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1-я КАФЕДРА ТЕРАПЕВТИЧЕСКОЙ СТОМАТОЛОГИИ

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МОНИТОРИНГ И ОЦЕНКА СИСТЕМЫ СТОМАТОЛОГИЧЕСКОЙ ПОМОЩИ НАСЕЛЕНИЮ

MONITORING AND EVALUATION OF THE SYSTEM OF DENTAL CARE TO THE POPULATION

Методические рекомендации

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Отражены сведения об уровнях отчетности в области стоматологического обслуживания, видах использования информации о стоматологическом обслуживании, связи стоматологической документации с медицинской документацией других служб, об оценке экономической эффективности и качества стоматологического обслуживания, приводятся экономические перспективы внедрения стоматологического обслуживания в систему первичной медико-санитарной помощи.

Предназначены для студентов 5-го курса медицинского факультета иностранных учащихся и врачей-интернов.

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На английском языке

INTRODUCTION

The dental care system has a common foundation with other health services, therefore, general technological management principles can be used in dentistry. To create a rational basis for managing dental care systems and decision making by service managers, an objective information system is needed. Information management systems are needed to collect, collate and organize data for use in managing the dental service.

In the existing service system, large groups of people are re-examined and follow the same scheme in order to establish the number of people who need help. The data collected in the course of such surveys make it possible to measure the effectiveness of maintenance. WHO recommends that various types of information be classified into the following groups:

1. Information for service management (service tasks, resources, results of activities).

2. Information about the management methodology (data relating to the planning and evaluation of dental services).

3. Information on alternative solutions to organizational problems (information regarding alternative methods of dental care).

Information management systems are needed to collect, collate and organize data for use in managing the dental service.

One of the tools that increase the capabilities of control systems is informatics, that is, the detection of information, its manipulation, its storage and transmission using electronic means.

The dental care system has a common fundamental basis with other health services, so common types of informatics technology can be used in dentistry. In the existing service system, large groups of people are re-examined and follow the same scheme in order to determine the number of people in need.

The data collected in the course of such surveys make it possible to measure the effectiveness of maintenance. However, the volume of accumulated data is rapidly increasing, and the analysis of information requires complex processing methods. Millions of units of information relating to the state of the teeth, oral cavity and dental services are currently recorded every day, but these data are used very little.

Different types of reporting planning and evaluation of activities required at each organizational level of a society are presented in Fig. 1.
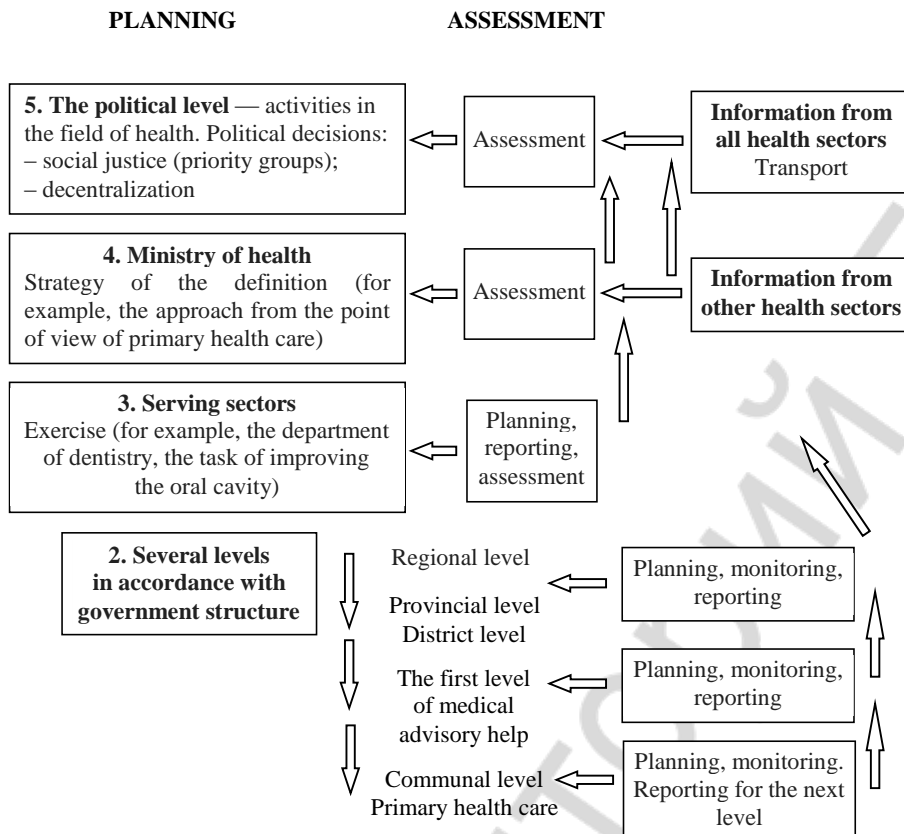
PLANNING   **ASSESSMENT**

5. The political level — activities in the field of health. Political decisions: – social justice (priority groups); – decentralization	Assessment	**Information from all health sectors** Transport
4. Ministry of health Strategy of the definition (for example, the approach from the point of view of primary health care)	Assessment	**Information from other health sectors**
3. Serving sectors Exercise (for example, the department of dentistry, the task of improving the oral cavity)	Planning, reporting, assessment	
2. Several levels in accordance with government structure	Regional level Provincial level District level	Planning, monitoring, reporting
	The first level of medical advisory help	Planning, monitoring, reporting
	Communal level Primary health care	Planning, monitoring. Reporting for the next level

Figure 1. Different types of planning, reporting and evaluation required on each organizational level

In Fig. 2 defines the levels at which different sets of information on dental services are used, as well as how the interrelation between different sectors in the field of oral hygiene — data "providers" to the information system and users of the information system itself — should be implemented.

The information system should serve as a useful link in all activities of the oral hygiene sector.

This is due to the fact that the information is often saturated with non-standard abbreviations, codes or symbols, is recorded in an inaccessible form, and the lack of a clear strategy for the use of data by service personnel and administrators.
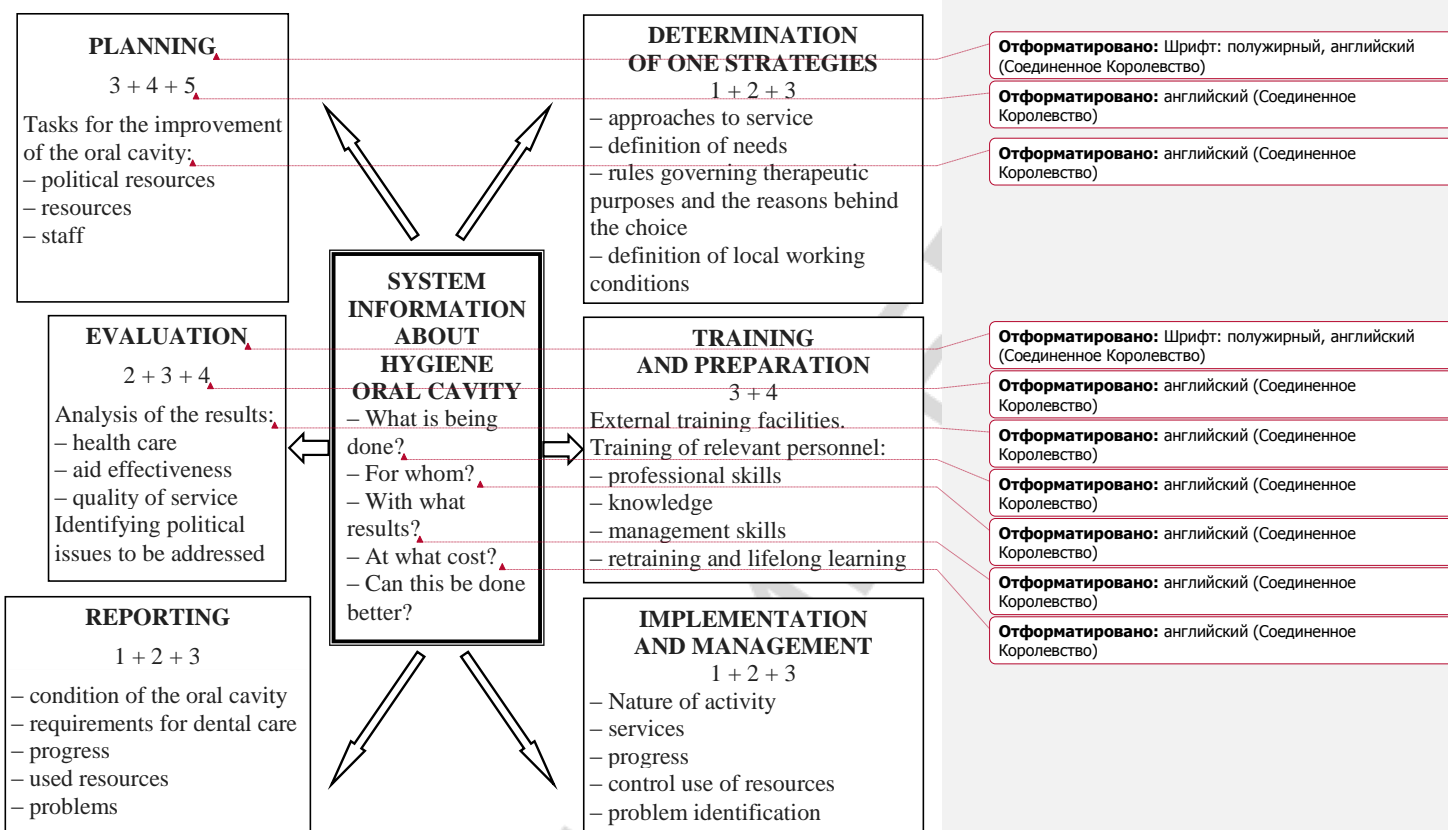
PLANNING

3 + 4 + 5

Tasks for the improvement of the oral cavity;
– political resources
– resources
– staff

DETERMINATION OF ONE STRATEGIES

1 + 2 + 3

– approaches to service
– definition of needs
– rules governing therapeutic purposes and the reasons behind the choice
– definition of local working conditions

EVALUATION

2 + 3 + 4

Analysis of the results;
– health care
– aid effectiveness
– quality of service
Identifying political issues to be addressed

SYSTEM INFORMATION ABOUT HYGIENE ORAL CAVITY
– What is being done?
– For whom?
– With what results?
– At what cost?
– Can this be done better?

TRAINING AND PREPARATION

3 + 4

External training facilities.
Training of relevant personnel:
– professional skills
– knowledge
– management skills
– retraining and lifelong learning

REPORTING

1 + 2 + 3

– condition of the oral cavity
– requirements for dental care
– progress
– used resources
– problems

IMPLEMENTATION AND MANAGEMENT

1 + 2 + 3

– Nature of activity
– services
– progress
– control use of resources
– problem identification

Figure 2. The level at which information is used regarding health oral cavity

The informatics technology has considerable potential for dental care, as the number of types of information is more clearly defined and information is readily available both in the form of individual pieces of information and summary data. The information system in dentistry can improve the level of staff training, management and patient care. The WHO considers it appropriate to encourage the use of informatics in the management of dental care programs. The WHO oral hygiene section plays a coordinating role in this area.

Information is needed for internal operations at all levels of the dental care program. Accepting specific data facilitates the coordination of activities and the mutual support of organizational units in national health and oral health systems.

TYPES OF INFORMATION DATA, THEIR USE AND METHOD OF COLLECTION

Demographic data include detailed information on the size of the population, its distribution by age and geography, socio-economic factors and their trends over time. Such information is obtained from population censuses and from various reports of public services.

Data on dental health — at the municipal, district and other levels determine the dental status or the corresponding morbidity of the population. Data can be grouped according to certain demographic factors and used to determine health trends. These data are usually collected during oral health programs, during routine maintenance, or during special examinations.

Information about health services characterizes health care activities, including education, fluoride regulation, and other measures to protect and promote health. These data are used to assess the performance of dental services and prevention programs, they determine levels of effectiveness, efficiency and adequacy of resources and are collected by dental staff.

Data on behavioral norms and attitudes towards various forms of health practice, including the dental care system. These data are used for interaction between dental programs and representatives of the population, as well as to assess trends in self-help, the degree of public awareness about preventive measures.

Data is usually collected in the process of conducting special surveys and interviewing individuals when seeking help.

Auxiliary data on health programs characterize resources and the progress of program implementation, as well as their management. They are used in developing strategies and setting priorities for conducting systematic research, for training programs for professional and support staff, for justifying the need for programs, for planning and evaluating resources (staff, materials, etc.), and for managing them. These data are usually collected using standardized counting methods and procedures.

REPORTING LEVELS IN THE FIELD OF THE STOMATOLOGICAL SERVICE

The extent of data registration by dental personnel varies widely and is dictated by the requirements of the system in which they operate. Given the possibility of having the most different categories of reporting, in the field of dental services there are 3 levels:

The first — the base — the lowest level of reporting — is the count of the number of patients treated and the procedures of each type. This is a quantitative definition of current activities. It can help planners assess the adequacy of existing staff, as well as establish the degree of rationality of the types of services offered.

The second level — an intermediate reporting system — provides a description of the patient's condition before treatment, an indication of the diagnosis, treatment needs and procedures provided to each person who requested help. This allows you to more accurately assess the compliance and adequacy of the dental care system and to assess the long-term effectiveness of treatment.

The third — the highest level of reporting — includes reporting and processing of separate data on conditions, diagnoses, scheduled treatment, and procedures actually performed. This level of accountability is very difficult to achieve, as it is necessary to link information about dental care in time on an individual basis. However, this level allows a more accurate assessment of the functioning of the dental care system than the previous two.

TYPES OF USE INFORMATION ABOUT STOMATOLOGICAL SERVICE

The World Health Organization recommends highlighting the following uses for dental care information. Using data at the individual level. The key to any system of data on dental care must be patient, since specific recommendations on service issues are developed at the level of individual therapy. Setting general priorities and some performance evaluations are possible at the summary data level, and at the individual level most of the dental procedures are performed, and it is from the patient himself that information should be obtained that will make possible general assessments of his or her health and maintenance. Patients or parents and caregivers should be given detailed information about their general condition, as well as recommend self-help measures.

Use data locally. The uses of data at the local level vary depending on the nature of the administrative structure of the dental care system. Many uses of information at the medical advisory, national level are also applicable in some situations and at the local (community) level. This is especially acceptable for countries with decentralized service systems. In most cases, at the local level, data are used to estimate the coverage of the program, the cost of treatment, and the ability of the program to improve dental health.

Use of data at the level of medical advice. The main function of the medical advisory center should be to provide individual dental services. Persons responsible for planning activities at the medical advisory level will need information about the estimated needs for various types of services.

In some dental care systems, when a patient is sent to a treatment center, the doctor is given information about the prescribed treatment.

In other systems, the initial examination and registration of the oral condition, requiring procedures that go beyond the primary health care, are carried out directly at the level of medical advice, despite the fact that the need to refer the patient for consultation and treatment was noted at primary health care.

Use of data at the national level. At the national level, the use of data should be significantly different from previous levels. The responsible authority should

periodically assess the compliance of the activities at the local (municipal) and medical advisory level in order to ensure optimal dental health. The second assessment should ensure optimal operation at all levels. The most important use of data on appointments and treatment should be the regular determination of the types and amount of necessary dental personnel.

COMMUNICATION OF DENTAL DOCUMENTATION WITH MEDICAL DOCUMENTATION OF OTHER SERVICES

Linking general health services and dental records is important. The information contained in the general medical documentation can help to identify those who are at increased risk of developing dental diseases and those for whom special precautions should be taken when carrying out medical procedures. Various lesions of the oral cavity can be early symptoms of systemic disorders.

At present, the connection of general medical and dental documentation is insufficient. However, as the organization of documentation improves, the possibilities for communication and transmission of various types of registration data will increase.

STRATEGY DETERMINING REGULAR AND ACCURATE INFORMATION COLLECTION

One of the main principles determining the strategy for obtaining information is that data collection should not become an unbearable burden for the personnel responsible for this activity.

For people and organizations that are at different levels of activity, characterized by different points of view. So, for practitioners, the main task is to provide the patient with the necessary treatment, and some data may seem unnecessary for this purpose. For planners with other priorities, the same information may be of the utmost importance.

These differences should be taken into account in the process of developing monitoring and evaluation systems and try to maximize their leveling.

To ensure constant, reliable information from the dental care system, it is important that the nature of data registration is comparable to the functioning of the system at this level and contributes to it. It is preferable to collect data using a simple system that could be developed as you gain experience and become aware of the need to expand the data.

SERVICE MONITORING AND ORGANIZATION FOR SPECIAL GROUPS OF POPULATION

Special population groups are groups of people whose needs are not sufficiently taken into account within the framework of existing dental care systems and require increased attention during monitoring. The classification of

such special populations may be based on a prognosis of incidence or on a population perspective.

Special groups include:

a) in terms of the prognosis of morbidity:

− persons with an increased risk of developing more severe stages of dental diseases;

− persons prone to the development of infrequent, but serious oral diseases that lead to severe disability and even death;

b) from the point of view of population perspective:

− persons who are disabled as a result of a mental or physical disorder;

− persons living in specific conditions that threaten health and contribute to the development of diseases;

− persons deprived of normal access to existing dental care services.

This classification is based on the concept that the fight against dental caries and periodontal diseases largely depends on social behavioral factors and lifestyle. Compliance with the rules of oral hygiene, maintaining optimal levels of fluoride, the choice of a balanced diet prevents the development of dental caries and periodontal diseases.

ASSESSMENT OF ECONOMIC EFFICIENCY AND QUALITY OF DENTAL SERVICE

The main areas of use of the results of economic evaluation:

a) planning objectives;

b) the justification of costs;

c) the objectives of practical implementation.

To ensure monitoring and evaluation of the cost and quality of treatment, it is necessary to know the amount of costs and criteria that determine quality. Based on the volume of financing, it is necessary to determine which types of services should be provided and which types should be abandoned. Dental care programs must be cost-effective and to ensure the maximum fulfillment of functional duties at a given cost of services and achieve their goals.

During the assessment it is important to get answers to the questions:

1) the effectiveness of the program;

2) the expediency of continuing work;

3) the need for adjustment.

Monitoring is a multistage process. Budget estimates allow you to analyze the allocation of resources to different sections of dental services and determine whether the program is carried out in accordance with the outlined plan and, if necessary, make changes.

The main types of costs for dental care:

1) staff costs;

2) the cost of basic services;

3) the cost of funds used.

MONITORING EXPENSES

Financial control requires monitoring the development of a project or program over time, as well as in terms of the cost of service quality and subsequent comparison with the planned course of activities. Expenditures to be monitored may include:

1) the cost of one event per unit of time;
2) the cost of the service;
3) a change in the cost of one change in the type of activity.

SERVICE QUALITY MONITORING

In accordance with the WHO recommendations, quality can be determined for all types of dental care using the following factors.

1. The performance factor is determined by the degree of achievement of the goals.

2. The planning factor — includes aspects of work relating to the solution of the following issues:

− organizing the conditions in which dental care is provided;

− pre-planning procedures;

− appropriate use of dental materials;

− attracting competent staff.

3. The actual maintenance factor — covers the parameters that affect the implementation of dental procedures. This factor is closely related to the performance factor.

4. The personal factor is part of the service factor itself and characterizes the personal qualities of the staff (professionalism, hard work). Control of the personality factor can be carried out through licensing procedures, certification.

5. The patient's personality factor is a factor that includes questions depending on the patient and his behavior.

6. Great importance should be attached to the symbiosis between the patient and the service personnel. This will allow a more realistic assessment of therapeutic procedures and self-help. The practice of providing patients with documented information about the state of dental health should be permanent.

7. The quantity factor determines the relationship between the capabilities of the service and the needs of the population. It is advisable to optimize costs by eliminating ineffective, outdated types of dental care.

8. Cost factor — a factor that determines the level of costs for dental services, which is considered in conjunction with existing resources.

The main goal of any oral health improvement program should be to achieve results that would improve the dental health of the population. Successful achievement of this goal should be subject to continuous evaluation and monitoring.

ECONOMIC PERSPECTIVES OF INTEGRATION STOMATOLOGICAL SERVICE SYSTEM IN PRIMARY MEDICAL AND HEALTH CARE

In most developing countries, it is usually not possible to put in place an independent dental care system. Some states already have well-developed primary health care systems, and it is necessary to integrate the dental care system into the existing infrastructure.

Personnel required for the implementation of dental programs already exist (employees of dental institutions, schools, e.t.c.)

MONITORING OF ORAL CAVITY IMPROVEMENT PROGRAMS

The monitoring system is an integral part of the dental care system and is based on detailed registration of the dental status data with subsequent analysis.

The table presents the main elements of monitoring and evaluation and indicates the organizational levels at which information collection and research should be carried out.

Key elements of the system for monitoring and evaluating the oral health program
(from a public health perspective)

Basic data elements		Levels of data collection and use	Areas affected by core data items
Main areas Units	**Subunits**	**PHC 1MAL 2MAL**	
Conditions: – characteristics of the population; – state of the environment; – clinical/epidemiological picture of the state of the oral cavity; – psychosocial factors	Demographic characteristics. Age structure. Geographical features. Representation. Knowledge. Values Relations. Behavior. Health care practice	+ – + + + + – – – – + – – + –	1. Lifestyle. Self-help. Regular interaction with the public
Services: – planning; – organizational / program; – actually provided	Information. Use of fluoride. Self help Outside help. Education. Use of fluoride. Superficial procedures. 1MAL 2MAL	– – + + + — – – – + +	2. Prevention. Leaders from the community. Mouth/general health; access; regular interaction with the public; minimal intervention; medical advice; appropriate personnel and technology; supplement to primary health care; rehabilitation and rehabilitation treatment; specialized assistance

Basic data elements		Levels of data collection and use	Areas affected by core data items
Main areas Units	**Subunits**	**PHC 1MAL 2MAL**	
Resources: − political; − financial; − staffing; − in education; − basic funds		+ − + − + − + − −	3. Leaders from the community; access; regular interaction with the population; minimal intervenetion; medical advice; proper personnel and techno-logy; supplement to primary health care; restorative and rehabilitative treatment; specialized assistance
Scientific base: − updating of scientific knowledge; − internal review		+ + − − + − − − − −	4. Prevention. Minimum intervention. Appropriate staff and technology

Symbols: "−" — collects data; "+" — uses data; PHC — primary health care; 1MAL — the first medical advisory level; 2MAL — the second medical advisory level.

SCIENTIFIC RESEARCH DATA

Improving dental health cannot be achieved without the use of modern technology. Research data should be used at all levels of dental care. Research information can be obtained from external and internal sources.

INTERNAL REVIEW

The internal review should be part of the dental assessment process, and the results of the review process should be an element of the scientific basis of the oral health programs. Regular monitoring of existing services will identify positive factors that can be usefully implemented in other regions. During the review process, there are opportunities for comparing estimates of programs implemented in different areas. It is useful to conduct reviews and analysis of programs, both existing and completed.

UPDATE OF SCIENTIFIC DATA

To update scientific knowledge, you must have information on:
− the latest technical advances in each section of the activity;
− needs for continuous training and attendance of courses;
− the number of personnel attending on-the-job training during the year;
− number of staff with diplomas and degrees in public health;
− the planned number of students for future training programs.

RECOMMENDATIONS AND CONCLUSIONS

Recommendations:

1. It is necessary to develop an information system that is compatible with computer technology and that aims to stimulate the use of a systematic approach to monitoring and assessing the state of the oral cavity.

2. In the process of studying the health services, it is necessary to investigate the effectiveness of methods for integrating oral health improvement and the primary health care system.

3. Every 3–5 years it is necessary to monitor the dental status of the population in order to adequately assess the effectiveness of the dental care system.

4. The use of monitoring and evaluation should lead to a more rational use of financial resources in order to ensure the dental health of the population.

Findings:

1. The basis of oral health programs, including monitoring and evaluation, should be a health-oriented approach.

2. The incidence of the disease, and therefore the necessary assistance, should be monitored to determine staffing needs and its training within available resources.

3. The oral hygiene system should be based on primary health care service.

4. Any system for monitoring oral health should be sensitive enough to identify the risk of dental diseases.

TEST QUESTIONS

1. To define the concept of "computer science":

_____
_____
_____

2. WHO recommends classifying various types of information into the following groups (cross out the unnecessary):

A. Information for service management.
B. Information on management methodology.
C. Information on the activities of non-state ownership structures.
D. Information on the prevalence of dental diseases.
E. Information on alternative solutions to organizational problems.

3. Name the levels of dental care planning required at each organizational level:

_____   _____
_____   _____

13

4. Name the levels at which information is used regarding the improvement of the oral cavity (cross out the unnecessary):
– planning;
– assessment;
– reporting;
– strategy definition;
– education and training;
– implementation and management.

5. List the types of information related to dental care:
_____
_____

6. Describe the type of information "demographic data":
_____
_____

7. Describe the type of information "dental health data":
_____
_____

8. Describe the type of information "information about the health services":
_____
_____

9. How many levels of reporting in the area of dental care are recommended by WHO?
1) 3;   2) 5;   3) 2;   4) 7.

10. Describe the basic level of reporting in the field of dental services:
_____
_____

11. Options for using dental health information in accordance with WHO recommendations (cross out the unnecessary):
– use of data at the level of health care;
– use of data at the individual level;
– use of data at the local level;
– use of data at the level of medical advisory assistance;
– use of data at the national level.

12. Is the linkage of documents on general health services and dental care appropriate and why?
– YES _____
– NO _____

13. Describe the "special population groups" from the point of view of dental health: _____
_____

14. Present the classification of "special population groups" in accordance with the WHO recommendations:
_____

15. The main areas of use of the results of economic evaluation:
– planning goals;
– training;
– justification of costs;
– goals of practical implementation.

16. The main types of costs for dental care: _____
_____

17. Define the term "monitoring": _____
_____

18. Name the factors that can be used to determine the quality of all types of dental care in accordance with the WHO recommendations.
_____
_____

19. Sources of research information:
– _____
– _____

20. What information is needed to update scientific knowledge?
– _____
– _____

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