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STATISTICAL ASPECTS OF OCCUPATIONAL INJURIES IN THE MANUFACTURE OF MAIN PHARMACEUTICAL PRODUCTS AND PHARMACEUTICAL PREPARATIONS

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Introduction. Statistical analysis of the causes, consequences and circumstances of occupational injuries in the manufacture of main pharmaceutical products and pharmaceutical preparations is a theoretical base for the formation of complex and effective measures to prevent accidents and reduce their level. Due to this, it will be possible to identify directions and recommendations for creating safe working conditions for production staff

at the sectoral, regional and productional levels of labor protection management. It is an actual scientific task primarily related to solving social problems.

Therefore, **the purpose of this work** is analyzing the causes, consequences and circumstances of occupational injury in the manufacture of main pharmaceutical products and pharmaceutical preparations for the period from 2013 to 2019.

The main results and their significance. According to the results of statistical analysis, 65 employees received occupational injuries in the manufacture of main pharmaceutical products and pharmaceutical preparations from 2013 to 2019 [1-2]. Of these, 63,3% of injures were received by males. Females accont for 36,7%, which is almost 2 times less than the level of male injuries.

Violation of traffic safety rules; non-performance of labor protection instruction requirements; violation of safety requirements during operation of equipment, machinery, mechanisms; non-performance of official duties, lack of proper control by officials became the most common organizational reasons.

It is also necessary to point out incorrect actions and mistakes due to the wrong choice of a set of measures to increase the level of security by the heads of the structural unit. The most common reason for wrong actions is the formal attitude of employees to safety, or imperfect knowledge of regulatory and technical documentation by the heads of structural units of pharmaceutical companies, or inability to apply the knowledge in a specific emergensy situation. Experimental studies show that often the time spent on decision-making in the event of an unusual situation can reach half or more of the total available time, and this is unacceptable in an acute shortage of time.

Features of information support are the constant change in the structure and scope of the regulatory base for labor protection, the processes of updating and replenishing operational information about the state of labor protection, the availability of probabilistic information, that complicate the perception by workers.

Effective management of labor protection can be carried out only in the presence of complete, timely and reliable safety information. It is possible to obtain this information, identify possible deviations from the norms and check the implementation of plans and management decisions only with the regular and objective control. Labor protection specialists control the following aspects: compliance wuth current legislation on labor protection; complience with instructions; complience with regulations on labor

protection of machines, mechanisms, equipment, vehicles, technological processes, personal protective equipment, collective and accident protection of workers; providing employees with personal protective equipment, medical and preventive nutrition, sanitary facilities; providing employees with benefits and compensation provided by law, related to severe harmful working conditions; implementation of measures, orders, instructions on labor protection, implementation of measures to eliminate the causes of accidents and incidents identified in the acts of investigation; timely training and briefing of employees, attestation and re-attestation on safety issues of officials and persons performing high-risk work, as well as compliance with safety requirements when performing these work.

The analysis of statistical data shows that the determining factors for the types of events that lead to accidents are road accidents both on public roads and on the territory of the factory; the action of objects and detailes that move, fly, rotate; fall of the victim, including from height in the manufacture of main pharmaceutical products and pharmaceutical preparations. Design disadvantages, imperfections, insufficient reability of means of manufacture, vehicles, unsatisfactory technical condition of manufacture objects, buildings, structures, engineering communication, territory dominate among the technical reasons. Injury due to alcohol intoxication and personal negligence of the victim became the most common psychophysiological reasons.

In addition, a survey of employees in the group of pharmaceutical companies was conducted, which showed that employees themselves consider the most common causes of occupational injury to be monotonous work, bad mood, fatigue, family and team conflicts, inattentive attitude of managers to subordinates, unsatisfactory psychological climate.

According to the analysis results of the study for occupational injury for the period 2013-2018, it was found that about 55% of accidents in the manufacture of main pharmaceutical products and pharmaceutical preparations are related to the equipment, machines, mechanisms and vehicles operations.

The influence of various factors on the indicators of occupational injury was analyzed: total length of service, lenfth of service in the specialty, profession, age of victims. According the results of the study, driver is the most traumatic profession in the manufacture of main pharmaceutical products and pharmaceutical preparations, because they are often injures both through their own fault and through the fault of an outsiders. The next professional group is workers, which operate and maintain equipment and facilities. More than half of accidents with electricians, locksmith, welders

amd low-skilled workers occur due to non-performance of instruction requirements of labor protection.

The fact, that more than half of all accidents account for employees between the ages of 30 and 50, is of particular concern. Most employees in this age group have managed to change several professions in different companies, they are characterized by excessive self-confidence and overestimation of their own capabilities, which reduce attention and lead to neglect of safety rules during the technological process, which ultimately creates abnormal situations. Most of the injures account for wotkers with more than 20 years of experience and workers with 1-5 years of experience. Both categories are characterized by an extremely negative factor of habituation to danger with hyperbolization of their own experience in solving standard situations. Special attention should be given to these facts during the initial and repeated on-the-job training. Moreover, it is necessary to improve the quality of the briefings, to enhance control over the work of employees with little professional experience.

Fatal accidents were analyzed separately. According to the results of statistical analysis, 15 employees died [1-4]. As a rule, each such injury is caused by several reasons in the manufacture of main pharmaceutical products and pharmaceutical preparations from 2013 to 2019. Violations of labor and manufacture descipline, violation of safety requirements during operation of equipment, machinery, mechanisms, violation of traffic rules, non-performance of instructions of labor protection, disadvantages during training in safe work methods, non-use of personal protective equipment, if any, are among the main ones.

Therefore, employers first of all need to: enhance control over compliance with traffic rules by employees, whose work related to the transportation of pharmaceutical products and drugs; to increase the quality of briefings and the development of instructions of labor protection; to encrease the effectiveness of training and testing of knowledge of employees labor protection, including employees engaged in high-risk work; provide monitoring of the condition of manufacture equipment, control systems, manufacture processes management, signaling and communications; to realize control over the abidance by both employees and heads of structural subdivisions of the requirements of legislative and normative-legal acts of labor protection in order to prevent occupational injure, increase the level of manufacture safety in the manufacture of main pharmaceutical products and pharmaceutical preparations. It is necessary to implement modern information-analytical systems of labor protection management, which should be organized taking into account the clear interaction of the head of

the service (department) of labor protection with heads of all structural subdivisions of the pharmaceutical factory, for adequate and continuous management, taking into account all the factors affecting the condition of labor protection, and provide to the heads of structural subdivisions an optimal set of measures to ensure work safety for constant control and monitoring of the condition of labor protection [3].

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