

# Inventory Management in Pharmaceutical Industry

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**Abstract** - For all health care industries, maintaining high levels of service and effectively managing inventory are its primary objectives. Shortage of drugs and improper inventory management of medicines disturb the pharmaceutical industry's supply chain, leading to financial losses and poor healthcare service with high costs. Some of the difficulties experienced by many pharmacies and hospitals in achieving proper control of inventory are that they cannot accurately address how the medicines are managed, supplied, and used. Another difficulty they face is during natural calamities like floods, tsunamis, earthquakes, etc., which creates tremendous losses. Preparation for similar events must become precedence. Hence, the pharmacy supply chain (PSC) has a huge responsibility since it is of supreme importance that proper medicines are used in suitable conditions and time.

**Key Words:** Pharmaceutical industry, Supply chain management, Inventory management

## 1. INTRODUCTION

The medical industry can be defined as a chain of complex processes which includes organization and operation of drug development and manufacturing, drug marketing, pharmaceutical distribution, pharmaceutical transportation, and inventory. The pharmaceutical supply chain usually comprises a primary manufacturer, a secondary manufacturer, warehouses, pharmacies, and retailers. Shortages and improper management of medical supplies disrupt the pharmacy supply chain, which causes low-quality care and higher prices, indirectly affecting patients. Hospitals and pharmacies often have difficulty achieving proper supply chain inventory control management due to a lack of knowledge about the management, supply, and use of medicines and drugs. There are several factors and components involved in drug distribution and logistics that play an essential and overlapping role in the pharmaceutical supply chain. Among the most frequently mentioned topics, supply chain management, and optimization, researchers paid much attention to inventory control, distribution planning, and production planning, however, only a little attention has been given to the pharmaceutical sector, even though it is vital to propose some optimization approaches to manage and optimize pharmaceutical supply chains. Inventory management is an effective way to increase profit and customer service within the pharmaceutical supply chain (PSC), but it's also very complex since there are three major players: producers, buyers, and providers. Any shortages in customer service level will influence the health of a patient since the right drug must reach the right person

in time and in the right condition to fight a particular disease. Additionally, the fragmentation of the drug market and policies that govern healthcare often limit distribution and access to the drug. Several factors contribute to drug shortages in the supply chain, including weak forecasts, unexpected demand, natural disasters, market factors, and inventory management. You must have an effective inventory control policy and train your employees to make the right decisions that will manifest in improved healthcare service, improved patient safety, and fewer drug shortages. This paper talks about pharmaceutical inventory management and its benefits.

## 2. PHARMACEUTICAL INVENTORY MANAGEMENT SYSTEM

Hospitals, clinics, and physician's offices have difficulty managing pharmaceutical inventory. Some of the skills that are required for it are not necessarily possessed by medical staff. Monitoring the use of addictive or harmful medications is essential to keeping vital and frequently needed medications on hand while preventing medication theft or misuse. The management can make informed decisions about ordering inventory, knowing if it is available, and matching it with physical inventory through accurate records. It is possible to save millions of dollars every year by reducing inventory shrinkage.

In the absence of an inventory management system designed for this purpose, lead times may result in damaging shortages. Managing inventory when demand varies widely is challenging. The pandemic of this year has served as a useful lesson for the medical community. The supply of life-saving medications must always be adequate, regardless of whether infection rates increase dramatically, as we have witnessed throughout the Covid-19 pandemic.

Having adequate stock levels and balancing demand and supply is important, as is remaining profitable while also recalculating minimum quantities, identifying alternate supply options, and having adequate storage. When the vast majority of the available supply comes from on-hand inventory, it is essential to find ways to cut shrinkage, labor costs, and costs associated with production. The pharmaceutical industry should design an inventory system that can do all three functions.

A good inventory system should provide the health industry with important features for pharmaceutical inventory management that can help balance supply and demand.

1. Barcode scanning - For logging physical inventory counts and describing medications, including any important warnings or instructions.
2. Lot Tracking - It is possible to trace any tainted product forward and backward.
3. Tracking expiration dates - reduce waste and ensure patients are receiving active medications.
4. Automate Purchase Orders - Automatically place orders with suppliers based on reorder points.

Medical and pharmaceutical companies use this inventory management system because it is easy to configure, quick to implement, and readily available. As it can handle fractional measurements, expiration date management, and more, it can be used in the health care sector. There are three categories of medications: those consumed infrequently, those that are clinically necessary, and those that are important to have on hand. Hence, an intelligent pharmaceutical inventory system can improve all key performance indicators, reduce labor hours, lower costs, and give a transparent view of all operations.

### 3. Importance of Inventory Management in the Pharmaceutical Industry

Pharmaceutical manufacturing is an extremely sensitive industry. The field focuses on products that directly affect human health (drugs, vaccines, medical devices, etc.). The management of such products is critical. Pharmacies can keep accurate and current stock records with the help of stock management techniques. This technique provides pharmacists with information about how many drugs are available in stock and what tasks need to be done. This system monitors the actual status of all medicine as well as assisting in the proper management of drugs. Due to the growth in technology in the Pharmaceutical industry to meet the expanding needs of customers, inventory management software is also in demand. Let's look at the benefits of inventory management in the pharmaceutical industry.

#### 3.1 It helps in achieving productivity

In the pharmaceutical industry, productivity is crucial. Therefore, the correct inventory management technology gives you the correct and accurate information about the stock. Pharmaceuticals an industry that is essential in today's world. Therefore, management and productivity are vitally important for the industry. The inventory management technique allows businesses to analyze important data. Additionally, it enhances productivity by allowing the business to analyze business-related data.

#### 3.2 It minimizes inventory costs to maximize sales

Inventory management technique that is well managed provides a multifaceted sales channel. It aids hospitals and medical practices in meeting any challenges they might face.

Maintaining stock in advance can be used to reduce costs throughout the business. Nevertheless, the node must be properly determined from which only data can be obtained. This technique helps reduce inventory costs and assists the pharmaceutical industry here. It facilitates the distribution of business information among professionals, allowing them to make the right stock purchase decisions. Therefore, correct information is vital for keeping inventory at an appropriate level and avoiding overstocking.

#### 3.3 It automates business tasks

The inventory management technique brings a great deal of automation to the pharmaceutical industry. Human labor is reduced and accuracy is improved. Customers have a good business experience when inventory is managed correctly and it also makes the business look more attractive to them. A cost calculation with such an automated management technique is much easier than with manual assistance. So, to avoid errors and calculate data, it is a good idea to utilize such inventory management techniques in the business. As a result, effective billing methods can be used more easily.

#### 3.4 It facilitates easy maintenance of customer and business data

Managing a business effectively requires monitoring customer and business data. A great feature of inventory management is that it maintains customer and business data. Analyzing all types of business data is available through its analytical facility. In this way, the business is provided with the facility of easy data management.

#### 3.5 It facilitates stock consumption reports on a monthly, quarterly and annual basis

The majority of retailers are unable to track consumption without a system, or they do it manually. Therefore, there is a greater chance of error. When your drugs inventory management is correct, you will receive the correct information. The report gives you a detailed breakdown of how many stocks they consume on a monthly, quarterly, and annual basis. You will then be able to better understand which products are best for you -

- Fastest seller
- Category performance
- Product performance
- Sales report per product and product type
- Sales report per customer or group of customers
- And other information regarding the performance of inventory

### 3.6 Business owners get clear data to plan their business expansion

Data, information, and reports are provided by stock management to its users. Businesses can adjust their inventory levels by using it. In this way, the business owners can ensure that their users receive continuous product supplies and maintain drug availability. This data is very helpful when business owners want to plan for their new pharmaceutical business expansion and to design a new pharmaceutical store. Their new business expansion is easier because they can easily learn about their target customers, stock quantity, staff, and the entire process.

### 3.7 Business owners will be able to better plan their strategies for their supply chains

Achieving excellence in pharmaceutical supply chain management depends on effective inventory management. Using the right techniques reduces complexities and enhances global reach. By doing so, a business owner can better plan their supply chain strategies.

### 3.8 Business owners will be able to better plan their strategies their supply chains

Excellence in pharmaceutical supply chain management is based on effective inventory management. By using the right techniques, complexities can be reduced and global scope can be enhanced. As a result, business owners can better plan their supply chain business strategies.

### 3.9 Business owners will be able to serve their valuable customers better based on the types of customers they have

Investing in and updating a business for customer retention is among the core goals of business owners. Pharmaceutical business owners can easily keep track of their customers' buying patterns and preferences with an effective inventory management system. They can use the data to plan loyalty programs, discounts, and offers for their customers, keeping them engaged long-term.

## 4. Conclusion

In an increasingly competitive business environment, managing pharmaceutical inventory has become a major challenge for health care industries as they simultaneously try to reduce costs and improve customer service levels. The inventory management technique streamlines the process of managing inventories. Managing inventories involves more than making immediate, reactionary decisions that affect your business. To maximize profits for your company,

inventory management requires you to establish and enforce procedures that will allow you to use your system as efficiently as possible every day. A successful business requires constant inventory control. A pull, receive, and replenishment procedure should be established, taking into account your specific environment. Healthcare and pharmaceutical companies need to make use of pharmacy inventory management techniques. The purpose of this inventory management technique is to make sure the right amount of stock is available at the right time. Furthermore, this technique is vital to achieving government compliance. Everyone must follow government regulations, especially hospitals and manufacturers of pharmaceuticals as it can be a matter of life and death. These orders can be tracked with the help of pharmacy inventory management techniques. That's why this technique can prove extremely useful and effective in the healthcare industry.

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