

# OCCUPATIONAL HEALTH POLICY

## OCCUPATIONAL DISEASES IN POLAND. LEGAL STATUS AND EPIDEMIOLOGICAL SITUATION

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**Key words:** Occupational diseases, Incidence, Epidemiology

**Abstract.** The authors discuss the legal status of occupational diseases in Poland. Referring to the register of these diseases, they analyse all cases observed in Poland between 1984 and 1988. In the analysis they take into account patients' age and sex, duration of exposure to hazardous agents and occurrence of diseases in particular voivodships and branches of the national economy. In the discussion the authors pay special attention to the complexity of factors influencing the incidence of occupational diseases.

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### INTRODUCTION

Occupational diseases as a result of the effect of unfavourable working conditions reflect the efficiency of medicotechnical prevention. The legislation of many countries, including Poland, provides for various services for people suffering from occupational diseases. Therefore, the kinds of such diseases, their notification, diagnosis and registration rules are based on the regulations which obtain in a given country. Differences among legal systems of different countries make it very difficult to elaborate a comparative analysis of data referring to occupational diseases. Nevertheless, the international exchange of information plays an important role, as it provides knowledge of the mechanisms of influence of particular workplace agents on workers' health, and renders possible the establishing of principles of prevention.

### LEGAL STATUS

The Cabinet's Decree Concerning Occupational Diseases of November 18, 1983 (Register of Laws, No 65, Item 294, 1983) applies in Poland at the moment. The Decree initiates important changes in the regulations

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which have been compulsory so far; according to this Decree, occupational diseases are the ones which are listed in the register of occupational diseases, if they result from the activity of hazardous agents present in a workplace. The type of occupational exposure, its duration, the way of performing a given job, immediate contact with patients suffering from communicable diseases or with biological material deriving from these patients and with agents causing invasive, allergic and malignant diseases — all these are taken into account during the evaluation of hazardous agents' activity.

The new register of occupational diseases includes 20 instead of 14 items; moreover, new disease groups have been added to some previously existing. The current register of these diseases can be found in Table 2.

The earlier prepared and implemented system of sending, gathering and analysing makes it possible to collect data on occupational diseases diagnosed in a given year in a special register in the Institute of Occupational Medicine in Lodz. This register is used for examining the incidence rate of occupational diseases all over the country, in particular administrative units and in all branches of the national economy. Information collected in this register has been used as a basis for many publications devoted to the epidemiological situation of occupational diseases in Poland (1—8). This article presents recent data.

#### MATERIAL AND METHOD

The analysis of incidence of occupational diseases refers to the years 1984—1986, i.e. the period of initiation of the new regulations in Poland. A short, three-year period of study does not allow for detailed presentation of this problem, yet it provides comparability of the data.

TABLE 1. Occupational Diseases in Poland Between 1984 and 1986 by Sex

| Year | Number of occupational diseases |       |       | Number of occupational diseases per 100 thous employees |       |       |
|------|---------------------------------|-------|-------|---------------------------------------------------------|-------|-------|
|      | men                             | women | total | men                                                     | women | total |
| 1984 | 5797                            | 2950  | 8747  | 84.3                                                    | 56.2  | 72.2  |
| 1985 | 5501                            | 3125  | 8626  | 79.6                                                    | 58.3  | 70.3  |
| 1986 | 5656                            | 3449  | 9105  | 81.5                                                    | 62.8  | 73.2  |

Individual notifications of diagnoses of occupational diseases sent to the register by voivodship sanitary-epidemiological stations constitute an important source of information. The incidence rate is measured using the number of newly diagnosed cases per 100 thousand persons employed in the branches of the national economy in a given year. General data

TABLE 2. Occupational Diseases in Poland in the Years 1984—1986, by Nosologic

Units

| No | Occupational disease                                                                                                                           | Number of occupational diseases per 100 thous employees |      |      |      |      |
|----|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------|------|------|------|
|    |                                                                                                                                                | 1984                                                    | 1985 | 1986 | 1984 | 1986 |
| 1  | Acute and chronic intoxications with chemical substances and their sequelae                                                                    | 623                                                     | 495  | 472  | 5.1  | 3.8  |
| 2  | Pneumoconioses                                                                                                                                 | 1274                                                    | 1093 | 1174 | 10.5 | 9.4  |
| 3  | Chronic diseases of bronchi induced by substances causing paroxysmal bronchospasms and pneumopathies with inflammatory proliferative reactions | 124                                                     | 139  | 157  | 1.0  | 1.3  |
| 4  | Chronic bronchitis induced by toxic substances, irritant aerosols — in case of pulmonary insufficiency                                         | 286                                                     | 291  | 370  | 2.4  | 3.0  |
| 5  | Pulmonary emphysema in glassblowers and musicians of brass bands — in case of pulmonary insufficiency                                          | 5                                                       | 3    | 3    | 0.0  | 0.0  |
| 6  | Chronic atrophic, hypertrophic and allergic inflammation of mucous membranes of nose, pharynx, larynx and trachea                              | 221                                                     | 209  | 155  | 1.8  | 1.2  |
| 7  | Chronic diseases of vocal organ related to excessive voice effort                                                                              | 576                                                     | 835  | 1067 | 4.8  | 8.6  |
| 8  | Diseases induced by ionizing radiation including malignant neoplasms                                                                           | 18                                                      | 18   | 11   | 0.1  | 0.1  |
| 9  | Malignant neoplasms induced by carcinogens present in working environment, except for those mentioned in point 8                               | 20                                                      | 31   | 42   | 0.2  | 0.3  |
| 10 | Dermatoses                                                                                                                                     | 1103                                                    | 950  | 837  | 9.1  | 6.7  |
| 11 | Contagious and invasive diseases                                                                                                               | 1743                                                    | 1709 | 1726 | 14.4 | 13.9 |
| 12 | Chronic diseases of locomotor system                                                                                                           | 152                                                     | 167  | 219  | 1.3  | 1.8  |
| 13 | Chronic diseases of peripheral nerve                                                                                                           | 19                                                      | 36   | 54   | 0.2  | 0.4  |
| 14 | Diseases of the eye induced by occupational chemical or physical factors                                                                       | 40                                                      | 33   | 35   | 0.3  | 0.3  |
| 15 | Noise-induced hearing loss                                                                                                                     | 1918                                                    | 1993 | 2229 | 15.8 | 17.9 |
| 16 | Vibration syndrome                                                                                                                             | 616                                                     | 619  | 550  | 5.1  | 4.4  |
| 17 | Diseases induced by work in increased or decreased atmospheric pressure                                                                        | 1                                                       | —    | —    | 0.0  | —    |
| 18 | Diseases induced by gravity load (accelerations)                                                                                               | —                                                       | —    | —    | —    | —    |
| 19 | Diseases of central nervous system, cardiac pace maker and conducting systems and gonads induced by electromagnetic fields                     | 6                                                       | 5    | 4    | 0.0  | 0.0  |
| 20 | Heat hyperpyrexia syndrome and its sequelae                                                                                                    | 2                                                       | —    | —    | 0.0  | —    |

on this subject are presented in Table 1. It shows an increase in the incidence rate of occupational diseases during the analysed period. This increase is particularly noticeable among women.

The highest incidence rate is attributed to occupational noise-induced lesions hearing, infections and invasive diseases, pneumoconioses, chronic voice organ diseases, dermatoses and intoxications (Table 2). The highest dynamics of incidence increase is observed among chronic voice organ diseases and noise-induced hearing lesions. In the group of intoxications and in dermatoses, a decrease of the analysed coefficient value can be found. Among other diseases neither the incidence rate nor its changes during recent years noticeably affects the dynamics of the observed phenomenon.

Considering particular diseases observed among men and women, some distinct differences resulting from specific employment and working conditions can be found. Among men, hearing damages and pneumoconioses are dominant. Among women, infectious and invasive diseases as well as chronic voice organ diseases are widespread. The high incidence rate of chronic voice organ diseases results in significant changes in occupational disease structure and is reflected in the formation of the general coefficient of occupational disease incidence in Poland as far as the role of disease among women is concerned.

The specific conditions of formation and development of the most frequently observed occupational diseases affect differences among frequencies of their occurrence in particular age groups of men (as opposed

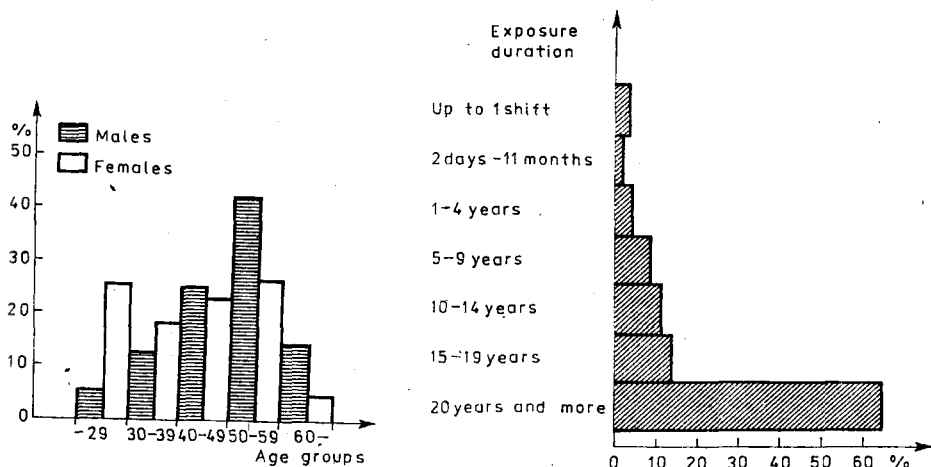


Fig. 1. Structure of population afflicted with occupational diseases in Poland in the years 1984-1986 according to age and sex.

Fig. 2. Structure of occupational diseases in Poland in the years 1984-1986 according to exposure duration.

to women) (Fig. 1). In men, chronic diseases prevail, which is attributed to exposure duration. Among women, exposure duration is an important element in the formation of chronic voice organ diseases; in infections and invasive diseases it is not significant. Therefore, the majority of cases are diagnosed among men at 40–49 and 50–59 years; among women older age groups are not so predominant (reasons as above).

Information about the period of occupational exposure after which an occupational disease can be diagnosed (Fig. 2) are essential as far as

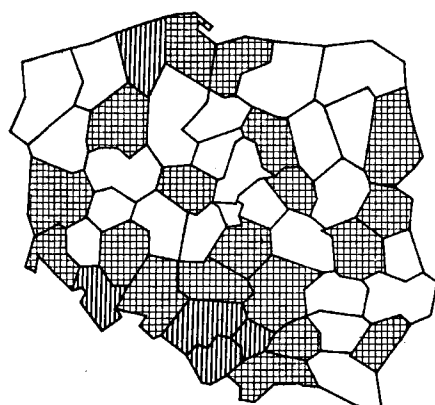
TABLE 3. Occupational Diseases in Poland Between 1984 and 1986 in Particular Branches of the National Economy

| No | Branch of the national economy       | Number of occupational diseases |      |      | Number of occupational diseases per 100 thous employees |       |       |
|----|--------------------------------------|---------------------------------|------|------|---------------------------------------------------------|-------|-------|
|    |                                      | 1984                            | 1985 | 1986 | 1984                                                    | 1985  | 1986  |
| 1  | Industry                             | 4956                            | 4664 | 4879 | 106.6                                                   | 100.4 | 104.4 |
| 2  | Bulding industry                     | 445                             | 444  | 414  | 39.8                                                    | 39.3  | 35.8  |
| 3  | Agriculture                          | 324                             | 229  | 257  | 38.7                                                    | 27.9  | 31.5  |
| 4  | Forestry                             | 230                             | 209  | 161  | 157.6                                                   | 139.2 | 105.5 |
| 5  | Transport and communication          | 156                             | 206  | 176  | 14.8                                                    | 19.4  | 16.7  |
| 6  | Trade                                | 90                              | 58   | 91   | 7.8                                                     | 5.0   | 7.7   |
| 7  | Communal economy                     | 31                              | 37   | 30   | 8.9                                                     | 10.5  | 8.5   |
| 8  | Education, culture and art           | 663                             | 872  | 1119 | 63.2                                                    | 79.7  | 98.6  |
| 9  | Health protection and social welfare | 1690                            | 1727 | 1800 | 228.2                                                   | 224.4 | 226.6 |

working conditions and risk of incidence are concerned. After excluding allergic infections and invasive diseases from the analysis, it appears that more than 60% of cases are generated after a minimum 20 year period of work in contact with an agent which causes a disease. A lengthening period of work without any disease symptoms being diagnosed and a generally slow progression of the disease process, indicate an improvement of efficiency of medical and technical prevention in plants.

The incidence of occupational diseases in particular branches of the national economy between 1984 and 1986 is characterized by a significant differentiation (Table 3). This results from the kind of work, the production process which determines the kind and level of concentration of hazardous agents as well as from the number of people employed at work-stands at a high risk of disease incidence. The highest incidence levels are to be found in industry, forestry, training, education, health protection and social welfare. In industry, noise-inducud, hearing lesions, pneumoconioses, skin diseases and intoxications are dominant. They constitute





Number of cases per  $10^5$  employees

□ -50

▨ 51-100

▧ 101-

Fig. 3. Geographic distribution of occupational diseases in Poland during 1984-1986.

79,7% of all observed cases. In forestry, vibratory syndrome (77% of all cases) prevails. In education, chronic voice organ diseases caused by excessive voice effort (89,5% of all occupational diseases) are most frequent. In health protection and social welfare, infections and invasive diseases (mainly hepatitis) predominate constituting 84% of occupational diseases observed in this branch of the economy.

Differentiation of the incidence level of occupational diseases in particular voivodships (Fig. 3) results from an unequal degree of industrialization and different scales of technological progress. For more detailed presentation of the situation, a frequency analysis of occupational diseases incidence in plants of the same production profile would be necessary. It should be repeated that information collected from various plants is important for prevention activities. Analyses of this type reveal, for instance, the main sources of occupational diseases. Lists of plants with a high rate of occupational diseases, as published in annual bulletins, are an important cue in taking decisions concerning the improvement of hygienic conditions and in limiting the risk of incidence.

## DISCUSSION

The system of collecting and processing data on occupational diseases in Poland helps obtain completeness of information, thus being one of the better routine information sources concerning diseases which must be notified and registered. However, some proof exists which indicates that a number of syndromes caused by the harmful action of the working environment are not included in the system. There are many reasons for

this: inadequate quality of diagnostic equipment or the neglecting of information on working environment when taking a medical history of a patient. Yet the present situation is being improved. Monitoring activities initiated in recent years concerning the state of health of workers exposed to certain noxious agents (system of pneumoconiosis prevention, monitoring the state of health of workers exposed to lead) make it possible to detect occupational diseases more effectively.

The remarks above indicate the complexity of factors influencing the level of occupational diseases incidence, expressed as the number of registered cases in relation to employed population. In recent years many examples have appeared which prove that justifying statistical differences observed in time exclusively in terms of working environment — workers can bring about substantial errors. More precise detection of particular diseases, which is possible when a better diagnostic base has been created, can induce an increased incidence level without changing working conditions in a given area. For administrative and legal reasons and because of interpretation of regulations, periodical overrating and underrating of statistical data do often occur. All these facts prove that the present incidence level does not always reflect the scale of the existing risk.

A disease is a temporary or permanent impairment of the state of health which is correlated with distinct economic consequences. The Decree Concerning Occupational Diseases initiates, among other changes, a compulsory registration and analysis of the consequences which result from diagnosing an occupational disease. By consequences we mean different information about the period of incapacity for work, extent of loss of health, disability pension, reduced capability for work and compensation. These additional data will soon supplement the material already collected and make it possible to be better acquainted with an examined phenomenon. The programme of collecting and analysing this kind of data has already been prepared and will soon be implemented.

Due to a short period of implementing new regulations concerning occupational diseases, detailed forecasting of the epidemiological situation in this respect cannot yet be carried out. Too many factors exist which can affect the future situation quite unexpectedly. One would suspect, however, that hearing damages, infectious and invasive diseases, pneumoconioses, skin diseases and intoxications will still prevail among occupational diseases in Poland. In the future, chronic diseases and a long period of work in a given exposure before diagnosing a disease, will probably occur.

In conclusion, after considering the value and interpretation of the information obtained it is worth noticing that the new Decree Concerning



Occupational Diseases is advanced as compared to the compulsory regulations enforced until now. It creates possibilities for obtaining more information about the epidemiological situation, yet it does not solve all the problems which eliminate the elements disturbing and modifying a quantitative and qualitative analysis of the incidence of occupational diseases in Poland.

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