

## **CURRENT SITUATION AND PROBLEMS OF PROFESSIONAL DISEASES IN UKRAINE**

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The protection and strengthening of the health of the working population is one of the most important problem of labor medicine and health care. Professional diseases in Ukraine are a complex socio-economic, medical and hygienic problem. It is a component of the general diseases of the population, which covers the category of diseases that arise as a result of the unfavorable factors of the production environment and labor process [1, p. 9].

According to the State Statistics Committee of Ukraine, one in four (24,7%) employers work in conditions that do not meet sanitary standards for the parameters of dust content and chemical pollutants in the air of the working area, vibration, noise, infrasound and ultrasound, ionizing and non-ionizing radiation , the severity

and intensity of labor. The most dangerous working conditions in Ukraine are observed in the coal industry (74,1%), metallurgy (59,6%), gas (55,6%), oil extraction (50.6%), chemical and petrochemical industries (43,2%) [2, p. 34].

The situation and problems of labor potential in the world are constantly analyzed and covered by the International Labor Organization (ILO), which states that the problems of its preservation and further development in many countries of the world remain unresolved. Every year in the world, according to ILO data, there are 250 million accidents, about 335 thousand of which are fatal (each 28th is registered in Ukraine). Each year, more than 160 million professional illnesses are registered in the world, resulting in the death of 1,1 million people in the world, which is 2,2 cases per year. Economic losses from traumatism and diseases caused by labor activity reach 4% of the gross domestic product of the world economy [3, p. 14].

According to the data of literature in Ukraine annually about a thousand people die, up to 15 thousand are traumatized, about 6-8 thousand professional diseases are registered annually, which in intensive cases makes 4,61-5,38 cases per 10 thousand employees and is accompanied by significant social and economic losses. The collapse of industrial medicine in Ukraine has led to many negative consequences, one of which is the detection of professional disease on later stages, when rehabilitation is impossible, manufactory loses an employee, and society receives a disabled person [3, p. 15].

Comparison of the indicators of professional diseases in Ukraine with the data of European countries makes it possible to establish that the average level of such diseases in Ukraine (for the period 1996-2002 –  $13,3 \pm 4,9$  per 100 thousand population) is significantly lower than the average The level in the European Union ( $43,0 \pm 0,9$ ) and Europe as a whole, and according to the European Bureau of WHO, ranked as 21st among 37 European countries. Among the CIS countries, Ukraine occupies the 2nd place in terms of occupational disease, conceding to Tajikistan

(26,8±7,9 per 100,000 population) and ahead of the Russian Federation (11,2±1,9) [4, p. 5].

Today, Ukraine has gained considerable experience in studying the effects of hazardous and harmful working conditions on health of the workers, scientific substantiation of hygiene norms and regulations. However, the level of detected professional diseases in Ukraine remains lower than in developed countries of Europe (Denmark, Sweden, Iceland, Norway and others). The official statistics of professional diseases do not fully reflect the real situation in the world, the reason for which is the difference in the identification of professional diseases and their official registration in European countries, which may be due to the relation to the problems of the state, the level of social protection of workers, with different methodological approaches to determine the criteria for the availability of occupational diseases, as well as various systems of medical care of workers. Usually, these issues are more complex in transition economies and in developing countries, compared with the US, Canada, and EU countries [5, p. 3].

According to the results of many studies, the largest number of professional diseases in Ukraine is recorded in the coal, metallurgy and machine building industries, accounting for almost 92% of the total number of professional diseases, whereas in the USA, Germany, Japan, Norway, Denmark, Spain, more the number of professional diseases (42-85%) is recorded in engineering, transport, construction, agriculture, finance and business with some fluctuations in some countries [4, p. 4].

Professional disease in Ukraine has regional peculiarities, among which industrial areas occupy the first place. The highest number of occupational diseases, if excluded, is registered in Zaporozhye, Kharkiv, Sumy, Kherson, Ternopil and Cherkasy regions, accounting for fifth of all cases of disease in Ukraine [6, p. 42].

Scientific research and analysis of the causes of professional disease in Ukraine found out that working conditions are the main factor in the development of diseases that effect the bronchopulmonary system caused by the influence of industrial dust

and aerosols in the structure of manufactory diseases in Ukraine and the CIS [7, p. 75].

Normalization of the dust factor in Ukraine includes the assessment of the concentration of total dust, which does not fully reflect the influence of the main risk factors for the development of respiratory diseases: respirable fraction of dust and quartz, which in Ukraine is not standardized and is not the subject of evaluation.

In foreign countries, there is a large amount of data on human health hazards of suspended particles in the atmospheric air with a diameter of less than 10  $\mu\text{m}$  ( $\text{PM}_{10}$ ) and 2,5  $\mu\text{m}$  ( $\text{PM}_{2,5}$ ). In the countries of Eastern and Western Europe, the USA, Australia, and other states, for many cities, levels of  $\text{PM}_{10}$  and  $\text{PM}_{2,5}$  particles content in the atmosphere are determined, seasonal variations in the content of these particles in the air are detected [8, p. 254].

Russian scientists conducted research on the disperse and chemical composition of solid components of dust and gas emissions of metallurgical enterprises and found out that at the metallurgical enterprises the largest volume of emissions containing solid particles is formed in sintering and blast furnace production, open-hearth and converter steel smelting workshops. It has been determined that for metallurgical production, the median particle sizes are from 1,0 (charge loading operation) to 200  $\mu\text{m}$  (sintering operation of agglomerate).

The fraction of fine particles varied in the range of 10 to 84 % depending on the technological operation and the raw materials used. In the composition of the dust identified up to a dozen chemical elements, the main of which are iron, carbon and silicon (60 to 96%), as well as the presence of nanoparticles [9, p. 22].

In many industries - such as metallurgy, mining, construction materials, and the production of mineral fertilizers - are used loose and granular materials. In the process of their processing and transportation, aerodynamic systems are inevitably created [10, 11].

According to statistics, from 20 to 40% of manufactory injuries are caused by diseases directly or indirectly related to unsatisfactory working conditions, in other words, professional risks that may manifest themselves in the early aging of the body, contribute to a decrease in life expectancy, an increase in the level of general and occupational morbidity among workers in able-bodied age, mortality, increase of cases of professional injuries.

According to recent estimates by ILO and WHO specialists, the number of work-related accidents and diseases tends to increase, and takes more than 2 million human lives annually. Occupational accidents are responsible for 1,7 million cases of work-related mortality. They prevail over deaths as a result of accidents at work in the ratio of four to one [12, p. 11].

The problem of ensuring safety at the industrial enterprises today is relevant and requires a transition to a new level. In order to improve the system of management and safety of labor, health protection of employees, it is important to apply the methodology of professional risk assessment and to develop a systematic approach to professional risk management in the workplace.

It should be noted that the introduction of professional risk management systems in countries around the world (UK, USA, Japan, Finland, Australia, France, etc.) has shown the expediency of a risk management approach to improve working conditions, reduce injuries and occupational diseases.

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