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Inventory Management: A Tool of Identifying Items That Need Greater Attention for Control

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Cost analysis plays a pivotal role in the management of pharmacy store. About one-third of the hospital budget is spent on purchasing materials and supplies including medicines. The pharmacy is one of the most extensively used therapeutic facilities of the hospital and one of the few areas where a large amount of money is spent on buying items. To explore the feasibility of alphabetical analysis where items are classified into A, B and C categories depending on their annual consumption value, in effective management of pharmacy store. A study suggested that review for expensive drugs could bring out 20% savings in pharmacy store budget. The goal of inventory management involves having to balance the conflicting economics of not wanting to hold too much stock. The inventory management can bring out significant improvement not only in patient care but also in the optimal use of resources. Continuous management can provide the value added services to the patients.

Keyword: Drug Inventory Management, ABC Analysis, Pharmacy Store Budget.

INTRODUCTION: With the advent of advanced medical technology and drugs, the expenditure on health care delivery is increasing disproportionately as compared to the resources available [1]. About one-third of the hospital budget is spent on purchasing materials and supplies including medicines.

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The pharmacy is one of the most extensively used therapeutic facilities of the hospital and one of the few areas where a large amount of money is spent on buying items [2].

Hospital supply system should ensure adequate stock of all the required items to maintain uninterrupted supply. This necessitates the effective and efficient inventory management of pharmacy store by keeping a close supervision on important drugs, prevention of pilferage, and priority setting in purchase and distribution of drugs. A study suggested that review for expensive drugs could bring out 20% savings in

pharmacy store budget. Hence, the essentiality of inventory management is emphasized [3].

Inventory represents an important decision variable at all stages of product manufacturing, distribution and sales, in addition to being a major portion of total current assets of many business. Inventory often represents as much as 40% of total capital of industrial organizations. It may represent 33% of company assets and as much as 90% of working capital. Since inventory constitutes a major segment of total investment, it is crucial that good inventory management be practised to ensure growth and profitability [4].

The principal goal of inventory management involves having to balance the conflicting economics of not wanting to hold too much stock [5]. The inventory management can bring out significant improvement not only in patient care but also in the optimal use of resources. Continuous management can provide the value added services to the patients [3].

Cost analysis (ABC analysis) has found to be effective and most preferred for pharmacy store. ABC analysis is common to perform the analysis with past consumption data and monetary value [6]. In this, there are items which have low capital investment and consumption but is life saving[3].

ABC analysis is a method of classifying items according to their relative importance. It is also known as "separating the vital few from the trivial many". The analysis classify items into three categories: the first 10-15% of the items account for approximately 70% of cumulative cost (category A), 20-25% are category B items account for a further 20% of the cumulative cost and the remaining 65-70% are category C items, amounting for a mere 10% of the total value. The limitation of ABC analysis is that it is based only on monetary value and the rate of consumption of the item. In a hospital, an item of low monetary value and consumption may be very vital or even lifesaving. Their importance cannot be overlooked simply because they do not appear in category A. Therefore, another parameter of the materials is their criticality [2].

Historical review of inventory management

Historically, inventory management has often meant too much inventory and too little management or too little inventory and too much management. There can be severe penalties for excesses in either direction. Inventory management have proliferated as technological progress has increased the organisations ability to produce goods in greater quantities, faster and with multiple design variations. The public has compounded the problem by its receptiveness to variations and frequent design changes [7].

Since the mid 1980s, the strategic benefits of inventory management and production planning and scheduling have become obvious [8].

Definition and Concepts

In pharmacy operations, inventory is referred to the stock of pharmaceutical products retained to meet future demand. Inventory represents the largest current asset, as well as liquid asset in pharmacy practice and its value continues to rise because of the growth in variety and cost of pharmaceutical products.

Inventory management is defined as the continuing "process of planning, organizing and controlling inventory" that aims at "minimizing the investment in inventory while balancing supply and demand" [9].

Inventory management refers to all the activities involved in developing and managing the inventory levels of raw materials, semi-finished materials (work-in-progress) and finished good so that adequate supplies are available and the costs of over or under stocks are low[10]. The cost of maintaining inventory is included in the final price paid by the consumer. Good in inventory represents a cost to their owner. The manufacturer has the expense of materials and labour. The wholesaler also has funds tied up. Therefore, the basic goal of the researchers is to maintain a level of inventory that will provide optimum stock at lowest cost [11]. Inventory

management in its broadest perspective is to keep the most economical amount of one kind of asset in order to facilitate an increase in the total value of all assets of the organization – human and material resources [12]. The major objective of inventory management and control is to inform managers how much of a good to re-order, when to re-order the good, how frequently orders should be placed and what the appropriate safety stock is, for minimizing stock outs. Thus, the overall goal of inventory is to have what is needed, and to minimize the number of times one is out of stock [13]. Inventory as a stock of goods that is maintained by a business in anticipation of some future demand [14]. This definition was also supported by author who stressed that inventory management has an impact on all business functions, particularly operations, marketing, accounting, and finance. He established that there are three motives for holding inventories, which are transaction, precautionary and speculative motives. The transaction motive occurs when there is a need to hold stock to meet production and sales requirements [15].

Factors affecting inventory management

Following factors are taken in account when evaluating pharmacy inventory management: product type (generic, brand), inventory size, unclaimed prescriptions, inventory shrinkage, returned product policies and use of formularies [9]. Generic products have lower acquition costs compared to bran-named counterparts, thereby minimize inventory costs. Most product vendors (manufacturers and wholesalers) have policies regarding products that may be returned. Examples of such policies include providing credits for future orders, product replacement and cash back to the pharmacy. About 1.5% of all prescriptions filled by community pharmacies remain unclaimed. Pharmacists should monitor such prescriptions and specify a threshold time period (e.g. 2 weeks) for returning the product to the shelves [16].

Up to 4.5% of community pharmacy sales is lost due to inventory shrinkage. Inventory shrinkage referred to losses due to theft, shoplifting, and robbery. Unfortunately, employee theft comprises the largest source for inventory shrinkage in community pharmacy settings. While pharmacists should hire credible and candid employee, proper security and observation training and monitoring strategies are also important. In addition, apt security regarding controlled substances should be a priority in monitoring shrinkage, especially when theft of these substances is ever more challenging.

In hospital pharmacies, formularies are utilized to enhance inventory management, where pharmacists can carry one therapeutic equivalent product within a class of medications; thereby reducing overall inventory cost. However, limited lists and formularies could serve as an impediment in balancing supply and demand in community pharmacy settings [17].

Inventory management tool

ABC analysis is an important tool used worldwide, identifying items that need greater attention for control [18]. Before an inventory management is done, an ABC classification is usually undertaken [19]. ABC analysis is a method of classifying items according to their relative importance. It is also known as "separating the vital few from trivial many" [18]. In a several study, it is showed that on ABC analysis, 13.78% (58), 21.85% (92) and 64.37% (271) items were found to be A, B and C category items, respectively, amounting for 69.97% (Rs. 27,996,865), 19.95% (Rs. 4,034,416) of annual drug expenditure of the pharmacy. The cut-offs were not exactly at 70/20/10%, and differed marginally, which is permissible. This necessitates application of scientific inventory management tools for effective and efficient management of the pharmacy stores, efficient priority setting, decision making in purchase and distribution of specific items and close supervision on items belonging to important categories. ABC analysis identifies the drugs requiring stringent control for optimal use of funds and elimination of out-of-stock situations in the pharmacy [2]. Out of 325 drugs, 47 (14.6%)

drugs consume 78% of ADE of group A, 73 (22.46%) consume 19.99% of ADE of group B and the rest 265 (63%) drugs consume just 9.99% of total budget. This effectively control the recommended 47 drugs from group A, but will be compromising on the availability of drugs of vital nature from B and C categories (2+19) [1]. Other shows that out of 210 items, only 165 was available in drug formulary and the cut off value was not exactly 70%, 20% and 10% but differed marginally. The authors concluded that, the analysis identifies drugs requiring stringent control for the optimal use of resources. Due to inflation, total expenditure for the drugs is increased each year, which supports the higher budgetary requirement for the forthcoming years. At the same time, forecasting of budget helps for better management of medical store. Hence, the analysis along with EOQ and integrated economic analysis optimizes the costs of medicare services besides making materials available to the patients which can increase the quality of healthcare services[3]. Out of 23 explosive products, 4 products constituting 17.4% of inventory items are in class A accounts for 70.35% of the sales value. 7 products constituting 30.4% of inventory items are in class B accounting for 20.40% of sales value and 12 products constituting 52.2% of inventory items in C class accounting for 9.25% of sales value. The 11 explosive products in class A and class B accounts for 90.75% of sales value and are critical to the success of the company from the point of view of inventory management. This used to prioritise explosive products based on their sales dollar value and minimize total inventory ordering/setup and carrying costs.[4].

CONCLUSION

Inventory management has become highly developed to meet the rising challenges in most corporate organizations and this is in response to the fact that inventory is an asset of distinct feature. Inventory management as one of the key activities of business logistics has always been a major preoccupation for the company's survival and growth. It has been used to develop models to meet items assembling and requirement under conditions of uncertain demand. In this, ABC analysis is a feasible and efficient technique for inventory management. This will help in improved drug availability. This identifies drugs requiring stringent control for the optimal use of resources.

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