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Medical school innovation for the response to infectious diseases like COVID-19

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Prof. Sung Min Kim

*Division of Infectious Disease, Department of Internal Medicine,
Chungnam National University Hospital*

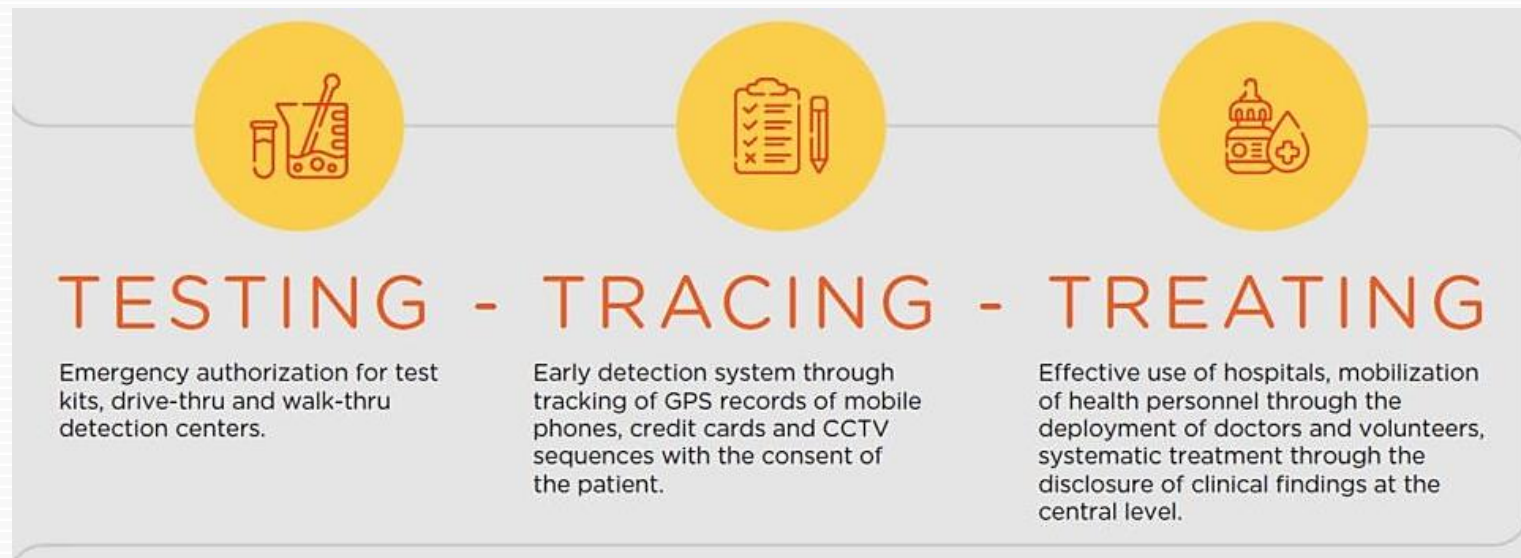
1) Current Status and Direction of Korea related to Infectious Diseases

EMERGING INFECTIOUS DISEASES IN THE 3RD MILLENNIUM

- **Severe Acute Respiratory Syndrome (SARS)**
 - 2002, Southern China
 - 29 countries, 8,096 cases, 774 deaths (fatality: 9.6%)
 - No confirmed case in Korea
- **Novel flu (Swine flu)**
 - 2009, USA
 - 214 countries, 0.7-1.4billion cases, 151,700-575,400 deaths (fatality: 0.01%)
 - Korea, 760 thousand cases, 270 deaths
- **Middle East Respiratory Syndrome (MERS)**
 - 2012, Middle East
 - 2,519 cases, 866 deaths (fatality: 34.3%)
 - 2015, Korea, 186 cases, 38 deaths (fatality: 20.4%)
- **Coronavirus Disease 2019 (COVID-19)**
 - 2019, Wuhan China
 - 2021/08/21, 209,642,174 cases, 4,398,074 deaths (fatality: 2.1%)
 - Korea, 236,366 cases, 2,215 deaths (fatality: 0.9%)

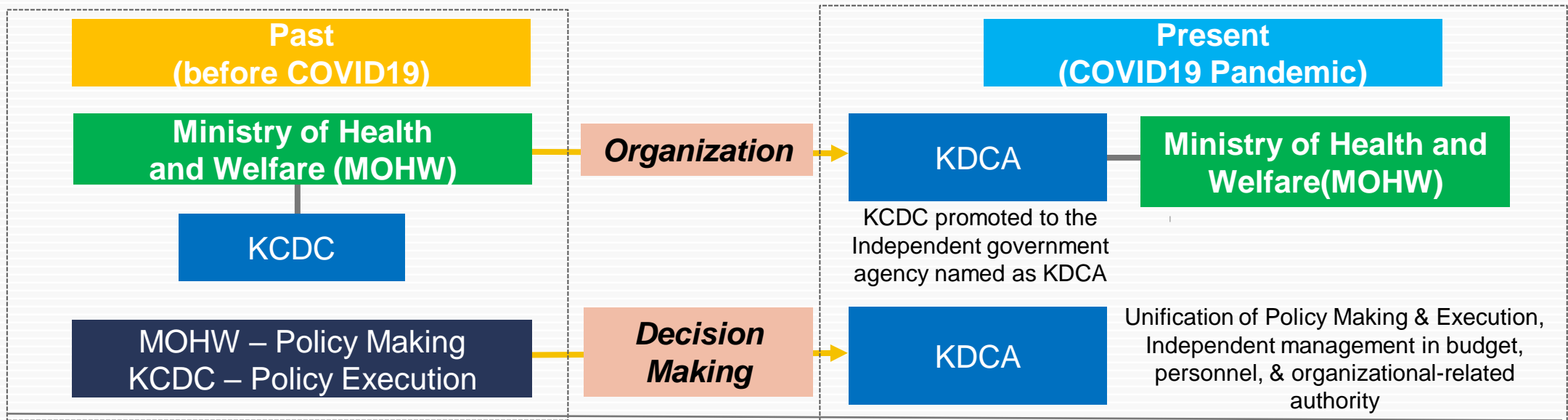
EXPERIENCES OF NOVEL INFECTIOUS DISEASES

- For the past 20 years, the world experienced novel infectious diseases such as SARS, H1N1, Ebola, MERS, and currently COVID-19 pandemic.
- Especially, since the newly emerging of MERS in Korea, the Korean Government has made a quick effort to prepare and respond to prevent the influx and outbreak of a novel infectious disease.
- Through the experiences of MERS, the national system for prepare, diagnosis, and response to a novel infectious diseases in Korea has become more strengthened along with enhancement in epidemiological investigation.



KDCA (Korea Disease Control and Prevention Agency)

Due to prolong of COVID19 pandemic in Korea, the KCDC has promoted to KDCA;



Source: yonhapnews (20/06/03)

- In Sep.12, 2020, the KCDC promoted to KDCA as the independent government agency for preparedness and response to infectious disease. KDCA can independently conduct management in budget, personnel, and organizational-related authority.
- Although the KDCA has become the independent government agency, the MOHW and KDCA work together as in the current system in a crisis situation that requires gathering capabilities at the pan-government level due to COVID-19 pandemic.

2) Status of Epidemiological Investigation Education and Training in Korea

HISTORY

- On January 12, 2000, as the 'Prevention of Contagious Disease Act' was amended, the basis evidence for epidemiological investigation was prepared. **The Field Epidemiology Training Program (FETP)** was newly established as a field epidemiology training course.
- On December 29, 2001, **the scheme for epidemiological investigation began to be systematized** as the basis for national subsidy for the investigation of 'adverse vaccination reactions' and the education and training of epidemiological investigators was systematically initiated.
- After experiencing the H1N1 influenza pandemic (2009), "Prevention of Contagious Disease Act" was completely amended to "the '**Infectious Disease Control and Prevention Act**'" to make the improvement for the infectious disease control and prevention system.

Source: Lee MS, et al. Experiences of 16 years and its associated challenges in the Field Epidemiology Training Program in Korea. Konyang University, 2017

In June 2016, the amendment bill was passed to the 「Infectious Disease Prevention Act」 to respond promptly and appropriately to infectious diseases

- ① Establishment of a rapid and effective response system for infectious diseases
- ② Prompt disclosure of infectious disease outbreak information
- ③ Clarify the basis for compensation when performing duties and obligations of infectious disease patients, etc.

EPIDEMIOLOGICAL INVESTIGATION TRAINING IN KOREA

Epidemiological investigator education and training program consists of;

1) The Basic Education and Training Course

- The basic training course provides basic knowledge and skills on epidemiology and infectious disease management;
- Those who wish to receive education and training from among **public health doctors or medical personnel** who have been selected and assigned as new epidemiological investigators
- Those who perform epidemiological investigations **with licenses, public officials** in charge of quarantine, epidemiological investigations, and vaccinations, and experts in related fields such as infectious diseases.

EPIDEMIOLOGICAL INVESTIGATION TRAINING IN KOREA

2) Workshop

- discussions about *the formation of networks between newly appointed epidemiological investigators and existing epidemiological investigators* and the system of epidemiological investigators are held.

3) Continuous Education & Training

- focuses on epidemiological investigation cases for epidemiological investigators belonging to the central and metropolitan/provincial epidemiological investigation stations, quarantine stations, and metropolitan/provincial offices
- learning specialized knowledge for each specific task, and epidemiological investigation activity cases discussion, etc.

4) Academic conference

- Discussion on *epidemiological investigation case and infectious disease research study*

3) Status of Medical School Education and Training in Korea related to Infectious Disease

Direction of Infectious Disease Education in Korea

- Through the experiences of MERS (2015) and COVID-19 pandemic (2020~present) in Korea, there are growing interests for strengthening the capacity of medical schools and other health-related institutions.
- Lately, the Korean medical students learn more diverse educational and training experiences to improve capacity for their future medical professionalism through curriculum related to infectious diseases.
- Medical students and those who are at master's level (or above) related to health field are learning more advanced statistical tools to investigate infectious diseases that spread in worldwide. This data may include a large cohort studies.
- The global health program for students can improve the knowledge and practical skills through experiencing ODA projects with various topics related to diverse infectious diseases in developing countries and worldwide.
- Medical schools and graduate level educational institutions are expanding and developing a curriculum of infectious disease field, such as medicine, epidemiology, public health, and others.

MEDICAL EDUCATION AND TRAINING IN KOREA

Medical Education & Training in Korea

Level	Progress
Undergraduate (Major in Medicine)	<p>Total 6 years</p> <ul style="list-style-type: none"> - Pre-medical course (2 years) - Medical course (4 years) • After graduate, medical students take the national physician licensure exam • After passing the exam, students obtain M.D license (approved by the Ministry of Health and Welfare of Korea)
Internship & Resident	<ul style="list-style-type: none"> - Internship (1 year) - Resident (3-4 years) - depending on their specialty (26 subjects) • Students take the licensure exam for their medical specialty • After passing the exam, students obtain their medical specialty license.
Fellowship	<ul style="list-style-type: none"> • 1~2 years of medical sub-specialty training

Capacity Building for Medical Personnel

Capacity	Undergraduate (Major in Medicine)	Internship & Resident	Fellowship
Education	Basic and clinical science for general diseases	Basic & Clinical & medical specialty	Sub-specialty
Clinical Practice / Training	Basic laboratory & clinical training	Advanced clinical training for patient diagnosis, treatment, etc.	Highly advanced clinical training for sub-specialty

MEDICAL EDUCATION AND TRAINING IN KOREA

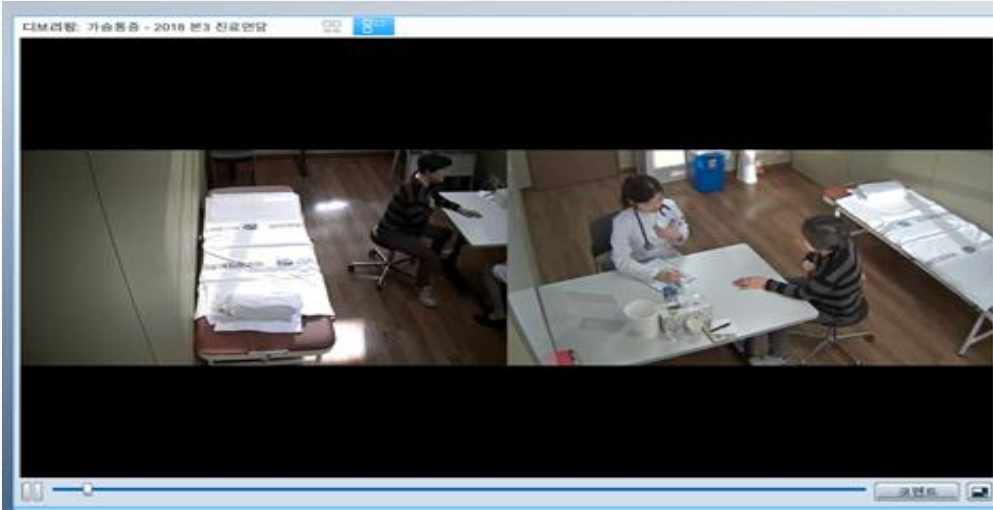
Education of Infectious Diseases (IDs) in Medical College

Level	Progress
3rd or 4th year	<ul style="list-style-type: none"> - A block course for 2-3 weeks • consists of IDs, microbiology, pharmacology, clinical pathology, pathology, preventive medicine etc. • includes lectures, PBL, CBL, TBL etc.
5th year	<ul style="list-style-type: none"> - Clinical rotation for 2-3 weeks • includes involvement in care of ID patients, surgical infections & immunocompromised host infections • Practice of infection control

Education for Infectious Disease (ID) Specialists

Level	Progress
1st year of fellowship	<ul style="list-style-type: none"> - Licenses of MD and Internist are required - Education under supervision of ID specialists
2nd year of fellowship	<ul style="list-style-type: none"> - Practice in clinical fields of ID patients care and infection control.
License	<ul style="list-style-type: none"> - After the 2-year fellowship and passing the subspecialty exam

EXAMPLE: SIMULATION CENTER AT HOSPITAL



- At Hospital Simulation Center, medical students conduct a simulation on how to prepare and response to a medical situation (e.g., patient-doctor consultation, emergency, etc.)
- All activities performed by students are monitored and recorded through the monitoring system.

EXAMPLE: INFECTIOUS DISEASES CURRICULUM

Master's Level (or above)

- Lectures on the prevention and management of infectious diseases based on the understanding of the ecological characteristics and epidemiologic characteristics of infectious diseases.
- Understanding the latest statistical methodologies, and advanced statistical techniques for independent research are introduced related to infectious diseases.
- Improving the capacity to prepare for and respond to public health crisis by understanding the basic characteristics and classification, and epidemiological investigation.

Major Courses, Dept. of Epidemiology & Bioinformatics

- Research Methodology
- Clinical Epidemiology
- Epidemiology of Infectious Disease
- Hospital Epidemiology and Infection Control
- Epidemiology of Chronic Disease
- Public Health Crisis Management
- Public Health Informatics
- Hospital Epidemiology and Infection Control
- Field epidemiology
- Advanced Meta-analysis in Medicine & Public Health

EXAMPLE: GLOBAL HEALTH PROGRAM

Master's Level (or above)

- Recently, the curriculum for global health program at graduate level (or above) has become more diverse in Korea.
- It includes topics related to infectious diseases such as Global Health and Community Health, Infectious Diseases of Global Health, International Health & Maternal & Child Health, ODA & Health, etc.

Global Health Program, Graduate School of Public Health, K University, Korea

- Seminar in Global Health
- Planning and Evaluation in Global Health
- **Infectious Diseases of Global Health**
- Globalhealth and Community health 2
- Field Practice of Global Health 2

Graduate School of Public Health, Y University, Korea

- **International Health & Maternal & Child Health**
- Global Public Health Development & Assessment
- **Oversea Development Assistance & Health**
- **Global Infectious Disease**
- Case Studies on Official Development Assistance in Primary Healthcare

4) ADB Project: Medical school innovation for the response to infectious diseases like COVID-19

PROJECT – GENERAL INFORMATION

Project	GENERAL INFORMATION
Title	<ul style="list-style-type: none"> Innovation of Educational Capability of Medical Schools Responding to Infectious Diseases Like COVID-19
Period	<ul style="list-style-type: none"> Oct. 2021 ~ Sep. 2023 (2 years)
Group Organization	<ul style="list-style-type: none"> ADB (<i>Asian Development Bank</i>) 3 Nations <ul style="list-style-type: none"> - Turkmenistan, Lao PDR, Indonesia 3 Medical Consulting University in Republic Of Korea <ul style="list-style-type: none"> - Korea University, Chungnam National University, Hanyang University Advisory Group <ul style="list-style-type: none"> - Prof. Jimba Masamine (Univ. of Tokyo, Japan) - Prof. Rajiv n. Rimal (Johns Hopkins Univ. US)

PROJECT - OBJECTIVES & GROUP ORGANIZATION

PROJECT	GENERAL INFORMATION
Objective	<ul style="list-style-type: none"> Improving educational capability of medical schools responding to new infectious diseases, including surveillance of new infectious diseases, prevention, epidemiological investigations in medical schools.

Major Outputs	<ol style="list-style-type: none"> curriculum development for medical school capacity building for medical school faculties and infectious disease experts providing field practice for students developing e-learning education materials Producing knowledge products about DMCs medical schools' responses and best practices
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GROUP ORGANIZATION



PARTICIPATION IN GLOBAL PROJECTS

Korea University

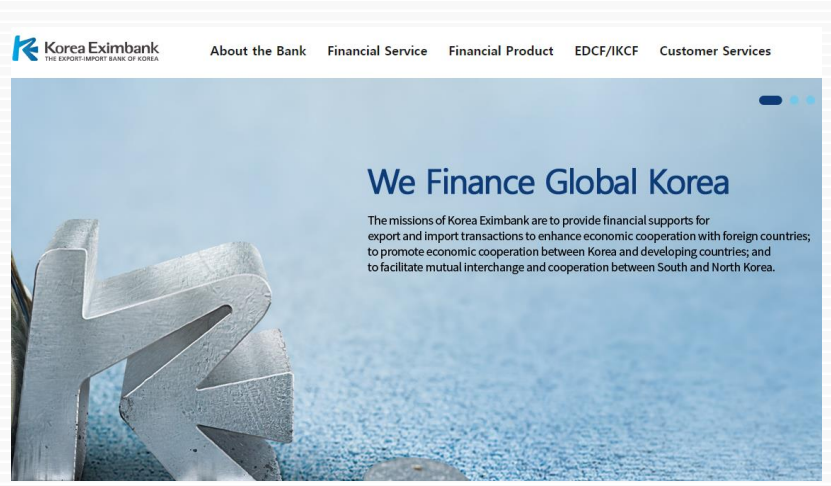
- As the project leader, Prof. Choi Jae Wook, has various experiences in medical consulting services particularly in many developing countries such as Tanzania, Vietnam, Lao PDR, Bolivia, Uzbekistan, and Pakistan for the past 10 years (e.g., feasibility study [F/S] on construction of a new hospital (EDCF-KEXIM Bank), maternal and child health, and other health related-projects from the Korean government agencies [KOICA, KOFIH] and bilateral agencies, etc.)

Chungnam National University

- The University participated in the KOCID projects that establishing a global network for development of diagnostic technology for highly pathogenic virus in 15 foreign countries such as Thailand, Vietnam, and etc.

Hanyang University

- The University participated in the KOICA projects related to medical consulting services such as the health policy consultation, and education and training local medical staffs related to infectious diseases in Peru, South America.



QUESTIONS (COMMENTS)?

THANK YOU!