

**Meeting of the States Parties to the Convention  
on the Prohibition of the Development,  
Production and Stockpiling of Bacteriological  
(Biological) and Toxin Weapons and on Their  
Destruction**

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**2010 Meeting**

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Item 5 of the provisional agenda

**Consideration of the provision of assistance and  
coordination with relevant organizations upon  
request by any State Party in the case of alleged  
use of biological or toxin weapons, including  
improving national capabilities for disease surveillance,  
detection and diagnosis and public health systems.**

**Republic of Korea national disease surveillance, detection,  
diagnosis and public health care system and participation in  
the global cooperation network**

Submitted by the Republic of Korea

**I. Introduction**

1. Though we have witnessed significant progress in the public health care system these days, we are facing no less a serious threat than before when it comes to infectious diseases, especially those used willfully for malicious purposes. The large-scale interdependence affecting every corner of the globe provides new opportunities for mutual prosperity, but at the same time increases the possibility that new infectious disease such as H1N1 will spread regardless of geographical or political boundaries.
2. If a deadly biological agent spreads to the general population, millions of people will be in imminent danger, there will be unimaginable economic loss, and the end result will be socio-political damage to the public system of the government. To deal with this new challenge, we must fully acknowledge the importance of containment and apply a comprehensive approach. In order to minimize the consequences of a potential use of biological or toxin weapons, therefore, a national system must be in place, and international cooperation and coordination among States and other relevant organizations is indispensable.
3. This working paper summarizes current disease surveillance, detection, diagnosis and the public health care system established by the Government of the Republic of Korea to prevent and mitigate the effects of bioterrorism, and highlights current efforts made by

the Republic of Korea as a member of international community to enhance the global network of disease surveillance, detection, diagnosis and public health care systems around the world.

## **II. Disease surveillance, detection, diagnosis and the public health care system in the Republic of Korea**

4. The Republic of Korea operates several surveillance systems targeting various diseases, such as the National Notifiable Infectious Disease Surveillance System, Tuberculosis Surveillance system, Leprosy Surveillance system and Laboratory-Based Surveillance.

5. The bioterrorism surveillance system consists of two parts. Emergency Room Surveillance in 125 Sentinel Surveillance Hospitals nationwide rapidly identifies suspected cases of infection. The second part of the system is an infectious specialist network comprised of 50 physicians. All the surveillance systems regarding infectious disease and bioterrorism are web-based.

6. The Republic of Korea also operates an established system of detection, with an improved protocol for the rapid diagnosis of anthrax and other diseases. We are also in the process of conducting various clinical studies regarding genetic recombinant anthrax vaccines based on inspections of non-clinical studies of vaccines created using protective antigens produced with our in-house host-vector manifestation system, safety-efficacy inspection and long-term safety test results.

7. The Republic of Korea is performing confirmatory diagnoses on pathogens and suspected pathogens from national and public institutes so as to discover their epidemiological characteristics, and disseminating standardized diagnostic methods to ensure the nation's ability to respond to an epidemic.

8. The Republic of Korea is planning to enforce its infrastructure and expedite the utilization of nanotechnology such as biocensoring as well as vaccine development in the vaccine and detection fields. We are expediting the creation of a BL4 high risk pathogen containment facility compound to provide a special environment for research on bioterrorism agents, rapid high-technology detection devices, vaccine development and expanding the national safety-net.

9. A rapid response team comprised of the police force, fire department and health officials has been established, and a 24 hour hotline between the Korea CDC and bioterrorism-related agencies has been installed to effectively cope with bioterrorism.

10. The Republic of Korea is also training rapid response agents to prepare for an actual emergency, enforcing communicable disease surveillance and emergency room surveillance, and creating a network of infectious disease specialists for the education of medical personnel so as to detect the early signs of bioterrorism.

## **III. Republic of Korea Contributions to the Global Network of Disease Surveillance, Detection, and Diagnosis**

11. The Republic of Korea has actively participated in the WHO Polio Eradication Programme. We have operated an acute flaccid paralysis surveillance system since 1998, thus contributing to the eradication of polio as announced by the WPRO in October 2010.

12. Even after its eradication of polio in 2000, the Republic of Korea maintained its acute flaccid paralysis surveillance and has submitted progress reports annually. The

Republic of Korea is also engaging in proficiency tests and accreditation by the WHO, and will maintain cooperation with international agencies such as the US Center for Disease Control, Japan's National Institute of Infection Diseases, and the Australia's VDRL through information sharing and academic activities in the area of polio eradication.

13. After declaring the elimination of measles in 2006, Korea reported to the WHO on the immunization status of suspected cases of rubella and the associated differential diagnostic results.

14. Realizing that collaboration between State Parties is critical in achieving measles elimination, we are conducting the re-inspection, quality control and confirmatory tests needed for obtaining WHO Measles National Standard Laboratory status. The Korea Centers for Disease Control and Prevention will commit to executing its role as a WHO Measles National Standard Laboratory and take its part in WHO's measles elimination enterprise.

15. The PulseNet operates as an early-warning system and to minimize the impact caused not only by water-borne or food-mediated infectious diseases, but also emerging diseases and bioterrorism through effective monitoring.

16. The Republic of Korea has been actively participating as the member of the Asia-Pacific Pulse Network since 2004, engaging in international cooperative activities such as disease information exchange and collaborative research.

17. The Republic of Korea has executed various studies since 2006, such as a study of the molecular-epidemiologic features and PFGE standardization of *Vibrio vulnificus*. the ROK proposed, based on that study, that PFGE method using *sfil* is the most adequate molecular-epidemiologic classification method in confirming genetic relevance.

18. The Republic of Korea is currently conducting molecular-epidemiologic studies of *Shigella* species utilizing multilocus variable-number tandem-repeat analysis (MLVA), and is working to create a MLVA method and database for use on *Shigella flexneri* and *Salmonella typhimurium*.

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