SOME ASPECTS OF OCCUPATIONAL MORBIDITY IN THE ROMANIAN COAL MINING INDUSTRY

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ABSTRACT

Health and safety of workers have a special importance for the quality of working life even in the current situation of austerity and financial instability. In the general framework of the social determinants of health - the occupation leaves its mark on the employees' state, and occupational risk assessment aims to prevent and make the employee to be aware of the possible dangers, forming a culture of the work safety.

Given the complexity of underground work system, the accidents at work and occupational diseases are factors that reduce the efficiency, productivity and profitability. Also, these factors have some other effects - economic (increased costs with personnel and with security and occupational health), social (because they affect one or more workers, their families, and the other members of the organization) and psychological (the reaction towards risk, problems of inadequacy or incompatibility with the old job, the negative impact on the image of the industry).

Considering the overall context of health status of the population and the peculiarities of our country, this paper analyzes comparatively the evolution of the main indicators of morbidity statistics that reflect the health state of the employees of some companies in the Romanian mining sector.

Keywords: Occupational morbidity, mining sector, morbidity indicators, diseases registered;

1. HEALTH AND SAFETY AT WORK IN UNDERGROUND MINING

Because of the many disasters that have occurred and latent dangers existing in underground coal mining, the concern for ensuring health and safety at work (OHS) is paramount. Even if improvements of regulatory norms have occurred rather as a result of such events, it is important that they exist and are continually refined to comply with this condition.

The Mine Safety and Health Administration defines a disaster as,, an incident with five or more fatalities and classifies disasters by cause and number of fatalities. Disasters due to haulage result from failures in the transportation of personnel, material, or equipment. Disasters due to ground fall or bump indicate the fall of roof rock or outward bursting of walls in an underground work area." (National Research Council, 2013, p.39)

People are involved in all these events, people who work every day in the depths of the earth. Occupation plays an important role in the general framework of

social determinants of health. In order to prevent such events, to maintain the health and well-being of the workers on the one hand, and safe working conditions on the other hand, within the complex system of underground work is necessary a model of prevention on three levels (Figure 1), respectively a risk management process (Figure 2) implemented in a responsible manner. Romanian legislation concerning OHS (Law No. 319 of 2006, updated in 2012, with related amendments and norms) aligns with the international norms in the field and stipulates the risk factors identification and assessment, thus creating a framework for awareness and preventive action.
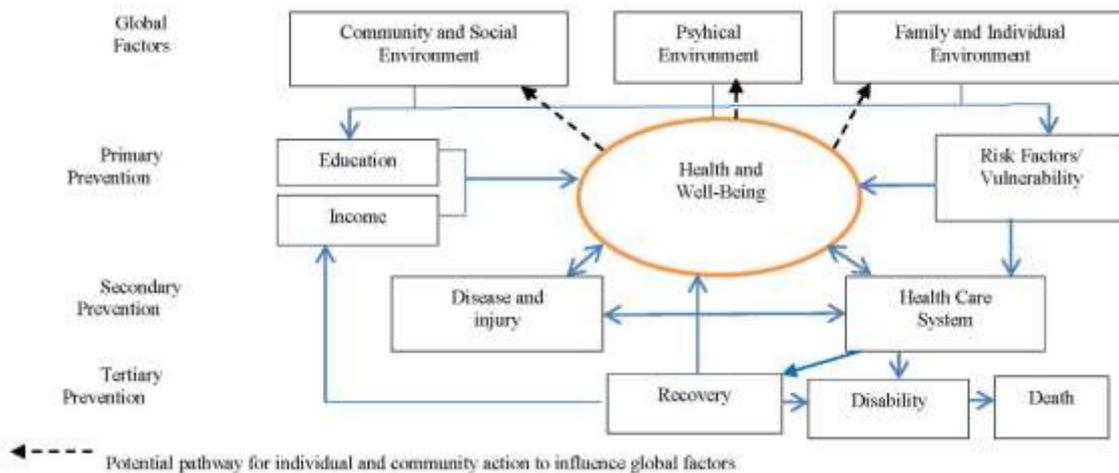

Fig. 1.

Determinants of Health: The 21st – Century Field Model
Source: Ratzan et al., 2000 cited in National Research Council, 2011, p.8
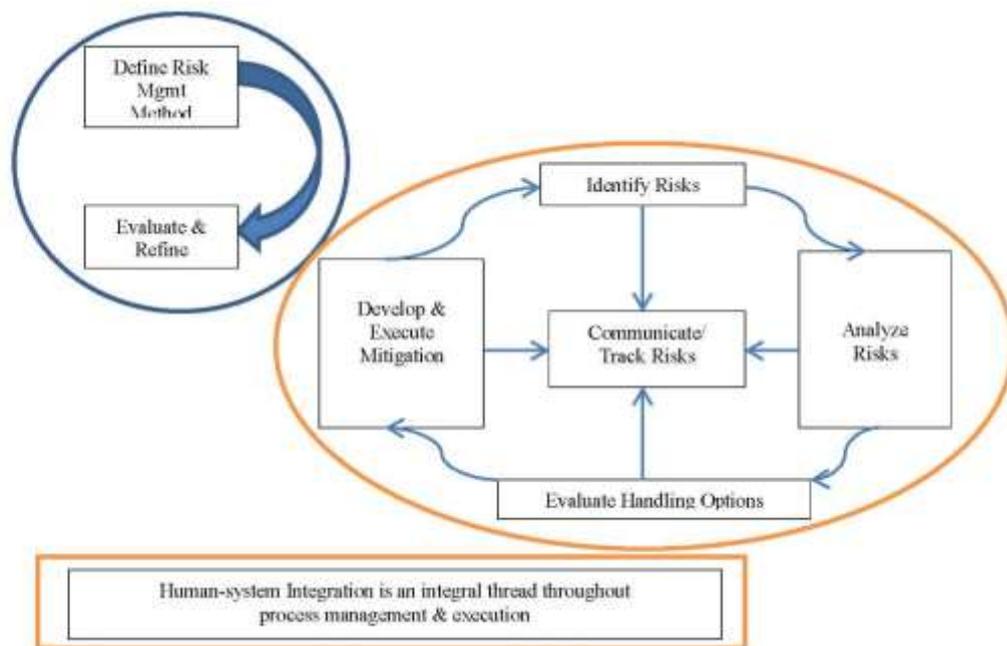

Fig. 2.
The risk-management process
Source: National Research Council, 2007 b, p.77

The incidence of risk factors is commonly associated with increasing occupational morbidity (OM). OM analysis is an integral part of monitoring the health of employees obligatorily, having especial importance in decision-making within work and health systems. Morbidity (M) with temporary incapacity for work (TIW) is a concept generally related to the intensity of disease phenomenon within a collectivity, which allows the study on this phenomenon both as trend of evolution in time in the same collectivity, and between different collectivities.

Analysis of M with TIW aims to identify determinant factors that generated/favored diseases of the workers, in order to establish technical and organizational measures of work protection, prophylactic health measures and for socio-professional rehabilitation. The basic tool for monitoring and analysis is the sick leave certificate (medical certificate) issued by the institution which provides curative and preventive health care services.

Against this context the paper examines main indicators of M statistics in Romanian mining sector. Main indicators of M statistics monitored at national level and used for the analysis are:

- Severity index (SI) = days number of TIW x 100 / average number of registered employees;
- Frequency index (FI) = number of initial medical certificates x 100 / average number of registered employees;
- Average duration index (ADI) = days number of TIW / number of initial medical certificates.

2 ANALYSIS OF MORBIDITY IN COAL MINING SECTOR OF ROMANIA

The study was based on statistical research and analysis of policy documents and reports at national and sectoral level in 2011-2013.

Compared to the national average incidence (19,79%₀₀₀ workers), the value in Hunedoara County (where is located Jiu Valley - the largest coal mining basin in Romania) is 45,76%₀₀₀ workers (INSP, 2012, p.8).

Being the biggest producer of energy coal in Romania, the National Company of Hard Coal S.A. Petroşani (NCHC) from Jiu Valley had under suborder seven mine units (underground coal mines) during 2008-2012 period. Starting with the 18th of December 2012, NCHC was reorganized in two structures, i.e. the National Society of Hard Coal S.A. Petroşani (NSHC), which is composed of four mines and the National Society for Mine Closure Jiu Valley- S.A Petroşani (NSCMJV) having as components the rest of the three mines that will be closed until 2018.

Therefore, the analysis of M that follows aimed this new organizational structure. The primary data used to calculate these M indicators are presented comparatively for the last two years, according to the data registered and reported by the three analysed units of the coal mining sector (table 2). The resulted values of the indicators are shown in the same manner in table 3. The structure by major groups of diseases which had as result TIW (in days) is shown in table 4, for each of the three considered organizations.

OM registered significant variations during the analysed period. Thus, compared with data from 2011, in 2012 was registered a decrease in the number of days of TIW, respectively less days for ordinary disease and more days (but not significant) for occupational diseases and accidents (with mention that number of days for accidents at work decreased). The values of M indicators SI and ADI have reduced, while FI insignificantly increased. The hierarchy of the main diseases registered shows that musculoskeletal disorders are in first place in the structure of the M with TIW, both in mining and in other industries, being the most common work-related health problems in the EU (INSP, 2012), followed by respiratory diseases, digestive diseases, cardiovascular diseases, tuberculosis and tumors.

At the NSCMJV we notice a large increase in days number of TIW for occupational and ordinary disease in 2013 compared to the same period of the precedent, while days number for accidents decreased per total, but increased for accidents at work. This large increase in the number of days is explained by the transfer of workers from the former company NCHC to the new society NSCMJV (workers with health problems and who had sick leave with TIW relatively long periods of time, until their dismissal in October 2013). The structure of diseases maintain the same hierarchy above mentioned.

For the same period (2013 comparative with 2012), the analysis of situation from Mining Division of HEC revealed a considerable increase in days number of TIW which could be explained by the increasing frequency of disease in a large part of staff close to retirement age with more chronic conditions requiring prolonged treatment and prolonged recovery to restore working capacity.

It may note that days number of TIW for accidents decreased, but it increased for the occupational and ordinary disease. Values of M indicators SI and FI increased, while ADI has an insignificant decrease even in conditions of reducing average number of employees.

Muskuloskeletal disorders remain as the peak of M, recording a growth in days number of TIW, and hierarchy of diseases is almost the same for first places, except the tumors placed ahead of tuberculosis.

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