Reinforcing surveillance to quickly detect epidemics — with an influx of visitors from around the world, Japan faces a greater risk of diseases spreading.

### Social Landscape / Social Agenda

Diseases like Ebola and dengue fever started as isolated epidemics but quickly turned into pandemics. There is also an increased concern over human-caused health risks, including bioterrorism. Japan will face a greater risk of pandemics as it becomes even more internationalized, so preparation is urgent and essential.

### Long-term Vision

Further reinforcement of measures to create a society that protects people from the threat of epidemics

Effective and appropriate countermeasures involve the systematic collection of data from doctors, its analysis by specialists, and sharing of such information with medical practitioners and the general public.

### During the Tokyo Games

Enhancing surveillance measures to enable early detection of an epidemic during the event and to offer a prompt response.

### Three Priorities

1. **Social Impact**
   - Launching a campaign ahead of the Games to publicize the thorough measures being taken

2. **Hospitality during the Games**
   - Quickly providing the public with information on preventive measures against outbreaks or epidemics, and accurate updates in the event of any such developments

3. **Shared Value**
   - Enabling technical partnerships with local governments and communities

### Concept for 2020

**Outbreak Alert Innovation 2020**

**Reinforced surveillance of infectious diseases**

Early detection and disclosure of outbreaks of infectious diseases to protect healthy living.
Objective and Conceptualization

Protecting the public from the spread of epidemics by building a framework that enables the collection and analysis of information on possible outbreaks, and the speedy dissemination of accurate information to the public.

Epidemic Surveillance

In accordance with the Infectious Diseases Act, surveys are conducted to assess the number of patients in Japan who have contracted classified diseases, and a nationwide information framework called NESID (National Epidemiological Surveillance of Infectious Disease) categorizes diseases according to their degree of infectiousness and level of risk they may cause after infection.

Early detection of potential patients at medical institutions and quarantine stations
- Use of thermography to monitor travelers’ body temperature at quarantine stations at airports and ports
- Providing information to public health centers on instances of infectious diseases observed by medical institutions and quarantine stations

Collection, analysis, and distribution of regional data by prefectural and local governments
- Analyzing collected data and circulating it to medical institutions, distributing information on possible epidemics and issuing alerts in the case of an outbreak

Collection, analysis, and distribution of national data and research on counter-epidemic measures by MHLW, NIID
- Collecting and analyzing data on confirmed instances of infectious diseases across the country and distributing the information to the public
- Continuing with research on counter-epidemic measures

* MHLW: Ministry of Health, Labour and Welfare
Course of Action Toward 2020

Localized epidemics can now instantly spread across the globe. The aim is to protect people against such threats by ensuring early detection of, and prompt action against, epidemics, especially during such large-scale events as the Tokyo Olympic and Paralympic Games.

Technological Outline

Introducing an “Epidemic Surveillance Scheme” to detect epidemics at an early stage, and to collect and analyze relevant information.

- Monitoring visitors’ body temperatures using thermography
- Transporting patients with highly infectious diseases to designated medical institutions
- Research on comprehensive measures against infectious diseases caused by insectborne viruses
- Providing the general public with accurate knowledge of epidemics
- Prefectural Governments
- National Institute of Infectious Diseases (NIID) (Infectious Disease Surveillance Center, IDSC)
- Regional Centers for Information on Infectious Diseases
- Quarantine Stations
- Medical Institutions

- Obliging travelers to undergo periodical health checks, including those assessed as being low risk
- In the event of an epidemic, appropriate counter measures will be taken to prevent it spreading
- Stepping up surveillance to detect travelers who may be carrying the disease
- Providing information to medical practitioners and the general public

MHLW*: Ministry of Health, Labour and Welfare
Initiatives and Partners

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<th>Initiatives</th>
<th>Cooperating Organizations</th>
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| Reinforcing Epidemic Surveillance               | NIID* and other organizations | Research on comprehensive measures against infectious diseases from insect-borne viruses  
|                                                 |                           | Research on improving diagnosis of infectious diseases                  |
|                                                 | J-GRID (Japan Initiative for Global Research Network on Infectious Diseases) | Taking advantage of research centers J-GRID has established across Asia and Africa, to promote epidemiological research on epidemic pathogens from around the world and fundamental research on diagnostics and medicine. Strengthening cooperation in research between universities and institutions around the country, including NIID. |
|                                                 | Commercial broadcasters (Hiroshima Television Corporation) | Establishing a platform to quickly inform the public about the results of surveillance of infectious diseases. Specifically, creating a website to promote understanding of infectious diseases and an app to provide information on vaccines. |

* NIID - National Institute of Infectious Diseases
### Scope of this project
- Creating a new surveillance scheme that covers pathogen genomics and traditional epidemic surveillance.
- Reinforcing human resources to carry out counter-epidemic measures.

### Research and Development
- **MEXT**
  - Genomic analysis of pathogens
  - Development of high-sensitivity pathogen detection technology
- **MHLW**
  - Specimen collection, research, infrastructure enhancement
  - Enhancement of genomic analysis infrastructure
- **Co-Host** (NIID)
  - Promotion of R&D on vaccines (norovirus vaccines, trans-nasal influenza vaccines)
  - Clinical and non-clinical testing

### Supporting young researchers
- **(Regular opportunities)**
  - Hands-on training at J-GRID’s overseas centers
  - Training programs at NIID
  - Joint workshops
- **Continued Initiative**
  - Enhancing genomic analysis infrastructure
  - Accumulation of pathogen genomics and epidemiological information
  - Study of pathogen analysis for new rapid diagnostic methods

### Timeline
- **2015 (FY)**
  - Research Program on Emerging and Re-emerging Infectious Diseases
  - MEXT
- **2016**
  - J-GRID (Japan Initiative for Global Research Network on Infectious Diseases)
  - MHLW
- **2017**
  - Establishment of a real-time data-sharing framework, including creating a database.
  - Co-operation in drug development, including vaccines
- **2018**
  - International risk assessment
  - Specimen collection, research, infrastructure enhancement
  - Improvement of specimen collection and inspection technologies at regional health institutions
- **2019**
  - Enhancement of genomic analysis infrastructure
  - Improvement of specimen collection and inspection technologies at regional health institutions
- **2020**
  - Expansion of NIID’s database
  - Integration of domestic and international genomic information into NIID’s database
  - Improvement of genomic analysis accuracy

### Corporations
- Creating a platform to disseminate information on infectious diseases

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* MEXT: Ministry of Education, Culture, Sports, Science and Technology
* MHLW: Ministry of Health, Labour and Welfare
* NIID: National Institute of Infectious Diseases