**Facts about DPR Korea**

- Population: 22,2 million (2002 est.)
- Area: 120,540 sq km
- Arable land: 14.1%
- Literacy rate: 99%
- GDP per capita: US$ 480 (est.)

**Background**

An extensive health infrastructure was developed during the 1960 & 1970s, providing access to free health care throughout the country. The health infrastructure is extensive, even in remote areas. The core of health care at the community level is the section or family doctor serving around 130 – 140 households. The sections doctor is responsible for curative, promotive and preventive health care. Large farms and factories also have clinics as well as hospitals. The Hygiene and Anti-Epidemic Stations on central, provincial and county level is responsible for preventive health care, surveillance of communicable diseases and environmental and food hygiene.

By the beginning of the 1990s, with the end of the socialist economic system in previous Soviet-Union and Eastern Europe, DPR Korea was faced with major economic difficulties and also suffered from natural disasters in mid-1990. These factors led to a massive reduction in the size of the DPRK economy. As compared with 1989, the DPR Korea economy in 2002 is probably about half its size. Current GDP per capita is estimated at US$ 480.

The economic difficulties have had vast impact on the health and nutritional situation for Korean people. This was paralleled with a diminishing capacity of the state to deliver health and social services. The health services ran out of essential medicines and medical supplies. The country has no private health sector, e.g. pharmacies as an alternative source of supply, and the people therefore solely depend on the services provided by the state.

Most hospitals and clinics were constructed during 1960 and 1970’s, and are generally of poor building quality. Health institutions have been severely affected by the increasing infrastructure problems in the country. Most hospitals and clinics have irregular electricity, usually only power supply for a few hours per day, and few hospitals have running water. Heating of hospitals during the harsh winter season remains a severe problem. The only exception appeared to be Pyongyang where health facilities are better maintained, and more comprehensive and specialized services are available. The health infrastructure will in the long-term require large-scale restructuring and improvements, but this will depend on revival of the overall economy and infrastructure in the country. It is necessary to review the health care system, reducing number of hospitals.
and hospital beds while improving the quality of the services provided.

The number of health personnel is adequate, although there are few nurses compared to doctors (1.0 nurse per doctor). Nursing and midwifery are areas that need to be strengthened substantially. The coverage of medical doctors is 297/100,000 population, and the number of hospital beds is 1,383/100,000, a higher figure than observed in most countries.

Because of the political position, the country has been isolated and has very limited access to outside information resources. Many practices and standards in health and medicine are outdated, and there is a gap in knowledge in many areas of public health and modern health care. Medical education has also been suffering because of lack of financial resources as well as the limited access to international information resources. The assistance and presence of international agencies in recent years has provided a better opportunity for dialogue on technical health issues.

Investments in general education has given a literate population, and DPR Korea therefore has a comparative advantage compared to many other countries in Asia to improve the health status of the population. Although the quality of education has diminished, the overall literacy level remains very high.

The Koreans have a strong and disciplined manual work force, but are behind in knowledge and skills on quality standards. For the health sector, as well as for economic and industrial development, improvement of quality standards and exposure to international professional training are essential. Limited language skills remain a constraint for international fellowships and training.

**SARS highlights the vulnerability of the health care system**

Although there have been no reported cases in DPR Korea, the SARS outbreak has highlighted the vulnerability of the health care system. The infrastructure problems in the hospitals with the lack of adequate water and sanitation facilities and scarcity of electricity make it difficult to uphold proper hospital infection control. Few, if any, hospitals have satisfactory isolation units, and the physical layout of rooms and wards in hospitals makes it hard to establish infection control procedures.

Furthermore, health personnel have limited knowledge and skills in hospital infection control procedures. Few nurses and a small capacity in nursing care is a major limitation. The current status of health facilities, the lack of proper isolation units and not enough capacity and skills in barrier nursing techniques could make an outbreak of SARS in DPRK very serious.

**An improving, but fragile humanitarian and health situation**

Although there has been a verifiable improvement of the humanitarian situation in DPR Korea compared with the worst period, 1995 – 1999, the conditions remain fragile. Access to basic health care for a large part of the population is still unsatisfactory with critical shortage of essential medicines, inadequate resources to handle complications related to child birth, severe infections in children and surgical emergencies.
For important public health programs, such as immunizations and the control of tuberculosis (see text box), there has been a marked progress over the last two years. Multi-year funding has been ensured through support from GAVI, The Global TB Drug Facility (GDF) and GFATM, an important step forward from the dependency on ad-hoc emergency support.

UNICEF and WFP published earlier this year the report from the Nutritional Assessment conducted in October 2002. The report concluded that the nutritional situation has improved dramatically since 1998. Acute malnutrition was reduced from 16.8% (1998) to 8.1% (2002). The rates of underweight and stunting have also gone down significantly, but still remains among the highest in Asia. The Nutritional Assessment 2002 included for the first time breakdown of data on malnutrition rates by province, and revealed large differences with the North-Eastern part worse off than the more central part of the country.

The food security situation has improved due to food aid, more diversification of agricultural crops, and favourable climatic conditions during the last two years. The agriculture outlook for 2003 seems encouraging. However, the country continues to depend on food aid due to the limited arable land as well as limited resources for fertilizer and other agricultural inputs. DPR Korea is an industrial country with about 65% of the population living in urban areas, and the food security situation eventually depend on the revival of the industry and the economy of the country.

**Successful DOTS program**
Recent years have seen a dramatic increase in TB case notifications from 38/100,000 population in early 1990’s up to 220/100,000 at the end of 2002. There were an estimated 47,000 TB cases in 2002. DOTS has been introduced through a phased expansion during 1998 - 2003. The 4th DOTS expansion took place in January 2003, covering 94.1% of national population. The sputum conversion and treatment cure rates are high, i.e. 90 % and 87% respectively, in line with the global targets. DOTS should cover the whole country by the end of 2003. Ambulatory care of TB patients is now much more accepted than previously. However, weaknesses still exist in the DOTS program. Greater attention needs to be paid to the areas of effective supervision, accurate reporting and analysis of data provided by the quarterly reporting system and improved management and distribution of drugs and laboratory consumables. But the introduction and expansion of DOTS in DPRK must be seen as one of the success stories of the international engagement in the country. WHO has provided technical assistance to the national TB control program. Substantial funding provided by WHO through emergency and humanitarian funds / multi-country funding mechanisms, (main donors being Sweden, Norway, Canada and Australia) has facilitated the phased rapid expansion. Since the end of 2001, Global TB Drug Facility (GDF) has provided the necessary anti-TB medicines for the DOTS program. GFATM approved the proposal in April 2002 for DOTS expansion, but the disbursements of funds are still pending.
Vector control key to malaria control

Vivax malaria has re-emerged in the Korean peninsula during the 1990s. The re-emergence of malaria can be contributed to several factors. The floods in 1995-96 have provided increased breeding grounds for the species of mosquito transmitting malaria, and the main breeding places for this mosquito are the rice fields. Change in agricultural practices with less use of pesticides and the way the rice fields are irrigated, as an adaptation to the energy problems, might also have contributed to increased breeding of the vector.

In DPR Korea, the incidence of malaria is highest in the rice-field river plains north of the demilitarized zone. The number of reported cases increased from 204,428 in 2000 (107/10,000) to nearly 300,000 (150/10,000) in 2001 and 254,000 in 2002. A reduction of malaria cases in 2002 occurred probably as a result of initiation of the control efforts. Since the reporting is based on clinical findings rather than laboratory confirmation, it is assumed that actual malaria incidence in the country does not constitute more than 50-60% of that reported. Nevertheless, malaria is an important public health challenge in the country, and it is estimated that around 40% of the population are at risk. However, more accurate epidemiological data on the malaria epidemic in DPRK is needed.

WHO has provided substantial technical and material support for malaria control during 2000-2003, amounting to about 2.5 million USD. This has been possible due to generous contributions from South Korea and other donors. Besides the technical assistance, introduction of impregnated bed nets, laboratory supplies for prompt diagnosis and antimalarial drugs to ensure access to treatment, are the key components of the WHO support.

Because of the long-incubation period of the vivax malaria, mass prophylaxis with primaquine is being tried out in high risk areas. Entomological investigations carried out with support of a WHO expert indicate that, as in the past, the main malaria vector An.sinensis was well presented in all surveyed parts of the country in high density. Contrary to the prevailing beliefs, it was found that it also feeds and rests inside houses. These findings are in agreement with the recent findings of South Korean scientists, who made similar observations in their northern parts of the country. Another important finding was the discovery of the presence of new species for the DPR Korea, An. anthropophagus, a vector which plays an important role in transmission of vivax malaria in Central and Northern China. This vector, though its density is lower than that of An. Sinensis, has a very high vectorial capacity, as it feeds on humans while An.sinensis primarily feeds on animals. The result of the entomological investigations suggests that malaria can be successfully controlled through the use of various vector control methods. Further entomological studies are being conducted during the ongoing malaria season.

WHO in DPR Korea

DPR Korea has been a member of WHO since 1973, but the collaborative program was for many years under national execution. In 1997, a WHO Emergency and Humanitarian Action (EHA) office was established in
Pyongyang as a result of the deteriorating humanitarian situation. WHO has since then participated in the annual UN Consolidated Appeals (CAP) for DPR Korea. Resources through the UN Consolidated Appeal and other funding mechanisms have been instrumental to address major public health problems such as tuberculosis, polio eradication, blood safety, strengthening of EPI program and health care at the community level. This shows that, in countries with complex emergencies, WHO has the ability to mobilize resources and in cooperation with donors and national authorities address some of the immediate public health concerns. The experiences from recent years also confirm that it is possible to effectively implement health programs in DPR Korea in spite of the institutional and the political constraints. The emergency programs have furthermore been an entry point for a broader assessment of the health sector in DPRK.

In 2001, a full WHO country office was established in Pyongyang, and the first WHO Representative was appointed. The office has presently three international and three national professional staff, plus support staff. A substantial number of WHO short time consultants & experts visit the country every year for training, capacity building and technical assessments. In March 2003, an update of the Country Cooperation Strategy (CCS) was completed. The CCS emphasizes the need to significantly enhance the technical capacity of the country office by increasing the number of international and national staff.

WHO takes active part in the interagency collaboration with other UN agencies, NGOs and donors and embassies in Pyongyang. A good cooperation between agencies has contributed to effective sharing of information and adoption of common strategies for the work of international organizations in the country.

Challenges and constraints

- Higher priority to health and more resources from the government and donors are needed to improve access to basic health services.
- A recovery and revival of the health sector is closely linked to the ability in finding an acceptable solution to the country’s economic difficulties.
- The limited access to and interaction with national counterparts are constraints for building capacity and technical skills.
- The government is limiting the number of international staff in international organizations. WHO, being a technical agency, depend on having adequate professional staff.
- The current political climate is a limitation for attracting funds, in particular for development activities. DPR Korea does not have access to international financial institutions such as World Bank and Asian Development Bank.

This paper has been prepared by the WHO Country Office. The objective is to provide updated information and analysis on the health and humanitarian situation in DPR Korea for use within WHO, for development partners and donor agencies.