



## **PROBLEMS AND SOLUTIONS WATER SUPPLY OF THE POPULATION OF THE REPUBLIC OF UZBEKISTAN**

**A.D. Dauletbayev., A.O. Abdullayev**  
Kimyo International University in Tashkent

<b>Article history:</b>	<b>Abstract:</b>
<b>Received:</b> January 10 <sup>th</sup> 2023	<b>Objective:</b> Development of sanitary norms, rules and hygiene standards aimed at ensuring public health and preventing non-communicable diseases and acute intestinal infections, especially among the population living in rural areas. <b>Material and methods:</b> The objects of the study were small-scale water supply systems that provide drinking water to the population of rural areas of the republic. To achieve the goal, we used proven sanitary and hygienic methods, epidemiological and scientific analysis. <b>Results:</b> At the beginning of 2021, about 70% of the population of the republic was covered by centralized water supply networks. Of the total number of these water pipes, 6.1% did not meet sanitary and hygienic and technical requirements. Every year, according to chemical indicators, the quality of water, both in surface water bodies and tap water, during the flood period is mainly within the permissible deviations. <b>Conclusions:</b> Violation of certain sanitary rules both in the organization of water supply and in the process of operation of the water supply system entails sanitary problems, up to extreme situations associated with the occurrence of epidemic outbreaks.
<b>Accepted:</b> February 10 <sup>th</sup> 2023	
<b>Published:</b> March 20 <sup>th</sup> 2023	

**Keywords:** drinking water, small water supply and sanitation systems, prevention, acute intestinal infections, noncommunicable diseases.

Speaking about the problems of ensuring security and stability in Central Asia, it is impossible to ignore such an important issue as the sharing of shared water resources in the region. In the presence of global environmental problems and in conditions of extreme limitations of natural non-renewable resources, as well as very rapid growth of the world's population, the study of the causes of water pollution, finding ways to clean up can contribute to socio-economic growth in the country and support a healthy lifestyle.

The current stage of the development of the economy of the Republic of Uzbekistan sets itself fundamentally new tasks, one of which is aimed at organizing measures to ensure the sanitary and epidemiological well-being of the population, prevention of infectious and non-communicable diseases, reducing the impact of risk factors on the body human. It is especially important to take into account, in the conditions of the coronavirus pandemic, the provision of an appropriate disinfection regime at water intake facilities, as well as systematic laboratory control of water for virological, microbiological indicators and control of especially dangerous intestinal infections.

The urgency of solving the problems of monitoring, standardization and determination of criteria for the quality of drinking water remains due to the increasing.

### **THE PURPOSE OF THE STUDY**

Development of sanitary norms, rules and hygienic standards aimed at ensuring public health and prevention of non-communicable diseases and acute intestinal infections, especially among the population living in rural areas.

### **MATERIAL AND METHODS**

The objects of the study were small-scale water supply systems that provide drinking water to the population of rural areas of the republic. Proven sanitary and hygienic methods, epidemiological and scientific analysis were used to achieve the goal.

### **RESULTS AND DISCUSSION**

Safe water of acceptable quality for human consumption, which is available in sufficient quantity, is available physically and by cost, is one of the main prerequisites for human well-being. Access to safe water is a fundamental factor not only for good health, but also for a satisfactory livelihood, human dignity



and prospects for economic growth and education. The lack of access to sufficient quantities of safe water leads to human suffering and loss of human potential, which cannot be justified from an ethical point of view and causes direct damage to the economy [1-3].

In this regard, the introduction of alternative options for organizing the activities of small water supply and sanitation systems, especially in rural areas, is becoming most relevant. The experience gained from pilot projects shows the positive effect of such management. And, consequently, the issue of studying water quality in rural settlements is the main goal of the sanitary and epidemiological service of the republic in preserving the health of the population from diseases associated with the water factor and, first of all, from acute intestinal infections.

At the beginning of 2021, about 70% of the population of the republic was covered by centralized water supply networks. At the same time, the lowest coverage of centralized water supply networks was observed among the rural population in the Republic of Karakalpakstan – 52.4%, Bukhara – 53.4%, Kashkadarya – 54.2%, Surkhandarya – 54.5% and Khorezm – 56.5% regions. The Sanitary and Epidemiological Service of the Republic oversees 4251 rural and departmental water pipes. Of these, 79 (1.9%) with water intake from open reservoirs provide the population, mainly of large settlements. The remaining water pipes, i.e. a larger number of them are fed from underground sources.

Of the total number of these water pipes, 6.1% did not meet sanitary and hygienic and technical requirements. At the same time, the majority, or 80.3% due to the lack of disinfection installations (of the total number), 40.4% - due to non-compliance with the sanitary protection zone. All this cannot but affect the sanitary and epidemiological well-being of the territories.

Annually, according to chemical indicators, the quality of water, both in surface reservoirs and tap water, during the flood period is mainly within acceptable deviations. Only in August there was a slight increase in the detected percentage of samples with a deviation from sanitary and hygienic requirements due to a decrease in the total volume of the watercourse and elevated atmospheric temperatures, which adversely affects water quality indicators, mainly in terms of mineralization and overall hardness, as well as microbiological indicators, especially when it is supplied hourly.

Also in the summer months, during the autumn, the concentration of mineralization salts both in the water in the springs and in the drinking water itself increases, especially in the lower reaches of the Amu-Darya River and in certain areas of the Ferghana, Tashkent, Syrdarya, Navoi and Bukhara regions.

According to monitoring data on chemical indicators, in 2020 the water quality of centralized water supply systems also improved slightly, there were 8.2% of non-conforming samples (in 2019 - 8.8%). The most unfavorable water by chemical indicators due to such indicators as mineralization, total hardness, chloride and sulfate content was observed in Bukhara – up to 11.0%, Namangan – 15.5%, Tashkent – up to 15.0%, Ferghana – 11.3% regions and in the Republic of Karakalpakstan – 18.2%.

The quality of drinking water according to bacteriological indicators improved slightly in 2020 compared to 2019, as evidenced by the results of laboratory control: the indicator was 6.2% (in 2019 – 7.6%) [1].

The analysis of the incidence of acute intestinal infections in the republic over the past 5 years (2016-2020) showed a decrease of 1.8 times (in 2016, the intensive incidence rate was 118.9, in 2017 – 134.3, in 2018 – 123.4, in 2019 – 141.2, then in 2020 – 65.0). At the same time, the highest morbidity rates (intensive indicator – 141.2) were registered in 2019. During this period, the most pronounced decrease in morbidity was registered in Namangan, Navoi, Syrdarya, Bukhara and Khorezm regions. A sharp decrease in the incidence of acute intestinal infections in 2020 can be attributed to quarantine measures in connection with the pandemic of coronavirus infections.

The analysis of the emerging epidemic situation, especially in connection with the problems arising during the pandemic, calls for the resumption and tightening of a number of measures aimed at preventing the occurrence of outbreak situations, as well as preventing the occurrence of complications of the epidemiological situation in the regions. Based on this, a number of mandatory preventive measures were proposed to the territorial bodies of the sanitary and epidemiological service:

- develop comprehensive action plans for the current year in case of an extreme situation and coordinate them with local authorities;
- “Uzsuvtaminot” services and enterprises and institutions that have water pipelines and sewers on their balance sheet are in constant mobilization readiness to eliminate accidents at water supply and sewerage facilities, repair and restore networks. Have constant standard necessary supplies of disinfectants and coagulants;
- to provide laboratory control on a systematic basis in a tightened regime, in addition to tap water, also decentralized water supply and the quality of imported water;
- to issue proposals on tightening the disinfection regime and compliance with personal hygiene



conditions at all public utilities, catering facilities, preschool and school institutions, etc.

Organizations (legal entities) operating in the field of household and drinking water supply are obliged to ensure that the quality of the supplied water complies with sanitary rules, norms and hygienic standards, as well as state standards [2].

The described measures and recommendations formed the basis of sanitary norms and rules No. 0372-20 "Temporary sanitary rules and regulations for the organization of activities of state bodies and other organizations, as well as business entities in the conditions of restrictive measures in connection with the COVID-19 pandemic (new edition)", as well as sanitary norms and rules "Hygienic requirements for the quality of non-centralized water supply and sanitary protection sources in the conditions of Uzbekistan" (project).

## **CONCLUSION**

1. Centralized water supply, even at the level of small systems, allows you to dramatically raise the level of sanitary culture of the population, helps to reduce morbidity. Violation of certain sanitary rules both in the organization of water supply and in the operation of the water supply system entails sanitary problems, up to extreme situations associated with the occurrence of epidemic outbreaks.

2. Massive and severe consequences of public health violations are associated with the possibility of transferring pathogens of intestinal infectious diseases with water. The developed restrictive measures and recommendations on the organization of the work of water supply organizations are aimed at preventing the occurrence and spread of infections transmitted by water.

## **LITERATURE**

1. Departmental statistical reporting form-25-Ministry of Health of the Republic of Uzbekistan. Tashkent: 2019-2020 reporting periods. – 49 p.
2. On sanitary and epidemiological welfare of the population: The Law of the Republic of Uzbekistan // Collection of legislation of the Republic of Uzbekistan. – 2015. – No.34. – St. 451. 2019. – №2. – Article 47.
3. The UN Development Program. Summary of the 2006 Human Development Report What lies behind the lack of water: power, poverty and the global crisis of water resources. New York, UNDP, 2006 ([http://hdr.undp.org/en/media/HDR\\_2006\\_RU\\_complete.pdf](http://hdr.undp.org/en/media/HDR_2006_RU_complete.pdf)), as of September 25, 2010). – 58 p.