side note, in Lawson’s Requisition Center, there is a Bill Code field that allows users to define requisitions as “Bill and Replace” that can be used to create consignment POs.

Lawson Requisition Center Bill Code Flag
Conclusion

Consignment inventory management creates unique challenges throughout the entire supply life cycle. ERP systems have attempted to improve their ability to manage consignment inventory processes, but there are still significant gaps in delivered functionality. These can be overcome by customization of ERP systems and/or adaptation of business processes. However, the keys to successful consignment management are having (1) thorough policies and procedures, (2) clear identification of consignment items, (3) strict adherence to consignment business processes, and (4) strong communication with consignment suppliers.

Consignment inventory can add a great deal of rigor to a supply chain team, but when managed properly, it can have a meaningful impact on a hospital’s cash flow and eliminate the risk of obsolescence for high dollar, slow moving inventory items. For each roadblock identified in this paper, we have presented recommendations on how to overcome the problems that the roadblock creates based on prior implementation experience and industry best practices. While this paper does not contain a solution for every issue that may arise, it should provide the framework for developing a successful consignment inventory management program that can be applied to all future ERP implementations.