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THE IMPORTANCE OF COMMUNAL HYGIENE IN PROTECTING HUMAN HEALTH

Annotation: Prevention of diseases, protection of human health, ensuring the ecological stability of the environment are among the main urgent issues in the field of health care.

The issues of training, retraining, selection and placement of medical personnel are gaining increasing importance. The quality level of training of medical personnel should be raised in accordance with the State educational standards.

As stated in the State Program for Reforming the Health Care System, it is necessary to provide the population with new medical services, maintain and protect their health, form competition in the system, raise our national medicine to the level of world standards, and ensure the training of new personnel capable of competing at the highest level of the health care system of the Republic of Uzbekistan, meeting modern requirements, and ready for practical work.

Keywords: Medical staff, communal hygiene, population, quality drinking water, water supply, sanitary control, infectious diseases, chemical indicators, organoleptic indicators.

INTRODUCTION

Providing the population with sufficient quantities of high-quality drinking water is of great importance in protecting public health and preventing infectious diseases. Many specialists are contributing to solving problems in this regard. The effectiveness of sanitary supervision is based on: the work methods of medical and preventive workers in providing the population with centralized and local drinking water; standardization of drinking water quality; study of the natural state of water sources; the condition of sanitary and technical facilities, their use to improve water quality, and the results of laboratory tests of water quality.

The implementation of hygienic requirements for providing the population with high-quality drinking water in practice depends on the main indicators of samples taken for laboratory testing. This is carried out by inspecting water supply facilities from a sanitary point of view, including monitoring the sanitary condition of local waters.

Hygienic requirements for the quality of drinking water and methods of its quality control.

The role of practical training in teaching students about the state of providing the population with high-quality drinking water is mainly to provide students with a warning and current sanitary control through the implementation of the State Standard, and to compare the quality of water with the hygienic requirements of the students and express their opinions.

The water factor plays a significant role in the spread and occurrence of a number of infectious diseases (typhoid fever, paratyphoid, dysentery, cholera, hepatitis, tuberculosis, anthrax, amebiasis, helminthiasis, etc.), as well as non-waterborne diseases (sickness, endemic gout, endemic fluorosis and caries, water-nitrate methemoglobinemia, etc.).

Water supply is a set of measures and technical devices aimed at providing the population with high-quality drinking water. Two types of water supply systems are distinguished: local and

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centralized. In a centralized water supply system, water is mechanically extracted from the source, processed and supplied to consumers through water supply networks, while in local water supply, consumers use the water source itself directly.

To protect water supplied to consumers from accidental or systematic contamination, it is necessary to organize sanitary protection zones and install hermetic sealing devices in the water supply system.

METHODS

The quality of drinking water supplied to consumers is assessed in the following places, by its composition and characteristics: at water intake points, before water is supplied from water supply sources to the networks, and in the distribution network. The quality of water supplied to the network, regardless of the type of water source, the use of methods for improving its quality, and the peculiarities of the design of water supply pipelines, must meet the following hygienic requirements: 1) it must be safe from an epidemiological point of view; 2) it must be harmless in terms of chemical composition; 3) it must have pleasant organoleptic properties; 4) it must be free from radiation; 5) it must be safe from a parasitological point of view.

The epidemiological safety of drinking water is determined by the following indirect indicators: the level of total bacterial contamination and the number of E. coli bacteria. Total microbial count – the number of saprophytic microorganisms in 1 ml of undiluted water should not exceed 100, coli index – the number of E. coli in 1 liter of water should not exceed 3, coli titer – the minimum amount of water containing 1 E. coli, should not be less than 300 ml.

Epidemiological and parasitological indicators of drinking water quality.

Indicators	Unit of measurement	Standard
I. Epidemiological indicators		
1. Total microbial count	Number of microbes in 1 ml of undiluted water	No more than 100
2. Coli index	Escherichia coli bacteria in 1000 ml of water	No more than 3
3. Escherichia coli (new fecal contamination indicator)	The number of Escherichia in 300 ml of water	No (if detected, repeat testing for coliforms and Escherichia coli will be performed)
4. Coliforms	The number of leaf forming units in 200 ml of water	None (only found in open water sources)
II. Parasitological indicators		
1. Pathogenic intestinal protozoa: Giardia, cysts, amoebas, balantids	Cysts in 25 ml of water	None (only found in open water sources)
1. Eggs of a gypsy moth	Number of eggs and larvae in 25 ml of water	None (only found in open water sources)

Water in the centralized drinking-domestic water supply quality control.

The quality of drinking water supplied to consumers through centralized water supply is ensured by the accredited production laboratory and central laboratories established by the Suvsoz Department.

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Water quality control is carried out in the laboratories of the State Sanitary Supervision Centers in accordance with the established procedure.

Technical control of water quality at various stages of the process of improving the quality of drinking water is carried out in accordance with technological regulations, based on a schedule agreed with the Republican State Sanitary Epidemiological Supervision Center.

Water quality control and its compliance with established hygienic requirements are carried out at the points of water intake from water sources, at the stages of purification, before entering the distribution network and in the distribution network.

The number of water samples and tests at water intake facilities, clean water storage tanks, pressure networks and distribution networks is determined in agreement with the Republican State Sanitary Epidemiological Supervision Centers. In the distribution network, water sampling points are determined at the main main networks, at the street, water intake networks, closed networks, and at high elevations of the network, at the points where water is pumped to the upper floors.

RESULTS

Water quality control is divided into the following types:

- Reduced control (total number of microbes, coli index, organoleptic indicators);
- General physico-chemical control: (natural in origin and components added during preparation of water quality);
- Special virological and parasitological;
- Special toxicological control (individual toxic substances, substances with carcinogenic effects);
- Special radiation control

When chlorine compounds and ozone are used to disinfect drinking water, their residual amounts must be determined every hour.

The quality of drinking water in the distribution network is checked according to reduced control parameters.

Monitoring of general physical and chemical parameters is carried out at the initiative of local sanitary workers or water supply departments in case of deterioration of water quality and other complaints.

In cases where the analysis of a sample of water taken from the distribution network shows high levels of contamination with microorganisms, it is recommended to re-test the water. If the coli index is higher than 20 in two subsequent samples, the sanitary authorities decide to re-test the water to detect pathogenic enterobacteria, and if coliphages are found in two consecutive samples, then re-test the water to detect the presence of enteroviruses. In such cases, it may be recommended to test the drinking water for the presence of hepatitis A virus antigen, as well as to determine the mineral nitrogen-containing substances and chlorides in the distribution network water.

The types and timing of water samples taken by the republic's sanitary workers are carried out in accordance with the procedure established by special instructions of the Ministry of Health of the Republic of Uzbekistan, based on approved special plans and schedules for monitoring the quality of drinking water.

Assessment of the sanitary condition of centralized drinking-domestic water supply sources.

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The selection and suitability of water sources is carried out taking into account the possibility of obtaining sanitary-reliable and safe drinking water. They, in turn, must meet the hygienic requirements and quality control requirements for drinking water.

The suitability of centralized drinking-household water supply sources is determined on the basis of:

- sanitary assessment of the conditions of formation and location of groundwater;
- sanitary assessment of the upper and lower parts of open water sources from the water intake points;
- sanitary assessment of the location of water intake facilities;
- forecasting the sanitary condition of the water source.

Data collection for the selection of water sources, as well as the study of sanitary-hydrological, hydrogeological and topographic conditions, as well as the development of forecasts for the sanitary state of water bodies by design institutions will be organized (this will involve scientific research institutes with expertise in the hygienic field, as well as employees of the State Sanitary Epidemiology Center).

The locations of water source sampling are determined and implemented by the local sanitary organization, and the samples taken are performed in laboratories authorized by the legislation of the Republic of Uzbekistan.

DISCUSSION

Hygienic and sanitation - technical requirements.

In addition to the requirements specified in the tables below, the composition of groundwater and open water sources must meet the following requirements:

- dry residue should not exceed 1000 mg/l (up to 1500 mg/l may be allowed with the permission of the local sanitary organization);
- chloride content should not exceed 250 mg/l (up to 350 mg/l is allowed);
- sulfate content should not exceed 400 mg/l (up to 500 mg/l is allowed);
- total hardness should not exceed 7 mg-eq/l (up to 10 mg-eq/l is allowed)
- the concentration of chemical substances in the water source water should not exceed the permissible concentration and radiation safety standards in force in the territory of the Republic of Uzbekistan.

The flow rate (the ratio of water volume to consumption) of the selected water source should fully satisfy the population's water needs. The amount of water withdrawn from the source throughout the year should not exceed the population's consumption.

Rules for the selection of water sources and assessment of suitability.

Centralized water supply sources are selected in the following order, taking into account their sanitary reliability:

- underground interlayer pressure water sources;
- underground interlayer pressureless water sources;
- groundwater and artificially recharged river waters;
- open water sources (rivers, lakes, reservoirs, canals).

If there are several water supply sources with equal opportunities in terms of quality and quantity, the choice of the source is made taking into account the availability of water treatment systems, sanitary reliability and technical and economic conditions.

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Water quality is based on the results of complete laboratory tests taken from water intake points. To have a complete picture of the tests, samples taken from water sources should be analyzed over the past two quarters.

The class of centralized water supply sources is determined by the organizations developing water supply projects.

The conclusion on the suitability of a water supply source should contain the following information:

- the quality of water at the source;
- forecasts for meeting the population's water needs;
- methods of treatment to bring it into line with drinking water requirements, including the establishment of sanitary protection zones.

Water supply water quality classes and water treatment methods

Groundwater sources:

Class 1: Fully meets the requirements of the State Standard "Drinking Water". Can be directly supplied to consumers.

Class 2: Aeration, filtration and disinfection methods are used.

Class 3: In addition to methods for improving the quality of water in class 2, filtration, pre-clarification, the use of various reagents and other means is required.

Open water sources:

Class 1: water quality is brought into compliance with the requirements of the State Standard "Drinking Water" by coagulation or by using methods of clarification, filtration and disinfection.

Class 2: Coagulation, clarification, filtration and disinfection are required, and microfiltration is required if phytoplankton is present.

Class 3: In addition to the treatment facilities specified in Class 2, it is recommended to use clarification, oxidation and sorption methods, more effective disinfection and other special methods.

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