



Prevention Of Occupational Diseases In The Healthcare System: Ways To Improve And Develop Preventive Measures

Rakhimova Kh.M	Samarkand State Medical University, Samarkand, Center for the development of professional qualification of medical workers, Tashkent, Republic of Uzbekistan
Rustamova Kh.E	Samarkand State Medical University, Samarkand, Center for the development of professional qualification of medical workers, Tashkent, Republic of Uzbekistan
Narmukhamedova N.A.	Samarkand State Medical University, Samarkand, Center for the development of professional qualification of medical workers, Tashkent, Republic of Uzbekistan

ABSTRACT	<p>This article examines in detail the prevention of occupational diseases among healthcare workers. It analyzes the causes of these diseases, identifies the main risk factors, and presents methods for improving preventive measures. The study's findings indicate that regular medical examinations, hygiene training, rehabilitation programs, and the introduction of modern technologies can effectively reduce occupational disease rates. The importance of introducing international experience and expanding psychosocial support programs is substantiated.</p>
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Keywords:	Occupational diseases, healthcare system, prevention, risk factors, medical examination, rehabilitation, psychosocial support.
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Introduction

Occupational diseases are among the most important issues in modern medicine, as they develop under the influence of various harmful factors in the working environment. According to the World Health Organization (WHO), about 10–15% of the world’s working-age population suffers from occupational diseases, and in some developing countries this figure is significantly higher. The main groups of occupational diseases include lesions of the respiratory organs (dust bronchitis, pneumoconiosis), hearing and vision organs, the musculoskeletal system, skin, as well as pathologies associated with exposure to chemical and biological factors. According to WHO estimates, more than 160 million workers are exposed to occupational hazards each year, and about 2 million cases result in death [1]. According to the results of several studies, 10–15% of workers temporarily or permanently lose their ability to work due to unfavorable working conditions [2,3,7].

Epidemiological observations show a high incidence among workers in heavy industry, construction, mining, agriculture, and healthcare [5]. Abroad, various aspects of occupational disease prevention are also being actively studied. Thus, studies by N.N. Izmerova showed that ensuring environmental safety at work and the proper use of personal protective equipment can reduce the level of occupational morbidity by 30–40% [5]. In the USA and European countries, the implementation of "Workplace Health Promotion" programs has significantly reduced the level of occupational diseases by promoting a healthy lifestyle, proper work organization, and the introduction of stress management methodologies [6]. In the Republic of Uzbekistan, the issue of occupational diseases remains relevant as well. The most significant causes of occupational diseases among healthcare workers are exposure to dust, noise, vibration, toxic

substances, and biological factors [6,7,11]. Scientific research conducted in medical institutions has made it possible to study the risk factors of occupational diseases and develop a methodology for organizing preventive measures to prevent these diseases among medical personnel. In their works, a number of researchers point out that reducing the impact of harmful factors in medical institutions not only helps to prevent occupational diseases, but also reduces the prevalence of chronic illnesses [7,9,10]. Another scientific article substantiates the necessity of mandatory implementation of medical prevention, health check-ups, and wellness programs in enterprises [2,3,6,8,11]. Thus, existing scientific data confirm the need for a comprehensive approach to the prevention of occupational diseases. The improvement of the prevention system will

contribute to the health of healthcare workers, increase labor productivity, and reduce disability and mortality.

Materials and Methods. The study was conducted at a city multidisciplinary hospital employing 477 healthcare workers in 14 treatment departments and auxiliary units. A situational analysis was conducted to determine the number of staff, the conduct of annual periodic medical examinations, compliance with hygiene rules and hygiene control, and the availability of rehabilitation and vocational training programs. The largest number of healthcare workers was found in the admissions and emergency departments: 95 employees (19.9%), 71 employees (14.9%) in administration, 56 employees (11.7%) in intensive care, and 51 healthcare workers (10.7%) in the infectious diseases department (table 1).

Table 1 Number of staff in a multidisciplinary hospital

No	Departments and divisions of the hospital	Total number of personnel	%
	therapeutic	41	8,6%
	surgical	30	6,3%
	children's	32	6,7%
	reception and emergency	95	19,9%
	infeksion	51	10,7%
	resuscitation	56	11,7%
	travmopunk	21	4,4%
	laboratory	26	5,5%
	diagnostic	24	5,1%
	rentgen	10	2,1%
	pharmacy	4	0,8%
	sterilization	4	0,8%
	accounting	12	2,5%
	administration	71	14,9%
	Total	477	

In the remaining departments and units, the percentage of employees varied from 0.8% to 8.6%.

A situational analysis was conducted regarding the number of working personnel, the status of annual periodic medical examinations, adherence to hygiene rules by employees of the

intensive care, infectious disease, and pediatric departments and the implementation of hygienic control, as well as the presence of rehabilitation programs and professional training for medical workers.

Results and Discussion.

As the results of the inspection showed, the number of sick employees in 2025 decreased by 5% compared to 2024—from 23.7% in 2024 to 17.4% in 2025. All employees of the therapeutic, surgical, pediatric, infectious, and intensive care departments underwent a complete medical examination this year, but employees of the laboratory, diagnostics, X-ray room, sterilization department, and accounting office underwent the medical examination only partially.

Compliance with hygiene rules by employees was selectively checked in the intensive care, infectious, and pediatric departments. All faucets were supplied with running water, there were bottles of liquid soap and paper towels for hand hygiene. Hygienic control of the premises was carried out regularly, and procedures were performed by the nursing staff while wearing gloves. The senior nurses of the departments had notebooks documenting the training activities conducted for medical personnel.

In 2025, as a result of deteriorating health, 83 employees (17.4%) in the hospital were granted sick leave (table 2).

Table 2. Number of employees who fell ill in 2025.

No	Departments and divisions of the hospital	Number of cases in 2025	% of sick employees
1.	therapeutic	4	4,8%
2.	surgical	14	16,8%
3.	children's	6	7,2%
4.	reception and emergency	12	14,6%
5.	infeksion	12	14,6%
6.	resuscitation	12	14,6%
7.	travmopunk	3	3,6%
8.	laboratory	8	9,6%
9.	diagnostic	4	4,6%
10.	rentgen	0	0,0%
11.	pharmacy	0	0,0%
12.	sterilization	4	4,8%
13.	accounting	2	2,4%
14	administration	2	2,4%
	Total	83	100,0%

An analysis of sick employees showed that most of the sick leave certificates were issued to the staff of the surgical department—16.8%. Among them, 9 people were mid-level medical personnel (64.3%) and 5 (35.7%) were junior medical staff. In the admission and emergency

department, 12 people fell ill, including 4 doctors (33.3%), 6 nurses (50%) and 2 junior staff (16.7%). In the infectious diseases department, among the sick, 66.7% were nurses and 33.3% junior medical staff. In the intensive care unit, the number of sick doctors

and nurses was the same (25%), while the majority were mid-level staff (50%). Finally, special attention should be paid to the number of illnesses in the laboratory: among them, most were doctors—65%; a quarter were nurses (25%), and even less were mid-level staff—12.5%.

The main causes of illnesses among hospital staff were acute respiratory viral infections, acute pharyngitis, acute bronchitis, isolated cases of angina pectoris, and exacerbation of chronic cholecystitis.

Thus, in the practice of occupational disease prevention, respiratory tract diseases predominate due to an increased risk of infections associated with insufficient use of personal protective equipment. The lack of measures to eliminate occupational risks and the limited coverage of workers by periodic medical examinations also contribute to the increase in morbidity among employees, as regular medical checkups play a key role in maintaining workers' health. For those who were examined, risk factors for diseases were identified at early stages, increasing the effectiveness of treatment and rehabilitation. As evident, the origins of occupational diseases are multifactorial and their prevention should be comprehensive.

No less important is the presence of occupational burnout syndrome, especially among surgical department staff (42%), particularly intensive care (38%) and emergency admission (25%).

It was also noted that the implementation of psychological support programs contributes to reducing stress levels and increasing work productivity. Hygienic education and constant information of employees about occupational risks, according to literature data, have a positive effect.

The results obtained confirm that the prevention of occupational diseases requires a systematic approach that includes state control, enterprise leaders' responsibility and active participation of medical institutions. The effectiveness of preventive measures is directly related to the creation of safe working conditions, the formation of a healthy lifestyle,

regular medical examinations, and accessible rehabilitation programs.

The social significance of prevention lies in reducing disability, maintaining work capacity and improving public health, which contributes to economic growth and a reduction in healthcare costs. It is also important to implement modern risk monitoring technologies, digital platforms for workplace control, and to improve personal protective equipment. Special attention should be paid to psychosocial risks—stress, professional burnout, emotional exhaustion. International experience has demonstrated the effectiveness of legal regulation and prevention programs at the enterprise level. For Uzbekistan, it is relevant to align labor hygiene standards with international requirements and establish the protection of workers' health as a priority of state policy.

Conclusions.

The prevention of occupational diseases is a crucial area of the healthcare system and should be implemented through the collaboration of the state, medical institutions, and personnel. The conducted study showed that regular medical examinations, monitoring of risk factors, hygienic education, and rehabilitation programs significantly reduce morbidity rates. Additional measures—such as the introduction of modern technologies, development of psychosocial support programs, utilization of international experience, and improvement of the regulatory and legal framework—will increase the effectiveness of prevention. The prevention of occupational diseases contributes to preserving workers' capacity for work, increasing economic efficiency, and strengthening public health as a whole.

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