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## Statistics and Analysis of Newly Added Occupational Diseases in China from 2010 to 2015

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**Abstract** In order to grasp the incidence of occupational diseases in our country from 2011 to 2015 and analyze the status and laws of the occurrence of occupational diseases, and to provide the basis for formulating a scientific and rational strategy of preventing occupational diseases. Now statistics National Health and Family Planning Commission released between 2010 and 2015 "national occupational disease report" data, occupational disease-related data for statistical analysis. There were 159,032 new occupational diseases nationwide in 2010-2015, of which 138,939 were pneumoconiosis (87.37%), 11092 (6.97%) were occupational poisonings, 8340 (5.24%) were occupational ENT diseases and 537 were occupational tumors (0.34%), the other 127 cases (0.08%). Pneumoconiosis was still the most serious occupational disease in our country. Thirteen thousand three hundred and thirty-three cases of pneumoconiosis and coal worker pneumoconiosis accounted for 94.46% of the total number of pneumoconiosis patients. Most of the deaths were caused by acute occupational poisoning, Caused by major occupational poisoning (98.58%), chronic occupational poisoning accounted for 75.07% of poisonings caused by three poisonous substances, including lead and its compounds, benzene, arsenic and its compounds. Among occupational diseases Otolaryngology and oral cavity diseases accounted for the highest proportion of 42.42%; occupational tumors, 81.19% of patients are caused by benzene-induced leukemia and coke oven workers are two cases of lung cancer caused; and from the distribution of occupational diseases in the coal mining industry (48.27%), non-ferrous metals industry (10.18%) accounted for a larger proportion. The overall trend of occupational diseases in 2010-2015 is fluctuating upward trend. Pneumoconiosis is the main factor affecting it. The number of new occupational diseases added in each year is relatively stable. Therefore, relevant education and training of occupational diseases should be strengthened to strengthen daily protection and management, Industry (such as coal) and special substances (such as benzene, arsenic) protection.

**Keywords** Occupational disease, Pneumoconiosis , Occupational poisoning, Self-protection

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### Introduction

In the process of economic construction, the material living standards of the people have been continuously raised. People are also paying more and more attention to their own health, especially their own work environment. With the development of large industrial production and natural sciences, occupational diseases will become more and more complex. Therefore, this statistical analysis is conducted for the purpose of government and health sector management, better protection measures for enterprises and workers' better self-protection.



**Data and Methods**

**Source**

Data collected from the National Health and Family Planning Commission of the People's Republic of China released the "National Occupational Disease Report 2010" "on the 2011 National Occupational Disease Report" "on the 2012 National Occupational Disease Report" "on the 2013 National Occupational Disease Report" on the 2014 National Occupational Disease Report, Report on the National Occupational Disease in 2015 and the Third National Economic Census (No. 2), released by the National Bureau of Statistics on December 16, 2015.

**Analytical Methods**

The collected data were analyzed, classified, and entered into Excel 2007 to create an information table, and then use SPSS 18.0 software package for statistical analysis, the statistical description.

**Results**

**Occupational Diseases and Pneumoconiosis Development Trend**

From 2010 to 2015, a total of 159,032 new types of occupational diseases nationwide were added, of which 138,939 cases were newly added to pneumoconiosis, accounting for 87.37% of the total. Since the beginning of 2010, the total number of occupational diseases and pneumoconiosis in the country has been on the rise, as shown in figure 1.

In the newly-added 138,839 patients with pneumoconiosis, there were 131,238 cases of silicosis and coal worker's pneumoconiosis, accounting for 94.46% of the total number of pneumoconiosis cases, as shown in figure 2.

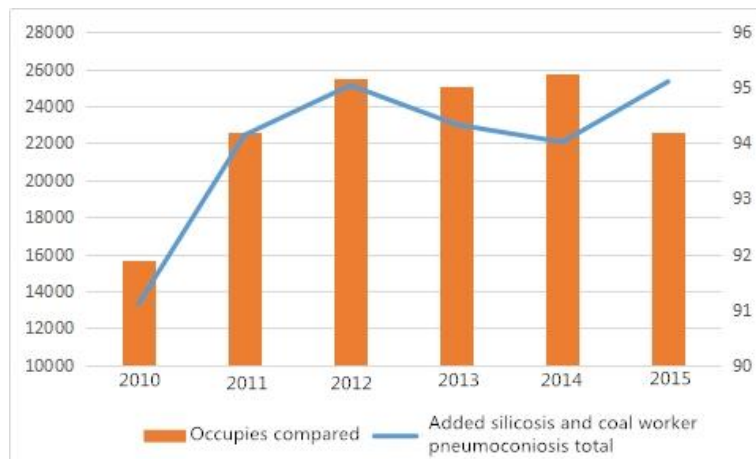


Figure 1: The total number of occupational diseases and pneumoconiosis trends in 2010-2015

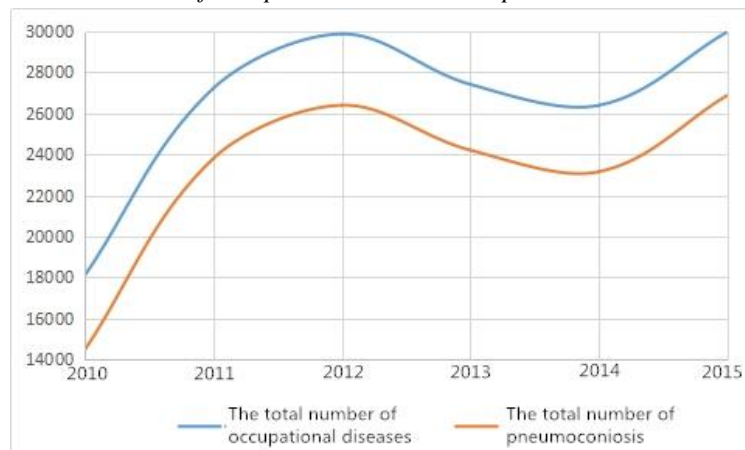


Figure 2: The total number of added silicosis and coal workers' pneumoconiosis from 2010 to 2015 and the proportion of added pneumoconiosis patients they occupy

**Occupational Poisoning**

From 2010 to 2015, 3483 new acute occupational poisoning patients were newly added, and 7609 chronic occupational poisoning cases were newly added, accounting for 6.97% of the total number of occupational diseases. The number of newly-added acute occupational poisoning patients is relatively stable each year, while the number of new chronic occupational poisoning patients Decline, as shown in figure 3.

In the past six years, lead and its compounds, benzene, arsenic and their compounds were the major three kinds of poisons causing chronic occupational poisoning. The number of people who were poisoned was 2854, 1730 and 1188, respectively, accounting for the increase of chronic occupational poisonings 29.64%, 22.74%, 14.82%, as shown in figure 4.

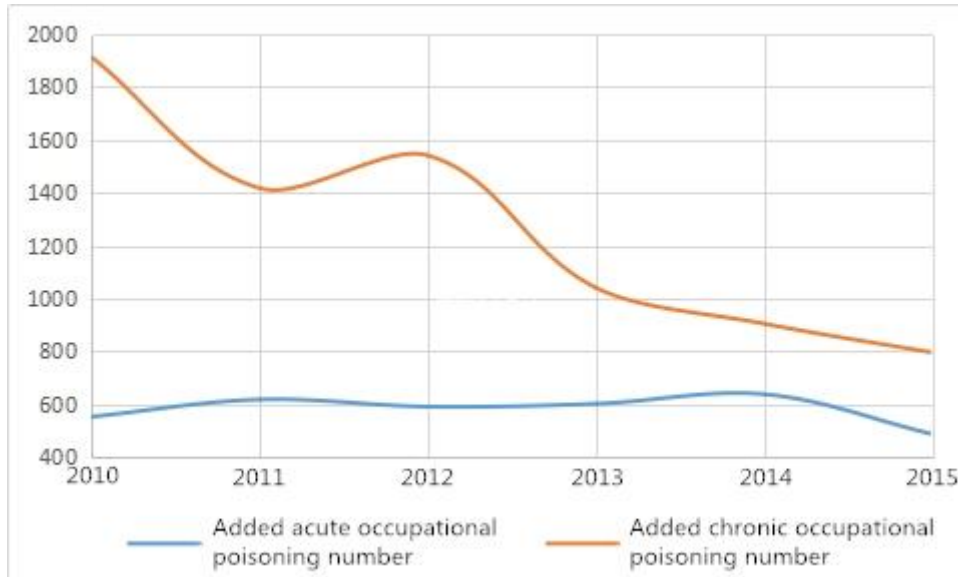


Figure 3: Trends in the number of added acute and chronic occupational poisoning patients in 2010-2015

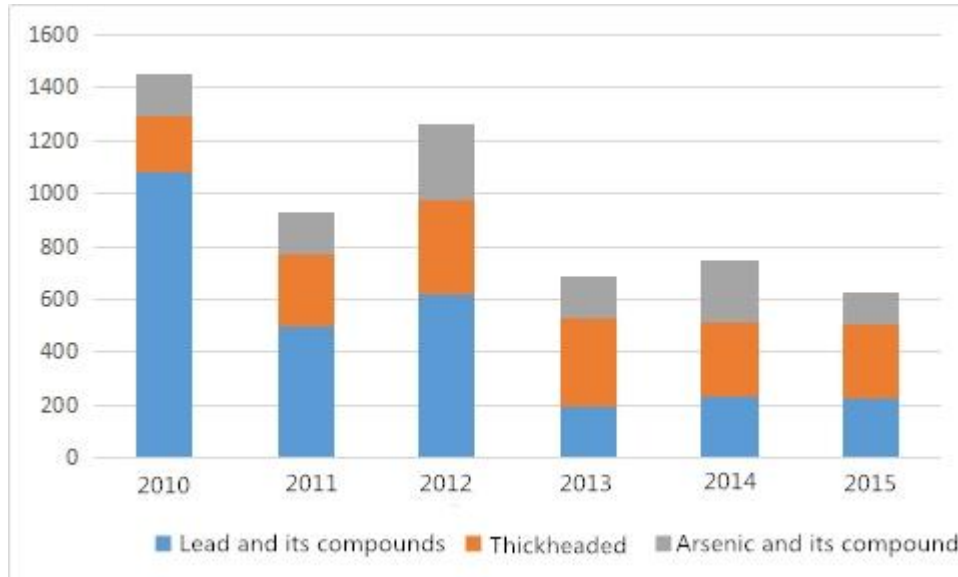


Figure 4: Added chronic poisoning in patients with the main toxic substances statistics in 2010-2015

**Occupational ENT and oral diseases**

From 2010-2015 six years of occupational ENT and oral diseases, occupational eye diseases, physical factors caused by occupational diseases, biological factors caused by occupational diseases, occupational skin diseases, other new occupational diseases were 3538 cases, 916 cases, 1085 cases, 1575 cases, 938 cases, 288 cases, accounting for 5.24% of the total new occupational diseases in six years, as shown in figure 5.

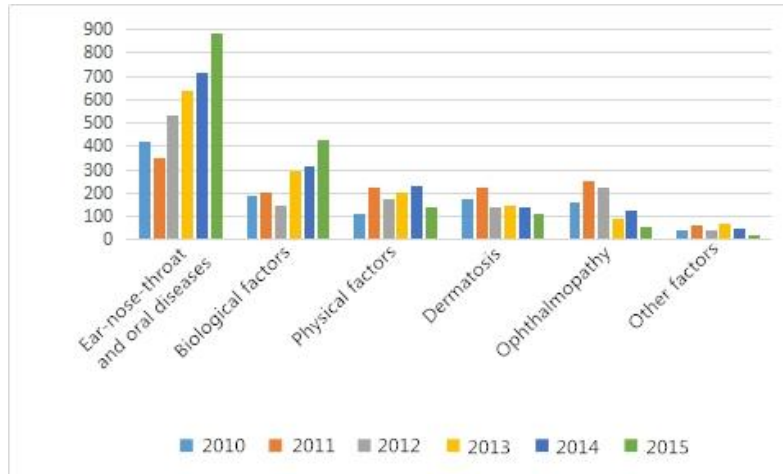


Figure 5: ENT and other six occupational disease statistics in 2010-2015

**Occupational Disease Analysis**

In the past six years, there were 159,032 cases new occupational diseases nationwide, of which 138,939 cases (87.37%) were pneumoconiosis, 11092 cases (6.97%) were occupational poisonings, 8340 cases (5.24%) were occupational ENT diseases and oral diseases, The other 127 cases (0.08%), as shown in figure 6.

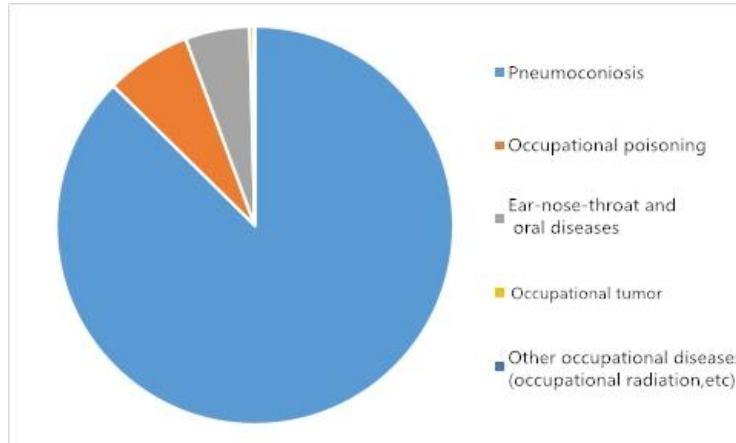


Figure 6: Proportion of occupational diseases in 2010-2015

**Occupational Disease Industry Classification**

Among the various types of occupational statistics, there are 76,763 cases belonging to the coal mining industry, 16,137 cases belonging to the non-ferrous metal industry, accounting for 48.27% and 10.18% of the newly-added occupational diseases respectively, as shown in figure 7.

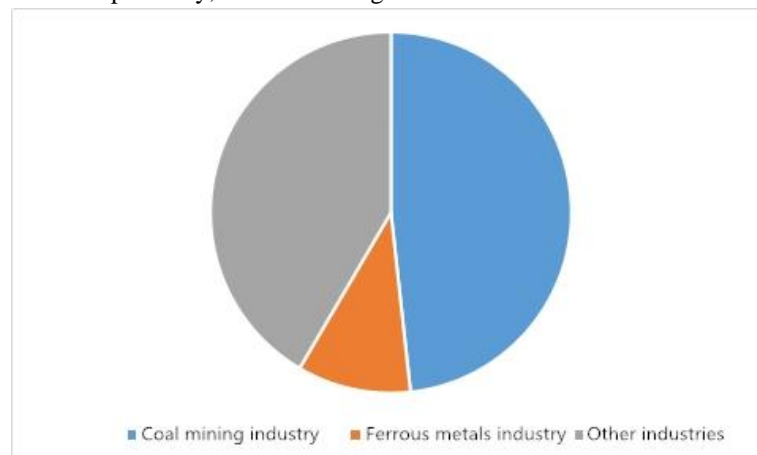


Figure 7: Occupational disease distribution industry statistics in 2010-2015

## Conclusion

The labor force is the driving force behind social development. To improve the health quality of the entire nation, it is important to improve the health quality of workers. Constructing "Building a Well-off Society in an All-round Way". The strategic research on the macro-strategic goal of "safe and well-off" and the goal of occupational health is an important part [1]. At present, the situation of prevention and treatment of occupational diseases in our country is extremely harsh. Occupational hazards are widespread, the number of victims is constantly increasing, and new hazards are emerging. The concern about occupational diseases has become an unavoidable topic.

According to this study, 87.37% of new patients with pneumoconiosis have been newly added up. Pneumoconiosis is still the most serious occupational disease in our country. The incidence of pneumoconiosis is shortened as well as that of massive pneumoconiosis. SMEs pneumoconiosis incidence is grim, more than half of the distribution of pneumoconiosis in the characteristics of SMEs. The incidence of pneumoconiosis and coal worker pneumoconiosis has reached 94.46%, which is consistent with the relevant domestic statistics [2]. The results showed that patients with tuberculosis after the risk of death was significantly greater than those without pulmonary tuberculosis. Therefore, to strengthen the tuberculosis prevention work of pneumoconiosis patients to control the course of disease and prolong the life of patients. Patients who have complicated tuberculosis should be actively treated to improve their quality of life [3].

Among the newly added occupational poisoning patients, those with chronic occupational poisoning are significantly higher than those with acute occupational poisoning. This is mainly due to the fact that acute occupational poisoning occurs in major occupational poisoning accidents. Due to the relatively small number of major occupational poisoning accidents, So poisoning patients are relatively small, but the death of acute occupational poisoning patients, mostly caused by major occupational poisoning, accounting for 98.58%, and the vast majority of acute occupational poisoning caused by CO. Chronic occupational poisonings are mostly distributed in light industry, metallurgy, electronics and other industries, especially some smaller enterprises, blind pursuit of economic interests, neglect of individual protection and other measures, to a certain extent, exacerbated chronic occupational poisoning [4].

Occupational ENT oral and other diseases and occupational tumors each year the new patient is relatively stable, but in the statistical analysis found that benzene-induced leukemia and coke oven workers suffering from lung cancer these two cases caused by the proportion of occupational tumors reached 81.19%. Therefore, the protection of special trades should be strengthened to improve the production technology and equipment so as to reduce the prevalence of such trades.

The coal industry and the non-ferrous metals industry have always been the high incidence of occupational diseases. Most of them are engaged in the underground mining, washing and smelting processes. Workers have long-term exposure to occupational diseases such as pneumoconiosis, occupational poisonings and occupational diseases, such as dust, CO, and radioactive substances. All levels of government and management departments should pay wide attention to publicity and supervision, take coercive measures to curb the growth of new cases, implement the first payment system for work-related injury insurance and establish a multi-dimensional, three-dimensional rescue system [5], and practitioners should also increase self-protection Consciousness, reasonably wear labor insurance products, to reduce the work environment harm themselves.

## References

- [1]. LI Tao, ZHANG Min, LI De-hong, etc.(2004)Development of Occupational Health in China.Industrial Hygiene and Occupational Diseases,30 (2): 65-68.
- [2]. ZHANG Min, WANG Dan, ZHENG Ying-dong, etc.(2013) Characteristics and trends of pneumoconiosis in China from 1997 to 2010.Chinese Journal of Occupational Health and Occupational Diseases, 31 (5): 321-334.
- [3]. Tang Hao, Wang Yidan, Chen Hui,etc.(2014) Meta - analysis of case fatality rate in patients with pneumoconiosis in China. Chinese Journal of Occupational Health and Occupational Diseases, 33 (03): 229-232.
- [4]. ZHANG Xing, JI Jun-Min, ZHANG Zheng-Dong.(2004)Analysis on the Incidence and Trend of



Occupational Diseases in China from 2007 to 2013. *Occupation and Health*, 30 (22): 3187-3189.

- [5]. Chen Jingyu. (2012) Gathering government and social forces to care for patients with pneumoconiosis. *Chinese Journal of Occupational Disease Health*, 3 (01): 1-2.

