

INVENTORY CONTROL



► **INTRODUCTION**

Inventory control in hospitals is more than just procurement and usage. The proper controls and processes can save millions in healthcare costs by enabling a hospital to efficiently order and store just the right amount of supplies needed for patient cases while tracking cost, tier pricing and patient charges associated with supplies.



DEFINITION



Inventory control is a scientific system which indicates as to what to order, when to order, and how much to order, and how much to stock so that purchasing costs and storing costs are kept as low as possible.

- Inventory control is defined as safe guarding of company's property in the form of inventory and maintaining at the optimum level considering the operating requirements and financial resources of business.

Or

- Inventory is the list of moveable items which are required to manufacture a product or to maintain equipment. Inventory is a unique item having identification number, nomenclature and specification.

- Inventory control is the technique of maintaining the size of inventory at some desire level keeping in view the best economic interest of an organization.

TYPES
OF
INVENTORY CONTROL

**OFFICIAL
INVENTORY**

**UNOFFICIAL
INVENTORY**



OFFICIAL INVENTORY

- The materials lying in the main stores and being accounted for but have not been issued to the user units.

- **Medical and surgical items**
- **Dressings**
- **Linens**
- **X-ray supplies**
- **Laboratory supplies**
- **Housekeeping items**
- **All processed sterile items**

UNOFFICIAL INVENTORY

- The materials have been issued to the user units like the dispensary, CSSD, laundry, wards, OPD, cast rooms etc. In case of forecasting or demand estimation, these items are not taken into consideration by the hospital administration, so it is called as unofficial inventory for hospitals.

OBJECTIVES OF INVENTORY CONTROL

- To supply the materials in time.
- To give maximum clients service by meeting their requirement timely, effectively, smoothly and satisfactorily

- To reduce or minimize idle time by avoiding stock out and shortages
- To avoid shortage of stock
- To meet unforeseen future demand
- To average out demand fluctuations

FUNCTIONS OF INVENTORY CONTROL

- To carry adequate stock to avoid stock-outs
- To order sufficient quantity per order to reduce order cost
- To stock just sufficient quantity to minimize inventory carrying cost
- To make judicial selection of limiting the quantity of perishable items and costly materials

- To take advantage of seasonal cyclic variation on availability of materials to order the right quantity at the right time.
- To provide safety stock to take care of fluctuation in demand/ consumption during lead time.
- To ensure optimum level of inventory holding to minimize the total inventory cost.

PRINCIPALS OF INVENTORY MANAGEMENT

- **Determination of order quantity**
- **Determination of Recorder point of Recorder level**

CONCEPTS RELEVANT IN CONTROLLING INVENTORY COSTS

- **Periodic/ cyclic system:**
 - periodic/ fixed intervals
 - placement of orders depending on the stock on hand and rate of consumption
 - The ordering interval is thus fixed but the quantity to be ordered varies each time.

- **Two bin system:**

- It is a system where the stock of each item is held in two bins, one large bin containing sufficient stock to meet the demands during interval between arrivals of an order quantity and placing of next order.

- The other bin containing stocks large enough to satisfy probable demands during the period of replenishment .
- When the first bin is empty, an order for replenishment is placed, and the stock in the second bin is utilized until the ordered material is received.

- **Lead time:**

- It is the average number of days between placing an indent and receiving the material.
- Lead time is composed of **two elements**:

- **Administrative or buyer's lead time** (i.e. Time required for raising purchase requisitions, obtaining quotations, raising purchase order, order to reach supplier etc)
- **Delivery or supplier's leading time** (i.e. Time required for manufacture, packing and forwarding, shipment, delays in transit)

- **Minimum/safety/ buffer stock:**

- This is the amount of stock that should be kept in reserve to avoid a stock-out in case consumption increases unexpectedly or in case the lead time turns out to be longer than normal.
- It is also the level at which fresh supply should normally arrive, failing which action should be taken on an emergency basis to expedite supply and replenish the stock.

- **Safety stock = maximum daily consumption - average daily consumption x total lead time**

- **Maximum order level:**
- This is the maximum quantity of the materials to be stocked, beyond which the item must not be in the inventory.

- **Re-order level:**
- This is the value which is very important from the point of view of the inventory control. This is the point at which we have to place an order for procurement for replenishing the stock.
- It is derived by the formula (minimum order level + buffer stock)

TYPES OF INVENTORY COSTS



- **Ordering costs:**

- This is the cost of getting an item into the store. The process of ordering starts with raising requisition, placing an order, follow up, transportation receipt and inspection, acceptance and placing in stores.

- **Carrying costs:**

- This is the cost of holding an item in the store till it is issued out or sold.
- Following are the elements:-
- Interest on capital cost incurred.
- Cost of obsolescence, wastages, damages.

- **Shortage costs:**

- These are the costs incurred both directly and indirectly due to shortages like intangible costs due to loss of goodwill, opportunity loss or production hold costs.

- **Total inventory cost:**

- A total inventory cost consists of carrying costs and ordering costs.

- **Lead time:**
- This is the time which has elapsed between placing an order till the same items are received, stocked and ready to use.

SELECTIVE INVENTORY CONTROL

- **Definition:**

Selective inventory control means grouping the inventory and classifying for the purpose of applying the right type of control based on their costs and functional importance.

Objective

- to minimize total cost of inventory.
- Supervision on planning and control of inventory functions like forecast of requirements
- Purchase quantity fixation
- Storage and supply

Need for selective inventory control

- **Inventory consists of many items, in which some are costly whereas some may be not.**
- **Some inventories are required in large quantities whereas some are required in limited quantities, thus each item require different type of control, some tight and some loose**

Methods of selective inventory control:

- **ABC Analysis**
- **VED Analysis**
- **HML Analysis**
- **XYZ Analysis**
- **FSN Analysis**
- **SDE Analysis**
- **GOLF Analysis**
- **SOS Analysis**

- **ABC Analysis**
- It is the process of classifying items by using values as measure.
- **VED Analysis**
- VED Analysis – Vital, Essential and Desirable.
- **HML Analysis**
- classified according to their **unit value** as high, medium and low.

- **XYZ Analysis**

- X items are those whose **stock value** are high, while Z items are those stock values are low. Understandably Y items fall between the two categories

- **FSN Analysis**

- Movement analysis forms the **basis** for this classification. The items are classified as fast moving, slow moving and non-moving.

- **SDE Analysis**

- Classification methods based on **source of supply**, SDE classification is a system where materials are sorted out as scarce to obtain, difficult to obtain and easy to obtain.

- **GOLF Analysis**

- In the GOLF system, classification is based on the **availability and nature of supplies**. Government suppliers, Ordinary suppliers, Local suppliers and Foreign suppliers.

- **SOS Analysis**
- Raw materials can be classified into seasonal or off season items

ADVANTAGES

- Delivery in time
- Possibility of discount for bulk purchase
- Unforeseen circumstances can be handled to some extent.
- Workers and machinery needn't idle.

DISADVANTAGES

- Working capacity is tied up
- More space required
- Increase insurance charges
- Increased overhead expenses
- Changes of damage
- Increase charge for obsolescence

CONDEMNATION

- The materials which could not be used within its shelf life, deteriorated and declared unfit for use, became obsolete or banned due to legal provisions are considered for condemnation or disposal.

- **Criteria for condemnation:**
- The equipment has become:
- Non-functional & beyond economical repair
- Non-functional & obsolete
- Functional, but obsolete
- Functional, but hazardous
- Functional, but no longer required

PROCEDURE

- A condemnation committee comprising of three or more members is constituted by the competent authority.
- The committee members go into details through inventory records right from the point of demand estimation to the distribution level of materials, and will find out reasons for being an item surplus and remained unused.

- The committee will declare the items condemned and make recommendation for further disposal of items.
- The condemned items are to be destroyed, so it is to be taken out from the inventory registers, a write off sanction of the competent authority is obtained before final disposal.

- The items particularly medicines which are toxic and cannot be disposed of by burial or as per the relevant laid down rules under the subject of waste disposal.
- The effective measures are taken for disposal of surplus items before it becomes unfit for use.

ROLE OF NURSE

POPULATION/PROBLEM	inventory system under continuous review with two demand classes
INTERVANTION	Two bin policy for inventory system
COMPARASION	Higher demand class and lower demand class
OUTCOME	The proposed policy is able to provide a much higher service level for the lower priority class demand without increasing the total cost too much and without affecting the service level for the higher priority class



**Thank
You!!!**