

Public and Private Collaboration in Times of Pandemic: Taiwan Experience

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A portrait of Dr. Wui-Chiang Lee, a middle-aged man with short dark hair and glasses, wearing a white lab coat over a dark suit and tie. He has his arms crossed and is standing against a plain grey background.

Dr. Wui-Chiang Lee

EDUCATION:

- PH.D. & MHS, JOHNS HOPKINS UNIVERSITY BLOOMBERG SCHOOL OF PUBLIC HEALTH, USA
- MD, NATIONAL YANG-MING UNIVERSITY SCHOOL OF MEDICINE, TAIWAN (ROC)

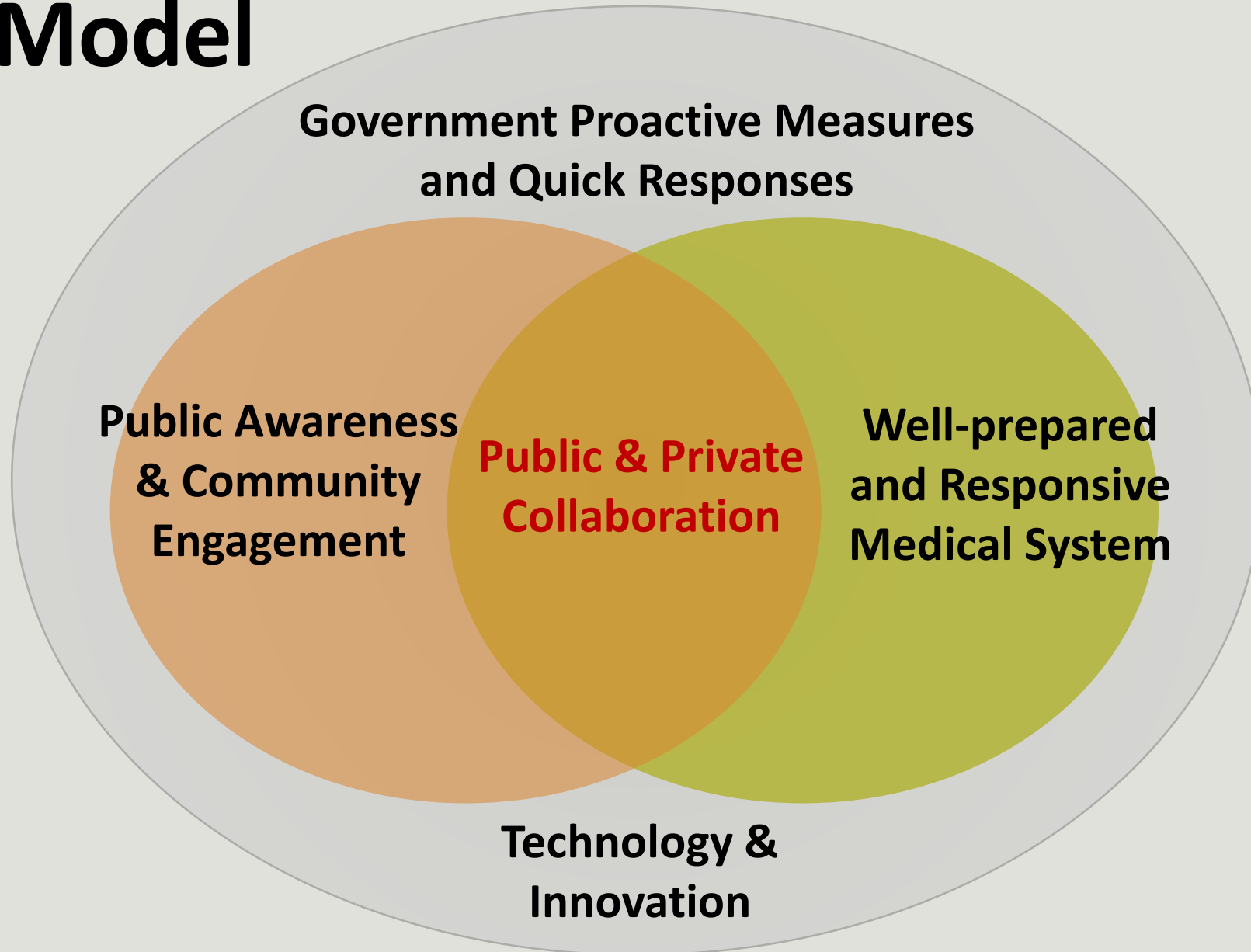
CURRENT JOBS:

- VICE SUPERINTENDENT AND ATTENDING PHYSICIAN, TAIPEI VETERANS GENERAL HOSPITAL, TAIWAN (ROC)
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EXPERIENCES:

- DIRECTOR-GENERAL, DEPARTMENT OF MEDICAL AFFAIRS, MINISTRY OF HEALTH AND WELFARE, TAIWAN
- CEO, JOINT COMMISSION OF TAIWAN
- PRESIDENT, ASIAN SOCIETY FOR QUALITY IN HEALTH CARE

Taiwan Model



Reinforcement of Infection Control System after 2003 SARS Outbreak



Amending “Communicable Disease Control Act” in 2004



Reorganizing Taiwan CDC’s infrastructure, manpower and equipment



Establishing Central Epidemic Command Center (CECC) for inter-ministry coordination



Establishing communicable disease control medical network



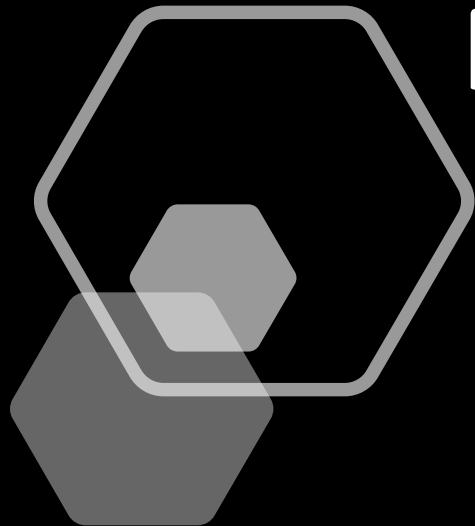
Enhancing communicable diseases surveillance and reporting system



Collaboration between central and local government



Public and private partnership



Public Governance



Central Epidemic Command Center (CECC)



CECC: Empowered and Activated by Law

- **Formulate policies and plans** for the prevention and control of communicable diseases including measures such as immunization, prevention of communicable diseases, epidemiological surveillance, case reporting, investigations, laboratory testing, management, quarantine, drills, mobilization by level, training, and pharmaceutical, device and protective equipment stockpile.
- **Supervise, command, guide and assess** local competent authorities in the execution of matters concerning communicable disease control.
- **Establish relief funds** for compensating vaccine victims and related activities.
- **Conduct quarantines** of international and specifically designated ports.
- **Organize international collaborative** projects and exchanges on matters concerning the control of communicable diseases.

Communicable Disease Control Act, Taiwan (ROC)

Border Control and Mandatory Quarantine



Quarantine Measures

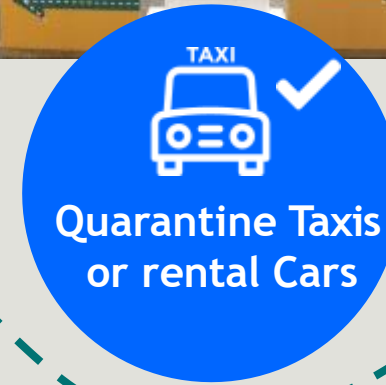
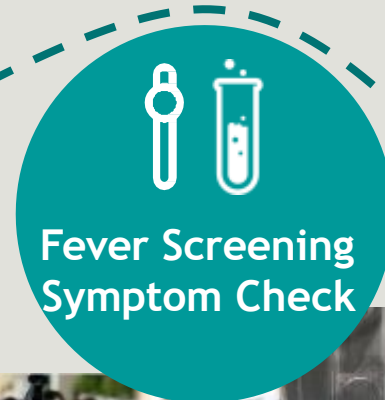
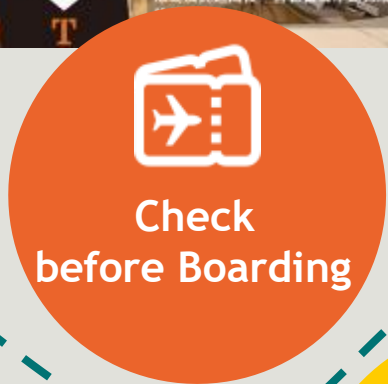
Quarantine Hotels Booked



Quarantine System for Entry



Inbound Travelers are not allowed to take public transportation



Onboard Quarantine



Fever Screening



Collecting Specimen



Home Quarantine Package

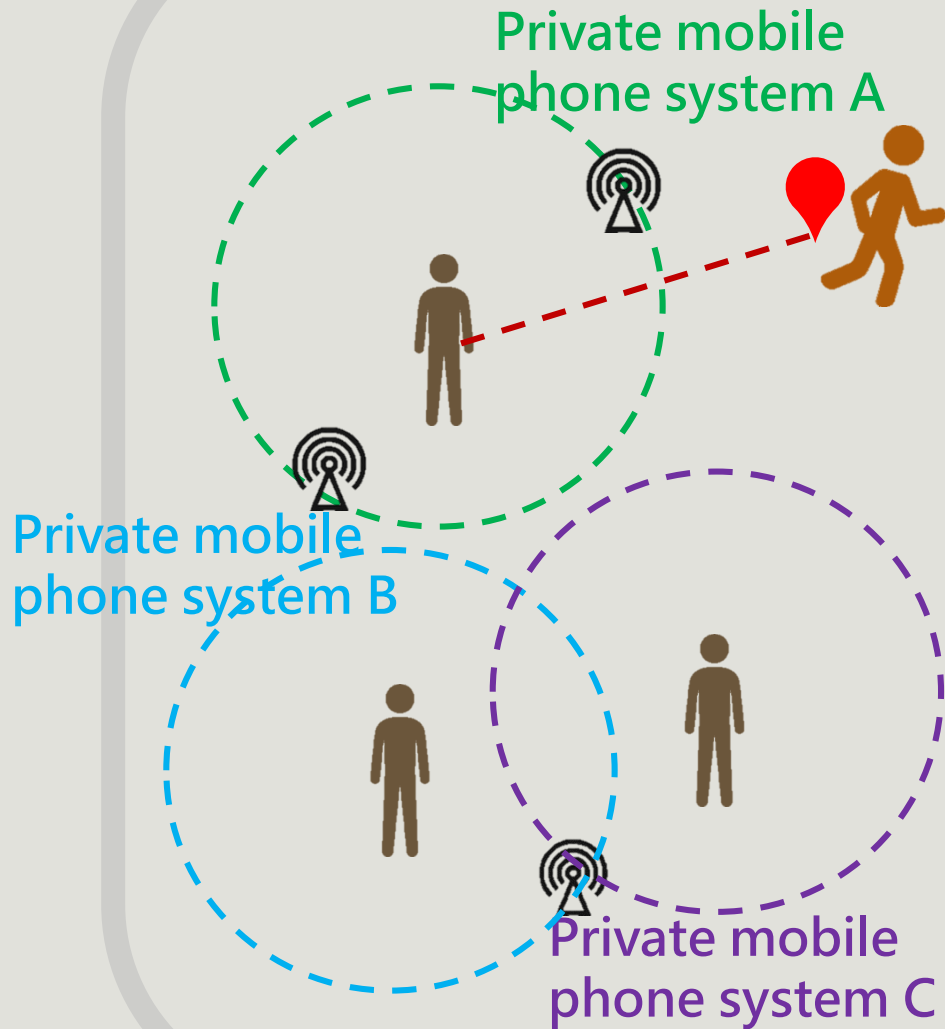
Photo: Liberty Times Net

Quarantine System for Entry

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The screenshot displays the '防疫監控資訊系統' (Epidemic Monitoring Information System) interface. The main map shows Taiwan with yellow circles indicating infection hotspots. The left sidebar contains filters for '全國' (National) and '指定縣市' (Specified City/County). The right sidebar lists cities and counties for selection. The top bar shows the system name and user information.

Digital Fencing and Tracking System



1 Local healthcare authorities



2 Police visit



3 Fine





Requisitioned Collective Quarantine Sites

- 63 sites were requisitioned for collective quarantine or isolation use, including 6,136 rooms and 7,663 beds.
- Around 133,518 people and 1,258,348 person-days were served
- Manpower mobilization for health care, security, and logistics, etc.
- Policeman manpower: 721,118 person-time

Data up to Sep. 2022
Source: CDC, Taiwan



Quarantine Hotels

- Up to 519 hotels (32,000 rooms, max) remodeled for quarantine or people with mild symptoms after COVID infection.
- Around 880,000 person-times served
- Significant reduction of community transmission risk

Data up to Oct. 2022
Source: CDC, Taiwan



Home Quarantine or Isolation

- Nearly *5 million* for home isolation
- *1.85 million* for home quarantine

Data up to Oct. 2022
Source: CDC, Taiwan

Community Care and Life Assisting Services



Local government
hotline



Meal delivery



Garbage collection



Settlement



Family visits



Suspected symptoms-
Designated ambulance



Non-suspected symptoms-
Medical care arrangement

Assisting for the Quarantined at Home

- Around 7,708 employees from civil and police departments of local governments were devoted to assisting *1.85 million* quarantined people at home.
 - Including *415,059* people from abroad
- More than 2,118 mobile phones were provided.

Data up to October 2022

Source: CDC, Taiwan

Caring Center for the Quarantined

- At the lobby floor of Ministry of Health and Welfare since Feb. 11, 2020
- 405 volunteers including nurses, psychiatrics, and many other professions
- A total of 6,026 shifts, 230,721 phone calls, and 18,488 hours service time

Data up to Oct. 2022
Source: CDC, Taiwan





Caring Centers for the Quarantined of 23 Local Governments

- 1,429,911 phone calls to the 399,950 quarantined or isolated
- 264,744 visits
- Medical assistance:
27,930 for symptoms, 105,777 for non-symptoms
- Living assistances:
delivery services 49,096 times
garbage disposing 399,950 times

Data up to Oct. 2022

Source: CDC, Taiwan

Quarantine Taxi Teams

Airports:

- Around **1,900 taxis** served quarantine travelers from international airports to quarantine sites or hotels since March 4, 2020.

Local governments:

- Asymptomatic home quarantine or COVID infection cases
- Over 570,000 person times were served by 520,000 times driving

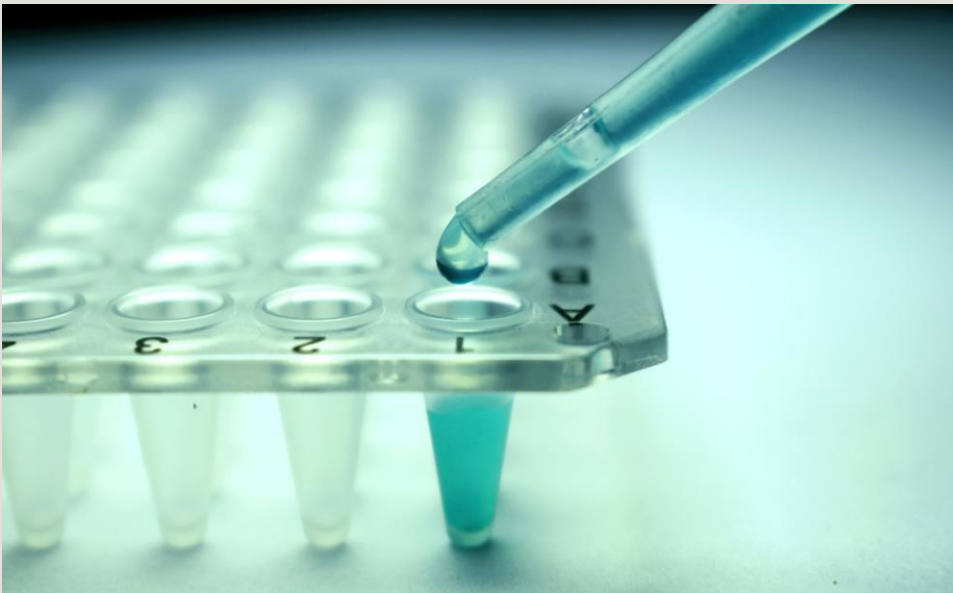


Data up to Oct. 2022
Source: CDC, Taiwan



Labs for PCR Testing

- 266 public and private laboratories for PCR testing
- 80,000 tests per day, up to 230,000 tests (max)



*Data up to Oct. 2022
Source: CDC, Taiwan*

National Face Mask Team

- 73 production lines and 110 machines after April 2020
- Daily production increased from 1.88 million to 21 million after May 2020
- A total of 3.4 billion masks were rationed

*Data up to Oct. 2022
Source: CDC, Taiwan*





Face Mask Rationing Plan

- Banned mask and PPE export
- Launching domestic mass production
- Setting price of each mask US\$ 0.13
- Requisition of all domestic masks since Feb. 4, 2020
- Online name-based registration

Data up to Oct. 2022
Source: CDC, Taiwan

Name-based Ordering and Rationing Plan

2020/2/6

Mask 1.0

6,300 pharmacy stores or 340 health clinics



2020/3/12

Mask 2.0

pre-order online and pickup at 10,000+ convenience stores



2020/4/22

Mask 3.0

pre-order and pick up at Kiosks or convenience stores



Data up to Oct. 2022

Source: CDC, Taiwan

Mask Maps

- A software company developed a mask ordering and pick-up system online. Citizen can get rationed masks at community pharmacy stores, local health clinics, or convenience stores.



Taiwan Can Help

Over 52 million face masks were delivered to 80 countries





Rubbing Alcohol for Disinfection

- The Taiwan Tobacco and Liquor Company (public) transformed the production line to 75% rubbing alcohol for disinfection.
- 9 Private-owned breweries joined the National Team
- Distributed to 5,670 contracted pharmacy stores by Chunghwa Post. Co. every week.

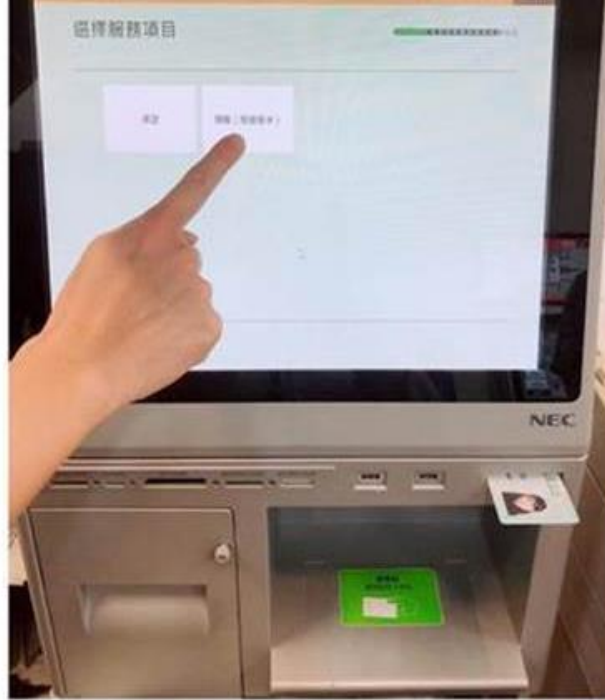
Data up to Oct. 2022

Source: CDC, Taiwan

Partnership with Convenience Stores

Over 10,000 stores
belonging to 8 systems
around the country

- ✓ Masks
- ✓ Rubbing alcohol
- ✓ COVID-19 rapid test kits



Health Care Organizations

All hospitals, primary care clinics, and medical personnel participated to the COVID combat, regardless of governmental or non-governmental sectors.



Source: Taipei Veterans General Hospital

Safety Network for Pandemic Control

- Six local medical networks for emerging contagious diseases
- Composed by 227 **public** and **non-public** hospitals
- Local command system
- Supervised by CECC



Data up to Oct. 2022
Source: CDC, Taiwan

Medical Care System Preparedness



Initiating contingency plan for emerging contagious diseases



Establishing an infection control team by specialists at every hospital



Preparing for triage and fever screening stations out of main buildings



Diverting and separating infected patients



Maintaining enough protective equipment stockpile for **30 days**



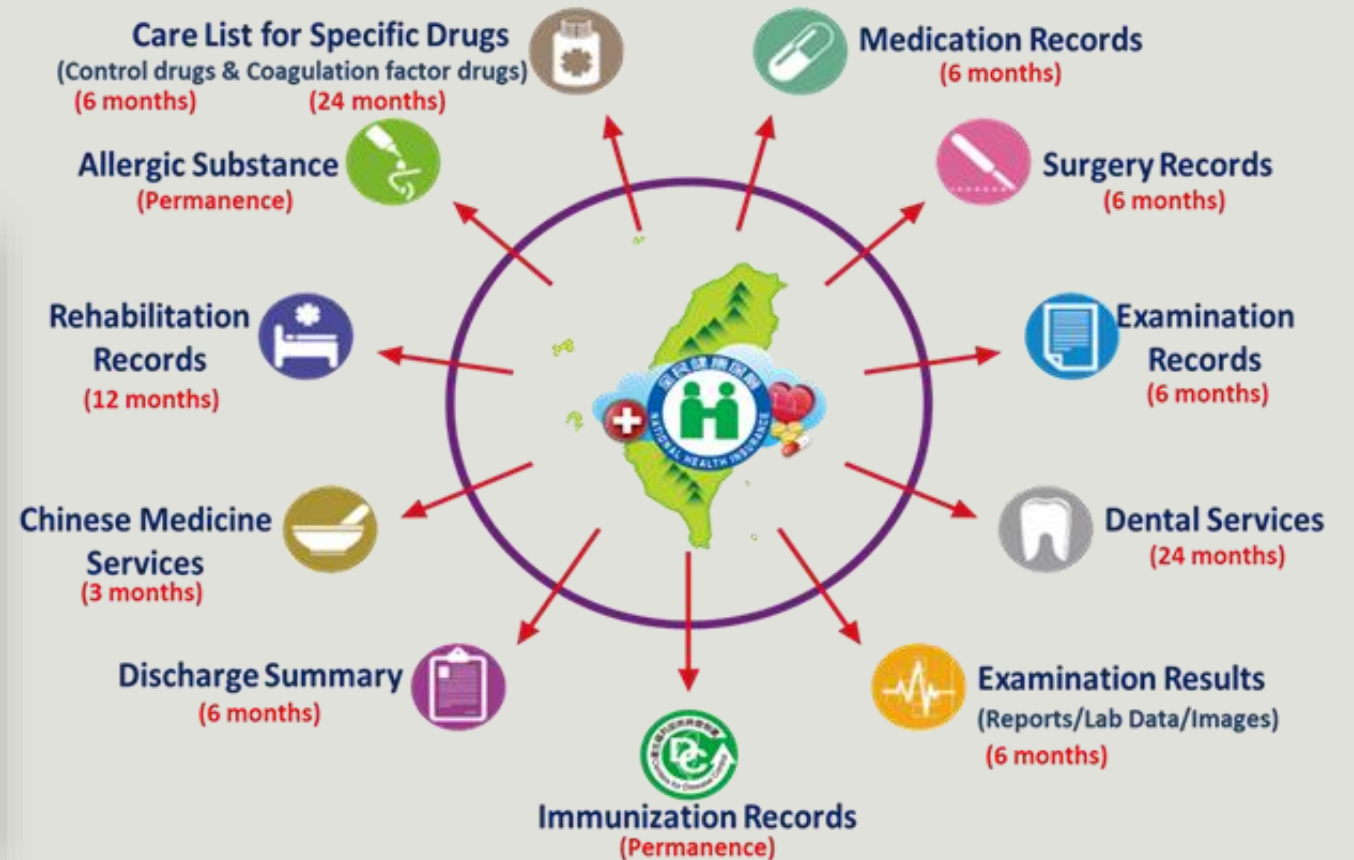
Drilling under supervision of local healthcare authorities every year



Accreditation by Joint Commission of Taiwan and Ministry of Health and Welfare

Collaboration between National Health Insurance Administration and HCOs

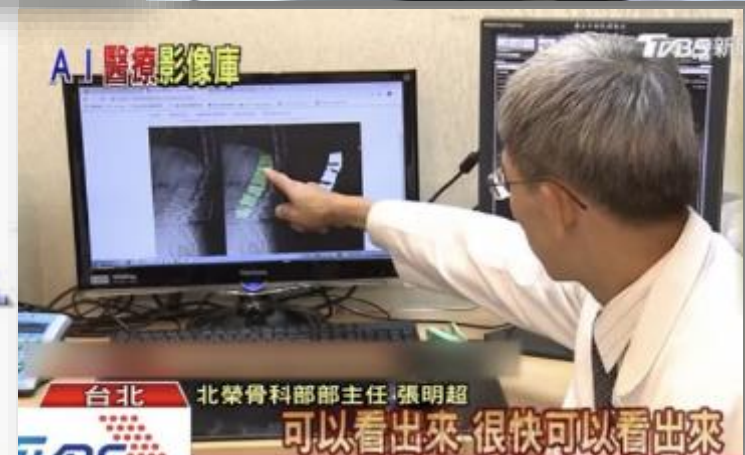
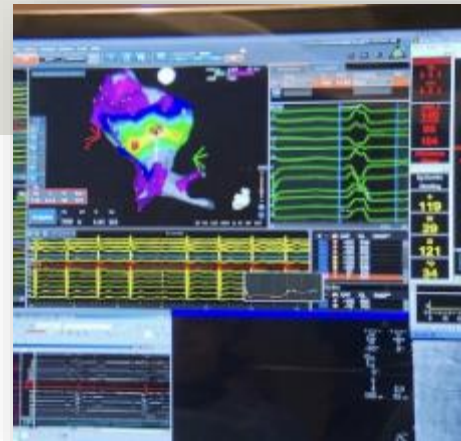
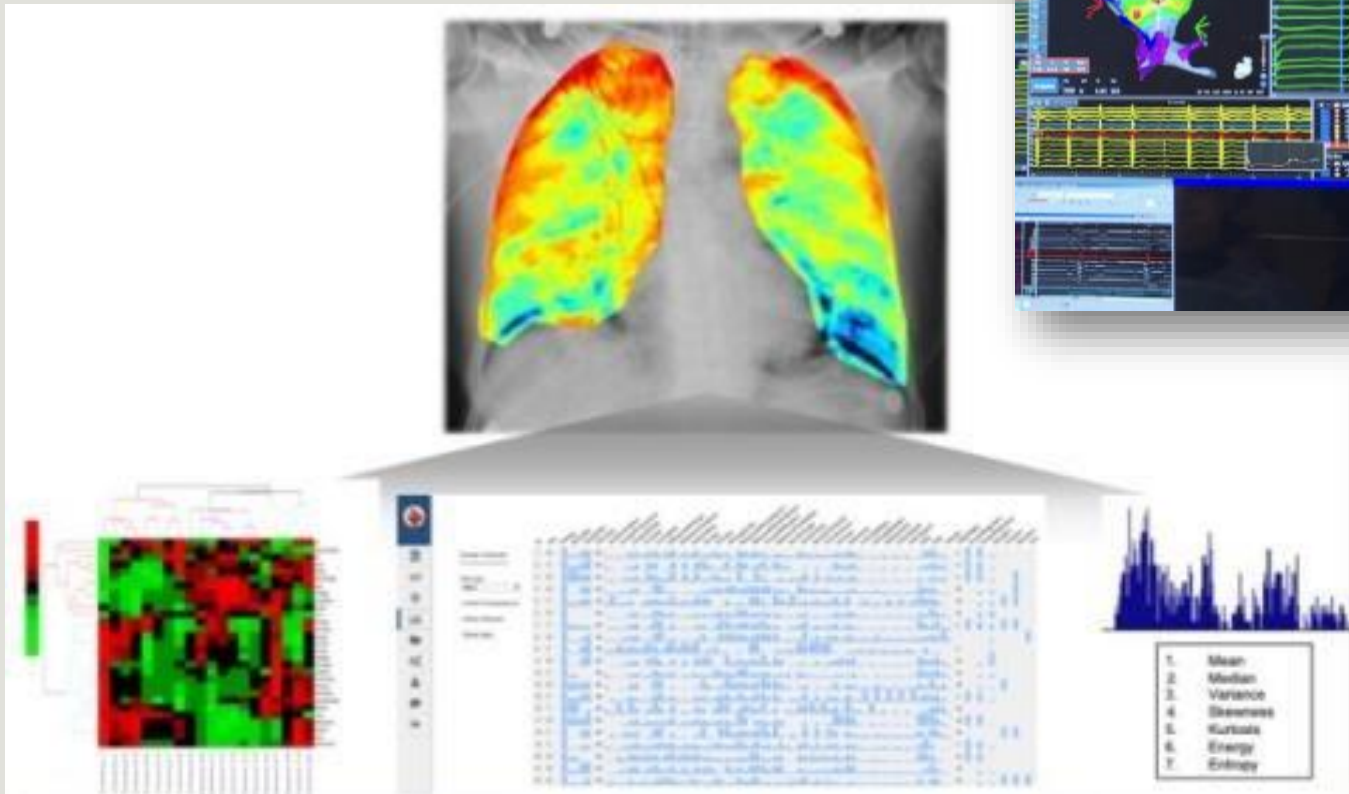
Travel
Occupation
Contact
Cluster



Source: NHIA, Taiwan

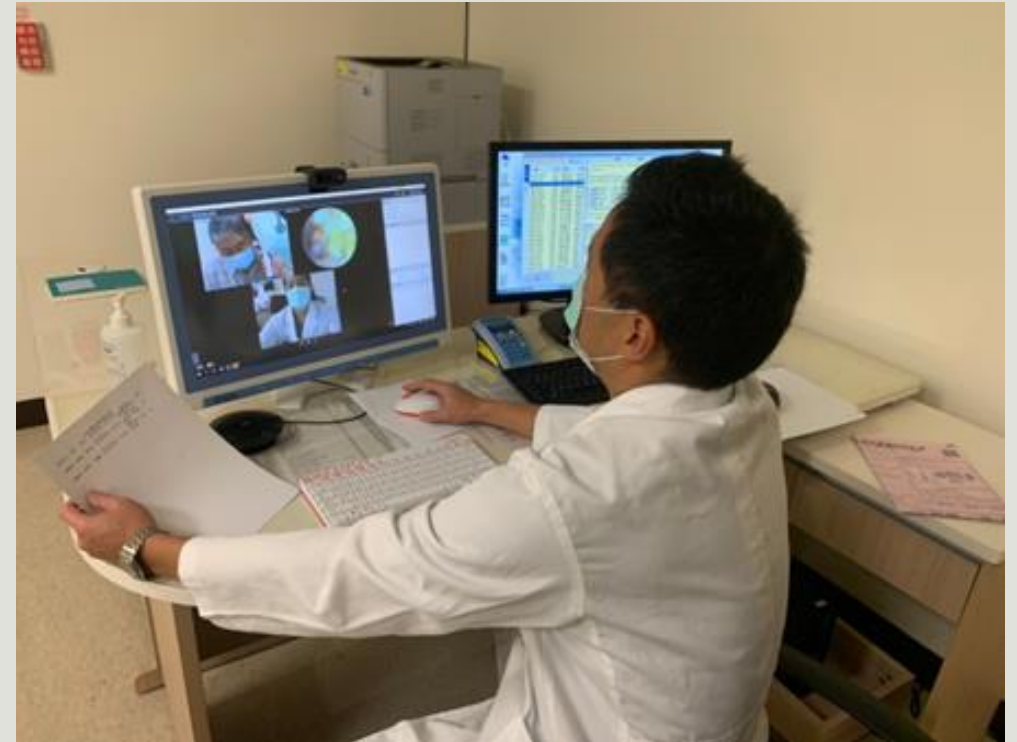
Testing and AI-assisted Imaging Diagnosis

- Pulmonary lesions



Telemedicine for Quarantined Patients

- 427 hospitals and 12,602 primary care clinics offered telemedicine (up to Sep 22, 2022)
 - Service types/volume:
 - Telemedicine 6.22 million (80%)
 - Phone consultation 1.52 million (20%)
- (from May 15, 2021 to Sep. 22, 2022)*



Source: MHOW, Taiwan

Self-disciplined and Engaged Citizen



Conclusion: United We Stand

- Taiwan has proved its medical resilience through strong public and private partnership in times of pandemic control over past 3 years.
- Engagement of governmental and non-governmental healthcare organizations as a comprehensive medical network.
- Global solidarity and international collaboration

