UEF. Economy.

4th year, 7th semester,

full-time study.

Lecture 6.

Inventories. (stocks of goods)

Lecture plan

1. Inventory(stocks of goods). Factors and motives for creating inventories
2. Classification of inventories(stocks of goods)
3. Inventory sizes, units of measurement
4. Inventory analysis, analysis tasks
5. Turnover. Average inventory (stocks of goods).
6. Inventory planning methods
7. Inventory rationing,
8. Calculation of commodity security of sales volume
9. Examples of inventory planning

1. Inventory. Factors and motives for creating inventories

The main task of the pharmacy is to provide medicines to the population and medical and preventive institutions.

A necessary condition for uninterrupted provision is the availability of working capital. The main part of the pharmacy's working capital is inventory.

The size of the inventory provides:

1. smooth sales process
2. a wide range of assortment

If the inventory is excessive:

1. overstocking occurs
2. the turnover of goods slows down
3. storage costs increase
4. there is damage to goods

If there is not enough inventory:

1. there are interruptions in sales

2. the degree of provision of the population is decreasing

3. revenue is declining

4. profit decreases

Inventories are all goods owned by the company and intended for sale, including goods in transit.

Inventory is the quantity of goods of a pharmacy organization (on sale, in stock, in transit) in monetary or physical terms on a certain date.

Factors causing the need to create inventories:

• fluctuations in demand, seasonal morbidity,

• fluctuations in release dates in the pharmaceutical industry

• fluctuations in the delivery time of goods to the wholesale market and to the pharmacy

Motives for creating inventory:

• The need to perform trading operations

• Caution in case of fluctuations in demand and supply

• Making a profit.

2. Classification of inventories

Inventories are classified:

1. By appointment

• Current storage

• Seasonal accumulation

• Target purpose

2. By location

• In the retail network

• At wholesale enterprises

• On the way

3. By terms

• Reporting

• initial (input)

• Final (output)

4. By size

• Minimum

• Maximum

• Average

Based on this classification, a reasonable choice of approaches to inventory planning is made.

3. Inventory sizes, units of measurement

Inventories are measured:

- ***in natural terms*** (liters, kg, g, packages, amp., tab., caps.)

- ***by value*** (in selling or retail prices: rubles, thousand rubles, million)

- in ***relative terms (days of stock***)

The following factors affect the size of inventory:

• sales volume, supply and demand ratio

• location, frequency of delivery of goods

• assortment structure, complexity of the assortment

• structure of consumers

• operation of the distribution network, the rhythm of receipt

• consumer properties of the product, forms of release, dosage

• advertising

• qualification of personnel.

The features of the formation of inventory in the pharmacy determine:

- production conditions, its uniformity, seasonality or periodicity

- transportation conditions: seasonality and frequency of deliveries

- conditions of consumption: outpatient, inpatient, over-the-counter or prescription, regular, seasonal or targeted.

In accordance with this, it is important for the pharmacy organization to correctly determine the necessary inventory. They must be

a) sufficient (for uninterrupted operation) and

b) optimal (excluding overstocking or shortage).

4. Inventory analysis.

The main tasks of inventory analysis are:

1- analysis of the assortment structure

2- study of the turnover rate

3- analysis of the compliance of inventories with the volume of sales

4- identification of the influence of individual factors on the value of inventories.

As a result of the analysis, the following questions should be answered:

- what factors influenced the formation and development of SG inventories;

- is it possible to fulfill the turnover with the existing inventories;

- whether the actual range of SG corresponds to customer demand.

The analysis of SG includes:

1. comparison of the actual size of the SG in total and in days with the standard

(plan);

2. comparison of the volume and structure of SG with the reserves of previous years, calculation

the rate of change of SG;

3. calculation of the average stock by commodity groups, determination of the actual turnover;

4.comparison of the actual turnover with the normative and indicators of the previous year;

5. Establishing the influence of factors on the change of SG and t-volume: the rhythm of deliveries, the structure of T, the volume of T, etc.

1. The structure of inventories should correspond to the structure of trade turnover. In this case, the possibility of uninterrupted drug service to pharmacy visitors increases and, accordingly, making a profit. Therefore, when analyzing inventories, it is advisable to analyze the turnover by structure:

• by product groups (lek.products, dietary supplements, perfumes, etc.)

• by pharmacotherapeutic groups

• by suppliers

• by manufacturers

• by prices and other characteristics.

In the analysis, the indicators of the current (reporting) period are compared with the planned indicators and indicators of the base (previous) period.

5. Turnover.Average inventory

The results of economic and financial activities depend on the turnover rate of goods. Acceleration allows you to conduct business activities with less expenditure of monetary and material resources and have a higher profitability.

The movement of the inventory is characterized by a constant change:

On the one hand, stocks are constantly being consumed,

on the other hand, they are systematically replenished.

This movement of inventory is a process of turnover.

Turnover is the time during which inventories are realized in the amount of their average value.

Accelerating the turnover of goods for one day allows you to free up working capital invested in inventories equal to the one-day turnover of the pharmacy.

Actual inventory in days or turnover (time of circulation of goods) it can be defined in 3 ways:

1.According to the coefficient of circulation rate – the number of days of the period is divided by the turnover rate (the volume of sales in wholesale prices divided by the average inventory in wholesale prices).

2. According to the coefficient of securing funds - the ratio of the amount of the average inventory to the volume of sales in wholesale prices.

The time of circulation of SG is equal to the product of the coefficient of securing funds by the number of days in the period.

The coefficient of securing funds shows a part of the average SG, which accounts for each unit of turnover in monetary terms.

Turnover = duration of the period x T consolidation

3. By average sales per day: the amount of the average inventory in wholesale prices is divided by the average daily sales in wholesale prices (sales in wholesale prices are divided by the number of days of the sales period)

Example

The turnover in wholesale prices per month is 300 thousand rubles.

Average inventories in wholesale prices 150 thousand rubles

• Coefficient of circulation rate of 300,000 rubles : 150,000 rubles = 2 times (stocks will turn around per month) 30 days : 2 = 15 days will make up the stocks.

• Average daily sales of 300,000 rubles: 30 days = 10,000 rubles per day.

150,000 rubles . : 10,000 rubles = 15 days will make up the reserves

• By securing funds 150,000 rubles : 300,000 rubles = 0.5

30 days. x 0.5 = 15 days will make up stocks (in the amount of 150,000 rubles.)

All the above calculation formulas contain the average SG indicator.

To determine the turnover, the average SG with the amount is calculated.

This indicator can be calculated

- by arithmetic average (per month)

- chronological average (per quarter)

6. Inventory planning methods

The main purpose of inventory planning and rationing

a) At the lowest cost, set the average SG in days and in total for the entire nomenclature;

в) Set the necessary stock for the assortment in days and in total

1. The experimental statistical Method is based on the study of the current turnover of individual groups of goods in previous years.

a) Dynamic series of actual inventories of current storage are constructed and the turnover over 4 quarters is analyzed.

b) The trends in the development of reserves identified in the analysis are extrapolated taking into account objective and subjective factors.

c) As a result of the analysis of the influence of these factors, the calculated standard in turnover days is calculated.

d) To determine the standard of SG in total, the planned average daily turnover is multiplied by the planned standard of SG in days for individual commodity groups.

e) Then summarize the data obtained and get the standard in the amount of the entire nomenclature.

2. Technical and economic

The method allows you to more reasonably establish the standards of SG. At the same time , the definition of the standard of SG is carried out according to individual constituent elements:

- working stock,
- current replenishment stock
- insurance stock
- stock on the way.

3. Normative method

This method is used in the organization of special-purpose SG, in the formation of irreducible stocks (IS) in case of emergencies, seasonal outbreaks of infectious diseases, etc.

4. Economic and mathematical

This is a method using inventory management theory. When constructing the model, the task is to justify the optimal volume and timing of deliveries,

to minimize the total costs for the formation and storage of SG. the optimal stock of goods is calculated.

7. Inventory rationing

The standard of inventories is determined by:

- in total (absolute value, in monetary terms at wholesale prices).
- in days (relative indicator)

- in the number of revolutions for a certain period (relative indicator).
The standard of inventories in total is set annually:
annual (balance of goods in the 4th quarter)
- quarterly, taking into account the turnover of the corresponding quarter (the rest of the goods in the last month of the quarter).

Forecasting of the standard of inventories is based on the analysis of actual inventories in days and the calculation of one-day turnover in wholesale prices.

The rationing of the annual inventory begins with the inventory in days (relative indicator).

Inventory in days = Analysis of the actual turnover in days over a number of years (finding reserves for reducing stock days and increasing turnover.).

The standard of inventory in total :

Inventory in total = 1 day. stock of 4 sq. m. in wholesale prices * Days of stock.

The quarterly standard of inventory in days :

In each quarter is determined by:

- dividing the received inventory in total by the one-day turnover in this quarter.
- by the amount of replenishment of inventories in the planned year, compared with the base (current) year, with its distribution by quarters.

Quarterly standard of inventories in total:

Plan. 1-day implementation of the quarter (in wholesale prices) * Scheduled stock days

8.Commodity provision of sales volume (inventory)

Inventories are the main factor in ensuring a large turnover. The analysis of commodity security is carried out using the method of balance linking (balance method).

Commodity support is needed to fulfill the specified sales volumes and create optimal stocks of goods.

They are calculated in natural and monetary meters. To calculate

Pharmacies use the commodity balance formula

About the beginning + R = P+ About the end

consumption (sales - P), receipt of goods (arrival - R),

commodity balances at the beginning and end of the reporting period (stocks – About the beginning, About the end)

the amount of the remaining goods on the starting date ***Sbeg.***	+	*receipt of goods (purchase)* ***R***	=	*Amount of goods sold salec.* ***P***	+	*the amount of the remaining goods at the end date* ***Send.***

Sbeg + R = P + Send find the receipt (P) P = R + Sbeg - Send

R = P + Send - Sbeg.

The actual inventory in total is determined on a specific date:
• On the 1st day of the month according to the commodity report
On the last day of the month according to the product report.
• At the time of inventory according to inventories.

9. Examples of inventory planning.

Example №1

1. Analyze inventories in days for a number of periods.

1 sq.	2 sq.	3 sq.	4 sq.
19 days	18 days	17 days	16 days

Average deviation (Co) : 1 day, i.e. there is an acceleration of turnover.

2. Determine the standard of SG in days.

NSG fact + Co = 16 days - 1 day = 15 days.

3. Determine the standard of inventories in the amount (annual – NSG for the 4th quarter of the year).

It is necessary to determine the one-day turnover at wholesale prices in the 4th quarter of the planned year.

To determine T in wholesale prices, we use the cost coefficient (K/s).

It can be defined in 2 ways:
1. (T retail. p. : T wholesale. p) * 100%

2. 100% - the level of trading overlays (margin). 100% - 28,67% = 71,33 %.

T in wholesale prices = (T retail * 71.33 %) : 100%

(884.48 tr * 71.33 %) : 100% = 630.9 thousand rubles

One-day T in wholesale.ts. = 630.9 : 90 days of the quarter = 7, 01 thousand rubles.

The standard of the TOR at the end of the year in the amount of = 7.01 thousand rubles. * 15 days = 105.15 thousand rubles.

Conclusion: for the projected turnover of 884.48 thousand rubles (630.9 thousand rubles at wholesale prices) for the quarter, the optimal inventory will be in the amount of 105.15 thousand rubles, which should be updated 6 times during the quarter (630.9 : 105.15), every 15 days (NSG in days.).

Example No. 2

1. Turnover in wholesale prices 195.7 thousand rubles.

2. Turnover in retail prices 209.4 thousand rubles.

% of T sales by quarters I – 24 % II – 25% III- 25% IY- 26%

4.Average annual growth rate of T 103%

5.Balances at the end of each quarter

thousand rubles (in wholesale prices) I – 24 II – 25 III- 25 IY- 26

6. Fact.turnover (days) 1 year – 53 2 year – 50 3 year – 48 days.

Solution:

1. Determine the average stock of the current year (according to av. chronological)

(½ 24 + 25 + 25 + ½ 26) = 12 + 50 + 13 = 75 | 3 = 25 thousand rubles.
4- 1 3 3

2. We determine the turnover on a one-day sale

25 thousand rubles : (195.7 thousand rubles : 360 days) = 25 : 0.5436 = 46 days.

3. We determine the forecast of t/ turnover in days, taking into account the dynamics over a number of years 53 days - 50 days – 48 days – 46 days (current year).

The reduction is for 2 days, it is possible to set 44 days of stock for the planned year.

4. We determine the forecast of inventories in total (standard SG)

- we calculate a one-day T in the 4th quarter of the planned year, taking into account its growth of 103% and its share in the total T of 26%.
(195.7 x 1.03 x 0.26) : 90 days = 0.582 thousand rubles (at wholesale prices)
- the total amount of the standard inventory in thousand rubles.
0.582 x 44 days = 25.6 thousand rubles.

To break down the annual inventory standard established in the amount by quarters (at the end of each quarter), determine:

1. By what amount is the planned increase in the annual inventory in the planned year, compared with the base (current) year – the amount of replenishment of inventory.

2. This amount is divided into 4 equal parts.

3. To obtain a quarterly standard in the planned year :

a) 1 quarter - the standard of the base year is increased by a quarter of the replenishment of SG.
b) 2nd quarter - the standard of the 1st quarter of the planned year is increased by a quarter of the replenishment of SG.
c) the 3rd quarter - the standard of the 2nd quarter of the planned year is increased by a quarter of the replenishment of SG.

4th quarter-the standard 3rd quarter is increased for ¼ part of the planned year.

(i.e. the amount of filling of goods reserves is distributed in the quarters.)

Example № 3.

Standard SG. in the base year it was 25 thousand.rub.

Standard SG. in the planned year, 25.6 thousand were raised.rub.

Break the standard SG. "I'm sorry," he said.

1.Determine the advance of the standard SG 25.6 – 25 = 0.6 out.rub.

2.Determine ¼ part of 0.6 : 4 = 0.15 out.rub.

3. this increase in the area :

- 1 quarter 25 + 0.15 = 25.15 out.rub.
- 2 quarters 25.15 + 0.15 = 25.3 out.rub.
- 3 quarters 25.3 + 0.15 = 25.45 out.rub.
- 4 quarters 25.45 + 0.15 = 25.6 out.rub. (end year)

Other standards for goods supplies in days in every quarter will determine how to comply:

Received product reserves in sum_____
One-time coverage in this quarter (in W.p.)

Example № 4.

The planned year was established:

The standard of goods reserves is 650 thousand rubles.rub, V. T. Ch.

1 sq. -612.5 out. rub. 2 sq. – 625 out.rub.
3 sq. – 637.5 out.rub. 4 sq. – 650 out.rub.

T 4600 out. rub v T. CH. in the quarter :

1 kV – 1200 out.rub. 2 sq. – 1100 out.rub.
3 sq. – 1000 out.rub. 4 sq. – 1300 out.rub.

Determine the standard SG in the days of the quarter.

1) the average daily exit to the quarters :

1 sq. (195,7 * 1,03 * 24%) : 90 day = 0.538 out.rub.
2 sq. . (195,7 * 1,03 * 25%) : 90 day = 0.560 out.rub.
3 sq. . (195,7 * 1,03 * 25%) : 90 day = 0.560 out.rub.
4 sq. . (195,7 * 1,03 * 26%) : 90 day = 0.582 out.rub.

2)determine the standard SG in days with the average yield:

1kV 25,15 out.rub: 0,538 out.rub. = 46 days
2kv 25,3 out.rub. : 0,560 out.rub. = 45 days
3kv 25.45 out.rub. : 0,560 out.RUB = 45 days
4kv 25.6 out.rub. : 0,582 out.rub. = 44 days