

How Taipei Medical University Hospital (TMUH) Enhances Health Autonomy and Disaster Resilience for Rural Residents of TAIWAN Nation (Paccan/Formosa)

Leveraging AI, BI, Telehealth, and Mobile Clinics for Sustainable Healthcare

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Background & The Challenge

- ▶ **Core Context:** Over a decade of crisis management spanning COVID-19, earthquakes, mudslides, and typhoons.
- ▶ **Current Status:**
- ▶ **Remote Areas:** Covering mountainous farming villages and offshore islands (Penghu, Matsu, Kinmen).
- ▶ **Service Capacity:** 10 Mobile Clinics, exceeding 13,000 outpatient visits.
- ▶ **Pain Points:** Scarcity of rural medical resources; the urgent need to establish a resilient healthcare system.

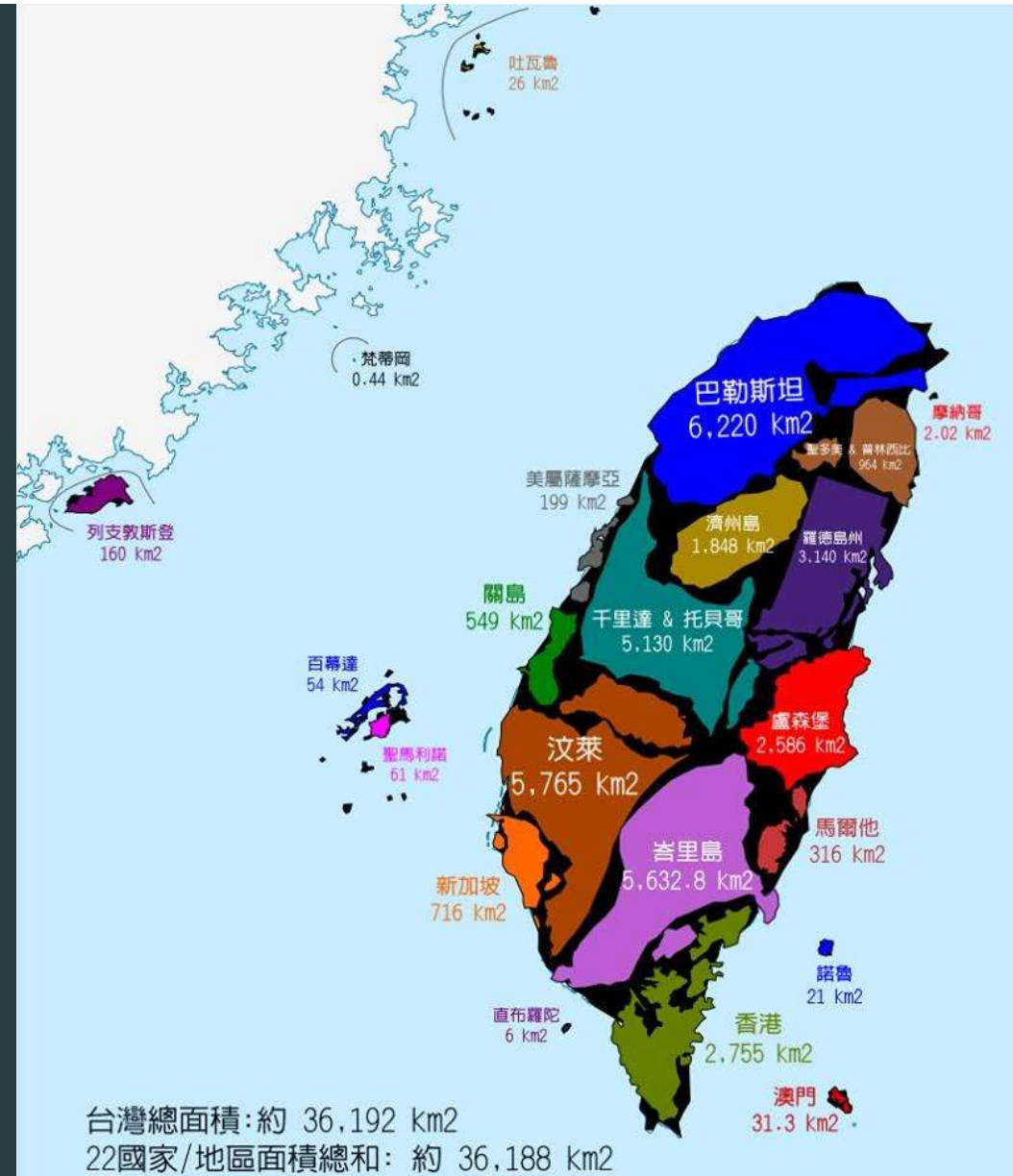


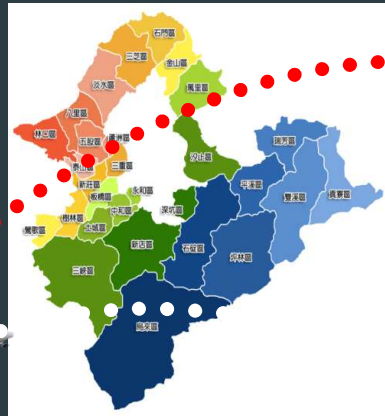
Taiwan Map

Matsu/
Lienchiang County

Kinmen County

Penghu County





TMUH, 101



TAIPEI
COUNTY



TAOYUAN
COUNTY



Penghu,
Matsu,
Kinmen

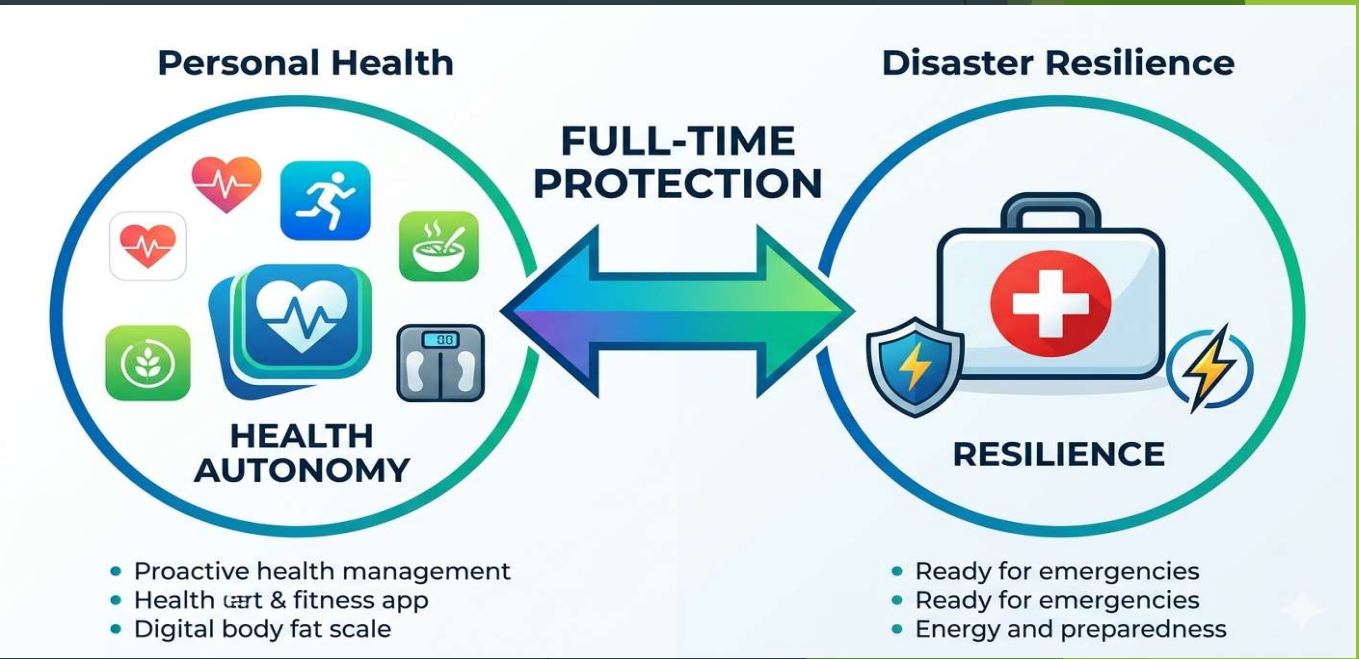
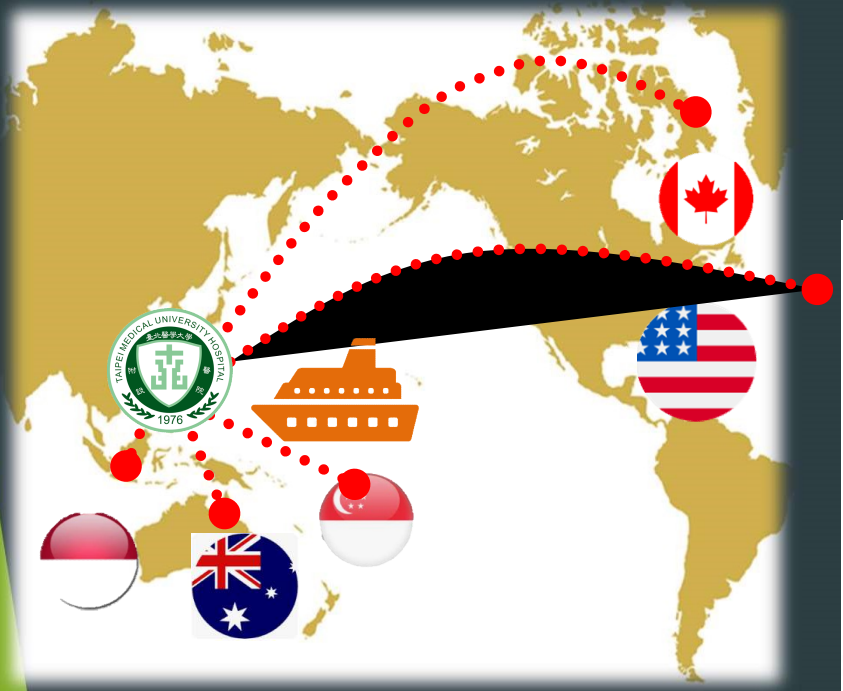


AR+
VR

AIOT
TELEHEALTH



Tele-X



Project Objectives



- ▶ **Primary Goals:**
- ▶ **Daily Empowerment: Strengthening residents' capacity for autonomous health management.**
- ▶ **Disaster Survival: Ensuring survival resilience during natural disasters or extreme scenarios (e.g., conflict).**
- ▶ **Vision: Transitioning from reactive medical care to proactive prevention and digital resilience.**



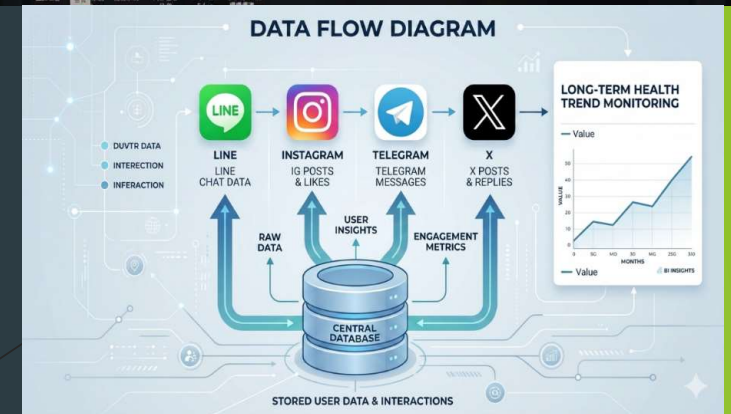
Strategy I: Public Policy & Environmental Support

- ▶ **Policy Guidance:** Establishing guidelines to reinforce public awareness of disaster prevention and health.
- ▶ **Infrastructure:**
 1. Equipping all mobile clinics with stable Wi-Fi connectivity.
 2. Distribution of home first-aid kits.
 3. Providing facilities, training, and simulated trauma care drills.



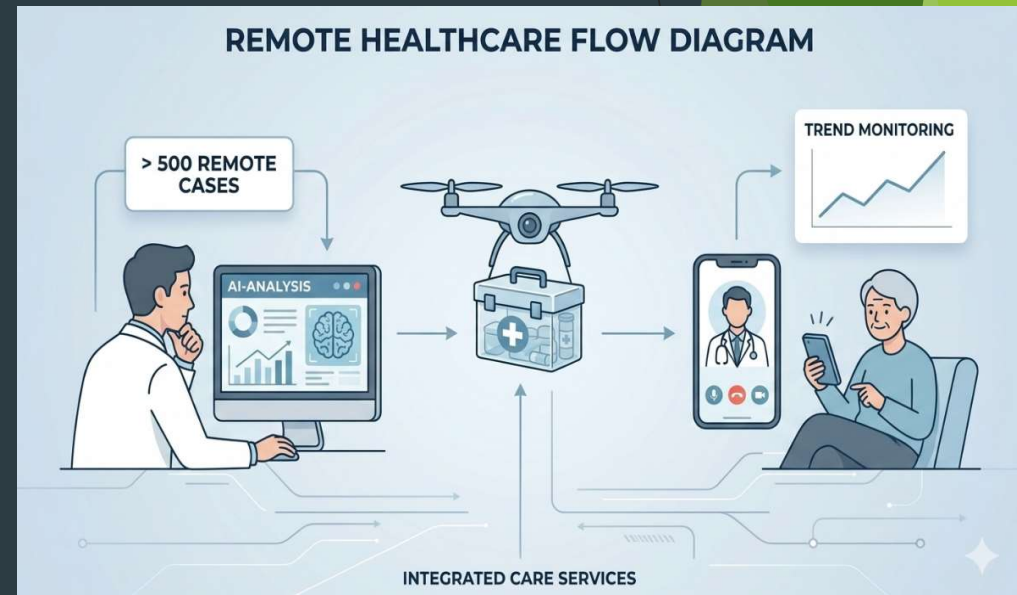
Strategy II: BI Big Data & Community Outreach (Apps)

- ▶ **Business Intelligence (BI):** Establishing a large-scale physiological database for long-term health trend tracking.
- ▶ **Multi-Platform App Integration:**
- ▶ **Utilizing Line, X, Instagram, Telegram, and MMS** for health promotion.
- ▶ **Delivering real-time health information directly to residents** to bridge geographical gaps.



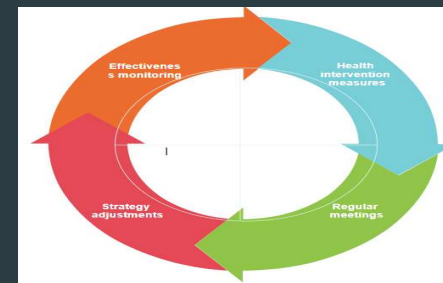
Strategy III: AI-Assisted Diagnosis & Telemedicine

- ▶ **Telehealth Services: Over 500 successful cases, including medicine delivery via Drones.**
- ▶ **AI & 24H Monitoring:**
- ▶ **Round-the-clock telemedicine services.**
- ▶ **AI-assisted diagnostics with real-time mobile app alerts for acute and critical conditions.**



Key Outcomes I: Emergency Training & Monitoring

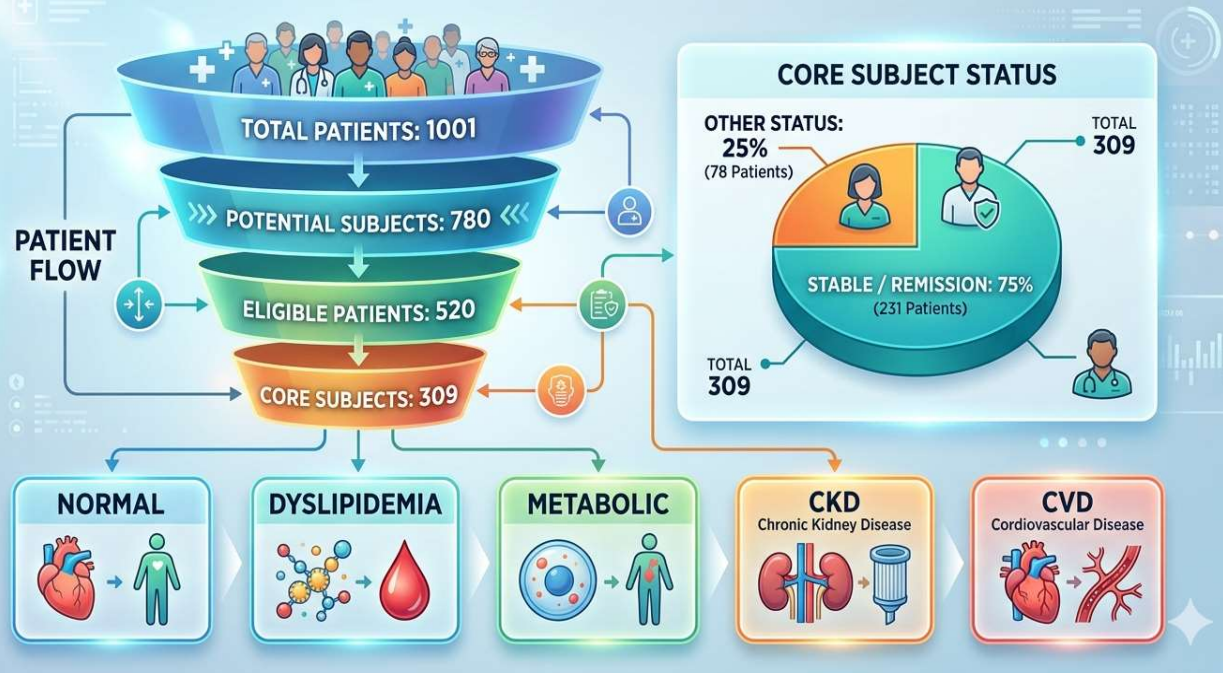
- ▶ **First Aid Empowerment:** Completed hands-on AED and CPR training for 278 elderly residents.
- ▶ **Continuous Improvement:**
- ▶ **Regular review meetings** to monitor the effectiveness of medical strategies.
- ▶ **Dynamic adjustment of service workflows** based on performance data & big data analytics.



Key OutcomesII: Chronic Disease Management Obtain actual proven efficacy



PATIENT JOURNEY & STATUS OVERVIEW



- ▶ **Scale of Management:** Tracking 1,001 chronic disease patients (categorized into: Normal, Hyperlipidemia, Metabolic Syndrome, CKD, and CVD).
- ▶ **Specific Results:**
- ▶ Among 309 key subjects, **231 (74.7%)** achieved disease remission or stabilization.
- ▶ Successful cases of reversing disease stages in participants even though CKD,CVD.

Disaster Resilience & Mental Health

- ▶ **Integration with Civil Defense: Linking healthcare networks with local defense protocols to ensure survival during war or disasters.**
- ▶ **Post-Disaster Recovery:**
 - 1.Focus on Mental Health as a priority.**
 - 2.Addressing Chronic Anxiety and PTSD in remote populations.**
 - 3.Training: Simulated trauma care to prepare residents for the first "golden hour."**



Conclusion & Lessons Learned



- ▶ **Mindset Shift:** Transitioning from passive treatment to proactive health management.
- ▶ **Integrated Value:** The synergy between healthcare and civil defense is the cornerstone of disaster resilience.
- ▶ **Future Focus:** Prioritizing mental health (e.g., PTSD and anxiety issues) during post-disaster recovery.
- ▶ **Sustainability:** Strengthening networks to secure ongoing funding from government and institutional stakeholders.



Relevance to HPH & Future Vision

- ▶ **HPH Alignment: Integrating health and social services through a mobile-first approach.**
- ▶ **Scalability: A proven, sustainable model of "Telehealth + Mobile Clinics" ready for global remote areas.**
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