ACHIEVEMENTS AND PROSPECTS ON LEPROSY PREVENTION AND CONTROL IN CHINA

PROF. YIN DAKUI, VICE-MINISTER OF HEALTH

Distinguished Chairperson, ladies and gentlemen:

Good afternoon.

On behalf of the Ministry of Health of the People's Republic of China and the Chinese Organizing Committee, I would like to express my warm congratulations to the successful convention of the conference and express my warm welcome to the experts, scholars and friends from all over the world. Now, I would like to present a report on leprosy prevention and control in China to the conference.

Introduction on health care service in China

China is a country with 31 provinces, autonomous regions, municipalities and a Hong Kong Special Administration Region (not including Taiwan), 391 prefectures (including cities under the provincial administration), and 2802 counties and towns. Fifty-six nationalities are living in a terri-

tory of 9.6 million square kilometers. By the end of 1997, the total population of the country was 1.236 billion, among which two thirds was living in the countryside. The adult illiteracy and semi-illiteracy rates were about 12%. China is a developing country with an average Gross National Product (GNP) of 5520 RMB (about 670 US dollars) in 1996.

After 49 years since the People's Republic of China was established, especially since the nation implemented the policy of reform and opening to the outside world, under the leadership of the Chinese Communist Party and the government, with the concerted efforts of the people of the country, the health care service has obtained great achievements in protecting people's health, upgrading the quality of the nation and promoting economic and social development. The health service system has been formed basically. By 1997, there were 310,000 health care setups in various forms; 89.3% of the administrative villages had established clinic units. There were 5.52 million health workers and 1.35 rural doctors, paramedical staff and midwives. The ratio for per thousand population was 1.25 doctors and 2.41 beds. A network of health care and prevention in the urban and rural areas had been basically shaped. Medical education and research developed rapidly. Traditional Chinese medicine and pharmacology were inherited and developed, primary health care promoted in a persistent way and a patriotic health campaign movement pushed forward intensively.

Remarkable achievements in the field of control of diseases were noted. Some infectious and parasitic diseases which most seriously endangered people's health had been eliminated or under control by intensive efforts. Smallpox was eradicated in 1961. Filariasis was basically eliminated in 1994. Since 1995, there has not been any wild virus of indigenous polio. The incident of reported infectious cases reduced from 7061/100,000 in the 1970s to 192.1/100,000 in 1997. The essential indicators, which reflected the general health status of the nation, were quite advanced among developing countries. For example: the infant mortality rate reduced from 200/1000 before the founding of New China to 31.4/1000 in 1996, the mortality rate of maternal and pregnant women reduced from 1500/100,000 to 61.9/100,000, and average life expectancy increased from 35 to 70 years.

Due to the low levels of economy and culture development, and unbalanced situation in different regions, the health care service cannot meet the needs of social and economic development and the increased living standard. A new opportunity and serious challenge in the field of health service confront our country in the 21st century. Therefore, health reform should be further conducted with faster speed and a new way should be exploited in the health care service.

Epidemiology of leprosy and its control

Leprosy has a history of epidemic of more than 2000 years in China, and was mainly distributed in the areas from the south to the 38° north latitude, although there was also sporadic incidence of leprosy in other provinces, autonomous regions and municipalities. Leprosy patients were detected in 86% of the counties. There were 69.1% of the counties (townships) with a prevalence of 1/100,000 and 42.6% with an incidence of 1/10,000. The cumulative number of registered leprosy patients from 1949 until the end of 1997 was 490,000, and that of each province of Guangdong, Shandong, Jiangsu and Yunnan was more than 50,000. Between the 1950s and the 1960s, there were 19 provinces, autonomous regions and municipalities with a prevalence of 1/10,000 and an incidence of 1/100,000 (Guangdong, Yunnan, Hainan, Tibet, Fujian, Guizhou, Jiangsu, Shandong, Guangxi, Shanghai, Jiangxi, Qinghai, Shaanxi, Zhejiang, Xinjiang, Hubei, Gansu, Sichuan and Hunan).

In the period of the 1950s, due to the absence of effective treatment measures, leprosy was regarded as an "incurable disease." Owing to the limited number of leprosarium and charity organizations as well as the shortage of financial resources and health care services, the majority of patients suffered from disability and did not have any means to support themselves. As a result, they went begging in the street. They

were driven and isolated or even led to end their lives. The fear of the disease and discrimination against patients with leprosy existed widely in society.

After New China was established, the Communist Party and the government have attached great importance to leprosy control. In the early 1950s, although the national resources were very limited while every sector waited for reviving, the Chinese government had provided a living allowance to leprosy patients and made efforts in the study of leprosy control. In 1956, the central government had clarified in the document of the National Program on Agriculture Development that the task of leprosy control should be actively carried out. In 1957, the Ministry of Public Health formulated the National Program on Leprosy Prevention and Control to define the principle of "active prevention and intensive treatment for control of infection sources." After training of key professional and technical staffs, investigating the epidemiology situation and setting up prevention and control organizations, the practice of "investigation, isolation and treatment" was carried out at the same time. Then the experiences were summed up and the comprehensive control measures, including "publicity, detection, hospitalization, treatment and management as well as scientific research," were implemented. After 30 years of active prevention and control, by the year of 1980, 250,000 patients were cured by dapsone (DDS) monotherapy, and there were still 80,000 registered active patients remaining with a prevalence of less than 1/10,000. Thus, we could see the periodical success was achieved in leprosy control.

As suggested by Dr. Ma Haide, senior adviser to the Ministry of Public Health, a goal of "basic eradication of leprosy by the end of the century" was proposed. This goal requested that by the year 2000, more than 95% of the counties (townships) should have a prevalence rate below 0.1/10,000 (calculated according to the number of active cases) and an incidence (or detection) rate in the recent 5 years under 0.5/100,000. The remaining counties or townships should keep the prevalence less than 0.5/10,000. Afterward, multidrug therapy (MDT) was implemented step by step in the country, and the leprosy treatment gradually became the work of the whole society. Since 1986, four foundation changes took place in the national strategy of leprosy control, namely: 1) from dapsone monotherapy to multidrug therapy; 2) from institutionalized treatment to the community control; 3) from pure specific therapy to complete rehabilitation disability prevention; 4) from control by specialized teams to community participation. The large amount of infectious sources was detected and treated and, as a result, the achievements of leprosy control were consolidated. Since the 1990s, we have insisted on pursuing the goal of the elimination of leprosy by the end of the century and, in the meantime, pointed out that the leprosy control was a course of trans-century. We still have a long way to go, therefore, to overcome the mood of slacking and insensitiveness and to make leprosy control work more dynamically.

In the last 50 years, the main activities carried out in China were as follows:

1. To carry out health education on leprosy control in the whole country. The knowledge of leprosy control was disseminated to the public through the patriotic health campaign by various forms. The public was educated that "leprosy is preventable, curable, and not terrible." The public was inspired to treat leprosy patients properly and to participate in the prevention work voluntarily. The awareness on leprosy control of the peripheral health workers was upgraded; they were urged to cooperate with the professional leprosy control staff to conduct case finding and treatment. Special efforts have been made since 1987 by marking the annual World Leprosy Day. On the occasion of the Leprosy Day, appeals were made to the whole society to establish a scientific and civilized attitude and to participate in the leprosy control work. By doing so, the leprosy patients could experience the warmth of society, the health workers working in the leprosy field could feel the sense of normality of their work, and society could have the thought of responsibility.

2. Optimum detection of leprosy patients. During the period of 1950s to the 1970s, the epidemiology situation of leprosy was quite serious. In order to detect and treat patients in a short period of time, the professional leprosy control staff work-

ing with the PHC health workers conducted crash campaigns by the methods of clue survey and screening. General surveys were carried out in endemic areas; at the same time, importance was attached to the clinical survey, contact examinations and school surveys. Consequently, most of the cases were detected and treated. Owing to the correct guiding principle and appropriate methods, the endemic situation was effectively controlled. After 1980s, taking into consideration the unbalanced development of prevention and control, positive and passive modes of detection were carried out in combination; according to the local condition, different stresses were given; the incentive scheme was adopted to encourage self reporting or notification; and monitoring and follow up of the cured patients were implemented prudently in order to detect as many patients as possible.

3. To provide intensive treatment to the patients. In the period of 1950s to the 1970s, due to the limitation of social and economic development and health care resources, hospitals and institutions for leprosy control were set up in urban areas, while in the countryside, where the incidence was high, leprosy villages were built to serve as the main arrangement to provide housing and treatment with DDS. The government allocated the land for such villages. The patients enjoyed free medical treatment provided by the health care department; they also received financial subsidies from the department of civil affairs. With scientific and technological development, and the expansion of international cooperation and exchanges, an overall MDT program was promoted in 1987. The supervision and management of the treatment course was strengthened and the coverage and curative rate of MDT increased. By the end of 1997, a cumulative number of 77,000 patients had received MDT and its coverage has reached 97% since 1990. A cumulative number of 64,000 patients have completed the full course with an expected completion rate of over 95%.

4. Disability prevention and rehabilitation. Since 1980, the treatment with MDT as well as the prevention of disabilities were carried out simultaneously. A disability record was collected in the regular file. The patients were educated and urged to care for their eyes, hands, and feet. The result of the self-care was quite satisfactory. Since 1990, with the support of the Leprosy Mission International of the U.K. and the Sasakawa Memorial Health Foundation of Japan, the pilot project on prevention of disability and rehabilitation has been conducted and some experience has been accumulated. In the meantime, the China Association for the Disabled issued an ID card of disability to the leprosy patients who were disabled due to the disease. It was an effort to rehabilitate the leprosy patients socially and economically.

5. Strengthening the management of leprosy control. China has attached great importance to the management of leprosy control, including registration, treatment, administration of drugs under direct supervision, and surveillance as well as follow up. During the 1990s, a surveillance system on leprosy epidemiology at the county (city) level was set up nationwide. The data bank of leprosy control has been set up since 1949 and provided a base for the scientific analysis of the endemic and for the formulation of the program.

6. Actively carrying out research and academic activities. Following the principle of scientific research to serve prevention and control, health authorities at different levels have organized scientists and technicians to work in the field of leprosy control and conducted research to make a breakthrough. Research was carried out in the field of modes of case detection, prevention with BCG vaccination, screening antileprosy drugs, drug-resistant *Mycobacterium leprae* strains, evaluation of the effectiveness of traditional drug tripteryglum in treating leprosy reaction, rehabilitation, basic science and social medicine. Symposia and experience-sharing meetings were convened. The *China Leprosy Journal* and *Circulation of Leprosy Control* and other professional publications were published to upgrade the academic level of the professionals.

Achievement and experience of leprosy control

In the past half-century, under the leadership of the Party and the government, thanks to the unremitting efforts by the previous generations, remarkable results have

been made in the field of leprosy control. In 1997, an evaluation was made jointly by consultants from the Ministry of Public Health and WHO in Yunnan, Guizhou, Sichuan and Guangdong provinces where there were more cases of leprosy. According to the result of the evaluation and the epidemiological statistics in the whole country, the prevalence rate was lower than the indicator made by WHO, which was 1/10,00 at the prefecture and city level in the whole country. The main evidence follows:

1. There were fewer new patients; the detection and the prevalence rates dropped remarkably. The number of newly detected cases declined from 35,000 in 1958 and to 1800 in 1997. The detection rate declined by 97.9% from 5.8/100,000 in 1958 to 0.15/100,000 in 1997. The prevalence rate which was added up after 10 years of follow up declined from 4.4/100,000 in 1958 to 0.41/100,000 in 1987, a reduction of 90.1%.

2. The number of patients with current syndrome was less and the prevalence reduced. By the end of 1997, among the cumulative 490,000 patients, 380,000 were cured. (Among them, 320,000 cured with monotherapy, 560,000 by MDT). There are still 4045 patients who need chemotherapy; the prevalence is 0.033/10,000, a 98.6% reduction compared with 2.4/10,000 in 1966. The new incident rate among the number of children and these with II degree disability rates dropped from 10% and 50% in the early 1950s to 4.3% and 21.3% in 1997, with reduction rates of 57% and 57.4%, respectively.

3. The endemic areas were diminished and the endemic level lowered. In 1981, the prevalence rate of below 1/10,000 set by WHO was met in the country. The goal was also reached at the provincial level (including autonomous regions and municipalities) in 1992, while the prefecture (city) level met the target in 1997. According to the standard of "basic eradication" set by our country, 85% of the counties (townships) have reached the target of less than 0.1/10,000 active cases.

4. The establishment of a professional pool for prevention and control and the changing attitude of the public toward leprosy patients. Through the leprosy control activities, a professional pool for control was established and a network at the peripheral level formed. Through health education, community participation and concrete evidence, the public made remarkable changes concerning their understanding of leprosy and discrimination of leprosy patients, which made it easier for the patients and those cured to return to society.

After reviewing the development of leprosy control in our country, it is proved that our policy and decisions were conducive to the condition of the country and the law of prevention work, meeting the needs of people in seeking health and medical care. The policy and decisions were quite successful. We have gained some experience in the process of our fight against leprosy.

1. The importance and commitment given by the government. We always regarded leprosy control was the government responsibility and integrated the work into the government working agenda. According to the objective of various stages of prevention and control, a unified plan was made with the central government and the local government. Tasks and requirements were assigned and a certain amount of investment was requested at different levels of these governments. A joint leading group was set up in the endemic areas with the participation of the departments of health, civil affairs, finance, public security, grain, commerce and publicity, etc. A lot of important problems were solved in the local leprosy control program by means of organization, coordination, and distribution of work and responsibilities and close cooperation. The leaders of the governments at different levels took part in leprosy control activities and set a good example for society.

2. Formulation of program to unify actions and try to obtain a balanced development. "National Regulations on Leprosy Control Management," "Methods on Confirmation of Elimination of Leprosy" and the "National Program on Leprosy Control" were formulated successively, which clarified periodic objectives and measures. According to the actual situation, the local authorities made their own control programs then carried out activities following the plan and steps. Guidance was provided by different categories according to various

places. For the areas where there were more difficulties and heavier tasks, support was rendered in terms of personnel, finance and technology in order to obtain balanced development. Taking into consideration the huge area and large population, the national goal of leprosy prevention and control was set in a pragmatic manner without being restricted by the global goal. From the 1980s the control objective was already requested to be implemented at county (township) level.

3. Persistent implementation of comprehensive prevention and control measures. Following the principle of "active prevention and intensive treatment of infectious sources," comprehensive prevention measures were taken in various endemic areas and within a certain period of time by the methods of "publicity, investigation, isolation, hospitalization, treatment, management and research," giving priority to different parts. Insistence was placed on the method of combination of regular work and campaign and positive and passive detection in order to find out as many patients as possible. Universal and standard free treatment was provided to the patients. Owing to the persistent and unremitting efforts, the endemic was under stable control.

4. Conduction of mass control by concerted efforts of professional staff and primary health network. In the endemic areas, a quite complete network for leprosy control was formed. By the end of 1997, there were 700 specialized hospitals, institutions, and stations for leprosy control nationwide, 500 leprosaria and homes for the leprosy patients, and 5700 professional staff. The well-trained and dedicated health workers became the basic power to implement the control program. Those professional staff provided training and guidance to village doctors and doctors who worked both at township health centers and shared the burden of caring for leprosy patients. They worked together in very good order. The participation of society and the public assured the implementation of the comprehensive control program.

5. Strengthening international cooperation. In the recent 10 years, the leprosy control work in our country has received great support from international organizations, NGOs, national associations of foreign countries, foundations and friendly personnel in terms of finance, materials and technology, which further stimulated leprosy control and speeded up its process.

Problems and prospects

Although remarkable achievements have been made in leprosy control, we still have many difficulties and problems.

1. China is a vast territory with the biggest population. The prevalence of leprosy is quite different, and the control work develops unevenly, especially in the remote, poor, mountainous and minority areas where the economy and culture are underdeveloped and the leprosy control work started late. Leprosy control is still quite an arduous task there.

2. Leprosy, as a chronic infectious disease with a long history, has not any primary prevention. In recent years, there are still 2000 newly detected cases in the country as well as some hidden cases in certain places. If we lessen our vigilance, leprosy can still become a public health problem.

3. In low-endemic situations after control, leprosy cases occurred sporadically. Furthermore, the floating population is moving more frequently which has increased difficulties in implementing control measures. People in low-endermic areas tend to have an incorrect attitude toward leprosy, and discrimination still exists. Due to the influence of the market economy, detection of leprosy cases has become very difficult.

4. There are still more than 200,000 cured individuals living in our country, among them 120,000 are disabled persons. Twenty thousand aged, vulnerable and disabled persons affected by leprosy are still living in leprosaria or leprosy villages (65% disabled persons). They need care in terms of rehabilitation, living security, and upgrading their living quality. They need, for a long period of time, care and support from the government and society.

5. Due to the shortage of financial resources, unstable professional personnel, and an incomplete infrastructure of health care service in remote areas, future control work is hindered for further development. The periodic goal in the long-term struggle against leprosy is to curb the prevalence of

leprosy at 1/10,000 or 0.1/10,000. It needs a long-term and arduous effort to control its incidence and endemic, eventually, to eradicate the disease.

Our future goal for leprosy control will be the following: a) By the year 2000, we will try to reach the program goal of basic eradication of leprosy at the county (township) level and to realize the target of prevalence of less than 0.1/10,000 in 95% of the counties (townships); b) By the year 2010, we will try to attain the goal of prevalence of 0.1/10,000 and incidence (detection) of 0.5/100,000 in all counties and townships in the whole country; and c) We will continue our efforts to consolidate and expand the achievements and strengthen the supervision of leprosy control. We will do our best to carry out disability prevention and social, economic and medical rehabilitation, upgrade the life quality of cured people affected by leprosy, and further eliminate the social problems and unfavorable impact caused by the disease.

According to the above-mentioned target, following the guiding principles of health work during the new period, namely: "to focus on rural areas, to give top priority to the prevention of diseases, to attach equal importance to traditional Chinese medicine and western medicine, to rely on science, technology and education, to mobilize all sectors of society to participate in health work, and to serve people's health and the socialist modernization drive," we will push forward leprosy control work in a consistent, coordinated and healthy way. We will try our best to do following work.

1. We will continue to regard the leprosy prevention as the government's responsibility. We will further refine health legislation, laws on leprosy control, and strengthen the dynamics on enforcement of regulations and laws. The governments at different levels should further enhance their leadership and integrate leprosy prevention work into their economic development programs according to the local situation and ensure the necessary investment. We will, in accordance with the requirement stated in the document issued by the state council, organize and coordinate activities to ensure the leprosy management work according to the distribution of responsibility of different departments. We will provide guidance according to different categories of the regions and deal properly with the relationship between balanced development and priority setting. The central government and local authorities should allocate more input to the ethnic groups in Yunnan, Guizhou, Sichuan and Tibet, where the endemic is quite serious, so as to carry out the Special Action Project and Leprosy Elimination Campaign according to the plan and steps and treat every patient in every village completely.

2. The health authorities at different levels should be good consultants and assistants to the government. They should undertake investigations and study and provide the scientific foundation from which the government can make decisions. They should take an active part in the formulation and implementation of regional leprosy programs, which should be conducive to the local conditions and define the responsibility and target. The health department should take the initiative to communicate information with relevant departments to build up a financing mechanism with defined responsibility, clear channels, stable resources, appropriate increases, regulated compensation systems and a rational use of resources. They should provide good management over prevention institutions and primary health care organizations and implement well-controlled methods.

3. To build up the organizations and maintain the professional pool. In low-endemic situations, we should bring full play to health and medical establishments at different levels, three-tier health prevention network and village doctors. We will gradually integrate leprosy control into the community health care service system, and gradually incorporate the leprosy prevention knowledge into the training of general practitioners and lessons of continuing education. We will bring full play to the role of professional bodies at different levels on leprosy control and attach great importance to the training of leading professional staff as well as nurture a batch of professionals who are dedicated, full of ambition, skillful, and ready to make contributions. We shall put into practice the relevant state policy to improve their conditions for living, working and studying; thereby maintaining a stable professional pool and bringing about their full initiative.

4. We are going to enhance health education on leprosy control and bring about the full play of the special function of mass media and information industry in the general health education to provide education of professional knowledge on leprosy control by various forms. We will continue to educate the fact that leprosy is curable but not terrible, and call on the public to show their sympathy to leprosy patients and eliminate discrimination. The publicity of leprosy control is a long-term and arduous task; the achievement should be consolidated and expanded.

5. We will further carry out the work of case finding, case holding and prevention of disability and rehabilitation. We will try to detect and treat the patients at an early stage in order to reduce the occurrence of disability and its progress. We will make efforts to rehabilitate disabled young people and create conditions for them step by step, and integrate rehabilitation of patients and cured persons into community-based rehabilitation. Government, social bodies, enterprises and individuals should show great concern and provide support to leprosy control and provide a basic living allowance which should not be below the local living standard to the leprosy patients who are old, vulnerable and have no families. If the disabled persons still have the capability to work, we should create conditions for social economic rehabilitation and medical rehabilitation.

China is a big developing country and her economic level is relatively low. We, however, are engaged in a large-scale leprosy control cause in the world. It is not easy to make these achievements. It is a result of hard work by health workers, especially professional staff, for several generations under the guidance of the Party and the government. Under the circumstances of undeveloped economy and social bias and extreme hard conditions, they did not consider their own gain and loss, bearing the hardship and criticism and dedication to the course they showed "noble spirit of scarifying themselves for the people." The late experts on leprosy control had devoted all of their energy to the cause, such as Drs. You Jiajun, Zhang Nan, Li Jiageng. Foreign friends also contributed their active support, such as Drs. Maxwell, Schujman, and Olaf K. Skinsnes. They deserve respect and memory of the people, especially the "Pioneer of Health Care Service in New China" Dr. Ma Haide who spared no effort in the performance of his duty until the end of his days and demonstrated a noble internationalism and dedication. He will be enshrined in the record of the history.

On the occasion of the current conference, the Ministry of Health is going to commend 125 outstanding units and 201 outstanding individuals, who are representatives of thousands of nameless heroes and heroines in the struggle against leprosy. I would like to take this opportunity to express my highest tribute to the broad masses of health workers who have been dedicated in the first line of leprosy control for a long time. I would also like to express my sincere thanks to the international organizations, leprosy foundations, and associations, as well as to friendly personnel and friends for your support of and assistance in our leprosy control work. In the meantime, I would like to express my cordial greetings to the leprosy patients and those cured. Looking forward to the future, we are soberly aware that in order to consolidate and develop the achievements of leprosy control, we should combine new knowledge with previous experience, combine enthusiasm with science and technology. Thus we can transfer our goodwill and determination to the concrete action of concern and care for each leprosy patient and those cured. We have both confidence and responsibility to thoroughly solve the problem of leprosy. We need continuous attention and support provided by the governments at different levels and the concern and participation of the relevant departments and social communities. We also expect the continued support, as ever before, from the international organizations and friends from all over the world. Let us unite and march on hand in hand and make a greater contribution to a world without leprosy.

Thank you for your attention.