



DISASTER MANAGEMENT AND EVACUATION UNDER COVID-19 IN TAIWAN

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TC21
Transdisciplinary Approach (TDA)
for Building Societal Resilience to Disasters



INTRODUCTION - SINOTECH ENG. CONSULTANTS

Research Building
Sinotech Engineering Consultants, INC
(180 employees)



2019 turnover: 24 million USD

Sinotech Engineering Consultants, LTD
(1,600 employees)



2019 turnover: 116 million USD

INTRODUCTION – SINOTECH ENG. CONSULTANTS



OUTLINE

Introduction

COVID-19 in Taiwan

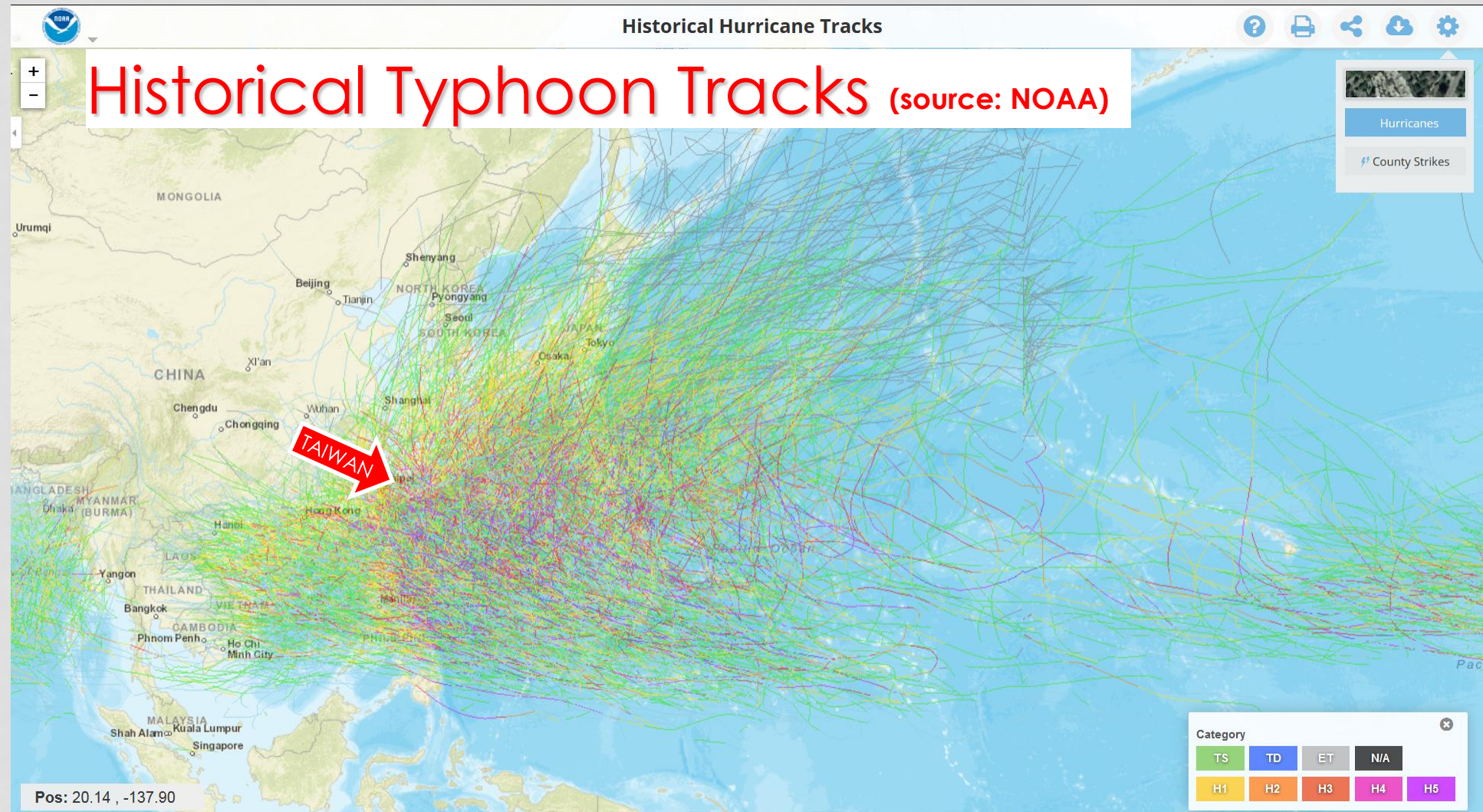
New Normal in Taiwan under COVID-19

Evacuation and Shelter Management
under COVID-19

QR-Code Contact Based Registration
System

Conclusions

INTRODUCTION



02

COVID-19 in Taiwan



COVID-19 in Taiwan



COVID-19 Dashboard

→ Home

✈ Map

🌐 World

🇹🇼 Taiwan

🏛 City

➕ Vaccination

📷 Chest xray

✉ Email

語言

COVID-19 DASHBOARD (Aug. 5, 2021)

切換至中文版

Updated on Aug-5 UTC +8



COVID-19
Map

200,193,983

Global cases
+ 628,145 ↑ 0.31%

Japan: 971,905

15,753

Taiwan cases
+ 11 ↑ 0.07%
Deaths: 791

33.94%

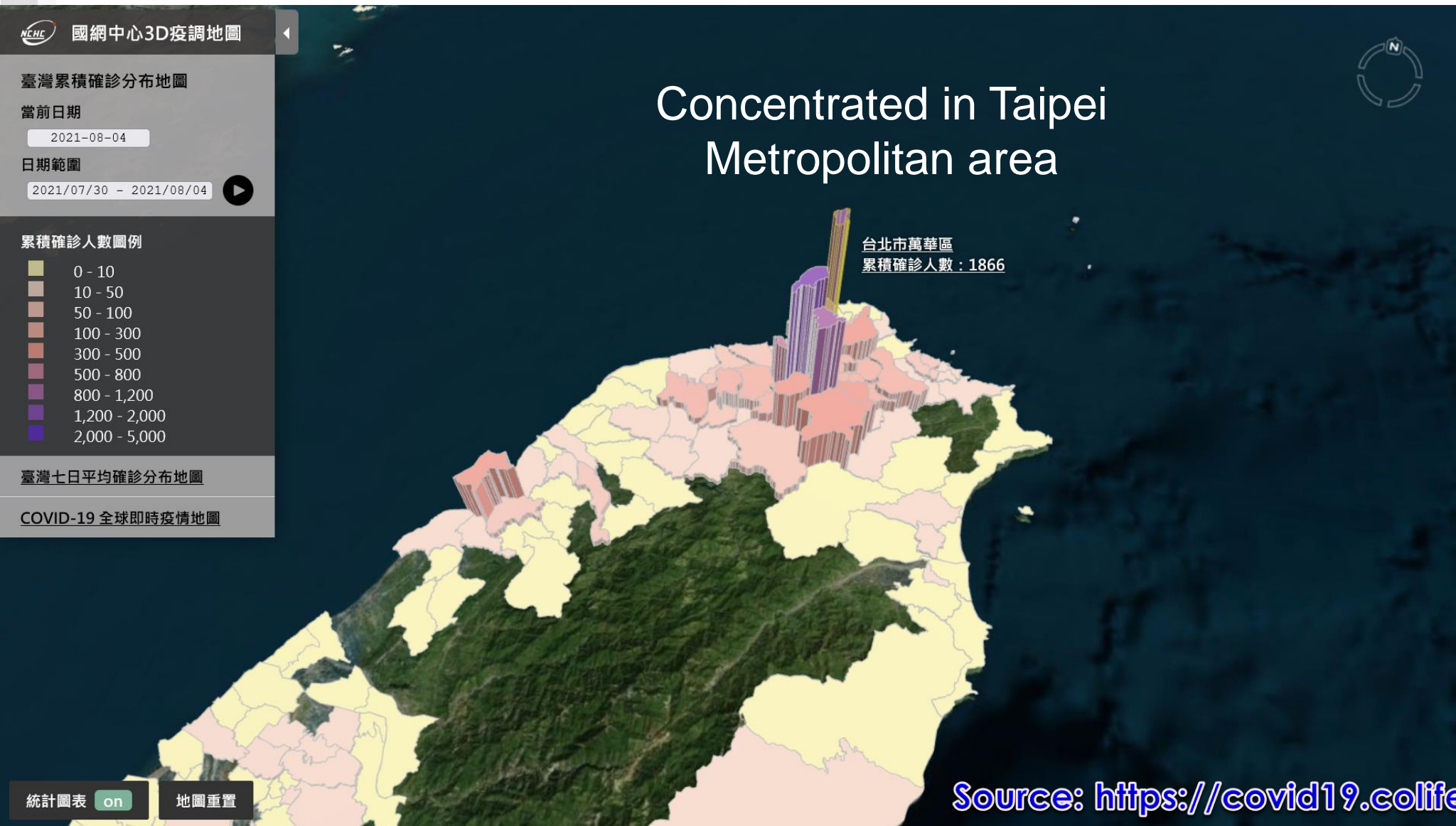
TW vaccinated
2nd 1.76%



City cases
Town level

Source: <https://covid-19.nchc.org.tw/>

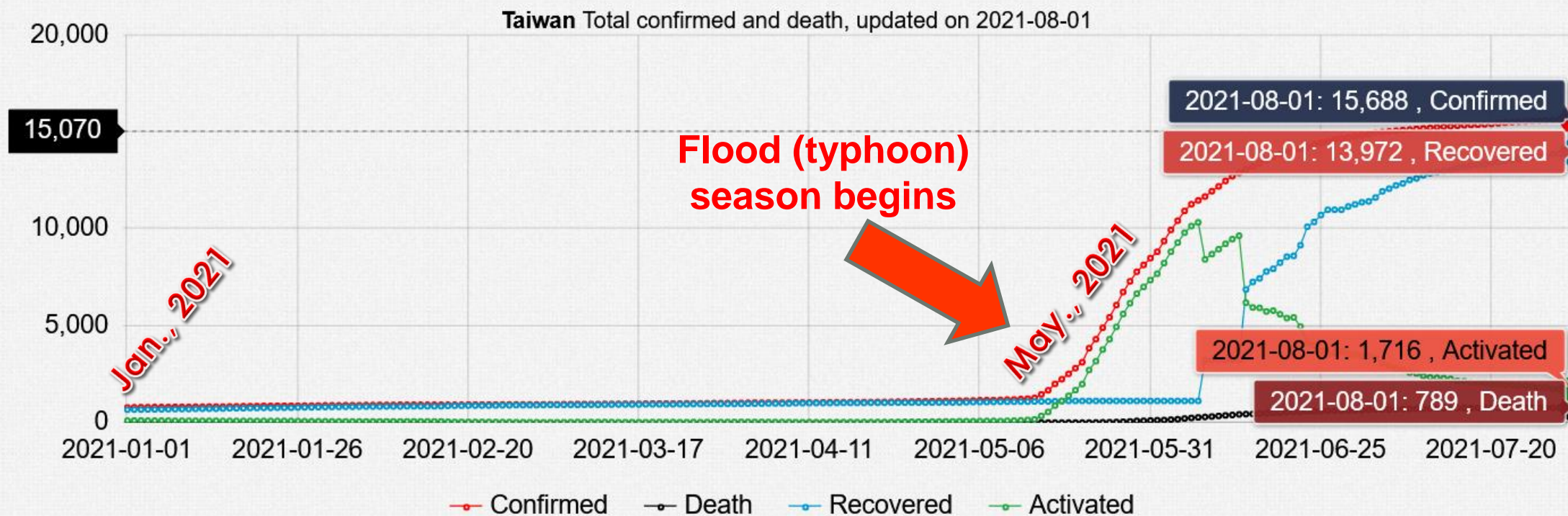
COVID-19 in Taiwan



COVID-19 in Taiwan

TAIWAN COVID-19 TOTAL CASES

[Click here for more backlog detail](#)



Source: <https://covid-19.nchc.org.tw/>

COVID-19 in Taiwan

TAIWAN COVID-19 DAILY CASES(1)

今日新增確診數 = (今日總累計數-昨日總累計數), 參考來源 Johns Hopkins CSSE

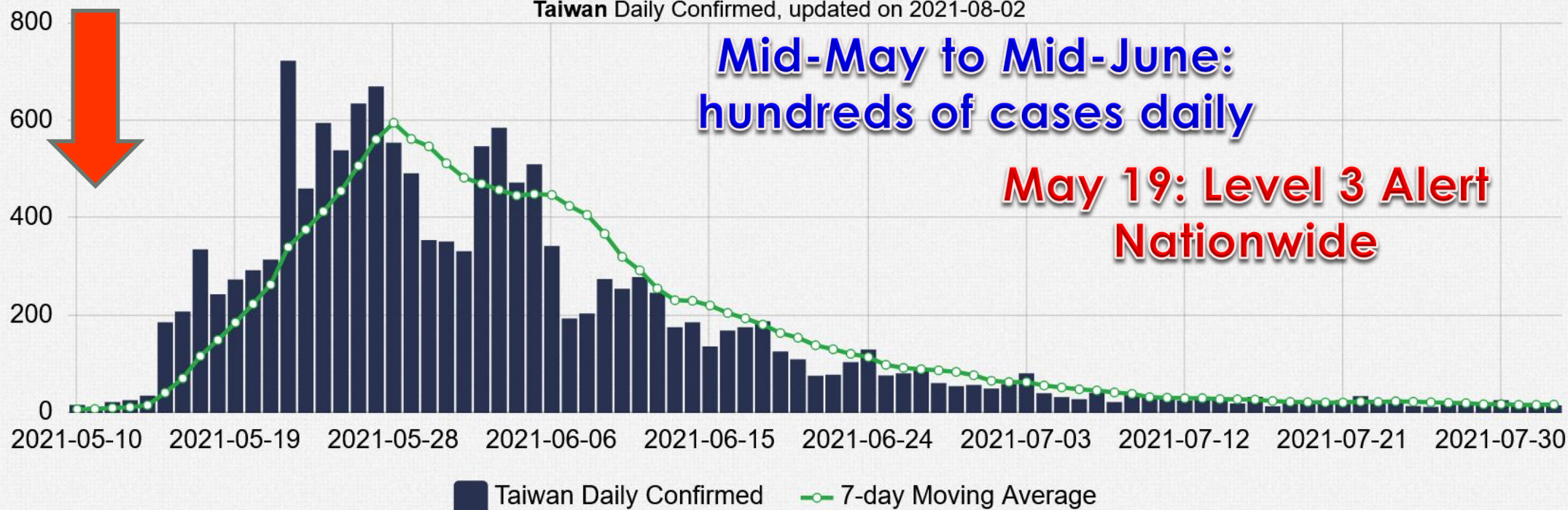
Flood (typhoon) season begins

註: CDC發佈的今日總累計 = (昨日總累計+今日新增確診數-空號), 例如CDC 6/7發佈總累計確診數為11,491人, 6/8發佈新增確診數為219人與空號16人, 故6/8總累計確診數為 $(11,491+219-16) = 11,694$ 人 ([相關說明連結](#))

Taiwan Daily Confirmed, updated on 2021-08-02

**Mid-May to Mid-June:
hundreds of cases daily**

**May 19: Level 3 Alert
Nationwide**



Source: <https://covid-19.nchc.org.tw/>

COVID-19 in Taiwan – Level 3 Alert

台湾全域「第3級」警戒 5/28まで (extended to Jul. 26)



- 各学校は休校し、オンライン授業に変更。塾や託児施設も全て閉鎖。保護者は防疫育児休暇を申請可(雇用主は給与支給を強制されない)
- 出勤は通常通りとするが、対策本部の手引きに準じること
- 外出時は常時マスクを着用
- 映画館やスポーツセンター、図書館、展示場などの娯楽施設、バーなどの特殊産業は全て閉鎖
- 屋内5人、屋外10人以上の社交活動、会食は禁止
- 飲食店は連絡先登録制を実施し、座席間には仕切り板を設置する。できない場合はテイクアウト・デリバリーサービスのみ提供する
- 不要不急の移動は控える

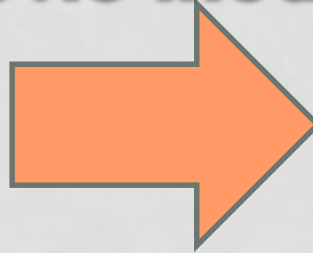
1. All school closed (study on-line)
2. Work as usual (follow instructions)
3. Wear med. mask at all times
4. Public facilities closed
5. Indoor < 5 people, outdoor <10
6. Restaurants takeout only
7. Avoid travels

COVID-19 in Taiwan – Level 3 Alert

Source: <https://tw.nextimgz.com>



Movie theater



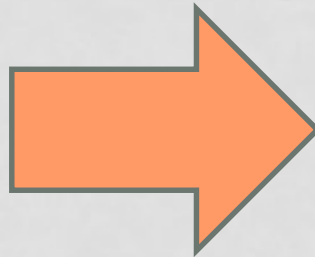
<https://cna.com.tw>



Source: Liberty Times



Metro Taipei



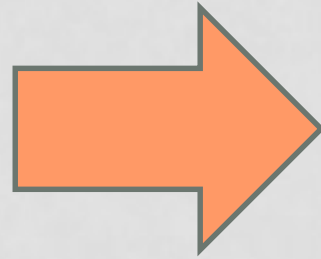
<https://cna.com.tw>



COVID-19 in Taiwan – Level 3 Alert



Night Market



中央通訊社
THE CENTRAL NEWS AGENCY

<https://cna.com.tw>

Source: IG TaipeiTravel

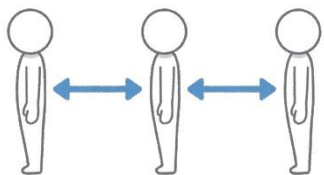
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New Normal in Taiwan under COVID-19



New Normal in Taiwan under COVID-19

各行各業一起來 防疫新生活運動



保持社交距離

室內1.5公尺以上、室外1公尺以上
座位採梅花座或增設隔板區隔



落實個人衛生防護

戴口罩、量測體溫
入口及場所內提供洗手用品或設備



出入實名(聯)制

採取實名(聯)制登記
確實執行人流管制及環境的清消

中央流行疫情指揮中心

廣告

1. **Social distance** (indoor 1.5m, outdoor 1.0m, plastic shields)

2. **Personal sanitation** (medical mask, wash hands, temperature measures)

3. **Contact based registration** (QR-Code or paper-based)

Source: Taiwan Centers for Disease Control

New Normal in Taiwan under COVID-19

Emergency Operation Center (National Level)



Source: <https://www.chinatimes.com>

Emergency Operation Center (County Level)



Source: I-Lan County Government

Emergency Operation Center (Township Level)



Source: <https://www.bcc.com.tw>

1. Social distance (indoor 1.5m, outdoor 1.0m, plastic shields)
2. Wear medical mask at all times

New Normal in Taiwan under COVID-19



1. Off-site backup commanding center
2. Command, communicate and decision making on-line

New Normal in Taiwan under COVID-19

Tribe Entrance Post



Source: Author



Source: Author



QR-Code Scan



QR-Code Scan

New Normal in Taiwan under COVID-19

Field investigation



- 1. Outdoor <10 people
- 2. Outdoor social distance > 1.0m



- 3. Wear medical mask at all times
- 4. Clean hands with 75% alcohol

New Normal in Taiwan under COVID-19

Construction Site



Source: Marven Deng



04

Evacuation and Shelter Management under COVID-19



Evacuation and Shelter Management under COVID-19

The Guideline of Evacuation for Disaster during the Pandemic Condition (issued in May, 2020)

防疫時期災害發生眾疏散撤離之應變措施

The Guideline of Refugee Shelters under COVID-19

災民臨時收容安置業務因應嚴重 (Issued in Apr., 2020)
特殊傳染性肺炎(COVID-19)工作指引

EVACUATION PLANNING

According to “the Guideline of Evacuation for Disaster during the Pandemic Condition” (issued in May, 2020)

1 Secure personal sanitation

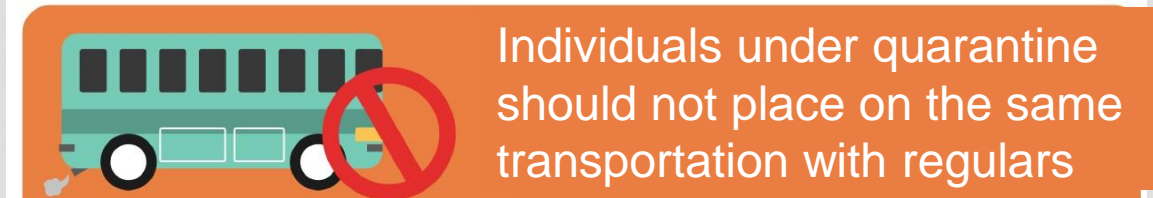


⚠ 執行人員及被撤離者，均應落實配戴口罩等防疫措施。
Crew, staff, and the evacuees should wear medical masks at all times and apply proper pandemic-safe measures

2 策略3 隔離接觸者 Quarantine the contacts



3 策略6 大眾運輸工具 感染控制 Charter Bus or Special Purpose Taxi



Evacuation under COVID-19

Evacuation



Source: udn.com

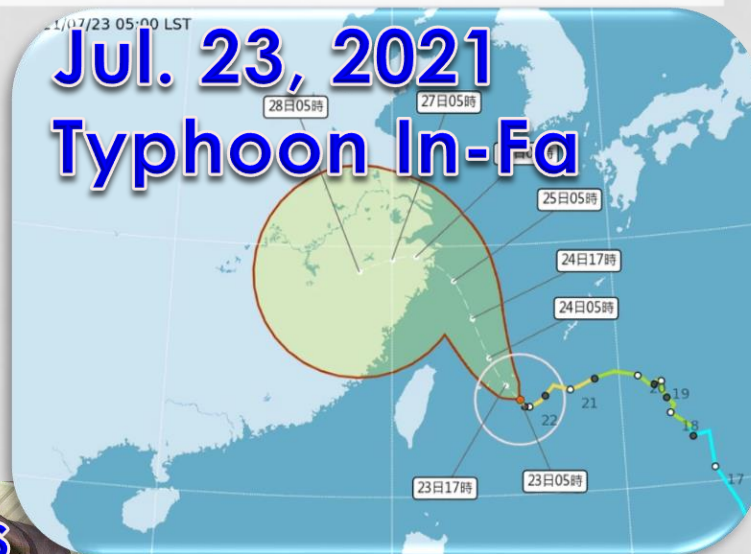


Wear medical mask at all times

警訊通知

[土石流及大規模崩塌警戒]高雄市美濃區福安里已發布土石流黃色警戒，請提高警覺。農委會水土保持局關心您

SMS Warning Message



Source: udn.com

SHELTER PLANNING UNDER THE PANDEMIC

According to “the Guideline of Refugee Shelters under COVID-19” (Issued in Apr., 2020)

Home quarantine →

Go to Shelters

Regular evacuees →

Collective quarantine facility or hotels

Priority to Hotels, Hostels

For each evacuation shelter

In door <100 persons

Facilities with greater capacity

Special evaluation

Secure proper distance

General: **1.5m** in door, **1m** out door

Dining: **1.5m** + plastic shields

SHELTER MANAGEMENT UNDER COVID-19

Shelter management



Entrance screen

Source: Taitung County Government



Extra social distance in living quarters

Source: Taitung County Government



1. Wear medical mask at all times
2. Plastic shields



Source: <https://udn.com>

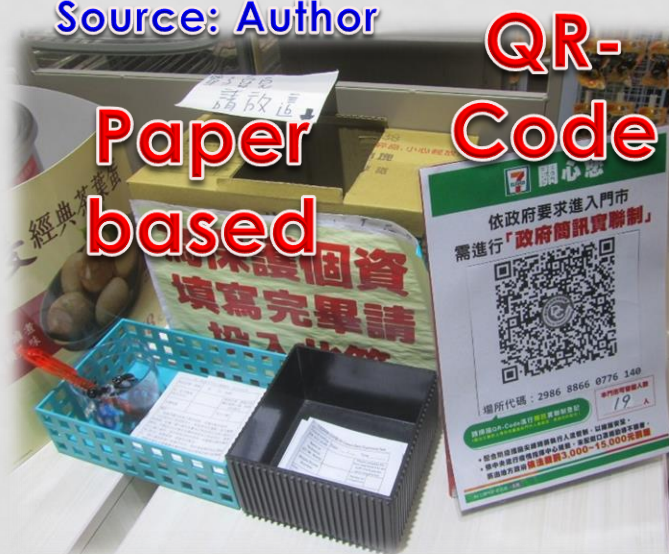
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QR-Code Contact Based Registration System (introduced in May, 2021)



QR-Code Contact Based Registration System (since May, 2021)

Source: Author



Source: Executive Yuan

- ✓ Developed by Audrey Tang
- ✓ 3 Steps in 5 Seconds
- ✓ Contact Free
- ✓ Free SMS message



Source: FB of A. Tang

QR-Code Contact Based Registration System



Source: Author



Source: Author

QR-Code Contact Based Registration System

BUS



Scan → Send the SMS

SMS contains time , location (ID), phone No.



場所代碼 : 1121 5742 8859 878

708-FZ

- 一、請使用手機掃描 QR CODE
- 二、請直接按發送簡訊(免費)
- 三、即完成實聯制登錄
- 四、請出示「手機簡訊上傳完成」畫面以供確認

1. ID of the facility

2. Bus plate number

3. Operation instruction

QR-Code Contact Based Registration System



Source: Author



Source: Author

High Speed Rail Taipei Station



06

Conclusions



CONCLUSIONS

- ▶ Covid-19 affected Taiwan dearly **since May, 2021**.
- ▶ New normal includes regulation and instructions were applied in **daily life** and also in **disaster management**.
- ▶ **More** pre-planning and management **efforts** considering COVID-19 for evacuation and shelters were required.
- ▶ New but simple IT tech (**QR-Code scan**) were introduced to monitor the flow of the crowds.



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