

# Disaster Medicine and Healthcare Resilience in Turkey

Dr. Hüseyin KOÇAK – MSc, PhD

University of Çanakkale Onsekiz Mart Faculty of Health Sciences

Department of Emergency Aid and Disaster Management



**Royal Academy  
of Engineering**



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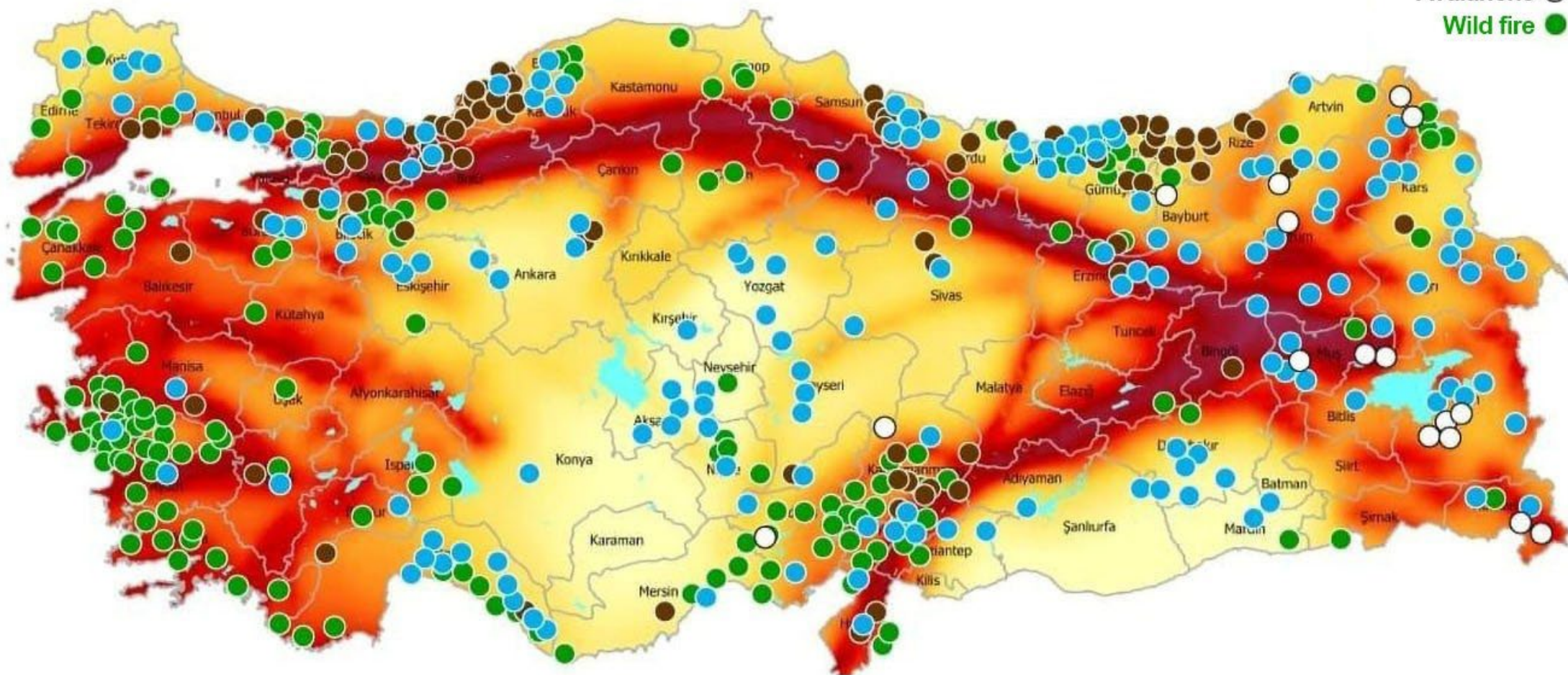
**Royal Papworth Hospital**

NHS Foundation Trust

# This Presentation

- ISMEP Project and Healthcare System Resilience and Capacity Development Implementation
- COVID-19 and Healthcare Systems Response
- Building education and training capacity in disaster medicine and emergency health services
- What is being done towards 2030 in terms of disaster medicine.

- Landslide ●
- Flood ●
- Avalanche ○
- Wild fire ●





# TURKEY MARKS 19TH ANNIVERSARY OF MARMARA QUAKE

The 7.4-magnitude earthquake hit wider Marmara region, causing massive devastation in Kocaeli, Duzce, Sakarya, Istanbul

**AUGUST 17, 1999**  
**Golcuk 03:02 / 45 seconds**

**17,480 PEOPLE DIED**



Buildings  
**COLLAPSED**



**66,441** HOUSES

**10,901** WORKPLACES

Buildings  
**DAMAGED**



**285,211** HOUSES

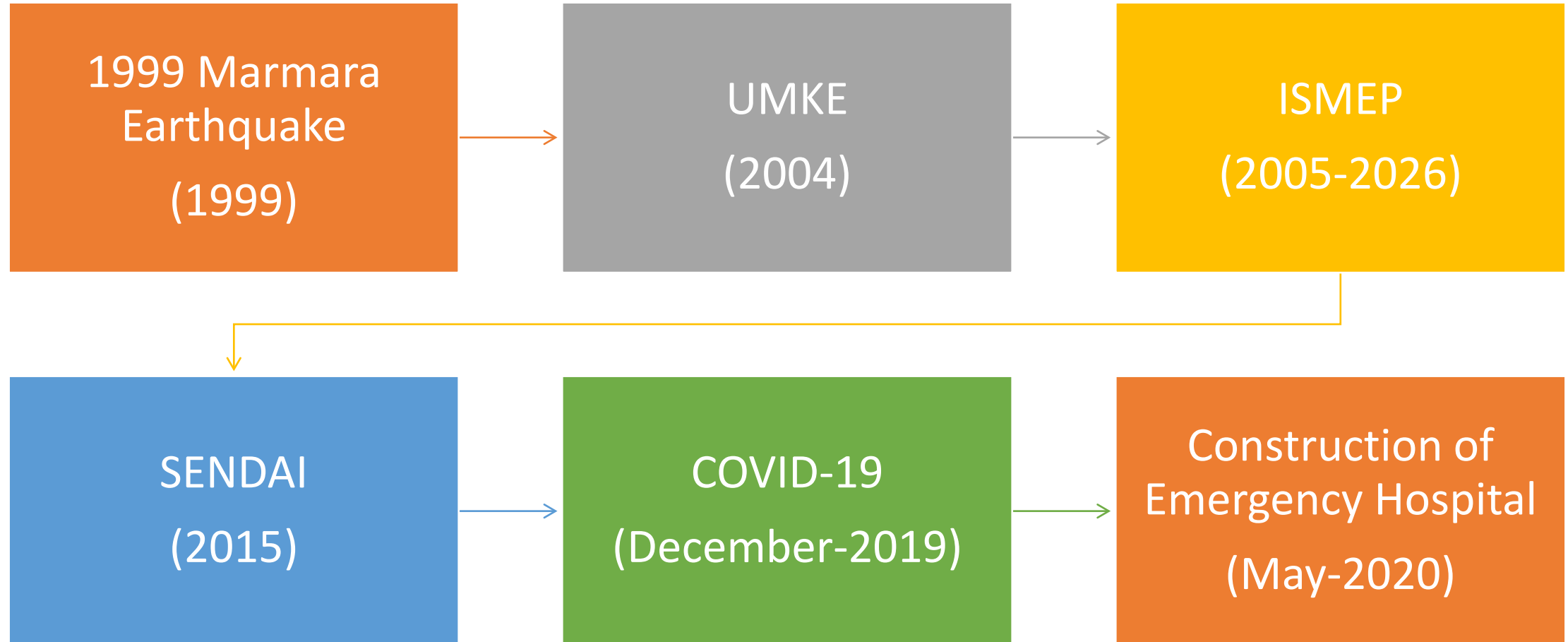
**42,902** WORKPLACES

**16 MILLION**  
**PEOPLE**  
affected by the quake

  
**43,953**  
wounded

  
**200,000**  
left homeless

# Key Points for Disaster Medicine and Healthcare Resilience in Turkey



# What is ISMEP?



## COMPONENT

- Establishment of emergency communication systems
- Establishment of emergency management information system
- Enhancement of institutional capacity of Istanbul AFAD
- Upgrading the emergency response capacity of the first responding agencies on the occurrence of a disaster
- Public awareness raising and training



## COMPONENT

- Retrofitting Works
- Reconstruction Works
- Protection of the Cultural Heritage
- Social Guidance



## COMPONENT

- Streamlining of the Procedures for Issuing Building Permits at Pilot Municipalities
- Training of Civil Engineers
- Public Awareness and Training

### Country-Region:

Turkey – Istanbul

### Project Owner:

Republic of Turkey Ministry of Treasury and Finance

### Implementing Agency:

Republic of Turkey Istanbul Governorship  
Istanbul Project Coordination Unit (IPCU)

### Project Duration:

2006 – 2025

### Fund Sources:

- World Bank
- European Investment Bank
- Council of Europe Development Bank
- Islamic Development Bank
- KfW Development Bank
- Asian Infrastructure Investment Bank
- Ecobank

### Project Budget:

2.3 Billion Euro



## Increasing Emergency Response Capacity

Vehicles and equipments were procured in line with the needs of the first responding institutions.



100

Insulated Type  
Containers  
UMKE



CBRN First  
Responder  
Vehicle  
AFAD



100

Seismic sensors  
integrated into Kandilli  
Observatory Earthquake  
Monitoring System



50

Mobile Lighting  
Towers  
UMKE



10

**4x4 Off-road  
Equipped Search and  
Rescue Vehicle**  
UMKE & AFAD



5

Communication vehicles  
specially prepared for  
disasters  
UMKE & AFAD

4



4x4 Health  
Rescue  
Vehicles  
UMKE & AFAD



660

'Houses of Mevlana'  
purchased for Turkish  
Red Crescent  
(TURKISH RED CRESCENT MARMARA  
REGION DISASTER MANAGEMENT  
DIRECTORATE)



2

Diving Team Vehicles  
POLICE, GENDARME & AFAD



2

Diesel Forklifts  
UMKE



3

Land Type  
Health  
Rescue  
Vehicles  
UMKE & AFAD



2

Survey Vehicles  
AFAD



2

4x4 Off-road  
Emergency  
Operation Vehicles  
UMKE & AFAD



2

Battery Forklifts  
UMKE



Rescue Vehicle  
with a K9 Dog  
AFAD



Materials purchased for disaster preparation in Istanbul are used in many operations in Turkey (Van Earthquake, Edirne Flooding, Istanbul Basin Express Flooding) and abroad (Northern Iraq, Iran, Libya, Japan, Albania, Nepal, Pakistan, Afghanistan, Somalia).



2

Frigofric Trailer  
UMKE



2

Sliding Canvas Trailers  
UMKE



12

Operation and  
Survey Vehicles  
AFAD



Rescue  
Equipments  
UMKE & AFAD



Decontamination Vehicle to  
use after a possible chemical,  
biological, radioactive and  
nuclear contamination  
AFAD



Blood Transfusion Vehicle  
UMKE



Emergency radio live  
broadcast vehicle  
AFAD



Medical  
Equipments  
UMKE



Water purifier:  
10 ton per day  
UMKE



Emergency Operation Vehicle  
AFAD



AKB Training  
Facility



Cold storage

With these exercises, Turkish National Medical Rescue (UMKE) and Istanbul AFAD Search and Rescue Department started to serve in accordance with international standards and received the United Nations' INSARAG certificate. Thus, it became the "first" and "only" team in our country, which is considered to have international standards for "heavy search and rescue".







| BUILDING TYPES                   | RECONSTRUCTION WORKS |           |         |           |        |           |        |           |
|----------------------------------|----------------------|-----------|---------|-----------|--------|-----------|--------|-----------|
|                                  | COMPLETED            |           | ONGOING |           | TENDER |           | TOTAL  |           |
|                                  | Campus               | Buildings | Campus  | Buildings | Campus | Buildings | Campus | Buildings |
| SCHOOLS                          | 288                  | 317       | 51      | 52        | 5      | 6         | 344    | 375       |
| HOSPITALS                        | 6                    | 6         |         |           |        |           | 6      | 6         |
| POLYCLINICS & HEALTH CARE CENTER | 2                    | 2         |         |           |        |           | 2      | 2         |
| ADMINISTRATIVE BUILDINGS         | 7                    | 11        | 2       | 2         |        |           | 9      | 13        |
| DORMITORIES                      | 1                    | 10        |         |           |        |           | 1      | 10        |
| SOCIAL SERVICE BUILDINGS         | 2                    | 6         |         |           |        |           | 2      | 6         |
| TOTAL                            | 306                  | 352       | 53      | 54        | 5      | 6         | 364    | 412       |



PROF. DR. CEMİL TAŞCIOĞLU ŞEHİR HASTANESİ



KARTAL DR. LÜTFİ KIRDAR ŞEHİR HASTANESİ



March-July 2020,  
Istanbul-Turkey

- ISMEP Project – demolished and rebuilt hospitals
- for hospitals to be earthquake resistant and for business continuity to continue no matter what.
- Prioritize Efficiency in All Aspects





**Yeşilköy Prof. Dr. Murat  
Dilmener Emergency  
Hospital – May 2020  
1008 Bed**



**Prof. Dr. Feriha ÖZ Emergency  
Hospital  
Emergency Hospital – May 2020  
1008 Bed**

# PANDEMİK İNFLUENZA ULUSAL HAZIRLIK PLANI

## Pandemic Influenza Preparation Plan – December 2019

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- Preparation Of The Ministry Pandemic Influenza Preparation And Activity Plan
- Risk Management Approach
- Risk Communication
- Continuity Of Social And Economic Life
- Duties And Responsibilities Of Institutions And Organizations In Case Of A Pandemic
- National Coordination Board
- Ministry Operations Center
- Pandemic Influenza Provincial Preparation And Activity Plan Titles
- Pandemic Influenza Provincial Preparation And Activity Plan Preparation
- Pandemic Influenza Provincial Preparation And Action Plan Checklist
- Preparation Of Pandemic Influenza Preparation And Action Plans For Second And Third Stage Health Institutions



# Wildfires – Summer 2021

## Antalya-Muğla-Aydın







Flood-Sinop 2021





Winter Storm –İstanbul 2022





# Ayancık State Hospital – August-2021

- <https://www.sondakika.com/haber/haber-son-dakika-ayancik-devlet-hastanesi-ni-su-basti-bazi-is-14324553/>





EU-MODEX-2021  
Exercises in Turkey





# Disaster Medicine - RESEARCH

- Bezmialem Vakif University Institute of Health Science Disaster Medicine PHD Program
- University of Health Science, Institute of Hamidiye Health Science, Disaster Medicine Master and Phd Program
- Karadeniz Technical University, Institute of Health Sciences, Disaster Medicine Doctorate Program
- Hacettepe University, Institute of Health Sciences, Health Management in Disasters Master Program
- Ege University, Emergency Medical Services and Disaster Management Master Program

Sendai Framework  
for Disaster Risk Reduction  
2015 - 2030



## What will be done towards 2030 ?

# Towards 2030 Disaster Medicine and Healthcare Resilience in Turkey

- Making the training and exercises of health care personnel measurable, sustainable and transformable into behaviour
- The infrastructure of health care centers and hospitals across the country will continue to be strengthened.
- Developing and disseminating disaster medicine education and training
- Expanding disaster medicine research centers and increasing international cooperation
- Establishment of disaster medicine field research teams



# References

(Information used in the presentation official institutions and articles)

## **Ministry of Health, Emergency Medical Services & UMKE (Medical Rescue)**

- <https://acilafet.saglik.gov.tr>

## **Ministry of Interior, Disaster and Emergency Management Presidency - AFAD**

- <https://www.afad.gov.tr>

## **İstanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP)**

- <https://www.ipkb.gov.tr/en/e-library/ismep/>

Kocak H, Kinik K, Caliskan C, Aciksari K. The Science of Disaster Medicine: From Response to Risk Reduction. Medeni Med J. 2021 Dec 19;36(4):333-342. doi: 10.4274/MMJ.galenos.2021.50375. PMID: 34939400; PMCID: PMC8694167.

- <https://pubmed.ncbi.nlm.nih.gov/34939400/>

Koçak H. The Role of Disaster Medicine in Disaster Management and Preparedness. Integrating Disaster Science And Management: Global Case Studies In Mitigation And Recovery, Pp.423-432, 2018

- <https://www.scopus.com/record/display.uri?eid=2-s2.0-85051624009&origin=resultslist&sort=plf-f&src=s&sid=c559103607cf1d798c792558c8766110&sot=aut&sdt=a&sl=18&s=AU-ID%2856150005200%29&relpos=3&citeCnt=3&searchTerm=>

# FIReS Webinar 1

Fostering innovative resilience of clinical services  
to major disasters

**a.r.u.** | Anglia Ruskin  
University

# Thanks

Dr. Hüseyin KOÇAK - MSc, PhD

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University of Çanakkale Onsekiz Mart Faculty of Health Sciences

Department of Emergency Aid and Disaster Management

E-mail: drhuseyinkocakayay@gmail.com

LinkedIn: <https://www.linkedin.com/in/dr-huseyin-koçak-m-sc-phd-dm-a9636a51/>

Cv: <https://avesis.comu.edu.tr/huseyinkocak>

ResearchGate: <https://www.researchgate.net/profile/Huseyin-Kocak-3>



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