Occupational health surveillance paper report examples

Profession

Abstract

Managing occupational health is an essential part of managing a workforce, and on a larger scale, an entire organization. A healthy workforce may well lead to a productive one and hence a more profitable venture. An unhealthy workforce on the other hand would most likely lead to an unproductive and thus an unprofitable one. Occupational Health Surveillance is one of the direct interventions in keeping a healthy and productive workforce. The objective of this paper was to discuss what occupational health surveillance is and apply its principles in a chosen occupation or field, which is asbestos mining, focusing on a needs analysis via a health risk assessment. In the end, the researchers have concluded that in order to minimize the risks and hazards towards health as a result of the primary threat, which is asbestos exposure, employers and contractors must follow the latest asbestos regulations, and actually stay away from asbestos altogether.

Introduction on Occupational Health Surveillance

Occupational Health Surveillance is often confused with the term Workplace

Health Surveillance. In reality, here is nothing to be confused about because they basically mean the same thing, and are therefore interchangeable. Occupational Health Surveillance refers to all forms of processes associated with making a particular workplace, disease and infection free, or in general, healthy, as much as possible. According to the National Institute for Occupational Safety and Health Division of Surveillance Hazard (NIOSH, 2011), " occupational or public health surveillance is the ongoing systematic collection, analysis, and interpretation of health data for the purpose of improving health and safety, focusing on the dissemination and use of such gathered data to improve overall health conditions in a specific location, workplace, etc." This is similar with the way how the Centers for Disease Control and Prevention (CDC) define occupational health surveillance. In line with these definitions, occupational health surveillance would then encompass every management, precautions, made in a particular workplace to establish health which may well include the tracking and identification of exposures, hazards, illnesses, diseases, and injuries related to any particular operations in a workplace situation. All information gathered as a result of these processes would then be used to guide the organization's efforts towards the improvement of the health and safety of their workers, and also in monitoring changes, trends and progress in terms of health and safety over time.

Occupational health surveillance can generally be done in three ways: via population-based assessments, group-based assessments, and individual based assessments. Depending on the type of health risk or injury being or have identified, the occupational health surveillance administrator may order

the execution of any one and in severe situations, even all of these surveillance procedures. Individual-based occupational health assessment procedures are so far the most commonly administered surveillance procedure. It aims to monitor and screen worker functions which would most likely lead to the early detection of the members of the organization’s diseases, if any, which would then be immediately followed by appropriate interventions aimed at preventing the exacerbation of conditions, and transfer of diseases from one organizational member to another.

The NIOSH works together with other federal and at some point, local state agencies such as the Occupational Safety and Health Administration, the Bureau of Labor Statistics, the National Center for Health Statistics, the Mine Safety and Health Administration in achieving its objectives when it comes to workplace health and safety. In other cases, it also collaborates with private sector for-profit and not-for-profit groups via their respective employers in ensuring the health and safety of their workforce and in maintaining an uninterruptable flow of operations. Workplace-related illnesses are so common that private, public, and government-owned organizations lose a significant cut of their revenues to injuries, diseases, and other health-related issues. Organizations, especially those that heavily rely on the quality and quantity of human resources in generating revenues and output, can be affected directly because under certain employee laws and provisions, the employer would be the one to cover their employees’ medical diagnostic and treatment expenses when they suffer from any work-related health conditions.

In the case of mining companies for example, workers are exposed to

different kind of potentially harmful substances such as heavy metals (e. g. mercury, lead, asbestos, etc.) whenever they are assigned to the field, which of course, also depends on the type of mining company they are working for. A mining company operating under the asbestos industry for example, would naturally be associated with health risks and diseases related to varying exposures to asbestos. Exposure to asbestos has been proven to be harmful because it carries potential risks for developing a wide range of cancer and lung diseases, secondary to the substance’s carcinogenicity . Some examples of serious medical conditions that may well be associated with exposure or working with asbestos (as in the case of the asbestos mining industry) are asbestosis (a pulmonary condition characterized by the increase in the lungs’ fibrotic qualities that usually leads to bilateral fibrosis, and in worse conditions, honeycombing of both lungs); pleural plaques which are usually detected through x-rays as thickened and fibrous areas of the lungs, common among individuals with mid to long term exposure to asbestos or any other fibrous mineral, usually asymptomatic but may later on develop into pleural thickening which could cause increase in the labor associated with lung ventilation or breathing; skin diseases such as asbestos warts which usually appear when the asbestos fibers accidentally or chronically lodges on the skin, leading to the formation of a callus or a lump-like growth visible on the superficial area of the skin; and in severe cases, pneumothorax which are generally caused by the entry and lodging of a collection of substances (as long as they can fit in the airways down to the lungs), asbestos being one of the most common, in the pleural space—the space that separates the lung surfaces from the chest cavity. In most cases,

air is collected in these spaces-one of the most common mechanisms, and as a result, the individual with pneumothorax experiences shortness of breath, labored breathing, and decreased lung volumes and capacities (e. g. forced inspiratory volume, vital capacity, total lung capacity, tidal volume, etc.). The role of an occupational health surveillance team in this case would be the detection of any medical and surgical conditions that are both directly and indirectly associated with the occupation, which based on the example would be asbestos mining, and the administration of early interventions that would help prevent the exacerbation of the conditions of the already-affected individuals, the suppression of the occurrence rate of the disease, and in the event that the diagnosed disease is communicable, prevent the spread of it. Occupational health surveillance is a relatively new field under the bigger umbrella of Occupational Health and it is usually misperceived as similar to medical or health screening, a process usually done before employees enter a certain organization, and this is why it is important, at this early a stage, to know the boundaries of the two and identify the variables that each encompasses. Health or medical screening is entirely focused on the detection (preferably at the earliest stage) and medically appropriate management of illnesses and diseases associated with certain occupations, in which we just used asbestos mining as an example . Occupational Health Surveillance on the other hand is entirely focused on the identification of the factors that contribute to the formation and spread of the disease, and the administration of both organizational and medical interventions to remove or at least do something about the identified causative factors; it also involves constant monitoring of progress, trends, and even regressions, right after an

intervention has been done .

Needs Analysis Based on a Health Risk Assessment

Needs analysis refers to the systematic process of identifying various the needs, gaps, or basically the possible solutions to any particular problem, in obtaining something that is desired, or in attaining a target condition—this refers to the first phase; this first phase is immediately followed by the laying out of plans to address the identified needs. The main goal of a needs analysis is to accurately measure or quantify the difference or discrepancy between the current condition and the target condition because only by doing so an organization can systematically quantify their needs, hence the name needs analysis. A needs analysis is usually done when there is something that needs to be improved—usually in terms of performance, or when there is something that needs to be corrected or minimized. In this case, the goal of the needs analysis is to minimize certain health hazards—that is a group of workers' exposure to asbestos.

A Health Risk Assessment on the other hand is a procedure that is usually done to evaluate the level of health in any particular situation or location—usually in organizations to evaluate the health and quality of life of its members or workers. According to the CDC (2013), " HRA is a systematic approach to collecting information from individuals that identifies risk factors, provides individualized feedback, and links the person with at least one intervention to promote health, sustain function and/or prevent disease." A HRA can be done at any part of the year but most of the time; it is only conducted when there is already a manifestation that the workforce or any particular group is suffering from a particular medical condition.

The chosen workplace was an asbestos plant/mining company based in the state of Canada named Abitibi Mining Corporation. It has started its asbestos mining operations since the early 1970s. During that time, occupational health professionals did not have any clue about the potentially harmful effects of asbestos on the miners' health. Operations of course continued and more and more workers in the mining corporation became exposed to asbestos. After several years, pulmonary symptoms such as impaired breathing capacities, shortness of breath or dyspnea, and in severe situations, lung cancers, started to appear. Because of the severity of the conditions and the increasing number of individuals involved, an occupational health risk assessment should be promptly done, focusing on the identification of current and potential health hazards, identification of those who are and may get affected by the identified health hazards, evaluating the extent, severity, and potency of the hazards, and recommendation of appropriate, effective, and efficient managements and strategies that would swiftly address or at least minimize the risks and their possible effects altogether.

In this case, the main and only hazard is the exposure to asbestos. Asbestos mining has started more than four thousand years ago and occupationally safe mining interventions have been developed back then. Therefore, this is an area that should be listed on the bottom area on our list of priorities. The main concern here would be the consequences of this hazard in relation to the employees' health. Chronic inhalation of asbestos has been proven to cause malignant lung tumors, mesothelioma, and other major and minor pulmonary conditions, fibrosis, etc. These can be identified as secondary

hazards, because they are generally caused by the primary hazard which is the chronic exposure to asbestos. Of course, hazards related to occupational safety including the safety of the workers whenever they do their routine procedures in asbestos mining. Safety loopholes in the routine procedures may not lead to chronic health conditions, pulmonary cancer being one of them, but these are the most common causes of acute health conditions, such as fractures, ligamentous sprains, muscle strains, dislocations, traumatic brain and extremity injuries, etc.

The main group that would most likely be affected in the Abitibi Mining Corporation’s activities, the subject of this occupational needs analysis, based on a risk assessment procedure, would be the working group or put simply, its field employees. Individuals under this group spend a significant amount of their total working time in their stations, digging for asbestos. Most of them do not even know what kind of health hazards being exposed to asbestos brings. Those who are in managerial and supervisory mining plant positions may not be that affected because they spend their shifts inside an office, but under unique conditions, they may well be a target of the health hazards too. Nevertheless, the quarry workers would really be the first ones who will get affected.

It has been proven by countless medical researches that asbestos can be an obvious threat to any individual who gets exposed to it. By mentioning the different medical conditions that could come as a result of exposure to asbestos, we can well define the severity of this primary health hazard. Chronic exposure to asbestos can lead to serious medical conditions such as pulmonary cancers and tumors, pulmonary fibrosis, asbestos warts,

pneumothorax and life-limiting impairments such as increased and easy fatigability, breathing problems similar to patients with Chronic Obstructive Pulmonary Disorders (COPD) . Now, most of these identified resulting conditions of chronic asbestos exposure may not be life-threatening but they are severely life-limiting. Most of the impairments can change an affected person’s overall quality of life. Impaired breathing for example, may disable an individual from performing his leisure and even his occupational activities. This only shows that the possible consequences of this health hazard may last forever. Add the fact that in more chronic and higher exposure-level cases, the possibility of being diagnosed with pulmonary cancers and tumors, which can be both life-threatening and considerably harder to resolve, and this makes this primary health hazard, even if it is just one and alone, very serious. In general, the two criteria used to evaluate or classify the health hazard as “ severe” were its life threatening and life limiting potentials.

The size of the asbestos mining industry exponentially grew during the mid to late 19th century, mainly because of the rapid demand for infrastructure and silicate materials with tensile strength and a high level of versatility—qualities that perfectly describe asbestos. Because of this, thousands of individuals were recruited as miners to cope up with the demand. The problem was that the health hazards associated with the occupation were not yet clearly defined during that time and so appropriate curative and preventive interventions were not laid out and as a result, a lot of people’s health has already been compromised secondary to asbestos exposure. Fortunately, new regulations regarding the minimization of the health

hazards, altogether with the potential effects of occupation in the mining and construction industry have been put in place, especially in developed and industrialized countries such as the United States, the United Kingdom, Japan, Korea, Canada, and New Zealand . In the United Kingdoms for example, they have the Control of Asbestos Regulations of 2012, which came into effect last April 6, 2012. The regulatory act is basically to ensure that all household, commercial, and industrial materials used within the boundaries of the member states of the European commissions are properly identified and monitored, considering the fact that they may well be very harmful to citizens and other people who may not even be asbestos miners . Another important recommendation from the said act was the requirement that obliges all workers who will certainly be exposed to the substance to only work with licensed contractors; to follow the effective control limit for asbestos that is 0. 1 asbestos fibers per cubic centimeter of air (0. 1f/cm3)—however, this limit, does not equate to " safe levels" and so occupational exposure to asbestos should be kept as far below from this control level as possible; and the obligation of all employers to train their employees how to handle all occupations related to asbestos; and the requirement for asbestos-related-workers to

Lead and Lag Indicators

It is crucial to look for both lead and lag indicators for health risks in this case because doing so is by far the only direct way how the effectiveness of the recommended interventions related to occupational health surveillance can be described. One of the most recommended lead indicators here would be the prevalence rate of diseases, medical symptoms and impairments related

to asbestos-exposure. To make the observation of the indicators more linear, it would be advisable to use the prevalence rate of the diseases, medical symptoms and impairments as a lagging indicator as well. By using it as a lead indicator, we are basically conducting a short-term prediction of the effects of asbestos exposure and by using it as a lag indicator; we are basically assessing the effectiveness or even the efficiency of the execution of the recommended managements.

Used Abbreviations and their Meanings

NIOSH – National Institute for Occupational Safety and Health Division of Surveillance, Hazard

CDC – Centers for Disease Control and Prevention

COPD – Chronic Obstructive Pulmonary Disease

Conclusions

Occupational Health Surveillance has already been identified as a classically important part of maintaining a healthy and thus a productive workforce. It focuses on the identification and the removal of the factors that causes health risks and hazards as compared to health screening which focuses on the identification of health conditions and immediately treating them and stopping them from spreading. The focus of the discussion in this paper was the occupational health surveillance and risk assessment of the Abitibi asbestos mining corporation, which naturally exposes its workers to unsafe levels of asbestos, a substance that has been proven as harmful. The workers were identified as the ones who would significantly affected by the health risks associated with their occupation. The evaluation of the risks showed that it is on a severe level because of its life-threatening and life-

limiting qualities.

Recommendations

The best recommendation that workers and employers could adhere to would be to follow all the latest regulations and acts set forward by the government with regards to the acquisition, use, and even removal of asbestos as it would be virtually impossible for a corporation heavily reliant on asbestos to stop using asbestos altogether.

- Minimize the employees' exposure to asbestos as much as possible
- Provide appropriate training to all employees who would be exposed to the substance
- Provide regular, and adequate seminars regarding the harmful health-related effects of asbestos
- Look for other alternative materials aside from asbestos that are not harmful
- Provide safety gears and equipment for workers who would most likely be exposed to the substance
- Conduct regular medical checkups
- Provide for the early treatment and management of medical symptoms and impairments related to asbestos-exposure

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