

# **2004 REPORT ON CHILDREN'S HEALTH IN THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA**

**Medical Aid for the Children of DPRKorea**  
26-1 (3rd Floor) Ewha-dong, Jongro-gu  
Seoul, South Korea

Phone: 02-744-9756

Fax: 02-763-9756

Website: <http://www.healthchild.org>

E-mail: [help@healthchild.org](mailto:help@healthchild.org)

*North Korean Healthcare Network*  
[www.nkhealth.net](http://www.nkhealth.net)

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**As we publish our 2004 report...**

This is the third year that we have compiled information from various sources about healthcare-related issues in North Korea in the form of our *Report on Children's Health in the Democratic People's Republic of Korea*. This report has been published annually since 2002, in which we discuss most of the issues regarding children's health and nutritional needs.

We believe this year will be an important one in several ways. It has been a decade since North Korea first formally requested help and the international community responded in earnest. Furthermore, the Ryongchon catastrophe in April of this year captured the world's attention and a feeling of sympathy between North and South Korea became more widespread, leading to many aid efforts. It seemed as if reunification would occur sooner rather than later. But after August, North-South talks ceased.

The many difficulties North Korea has faced up until now are still present and the humanitarian crisis continues.

*Medical Aid for the Children of DPRKorea* have worked constantly to help relieve the hardships facing the children of the North, feeling their difficulties as if they were our own. We fervently hope that the children of the North and South, the leaders of our future, will all be healthy and be able to grow up spiritedly.

Our *Report on Children's Health in the Democratic People's Republic of Korea* is a result of these efforts.

A description of the health and nutritional state of North Korean children is included, as well as suggestions on and solutions to how we can truly help them. Because we have focused mainly on information that has been released to the public recently, we suggest looking at our previous 'reports' to help you to better understand the current situation. All of our reports in Korean can be found in the 'resources' section of the North Korean Healthcare Network at [www.nkhealth.net](http://www.nkhealth.net). Research aiding peace and reunification, as well as aid efforts, can be found here.

Finally, we would like to thank the many people who helped us in compiling the sources and information used in writing this report.

-The Staff of *Medical Aid for the Children of DPRKorea*

## **Chapter 1. Rebuilding D.P.R. Korea's Healthcare System**

As of 2004, ten years have passed since the Democratic People's Republic of Korea (DPRK) first asked for help from the international community in dealing with economic difficulties and damages caused by natural disasters. Although international organizations, foreign and South Korean non-governmental organizations, and DPRK authorities and residents exerted much effort to address these problems, DPRK's humanitarian crisis is not yet over.

Although DPRK got through the difficult time it dubbed 'The March of Hardship,' it is still facing many troubles. The lack of a strong healthcare system has made life even more difficult for residents of DPRK, especially for demographic groups that are more vulnerable during crises, such as children, the elderly, and pregnant women.

We are now at a point in time where we must look for long-term solutions to DPRK's healthcare crisis. The key players in this solution will no doubt be the DPRK authorities and residents, but we should not ignore the contributions of international organizations and non-governmental organizations in coordinating and keeping up relief efforts. Thus, the measures that will resolve this crisis will probably involve cooperation between these involved parties.

We must now begin to move away from the previous focus on emergency relief and support DPRK in helping them recover and rebuild. When doing so, the primary focus should be on what methods will most improve the health of North Koreans in the long-term.

In addressing the problems with healthcare in DPRK, we must establish a few principles. Furthermore, we should consider what will be the most realistic and efficient way to improve residents' health and what issues are the most pressing.

First, we can maximize the efficacy of DPRK's healthcare system by preserving its overall structure while strengthening its capacity (in terms of the workforce's skills, equipment, etc.). 99% of medical care in DPRK is public. Admittedly, public healthcare systems are bureaucratic and less efficient than private (commercial) healthcare systems. But equally important is the fact that they are not profit-driven and that they have the ability to ensure that goods are distributed to the most urgent problems, as opposed to fields that might be most profitable.

Tens of thousands of doctors in DPRK visit patients on site and clinics offering primary diagnoses are present in villages, regional units called "Ri"s, collective farms, and other work places. In each district and county, there is also a hospital with inpatient facilities. In Pyongyang and provincial capitals, there are many hospitals and birthing centers where tertiary diagnoses are available. Thus, a simple but organized system has been established and is operating throughout the DPRK. This type of system has proven to be very effective in solving healthcare problems such as eradication of polio.

Thus, the best policy is to strengthen the existing healthcare system in DPRK and advance reconstruction programs; this would be the most effective and limit the wasting of resources.

Second, we must strengthen the support given to the demographic groups that need medical care the most. There are many kinds of groups that are physically weaker, such as children, mothers, the elderly, the disabled, and more. But if we were to name the groups most in need, it would be children and mothers. These groups not only secure the growth and prosperity of a society but also are the most susceptible to social and economic crises.

Indeed, in assessing the state and development of a society, various factors are often referred to such as infant mortality rates, mortality rates of children under 5 years of age, mortality rates of children, and maternal mortality rates. That these indicators have significantly increased recently compared to past years in the DPRK reflects the fact that children and their mother are urgently in need of greater medical support.

The strategic goals regarding medical support for these “weaker” groups are simple; namely, what will lower infant, maternal, and child (under 5) mortality rates and guarantee the safe delivery and normal growth and development of children. We should consider in depth about how we can best provide the medical support needed by weaker groups such as children, mothers, the elderly, and the handicapped.

Third, we must focus on the subject of the healthcare system, which greatly affects the lives of residents, and the establishment of the system’s infrastructure.

We should place a priority on supporting the issues that will affect residents the most. In developed nations, this usually includes chronic diseases, ailments of the circulatory system, and obesity, whereas in developing nations communicable diseases, public sanitation, and malnutrition are the greater social problems.

DPRK is not an exception. Malnutrition caused by food shortages is becoming a nationwide problem and public sanitation, and the prevalence and spread of communicable diseases remain important social issues. Thus, we must keep in mind that the situation will have to be observed closely over the long-term.

Similarly important is establishing a healthcare system and infrastructure, which have diverse tangible and intangible aspects. This might include the modernization of essential hospital facilities, retraining the medical workforce, a variety of health promotion programs, drug manufacturing, and obtaining medical supplies and machines.

In this text, we have summarized the pressing questions regarding healthcare facing DPRK and solutions that will require collaboration in order for us to move forward.

### *1) Maintaining a National System for the Prevention and Control of Communicable Diseases*

In the mid-1990s, DPRK experienced a severe food shortage and at the same time, many types of healthcare problems. One serious problem was an explosive increase in the prevalence and proliferation of communicable diseases, which made a very big impact on the entire population in several ways.

For instance, diarrhea and respiratory communicable diseases are usually easily cured with the appropriate treatment and a normal immune system but if the appropriate treatment is not administered in the face of severe malnutrition, the result will be fatal. Nearly 80% of the deaths of children under 5 years old in DPRK were due to these diseases, so if these diseases were properly confronted, the child mortality rate could have been greatly decreased.

Second, diseases such as polio, measles, and tetanus can be prevented by vaccinations but will occur if vaccinations are not given. For example, polio was more or less under control until the mid-1990s, when vaccinations dropped and cases were reported. In order to bring polio under control, in 1997 DPRK instituted an annual nationwide program called “National Immunization Day” and consequently is managing the disease effectively now.

Third, malaria and tuberculosis were relatively well under control prior 1990, when the number of cases also rose sharply. In the case of tuberculosis, if the appropriate drugs are administered correctly most patients will recover completely but when drugs are not available, the disease is fatal. Tens of thousands of patients suffered from malaria as well.

Due to improvements in nutritional intake and the surrounding environment, the supply of intravenous (IV) solutions (e.g., Ringer’s solution) and antibiotics, and the rate of vaccinations, the worst is considered to be over in the prevalence and spread of communicable diseases, but currently we cannot yet say that they are effectively under control.

The intervention and management of the spread of communicable diseases is one of the important and outstanding issues for DPRK’s healthcare system. Nutrition, environment, medicines, hospital facilities, the medical workforce, and a variety of other aspects should be considered with regards to this problem, but how to most effectively employ the currently limited goods and medical workers in addressing these issues is another important question.

Although the international organizations such as the World Health Organization (WHO) and UNICEF, as well as other non-governmental organizations (NGOs) are doing their best to help, but these efforts are not likely to produce a long-term solution to the roots of the problem.

DPRK authorities must be willing to contrive solutions that reach the root of the problem if they are to effectively manage communicable diseases and consequently organize and specialize their management system. Also urgent is the need to use education and training to produce specialists.

A monitoring system is necessary in order to prevent and manage communicable diseases but in the case of DPRK, the framework for regional monitoring is already in place. If these networks are used properly, it should not be too difficult to establish a system for effectively manage communicable diseases.

Cooperation from and collaboration between North and South Korea is absolutely necessary in managing communicable diseases. For example, malaria most frequently occurs in the DMZ and thus without collaboration between the two countries the disease cannot be effectively

controlled. As visits and contact with South Korea increases, the need for jointly attacking communicable diseases increases as well.

In order to protect the residents of South Korea, the South Korean government must take appropriate measures regarding communicable diseases as well. The Center for Disease Control and Prevention in South Korea has a system to respond to incidents domestically as well as the influx of contagious diseases from abroad but is passive regarding communicable disease cases in the DPRK region.

There is a need for South Korea's Center for Disease Control and DPRK's institutions for the management of communicable diseases to mutually cooperate with each other through information exchanges and by teaching each other skills and techniques. It is important that South Korean authorities acknowledge this if they are to really protect the residents of South Korea from communicable diseases.

## *2) The Management of Children's Nutrition and Health*

Food shortages posed a grave danger to DPRK's children in the form of malnutrition and the secondary health problems caused by malnutrition. In 2002, a nationwide survey on children's nutrition showed that 8.5% were wasted, 21% were underweight, and 41.6% were stunted. This was an improvement compared to previous surveys but the situation was still deemed a severe crisis.

The infant and under-5 children's mortality rates rose significantly compared to statistics prior to 1990, which reflected the serious threat to the health of children in DPRK.

There is no doubt that the problem of child malnutrition originated in food shortages and thus food supply is an important factor in solving this problem. However, there is no indication that food shortages will be remedied in the near future and thus a critical issue is providing specialized care to the children that are already seriously ill due to malnutrition.

More than 70,000 children were determined to suffer from such problems and thus there is an immediate need for a special program designed especially to help these children. Simply increasing the food supply will not solve this problem; rather, specialized facilities and programs and trained staff are needed to help these children recover from malnutrition. UNICEF is providing aid for specific projects here and there but it is not enough to fully resolve the current situation.

Furthermore, the food supply for children should not consist only of simple grains and cereals but should also address the frequent need for specially processed foods. There is a need to develop a system that will distribute products such as breast milk substitute (formula), baby food, and other foods that will provide well-balanced nutrition for younger children whose digestive systems are not yet fully developed.

In addition, there is a definite need for foods and medicines that will remedy and diagnose iron, vitamin, iodine, and other specific nutritional and mineral deficiencies.

In order to solve the problem of child malnutrition, DPRK authorities, international organizations, and other NGOs must cooperate in collaborating. DPRK authorities must either establish a specialized organ or strengthen existing bodies in order to deal with this problem, as well as designate bodies to deal with the problem on a regional level, reinforce facilities, and support the training of personnel. There is also the need to set up an open network for information exchange between the international organizations and NGOs that are currently providing aid and support for the cause of child malnutrition in DPRK.

In order to lower the infant and under-5 child mortality rates that are reflective of the children's health and bring them back to former levels, we must ensure drinking water quality and public sanitation, fulfill nutritional needs, improve medical facilities and the overall living environment, and take other appropriate actions.

In order to prevent the occurrence of the various ailments affecting these children, we must first address drinking water conditions, heating during colder months, nutrition, public sanitation, and their surrounding environment. Although DPRK authorities are working with limited resources, it is very important that they undertake a sweeping campaign and not hold back in trying to improve the living conditions of these children.

Recovery is usually possible if the appropriate treatment is administered in the early stages of communicable respiratory diseases or diarrhea. Thus in order for pediatric hospitals to be able to function properly and treat these illnesses it is absolutely imperative that they get the necessary supply of IV solutions and antibiotics. The reality is that aid regarding nutrition and communicable diseases will probably have the biggest impact on children's health and we must thus systematically work to help them with these problems.

### *3) Management of Maternal Health*

Equally important as children's health are the threats to women's health in DPRK. Especially critical is the fact that women are becoming pregnant and giving birth under difficult conditions. There were 110 pregnancy-related deaths of the mother per 100,000 pregnant women in 1996, which is 5 times higher than the statistic in South Korea during a similar period. It is important to note that maternal nutrition and health not only affect the mother but also have immense effects on fetal development and health. However, the inconsistent availability of a variety of conditions necessary to guarantee safe birthing practices probably plays a bigger role in the increase in the rate of pregnancy-related deaths than weakened maternal health. The primary cause of these deaths is usually because medical staff are not prepared to provide immediate responses to complications during delivery due to a lack of necessary medical equipment and infrastructure.

Because the main hospital in Pyongyang lacks the most basic equipment and supplies for delivery procedures, even normal delivery cases must be transferred to neighboring birthing clinics, reflecting the difficult conditions. If this is the case in the capital city, conditions must be far worse in rural areas.

The stagnation of population growth due to an increase in mortality rates and decrease in the birth rate has had a negative effect on economy. Although DPRK authorities are pushing a policy of encouraging more births, conditions are not conducive to giving birth, much less nurturing to a child, and thus the birth rate is not rising.

In the short-term, it is important consider what kinds of social policies we should adopt to be able to fulfill the nutritional needs of mothers and help them progress through a healthy pregnancy. We must ensure that there is a sufficient amount of food and nutritional supplements that will help mothers avoid iron and iodine deficiencies that can affect both mother and unborn child.

The most important thing is to ensure safe delivery conditions and environment. We must support district and county hospitals so that they can sufficiently be able to provide obstetric diagnoses. Although birthing clinics at the provincial level are meeting demands, in reality any clinic on a more local scale is currently unable to fully meet the need for obstetric skills. Because child delivery is time-dependent and involves waiting between diagnoses, there is a need for hospitals close to the mother's residence that she can reach quickly at any time. In terms of ease of accessibility, provincial clinics are not the ideal candidates. Thus, from a strategic standpoint, there is an immediate need to increase support in such areas to district and county hospitals.

#### *4) Establishing the Infrastructure to the Healthcare System*

In 1990, as DPRK began to enter an economic crisis, the pharmaceutical industry, the production of medical supplies and equipment, and other healthcare-related enterprises stagnated overall. This became the primary factor in the threat to the well being of DPRK residents.

Following the collapse of the pharmaceutical industry, it became impossible to obtain essential medicines for the treatment of various illnesses. The situation was such that importing the necessary drugs was not an option and thus residents were faced with a severe drug shortage. Previously, residents depended on traditional ("Koryo") medicines only 30% of the time but following the economic crisis this percentage increased suddenly to 70%. This tells us just how severe the shortage of Western medicines must have been.

It was definitely a life-threatening situation regarding illnesses that could not be cured with traditional ("Koryo") medicines. 80% of the fatalities of children under 5 years of age were due to diarrhea or communicable respiratory diseases. If treated appropriately in its early stages, most patients can recover from either, but death can result if not treated properly. Just having a sufficient supply of IV solutions and antibiotics could definitely save many lives.

There is a fragment of the original pharmaceutical industry left but the variety and volume of the drugs produced is insignificant. Aid from international humanitarian organizations and imports from Russia and China, as well as drugs smuggled in from these countries, creates a limited supply.

During the latter half of the 1990s, as aid flowed in from humanitarian organizations, support of the medical field also began in earnest. The support came mostly in the form of fully produced medicines but gradually increasing support for rebuilding the foundation of the pharmaceutical industry began at the same time. Humanitarian organizations based in Germany supplied both the equipment and raw materials needed to manufacture drugs while South Korean organizations donated equipment and raw materials needed for the production of pill and liquid drugs to Pyongyang's research institute for children's nutrition. More recently a serious effort has been made to support the establishment of a IV solution production line at Pyongyang's JuhngSuhng Pharmaceutical Corporation.

Collaboration from an economic (rather than a humanitarian) standpoint has occurred as well. Pyongyang's JuhngSuhng Pharmaceutical Corporation and South Korea's Han Pharmaceutical Corporation are working together to produce the thrombolytic agent Urokinase in DPRK, but there have been no other instances of economic cooperation in this arena so far.

In addition to drugs, there is also an extreme shortage of medical supplies and equipment. Although hospitals are reusing supplies such as gauze and syringes, there is obviously a limit to how many times they can be used. There is even a lack of the most basic equipment such as thermometers and stethoscopes; essential equipment such as x-ray machines, ultrasound scanners, and endoscopes are more than 20-30 years old and have often deteriorated to the point where they are no longer usable.

Although humanitarian aid is being given with regards to medicines, medical supplies, and medical equipment, it is far from enough to be able to meet the demands of the entire nation. Some CT scan systems, angiography systems, and similar up-to-date equipment that were formerly used in South Korean hospitals have been installed in DPRK hospitals. It is unknown how useful these machines might be in the DPRK, but if a donation system is set up where equipment not in use in South Korea and would be useful in the DPRK can be exchanged, it would probably be very helpful.

Eventually DPRK must also be able to produce its own essential medical appliances and equipment. But since it is impossible to establish production lines from the ground up overnight, they will probably need help in the form of equipment and produced in South Korea for some time, which they could receive through humanitarian, governmental, and economic channels amongst others.

In the case of modern medical equipment not produced in South Korea, aid falls far short of demand. In this situation donations of equipment not in use would be an effective solution. However, there are a few problems with donating used equipment. First, it is probable that the equipment's performance will be far from its best, because it these appliances probably would have been used in South Korea for some time before they were donated. It is also possible that DPRK's pride will be very wounded if they think that South Korea is merely dumping used and unwanted equipment on them. Thus, discretion must be used when choosing equipment for donation, inspecting the equipment to make sure that it is performing well and is not more than a few years old.

Second, a system for maintaining and inspecting these appliances must be established. The longer equipment has been used, the more likely it is to malfunction with the new owner. On the other hand, the more state-of-art an appliance is, the less likely a non-specialist will be able to fix any problems. Even if the donors went through a lot of trouble to give the equipment, it will merely become useless and a hindrance if it can not be properly fixed when broken. Sending a specialist from South Korea every time a machine breaks down is also out of the question. Thus, there is a need to establish a “Center for Medical Equipment Maintenance” in Pyongyang and a system where the equipment donated by South Korea can be inspected and maintained, although this center will probably need some technical assistance from South Korea as well.

#### *5) Establishing the Production and Supply of Vaccines*

In the mid-1990s, due to a severe shortage of vaccines, vaccinations could not be given as necessary and communicable diseases that could be prevented started resurfacing. Representative examples were polio, tetanus, and the like. Polio was considered to be a disease that could be eradicated, much like smallpox, and as such considerable effort was devoted towards doing so. Even in DPRK, there were no reports of polio until the first patient was discovered in the mid-1990s. The number of tetanus patients is also reportedly increasing.

During this period the number of vaccinations showed a big decrease, mostly due to a shortage in the vaccine supply. There were differences depending on the type, but in 1998 the rates were 34% for the measles (rubeola) and 37% for tetanus (DPT/diphtheria). Thanks to aid from WHO, UNICEF, and other international organizations, the rates increased greatly and returned to prior levels by the end of the 1990s.

The problem is that DPRK still does not have the production or economic capacity to supply itself with vaccines. If aid from international organizations is interrupted or stopped, there is a high probability that rates will drop once again to those of the mid-1990s. This means that diseases preventable by vaccination will possibly spread and create an epidemic.

We must help DPRK so that eventually it will be able to produce its own vaccines. DPRK must establish their own vaccine factory, production lines, and set up a system for importing a portion of their supply. If it is difficult to set this up immediately, then they must set up a system guaranteeing a supply of vaccines produced in South Korea, so that they can free themselves of dependence on international aid that much faster.

At the same time, in addition to ensuring a supply of vaccines for DPRK, we must also set up the necessary production, preservation, transport, and storage/refrigeration systems related to vaccines. Medical organizations need to think about setting up a large scale refrigeration facility at a base location, as well as ensuring that vehicles with refrigeration capabilities are available for transporting vaccines to the actual location where they will be administered.

#### *6) Establishing a System for Modernizing Hospitals*

It is widely known that most DPRK hospitals are currently unable to function properly. Not only are patients unable to receive the care they need due to a lack of medical equipment and drugs,

but the supply of heat, drinking water, food, etc., is also far from secure. There are even situations where it is impossible to administer inpatient treatment due to these problems. It is sad but true that every now and then, surgical procedures have to be stopped because there is an electrical blackout and that Caesarian sections have to be performed while the mother is not completely anesthetized because there are not enough anesthetics. The current situation is such that because there is no heat in the hospitals and patients are responsible for finding their own food, they can not be properly treated or recover and consequently there is no point in being hospitalized.

A long-term matter is establishing the infrastructure for healthcare-related enterprises so that the supply of medicines, medical equipment, and other items used in hospitals is guaranteed. DPRK is also concentrating on the issues of electricity and food supply on a national scale. Modernizing the hospitals, however, is closely connected to the state of the economy; this issue probably will not be easily solved for the time being.

The remodeling of hospital buildings will probably be difficult, considering that the supply of construction materials is insufficient and that the best that can be done right now might be using recycled materials. The modernization projects currently underway are dependent on foreign aid and thus it would be difficult for individual hospitals to modernize their facilities on their own.

Although continuous support has been given to hospitals on an individual basis, there seems to be a disproportionate emphasis on the large hospitals in Pyongyang. The aid from foreign and South Korean humanitarian organizations initially went to Pyongyang University General Hospital and city hospitals such as Pyongyang Citizens' Hospitals No. 1, 2, and 3. In 2004 however, the Pyongyang and South Korean Red Cross organizations launched full-scale efforts and supported regional hospitals for the first time by sending aid to Daedong River District Hospital. The completion of 2 years of construction and the opening of Pyongyang Children's Hospital can also be heavily attributed to collaboration with and aid from South Korea.

While South Korean aid has not yet been able to branch out from Pyongyang, foreign relief organizations have started working with children's hospitals in Sariwon and Wonsan, amongst other rural hospitals. The Ryongchon disaster also became an opportunity to provide support and aid to hospitals there.

It is only logical that there is a limit to how much hospitals can be helped on an individual basis. Although hospitals that are located in increasingly rural areas will probably have increasing need for aid, currently their specific needs are not being met and furthermore it will be impossible to respond to all of the requests of thousands of hospitals.

In order to have a direct impact on residents' health by modernizing the hospitals in the Pyongyang region, we first need come up with a plan that will be the most effective in the short-term—such as what hospitals will we focus on first. Another similar question is what equipment and supplies might contribute the most to improving all residents' health. All aid should be similarly prioritized after careful consideration.

Out of the many types of hospitals, the ones that should be given priority in receiving aid are the hospitals that would be the first in hospitalizing a patient. In the case of the Pyongyang area, this might mean district hospitals, and in rural areas, town and county hospitals might play such a role. These hospitals are especially important because they have the ability to respond to illnesses in their early stages and prevent patients' conditions from worsening.

In terms of aid to hospitals, swift action is most needed in making sure that they have essential medicines, supplies, and other basic equipment. In terms of medicines, priority should be given to the drugs that are used the most widely as well as the most essential, such as antiseptics for wounds and the various supplies necessary for patient diagnosis. Similarly, although a variety of medical equipment is needed, the focus should be on supplying the most essential equipment first.

Hospital facilities also need to be improved. Buildings need to be renovated so that heating is available during the winter months and aid is needed in supplying fuel to individual hospitals as well. Individual hospitals also should consider how to make sure patients get the food and drinking water they need.

#### *7) Providing Training and Clinical Instruction to Medical Staff*

The medical staff of DPRK are encouraged to be and known for being devoted to their work and compassionate towards patients. The "Devotion Movement" in North Korea is a campaign representative of the love and sincerity of medical workforce with respect to their patients.

However, the it is only expected that the ability to diagnose and cure diseases that require medical equipment falls behind as the equipment ages and deteriorates beyond use, yet are not replaced with new appliances because the supply is virtually nonexistent. Knowledge of how to appropriately administer Western medicines—never mind the newest drugs—and how to deal with potential side effects is also falling behind because the supply is definitely low.

Because contact with the rest of the world is limited and Internet access is not very prevalent, it is becoming increasingly difficult to keep up with the trend of medical advances worldwide.

Luckily the medical workforce of DPRK show great enthusiasm and zeal for their work. If the necessary medicines and equipment are offered, and training programs are sponsored, they will quickly be able to master the skills and information they need to know.

When providing aid in the form of medicines and medical equipment, in addition to simply supplying the actual goods, enough time must be spent on instructing and training medical staff how to use them. Consideration should be given to providing user's manuals and books on equipment maintenance with the equipment itself, as well as offering sufficient information on new medical techniques. It is also time to seriously think about offering support in a more intangible sense by setting up medical training programs about medical techniques and equipment suitable to the situation in DPRK.

The guidelines and clinical instruction given to the medical staff for preventing and treating illnesses also do not sufficiently reflect more recent advances in medicine. Although widely offering updated clinical instruction will probably have a significant impact on residents' health, this is not yet actively occurring.

Due to foreign supporters and their widespread efforts to implement DOTS (the WHO-recommended TB control strategy), the situation has come under control as of late. This is in addition to increased support regarding updating clinical knowledge for treating DPRK's children, mothers, and other such demographic groups more susceptible to environmental stress. Now, we also need to focus on making sure the instruction is extensive, covers a variety of medical fields, and reflects modern medical advances and guidelines.

## Chapter 2. The State of Children's Health in DPRK

### 1) Surveying Children's Nutrition

The state of children's nutrition was not well known internationally before the food shortage reached its climax in the mid-1990s. In 1997, the World Food Programme (WFP) undertook a population-representative survey focusing on kindergartners and found that 38% were stunted. A nationwide survey jointly undertaken by several international organizations in 1998 found that 60% of the children were underweight—the worst rate in the world at that time.

A survey which DPRK independently conducted in 2000 found that the percentage of underweight children decreased to 28% and a 2002 survey which international organizations participated in showed that the situation was rapidly improving, dropping to 21%. Each year following 1998 showed a 10% decrease in the percentage of underweight children, 200 times faster than the average rate of decrease for all of Asia. Furthermore, only 6.7% of the children born in the last 2 years have been underweight at birth, a rate similar to that of developed nations. These survey results reflect the effects of food aid from the international community on children's health.<sup>1</sup>

Table 2-1. Comparison of Nutrition-Related Conditions (by percentage)<sup>2</sup>

	1998*	2000**	2002#
Wasted	15.6	10.4	8.12
Stunted	62.3	45.2	39.22
Underweight	60.6	27.9	21.15

\*EU/UNICEF/WFP. Nutritional survey of DPRK 1998

\*\*Central Bureau of Statistics. DPRK. Report of the second multiple indicator cluster survey 2000, DPRK. Oct. 2000

#Central Bureau of Statistics, DPRK. Report on the DPRK Nutrition Assessment. 2002

Although children's health in DPRK has improved greatly compared to the past, the situation is still in need of help from abroad. The 40% stunted rate in 2002 is still considered to be "very high" by WHO standards. Stunted children are more likely to become ill than underweight or

<sup>1</sup> Roger Shrimpton, etc. Analysing the causes of child stunting in DPRK. October 2003.

<sup>2</sup> Medical Aid for the Children of DPRKorea. 2003 Report on North Korean Children's Health. 2003.

wasted children are. Also requiring careful examination is the fact that there is almost a 200% difference between the highest and lowest percentage of stunted children by city (Nampo City at 26% vs. Yanggang-do at 50%).

Detailed results of the 1998 and 2002 nutritional surveys can be found in the 2002 and 2003 editions of our organization's *Report on the Health of DPRK's Children*. The files can also be downloaded from the "Resources" section of the North Korean Healthcare Network's website ([www.nkhealth.net](http://www.nkhealth.net)).

## 2) Causes of Child Stunting

Stunting is associated with a short-term increase in child mortality rates, as well as mid- to long-term effects such as a decrease in learning capacity, decrease in ability to complete tasks, increased prevalence of diseases in adulthood, and increased rates of premature childhood deaths. Because there is a strong connection between the prevalence of childhood stunting and child mortality, it is important to determine the common factors between them.

A nationwide nutritional survey in 2002 attempted to closely examine the causes of stunting, but the data was not very usable. For instance, because the survey did not include questions related to drinking water or sanitation, there was not enough information to conclusively state the causes. Even if stunting is connected to other factors, it is hard to say that the analysis had the appropriate evidence to sufficiently support it. Although the survey is not very comprehensive, it is still significant in that it was a start in discovering the causes of stunting.

Based on the analysis of the results of the 2002 nutritional survey, some of the factors that seemed to have a direct connection to the stunting of DPRK's children include "maternal mid-upper arm circumference, whether the mother ate meat or eggs the day before, whether the main food in store was rice or wheat, and if the number of antenatal visits were less than 7. The most significant of these predictors was the number of antenatal visits."<sup>3</sup>

Table 12<sup>4</sup>

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The number of antenatal visits being greater than seven generally indicated that the mother was having specific problems with the pregnancy and would later give birth to a child with a low weight at birth. The fact that the most significant predictor was the number of antenatal visits also implies that frequent visits are currently not preventing stunting. In addition, this reflects the hardships that DPRK's mothers face; about half of the mothers with children under 2 years old had to work even when they were pregnant and could not receive proper treatment or medication when they became ill.

Because medical workers and facilities are close by within each community, once a woman becomes pregnant she can receive a medical examination at least once a month. Thus, if a mother receives more than 7 antenatal examinations, this suggests that she needs help that much

<sup>3</sup> Roger Shrimpton, etc. Analysing the causes of child stunting in DPRK. October 2003.

<sup>4</sup> Roger Shrimpton, etc. Analysing the causes of child stunting in DPRK. October 2003.

more. The mother that is ill more frequently during pregnancy has a higher probability of giving birth to a stunted child.<sup>5</sup>

This reflects the relationship between the mother's nutritional state and child stunting. There is also a strong connection to protein-rich foods as well, but we cannot conclude that protein consumption by itself is very important; although meat and eggs are protein-rich, they are also rich in iron, zinc, and other similar elements. The importance of having a store of rice or flour in the house was also reflected by the survey.

Although there was a connection between stunting and MUACs, there was no relationship between low weights at birth and MUACs. This implies that the causes of stunting are different between the factors leading to underweight and wasted children. Because MUACs are related to the mother's body mass index, they also reflect the mother's weight prior to pregnancy. The weight of DPRK's newborns at birth is extremely satisfactory, with only 7% of the infants born weighing less than 2.5kg. Because weight at birth is closely tied to weight increase during the second half of pregnancy, it also shows whether caloric intake during this period was sufficient. But if stunting is decided during the first half of pregnancy, then it is probably caused more by the quality rather than quantity of food. No relationship was seen between stunting and whether the mother was anemic or not.

One important result was the regional differences in rates of stunting. Although there was no difference between urban and rural areas overall, there were differences between individual towns and villages. For example, residents of Nampo and Pyongyang were much better off.

The fact that the relationships between these various factors and stunting are not fixed shows that there is no single cause of stunting. Thus, instead of adopting one national solution, each community should apply whatever measure is most appropriate for them and remain open to a variety of solutions. Each community plan, however, should make sure that it covers improving maternal health and ensuring the normal development of infants and children.

Currently, 42% of the children under 7 years old are wasted and their lives are being threatened because they are unable to receive appropriate and specialized treatment in hospitals.<sup>6</sup> Over the last couple of years the percentage of wasted children has decreased little by little, but child mortality rates have increased and its main cause, critical food shortage, does not seem to have decreased much.<sup>7</sup>

### *3) The State of Health of DPRK's Children*

Diarrhea and communicable respiratory diseases remain the main causes of child mortality. The worst is considered over but the threat to children's health still exists. The severity of the impact was reduced by the foreign donations of medicines and Oral Rehydration Solution (ORS) but continued support is still needed for the foreseeable future.

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<sup>5</sup> Roger Shrimpton, etc. *Analysing the causes of child stunting in DPRK*. October 2003.

<sup>6</sup> UNICEF. *Humanitarian action DPRK Donor Update* 12 March 2004.

<sup>7</sup> UNOCHA. *DPRK: Situation bulletin*. April/May 2004.

The “National Immunization Days (NID) Program” started in 1997 and administered polio vaccines, anthelmintic (deworming) agents, vitamin A, etc., until 2002 but starting from 2003 excluded polio vaccines, stating that polio was effectively under control. The name also changed from “National Immunization Days” to “National Child Health Days”.

The “National Child Health Days” program continued in 2004 by administering vitamin A and anthelmintic medicines. 95% of all children ages 6-59 months are administered vitamin A biannually and all mothers are given vitamin A doses immediately following delivery.

#### 4) *Results from UNICEF Action in 2003*

Here we include an excerpt from the Dec. 2003 UNOCHA DPR Korea Situation Bulletin.<sup>8</sup>

“Key results from joint Government-UNICEF action in 2003:

- Over 350,000 infants fully immunized protecting them against disease and disability
- Around 10,000 severely malnourished children treated, many of whom would otherwise have died
- Almost 2 million children in all villages received vitamin A and deworming through two child health days boosting their immunity / helping nutritional status
- Millions of children (unquantified) treated at health clinics as a result of the all year round availability of vital medicines for simple but life threatening illnesses including diarrhea and pneumonia
- Millions of women and children (unquantified) benefited from iodine intake through iodized salt with 18,000 MT half of the country needs now being produced
- Over 10,000 additional families with access to clean water through renewed piped water supply (another 15,000 in early 2004) and over 500,000 families through chlorinating city water supplies
- 650,000 children in primary schools in the northeast provinces and CNSP centers received textbooks and basic school materials
- 15,000 kindergartens received textbooks benefiting 600,000 children”

### 3. Responding to Communicable Diseases

#### 1) *The Vaccination Situation*

Because it is not possible to produce the actual vaccines, DPRK is dependent upon foreign aid. The vaccines needed for DPRK’s children in 2004 are being provided by UNICEF and as a result, over 350,000 are expected to be fully vaccinated.<sup>9</sup> Although it can be said that the spread of diseases preventable by vaccination is no longer a worrisome probability, because DPRK is still dependent upon foreign aid for its vaccine supply, this may become a long-term burden on all parties if not resolved.

The goal for 2004 is to effectively vaccinate 470,000 infants and 480,000 mothers. The WHO has installed solar-powered vaccine refrigerators in 25 county centers for disease prevention. Guaranteeing refrigeration facilities will help greatly in receiving donations and storing them in the future.<sup>10</sup>

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<sup>8</sup> UNOCHA. DPRK Situation bulletin. Dec. 2003.

<sup>9</sup> UNOCHA. DPRK: Situation bulletin. April/May 2004.

<sup>10</sup> UNOCHA. DPRK: Situation bulletin. April/May 2004.

## 2) *A System for Managing Polio*

After cases of the previously eradicated poliovirus were detected in both 1995 and 1996, foreign support helped turn the situation around such that currently, there have been no reports of polio. The NID Program instituted in 1997 to help control polio has definitely contributed to this development.<sup>11</sup>

A recent issue of a monthly magazine published in DPRK called “KumSuGangSan” (‘beautiful land’) reported on a laboratory working on polio research. A portion of that article is reprinted below.<sup>12</sup>

“...With the assistance of the WHO, a laboratory was set up with modern equipment including incubators, thermostats, nucleic acid amplifiers, high speed centrifuges, super cold freezers, and other modern biological laboratory equipment, allowing scientists to successfully perform virological experiments accurately.

Here, experiments focus on virus isolation [and related tasks] with the intent of isolating polio patients and other patients with acute paresis to determine if they have polio or not.

In addition to the laboratory head and members, who are all graduates of Pyongyang University Medical School, the presence of specialists in many different fields ensures that the laboratory is able to perform all necessary analyses on site. They continue to improve their skills and increase their knowledge by attending annual training sessions with representatives from many nations.

The laboratory has an organized system such that it is able to handle cases from all over the nation and a secure supply of equipment and laboratory reagents has allowed it to work steadily thus far.

...The laboratory shares updates on its work each week with the southeastern Asian countries. DPRK also exchanges information with laboratories from many different countries about current projects and produces a group report after discussion at an annual conference attended by heads of polio research laboratories.

Besides keeping tracking of patients with acute paresis, the laboratory also carries out surveillance on measles.”

## 3) *Tuberculosis (TB)*

The WHO has spared no effort in helping to eradicate TB from DPRK in the last 5 years. After the DOTS protocol was first introduced in 1998, it became widespread “ and reached 100% geographical coverage in October 2003.”

In May 2005 the WHO and Global TB Drug Facility dispatched 2 international TB specialists to DPRK; they concluded that the nation’s TB program is still in need of foreign aid.

Recently, the number of reports of TB has been rapidly increasing. In 1994, 38 TB patients were reported for every 10,000 residents. For the regions using the DOTS method, the rate increased to 207 TB patients by 2001. The total number of TB cases in 2001 is estimated to be 47,000.

In 2003 the number of patients receiving treatment by the DOTS method increased to 52,591. If the TB patients had not been treated, the overall mortality rate would have risen to 30% within 5

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<sup>11</sup> Medical Aid for the Children of DPRKorea. 2002-3 Report on North Korean Children’s Health. 2002, 2003.

<sup>12</sup> KumSuGangSan. The WHO’s Strategy. August 2004.

years.<sup>13</sup> “In 2003, the calculated all case detection rate was 241 per 100,000 and new smear positive (NSP) rate at 82.5 per 100,000.”<sup>14</sup>

The increase in the reported number of TB patients may in part be due to overall increased prevalence. However, the most likely explanation is that after foreign donations of medication came in and the DOTS program was introduced, treatment became much more effective and thus the number of patients seeking treatment increased as well.

In the UN’s 2002 DPRK Common Country Assessment, the authors note that

“with a mortality rate of 10 per 100,000 population, controlling TB is an important health priority... DPR Korea has a long commitment to tuberculosis control through a vertical National TB Programme (NTP). A draft five-year “Plan of Action for the Implementation of DOTS, 1998-2003” was drawn up by the TB Section of the Department of Communicable Diseases, Ministry of Public Health, with the assistance of WHO in early 1998.

Initially the DOTS Programme was implemented from November 1998 in seven pilot sites covering a population of 1.4 million (6% coverage). Two phased expansions of the programme have occurred since, and to date 2/3 of the country (15 million population) is covered under the DOTS Programme. Case notification rates are increasing, with high smear conversion and cure rates being maintained during the expansion. National guidelines for the control of TB in DPRK were developed in 2000 and a second 5-year “Plan of DOTS Expansion in DPR Korea, 2002-2006” was drawn up in 2001, with a target date of 2004 for nationwide coverage.”<sup>15</sup>

DPRK’s system for the management of TB includes, at the hospital level, 13 Centers for the Prevention of Tuberculosis (1 in Pyongyang, 2 in other cities that are directly controlled by the government, 9 provincial centers, and 1 in Sunchun County in North Pyongan province), 63 TB sanitariums, and at the local public health level, approximately 200 city and county clinics.<sup>16</sup>

DPRK is adhering to a policy of isolating TB patients and treating them in sanitariums. But the DOTS method notes that sanitarium treatment is not necessary when dealing with TB. If enough medicines and relevant supplies are provided for the treatment of TB, this policy of sanitarium isolation will probably need to be adjusted.

DPRK sent 4 representatives to a WHO-sponsored workshop on TB Surveillance and Epidemiology in New Delhi during September 21-24. The workshop focused on discussing the various monitoring and evaluation methods currently being used by various countries in the region.

#### 4) *Malaria*

In the mid-1990s cases of malaria reemerged, mostly tied to the DMZ area, and the number of cases skyrocketed suddenly. In 2000, more than 200,000 cases were reported, and in 2001 the figures were as high as 300,000. With the assistance of the international community,

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<sup>13</sup> UNOCHA. DPR Korea. Situation bulletin Jun/Jul 2004

<sup>14</sup> UNOCHA. DPR Korea. Situation bulletin Jun/Jul 2004

<sup>15</sup> UN. 2002 Common country assessment. February 2003.

<sup>16</sup> Hwang, NaMi. Prioritizing Healthcare Issues in North Korea and Future Topics. (www.nkchannel.org)

concentrated efforts to manage malaria helped stem the upward trend in 2002 and 2003 began to see a sudden decrease. In 2003 the number sharply decreased to 38,000 patients, reflecting an 85% decrease during 2001-2003 (Table 3-1, Figure 3-1).

Table 3-1. Incidences of Patients with Malaria in North & South Korea.<sup>17</sup>

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
South	2	3	25	107	356	1724	3932	3621	4142	2556	1799	1171
North							2100	95960	204428	295570	254000	38920

Figure 3-1. Number of Patients with Malaria By Year (see Korean version)

According to the WHO,

“the number of malaria cases for the first half of [2004] was about five times lower than last year. A report from the Central Hygiene and Anti-Epidemic Institute showed that only 116 and 2,551 malaria cases were diagnosed and treated during the first and second trimester of 2004. However, the number of malaria cases in July alone (10,854) was still not far below the same period of last year (13,095).”<sup>18</sup>

Furthermore, the authors of the 2002 DPRK Common Country Assessment write that

“The re-emergence of malaria can be contributed to several factors. The floods in 1995-96 have provided increased breeding grounds for the specific 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. Around 10 million, or 40% of the population, are now at risk.

A “Roll Back Malaria” programme has been implemented for the past three years focusing on improving prompt diagnosis and treatment through improved diagnostic facilities and availability of anti-malarial drugs. Furthermore, vector control measures using insecticide treated screens or curtains, as door or window covers, with insecticide-impregnated bed-nets is an economic and effective method to reduce the chances of mosquito bites... There is a need to strengthen the epidemiological surveillance for other communicable disease control and to improve the functioning of the Hygiene and Antiepidemic Station.”<sup>19</sup>

The supply of microscopes, training on how to use them, and their use in examination must also be increased.

Malaria was declared eradicated in South Korea in 1979, but following the infection of a soldier on active duty in 1993, the disease began to reemerge and saw a sudden and sharp increase in prevalence. Thanks to intensive efforts to control the disease, prevalence began to decrease in 2001 and 2003 saw the lowest rates since 1997, with just 1,171 cases.

The only way malaria can effectively be prevented is through North-South cooperation and collaboration. Malaria is spreading mainly through communities neighboring the DMZ, so merely addressing one “side” of the problem will not solve the problem at its root.

<sup>17</sup> Data for South Korea was obtained from the Communicable Disease Information System (<http://dis.mohw.go.kr>) and is the sum of cases that arose domestically and came from abroad. Data for North Korea was collected from a variety of separate sources.

<sup>18</sup> UNOCHA. DPR Korea. Situation bulletin Jun/Jul 2004

<sup>19</sup> UN. 2002 Common country assessment. February 2003.

## 5) *Management of Communicable Diseases Originating Abroad*

In 2003 the WHO's recommendations on how to quarantine and manage SARS were exceeded and occurrence of SARS was successfully prevented. In 2004, avian flu became very prevalent in southeast Asia but no cases were reported in DPRK.<sup>20</sup> In order to effectively deal with similar communicable diseases, DPRK has sponsored disease prevention programs by selecting areas for 'surveillance of cold viruses.'<sup>21</sup>

Up until now there have been no formal reports of AIDS patients in DPRK. Occasionally there are reports of an HIV-infected patient but these are usually foreigners, which raises sanitation and other public health issues. Because HIV has a tendency to spread rapidly once it enters a region, preventing further cases is of utmost importance. There is a high risk of HIV spreading because syringes are often reused in DPRK and the quality of blood used in transfusions is unreliable. Although HIV testing is included in blood tests, it is not being administered properly due to economic difficulties. The risk of an HIV epidemic is always present and very high, due to the country's proximity to China, where HIV prevalence is quickly rising, especially as people travel between the two countries. For example, in the Yanbian autonomous territory, home to the Korean-Chinese population, the first AIDS patient was discovered in 1994. By June 2004, a total of 41 people were known to be infected, and 6 had died. Until September 2002, there had been only 29 patients total, which means that in the last year and 9 months an additional 12 cases have surfaced.<sup>22</sup>

## 4. **Women's Health in DPRK**

### 1) *Women's Health and Nutrition in DPRK*

Up until the first half of the 1990s, women's health had significantly improved, at which point the economic crisis caused a deterioration of the situation to its current state.

Many women have nutritional deficiencies, most frequently iron and vitamin deficiencies. Nutritional deficiencies, excessive work, etc. can all have negative effects on the unborn child. Antenatal development can be affected, which often leads to low birth weights and is also connected to infantile and juvenile nutritional deficiencies. The chance of fetal death also increases.

The 2002 DPRK Common Country Assessment states that

“the health and nutritional status of women has deteriorated considerably over the past decade. Many women are now malnourished and micronutrient deficiencies, notably iron (anemia) and vitamin A, are frequent. During pregnancy, a precarious nutritional status, poor care and heavy workload further compounds the poor status. For the child, the result is poor intrauterine growth and low birth weight, malnutrition at a very young age and continued malnutrition into adolescence. The result is an increased risk of death during pregnancy. The number of maternal deaths has increased sharply in the past ten years,

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<sup>20</sup> UNOCHA. DPRKorea. Situation bulletin. Aug./Sept. 2004

<sup>21</sup> Yonhap News. Feb 8, 2004.

<sup>22</sup> Yonhap News. Nov. 11, 2002.

in part, because of a poorer health status but mainly because of the reduced ability of the health system to respond. Although a high priority is given to regular health care during pregnancy and the extensive Ri clinic / household doctor system means that antenatal care checks are common (on average 9 to 18 checks in each pregnancy), the quality of antenatal care is low. Simple equipment for antenatal assessment including for anemia is often not available. Iron supplementation during pregnancy and lactation is not yet national policy and the quality of health advice given is variable. . . a trained worker attends almost all deliveries but when complications arise during pregnancy or childbirth, the capacity of the health services to respond is poor. Basic items [are usually not available] for immediate management of complications. Staff skills also need improvement. Lack of transport often delays or prevents referral to the county hospital. Access to safe blood, when blood transfusions are required, is limited, and even access to safe intravenous infusions is inadequate. Funds have now been received by WHO to start the upgrading of blood transfusion services, although this will require long-term investments as well as training and capacity building.”<sup>23</sup>

UNICEF also drafted and shared with the Ministry of Public Health “two protocols on micronutrient supplementation - a Protocol on Iron/Folate Supplementation before Pregnancy and Treatment of Iron Deficiency / Anaemia, and a Protocol on Multi-Micronutrient Supplementation during 1st Trimester of Pregnancy.”<sup>24</sup>

In addition, UNICEF “continued its temporary intervention of iodine deficiency by distributing iodized oil capsules to 49,000 pregnant women in northern DPRK.<sup>25</sup> In April/May, iodized oil capsules were distributed to Chagang province, Ryanggang province, and selected counties in North Hamgyong province. Universal salt iodization is expected by 2005.”<sup>26</sup> This will help prevent iodine deficiency-related birth defects.

## 2) Family Planning

The authors of the 2002 DPRK Common Country Assessment write that

“Reports and observations from field visits indicate that fertility is gradually increasing since 1999 as the country recovers from the crisis of the mid- 1990s. The contraceptive prevalence rate for married couples, according to a 1997 Government survey in three provinces, supported by UNFPA, was 52% using modern methods and 67% by other methods. Intra-uterine device (IUD) was the most popular method (75%), followed by unspecified natural methods (17.7%) and female sterilization (6.5%). There is no additional information on access to family planning services in other provinces, or on the type of services available. Contraceptives are often not available at Ri-level. According to field reports condom use is increasing but is still insignificant.

“There is thought to be a large unmet demand for modern family planning services but services and methods are not generally available. Considering the country’s extensive health services infrastructure, there seems to be no reason why national family planning services cannot be put into place quickly. Expanding family planning services and broadening the choice of contraceptive methods should be a priority for UN System support.”<sup>27</sup>

UNFPA also conducted a survey on reproductive health in three provinces in 2004.

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<sup>23</sup> UN. 2002 DPRK Common country assessment. February 2003.

<sup>24</sup> UNOCHA. DPR Korea. Situation bulletin April/May 2004

<sup>25</sup> *All of the pregnant women in Jagang and Yanggang provinces were covered, as well as a portion of the mothers in North Hamgyong province.*

<sup>26</sup> UNOCHA. DPR Korea. Situation bulletin April/May 2004

<sup>27</sup> UN. 2002 DPRK Common country assessment. February 2003.

## 5. The Present State of Healthcare in DPRK

In this chapter we include information about the various aspects of healthcare in DPRK. The following is a compilation of information from many scattered sources, rather than an excerpt from one organized document. Because they all focus on healthcare in DPRK, we hope you will find this information significant.

For a broader discussion focusing on topics besides healthcare, we suggest our other publications, “2002 Report on the State of Children’s Health in DPRK,” “2003 Report on the State of Children’s Health in DPRK,” and “2003 Guidebook on the DPRK Healthcare System.” Useful documents can also be found on our website (nkhealth.net).

Here we print information previously unpublished in 2002-2003, updated information, and newly gathered data.

### 1) *Primary Healthcare in DPRK*

The framework of DPRK’s primary healthcare system is still active today. Tens of thousands of “household doctors” work at clinics and district and county hospitals, serving as the first line of defense in protecting residents’ health. At the village and town levels, primary medical care is provided by general clinics, and there is a clinic responsible for treating workers at each factory and collective farm. At the next level of healthcare, “people’s hospitals” can be found in each county/district and are responsible for caring for patients that must be hospitalized. The “household doctor –clinic - people’s hospital” system of primary healthcare was fully established by 1970 and has been in use ever since.

But the shortage of medicines, medical supplies, equipment, and other resources has made it very difficult to easily perform even the most basic diagnostic procedures. Furthermore, inadequate means of transportation often prevent a patient from being transferred to a secondary or tertiary care facility when their condition worsens. Even if the patient is successfully transported to a hospital, they are often told to secure their own drinking water and meals since the hospital is usually unable to offer either, making their stay even more difficult.<sup>28</sup>

#### *“Household Doctors”*

Out of the many unique characteristics of DPRK’s healthcare system, one of the most important is its system of doctors assigned to each district. These doctors provide care free of charge, focusing on a combination of preventative, Eastern, and Western medicine, and follow a variety of methods and regulations reflective of DPRK’s healthcare system.

This concept of “regional doctors” was first introduced in 1963 and was implemented for the first time in 1963. In order to make sure the system was effective, 3,179 people were trained to become doctors and “associate doctors” in 1963, and another 913 people joined their ranks after

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<sup>28</sup> UN. 2002 DPRK Common country assessment. February 2003.

passing technical exam. In 1946 there were 1.1 doctors and “associate doctors” for every 10,000 residents; in 1963 the ratio rose to 15.8 to 10,000.

Following the mid-1980s the system included rural areas for the first time and now covered the entire nation. From this moment on the system of region doctors was renamed and called “household doctors,” with a group of such doctors at each ri people’s hospital and clinic.

Following Chairman Kim Il Sung’s instructions to strengthen the “regional doctors” program at the 13th plenary meeting during the 6<sup>th</sup> gathering of the Party Central Committee (March 1988), starting from 1990 common doctors (non-specialists) kept track of the infectious diseases affecting their region and worked closely with or referred patients to specialists as necessary after diagnosis. Regional doctors were also stationed at coal mines, factories, and other work sites.

Each household doctor is usually responsible for 200-300 residents, but it has been said that the number has gone as high as several thousands. They are the first people to offer primary care to the residents. For instance, in the Daedong River district in Pyongyang, there are more than 500 household doctors for the 200,000 residents that live in the district. Out of the 170 doctors at Daedong River District Hospital, 39 are household doctors; at a lower level, there are more than 40 household doctors at each of the 12 general clinics.

In order to raise the level and quality of these primary care physicians’ diagnostic skills, there said to be frequent suggestions for a need to specialize and strengthen the system of collaboration.

Many years ago a workers’ newspaper called upon “household doctors’ enthusiasm for their work and their positive attitude in arguing for an increase in the duties and responsibilities of household doctors in each clinic.” They urged the creation of a plan to raise the skills of household doctors to those of specialists and to increase their duties. In order to accomplish this, they suggested helping household doctors to network and make connections with specialists, so that together they could improve patient treatment, preventative measures, and other medical services. They also wrote that household doctors should have a thorough understanding of the health of residents’ and households’ under their care and should work on improving their clinical skills at all times through various means, so that each clinic could develop services specific and appropriate to the community.

### *General Clinics*

The first place residents seek care when they become ill is the general clinic. These are set up at the town and rural village levels, possess knowledge, medical equipment and instruments in only a few essential areas, and only deal with outpatient treatment. The household doctors working in these clinics are also responsible for implementing preventative measures to protect public health and for making house calls.

We include an introductory passage about the No.2 general clinic in Pyongyang’s Mangyungdae district in order to further understanding about these general clinics that are below the district

hospital level.<sup>29</sup> Because this clinic is often referred to as a model clinic in many other publications as well, it is probably safe to assume that other district general clinics will be similar.

“Located on scenic and majestic riverbanks, the Mangyungdae farms’ general clinic serves more than 1,000 farm workers’ households. Many capable doctors serve as household doctors, obstetrician-gynecologists, pediatricians, and dentists, etc., and also specialize in traditional medicine and radiation (x-rays).

Within the last year the average life span in this region has increased greatly, with the child mortality rate at 0% and with almost no incidences of communicable diseases among the residents.

Besides implementing substantial measures to formally identify and record the various ailments afflicting residents and treat them, measures to find the root causes of these sicknesses and eliminate them early on have been or are being established.

It was a rainy summer night several years ago. On this day the clinic had several residents scheduled to come in for examination. All of the residents showed up, except for one farm worker whose home was rather far away and did not come in even as the sun began to set. At this time, a few of the clinic’s medical staff suggested moving his appointment to the next day, since the weather was bad. However, the chief doctor, Won Young Shil, firmly said, “The examination is just as important as treating and curing people. Let’s go find him.”

The chief, with the household doctor, braved wind and rain to visit the farm worker’s home. But the farm worker still had not returned from the vegetable fields. They immediately headed for the fields. When the doctors arrived, they found the worker tending to his crops, afraid that the wind and rain would damage them.

As the doctors explained why they had come, the farmer was apologetic and explained that he didn’t keep his appointment because he had felt that he wasn’t sick.

The chief doctor replied, “Even though you might think you’re not ill, a doctor can detect illness.” They then proceeded to a workers’ rest area and performed a cardiovascular examination. The results were clear.

A heart condition that the farmer had obviously known about was regressing. The chief doctor, who had worked so late, promptly sent the farmer to the district hospital to be hospitalized for treatment.

...The prompt care and dedication in this clinic is truly extraordinary. There have been stories of staff members donating their own skin and blood in order to treat a particular veteran’s condition and of traveling more than 100 ri (39.3km) in one night to help a mother regain her health...

...Chief Won Young Shil spent a substantial amount of time studying techniques to make sure that he provided the best care possible, even going above and beyond other staffers. Besides attending forums on clinical research, symposia on clinical experiences, etc., he constantly thought about and researched new medical techniques. Within the last year, he has introduced more than 50 new techniques in clinical practice at this general clinic.

One example is his production of hedysarum, dried fruit of Chinese matrimony vine, and countless other medicinal herbs by tending to a large medicinal herb garden. He also made mills, pill makers, concentrators, etc. and used them to produce various traditional medicines with many benefits.

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<sup>29</sup> KumGuGangSan. October 2003.

In order to be able to provide primary care to all patients that might come in at any time, the clinic always has a more-than-sufficient supply of equipment and medicines for emergency “trunk” cardiovascular procedures, pediatric illnesses, obstetric procedures, etc. Furthermore, the general clinic employs many methods in increasing residents’ knowledge about hygiene and disease prevention, such as distributing more than 1,000 educational posters about hygiene...”

## 2) *Hospitals*

At the county and district levels, people’s hospitals accommodate inpatients, while at the next level, provincial and university hospitals provide inpatient service. In Pyongyang, there are additional specialized hospitals as well, such as the Red Cross Hospital. With the exception of a few such hospitals in Pyongyang, the vast majority of hospital buildings are so worn down that they are in need of remodeling and sometimes even need to be rebuilt. Considerable investments will have to be made in order to renovate the buildings and facilities so that they can meet demand. In addition to the building itself, equipment and supplies needed in the operating room, examination room, etc. are also often difficult or impossible to obtain. The supply of drinking water and electricity is also irregular and insufficient to the point that it handicaps the doctors trying to provide the necessary diagnoses and treatments.

## 3) *Medical Techniques & Skills*

The skills and knowledge of medical staff have fallen behind international standards. Medical education cannot be anything but limited considering the shortage of resources and the fact that staffers do not have many opportunities to come into contact with modern techniques. There is a pressing need to close this gap in knowledge. The first way of doing this is to reeducate the current medical staffers and bring them up to international standards, while the second is to adjust the composition of the medical workforce<sup>30</sup> by addressing the substantially low number of nurses<sup>31</sup> compared to doctors.

## 4) *Traditional (“Koryo”) Medicine*

“DPR Korea has a strong tradition in traditional medicine called Koryo Medicine, which is widely practiced alongside modern medicine... Consequently, traditional medicine is one of the strong elements of the health care system in the country. At the central level there is a General Hospital of Koryo Medicine; all of the 12 provinces have Koryo Medicine Hospitals and each county hospital has a [department specializing in Koryo medicine]. During the difficult economic period, traditional medicine has filled in some of the gaps of modern medicine, but clearly does not replace the need for access to modern essential medicines.”<sup>32</sup>

## 5) *National Blood Center*

“WHO rehabilitated the National Blood Centre in Pyongyang and the Provincial Blood Centre in Hamhung and introduced disposable blood bags to ensure access to safe blood. 30,000 units of safe blood will be provided in 2004.”<sup>33</sup>

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<sup>30</sup> UN. 2002 DPRK Common country assessment. February 2003.

<sup>31</sup> *For every doctor, there are 0.8 nurses.*

<sup>32</sup> UN. 2002 DPRK Common country assessment. February 2003.

<sup>33</sup> UNOCHA. DPR Korea Situation Bulletin. Jun/Jul 2004.

## 6) *Chronic Diseases*

Up until 1990, the most common cause of death was cerebrovascular diseases. In 1982, for example, there were 19.2 such deaths for every 10,000 residents, or 45% of the total number of deaths. The next most frequent cause of death was malignant tumors such as cancer, at 14% of all deaths. The cause showing the most rapid increase between 1960-1980 was cancer, then cerebrovascular diseases, while the frequency of illnesses of the respiratory and digestive system showed a decreasing trend.<sup>34</sup>

According to WHO reports, in 2000 there were an estimated 367,000 diabetes patients and they predict that the figure will rise to 634,000 by the year 2030. In comparison, there were 1,850,000 diabetes patients in South Korea in 2000 and it is predicted that there will be 3,370,000 such patients by 2030.

Also according to the WHO, 8% of the entire population is infected with Hepatitis B, while 3% of the population has Hepatitis C.<sup>35</sup>

## 7) *Smoking*

Current reports on smoking in DPRK show that 59.8% of adults over the age of 16 smoke and on average smoke 11 cigarettes a day.<sup>36</sup> The harms of smoking are known in DPRK and anti-smoking campaigns are actively working to get their message out.

Last May 31 a ceremony was held at the People's Cultural Palace for World Anti-Smoking Day. The speakers at the event promoted a theme of "Regulating Cigarettes and Making Them Scarce," emphasizing that not only was smoking bad for an individual's health but also that it had detrimental to culture and civilization. They also encouraged increasing societal interest in protecting women and youth from the harms of smoking by increasing the range and number of nonsmoking areas, in addition to development of programs to aid in achieving this goal and to gradually eliminate cigarettes from daily life. It is said that World Anti-Smoking Day events were held throughout the nation as well.

Anti-smoking campaigns are actively encouraged by the government, and tobacco cultivation; the production, importation, and sale of cigarettes; and 흡연질소 are all being controlled by legislation. Measures adopted include the substantial increase of the price of cigarettes sold in stores and markets and an increase in the number and range of nonsmoking areas.

At the same time, the anti-smoking campaign is also reaching the masses through public service announcements about the dangers of smoking in publications, on television, and through radio broadcasts. According to Chosun Central Communications, there has been a marked decline recently in the percentage of men who smoke, while the number of people smoking in public areas, offices, and within families has also decreased significantly.<sup>37</sup>

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<sup>34</sup> Lee, WonShik. Research on the System of Guaranteed Healthcare in North Korea. 1992

<sup>35</sup> Yonhap News. August 13, 2004.

<sup>36</sup> UN. 2002 DPRK Common country assessment. February 2003

<sup>37</sup> Chosun Shinbo. June 1, 2004.

The following is a public announcement that was written about the increased risk of heart disease for smokers.<sup>38</sup>

“Cigarettes: An Instigator of Heart Disease

It is said that a cigarette is like a gun aimed straight at the heart.

The fact that this saying exists reflects how harmful cigarettes are to your cardiovascular system. Compared to a nonsmoker, someone who smokes more than 20 cigarettes a day is 3 times more likely to suffer from myocardial infarction (death of a region of the muscular tissue of the heart), but the threat decreases sharply if they quit smoking.

According to a study of workers in a particular cigarette factory, the risk of death due to coronary artery disease is much higher for smokers than nonsmokers for those who are more than 45 years old. Specifically, the risk for smokers is 3.3 times higher for those 45-54 years old; 4.5 times higher for those 55-64 years old; and 2 times greater for those 65-74 years old.

Most people do not realize that what seems like a trivial amount of nicotine from one cigarette can be invasive and reach even the most interior areas of your body.

Stating that a fatal dose of nicotine is as little as 60mg, international forums on smokers' health are agreeing on and emphasizing the fact that smoking is extremely dangerous to your health. Stress is being placed on the fact that smoking is not just harmful to your health but can also cause death as well; the danger is even printed on cigarette cartons. According to a journal titled *Today in Cardiology*, if a person stays away from cigarettes and controls their cholesterol, blood pressure, and diet accordingly, it is possible to reduce the risk of death by cardiovascular disease by 50%, compared to 30 years ago.”

## 8) *Disabled People*

A relatively detailed account of the issue of the disabled in DPRK is available in the *2003 Report on Children's Health in DPRK*.<sup>39</sup> The 2003 report does not include information about the enactment of legislation on protecting the disabled because none formally existed at the time.

On July 18, 2003, “The Law of the Democratic People's Republic of Korea on the Protection of the Person with Disability” was passed, and an English translation was made available by international organizations.<sup>40</sup> In enacting this law, the previously used term “physically handicapped” was formally changed to “disabled” in referring to mentally and physically disabled persons as a group.

### *Korean Association for Supporting the Disabled (KASD)*

The predecessor to KASD, the Korean Association for Supporting the Physically Handicapped, was established in July 1998. KASD currently has a branch office in Pyongyang, and the association's mission in DPRK is 1) to provide advice on developing policies for the disabled; 2)

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<sup>38</sup> KumGuGangSan. July 2003.

<sup>39</sup> Report on North Korean Children's Health (p141-156)

<sup>40</sup> Translated in English for the first time and available online at [www.humanitarianinfo.org/dprk/infocentre/library/Library\\_Documents/Law\\_of\\_DPRK\\_on\\_the\\_Protection\\_of\\_Pw\\_D.pdf](http://www.humanitarianinfo.org/dprk/infocentre/library/Library_Documents/Law_of_DPRK_on_the_Protection_of_Pw_D.pdf), or under the “Resources in English” section of [www.nkhealth.net](http://www.nkhealth.net).

to improve society's understanding of the disabled; 3) ensuring that the health of the disabled is protected, as well as security in their daily lives; 4) surveying the state of living and health of the disabled; 5) improving treatment facilities, etc., and undertaking other activities focusing on rehabilitation.<sup>41</sup>

The law "on the Protection of the Person with Disability" created a new term, "Disabled Persons Union," and the KASD plans to strengthen and increase the capacity of such an organization. KASD changed its name to its current one after the law was enacted.

The current chairman of KASD is the vice-minister Choi Chang-sik of DPRK's healthcare ministry and there are more than 20 employees working for the Pyongyang branch office. KASD has branch offices in the major cities and there are more than 3,000 members in one particular group associated with the organization. In order to strengthen the "Disabled Persons Union," KASD is currently preparing to form a group for physically handicapped people.

KASD currently prints two separate newsletters, one in English and one in Korean, and distributes them mostly to other international organizations. Staff members also attended the Regional Seminar on the International Convention on Disability held in Beijing, China, November 4-7, 2003.<sup>42</sup>

#### *Situation Regarding the Disabled*

KASD, with the help of experts, conducted a test survey from November-December 1998 and formally surveyed residents from January-March 1999. The representative (sample) survey covered the 430,000 residents of Pyongyang City; Pyongsong City and Pyongwon County in South Pyongan province; Wonsan City and Tongchon County in Kangwon province; Byuksung County in South Hwanghae province; and portions of other regions.

The results of the survey showed that the percentage of the population with limb mobility disabilities was 38.8%; with auditory disabilities was 22.02%; with visual disabilities was 21.63%; with mental disabilities was 4.95%; with mental disabilities such that it is difficult to participate as a normal member of society was 3.5%; and with a mix of disabilities was 9.04%.<sup>43</sup> Overall, disabled persons comprise 3.4% of the total population, amounting to more than 700,000 people. But in DPRK, the types of disabilities are limited to 5 total (mental retardation and bodily, auditory, visual, and mental disabilities), the actual number of disabled persons is probably higher.

In comparison, in South Korea in addition to these 5 categories, conditions can be classified as developmental or neurological disease disabilities. More recently, chronic and serious conditions impeding the kidney, heart, respiratory system, liver, and other internal organs from functioning normally have also been categorized as disabilities, raising the total number of "disabled" to more than 1,500,000 (Table 5-1).

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<sup>41</sup> Medical Aid for the Children of DPRKorea. 2003 Report on North Korean Children's Health. 2003.

<sup>42</sup> Able News.

<sup>43</sup> Yonhap News. May 5, 2002.

Table 5-1. Estimated Number of Disabled People in South Korea (in thousands)<sup>44</sup>

Disability Type	Total	Bodily	Brain (neuro-logical)	Visual	Auditory	Mental (Retard-ation)	Develop-mental	Mental	Kidney	Heart
1990	9956	458	--	186	241	--	--	71	--	--
1995	1053	704	--	75	193	--	--	81	--	--
2000	1449	605	223	182	176	109	13	72	25	44

### *Establishing a Factory for Orthopedic Equipment*

Recently KASD put their utmost efforts into setting up and opening a factory for the production of orthopedic appliances. The official name of the factory, located in Hamhung in South Hamgyung province, is ‘Hamhung Orthopaedic Factory’. According to those associated with the organization, in the past the orthopedic equipment in DPRK was always made out of wood, but the new factory is producing a specific appliance from polypropylene. Appliances for approximately 500 people are made in this factory per year.<sup>45</sup>

Hamhung Orthopaedic Factory has been supported by a Belgian organization called Handicap International (HI)<sup>46</sup> since 2001. Also in 2001, HI encouraged the development and implementation of rehabilitation programs accommodating 28 people, which was offered to those with impaired mobility for the first time in July 2003.

The International Committee of the Red Cross set up its second operations site in the northwestern region in 2002. A rehabilitation center was founded in Songrim City for the production of prosthetic limbs and education of patients. Approximately 1,000 prosthetic devices are made each year. A broadcast on November 8, 2002 informed listeners that a modern factory for the production of medical aid devices for the disabled had been constructed and was operating in Songrim City, referring to it as the “Songrim Factory for Orthopedic Equipment for Distinguished Soldiers”. The broadcast also stated that the factory would improve the quality of life for distinguished soldiers<sup>47</sup> and other people who need orthopedic devices.<sup>48</sup>

### *9) Healthcare in DPRK*

The ‘Regulations Regarding Medical Facilities in Factories and Mines’ were publicly announced in May 1945. Starting from January 17, 1947, the system of free medical treatment for farm and office workers and their dependents, based on “the law of societal insurance”, began to be implemented. In 1949 the Research Center for Industrial Medicine was established. Starting from 1954, safety equipment and nutritional supplements were supplied for free to workers.

<sup>44</sup> Korean Center for Research on Healthcare & Society. The Situation for the Handicapped. 2000.

<sup>45</sup> Able News.

<sup>46</sup> Handicap International is one of the first international humanitarian organizations to have not worked with the Flood Disaster Rehabilitation Committee (FDRC) and instead collaborated with other organizations in their project.

<sup>47</sup> *wounded soldiers*

<sup>48</sup> Yonhap News. November 18, 2002.

Compared to 1953, in 1956 the number of workers' safety offices increased 364% and the number of workers' health and hygiene offices increased 226%.

The 6-year healthcare plan presented at the 5<sup>th</sup> large rally in November 1970 included a segment on industrial healthcare. The Industrial Healthcare Bureau pledged to do their best to keep workers healthy by making work conditions safer, thoroughly studying the effects of high temperatures, dust/particle air pollution, gases, and preventing work-related ailments and industrial poisoning from occurring.

An on-site hospital, clinic, or emergency care unit provides primary care to workers, depending on the size of the work site, and each doctor is also responsible for serving a particular district. Thanks to concentrated efforts, the number of work site hospitals has increased 143.8% from 1960 to 1982.

### *Research Center for Industrial Medicine*

A subsidiary of the Medical Research Center, the Research Center for Industrial Medicine, located in Hamhung City (South Hamgyung province), focused on preventative measures and research designed to promote the health and safety of industrial workers.

In May 1964 the focus turned to workers' hygiene and health and the size of the institute increased. Now, a research branch was established in every major industrial area. Each branch had its own workers' health and clinical research laboratories.

The center has studied the various harmful elements that can be present at industrial work sites (air pollution, various chemical agents, electromagnetic fields, poor lighting) and how these problems can be prevented or eliminated, with productive results.

Research has especially focused on the biological and biochemical reactions that might occur if these elements were absorbed into the human body and preventative measures and medical treatments that might be used in response to ailments caused by these elements. Another area of research is the development and synthesis of various new drugs and antidotes to treat industrial diseases.

Today, in addition to publishing the many accomplishments of this center in book form, the center shares its knowledge and contributes to scientific growth by attending scientific forums, technical conferences, and meetings for information exchanges.

## **6. Aid from the International Community**

### *1) Pharmaceutical Aid*

“In spite of international assistance, it is estimated that less than 50% of the need for essential medicines is currently met. Unlike other countries, DPRK does not have pharmacies where people can buy medicines when these are not available in the clinics or hospitals. The shortage of essential medicines will without doubt contribute to increased mortality and unnecessary suffering. Medicines and treatment for chronic diseases such as diabetes, epilepsy, cardiovascular diseases and cancer are hardly available, which

especially affects the elderly population with a higher proportion of chronic diseases, but also children suffering from diseases such as epilepsy, cancer or heart disease.”<sup>49</sup>

According to the WHO, one of the most important concepts that workers managing the supply of drugs must understand in working with donations of medicines is the Essential Medicines Concept (EMC). EMC plays a very big role in receiving external support. The ability to offer medicines in bulk at a low cost and teach how to use them correctly is very important and has a big impact on improving residents’ health.

Currently the UN and various international organizations and foreign NGOs offering donations of drugs acknowledge the importance of EMC and apply this concept when adding items to the list of medicines needed. However, there is a lack of understanding regarding EMC among those working in healthcare fields or working for drug production plants in DPRK.<sup>50</sup>

The WHO, UNICEF, and IFRC collaborated in preparing and producing a Korean-language manual detailing the usage, dosage, and adverse side effects of 84 essential medicines. Translation of the revised, 13<sup>th</sup> edition of the report was completed in April 2004 and copies were widely distributed by the end of the month.

The WHO also provided raw materials for the production of paracetamol and aspirin to the factories of Pyongyang Pharmaceutical. Germany’s Diakonie, UNICEF, and other organizations are also supplying raw materials for drug manufacture.

Joint ventures between DPRK government and Swiss companies have also set up new drug production lines, completed around April 2004. Two pill manufacturing systems have already been set up.

The goal is to raise domestic production of oral rehydration solution (ORS) and 6 different essential medicines enough to meet about 50% of the demand.

## *2) Aid Regarding Medical Supplies, Equipment and Modernizing Hospitals*

On January 12th, 1,100 medical kits for household doctors supported by the German Government through the German Red Cross Society arrived at Nampo Port. All the kits were distributed as a joint effort between the German Embassy to DPRK and staff members of DPRK’s Red Cross Society. During the first half of 2004 the Finnish government donated an additional 1,000 household doctor kits.<sup>51</sup>

As a part of its efforts to modernize DPRK’s hospitals, the “WHO has developed standardized kits of equipment and consumables for support of community Ri clinics and County hospitals. 1,972 Ri clinic kits have been provided during 2001-2004. 20 county hospitals will be upgraded with county hospital kits in 2004.”<sup>52</sup>

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<sup>49</sup> UNOCHA. DPR Korea Situation Bulletin. Jun/Jul 2004.

<sup>50</sup> included on [www.who.int/medicines](http://www.who.int/medicines)

<sup>51</sup> UNOCHA. DPR Korea Situation bulletin Feb. 2004.

<sup>52</sup> UNOCHA. DPR Korea Situation bulletin Jun/Jul 2004.

Aided by foreign humanitarian organizations, efforts to modernize hospitals are also underway. The Adventist Development and Relief Agency (ADRA) is leading the modernization of Sariwon Children's Hospital, located in Sariwon, the capital of North Hwanghae province. ADRA usually collaborates with the Swiss government in its relief work. They built a factory that can produce at least 50,000 loaves in one day, which opened in November 2001, and more recently is collaborating with DPRK to develop alternative energy sources.

Sariwon Children's Hospital serves children under the age of 17 from 16 districts, or approximately 500,000 children. Although the hospital had been renovated several times, as it was first constructed in the immediate post-war era, when ADRA started its work the hospital was in very poor condition and was deteriorating. In the winter, due to a shortage of fuel, the interior temperature dropped to as low as -12 degrees Celsius, there was no secure supply of clean and safe drinking water, and ceilings, walls, doors, and window sills were all in dire need of repair.

In order to improve the services offered by the hospital, ADRA worked to 1) decrease the risk of infection following surgery and 2) improve the quality of treatment and services given to inpatients. A new operating room was built and new surgical supplies and equipment were donated. The infirmary area was also renovated and problems regarding heating and drinking water were addressed. ADRA completed its renovation project on December 30, 2003 and the hospital opened again on January 5, 2004.

ADRA had completed its work on helping provincial level hospitals and was preparing to start helping county hospitals when the Ryongchon disaster occurred. Following that event, they focused on rebuilding hospitals in the Ryongchon region. From the beginning, they encouraged a design that would resolve problems that had plagued the previous county level people's hospital and that would be compatible with conditions in the DPRK.

ADRA DPR Korea has also distributed hygiene and nutrition kits to 22 county people's hospitals in South Hamyong and North Hwanghae provinces. The kits include soap, antiseptics, high energy snacks, etc.<sup>53</sup> The nutrition kits are designed so that it can be used in many ways, depending on the doctor's prescription, and can be administered to both inpatients and outpatients. If the kits are prescribed effectively for high-risk outpatients, hospitalizations due to nutritional needs can be reduced by up to 2/3. In the case of inpatients, hospitalization time is approximately halved. One county has said that it was able to reduce deaths due to diarrhea and gastrointestinal diseases by 50% during a particular summer season.

AmeriCares shipped a 40 foot container of medicines and medical supplies to the DPRK in July" alone. "Beneficiary institutions added to the distribution list include the baby home in Nampo and in Wonson, the city baby home, children's home and paediatric hospital. Also, in addition to the shipment of medicines and medical supplies, AmeriCares also shipped several small pieces of diagnostic and monitoring equipment for the Pyongyang Medical University Hospital, and the Sariwon and Pyonsong Paediatric Hospitals."

### 3) *Aid to the Elderly*

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<sup>53</sup> UNOCHA. DPR Korea Situation bulletin. Aug/Sep 2004.

“Although elderly are clearly identified as a large vulnerable group in DPR of Korea (2.6 million of people are over 60 years old, 12% of the population), little is known on their health and living status” and very little has been done to address their needs until recently. In July 2004, Triangle GH started a new program targeting the vulnerable elderly population. The program will focus on the renovation of 3 homes for the elderly located of Sungho (Pyongyang district), Sinwon (South Hwanghae province) and Unpa (North Hwanghae province) by supplying small medical equipment and offering farming and income-generating activities to improve the diet and living status of the residents. “There are 24 Old People's Homes throughout the DPR of Korea, housing about 5,000 elderly, normally those without families to support them. These institutions need water and sanitation, shelter and health care facilities and extensive rehabilitation to improve living conditions for the inhabitants of such homes.”