Wang Ru-Kuan

Research for health development in China

An outline is given below of China’s strenuous efforts in health research since the mid-twentieth century and of the likely course of future endeavours in this field.

Some 40 years ago the Chinese government set out its aims of bringing health and medical services to workers, peasants and soldiers, giving high priority to preventive medicine, encouraging cooperation between Chinese traditional medicine and Western medicine, and integrating health work with mass health campaigns.

The development of health services required the establishment of research institutions both locally and nationally. The Chinese Academy of Medical Sciences and the Academy of Traditional Chinese Medicine were founded as directing centres for nationwide medical research. Academic medical bodies and groups were set up throughout the country. The Ministry of Public Health organized expert advisory committees for decision-making and counselling.

Medical research is coordinated with social and economic development. Particular attention is given to the prevention of the most dangerous diseases. The integration of Chinese traditional and Western medicine is regarded as very important. Both basic and applied investigations are conducted, special emphasis being attached to the latter. Multidisciplinary collaboration is organized and concentrated efforts are made to tackle major problems. Where appropriate, scientific and technological advances are introduced from other countries and adapted to China’s requirements.

Medical research is guided by national long-term plans, the latest of which is the 1986–90 five-year plan followed by the 1991–95 plan. Within this framework, annual plans are worked out. In recent years, medical research has been reformed with a view to making it increasingly relevant to the prevention and treatment of disease. Intersectoral and interdistrict cooperation is encouraged. A public bidding system for research projects and scientific foundations has been established.

Achievements

Cholera, plague, smallpox, relapsing fever, typhoid fever, kala-azar and venereal diseases have been eradicated or greatly reduced in incidence. Thus, for example, after extensive field and laboratory studies
on plague, measures for the prevention and
treatment of the disease were formulated
and it was then virtually eliminated in the
country.

The prevalence and distribution of five
major parasitic diseases, including
schistosomiasis and malaria, were worked
out, predisposing factors were identified, and
measures for prevention and treatment were
devised. The incidence of these diseases has
been greatly reduced. Kala-azar no longer
exists in the country, the number of
schistosomiasis patients has dropped from
over 11 million to under two million, the
annual number of malaria patients has
dropped from more than 30 million to
under two million, and it has proved
possible to cure 80% of filariasis patients.

Epidemiological and etiological studies have
been conducted on malignant tumours. A
clear picture has emerged of the prevalence
and geographical distribution of cancers, and
a cancer atlas has been published. Field
studies aimed at the prevention and
treatment of major tumours in areas of high
incidence have been carried out.

Excessive sodium intake and an unduly high
ratio of sodium to potassium in the diet are
important factors causing hypertension,
while calcium and fish proteins are
negatively correlated with the conditions.
The restriction of sodium intake in adults
and children has therefore been adopted as a
preventive measure.

Much applied research into the integration
of Chinese traditional medicine with
Western medicine has been conducted. More
than 100 different types of operation,
including open-heart surgery, have been
performed under acupuncture anaesthesia,
which has proved advantageous in over
20 types of operation, among them
thyroidectomy. Varying effectiveness has
been obtained in treating diseases of the
rectum, hypoplastic anaemia, malignant
tumours, cardiovascular disease, chronic
bronchitis, and hepatitis, among other
conditions, using Chinese traditional
medicine in conjunction with drugs. The
therapeutic efficacy of integrated Chinese
traditional and Western medicine frequently
appears superior to that of either type of
medicine alone.

In 1961, for the first time, a severed forearm
was successfully re-attached. Since then,
many operations have been performed to
re-attach severed hands, fingers, toes and
limbs. Other accomplishments have included
the replantation of skin flaps and the
grafting of bones with attached vessels.
Surgical operations have been simplified,
and some difficult problems, such as the
transverse suturing of peripheral nerves,
have been overcome.

Family planning research has proceeded
pace. Effective oral contraceptives have
been produced and used throughout the
country, and a new type of contraceptive
vaginal ring has been manufactured. The
annual birth rate fell from 36/1000 in 1949

Since the 1960s there have been considerable developments in many supporting disciplines, including biophysics, pathophysiology, biochemistry, virology, cytobiology, toxicology, molecular biology, immunology, endocrinology, genetics, neuroscience, pharmacology, biomedical engineering, social medicine, and health management and administration.

**Future direction**

In the coming years it is intended to give increased emphasis to research in social medicine in order to strengthen health care at community level.

Special attention will be given to the prevention and treatment of life- and health-threatening diseases, notably malignant tumours, heart disease, genetic disorders and endocrine problems. At the same time, ways of overcoming infectious diseases and other disorders will have to be found.

Further studies will be made on Chinese traditional medicine and its combination with Western medicine.

Studies on the health of the elderly are increasingly important as the population ages.

Finally, it is vital to continue working on birth control and the prenatal diagnosis of inherited diseases.

**Acknowledgements**

I thank Professor Yu Guoying and Professor Shi Zhongdao for reference materials; Professor Chen Houheng, Professor Hu Qiyin and Professor Dr Fan Qi for translating the present article into English; and Ms Zhang Ming and Ms Xian Hongqin for typing and proof-reading.