

Disaster Response in Taiwan

*A Comprehensive Overview of Preparedness, Management,
and Humanitarian Aid*

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Taiwan's Geographical Vulnerabilities



Taiwan's location on the Pacific "Ring of Fire"

Taiwan's unique geography places it at the intersection of multiple natural disaster threats:

Seismic Activity & Topography

- Part of the **Pacific Ring of Fire**, leading to frequent and powerful earthquakes.
- Mountainous terrain with steep slopes, highly susceptible to **landslides and mudslides** during heavy rainfall.

Typhoons & Flooding

- Directly in the path of **Northwestern Pacific typhoon paths** annually, bringing **destructive winds and torrential rains**.
- High risk of widespread **flooding** in coastal and low-lying areas.
- Historical disasters like the **1935 Hsinchu-Taichung Earthquake** and **1959 August 7th Flood** highlight these recurrent threats.

Historical Evolution

From Fragmentation to Global Standards



Early Response Era: Major Disaster Lessons (Pre-1999)

🏠 1935 Earthquake

The deadliest earthquake in Taiwan's recorded history, causing unprecedented destruction.

- **Human Toll:** Claimed over 3,200 lives.
- **Destruction:** Reduced more than 17,000 homes to rubble.



💧 1959 Flood

One of the most severe post-war disasters, highlighting the fragility of infrastructure and economy.

- **Impact:** ~700 deaths; widespread paralysis of power, transport, & communications.
- **Economy:** NT\$3.7 Billion loss (approx. 12% of GNP), devastating the post-war economy.



Early Response Era: Systemic Gaps (Pre-1999)

🤝 Charity-Driven Aid

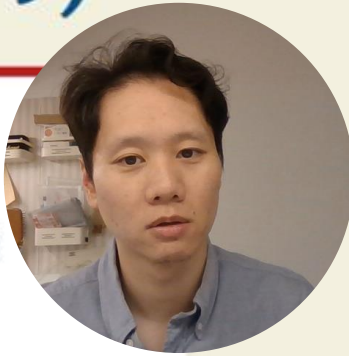
NGOs provided vital support, but the overall effort was often uncoordinated:

- Efforts were often uncoordinated.
- Resource overlap or gaps in remote areas.

👤 Military Reliance

The military was the primary first responder and logistics provider, demonstrating limitations:

- Lacked specialized medical expertise.
- No standardized MCI/Triage protocol.



System Evolution: Key Milestones



Pre-1985

Early Response Era

Fragmented, military-reliant response. (See Slides 5 & 6)



1985

The Foundation

Medical Network Plan established regional tiers & EMT systems.



1999

The Turning Point

921 Earthquake led to the Disaster Prevention Act & DMAT.



2003

Central Command

SARS established CECC and infection control protocols.



2022+

National Resilience

Whole-of-Society Defense & critical infrastructure protection.



The Foundational Role of the 1985 Medical Network Plan

The 1985 plan established the **regional structure** and **hospital grading system** necessary to support all subsequent emergency measures, making disaster management possible on a national scale.



Establishing emergency medical system



Designated hospital (Legal foundation for Tiers)



Medical Personnel Support for On-site
Disaster Response



Emergency Medical Technician (EMT)
System and Training



Mass Casualty Management Protocol



1999: The 921 Earthquake Catalyst



“1” Command & Communication Failure

The ad-hoc, verbal transmission of information led to chaos and confusion. This mandated the development of:

- Establishing emergency disaster communication capabilities
- Unified Incident Command System (ICS)

2 Mission Deployment Deficiency

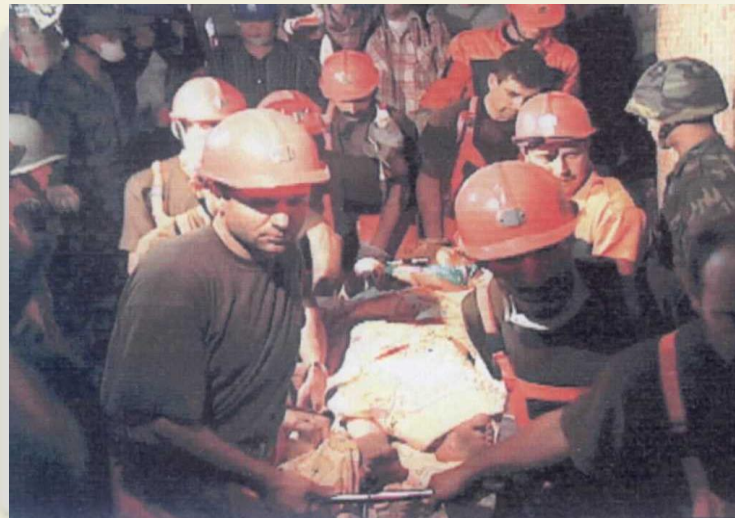
The lack of assigned tasks for numerous medical teams necessitated the formation of structured, deployable units:

- Formation of **Disaster Medical Assistant Team (DMAT)**
- Standardized training and mission protocols.

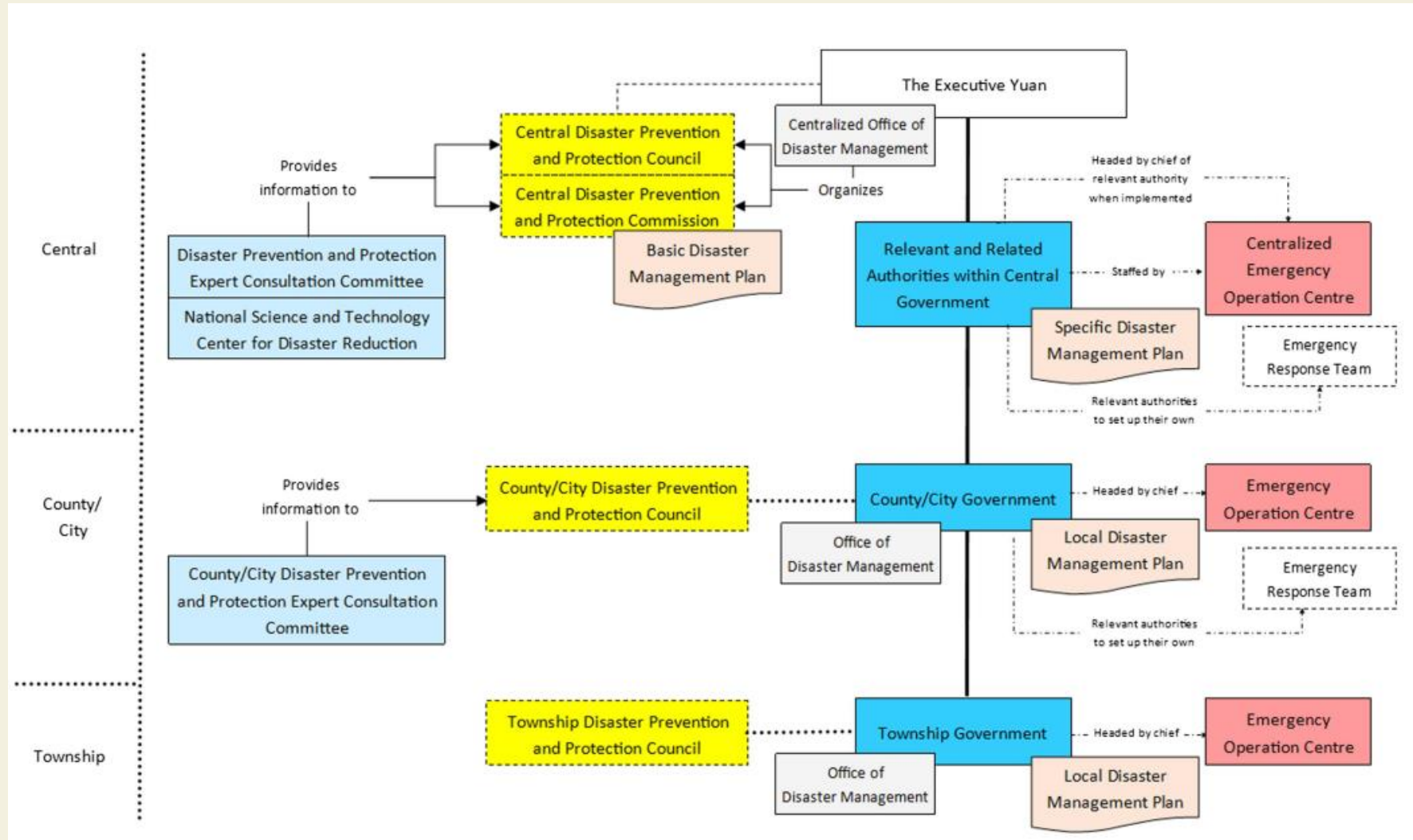
➤ The Legislative Mandate

The total collapse of emergency procedures drove the creation of a legal framework for all response protocols:

- Creation of the **Disaster Prevention and Protection Act**
- Establishment of a national legal basis for disaster management.



Current Disaster Management Structure



Emergency Medical Service (EMS) Operations Flow

Taiwan's Emergency Medical Services System



Emergency Responsibility Hospitals

Built upon the **1985 Medical Network Plan**'s regional structure, these hospitals are legally designated to form the backbone of disaster response.



Advanced Tier

- Delivers comprehensive care for critical patients
- Serves as the final referral hospital



Intermediate Tier

- Manages stable trauma cases
- Treats acute stroke and coronary syndromes
- Handles high-risk pregnancy and neonatal care
- Coordinates patient transfers



General Tier

Provides 24-hour emergency services

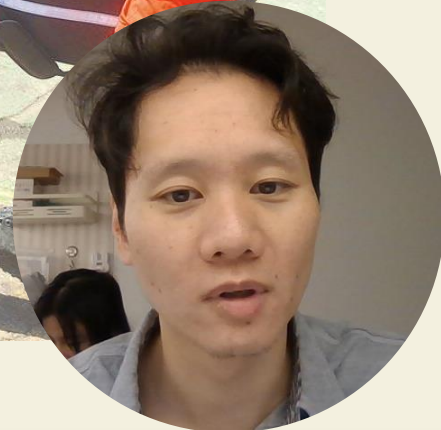


Disaster Medical Assistance Teams (DMAT)

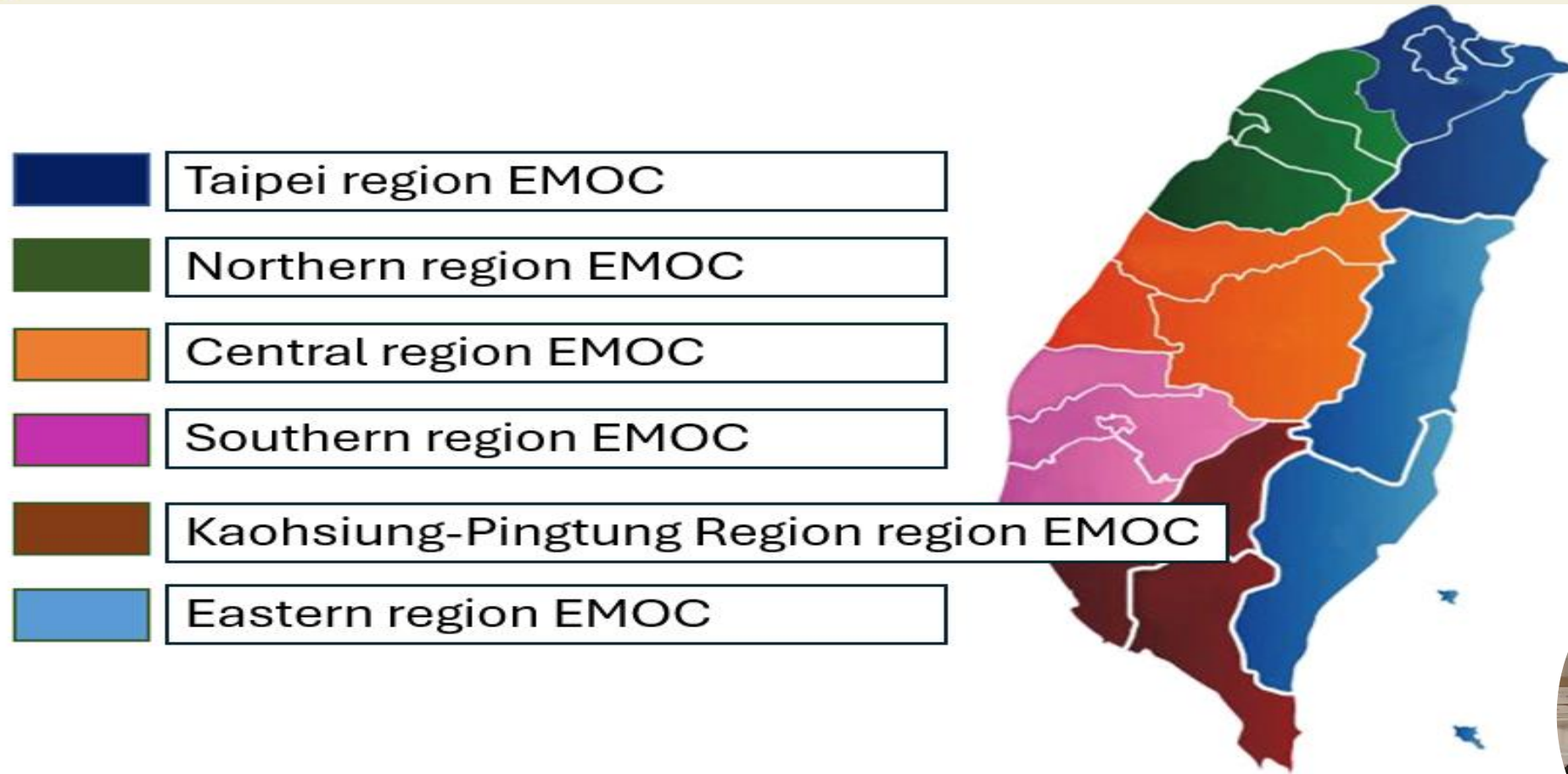
Rapid Mobilization: DMATs are specialized teams capable of deploying within hours to disaster zones.

Self-Sufficiency: Teams are equipped with tents, generators, and supplies to operate independently for 72 hours without burdening local resources.

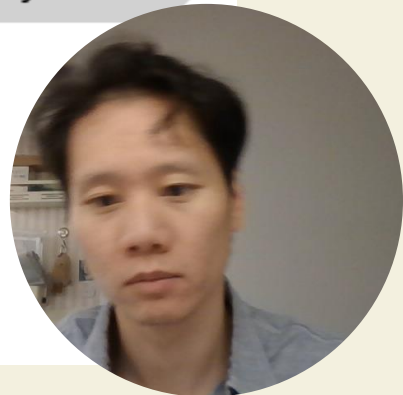
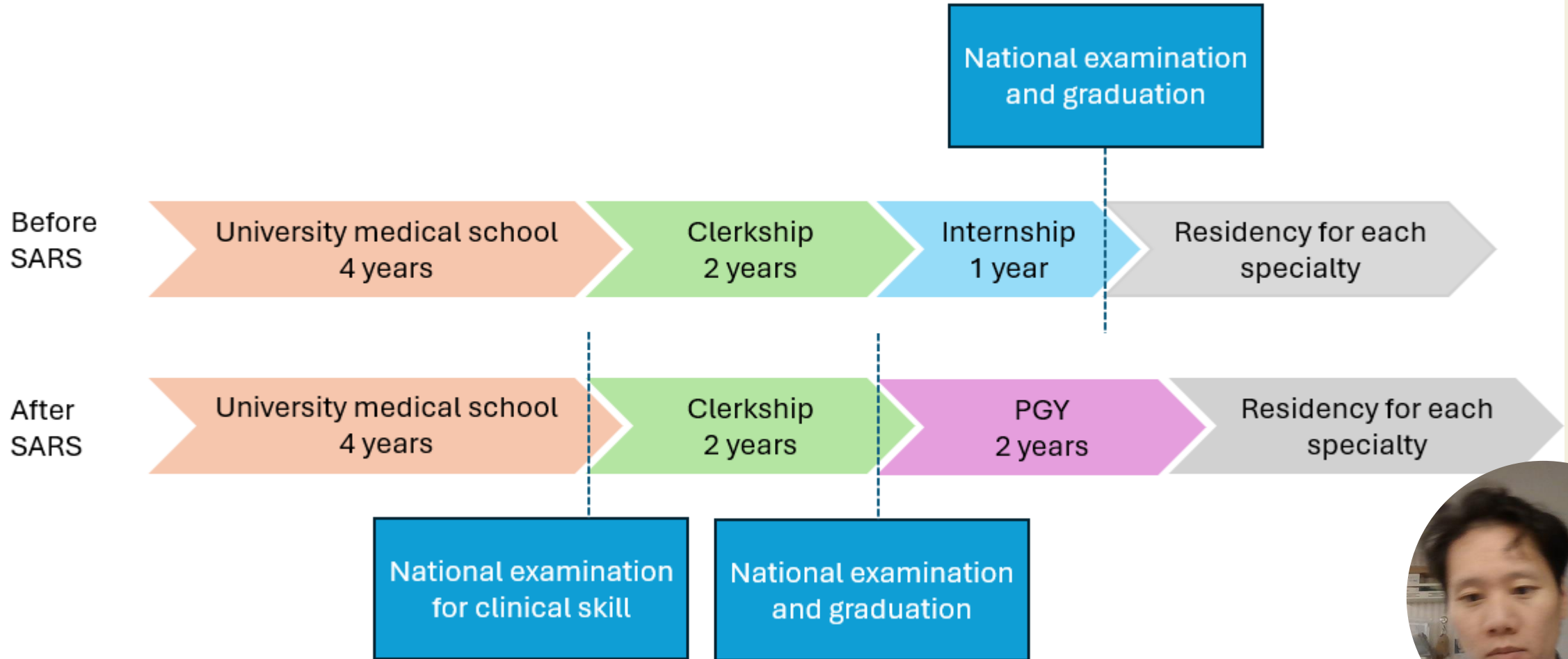
Interdisciplinary: A standard team includes Emergency Physicians, Trauma Nurses, EMTs, Pharmacists, and Logistics specialists working as a cohesive unit.



Emergency Medical Operations Center (EMOC) & Regionalization

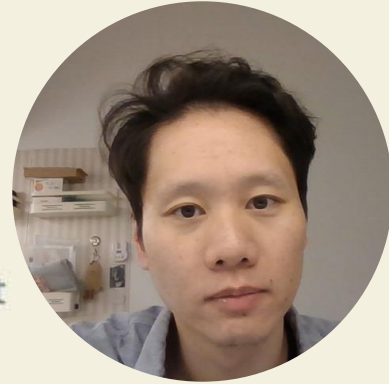


Post-SARS Medical Education Reform (2003+)



COVID-19: The Grand Stress Test

The COVID-19 pandemic served as a comprehensive "Acceptance Test," proving that the integration of **921's structural reforms** and **SARS's public health protocols** created a resilient safety net.



921 Legacy Tested

- ✓ **EOC Activation:** Seamless coordination between Central (CECC) and Local governments.
- ✓ **Hospital Network:** Effective patient diversion and isolation capacity (Negative Pressure Rooms).



SARS Legacy Tested

- ✓ **Legal Authority:** Communicable Disease Control Act enabled rapid border control & quarantine.
- ✓ **Public Compliance:** High mask usage and acceptance of contact tracing.



The "Taiwan Model"

- ✓ **Medical Surge Capacity:** System did not collapse under pressure.
- ✓ **Logistics:** Name-based mask distribution system leveraged the health insurance IT infrastructure.

2022+: The "National Resilience" Era



Whole-of-Society Resilience (Community Empowerment)

Flipping the mindset: The public transforms from passive victims into capable 'First Responders'.

- **Training:** Equip citizens with first aid and logistical skills.
- **Goal:** Community networks maintain basic operations and mutual aid in the 'golden hour'.

Critical Infrastructure Protection (Island Mode)

Ensuring hospitals can operate independently during extreme system paralysis.

- **Redundancy:** Decentralization and multiple redundancies for energy and comms.
- **Goal:** Medical institutions continue operations in 'Island Mode' even if the main grid is paralyzed.

Resilient Healthcare (Hardware, Logistics, Human)

Ensuring the medical system holds the line under extreme shocks (MOHW Initiative).

- **Hardware:** Building independently operating Backup Operating Rooms and alternative ICU/ER spaces.
- **Logistics:** Decentralized Storage of Critical Medications to address supply chain risks.
- **Human:** High-intensity training and scenario simulations for cross-specialty cooperation.

"Taiwan Can Help"

International Humanitarian Aid

Taiwan has transitioned from an aid recipient to a proactive global provider.

- **Global Outreach:** Deployment of medical teams to disasters in Nepal, Haiti, and Indonesia.
- **WHO Standards:** Pursuit of WHO Emergency Medical Team (EMT) certification to ensure global interoperability.
- **Strategic Diplomacy:** Combining medical expertise with diplomatic goodwill to strengthen global health security.



Thank You

Building a resilient future together.

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