Capacity Building of Public Health Preparedness and Response

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Ministry of Health and Welfare
Collaboration between Health Authorities and Other Relevant Stakeholders to Strengthen National Capacities for Pandemic Preparedness and Response

- Experience on MERS Outbreak in Korea-
Rapid and global spread of infectious diseases

THE GLOBAL AVIATION NETWORK

DISEASE CAN SPREAD NEARLY ANYWHERE WITHIN 24 HOURS

Image from openflights.org
Index case and transmission route

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UAE, Bahrain, KSA

Clinically Well
Mild Illness
Severe Illness (Hospitalization)

May 12, 14, 15 (Clinic A): A nurse was infected
May 15~17 (Hospital B): Fever, Cough, dyspnea, pneumonia
* 29 were infected
May 17 (Clinic C): A physician was infected

May 11: Fever, Myalgia

5.20 (NMC): Isolation treatment in negative pressure room
May 17, 18~20 (Hospital D)

KSA: Kingdom of Saudi Arabia
Sittinguation of New Pt. / Discharge / Death

Incidence (N)

- New Pt.
- Cum. Death
- Cum. Discharge

Cumulative (N)

- Index case & Wife

* Classification by confirmed date

<table>
<thead>
<tr>
<th></th>
<th>cases</th>
<th>discharged</th>
<th>deaths</th>
<th>Patients under treatment</th>
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<td>Total (as of 31. Aug)</td>
<td>186</td>
<td>147</td>
<td>38</td>
<td>1( Stable)</td>
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Hospital-based outbreak

A

Number of cases

Date of symptom onset

B

Number of cases

Hospital C

Hospital H

Hospital M.N
Characteristics of MERS-CoV Infection in Korea

**Characteristics 1**
- No Community Spread, Inter-hospital Spread

**Characteristics 2**
- “Super Spreading Event” with high transmissibility

**Characteristics 3**
- “Super Spreader” Unpredictable
Control Measures in Korea [early phase]

1. Entry Control
   - Quarantine/Monitoring system
     - Tracing of Visitors to risk areas for 14 days

2. Epidemiological Investigation
   - Patients & Contacts tracing
     - Patients investigated on transmission route
     - Contacts traced for symptom onset

3. Quarantine & Treatment
   - Home Quarantine/Isolation
     - Suspected cases quarantined with lab testing
     - Confirmed cases treated in facilities
     - Contacts under home quarantine
Control Measures in Korea [spreading phase]

1. Applying broad epidemic investigation for contact tracing
   - Expansion of Epi Investigation
   - Strict management of home quarantine

2. Intensive management for hospitals
   - Operate Joint Rapid Response Team (JRRT)
   - JRRT on site management

3. Strengthening of Infection prevention & control in hospitals
   - Suspected cases were separated from other patients
   - Resp. patients screened separately & hospitalized in a single room
Information Sharing and Communication

- Report the MERS case information via IHR (WHO)
- Website(www.mers.go.kr) was established to share information on patients & outbreak situation

<table>
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<tr>
<th>Category</th>
<th>MERS Portal Website</th>
<th>MOWH Homepage</th>
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<tr>
<td></td>
<td>Registered Postings</td>
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<td>Other Information</td>
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<td>Total</td>
<td>66</td>
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- Produced MERS brochures with 16 languages
Korea-WHO Joint Mission on MERS-CoV outbreak

- Korea-WHO joint mission team of 16 experts activated (June 9-13)
- KCDC, NMC briefing on MERS situation, Expert meeting, on-site visit
- Assessing ROK’s response and control efforts
  - Especially on virus transmission routes, contact tracing, quarantine measures, and governance system
- Evaluation of the strategy for information sharing and communications with public
Technical Cooperation with the KSA

- Presentation of KSA MERS Outbreak experiences on clinical/epidemiological aspects, countermeasures and risk communication followed by discussions with Korean experts
- Information sharing on infection prevention and control for hospital-related MERS cases
Technical Cooperation with US CDC

• US CDC’s MERS Technical Cooperation Team visited (June 21- July 1)
  – Conference with experts visiting 4 hospitals and the quarantine station at Incheon international airport
  – Introduction of an imported US MERS case to Korean clinicians

• Acknowledging Korea’s experience will enhance knowledge on MERS

• Sympathizing with Korea’s contribution through collaborated research and information sharing
Collaboration between agencies & activities

**Prime Minister**

**MoPSS (Related Ministry)**
1. Prime Minister
2. MND, MoSF
3. Local Government, Police

**MoHW (KCDC)**

**Local Government**

**Public-Private Joint Response TF**
1. PPJRTF
2. Telecommunication Company

**Activities**
1. Run ‘whole-of-government’ measure committee (June 9)
2. Expand HCWs support & compile a budget
3. Strengthen to manage home Quarantine contacts (back-up by local govern & police for non-compliance)

MoPSS: Ministry of Public Safety And Security, MoJ: Ministry of Justice
MND: Ministry of National Defence, MoSF: Ministry of Strategy & Finance
Impact minimized with rapid cooperation of multi-sectors

Epidemiological Investigation

Whole-of-Government/Private / International Collaboration

Contacts Home Quarantine

Hospital IPC

Information Sharing

IPC : Infection Prevention and Control
Lessons learned from MERS-CoV Outbreak

**Preparedness**
- Real time monitoring of global Emerging Infectious Disease (EID) situation
- Enhancement of Epidemic Intelligence Service (EIS) officers’ capacities

**Information Sharing**
- Information sharing with international partners is critical.
- Join exercise for lag finding would be essential.

**Strengthen multi-sectoral collaboration**
- Specification of roles, responsibilities and coordinating system to be arranged
- Collaboration, coordination between public & private sectors to be secured
Revision of infectious disease crisis response system

1. Recruitment of Qualified Experts at KCDC
   - Increase experts strengthen the experts’ capacities
     - 30 EIS Officers are under recruiting

2. Secure infrastructure for Rapid Response and Infection Control
   - Strengthen Quarantine system for emerging infectious diseases
   - 24h monitoring system by operating Emergency Operations Center (EOC)
   - Improve Infection Prevention & Control Capacities

3. Strengthen R&D for infectious diseases
   - Develop new laboratory diagnostic methods, including MERS detection kit
   - Strengthen R&D for emergency response, including vaccine development
Disaster Management System of Korea

- Ministry of Public Safety and Security (MPSS)
  - Was established on Nov. 19, 2014.
  - To create a prompt, comprehensive system, to cope with disasters and safety problems by building a disasters management system
  - It has Central Fire Service and Korea Coast Guard
  - It can establish, administer and control total coordinating policies of safety and disaster
- MPSS is a control tower and will cooperate with departments in charge of natural or man-made disasters
  - MOH and KCDC are in charge of Public Health issues
  - Ship capsizing: Ministry of Oceans and Fisheries
  - Oil Spills: Ministry of Environment & MOF etc.
Recommendations

• Within the country, multi-sectoral collaboration is essential to cope with infectious disease outbreak.
  – MOH and KCDC coped with MERS in Korea with the cooperation of other agencies (governmental and private sectors)
• And information sharing with people is very important.
  – MOH and KCDC delayed in sharing the information of hospitals where the MERS-CoV confirmed patients visited and this caused loss of credibility of Korean Health authorities.
• Globally, cooperation with WHO or other countries where experienced and coped with the infectious disease should be warranted.
  – With the collaboration and advice of these countries, Korea could finish MERS
Thank you