

# China's "Smoking & Health" Report, 2006

## Foreword

On May 21, 2003, the 56th World Health Assembly unanimously adopted WHO's "Framework Convention on Tobacco Control ". On November 10, 2003, the Chinese government officially signed the Convention, and on August 28, 2005, the 17th meeting of the 10th People's Congress' Standing Committee considered and approved the Convention, making China the 89th country to ratify it. The Convention officially went into effect in our country in January 2006. The enactment of the Convention has provided a legal framework for global control of the harms of tobacco, and collective protection of the health of all human beings. The Chinese government has always supported tobacco control measures of the international community, and has actively participated and pushed for the enactment of the "'Framework Convention on Tobacco Control". Currently, various agencies in the State Development and Reform Commission and the Ministry of Health, which are Convention implementation coordinating bodies, are actively working on its implementation.

Smoking is the behavioral risk factor for many diseases, including cardiovascular and cerebral vascular diseases, cancers and chronic obstructive pulmonary diseases, and it devastates people's health. WHO, on the occasion of the 19th World No-Tobacco Day, once again warned people that "tobacco swallows lives", that cigarettes of all varieties are equally harmful. To strengthen the promotion work of tobacco control, and make sure that Convention measure are well implemented, the Ministry of Health has established a "China **Smoking & Health Report**" system, and made it part of the Ministry's routine Convention implementation work. This year's "China **Smoking & Health Report**" focuses on tobacco control and lung cancer P/T . The report provides authoritative information about the prevalence of smoking and lung cancer in our country, and argues for tobacco control and lung cancer P/T. It alarms all sectors of society to the harms of tobacco, and advocates a healthy lifestyle for smokers so as to keep in check the trend of rapid increases in lung cancer incidence and death rate in our country.

Controlling tobacco's harms is a long-term, difficult and complex public health issue. It is also a social and economic problem with strong policy implications. Convention implementation work requires comprehensive measures and the cooperation of many agencies and organizations; it requires social mobilization, and the active building of a supportive environment for tobacco control laws. We'd like to take this opportunity to thank China Cancer Foundation, China Center for Disease Control and Prevention, China Tobacco Control Association, China Medical Society, China Health Education Association, China Anti-Cancer Association and National Office for Tumor Prevention and Treatment and the many experts involved in drafting this report, and their positive suggestions. We also want to thank China Cancer Foundation for its leading, organizing and coordinating roles in the drafting of this report. It is our belief that through the efforts of all sectors of our society, Convention implementation in the area of tobacco control and disease control in our country will make even greater progress.

Ministry of Health

May 26, 2006

## **China's "Smoking & Health" Report, 2006**

- Tobacco Control and Lung Cancer Prevention/Treatment

China Cancer Foundation  
China Center for Disease Control and Prevention  
China Tobacco Control Association  
China Medical Society  
China Health Education Association  
China Anti-Cancer Association  
National Office for Cancer Prevention and Treatment

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### **Summary**

According to survey results, in the year of 2002, 35.8% of the population over age 15 in our country were smokers. In that population, 66.0% of the males were smokers, while 3.1% of the females were smokers. Based on these numbers, our estimate is that there are 350 million smokers in our country, 1/3 of the total number of smokers worldwide. Moreover, the smoking population in our country is getting younger. Compared with the 1980s, the average starting age for smoking has dropped from 22.4 to 19.7 years old. Our country is a major tobacco producer as well as a major tobacco consumer. Tobacco production in our country is the equivalent of the total production of the other 7 largest tobacco producing countries. Annual cigarette sales in our country are as high as 1.6 trillion cigarettes, and Chinese cigarette consumption is about 1/3 of that worldwide. If all deaths resulting from various diseases related to cigarette smoking are included, currently the annual death toll of smoking is around 1 million, and this number is estimated to reach 2 million by the year 2020.

The relationship between smoking and lung cancer has been proven by much empirical research and a number of vigorously designed large population studies. Over 80% of lung cancer cases are related to smoking (including secondhand smoking). Experiences of some European countries and the US have shown that effective tobacco control interventions have an obvious effect in containing the increase in lung cancer incidence and death rate, and in bringing both of them down. Researches have also shown that even when a smoker quits in his/her middle age, the risk of getting lung cancer can still be reduced. For smokers, quitting is never too late, but of course, the earlier, the better.

Globally, both lung cancer incidence and death rate are among the highest of all cancers. Meanwhile, the lack of effective early detection methods, and the fact that treatment for mid- and late-stage lung cancer cases is expensive yet not effective (the 5 year survival

rate is only around 10%), have made lung cancer prevention and treatment (*hereafter P/T - translator's note*) the most important and the most difficult in the P/T of all cancers.

Our country has been seeing a trend of marked increase in both lung cancer incidence and death rate. Compared with the 1970s, lung cancer death rate in the 1990s has increased 111.85%. By the beginning of this century, lung cancer death rate has moved up to become the #1 cause of cancer deaths, from the #4 cause in the 1970s. Because the number of people already exposed (to cigarette smoking) is very large, this trend of increase is going to last for at least 20 to 30 years. It is our prediction that by the year 2025, the number of deaths caused by lung cancer alone will be close to 1 million.

Clearly, tobacco control and lung cancer P/T are very critical and urgent public health issues that will affect the realization of our goal of building a fairly well-off society, and the prosperity of our nation. Our government has always emphasized controlling the harms of tobacco and preventing/treating cancers. In December 2003, the Ministry of Health issued "Outlines of China's Cancer Prevention and Control Plan (2004 - 2010)", which identified the P/T of lung cancer as the most important issue, and tobacco control as the main strategy of cancer P/T and control in China. On August 28, 2005, The Standing Committee of the People's Congress approved WHO's "The Framework Convention on Tobacco Control", demonstrating the image of China as a responsible major power, and her resolve to work with all Convention signatory parties in containing the harms of tobacco and protecting the public's rights to health.

However, we should also see that tobacco control and lung cancer P/T in China is presented with extremely complex and difficult situations, and only through the perseverance, long term commitment and efforts from both the government agencies and social organizations involved, can we gradually solve the problem. First, health promotion work should be strengthened, and a mechanism in which the government leads, multi- government agencies cooperate, and all sectors of society participate should be established so that there will be combined tobacco control and lung cancer P/T efforts. The national tobacco control action program/plan should be enacted and put into practice. Secondly, national laws and regulations that ban smoking in public places should be enacted and promulgated as soon as possible; Thirdly, the gathering of information on cancer incidence and deaths, and the monitoring of related risk factors (such as smoking) should be strengthened; Fourth, researches on early detection and treatment of lung cancer should be strengthened, entry standards for new tumor clinical programs and guidelines for clinical diagnosis/treatment of lung cancer need to be made and carried out. It is our belief that with the above measures, lung cancer P/T and tobacco control in China will gradually show real results.

Chronic non-contagious diseases such as cancers and cardiovascular/cerebral vascular ones have become the major disease burden in our country, posing a serious threat to our people's health. Of all these diseases, lung cancer is particularly harmful. Smoking is the major risk factor for lung cancer, and the huge number of smokers has become the major cause for the continuous climb in lung cancer incidence and death rate. At the occasion of 2006 World No Tobacco Day, we submit this report on tobacco control and lung cancer P/T. Our goal is to raise more awareness of the issue by government agencies and all sectors of the society, so that policies will be made and active response will be taken.

## **I. The Prevalence of Smoking & Tobacco Control**

### **1. Smoking Swallows Lives**

Ever since the 1950s, a large number of epidemiology studies worldwide have proven that smoking is the leading risk factor for lung cancer. Of all lung cancer deaths, 87% were caused by smoking (including second hand smoking). Among male smokers, lung cancer death rate is 8 - 20 times of that of non-smokers. Moreover, there is a dosage-effect relationship between smoking and lung cancer: for daily smoking of over 25 cigarettes, lung cancer incidence is 227 out of 100,000; for daily smoking of 15 - 24 cigarettes, 139 out of 100,000; for daily smoking of 1-14 cigarettes, 75 out of 100,000.

Over 60 kinds of carcinogenic substances can be produced in the process of smoking. The main substances closely related to lung cancer are aromatic hydrocarbon compounds, arsenic, benzene and ammonia. These carcinogenic substances can, through different mechanisms, cause damages to the genetic agents in the bronchus epithelial cells, triggering a series of important events that make cell growth and regulation to be out of control, and eventually leading to cell canceration.

Smoking not only damages the health of the smoker him/herself, it also harms the health of non-smokers who involuntarily inhale large quantity of environmental tobacco smoke (ETS). A very strong pathogenic (?) relationship between exposure to environmental tobacco and lung cancer has been proven by over 40 epidemiology studies. ETS includes mainstream smoke and sidestream smoke, with sidestream smoke containing even higher level of cancer-causing compounds. For this reason, causing passive smoking of other people is very immoral.

### **2. The Prevalence of Smoking and Tobacco Control Worldwide**

According to WHO's estimate, there are 1.1 billion smokers worldwide, over 800 million of them live in developing countries. China has the world's largest population of smokers, which accounts for approximately 1/3 of smokers worldwide. Currently, it is estimated that globally, 5 million deaths occur every year as the result of smoking, and by 2030, the death toll is predicated to reach 10-15 million, most of which will be in developing countries.

A large number of epidemiology studies have proven the close relationship between smoking and lung cancer: smoking causes continuous increase in lung cancer incidence and death rate, while quitting smoking leads to the decline of lung cancer incidence and death rate. Two British large sample comparison studies of lung cancer cases in 1950 and 1990 have shown that even if a smoker quits in his/her middle age, the risk of lung cancer will still be reduced. Quitting before middle age may reduce 90% of the risks that can be attributed to tobacco. For smokers, it's never too late to quit, but of course, the earlier a person quits, the better.

Thanks to the implementation of increasingly stringent laws restricting smoking, lung cancer death rate among males in the US and some European countries such as the UK and Holland has been stable or in decline. Among British males, lung cancer death rate in 1950 was 38.28/100,000; in 1974, it increased to 75.24/100,000, thereafter it has been in decline. Among American males, lung cancer death rate in 1950 was 18.13/100,000; in 1990, the number was 58.16/100,000, and after 1990, it has been going down continuously every year; in 2000, the rate was 46.89/100,000. The age curves of lung cancer death rate in these countries indicate that for the > 65-year-old age group, there are different levels of increase in the death rate, for the 45-60 age group, the death rate is stable or fluctuate, while for the 40-year-old group, the death rate drops slightly, signaling that lung cancer death rate in the future will continue to decline.

### **3. Smoking Is Becoming A Serious Public Health Issue in Our Country**

WHO and some experts have pointed out many times that addiction to smoking and tobacco is becoming the #1 killer of our people's health. A 2002 sampling survey found that 35.8% of the population over age 15 were smokers. In that same age group, 66.0% of the males were smokers, while 3.1% of the females were smokers. Based on these numbers, it is estimated that the number of smokers is about 350 million. Previously, the 1996 national smoking behavior epidemiology survey result showed that 37.6% of the population over age 15 were smokers, and that male smoking rate and female smoking rate in that same age group are 66.9% and 4.2% respectively. After standardizing the two survey results using the 2000 census data, it is found that the rate of smokers in the population went down 1.8% from 1996 to 2002, with the male and female smoking rates dropping 3.1% and 1.0% respectively. However, due to population growth and aging, the smoker population, compared with that of 1996, had seen an increase of 30 million. One thing that needs to be pointed out is that in our country, there is a trend of the smoking population getting younger. The percentage of smokers among the 15-24 age group increased. The average starting age for smoking dropped from 22.4 in 1984 to 19.7. In addition, there are a higher percentage of well-educated people among the male smokers in our country. Over 50% of medical doctors and teachers smoke, ranking our country among the ones with the highest percentage of male doctor smokers.

With smoking behaviors so prevalent, the consequence is high incidences of lung cancer and other diseases that are closely associated with smoking, and the resulting heavy social and economic burden. Generally, an increase in lung cancer death rate occurs 20-30 years after smoking becomes prevalent. Take the US for example. The peak of male

popular smoking in America was from 1950s - 1970s, and after the 1970s, smoking rate started to go down. The peak of lung cancer death rate, on the other hand, was from 1980s to 1990s, and only started to drop after the 1990s. In China, tobacco consumption reached its peak in the 1990s. Per capita tobacco consumption increased 4 times compared with the 1950s, and we are still in the middle of the peak period right now. Because of the delayed effect of smoking on health, current lung cancer deaths and deaths resulting from diseases connected to smoking are the consequences of the population's tobacco consumption in the 1970s - 1980s. Consequences of current tobacco consumption will appear in the next 20- to 30 years, and the death rate of lung cancer and other diseases will continue to climb. In addition, population aging and the increasing industrialization of towns and cities, combined with the pollution of and damage to people's living environment, are also causes for the continuing climb of lung cancer incidence and death rate in our country.

In our country, what lies behind smoking are tobacco production and tobacco consumption markets, and the dependence of some regions on the tobacco economy. Our country is a major tobacco producing country in the world. Our tobacco production is the equivalent of the combined production of the other 7 largest tobacco producing countries. We also have the world's largest tobacco sales market, with annual sales reaching 1.6 trillion cigarettes. We are the world's largest tobacco consuming country. Our consumption of tobacco is about 1/3 of that in the world, and it has been increasing rapidly. From the beginning of 1970s to 1990s, per capita cigarette consumption has increased by 260%.

Tobacco production promotes tobacco consumption, and the economic interests resulting from tobacco consumption promotes popular smoking, leading to the heavy burden of lung cancer and other diseases. Society has to foot the bill with enormous amount of money. Smoking has become a serious public health issue in our country.

## **II. Prevalence of Lung Cancer and Its Prevention/Treatment**

### **1. Lung Cancer Worldwide:**

At the beginning of the 20th century, lung cancer was a rare tumor in the world. But after the mid-20th century, starting from developed nations and gradually spreading to developing nations, lung cancer incidence and death rate increased rapidly. By 2002, new lung cancer cases worldwide were 1.35 million, 12.4% of all new cancer cases, and a 51% increase compared with 1985 (44% for males, and 76% for females). Lung cancer is a major cause of all tumor related deaths. In 2002, there were 1.18 million lung cancer deaths, which accounted for 17.6% of all cancer deaths. What's worth noticing is that before 1980, 69% of lung cancer incidences were in developed nations, but afterwards, 49.9% of lung cancer incidences have been in developing nations.

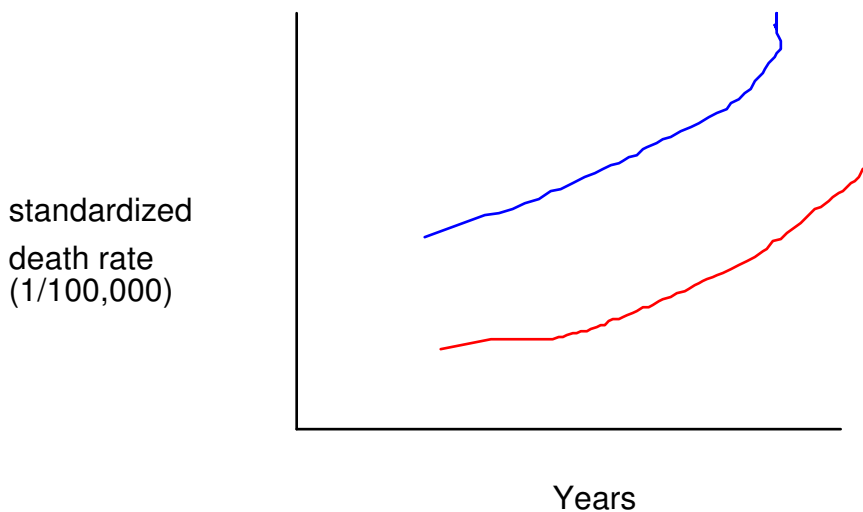
Worldwide, both lung cancer incidence and death rate among males are higher than among females. In 2002, male lung cancer incidence worldwide was 35.5/100,000, death rate was 31.2/100,000; while female incidence was 12.1/100,000, with a death rate of

10.3/100,000. The gender ratios of male/female incidence and death rate were 2.93 and 3.03 respectively. Whether for the male or female population, lung cancer high incidence areas are located in developed countries and regions, for example, North America, Europe, Australia and New Zealand.

## 2. Marked Increase in Lung Cancer Incidence and Death Rate in Our Country:

There has been a continuously increasing trend of lung cancer incidence and death rate in our country. During the past 30 years, changes in high incidence cancers are rather obvious. Lung cancer death rate has seen the most obvious jump, from being the #4 cause of cancer deaths in the 1970s to #1 in 2000. According to the 1973-1975 entire population and the 1990-1992 1/10 population sampling retrospective surveys of all death causes, lung cancer death rate increased from 7.17/100,000 in the 1970s to 15.19/100,000 in the 1990s, a jump of 111.85%, the highest among all malignant tumors. Out of that, death rate among males increased from 9.94/100,000 to 21.96/100,000, an increase of 120.93%; while female death rate increased from 4.59/100,000 to 8.74/100,000, an increase of 90.41%. During the same period of time, both urban and rural areas witnessed marked increase in lung cancer death rates, even though lung cancer high incidence areas were mostly in the cities.

Utilizing the original data from the two national retrospective surveys of the causes of tumor deaths, and the lung cancer death rate data from the China Center for Disease Control and Prevention's 1991-2000 National Diseases Monitoring System, we made the following chart of age-standardized rates. The result shows that both male and female lung cancer death rates in our country have shown a trend of continuous increase from the 1970s to the 21st century.



**Chart 1: Changing Trend of Lung Cancer Death Rate in China, 1973-2005**

Blue curve is male, red is female

Note: Lung cancer death rates are standardized using 2000 world standard population

*(Translator's note: Please refer to the chart in the original document)*

Similar to the global picture of lung cancer incidences, in our country, male lung cancer incidence and death rate are also higher than those among females. In the 1970s, the gender ratio of lung cancer death rate was 2.17 (with male rate 9.94/100,000, female rate 4.59/100,000), the ratio was 2.51 in the 1990s (with male rate 21.96/100,000, female rate 8.74/100,000). The gender ratio is higher in urban than in rural areas.

Lung cancer incidence and death rate in our country show differences in regional distribution. The numbers are markedly higher in the cities than in the countryside. In the 1970s, lung cancer death rate in urban and rural areas was 12.74/100,000 and 5.19/100,000 respectively. In the 1990s, lung cancer death rate in urban and rural areas was 21.76/100,000 and 12.63/100,000 respectively. According to the 1993-1997 12 county and city lung cancer incidences and deaths data, lung cancer incidence and death rate for both males and females are higher in the cities than in the countryside. Large cities such as Shanghai, Beijing, Tianjin, Wuhan and Harbin had the highest death rates.

Lung cancer incidence and death rate in our country moved up rapidly from age 40, reached a peak at age 70, and dipped slightly after 75. Age distributions of lung cancer incidence and death rate among males and females showed basically the same trend. However, in cities with rapidly increasing lung cancer death rate, lung cancer death rate age curves of different periods of time indicate that lung cancer death rate peak appears to be moving younger. Take the 1970s and 1980s in Beijing for example. In the 1970s, lung cancer death rate started to move up rapidly from the 40 year old age group, while in the 1980s, the increase starts from the 30 year old age group, a backward move of 5-10 years. Similar trend happened in Tianjin and Shengyan too. Surveys have shown that there is a trend that the ages for lung cancer onset and death are getting younger.

### **3. Poor Clinical Diagnosis and Treatment for Lung Cancer:**

Lung cancer at its early stage seldom shows any symptom, so most of the people seeking medical help for their symptoms are already in the mid or late stage of the disease, and treatment result is not good. Early detection and diagnosis as well as early treatment are therefore the key to improve lung cancer cure rate and to lower the death rate. However, so far there is still no mature lung cancer screening program in the world. Sputum cytology and chest X-ray have been used for over half a century as ways of screening. Sputum cytology tends to have a higher false negative rate for various reasons, while chest X-ray has a higher rate of not diagnosing focuses that are less than 1 centimeter in diameter, and are hidden under the heart or large blood vessels. These two methods therefore have a minimal effect in reducing lung cancer death rate. Researches in lung cancer early detection among the miners in tin mines in Gejiu, Yunnan province in China also came to a similar conclusion. Methods such as liquid-based cytology and low dose spiral CT, which are promoted in developed nations, are not yet ready to be used for screening in our country. Therefore, there are a lot of obstacles to early diagnosis and early treatment of lung cancer.

During the last 20 years, significant improvements have been made in lung cancer imaging diagnosis and clinical treatment technologies. Lung cancer patients that are candidates for surgical resection in hospitals have a 25% - 30% 5-year survival rate. The overall 5-year survival rate of lung cancer in developed nations is 15%, while it is below 10% in our country. The reason for such a discrepancy is that the majorities of the patients who seek medical help are already in the late stage, and have lost the indicative characteristics for treatment through surgeries. Currently our country does not yet have the entry standards for tumor clinical programs, and clinical diagnosis/treatment of lung cancer also needs to be standardized urgently. In comparison with developed nations, lung cancer P/T in our country is still significantly behind.

### **III. Suggested Measures for Tobacco Control and Lung Cancer P/T**

It is obvious that lung cancer P/T and tobacco control are issues of utmost importance and urgency to the health of our people, and the realization of our goal of building a fairly well-to-do society and a strong and prosperous nation. Our government has always emphasized tobacco control and cancer P/T. In December 2003, Ministry of Health promulgated "Outlines of China's Cancer Prevention and Control Plan (2004 - 2010)", which identified the prevention/treatment of lung cancer as the most important issue, and tobacco control as the main strategy for preventing and controlling cancers in China. On August 28, 2005, The Standing Committee of the People's Congress approved WHO's "Framework Convention on Tobacco Control", demonstrating the image of China as a responsible major power, and her resolve to work with all Convention signatory parties in containing the harms of tobacco and protecting the public's rights to health.

However, we should also be aware that tobacco control and lung cancer P/T in China is presented with extremely complex and difficult situations, as many issues will be involved: economic growth and employment, means of livelihood in some regions, behavioral habits of smokers, education of the young, and research and development of effective measures for quitting smoking, as well as effective and population based tobacco control models and experiences. Only through the perseverance, long term commitment and efforts from both the government agencies and social organizations involved, can we gradually solve the problem. For this purpose, we make the following suggestions:

First of all, health promotion work should be strengthened, and a mechanism in which the government leads, multi- government agencies cooperate, and all sectors of society participate should be established, so that there will be combined tobacco control and lung cancer P/T efforts. At the beginning stage, this mechanism may be a communication platform for the many participating parties, so that professional and social organizations involved can fully understand the basis upon which policy makers make their decisions, and policy makers, on the other hand, can hear more of these organizations' voices to ensure that policies made are more science- and reality-based. Efforts of all parties in tobacco control and lung cancer P/T will therefore be effectively integrated. Currently, 12 of the government Ministries and Commissions, including the Development and Reform Commission, Ministry of Health, Ministry of Foreign Affairs, Ministry of

Finance, Industrial and Commercial Ministry, and Taxation Ministry have established inter-government coordination mechanism for Convention implementation. The national tobacco control action plan should be enacted and implemented as soon as possible, so various tobacco control measures can actually be enforced. Youth health education and tobacco control promotion work in particular should be emphasized.

Secondly, national laws and regulations that ban smoking in public places should be enacted and promulgated as soon as possible.

Thirdly, the gathering of information on cancer incidence and deaths, and the monitoring of related risk factors (such as smoking) should be strengthened, so as to provide data for scientifically based decisions and evaluations.

Fourth, researches on early detection and treatment of lung cancer should be strengthened; entry standards for new tumor clinical programs and guidelines for clinical diagnosis/treatment of lung cancer need to be made and carried out, so patients can get better clinical services.

It is our belief that with the above measures, lung cancer P/T and tobacco control in China will gradually show real results.