The Impact of COVID-19 on DPRK’s Health System and Future Inter-Korean Biomedical Cluster Cooperation in the Post-pandemic Era

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1. **Impact of the DPRK Covid-19 Response on the DPRK’s Health System**

2. **Trends in Global Health Aid to DPRK During the International Sanction and the Role of the ROK Government in the COVID-19 Pandemic Era**

3. **Future Inter-Korean Biomedical Cluster Cooperation at the Demilitarized Zone (DMZ) or Border Area in the Post-pandemic Era**
1. **Impact of the DPRK Covid-19 Response on the DPRK’s Health System**
1> The Impact of the DPRK Covid-19 Response on DPRK’s Health System

Economic Decline in the DPRK → Limited Government Budget in Health

- Limited Global health aids of Essential Medicine
- Leak of Essential Medicines
- Distort the service delivery system

Loosening of governmental control

- Lack of financial supports to healthcare providers
- Unauthorized private dual practice
- Unofficial payment
- Pt’s self-diagnosis and self-treatment ↑

Socioeconomic disparity ↑

Unofficial Health Market + Unofficial payment under not well-functioning socialist health system

I couldn’t buy needed medication due to lack of enough money in the DPRK

43% (+) 57% (-)
2. Trends in Global Health Aid to DPRK During the International Sanction and the Role of the ROK Government in the COVID-19 Pandemic Era
Flow of Global Assistance for Health

**Donor**
- Funding Sources
  - National treasuries
  - Debt repayments to international financial institutions
  - Private philanthropists
  - Corporate donations

**Channels of Assistance**
- Bilateral development assistance agencies
- The European Commission
- UN Agencies: UNFPA, UNAIDS, WHO, UNICEF
- The World Bank and other regional development banks
- The Global Fund to Fight AIDS, TB and Malaria
- The GAVI Alliance
- Foundations
- International NGOs

**Implementing Institutions**
- Governmental programs
- National ministries of health
- National disease control programs
- Non-governmental programs
- National NGOs
- Universities and research institutions

Trends in Global Health Aid to DPRK by Channel

Total Sum

- EU Institutions: 137.05 million USD
- Global Fund: 103.02 million USD
- WFP: 55.35 million USD
- GAVI: 45.95 million USD
- UNICEF: 32.34 million USD
- WHO: 16.04 million USD
- UNFPA: 15.91 million USD

Health Areas:
- Tuberculosis, Malaria, AIDS
- Vaccination
- Maternal Health, Children Health
Global Health Initiatives: GAVI, Global Fund

focus on specific diseases or on selected interventions, commodities, or services

Global Alliance for Vaccines and Immunization (GAVI)  Vaccination

GAVI is co-leading COVAX (Covid-19 Vaccines Global Access)

Global Fund  Tuberculosis, Malaria, AIDS

- Public donors’ contributions **cannot be earmarked** for specific countries or programs, and the allocation of funding is the responsibility of the Global Fund Board

- **Performance based financing**: inputs linked to performance
Christoph Benn, the Director of External Relations at the Global Fund, told the South Korean government that the country’s total amount of contribution to the Global Fund only amounts to one third of what the Global Fund has sent to DPRK as aid, indirectly calling for an increase of the ROK’s contribution.

The Global Fund suspended its assistance to the DPRK tuberculosis and malaria project in June 2018.

The Global Fund resumed its support for DPRK’s tuberculosis and malaria programs in January 2020.

ROK maintained its previous level of contribution in 2018.

the ROK decided to double its contributions to Global Fund starting from 2019.

This is a classic example of how a country that financially depends on certain external organizations in tackling infectious diseases can become extremely vulnerable to international relations and political decisions.
Role of the ROK for Health Aid to the DPRK

Funding Sources:
- National treasuries
- Debt repayments to international financial institutions
- Private philanthropists
- Corporate donations

Ministry of Unification: Inter-Korean Cooperation Fund => UN Agencies
Ministry of Foreign Affairs: Global Disease Eradication Fund => GAVI, Global Fund
Ministry of Health and Welfare: Korea Foundation for International Healthcare (KOFIH)

It is very important for the ROK, United States and other donor countries to maintain its direct and indirect financial support in order to contribute to DPRK’s health and medical care, including Covid-19 tests, treatments, and vaccines through various multilateral organizations in spite of difficulties in UN sanctions, inter-Korean cooperation and DPRK’s Covid-19 lockdown.
3. Future **Inter-Korean Biomedical Cluster Cooperation** at the Demilitarized Zone (DMZ) or **Border Area** in the Post-pandemic Era
Due to an economic crisis in early 1980, the two fellow Scandinavian countries decided to join hands to solve the problem of high unemployment rates in Sweden and high wage problems in Denmark. Medicon Valley offers jobs to the Swedish people and an incentive for competition among businesses in Denmark. This benefits both countries and has become a model case of a cross-boundary biomedical cluster.

- A model of coexistence in which research, clinic, education, and production are intertwined in an interdisciplinary network, based on a model of economic cooperation that builds upon the notion of “One Health”.
- DMZ would no longer remain a symbol of the Korean war, but a symbol of life and peacebuilding.
Inter-Korean Biomedical Cluster at the DMZ or Border Area

Biomedical-Agricultural Science R+D
- Basic Medicine Convergence
  - Natural Product Research Center
    - New drug from natural products
  - Research Center
    - Basic research
    - Etiology investigation
    - Development of diagnostic methods
    - Development of treatments
    - Health and welfare Services
    - Medical equipment
    - Data Science, AI
  - Asian Infectious Disease Response Center
    - Vaccine research
    - Animal-human Infectious disease
      - Research on zoonotic infectious diseases
      - Animal clinical sample resources bank
    - Response to new infectious diseases

One Health Hospital
- Department of Clinical Medicine
- Infectious Disease Hospital
- Cardiocerebrovascular Hospital
- Cancer hospital
- Dental hospital
- Education training
- General Hospital

Industrial Complex
- Mobile care hospital (X-ray, ultrasound, clinical pathology set)
- Clinical pathology, electronic diagnostic medical equipment
- Medical equipment, medical consumables
- Digital healthcare, software AI industry
- Medical device service and training

Medical Device Complex Center

Establishment of life health industrial complex

Pharmaceutical new drug GMP facility
- Vaccine
- Medicine
- New drug from natural products

Business Platform
- Product promotion and sales
- Intellectual property Support
- DMZ Plaza

Agricultural industry
- Smart Greenhouse
- Plant factory (GMP crops)
- Greenhouse Healing & Healing Space

Bio Venture Company

Inter-Korean Biomedical Cluster Development Project Team

Administrative, financial, and legal promotion for inter-Korean joint R&D
Thank you