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OCCUPATIONAL HEALTH SERVICES IN POLAND DURING THE COVID-19 PANDEMIC

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Abstract
Objectives: This publication analyses the activities of physicians and occupational medicine units in Poland during this period. **Material and Methods:** The analysis of the number of physicians and units of occupational medicine and the preventive and judicial activities they carried out was based on the MZ-35 and MZ-35A statistical forms, which constitute mandatory medical reporting. **Results:** In Poland, during the pandemic, the number of physicians authorized to perform preventive examinations of employees decreased by 9.3% (6597 in 2019 vs. 5984 physicians in 2022). At the same time, the number of basic units of the occupational medicine where preventive examinations of employees decreased from 5974 to 5534 (by 7.4%). The average number of preventive examinations performed annually on employees throughout the pandemic decreased by 9.4% from 5 429 808 (in 2015–2019) to 4 923 161 (in 2020–2023). In the first 2 years of the pandemic, the share of decisions on health contraindications to perform professional activities in the position indicated in the referral increased slightly. During the pandemic, there was also a significant decrease in the number of visits carried out by occupational medicine physicians, both to entire workplaces (by 46%) and to individual positions (by 49%). During the COVID-19 pandemic, occupational medicine physicians reported almost 3 times more suspected occupational diseases than in previous years (an average of 1736 reports per year compared to 673 reports in 2015–2019). The most reports were recorded in 2020 (N = 2183). **Conclusions:** The COVID-19 pandemic has significantly impacted the preventive activities performed by occupational medicine physicians. Reducing the number of mandatory medical examinations of employees during the pandemic could have led to the construction of a health debt of the working population, both in terms of limiting the unfavourable impact of working conditions and worsening the chances of early detection of lifestyle diseases. Int J Occup Med Environ Health. 2024;37(5)

Key words:
COVID-19, occupational health service, medical certification, preventive care, occupational health check, medical reporting

INTRODUCTION

Globally, as of December 13, 2023, there have been 772 386 069 confirmed cases of COVID-19, including 6 987 222 deaths, reported to WHO [1]. The COVID-19 pandemic has caused many health and social phenomena affecting employees and employers, and, consequently, both directly and indirectly (through increased morbidity and mortality also among medical staff), on physicians and organizational units of the occupational medicine service in Poland. A key role was played by the increase in sickness absence, epidemiological restrictions of various scales, including lockdown introduced by the Polish government, as well as legislative changes directly related to preventive care for employees [2–8]. The COVID-19 pandemic was an opportunity for occupational medicine to emphasize, and in many cases make people aware of, the key role it plays in protecting the health of not only employees, but also the entire community. Outside the early phase of the pandemic, due to organizational difficulties and lack of personal protective equipment, the role played by occupational health physicians helped to limit the impact of COVID-19 on workers, especially medi-

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cal staff [9]. According to a report by the European Center for Disease Prevention and Control (ECDC), a total of 1377 clusters of SARS-CoV-2 infections have been reported in various occupational settings in the United Kingdom and the European Union, including 18 198 cases of COVID-19. Of these, approx. 50% occurred in health and social care settings, 21% in the food packaging and processing industry, and 29% in other workplaces [10]. The COVID-19 pandemic triggered emergency measures that have played an important role in the development of labour law in many countries. The main goals of these choices are to reduce the risk of infection in the workplace, mitigate the financial consequences for businesses and workers and ensure that essential work is carried out [11]. The risk of infection with the SARS-CoV-2 virus in the workplace has sparked numerous discussions about preventive measures to be taken depending on the environment and workplace, and the role of enterprise managers, employees or labour inspections is widely discussed. The role of an occupational medicine physician, although fundamental in the context of a pandemic is rarely mentioned [12].

This publication aimed to analyze the activities of physicians and occupational medicine units in Poland during the COVID-19 pandemic – based on data from mandatory medical reporting.

MATERIAL AND METHODS

The analysis covered data on the activities of the occupational medicine service in Poland from 2020–2022, derived from the mandatory reporting to which all basic units of the occupational medicine service are obliged to complete (on MZ-35A forms) and Voivodeship Occupational Medicine Centres (on MZ-35 forms) [13,14].

To calculate the coefficients, data on the number of economically active people based on the labor force survey (LFS) published by the Central Statistical Office were used. People aged ≥15 years classified as employed or unemployed, but actively looking for work or ready to start working, by the definition used in the Labour Force Survey (Badanie Aktywności Ekonomicznej Ludności – BAEL), were included in the study [15].

RESULTS

In Poland, during the pandemic, the number of physicians who are authorized to perform preventive examinations of employees and provide preventive health care necessary due to working conditions decreased by 9.3% (in 2019, 6597 physicians were registered, in 2020 – 6349, in 2021 – 6153, and in 2022 – 5984). At the same time, the number of basic units of the occupational medicine service in which preventive examinations of employees are performed decreased from 5974 to 5534 (by 7.4%). In this group, the largest decline was recorded among private medical practices (by 8.8%, from 2556 in 2019 to 2331 in 2022).

During the pandemic, as in previous years, the largest number of occupational physicians worked in the Śląskie Voivodeship, which resulted in the lowest number of professionally active people according to BAEL and the number of preventive examinations per one physician compared to other voivodeships. However, the relatively highest burden of preventive activities is observed primarily among occupational physicians in the Podlaskie and Kujawsko-Pomorskie Voivodeships (Table 1 and Figure 1) [15,16].

The highest increase in the burden of preventive activities on occupational physicians during the pandemic, recorded in the Kujawsko-Pomorskie Voivodeship, was the result of both the largest increase in the population subject to testing (by 4.6%) and, at the same time, the largest decrease in the number of authorized physicians (by 26.7%) [15–17]. Interestingly, the comparable (40% at the end of 2022) increase in the burden of examinations on physicians in the Mazowieckie Voivodeship was influenced not only by the above-mentioned 2 factors, but also by an additional >15% increase in the number of prophylactic examinations performed compared to 2019.

Table 1. Occupational health services (OHS) in Poland, 2019–2022 by region

Place	Physicians authorized to provide prophylactic examinations			Prophylactic examinations		
	2019	2022	2019 vs. 2022	2019	2022	2019 vs. 2022
	n	n	%	n/OHS physician	n/OHS physician	%
Voivodeship						
Dolnośląskie	381	346	–9.2	1328	1303	–1.9
Kujawsko-Pomorskie	217	159	–26.7	1491	2075	39.2
Lubelskie	293	256	–12.6	813	866	6.5
Lubuskie	146	133	–8.9	1112	1091	–1.8
Łódzkie	522	519	–0.6	563	518	–8.0
Małopolskie	410	355	–13.4	1035	1265	22.3
Mazowieckie	723	598	–17.3	802	1118	39.5
Opolskie	123	119	–3.3	1043	834	–20.0
Podkarpackie	294	290	–1.4	1061	1005	–5.3
Podlaskie	102	87	–14.7	1821	2080	14.2
Pomorskie	367	337	–8.2	1344	1405	4.5
Śląskie	1769	1641	–7.2	489	524	7.1
Świętokrzyskie	177	163	–7.9	975	960	–1.6
Warmińsko-Mazurskie	203	198	–2.5	786	776	–1.3
Wielkopolskie	589	525	–10.9	766	910	18.8
Zachodniopomorskie	281	258	–8.2	890	862	–3.2
Poland – total	6597	5984	–9.3	841	911	8.3

In the same period (comparing 2022 to 2019), only 4 voivodeships saw an increase in the number of preventive examinations (by 5.9% in the Małopolskie and Wielkopolskie voivodeships and by 2% in the Kujawsko-Pomorskie Voivodeship).

Throughout the country, the number of medical examinations of employees in 2022 compared to 2019 decreased by over 1.7%. However, it is worth noting that during the pandemic, the number of year-to-year examinations decreased significantly only in 2020 (by 22.2%), and in the following years their year-to-year increase was recorded (by 16% in 2021 and by 8.9% in 2022) (Table 2). However, the average number of prophylactic examinations performed annually on employees throughout the pandemic decreased by 9.4% from 5 429 808 (in 2015–2019) to 4 923 161 (in 2020–2023). In the years 2020–2022, as in previous years, >99% of prophylactic examinations of employees and job candidates, performed under Art. 229 § 4 of the Labor Code, ended with the issuance of a decision on the lack of health contraindications to performing work in a specific position (judgment symbol 21). In the first 2 years of the pandemic, the share of decisions on health contraindications to performing professional activities in the position indicated in the referral increased slightly (judgment symbol 22). In the third year, the share of negative judgments dropped to the level observed in the period before the COVID-19 pandemic, however, on an average annual basis, the share of these judgment decisions in the period 2020–2022 was higher than in the pe-

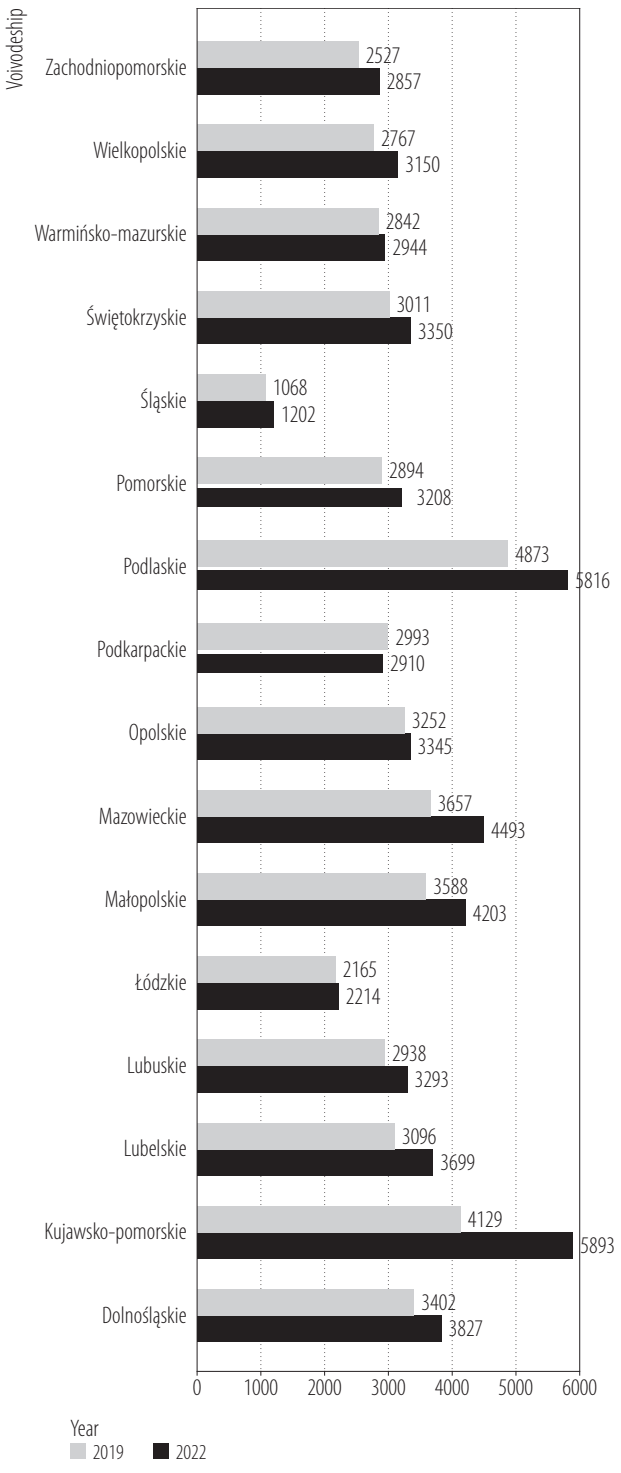

Figure 1. Active professionals according to the Labour Force Survey (Badanie Aktywności Ekonomicznej Ludności – BAEL) (both the workings and the unemployed) per 1 occupational health services (OHS) physician in Poland, 2019–2022 by region

riod of 5 years preceding the pandemic (0.52% of all judgments in the pandemic vs. 0.37% in 2015–2019) (Table 2). However, the share of other judicial decisions relating to specific health situations related to professional activity remained relatively low (approx. 0.06% of all judgments), remained at a constant level in the first 2 years of the pandemic, and in 2022 dropped even below the level observed before the pandemic (Table 2). In this group, during the entire pandemic period (2020–2022), the following issues were reported:

- 4703 decisions with symbol 23 – determining the loss of ability to perform current work by an employee who is no more than 4 years away from reaching retirement age [13,14] (the annual average of such decisions during the pandemic was 1568, and for comparison in 2015–2019 was 1730);
- 2644 decisions with symbol 31 – on the need to transfer an employee to another job due to the finding of a harmful impact of the work performed on the employee's health (the annual average of such decisions during the pandemic was 881, and for comparison in 2015–2019 it was 1153);
- 530 decisions with symbol 33 – stating that a given job poses a threat to the health of adolescents (the annual average of such decisions during the pandemic was 177, and for comparison in 2015–2019 it was 132);
- 367 decisions with symbol 34 – stating that an employee had symptoms indicating the occurrence of an occupational disease (the annual average of such decisions during the pandemic was 122, and for comparison in 2015–2019 it was 252);
- 200 decisions with symbol 35 – stating the inability to perform previous work for an employee who suffered an accident at work or was diagnosed with an occupational disease, but was not included in any of the disabled groups (the annual average of such decisions during the pandemic was 67, and for comparison in 2015–2019 it was 77);
- 247 judgments issued under Art. 179 of the Labor Code [13] – stating health contraindications to per-

Table 2. Types of certificates issued by occupational medicine physicians in Poland, 2019–2022

Year	Prophylactic examinations of employee							
	total		certificate					
			type 21		type 22		others	
	n	%	n]	%	n	%	n	%
2019	5 545 945	100	5 522 794	99.58	19 641	0.35	3510	0.063
2020	4 314 520	100	4 285 452	99.33	26 384	0.61	2684	0.062
2021	5 005 649	100	4 972 698	99.34	29 789	0.60	3174	0.063
2022	5 449 313	100	5 427 257	99.60	19 258	0.35	2833	0.052

Explanation of the symbols of certificates given by occupational physicians authorized to provide prophylactic examinations in accordance with the Decree of the Minister of Health dated 1996 May 30 on medical examinations of employees, the scope of prophylactic health care of employees and medical decisions issued for purposes provided for by the Labour Code [23]:
– 21 – worker is able to perform work on the given (current) position due to the lack of medical contraindications,
– 22 – worker is unable to perform work on the given (current) position due to medical contraindications,
– others, including:
• 23 – worker is no longer able (lost his/her ability) to perform work on the given (current) position due to medical contraindications,
• 31 – worker is unable to perform work on the given (current) position due to the harmful effect of the work on his/her health,
• 33 – worker is unable to perform work on the given (current) position due to a threat to an underage worker's health,
• 34 – worker is unable to perform work on the given (current) position due to suspected occupational disease,
• 35 – worker is unable to perform work on the given (current) position due to detected occupational disease or effects of a work-related accident,
certificates stating that particular work is harmful to a pregnant woman's health.

forming current work by a pregnant or breastfeeding employee (the annual average of such decisions during the pandemic was 82, and for comparison in 2015–2019 it was 241).

During the pandemic, a total of 929 285 prophylactic examinations were reported for pupils, students, students of qualifying vocational courses and participants of doctoral studies who, during practical vocational training or studies, are exposed to factors that are harmful, burdensome or hazardous to health (255 887 in 2020, 315 194 in 2021 and 358 204 in 2022) For comparison, 413 107 such examinations were carried out in 2019.

During the 3 years of the pandemic, a total of 6 695 411 initial examinations were performed, which constituted 45.3% of all prophylactic examinations, 6 687 304 periodic examinations (45.3%) and 1 386 767 follow-up examinations (9.4%) (Table 3).

In the years 2020–2022, there was also a significant decrease in the number of visits carried out by occupational physicians, both to entire workplaces (from 8624 performed on average annually in 2013–2019 to 4665) and to individual positions (from 55 349 to 28 051).

During the COVID-19 pandemic, occupational medicine physicians reported almost 3 times more suspected occupational diseases than in previous years (an average of 1736 reports/year compared to 673 reports in 2015–2019). The most reports were recorded in 2020 (2183), followed by 1406 (in 2021) and 1618 (in 2022).

In 2020, only 3607 (56.8%) of physicians obliged to prepare reports on prophylactic activities on the MZ-35A form complied with the obligation to prepare annual reports, and in the following years, their number decreased further to 3461 (56.2%) in 2021, and up to 3326 (55.6%) in 2022.

DISCUSSION

After 3 years of the COVID-19 pandemic, Poland has seen a decrease in the number of physicians declaring that they provide occupational medicine services. At the same time,

Table 3. Types of prophylactic examinations of employee in Poland, 2019–2022

Year	Examinations					
	preliminary		periodic		follow-up	
	n	%	n	%	n	%
2019	2 542 004	45.8	2 570 011	46.3	433 930	7.8
2020	1 933 355	44.8	1 924 929	44.6	456 236	10.6
2021	2 310 391	46.2	2 229 993	44.5	465 265	9.3
2022	2 451 665	45.0	2 532 382	46.5	465 266	8.5

a progressive allocation of occupational physicians is observed, which deepens the differences between individual voivodeships in the availability of preventive health care necessary due to working conditions [18,19]. As a result, the ratio of the number of professionally active people per occupational medicine doctor increased unevenly throughout the country. Higher sickness absence among physicians must have also contributed to the deterioration of access to preventive examinations during the pandemic. In the health care and social assistance sector alone, in 2020 the number of days of sickness absence was 28.5% higher than in 2019, and in 2021 and 2022, despite the improvement in the situation, it was still higher than in 2019 by 2.1% and by 3.4% [5–8]. Due to COVID-19, 304 physicians died by February 2022 (considering all specialities), and increased absenteeism among all physicians was caused by 45 705 recorded SARS-CoV2 infections and 78 069 cases of imposed quarantine in 2020 alone [20,21]. It should also be noted that 43% of the basic units of the occupational medicine service are individual medical practices which, in the event of a doctor's absence, including illness, stop providing preventive care for employees (no replacements). In the first year of the COVID-19 pandemic in Germany, 4398 suspected case reports were submitted for the diagnosis of SARS-CoV-2 infection among health care and social care workers. This number is 4 times the number of all reported infections typically received annually. The greatest number of reports, regardless of whether there was a confirmed infection, concerned nurses (N = 6927, 63.9%). The mortality rate of workers infected with SARS-CoV-2 ranges from 0.2% to 0.5%. Physicians are more likely to suffer from more serious diseases than other professional groups (8.1% vs. 4.1%). In Malaysia, occupational infections among healthcare workers mainly occurred when patients were not suspected of having COVID-19 and were not wearing appropriate personal protective equipment [22].

During the pandemic, 10% fewer prophylactic examinations of employees were performed than in the previous corresponding period. The reason for such a significant decline in the number of examinations should be the introduction of the provisions of the Act on special solutions related to the prevention, counteracting and combating of COVID-19, as a result of which the obligation to perform periodic examinations was suspended. Although the obligation for preliminary examinations (before taking up a new job or changing job position) and follow-up examinations (after returning to work after long-term incapacity for work lasting longer than 30 days due to illness) was maintained, other doctors were also authorized to carry them out [3,23].

The effect of the introduced legal regulations and the epidemiological and socio-economic situation during the pandemic was an increase in the number of employee follow-up examinations, both in absolute numbers (by >5% in 2020 and by another 2% in 2021) and their share in the

structure of all examinations (from the level of approx. 8% in the 3 years preceding the pandemic [19]). The reason for the greater number of follow-up examinations during the pandemic was, on the one hand, the continued obligation to perform them, and on the other hand, the number of cases of long-term absence from work exceeding 30 days, requiring the consent of an occupational medicine doctor to return to work, remaining at a comparable level [5–8]. Since periodic examinations were suspended, significant reduction was expected. Their number, like preliminary examinations, decreased significantly, especially in the first year of the pandemic (the longest lockdowns took place in 2020). However, the analysis of the data indicates that periodic examinations were performed at a similar level to the initial examinations, and in 2022 – half a year before the pandemic was cancelled, their number was already comparable to the pre-pandemic period. The reasons for this phenomenon can be seen in the failure to postpone periodic examinations, as they were not abolished at all, but only suspended. Employers and employees were obliged to immediately implement them within a period not longer than 180 days from the date of lifting the state of epidemic threat [3,4].The reason for ordering periodic examinations could also be the employers' concern about maintaining safe and healthy working conditions, especially for employees working in conditions of higher accident risk.

Compared to the same period before the pandemic, in 2020–2022, despite a decrease in the number of all examinations by >10.7%, the number of negative decisions on the possibility of taking up or continuing work increased by 14.5% (judgment symbol 22). In Polish reality, this meant that during the pandemic, 75 431 people, based on the decision of occupational medicine doctors, were either prevented from taking up a new job or dismissed from their current position (in 2017–2019, there were 65 851 such cases, i.e., 9580 fewer) [18,19].

In the case of prophylactic examinations of pupils, students, students of qualifying vocational courses and doctoral students, the differences in their number are mainly due to differences in the number of people from a given age group who were subjected to these examinations. The obligation to obtain a positive medical certificate before starting practical vocational training has not been abolished [19].

During the pandemic, there were significant changes in the number of occupational diseases diagnosed in Poland. In 2020, compared to 2019, the number of all diagnosed occupational diseases decreased by 10.4% (2065 occupational diseases in 2019 vs. 1850 in 2020), but in the following years, it increased by 35.7% (2543 occupational diseases in 2021) and by 3.7% (2637 in 2022) [24]. This situation was mainly caused by a sharp increase in the number of cases of COVID-19 diagnosed as an occupational disease (38 cases in 2020, 968 in 2021 and 1053 in 2022) and a simultaneous decrease in the number of diagnoses of other occupational diseases (1812 in 2020, 1575 in 2021 and 1584 in 2022 compared to 2065 non-COVID-19 occupational diseases in 2019) [25,26].

In this context, it is worth paying attention to the increased activity of occupational medicine physicians, who reported almost 3 times more suspected occupational diseases during the pandemic than in the 3 years preceding the pandemic. However, it cannot be clearly stated that they only concerned SARS-CoV2 infections at work, because medical reporting in Poland only provides for collecting the number of cases of suspected occupational diseases, without registering their names. Only the names of administratively confirmed occupational diseases are registered. Moreover, it should be emphasized that suspected occupational diseases in Poland also have the right to be reported by patients, employers and, above all, doctors of other specialities (including infectious disease specialists), which is particularly important in the case of COVID-19.

In Italy, in the management of the pandemic, the Italian Society of Occupational Medicine was able to translate scientific evidence into pragmatic guidelines, providing oc-

cupational physicians with practical and effective tools. Moreover, it played a key role in the recognition and compensation of SARS-CoV-2 infection as an occupational accident by Italian National Institute for Insurance against Accidents at Work (Istituto Nazionale Assicurazione contro gli Infortuni sul Lavoro – INAIL) [27].

Despite the reduction in the number of visits to plants and workplaces and, consequently, the presence of occupational medicine doctors at the workplace, it is worth emphasizing the special preventive role that occupational medicine doctors played during the pandemic. During the periods of the greatest epidemic restrictions and limiting the possibility of personal contact with primary and specialist health care through the introduction of teleconsultations, often the only opportunity to physically examine a patient after COVID-19 and, in general, to have personal contact with a doctor were check-ups carried out by an occupational physician. On the other hand, one should be aware that reducing the number of initial and periodic examinations leads to a deterioration of primary and secondary health prevention among employees, significantly reducing the chances of detecting previously undiagnosed lifestyle diseases, such as hypertension, diabetes or dyslipidaemia [28–30].

The roles and responsibilities of an occupational health practitioner vary from country to country concerning national regulations; therefore, health care and occupational health are not evenly distributed around the world, reflecting significant differences in health care, social security, and insurance delivery systems. In Italy, among the legal duties of an occupational physician, the primary duty is to plan and carry out health surveillance based on health protocols defined depending on the specific occupational risk and taking into account the most advanced scientific guidelines. The law therefore reaffirms the obligation of the occupational health physician to play an active role in planning as well as carrying out the required health surveillance through health protocols tailored to the specific risks associated with the specific job performed by the employee, thus avoiding all those broad-based assessments that are not intended to the purpose of their prevention [31].

CONCLUSIONS

The COVID-19 pandemic has significantly impacted the preventive activities performed by occupational physicians. Both the number of initial and periodic examinations and the presence of physicians in workplaces in the form of visits to employers and workplaces have decreased. At the same time, the number of reported suspicions and diagnoses of occupational diseases, especially COVID-19, increased. Reducing the number of mandatory medical examinations of employees during the pandemic could have led to the construction of a health debt of the working population, both in terms of limiting the unfavourable impact of working conditions and worsening the chances of early detection of lifestyle diseases. It cannot be forgotten that occupational medicine was extremely important in the fight against the first wave of the epidemic, thanks to its experience and expertise in the assessment, prevention and management of biological threats. Moreover, medical surveillance of workers during the pandemic has protected the health of healthcare workers, and therefore hospitals, from collapse by ensuring the early identification, treatment and quarantine of COVID-19 cases, and the subsequent management and return to work of recovered ones.

Author contributions

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Statistical analysis: Andrzej Marcinkiewicz

Interpretation of results: Andrzej Marcinkiewicz, Marta Szkiela

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