



Federal State Budgetary Educational Institution of Higher Education "Volgograd State Medical University" of the Ministry of Health of the Russian Federation

Department of Management and Economics of Pharmacy, Medical and Pharmaceutical Commodity Science

Merchandising as a science. historical aspects. Subject and tasks. Theoretical foundations of medical commodity science. Use value and use properties of medical and pharmaceutical products

Lecture № 1.

Discipline: medical and pharmaceutical commodity science

3 course, 5 semester

Volgograd - 2022

lecture plan

- 1. Merchandising as a science. Definitions of the basic concepts used in medical and pharmaceutical commodity science. historical aspects.**
- 2. Purpose, subject, tasks, principles of medical and pharmaceutical commodity science.**
- 3. Medical merchandising in the professional activity of a pharmacist.**
- 4. Theoretical foundations of medical commodity science.**
- 5. Methods of knowledge in commodity science.**
- 6. Use value and use properties of medical and pharmaceutical products.**
- 7. Indicators for evaluating consumer properties.**
- 8. Factors affecting the formation and preservation of consumer properties of medical and pharmaceutical products**
- 9. summary.**

Definitions of the basic concepts used in medical and pharmaceutical commodity science

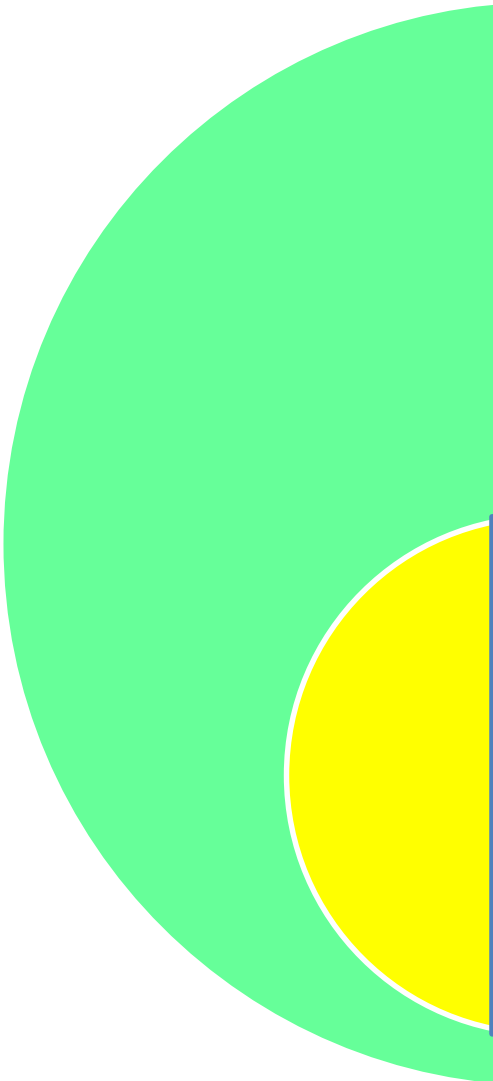
The term "commodity science" consists of two words: "goods" and "knowledge" (Skt. veda knowledge) and means knowledge about goods.

Commodity science is a scientific discipline that studies the use values of a product, which form properties or qualities are inherent only in this product. The generality and totality of the properties of the goods, established during the commodity assessment, determine the degree of suitability of the goods for its intended use and characterize its quality.

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Medical and pharmaceutical commodity science (MFTV) is a science and academic discipline about the fundamental characteristics of goods used in medical practice and pharmaceutical activities, and about the factors that ensure these characteristics


COMMODITY AS A SCIENCE



Commodity science is a complex scientific discipline that studies the consumer properties of goods; their classification and coding; standardization; factors that determine the quality of goods; control and evaluation of the quality of goods; patterns of formation of the assortment of goods and its structure; conditions for maintaining the quality of goods during transportation, consumption and operation.

Pharmaceutical merchandising is a discipline that studies the use values of pharmaceutical products; merchandising operations related to the movement of goods in the pharmacy network; factors affecting the quality of pharmaceutical products and the organization of their storage.

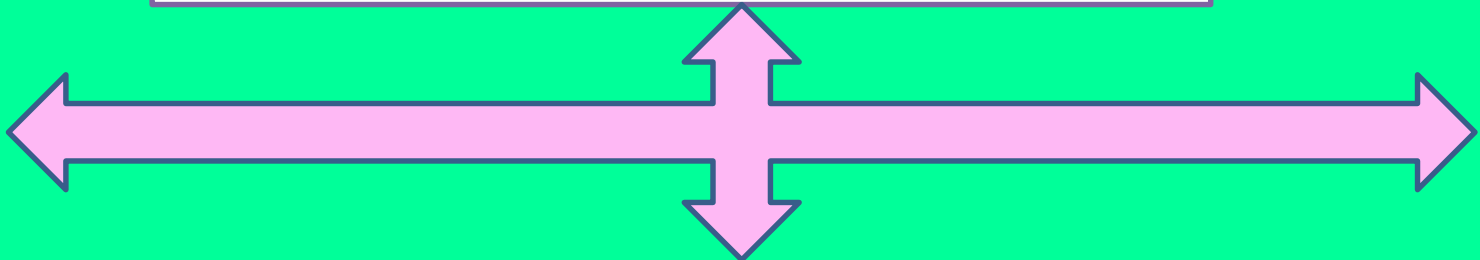
Definitions of the basic concepts used in medical and pharmaceutical commodity science



Use value (property) is the ability of a product to satisfy specific human needs, and the totality of such properties means use value.

Use value is otherwise defined as the usefulness of a commodity, its value to a person.

**HISTORICAL ASPECTS OF
MEDICAL AND
PHARMACEUTICAL
COMMODITY
DEVELOPMENT**



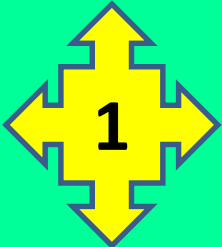
HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT

• HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT

**Stage 1. Commodity-descriptive period: XVI century. –XVII
century**

**From the middle of the 16th century, the widespread
development of trade relations between states led to the need
to streamline the requirements for the quality of goods,
primarily pharmacies.**

**In 1549, at the University of Padua in Italy, the Department of
Commodity Science of Plant and Animal Pharmaceutical
Materials was opened. Similar departments were opened at
the University of Göttingen (1774) and at the Vienna
Polytechnic Institute (1866).**



HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT




Stage 2. Commodity-technological period: early 18th century - early 20th century


There was a need for commodity expertise, as a special type of activity in assessing the quality of goods.

In Russia, at this time, they also see the need for a transition to the machine production of medical instruments. In 1721, Peter I issued a special decree on the organization of the “Tool Hut” on Aptekarsky Island in St. Petersburg. Soon a workshop of medicinal instruments was opened in Moscow. In 1738, a catalog of surgical instruments produced in Russia was compiled.

HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT



Stage 2. Commodity-technological period: early 18th century - early 20th century (continuation)



In 1765, the Russian Medical College published in Latin the Military (field, camp) pharmacopoeia - *Pharmacopoea castrensis*, which consisted of a catalog for regimental pharmacies, which included 191 names of medicines, 50 prescriptions for complex dosage forms and a description of a number of medical instruments.

In 1783, the Marine Pharmacopoeia, *Pharmacopoea navalis*, was published in Latin and Russian.

In 1788, the Medical College issued in Latin the Civil National Pharmacopoeia, known as *Pharmacopoea Rossica*, which describes only domestic medicinal products from plant materials and briefly methods for their preparation.

HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT

**Commodity-technological period:
early 18th century - early 20th century (continuation)**

In 1789, the Pharmaceutical Charter was published, which provides for the maintenance of a register of medicines approved for use. Separate disciplines are distinguished.

In Europe, the science of drugs until the 17th century. was taught as a complex of knowledge, based mainly on the work of Dioscorides (I century AD) “Materia medica” (“Medical Substances”).

In the 17th century, pharmacology and a generalized pharmaceutical discipline began to separate from this general basis of knowledge about drugs - pharmaceutical commodity science, which considered all issues related to the manufacture of drugs, the description of their properties and storage.


The beginning of the teaching of medical and pharmaceutical commodity science in Russia can be attributed to 1764-1765. (the Department of Medicine Science was opened at Moscow State University).

In the fourth edition of the Russian Pharmacopoeia, much attention is paid to commodity characteristics.

During this period, there is a separation of disciplines: pharmacology, pharmacognosy, materials science and technology.



HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT



Stage 3. Commodity-forming period: early. 20th century-ser. 20th century
The main task of this period throughout the world is the development of scientific foundations for the formation, evaluation and management of use value, quality and assortment of goods.

In general commodity science, both in our country and abroad, the theoretical foundations of commodity science are beginning to be intensively created.


In 1943, at the department of military medical training of the 1st MMI named after. IM Sechenov , the course "Medical Commodity Science" was created.

In 1958, the first edition of a textbook on medical commodity science was compiled (PEKrendal).



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HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT



**Stage 4 Integration stage:
to. XX century. - early 21st century**

In the activities of a pharmacist, merchandising functions are becoming increasingly important.

A huge contribution to the development of commodity science as a scientific discipline was made not only by domestic scientists, but also by foreign scientists, primarily Polish and German.

In 1967, in the USSR, a translation of G. Grundke's book "Fundamentals of General Commodity Science" was made into Russian, this book was published in our country.

From 1976 to 1979, five textbooks were published in Japan. They were developed by such scientists as Ioshtana Katsamaki , Mosaharu and Akiyama Copies, Ishnaki Ishii, Takao Ikogayama and others. The textbooks contained knowledge on commodity theory.

In 1986, a new discipline was included in the curriculum for the preparation of pharmacists - medical and pharmaceutical commodity science.

In the period from 1962 to 2000, the globalization of merchandise science began to take on an increasingly large scale.



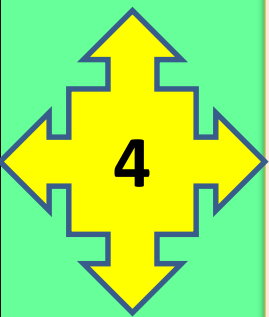
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HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT



**Integration stage: end of the 20th century - early XXI century
(continuation)**


One of the most interesting results of the activities of commodity science on an international scale was the environmental protection measures.



In 2000, a book called "Green Book on Integrated Manufacturing Policy" was released, where environmental and safety aspects were combined in the life cycle of a product, thus echoing commodity science.

Ecological topics for commodity science were not new, but now they have taken a completely different turn, have become the basis of many scientific achievements.

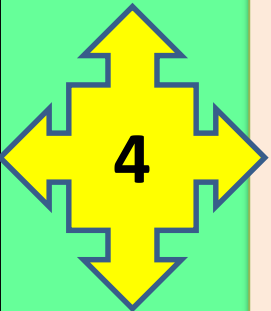
HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT



Integration stage: end of the 20th century - early XXI century (the ending)

The development of commodity science is due to predictive actions in this area.

This happens by integrating commodity science with other fundamental applied sciences, such as microbiology and biochemistry, physical chemistry, biophysics and a number of economic sciences: marketing, merchandising, quality management, product management, commerce and logistics.



HISTORICAL ASPECTS OF MEDICAL AND PHARMACEUTICAL COMMODITY DEVELOPMENT



Modern period: 10-20 years. XXI century

The current stage of development of commodity science as a science is developing in two closely interconnected areas: scientific and educational (training).

The first defines commodity science as an applied science.

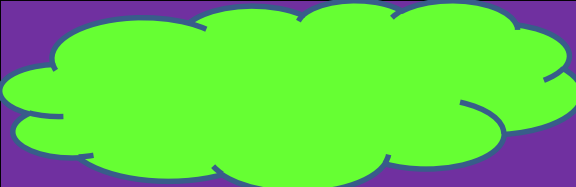
The second defines it as a discipline of natural science.

Scientific tests in commodity science are the basis for the formation of theoretical foundations, which, in turn, are their analytical result, the result of this scientific activity.

Commodity experts, theorists and practitioners, as implementers and conductors of knowledge into practice and vice versa, become a kind of accelerators of modernization and integration processes in commodity science.

Commodity science has risen to the stage, which is called axiomatic.





**Subject and object of medical
and pharmaceutical commodity
science.**

**Goals (purpose) and objectives
of the study .**

Subject and object of medical and pharmaceutical commodity science. Goals and objectives of the study.

The focus of the IPTV are medical and pharmaceutical products, respectively, although over time the scope of science may expand and the merchandising of medical and pharmaceutical services will be developed.

The subject matter of the MFTV is the use of values of medical and pharmaceutical products, as well as methods for their knowledge and provision. Only use value makes a product a commodity, as it has the ability to satisfy specific human needs.

The consumer considers a product, in particular medicines, primarily as a certain set of properties: efficiency, safety, availability, price, etc.

The consumer creates a set (structure of preferences) about a certain drug according to the degree of presence of each individual property in it. Consumer preferences can be based on knowledge of the true properties, personal experience, as well as knowledge resulting from selective perception.

PURPOSE OF MEDICAL AND PHARMACEUTICAL COMMODITY

- *The purpose of medical and pharmaceutical commodity science is to study the fundamental characteristics of medical and pharmaceutical products, as well as their changes at all stages of product distribution.*

Medical and pharmaceutical commodity science is a science and academic discipline about the fundamental characteristics of goods used in medical practice and pharmaceutical activities, and about the factors that ensure these characteristics .

The tasks of medical and pharmaceutical commodity science, as a science and academic discipline, are (list):

1. a clear definition of the fundamental characteristics that make up the use value;
2. establishing the principles and methods of commodity science, which determine its scientific basis;
3. systematization of a variety of medical and pharmaceutical products through the rational application of classification and coding methods;
4. study of the properties and indicators of the assortment for the analysis of the assortment policy of a medical or pharmaceutical organization;
5. management of the assortment of the organization;
6. determination of the nomenclature of consumer properties and indicators of medical and pharmaceutical products;
7. assessment of the quality of goods, including new domestic and imported ones;
8. identification of quality gradations and defects in medical and pharmaceutical products, their causes and measures to prevent the sale of low-quality goods;
9. determination of quantitative characteristics of single copies of goods and consignments;
10. ensuring the quality and quantity of medical and pharmaceutical products at different stages of their life cycle by taking into account the shaping and regulating the retaining factors;
11. identification of types of commodity losses, causes of their occurrence and development of measures to prevent or reduce them;
12. information support of commodity circulation from the manufacturer to the consumer;
13. commodity characteristics of specific medical and pharmaceutical products.

TASKS OF MEDICAL AND PHARMACEUTICAL COMMODITY (as a science and academic discipline)

• a clear definition of the fundamental characteristics that make up the use value;

• establishing the principles and methods of commodity science, which determine its scientific foundations;

• systematization of a variety of medical and pharmaceutical products through the rational application of classification and coding methods;

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• assortment management of the organization;

• determination of the nomenclature of consumer properties and indicators of medical and pharmaceutical products ;

• assessment of the quality of goods, including new domestic and imported ones;

TASKS OF MEDICAL AND PHARMACEUTICAL COMMODITY (as a science and academic discipline)

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information support of goods movement from the manufacturer to the consumer;

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SCIENTIFIC BASES OF MEDICAL AND PHARMACEUTICAL COMMODITY



The scientific foundations of Medical and Pharmaceutical Merchandising are based on:

- general economic laws,

- natural science disciplines - chemistry, physics, mathematics .

MFTV is a basic academic discipline for the organization and economics of pharmacy, marketing and logistics.

Principles of medical and pharmaceutical commodity science:

safety,

efficiency,

compatibility,

interchangeability,

systematization,

conformity.

Principles of medical and pharmaceutical merchandising

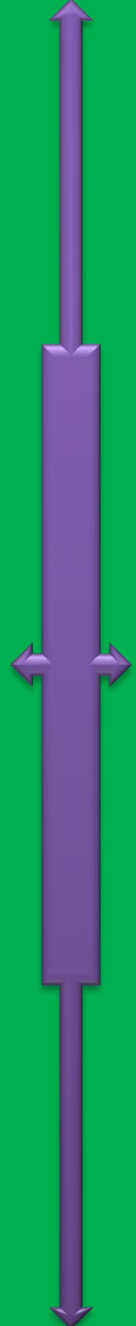
Safety - the fundamental principle, which consists in the absence of unacceptable risk associated with the possibility of causing damage to life, health and property of people by a product (or service, or process) .

Safety is at the same time one of the mandatory consumer properties of the product, which is considered as a risk or damage to the consumer, limited to an acceptable level.

From the standpoint of merchandising , the **product must be safe for all subjects of medical and pharmaceutical activities.**

At the same time, in commodity science , the **principle of safety for goods and the environment must also be observed in relation to the processes of packaging, transportation, storage, and pre -sale preparation for sale.**

Packaging, environment, etc. must be safe.



Efficiency is the principle of achieving optimal results in the production, packaging, storage, sale and consumption (operation) of medical and pharmaceutical products.

This principle is important in **the formation of the range, as well as ensuring the quality and quantity of goods** at different stages of product distribution.

All **types commodity research activities** should be aimed at **improving efficiency** .

This is achieved by an integrated approach based on the choice of methods and means that provide the best end results at minimal cost.

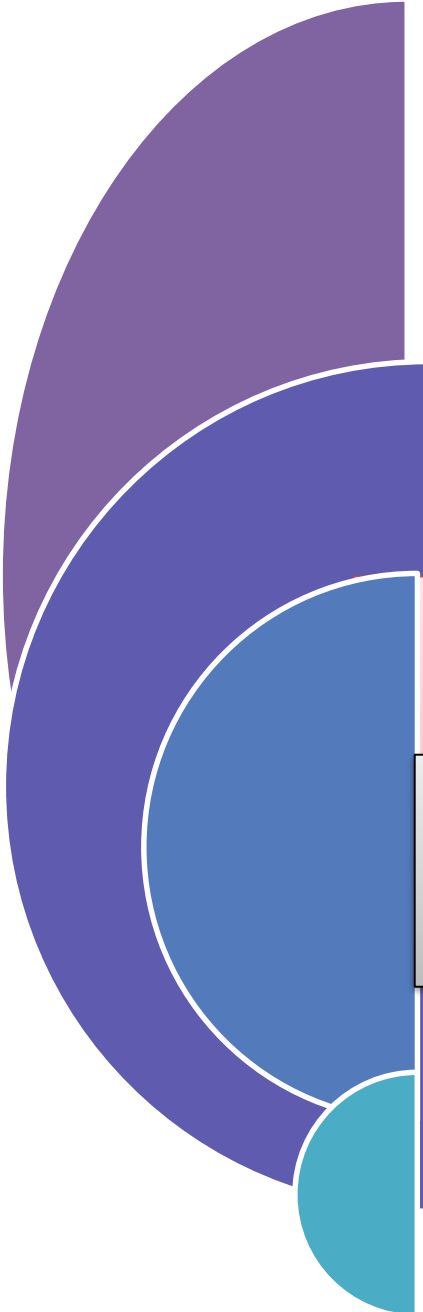
***Compatibility* is a principle defined by the suitability of goods, processes or services for joint use without causing undesirable interactions.**

The compatibility of goods is taken into account when forming the assortment, placing them in storage, choosing packaging, as well as the optimal mode.

Compatibility of parts, components during installation, commissioning and operation of complex medical devices and devices is an indispensable condition for maintaining their quality with the consumer.

Compatibility of products in their use is essential for the most complete satisfaction of needs.

EXAMPLE: the use of incompatible drugs can cause serious unexpected reactions in the patient's body.



Interchangeability - a principle determined by the suitability of one product, process or service for use in place of another product, process or service in order to fulfill the same requirements. Federal Law No. 323-FZ dated November 21, 2011 “On the Basics of Protecting the Health of Citizens in the Russian Federation” introduced a requirement to enter information about interchangeable medical devices in the state register of medical devices.

Systematization - the principle that consists in establishing a certain sequence of homogeneous, interrelated goods, processes or services.

The principle of systematization is the basis of a group of methods, which include classification, generalization and coding.

A systematic approach allows you to see the product, its commodity characteristics, quality and quantity assurance processes as a complex of interrelated subsystems united by a common goal, to reveal its integrative properties, internal and external relations.



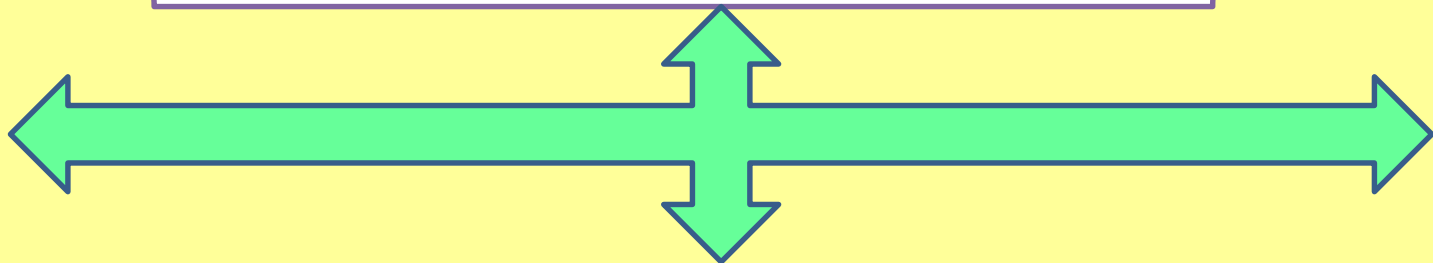
***Compliance* is the principle of compliance with established requirements.**

At the same time, the characteristics of goods or processes of production, transportation, storage, sale and operation must comply with the regulated requirements of regulatory documents or consumer requests.

In merchandising, this principle plays a decisive role in assortment management, quality assessment, provision of conditions and terms of transportation, storage and sale, as well as in the choice of packaging .

This principle is based on the definition of quality gradations, the identification of defects and the prediction of the shelf life of goods .

**Methods of medical
and pharmaceutical
commodity science**

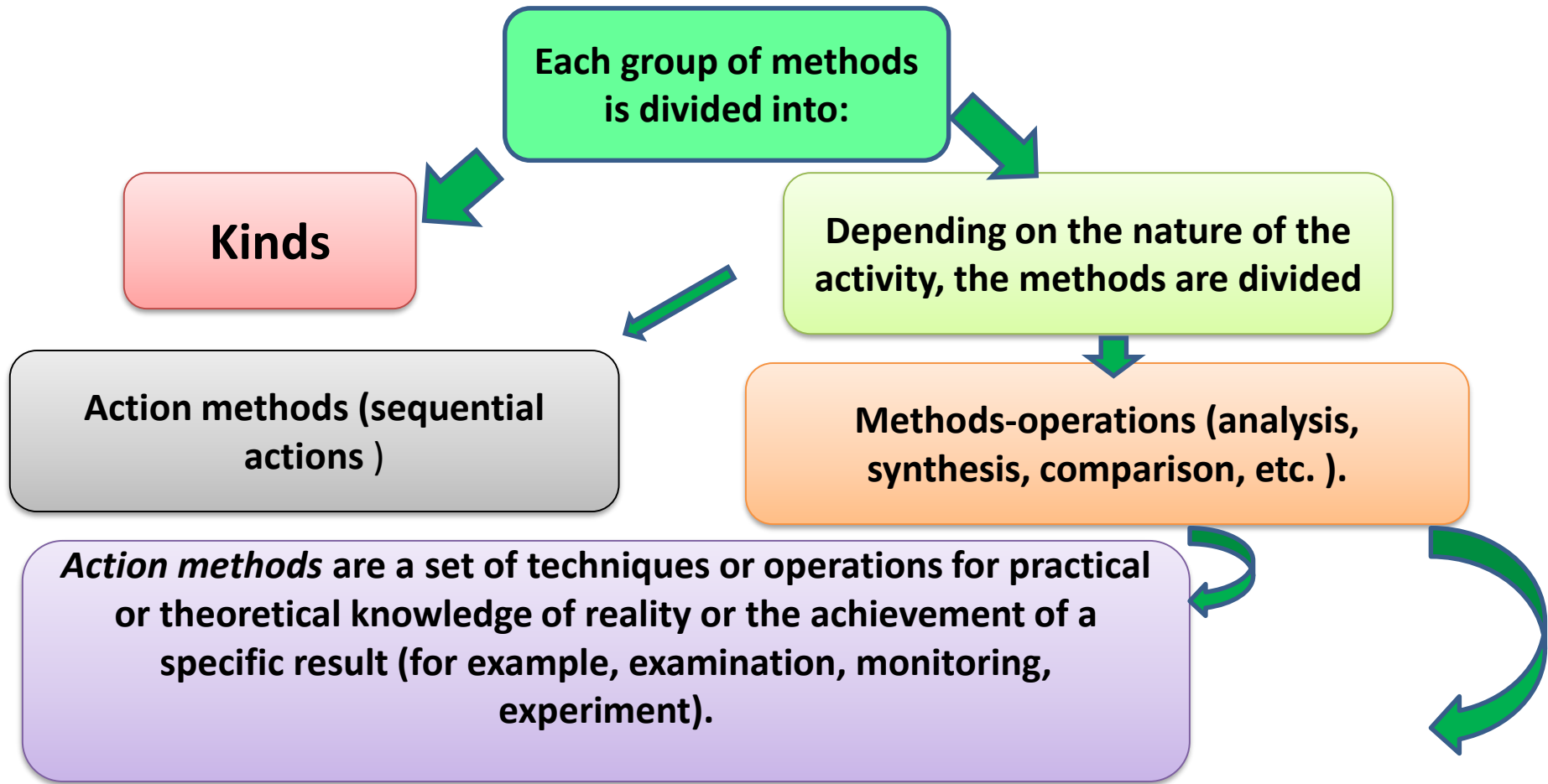


Methods of scientific knowledge of medical and pharmaceutical commodity science

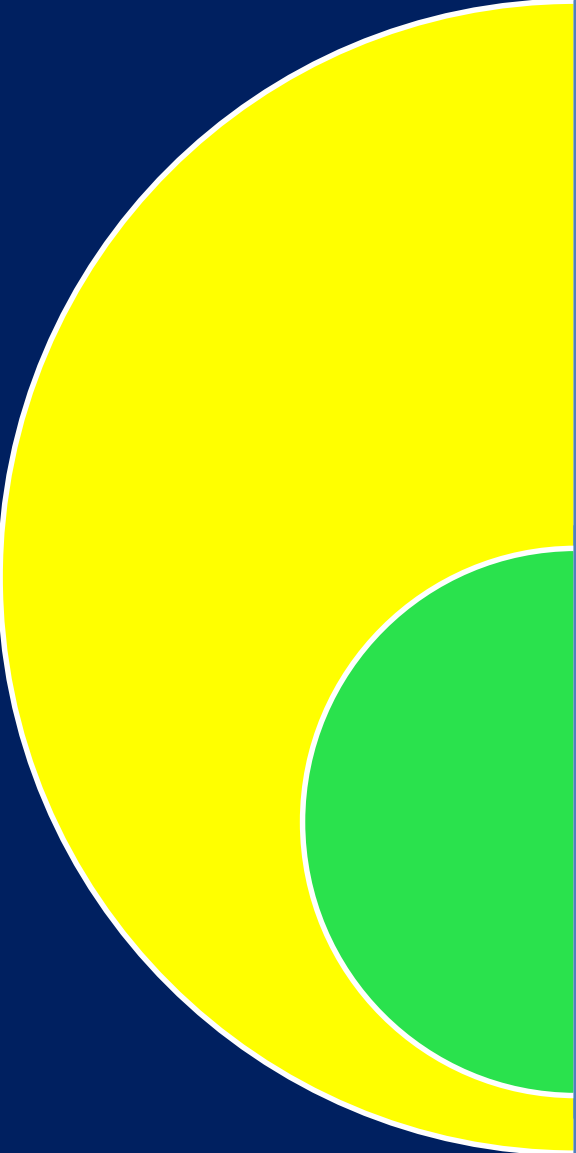
In commodity science as an applied natural science discipline, along with its own methods (for example, organoleptic, expert and measuring methods for determining the values of quality indicators), borrowed from other, mainly fundamental sciences - physics, chemistry, mathematics, philosophy, etc.

Method (from the Greek. *methodos*) - a way of knowing, studying the phenomena of nature or social life, as well as a method or method of action that ensures the achievement of the goal.

Commodity science as a science is characterized by tendencies inherent in other areas of knowledge: **the integration of knowledge, its continuous improvement and development to increase the effectiveness of results.**

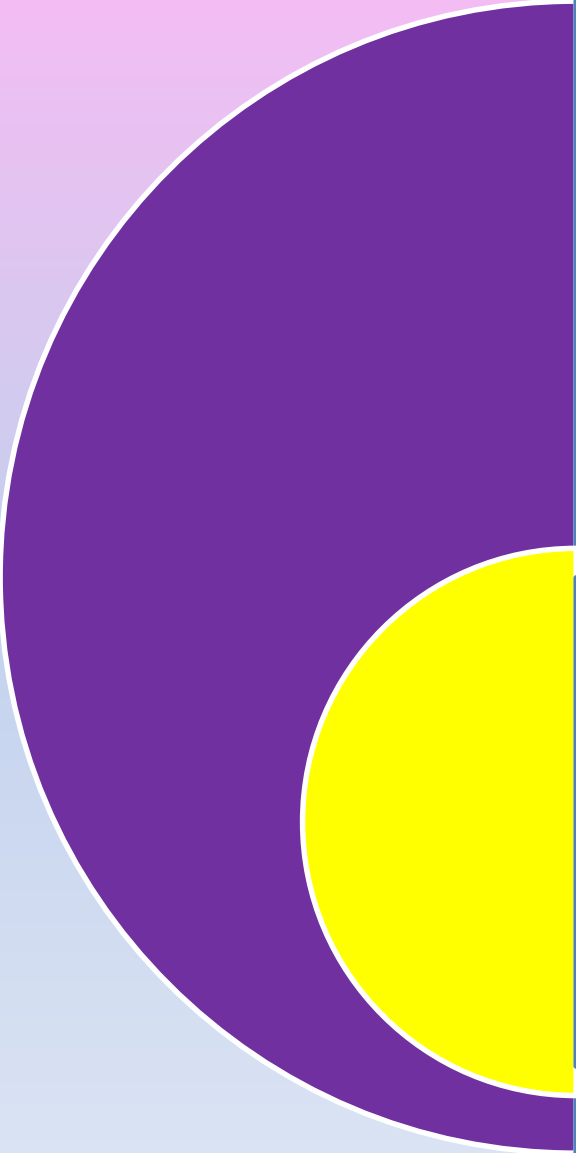


Methods-operations - specific methods of activity. For example, marking as a method-action includes the following methods-operations: development of the marking text, selection of its carrier, application of the text to the carrier or product, attachment (gluing) of the carrier to the product. A characteristic feature of the action methods is the presence of a specific goal (for example, the purpose of labeling is the identification and communication of product information to interested parties, the purpose of the experiment is to obtain factual data on the properties of the studied pharmaceutical product).



Theoretical methods - methods based on mental actions and / or operations for the purpose of cognition and / or research of reality. These include analysis, comparison, synthesis, diagnostics and other methods-operations.

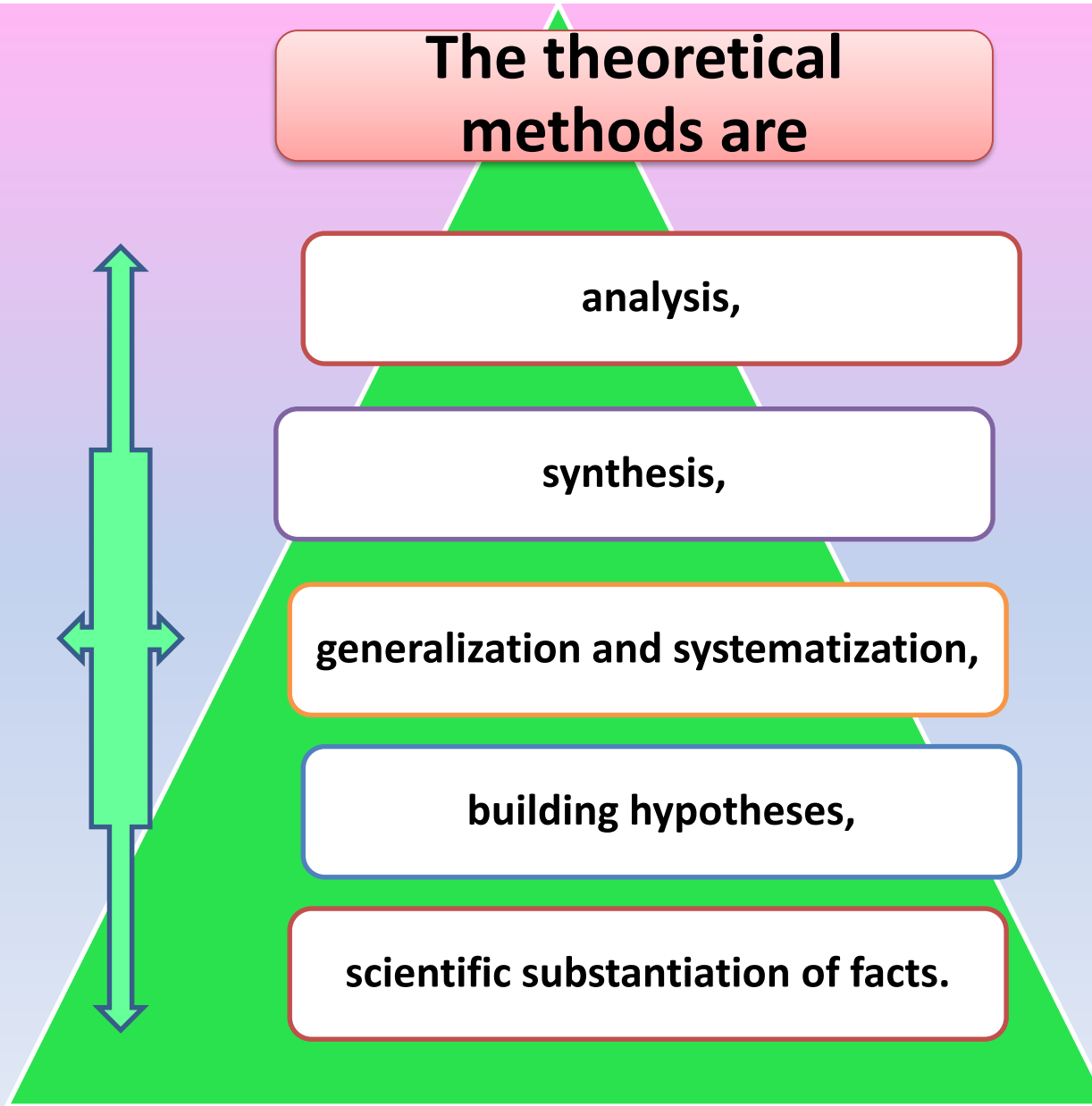
empirical methods - methods based on cognitive actions and operations using measuring instruments (technical devices or sense organs) to determine the actual values of the characteristics of the objects under study. These methods include both operation methods (measuring, organoleptic, etc.) and action methods (examination, monitoring).



Practical Methods - methods based on technological actions and operations designed to determine the characteristics of the goods (quality, quantity, commodity information) and ensure their preservation during the movement of goods. Practical methods include technological methods-actions (labeling, packaging, etc.), as well as methods-operations (quality assessment and quantity measurement).

Practical methods for assessing quality and measuring quantity are based on such experimental methods as measuring, organoleptic and registration (for example, determining the types and amounts of impurities, defects, quality gradations).

Theoretical methods of medical and pharmaceutical commodity science (1)



1. *Analysis* - the division of the object under study (product, technological process, etc.) into its constituent elements, the selection of its individual features, properties and operations.

This method is usually used at the first stage of scientific research to determine the properties, composition, structure, structure of the product, operations and methods of various processes. In commodity science, this is one of the most common methods of understanding a product as an object.

2. *Comparison* - a method-operation based on a comparison of objects to identify commonality and differences between them.

When using this method, the signs of comparison are important, which determine the possible relationships between objects.

To compare individual elements, it is necessary to identify them using analysis, so quite often these two methods are used together in the form of *comparative analysis* as a complex method.

Theoretical methods of medical and pharmaceutical commodity science (3)

3. *Synthesis* - combining the constituent elements of an object into a single whole (system). At the same time, logical cause-and-effect relationships arise between the individual elements, which determine the integrity of the object. The commodity characteristic of any pharmaceutical product is also the result of the synthesis of its various properties.

4. *Diagnostics* - a method-operation based on the description of the main features, indicators of the object under study and the identification of certain correspondences (identities) or inconsistencies and the causes of their occurrence. This method is the basis for such important and widespread activities as the establishment of quality gradations (for example, the category of a medical device), defects, and identification.

The results of diagnostics, analysis and synthesis can be used for forecasting.

5. *Forecasting* - a method based on the study of the prospects for changing certain processes. Using this method, quality and its changes during storage are predicted depending on certain conditions and terms, as well as a rational assortment.

6. *Programming* - a method based on determining the sequence of actions to ensure the proper commodity characteristics of goods or rational commodity circulation. It is used in the development of product quality programs and production control programs, as well as the definition of assortment policy and quality policy.

Consistent application of the methods discussed above creates the basis for further planning of commodity research activities.

7. *Planning* is a method based on the development of long-term and short-term plans or projects .

This method is used in managing the assortment and quality of goods, their purchases and storage, establishing the frequency of the sale of individual series of medicines.

8. *Abstraction* - a method based on the mental selection and transformation into an independent object of consideration of individual characteristics of goods and / or factors affecting them.

A feature of this method is that the selected characteristic does not exist independently in its physical manifestation.

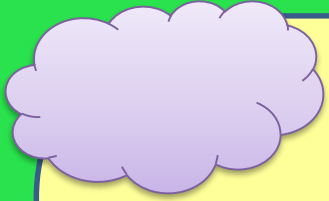
9. *Concretization* - a method based on the representation of an object in a specific, visual form.

Like abstraction, concretization is the result of human mental activity.

10. Generalization - a method based on the selection and fixation of relatively stable, invariant properties of objects and their relationships. As a result of generalization, the most typical properties or processes inherent in all or many objects are selected, despite private or random exceptions.

11. Idealization - a method based on the mental construction of concepts about objects that do not exist or are unattainable in reality, but to which their prototypes in the real world must strive. Such concepts are applicable to the discipline "Medical and pharmaceutical commodity science".

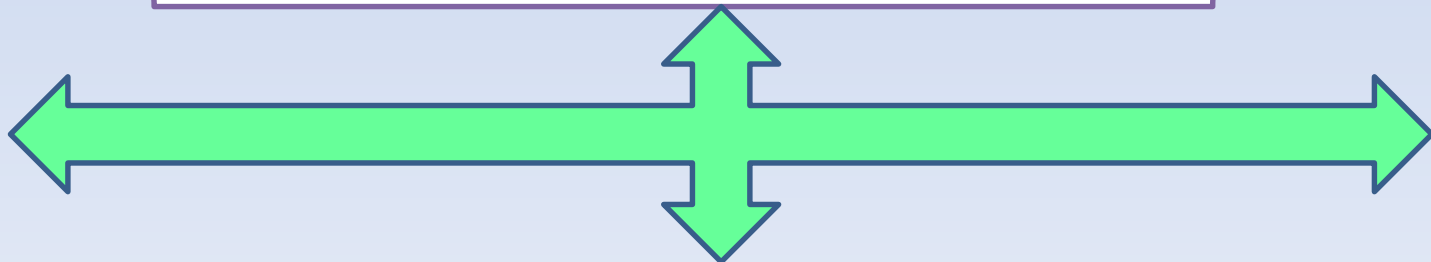
12. Modeling - a method based on building models and transferring information by analogy from model to prototype. This method is a combination of several methodological techniques: choosing or transforming a model, building a model, or transferring information by analogy from a model to a real object that is its prototype. Analogy is considered as a method-operation of transferring knowledge from one object (model) to its prototype or original - a less studied or less accessible object.



13. *Systematization* - a method based on the construction of a unified system of characteristics of objects and related processes.

With the help of this method, the ordering and formation of a rational pharmacy assortment is ensured, which is necessary and sufficient to achieve certain goals of the organization, as well as the choice of indicators in assessing the quality and storage conditions to minimize losses.

**Commodity science in
the professional
activity of a
pharmacist**



Commodity science in the professional activity of a pharmacist

- **The pharmacist as a subject of commodity research activities in the process of studying the discipline "Medical and pharmaceutical commodity science" must study:**

- ❖ empirical and analytical methods;
- ❖ assortment of medical and pharmaceutical products (commodity nomenclature), indicators characterizing it, methods and stages of assortment management;
- ❖ the main directions of development and improvement of the range;
- ❖ nomenclature of consumer properties of medical and pharmaceutical products and indicators, criteria for their selection in assessing quality;
- ❖ quantitative characteristics of single copies of medical and pharmaceutical products and consignments, rules for sampling from consignments;
- ❖ factors influencing the formation and preservation of the quality of medical and pharmaceutical products;
- ❖ types of losses and the reasons for their occurrence, the procedure for writing off;
- ❖ types, functions, forms and means of information about medical and pharmaceutical products;
- ❖ commodity characteristics of commodity groups and specific medical and pharmaceutical products.

COMMODITY SKILLS OF A PHARMACIST

- ❖ classify, analyze and generalize the results of product evaluation on various grounds (composition, indications, contraindications, technical characteristics, etc.) in order to better meet the demand of consumers in different market segments, as well as to identify consumer preferences and ensure the competitiveness of medical products;
- ❖ determine and analyze assortment indicators to achieve a rational assortment policy of the wholesale or retail link of the pharmacy chain, taking into account the direction of development and improvement of goods of homogeneous groups;
- ❖ evaluate the quality of medical and pharmaceutical products by choosing the most appropriate range of properties and indicators, determining the actual values and comparing them with the values regulated by the regulatory and technical documentation (NTD);
- ❖ carry out diagnostics of defects, identify the causes of their occurrence in order to make decisions on the possibility (or impossibility) of filing claims and material claims against the guilty parties, as well as using them for the prevention and treatment of patients;
- ❖ identify consignments, count and take samples in accordance with the requirements established by the NTD;

MERCHANT SKILLS (2)

- ❖ determine acceptance and rejection numbers for acceptance and delivery and ongoing quality control in accordance with established requirements;
- ❖ carry out measurements of medical and pharmaceutical goods and consignments to establish their quantitative characteristics when accounting at different stages of product distribution;
- ❖ take into account the shaping factors for predicting the quality and competitiveness of medical and pharmaceutical products, as well as for assessing the ability of a manufacturer to produce products whose quality meets the needs of a particular market segment;
- ❖ regulate the factors affecting the preservation of the quality of medical and pharmaceutical products during storage, transportation and use;
- ❖ control the creation and maintenance of climatic and sanitary-hygienic regimes for the storage of medical and pharmaceutical goods;

MERCHANT SKILLS (3)

- ❖ participate in the selection of the most appropriate types of commercial equipment for storage, preparation for sale and sale, taking into account the characteristics of the goods or product groups for which this equipment will be intended;
- ❖ develop and implement measures to prevent and reduce losses;
- ❖ ensure the preparation of goods for sale in order to form the proper quality and quantity, improve the presentation and prevent the sale of goods that do not meet the established requirements in terms of quality;
- ❖ work with shipping documents to determine and / or verify all the characteristics of the consignment, manufacturer and supplier, and other information necessary for further work with the goods;

MERCHANT SKILLS (4)

- ❖ to identify, by various means, fundamental, commercial and consumer information for the most complete acquaintance with the product and the creation of consumer preferences, which allows stimulating the sale of goods;
- ❖ identify the product using different types of marking, decipher the information signs on the marking and shipping documents to provide consumers with sufficient and reliable information;
- ❖ work with specific medical and pharmaceutical products - identify them with a certain assortment group and type, evaluate quality, ensure the preservation of goods throughout their journey to the consumer.

PRODUCT. DEFINITION OF THE CONCEPT.

There are many definitions of a product. In commodity science, the following definition of a product is accepted, since it reflects the main function of the product - the satisfaction of social needs.

A commodity is a product of labor intended for sale in order to satisfy some social need.

As follows from the definition, the **product is characterized by consumer properties that determine the ability of the product to satisfy specific needs.** These consumer properties appear only in the process of consumption or exploitation.

In order for a product to satisfy a human need, it must be useful.

From the standpoint of economic theory, utility is the overall satisfaction derived from the consumption of goods or services.

It is utility that turns the product of labor into a commodity that has a use value.

PRODUCT. DEFINITION OF THE CONCEPT. (2)

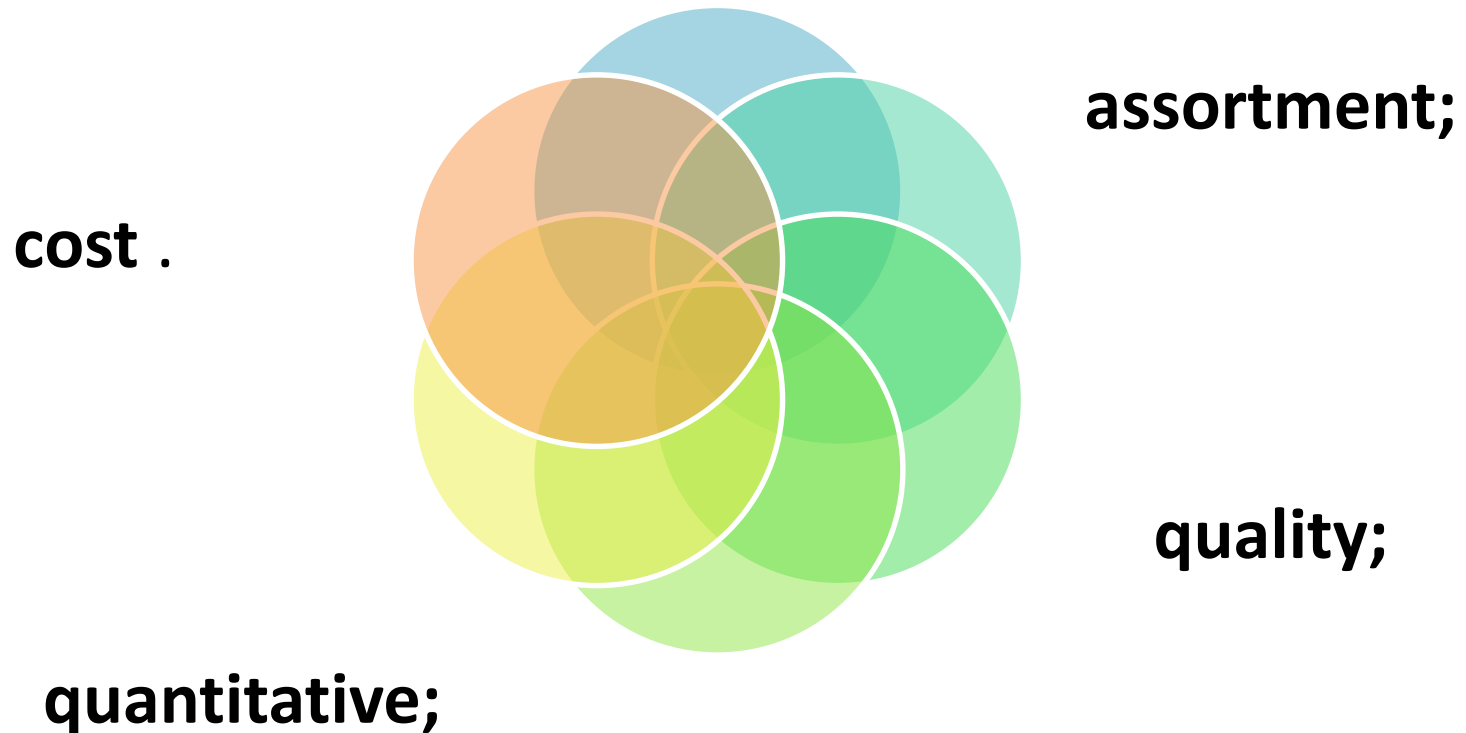
In marketing, a product is viewed primarily as a means by which a certain need can be satisfied, and then only as a product of labor produced for sale. These concepts are summarized in the definition given by F. Kotler .

Goods (product) - everything that can satisfy needs or needs and is offered to the market in order to attract attention, purchase, use by the consumer (F. Kotler , 1990).

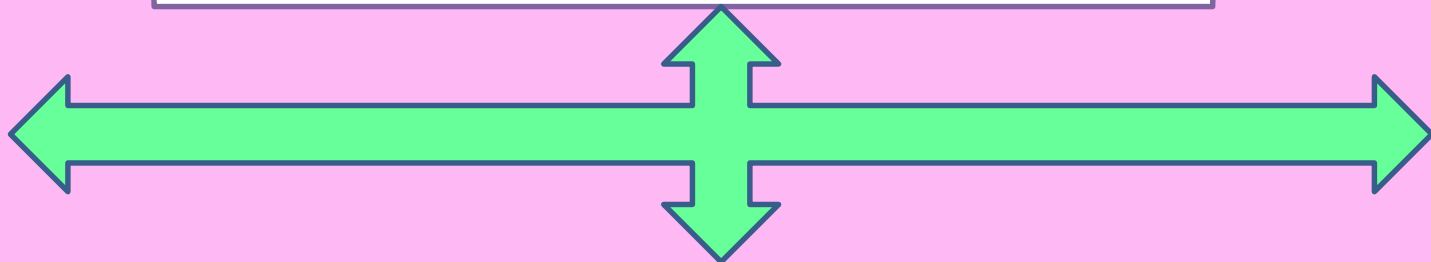
Often, a commodity can also be defined as a product, which is a collection of products of production or a separate product of production.

Product characteristics

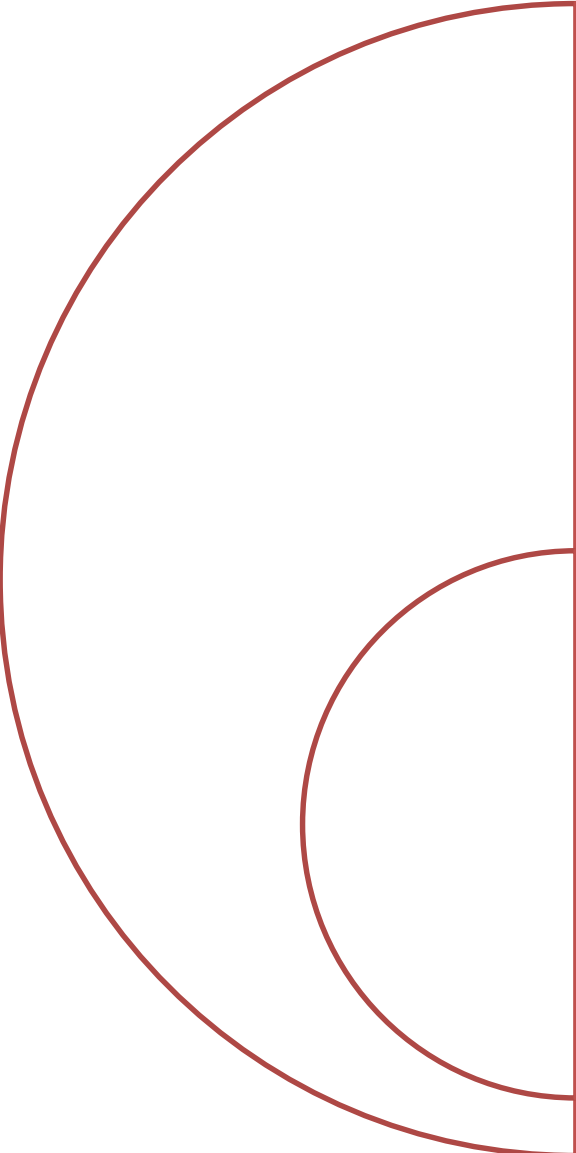
Goods, as objects of commodity research activities, have four fundamental characteristics:



**USER COST AND USER
PROPERTIES OF
GOODS**



USER COST AND USER PROPERTIES OF GOODS



value of a product manifests itself in the form of **its usefulness** and is determined by the cumulative effect of the **use properties necessary to satisfy the material, cultural and biological needs of a person .**

In order for a product to satisfy a human need, it must have ***usefulness***.

USER COST OF GOODS (2)

From the standpoint of economic theory , **utility** is *the overall satisfaction derived from the consumption of goods or services.*

Utility turns the product of labor into a **commodity** that has a use value.

Distinguish:

price
(exchange value)

use value of the product.

USER COST OF GOODS (3)

The value of a commodity is determined by the socially necessary labor expended on its production. The monetary expression of exchange value is **price**.

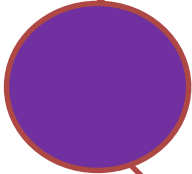
value of a good is an *economic category that manifests itself when a good is used*. In monetary terms, use-value may exceed the price of a commodity.

CONCLUSION: use value is the most important commodity science category that objectively characterizes the state and place of a product at a given stage of development of social needs, and therefore makes it possible to develop scientifically based measures to improve its consumer properties.

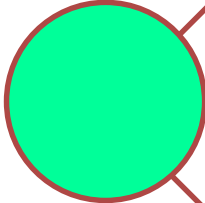
USER COST OF GOODS (4)

- Unlike *value* , **use value is inherent in all products of labor created both for exchange and for personal consumption** . It does not depend on social forms of production.
- In commodity science, the identification and **unambiguous interpretation of the concepts *commodity = thing = object = product*** , etc. are acceptable, while in the economic sense they can have different content.
- **Characteristic features of the formation of the use value of goods:**
 - - The ability of the products of labor to satisfy human needs is associated with their inherent natural properties, although these properties are manifested only in relation to needs.
 - - Each product has many properties. However, its **use value is formed only by those that satisfy the needs of the consumer, in our case, the patient.**

USER COST OF GOODS (5)



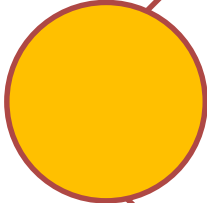
Consumer - a citizen who intends to order or purchase or ordering, acquiring or using goods (works, services) solely for personal, family, household and other needs not related to entrepreneurial activities (*Article 1 of the Federal Law "On Protection of Consumer Rights")*



« The consumer is the recipient of the products provided supplier.» (*International standard MS ISO 8402 "Quality management and quality assurance. Vocabulary"*)

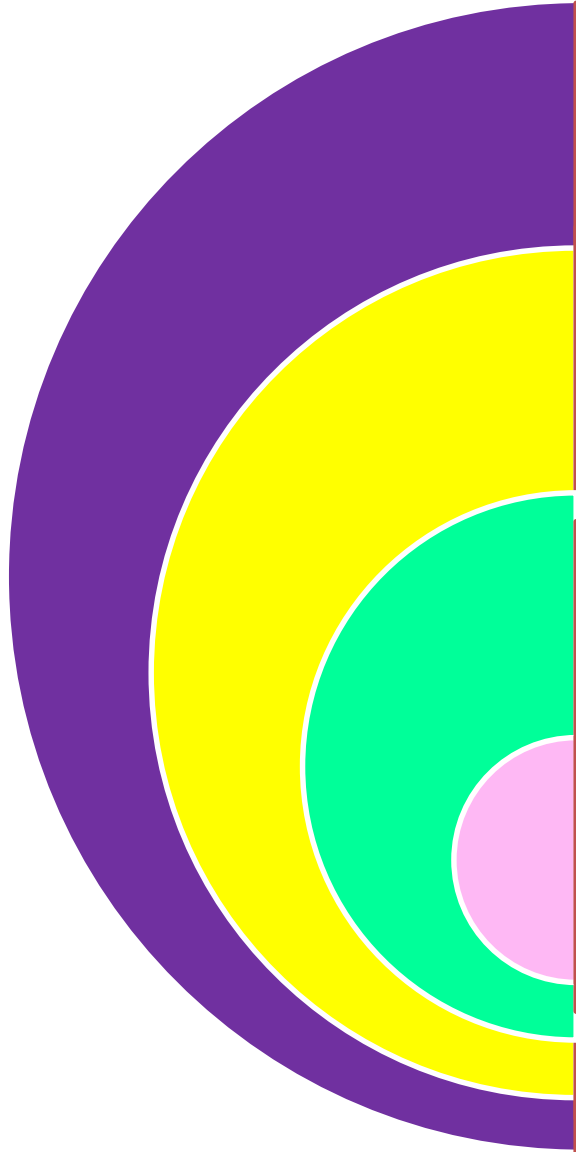


" Consumer - a person or organization that consumes, uses the product of someone else's labor.
(*domestic "Modern Economic Dictionary", 1996*)



From the last two definitions, it follows that the consumer can **be an external (direct) and internal (intermediate)** recipient, using the purchased product for the final consumption purposes, or for the production of new types of products.

USER COST OF GOODS (6)



A need is a conscious necessity, which is objective in nature and depends on the level of the material and spiritual life of society.

Need and use value are dialectical categories. The natural properties that constitute the material basis of the usefulness of things only seem to be independent of the historical process of development.

The content of *utility itself* is determined by the social development of society.

The usefulness of products is formed both under the influence of natural properties, and under the influence of improving the structure and increasing social needs .

USER COST OF GOODS (7)

The use value of the products of labor is manifested in use. A single commodity has only potential utility. As *a product of labor, it manifests itself only when the use value is realized, i.e. in consumption.*

EXAMPLE: *a medicine developed for the treatment of a particular disease shows its use value only if the patient has taken it and is cured.* A drug that does not have the expected therapeutic effect (for example, a counterfeit drug that does not contain an active substance) does not have a use value.

USER COST OF GOODS (6)

A thing can be useful and be a product of human labor, but not be a commodity.

He who satisfies his own need with the product of his labor creates use-value, but not a commodity.

In order to produce a commodity, it ***must produce not just a use-value, but a use-value for others, a social use-value*** .

The same applies to the use value of medical and pharmaceutical products.

Individual and social use values

In general commodity science, depending on the nature of the consumption of labor products, *individual and social* use values are distinguished.

Individual use value is inherent in the products of labor created for personal consumption. These products are not a commodity.

Their use value is formed by the material side, independent of social relations, and manifests itself as a natural property of the product to satisfy human needs (example: medicinal plant material, which the patient himself collects in the summer, dries, and then prepares infusions and decoctions from it himself).

Individual and social use values (2)

Social use value is inherent in the products of labor that are created ***to satisfy social needs***. Under the conditions of commodity production, ***these products of labor are commodities*** .

Example: medicinal herbal raw materials that are processed in a certain way in pharmaceutical enterprises or pharmacies. Patients buy it in a pharmacy and prepare their own infusions and decoctions from it.

“... if the use-value of an individual commodity depends on whether it satisfies a need in itself, then the use-value of a certain mass of social products depends on whether it is adequate to a quantitatively determined social need for a product of each particular kind ... ”. (K. Marx)

Social use value is divided into:

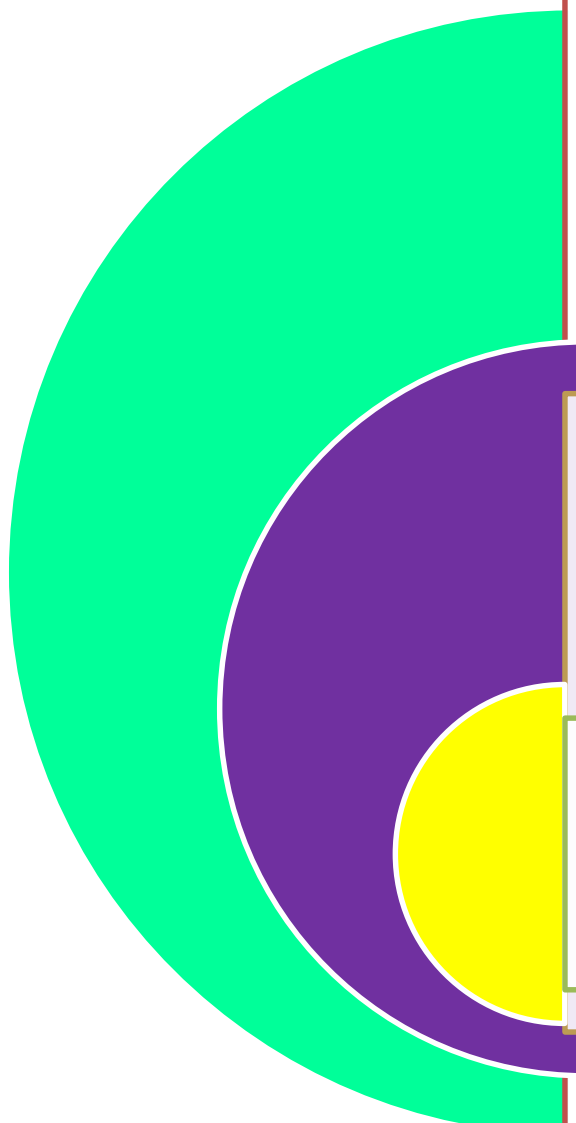
unit use value inherent in a unit of goods or a set of goods to meet the needs of one person or members of his family

example: specific drug, item of care for a specific patient, etc.

total social use value inherent in a large number of goods to meet the needs of society or its individual groups.

example: medicines, patient care items, various diagnostic instruments and equipment, etc.

Social use value



The social use value of goods is also characterized by two inextricably linked components: *tangible and socio-economic* .

The material value is determined by the degree of development of science and technology of production, the second - by the level and nature of the needs that society imposes on the product.

Commodity science studies the material and material use value of goods.

According to the method of consumption, use value is divided into:

of *commodities*

things that satisfy the material, spiritual needs of people (medicines, medical instruments, items for patient care, etc.);

cost of means of production

things that satisfy the needs of people indirectly, i.e. used to make consumer goods. (Everything that is used in the creation of consumer goods - buildings, technological equipment, raw materials, semi-finished products, catalysts, activators, stabilizers, etc.).

CONSUMPTION

Consumption is the process of using material or spiritual goods, services to meet needs.



A comprehensive study of the factors influencing the process of consumption of pharmacy products should be carried out for:

making effective management decisions , including when choosing a rational method for forecasting the need for medicines and other groups of pharmaceutical products.



Basic consumer properties

social

functional

safety

ergonomics

reliability

environmental friendliness

aesthetics

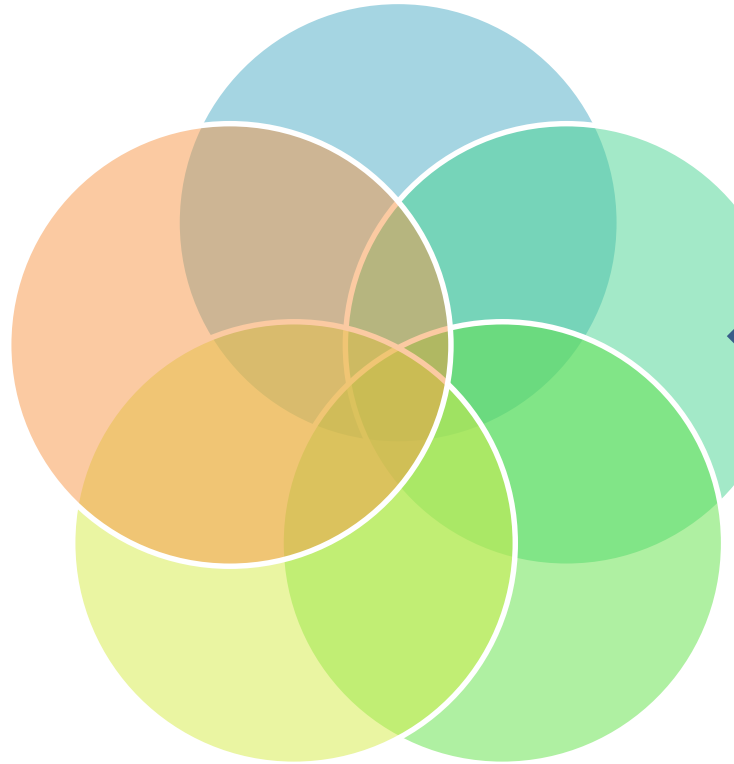
**perfection of production
execution and stability of
the presentation**

resource consumption

compatibility

SOCIAL PROPERTIES

These properties characterize the compliance of a given product with the total needs of society, which determines the economic and social expediency of its production.

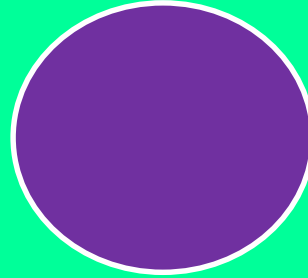


-demand

- the possibility of an additional social effect

- freedom of movement of goods from the manufacturer to the consumer.

SOCIAL PROPERTIES (2)



A distinctive feature of the social properties of medical and pharmaceutical products is that these properties have a clearly defined focus on the part of the population that needs medical care.

And therefore, along with a social orientation, these goods should also have a nosological orientation.



Functional properties:

When **grouping functional properties**, the **ability of the product to fulfill its main purpose is of decisive importance**, for example, for a drug - the quality of treatment of this nosology.



1. Therapeutic efficacy

2. latitude

3. depth

4. the rate of onset of the therapeutic effect

Functional properties (2)

The performance of the main function of the product depends on the quality of the raw materials, the technology of its manufacture, quality control methods.

An important characteristic of the functional properties of medical products is the versatility of application, characterized by the breadth of the range of conditions and possibilities for using the device for its intended purpose.

The versatility of application is determined by the possibility of performing a number of **auxiliary functions.**

SAFETY

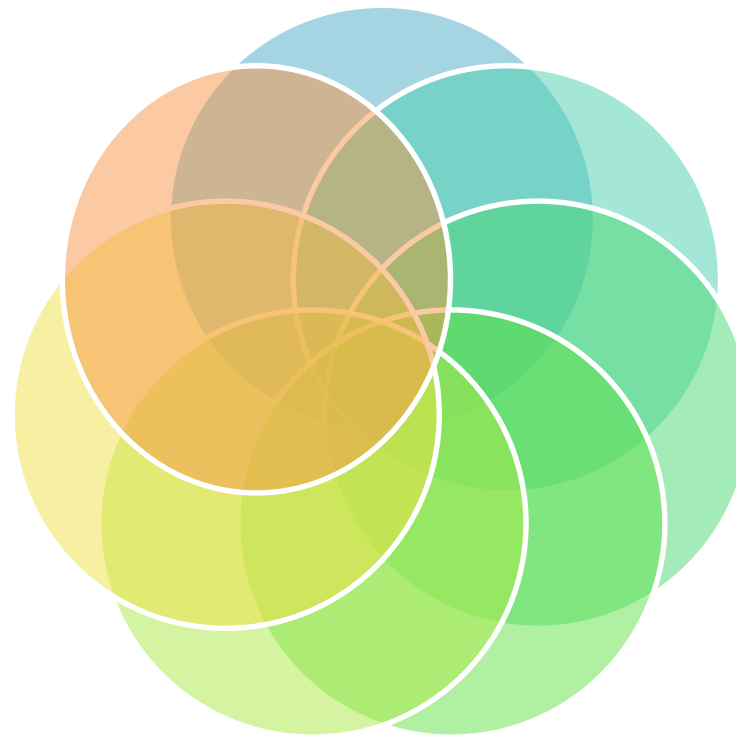
Safety - the state of the product under normal conditions of its use, storage, transportation and disposal, in which the risk of harm to life, health and property of the consumer is limited to an acceptable level (for the patient, medical and attendant personnel, surrounding objects).

Main safety indicators of medical products :



1. electrical safety

2. fire safety



3. electromagnetic radiation

4. vibration

5. acoustic noise



SAFETY (2)

All possible types of risk arising during the operation and maintenance of **medical equipment, the requirements** and means of ensuring it **must be indicated in the operating instructions.**

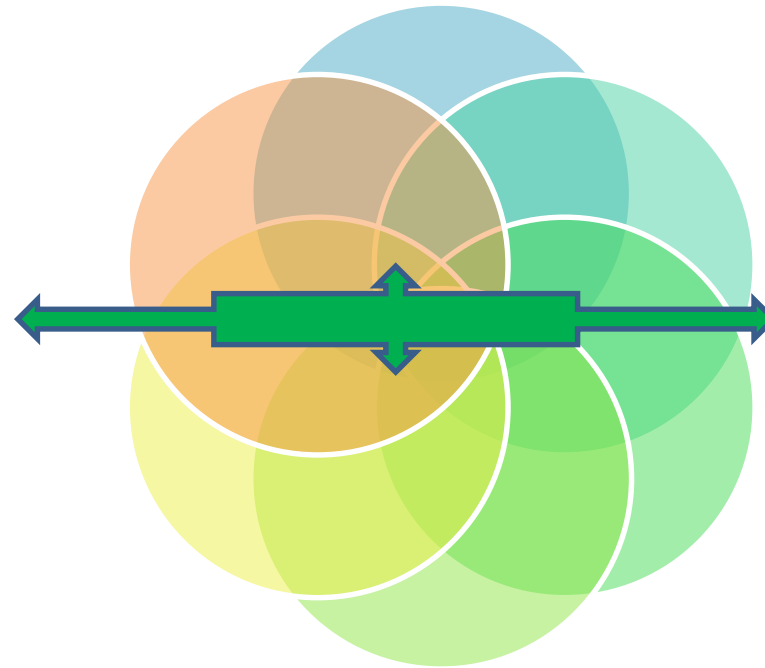
Warning labels must be placed in prominent places on the product.

EXAMPLE: The **safety features of medicines include side effects, contraindications.**

RELIABILITY

In many cases, the safety of a product is determined by its **reliability**, that is, the **property of maintaining its original characteristics for a long time within certain limits during operation** .

The main indicators of reliability -



1. product durability
2. service life
3. product reliability
4. resource

RELIABILITY (2)

Reliability control of products is carried out in the process of independent tests or other types of tests.

Requirements for the reliability of products are established in the standards of the type of general technical conditions (technical requirements), medical and technical requirements and technical specifications.

OTHER USER FEATURES. DEFINITION.

Reliability is the property of a product to perform the required function under given conditions for a given time interval. The reliability of non-repairable products is characterized by such an indicator as the mean time to failure. The failure-free operation of products for which repair work is envisaged during operation is evaluated by the average time to failure.

Durability - the property of the product to remain operational until the limit state occurs with the established system of maintenance and repair. The durability of products is evaluated by the value of the average service life (resource) before decommissioning or repair.

Life time - calendar duration of operation from the beginning of the operation of the product or its resumption after repair until the transition to the limit state.

Resource - the total operating time of the object from the beginning of its operation or its resumption after repair until the transition to the limit state.

A SERIES OF PROPERTIES THAT QUALITY MEDICAL PRODUCTS SHOULD HAVE:

Ergonomic

properties characterize the convenience and comfort of using the product and are determined by complex indicators: anthropometric, physiological (hygienic), psychophysiological, psychological, etc.

Anthropometric

properties characterize the correspondence of the size and shape of the product to the size and shape of the human body.

Hygienic

properties characterize the ability of the product to become contaminated and cleaned, are of great importance for patient care items.

Psychophysiological

properties characterize the compliance of the product with the power, auditory, visual, gustatory, olfactory capabilities of a person.

A SERIES OF PROPERTIES THAT QUALITY MEDICAL PRODUCTS SHOULD HAVE (2):

Environmental

friendliness characterizes the degree of harmful effects of medical products on the environment that occurs at the stage of the entire life of the product. Environmental indicators : the level of hazardous chemical emissions, radiation, the concentration of harmful substances, as well as the ability to recycle.

Aesthetics - an indicator of the qualitative and quantitative assessment of the aesthetic value of products, depending on the group of consumers, specific conditions of consumption and purpose of the product. Aesthetic indicators do not affect the utilitarian properties of the product, but help to attract potential buyers, for example, aesthetic indicators of packaging and labeling.

The perfection of production performance and the stability of the presentation are determined by the cleanliness of the execution of contours, roundings and connections of individual elements, the absence of visible manufacturing defects and the thoroughness of surface finishing, the preservation of shape and surface elements during external impact during operation, the clarity of execution of brand names and indicators, accompanying documentation and information materials.

A SERIES OF CONSUMER PROPERTIES WHICH SHOULD HAVE QUALITY MEDICAL PRODUCTS:

resource

consumption characterized by the consumer's costs for the purchase, operation and maintenance of the product during the period of the average technical resource, that is, until the product is taken out of service. Resource consumption indicators characterize the costs of direct use of products for their intended purpose. They are subdivided into indicators of the economical use of raw materials and materials, fuel and energy resources, and labor resources.

Compatibility — the suitability of products, processes and services for joint, non-interfering use under specified conditions while fulfilling specified requirements. Medical equipment is subject to mandatory certification for electromagnetic compatibility, that is, the ability to function normally in a certain electromagnetic environment without creating magnetic fields that are dangerous for other technical equipment or humans. In case of violation of electromagnetic compatibility, malfunctions of electronic computing systems, registration or filing of false signals are possible.

INDICATORS FOR EVALUATION OF CONSUMER PROPERTIES


Properties	Assessment indicators
1.Social	<p>Properties of social purpose - compliance of goods with socially necessary and individual needs of the population . The main indicators for assessing social properties:</p> <p>Demand for this drug</p> <p>freedom of promotion of medicinal products / medical equipment from the manufacturer to the consumer</p> <p>The possibility of an additional effect (addiction, drug addiction, etc.)</p>
2 . Safety	<p>Safety indicators characterize the features of goods that ensure consumer safety in all modes of their consumption or operation, as well as transportation, storage and disposal.</p> <p>There are chemical, mechanical, biological, radiation, thermal, radiation fire fighting and other security</p>

INDICATORS OF ASSESSMENT OF CONSUMER PROPERTIES (2)

Properties	Assessment indicators
3. Environmental	Environmental properties characterize the degree of harmful effects of products on the environment arising from the production, consumption or operation of goods, as well as during their storage and disposal.
4. Functional	The properties of the functional purpose determine the use of the medicinal product / medical product for its intended purpose. Indicators of functional properties characterize: The essence of the product properties that determine the ability of products to perform their functions under specified conditions of intended use. Indicators of functional properties depend on the specifics of the product, they can be divided into the following groups: <ul style="list-style-type: none">• indicators of excellence in the performance of the main function;• indicators of universality;• performance of support functions.
5. Reliability	Reliability indicators complement the characteristics of goods with indicators of functional purpose , as they characterize the duration or completeness of the manifestation of the effect of use by the consumer.

INDICATORS OF ASSESSMENT OF CONSUMER PROPERTIES (3)

Properties	Assessment indicators
6. Ergonomic	<p>Ergonomic properties of goods characterize their suitability for human use in production and household processes. Ergonomic properties and indicators include:</p> <ul style="list-style-type: none">hygienicanthropometricpsychophysiologicalpsychological.
7. Aesthetic	<p>Aesthetic properties - the ability to express sensually perceived signs of the socio-cultural significance of goods, the degree of their usefulness and expediency, technical excellence.</p> <p>The indicators of aesthetic properties include: the shape of the product, color, value of the composition, style, fashion, originality of the product, perfection of production performance.</p>



**Factors affecting the
consumer properties of
medical and pharmaceutical
products**

Consumer properties and product quality depend on many factors:



In merchandising, they are divided into two groups:

- factors that **shape** consumer properties and quality of goods

- factors that **preserve** consumer properties and quality of goods.

Factors affecting the consumer properties of medical and pharmaceutical products

scale and structure of morbidity;

the level of technology development in the industry;

quality of raw materials;

product manufacturing technologies;

methods of product quality control;

means of transportation;

storage features;

compliance with the rules for the use of this product.

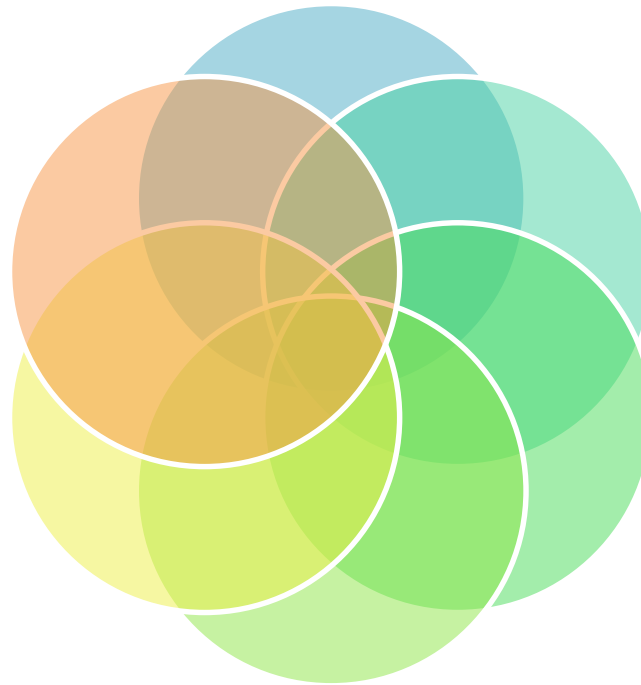


**Factors that form and
maintain consumer
properties and quality of
goods**

Factors that form the consumer properties of medical and pharmaceutical products

1. Consumer properties and quality of raw materials, materials and components.

5. The quality of disinfection and sterilization (including the quality of regulatory and technical documentation, equipment, the quality of workers' work, quality control, etc.).

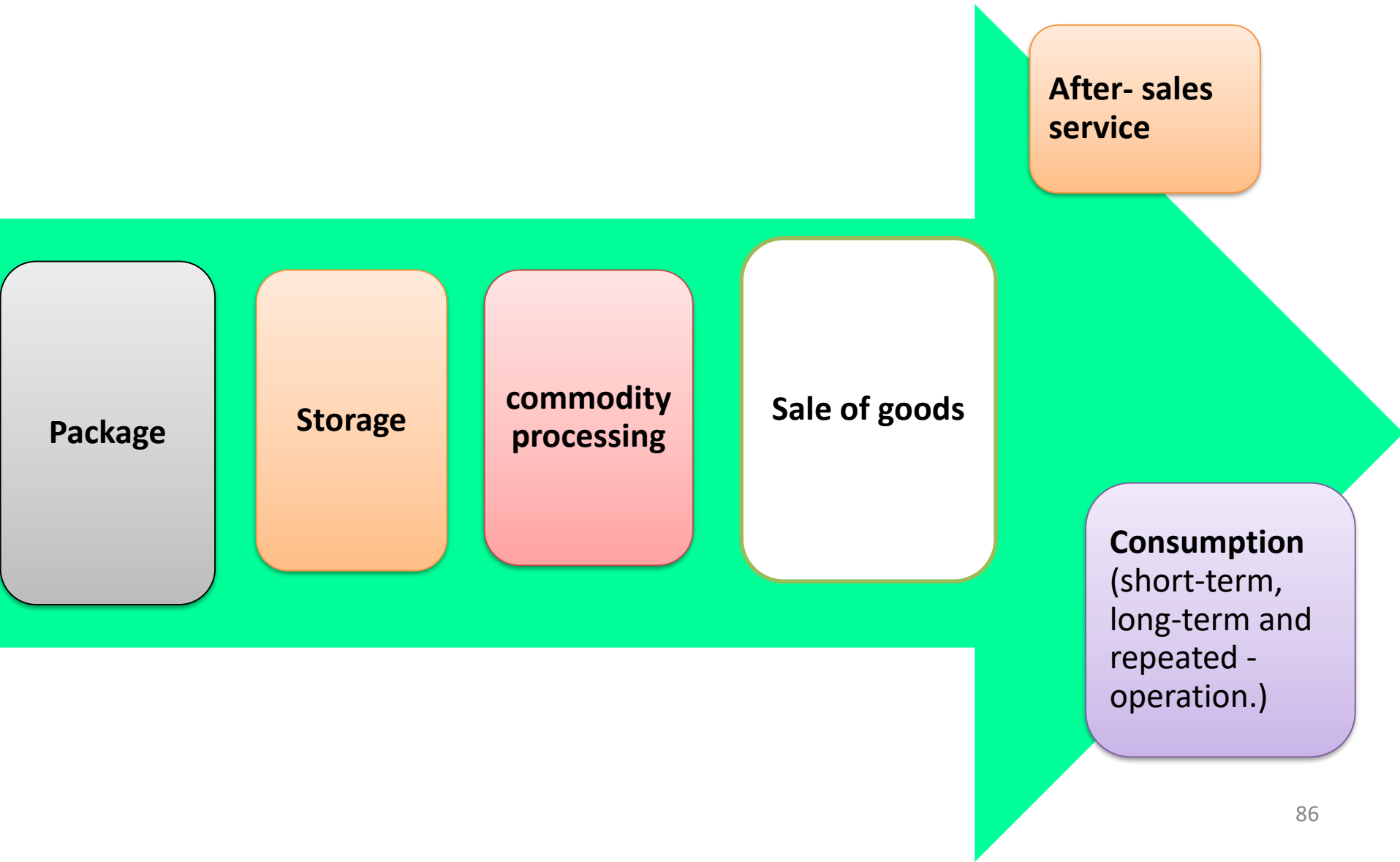


2. Composition and ratio of components in the manufacture of the product.

3. Product form (for medical products - product design, for medicines - dosage form).

4. Process quality

Stages of circulation and operation of goods on which it is necessary to preserve the consumer properties of medical and pharmaceutical goods



In the process of circulation and operation of goods, their consumer properties change under the influence of factors:

physical and chemical (humidity, temperature, light, oxygen, various gases and other air components)

mechanical (compression, stretching, bending, impacts, shocks, shaking, etc.),

biological (impact of microorganisms, insects and rodents).

The types, nature and size of the damage they cause are determined by the intensity of the impact and the properties of the material of the product.

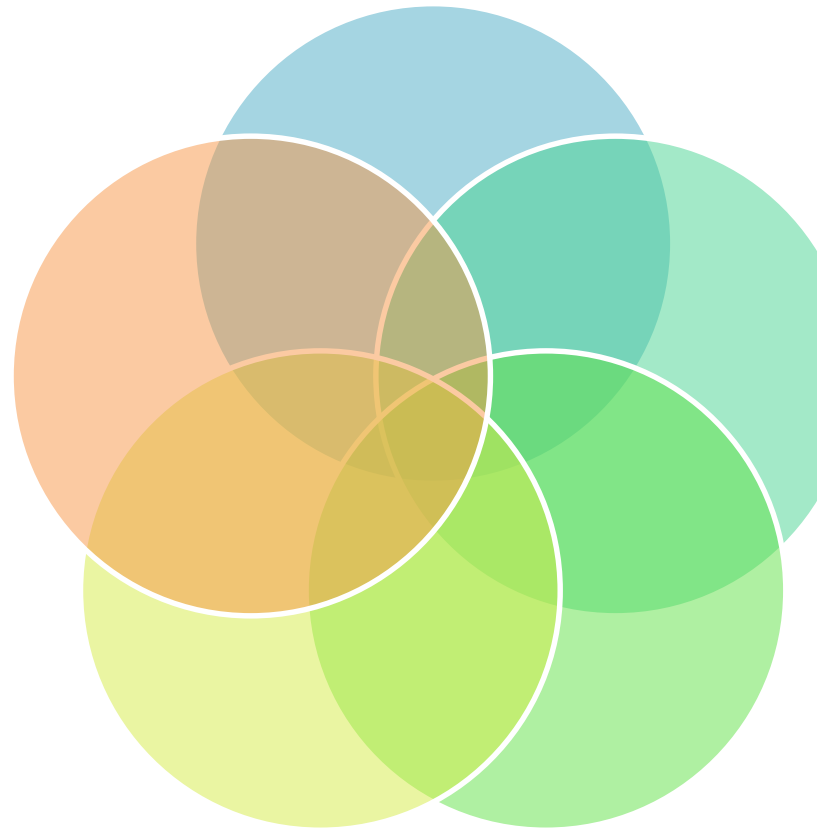
preservation of consumer properties of goods

- **Preservation of consumer properties of goods depends on:**

- **packaging quality;**
- **quality labeling for goods and packaging;**
- **packing goods into packages;**
- **transportation conditions;**
- **storage conditions;**
- **disinfection method;**
- **sterilization method;**
- **conservation method;**
- **depreservation method .**

When accepting goods in terms of quantity and quality, it is necessary to pay attention to:

necessary to organize the **proper storage of goods**, if necessary - **sterilization**, **conservation and re-preservation of medical instruments**, instruments and equipment .



↓
- conditions for the transportation of goods,

- safety of packaging and labeling,

- their compliance with the standards for accepted goods.

Methods of protection from environmental factors to preserve consumer properties and quality of medical and pharmaceutical products

No.	Environmental factors	Protection methods
one	Physico-chemical	<ol style="list-style-type: none"> 1. Use of packaging that protects against the penetration of moisture, gases and light. 2. Creating the optimal storage temperature. 3. Rational preservation of products. 4. Rational sterilization of products.
2	Mechanical	<ol style="list-style-type: none"> 1. Using rational packaging with high mechanical strength. 2. Proper packing of goods during transportation. 3. The use of closures.
3	Biological	<ol style="list-style-type: none"> one . aseptic production conditions. 2. rational sterilization. 3. Creation of rational storage conditions. 4. Systematic treatment of premises with disinfectants.



**Factors affecting the
consumption of pharmacy
products and their consumer
properties**

Classification of factors influencing the consumption of pharmacy products

sign	Group of factors	Characteristics of factors
<i>Scale of impact</i>	Common to all consumer goods	Level of economic development of the country, population, income of consumers.
Common to all pharmacy products	incidence rate; number of medical and pharmaceutical personnel	
Specific for specific product groups	Form of the disease, age composition of the population	
<i>Direction of impact</i>	Increasing consumption	Approximation of medical and drug care to the population, an increase in the proportion of elderly people, an increase in the number of pharmacy organizations
Reduce consumption	Carrying out preventive measures, introducing prolonged drugs	
<i>Content</i>	quality	The form of the disease, the professionalism of medical and pharmaceutical personnel
quantitative	Incidence rate, population, medical and pharmaceutical staff	

Classification of factors influencing the consumption of pharmacy goods (continuation of the table)

sign	Group of factors	Characteristics of factors
<i>Media Type</i>	Affecting the institutional consumer	Geographical segment of activity, specificity of morbidity in the segment, cost of goods and services consumed, distribution channels
- intermediate consumers	Treatment regimens, availability of restrictive lists, individual preferences	
- end consumers	Doctor's prescriptions and individual preferences, cost	
<i>Duration of exposure</i>	Permanent	Change in population, number of medical and pharmacy organizations
Temporary	Seasonality of drug consumption	
<i>Force of influence</i>	Strong	Incidence rate, population
Moderate	Age composition of the population, preventive measures	
Weak	Cultural level of the population	

Classification of factors influencing the consumption of pharmacy products (end of table)

sign	Group of factors	Characteristics of factors
<i>The nature of the impact</i>	objective	Incidence rate
subjective	The health of a particular person	
Random	Disaster	

**Thank you for
your attention**