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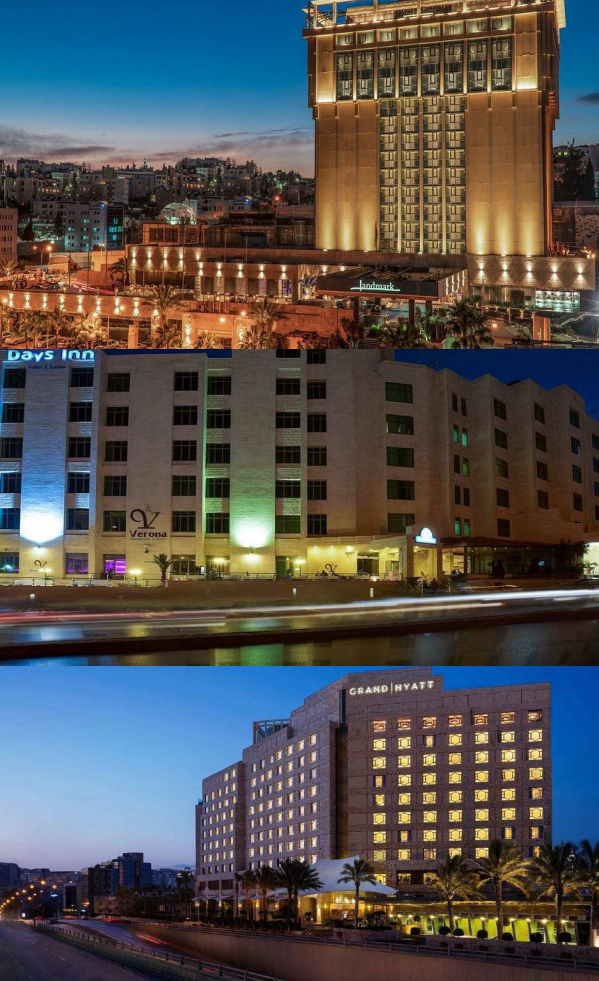
# Counter Terrorism Medicine: Emerging Subspecialty

Fadi Issa, MD, MScDM, JBEM

Director of Education

BIDMC Fellowship in Disaster Medicine

Department of Emergency Medicine



## Wednesday November 9, 2005 20:52

- Three simultaneous coordinated bomb attacks  
in three hotels in the capital Amman
- Four attackers: 3 men and 1 woman
- Explosive belt denoted in 3 different sites
- Claimed by Al-Qaida – Iraqi terrorist group





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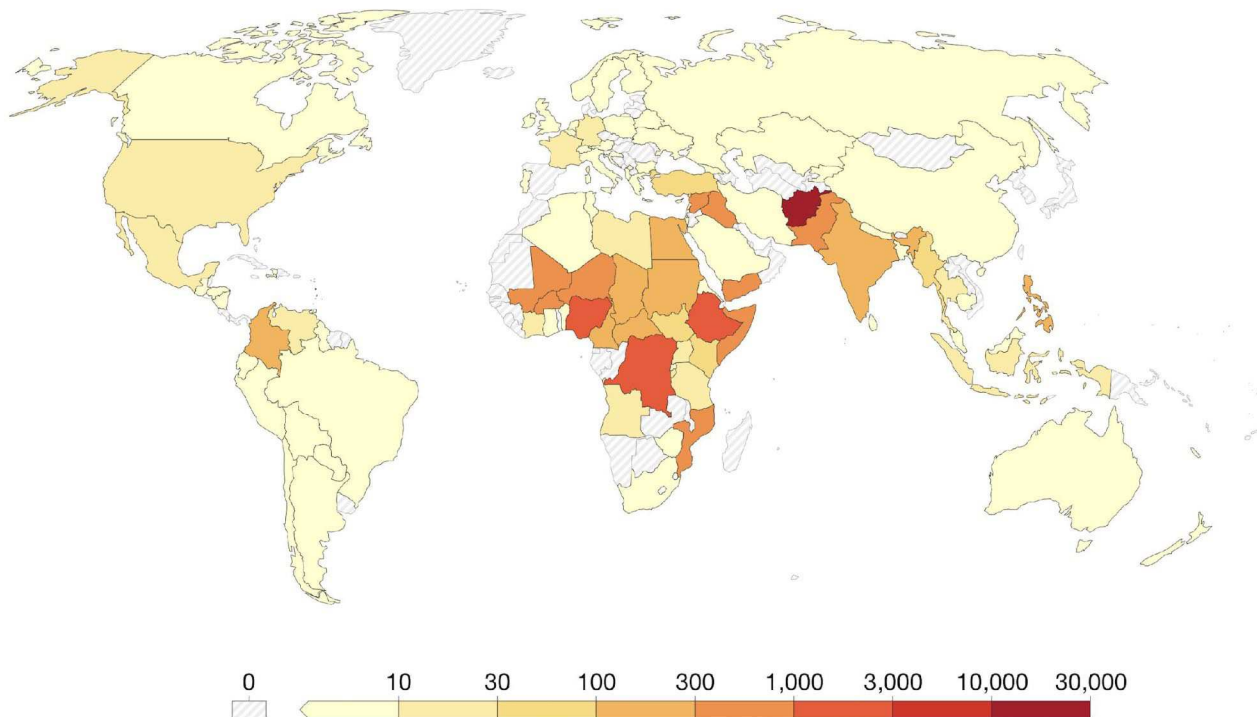
Place	Deaths	Injured
Radisson SAS blast	36	N/A
Grand Hyatt blast	9	N/A
Days Inn blast	3	N/A
In hospitals	12	N/A
<b>Total</b>	<b>60*</b>	<b>115</b>
*Excludes the 3 suicide bombers		

Country	Number
United States	4
Syria	2
Saudi Arabia	1
Palestine	5
Jordan	36
Israel	2
Iraq	6
Indonesia	1
China	3
Bahrain	2



# Deaths from terrorism, 2020

Confirmed deaths, including all victims and attackers who died as a result of the incident.



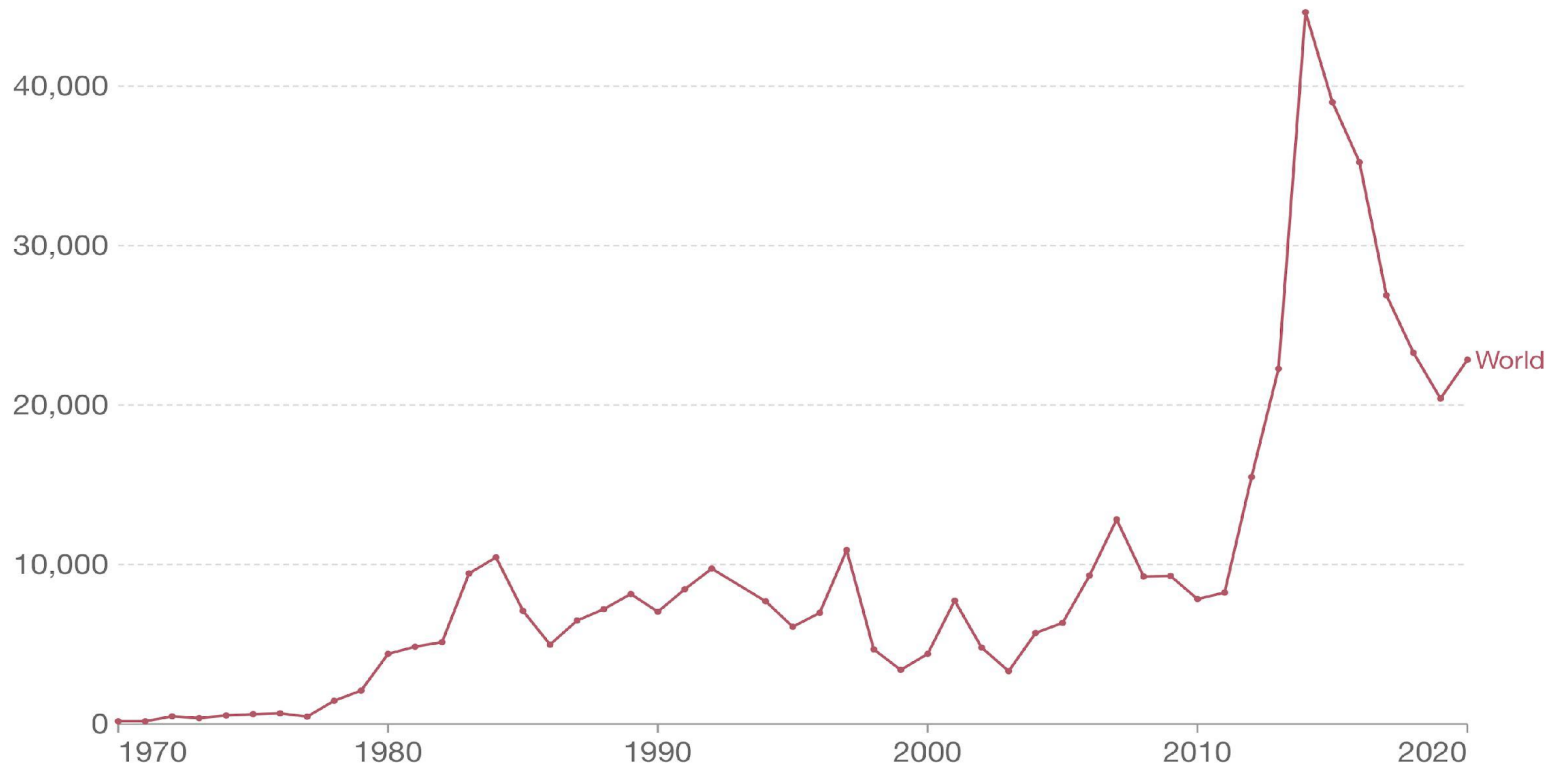
Source: Global Terrorism Database (2022)

[OurWorldInData.org/terrorism](https://OurWorldInData.org/terrorism) • CC BY



# Deaths from terrorism, 1970 to 2020

Confirmed deaths, including all victims and attackers who died as a result of the incident.

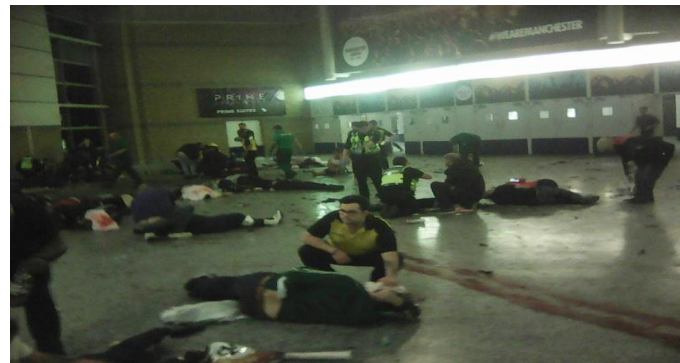


Source: Global Terrorism Database (2022)

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# Complex Multi-Modal Attacks





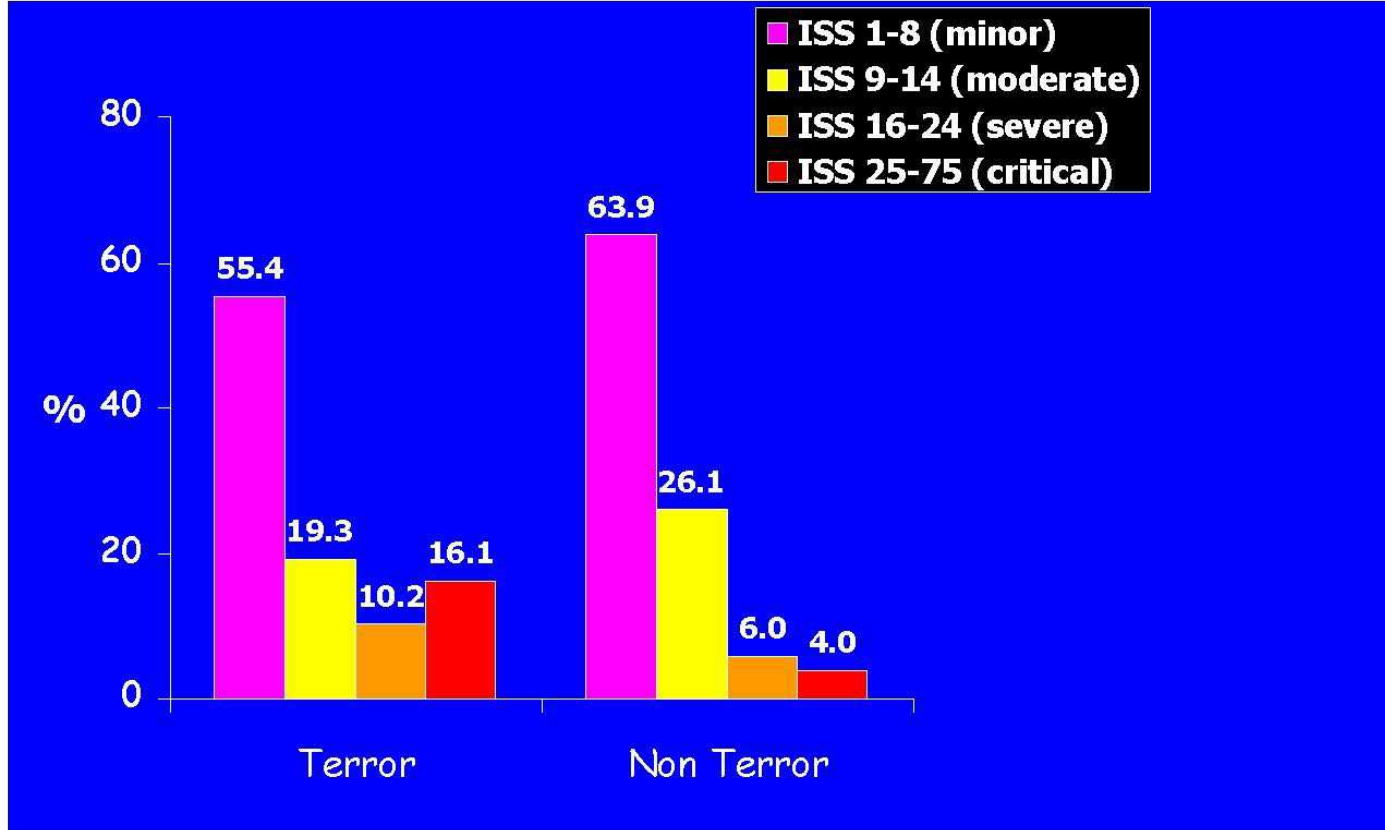
# Injury patterns and severity:

- Blast injuries
- Chemical attacks
- Crush injuries

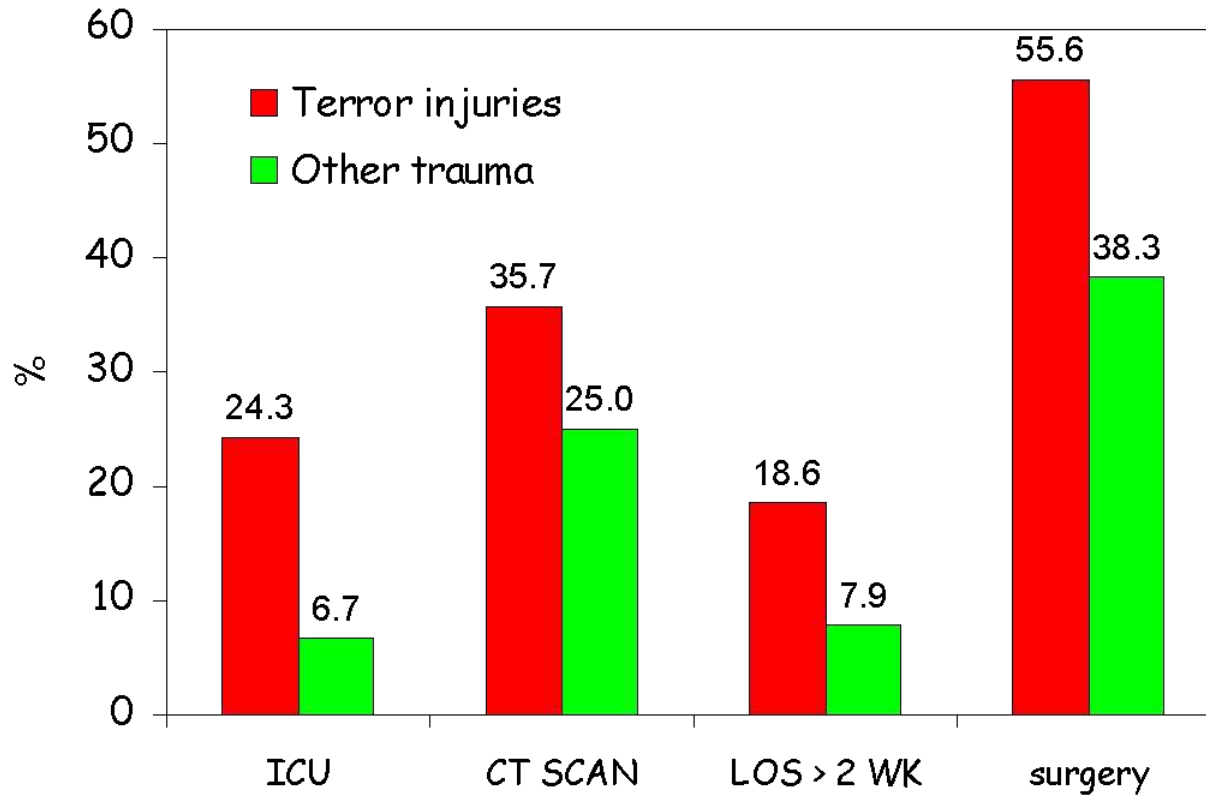




# Terror injuries have more severe injuries

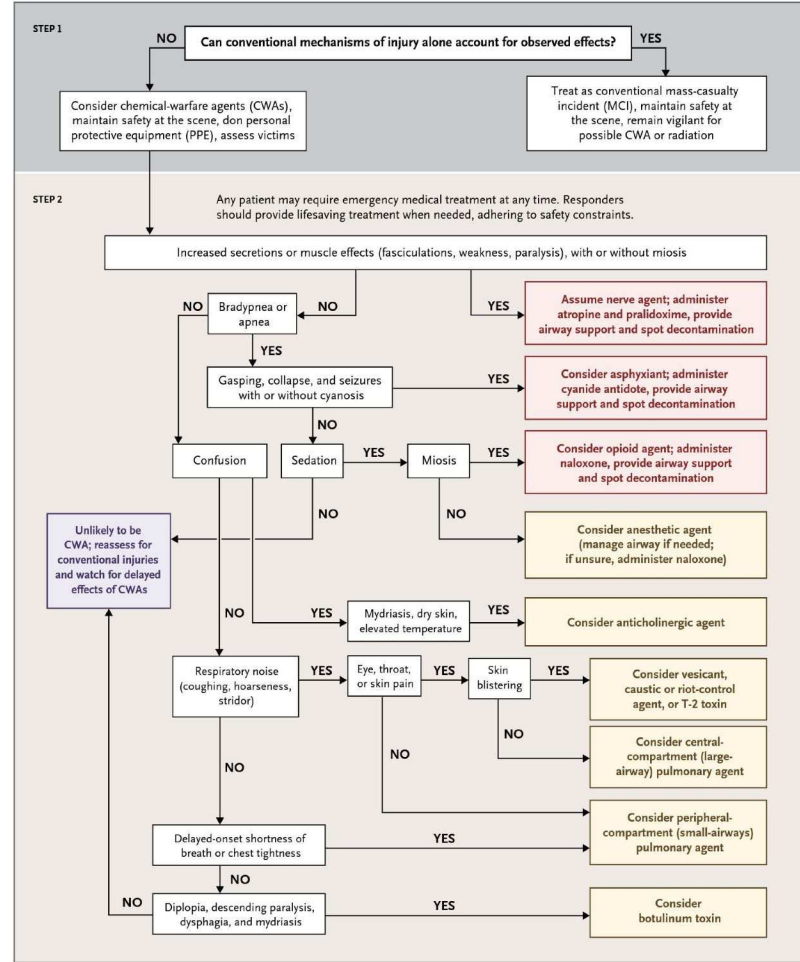


# Hospital Resources Utilization



# Toxidrome Recognition in Chemical-Weapons Attacks

Gregory R. Ciottone, M.D.



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# Counter-Terrorism Medicine: Creating a Medical Initiative Mandated by Escalating Asymmetric Attacks

Michael Court, MBChB, MSc, MRCGP;<sup>1,2</sup>  Brydie Edwards, MBBS, FACEM;<sup>1</sup> Fadi Issa, MD, MSc;<sup>1</sup> Amalia Voskanyan;<sup>1</sup> Gregory Ciottone, MD, FACEP<sup>1,3</sup>





# Education and Research

## Didactic and Hands-on training:

1. Simulation-based training
2. Scenario-based training
3. Lectures and seminars
4. Field training
5. Online learning

# WADEM SIG Group



## COUNTER-TERRORISM MEDICINE

The Counter-Terrorism Medicine Special Interest Group (CTM-SIG) enables WADEM members with an interest in this new area to find a place to exchange ideas, share experiences, and collaborate on research. The CTM-SIG strives to be on the cutting edge of this ever-changing new field and set the standard for global mitigation, preparedness, and response to asymmetric terrorist attacks.



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# WADEM Congress on Disaster and Emergency Medicine 2023



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# **WADEM 2023**

## **Latest developments in Counter Terrorism Medicine**

**Beth Israel Deaconess Medical Center  
Harvard Medical School**

**2023**

# Global Terrorism Index 2022 report

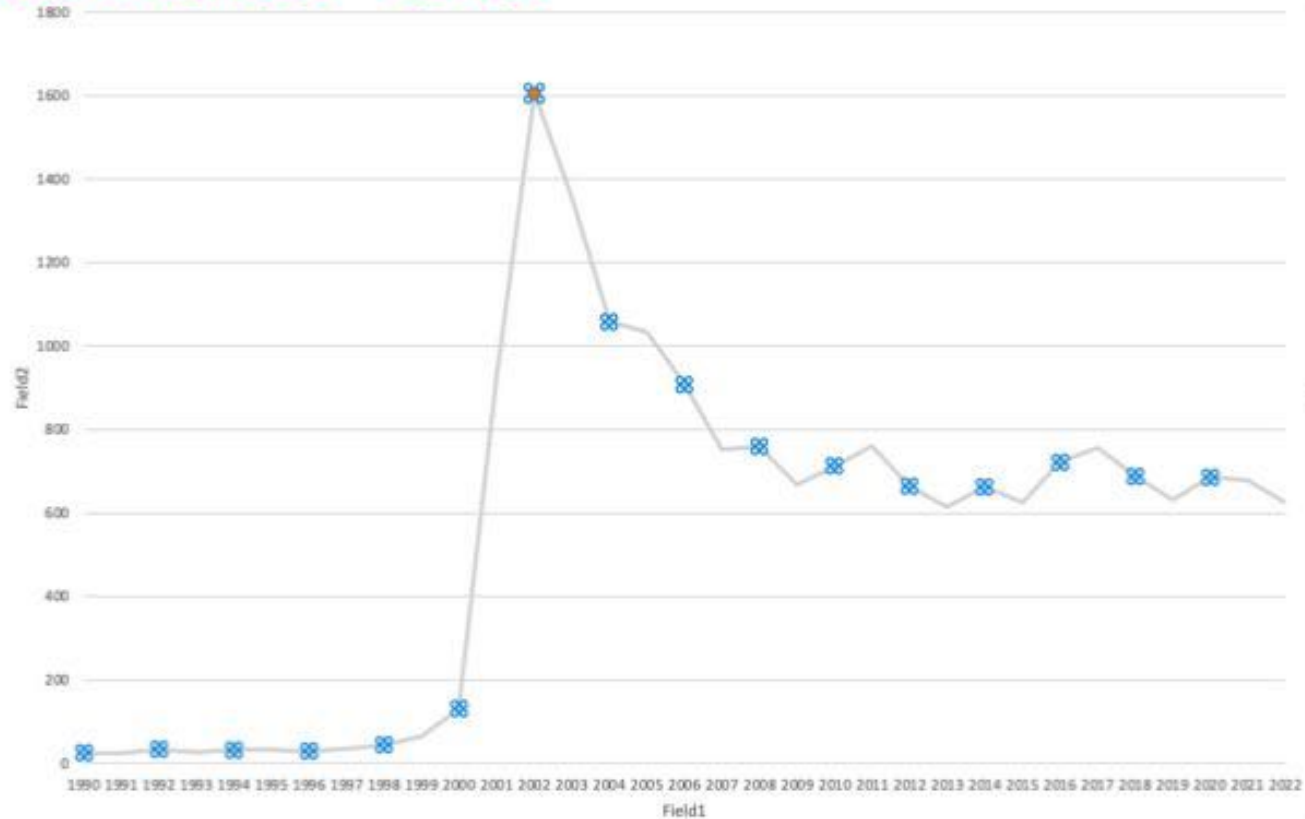
- Sub-Saharan Africa: 48% of global terrorism deaths.
- 119 countries recorded no deaths, the best result since 2007.
- Terrorist activity concentrated in South Asia and sub-Saharan Africa with both regions having recorded more terrorism deaths than MENA since 2018.



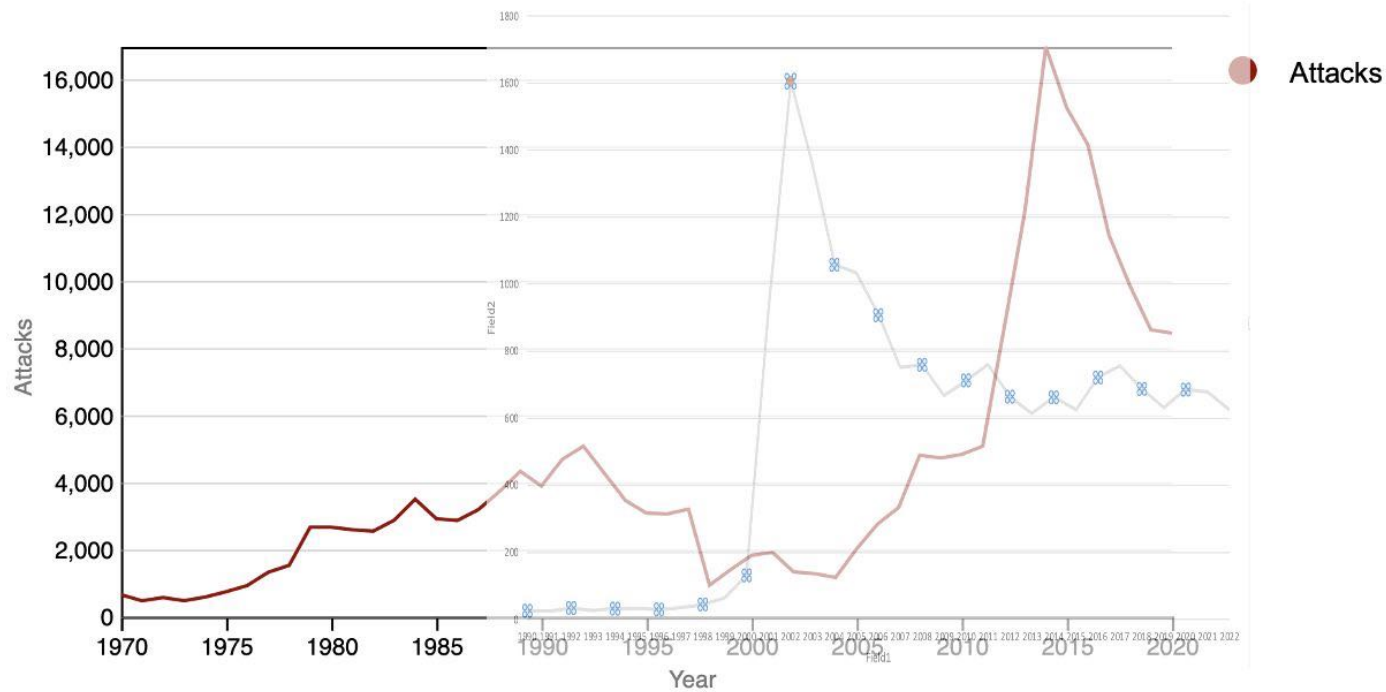
# Key Trends in Global Terrorism Index 2022 report

- In the West, politically motivated attacks overtook religious attacks, which declined by 82%. There were five times more political attacks than religious attacks.
- Terrorists are using more advanced technologies including drones, GPS systems and encrypted messaging services.

# PubMed Trends: Terror

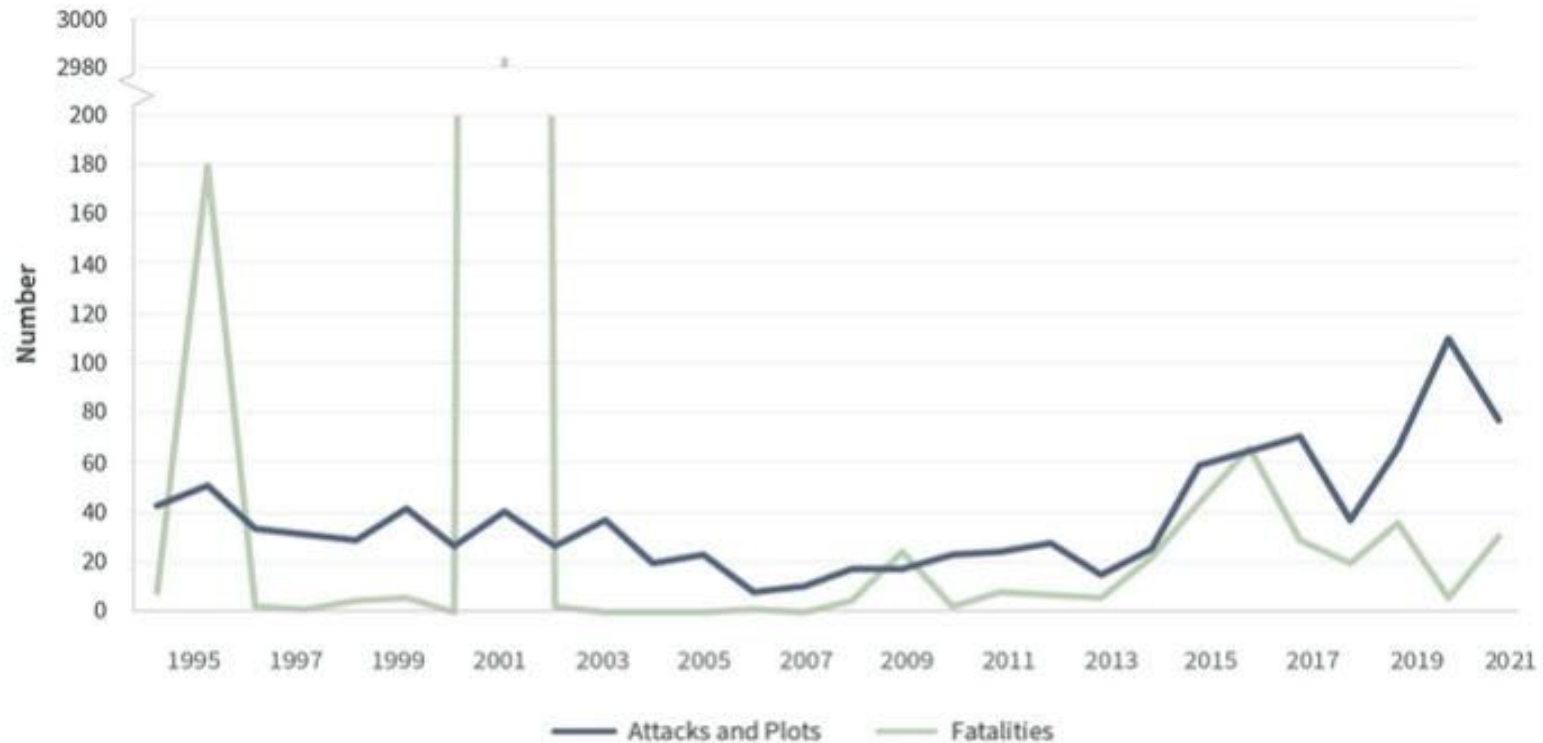


# Pubmed and Terror Events





**Figure 3: U.S. Terrorist Attacks and Plots and Fatalities, 1994–2021**



Source: Data compiled by CSIS Transnational Threats Project.

Note: Fatality data exclude perpetrators. Data from 1995 include the Oklahoma City bombing, in which 168 victims died. Data from 2001 include the 9/11 attacks, in which 2,977 victims died.

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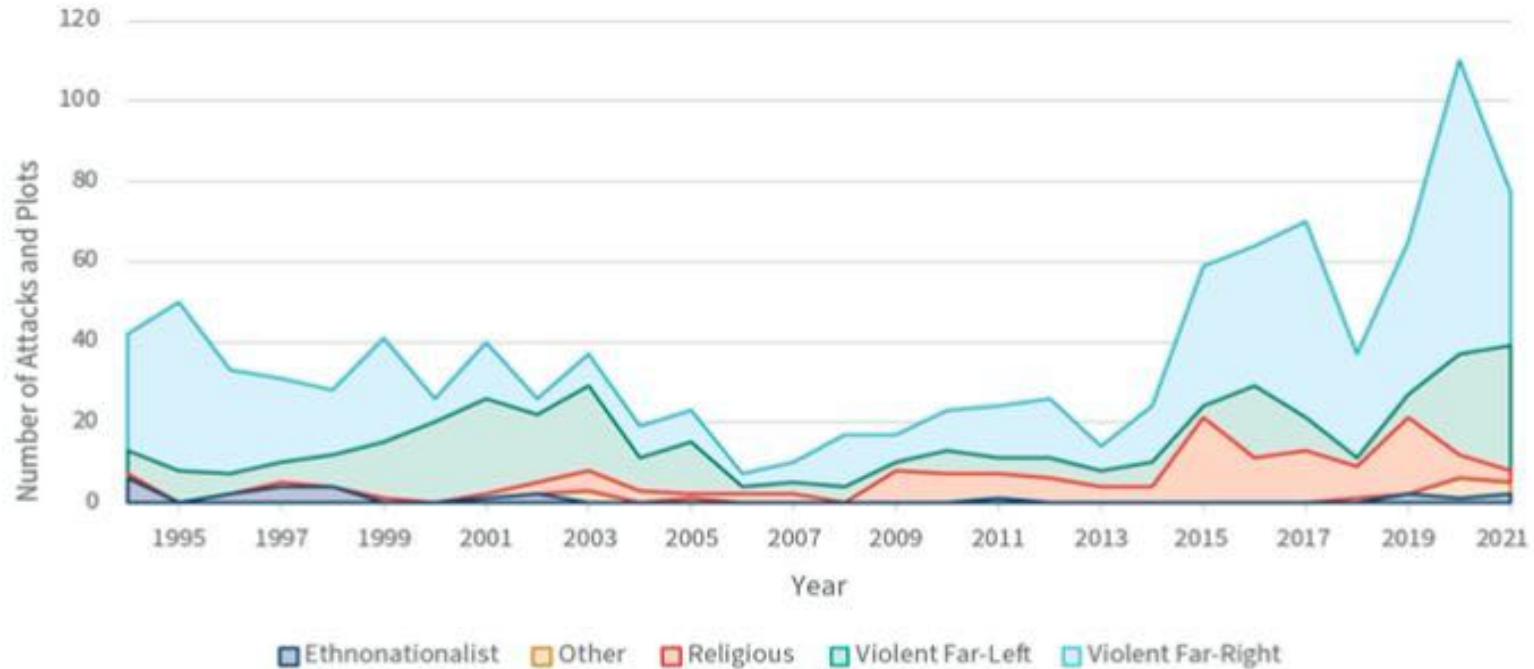


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**Figure 5: U.S. Terrorist Attacks and Plots by Perpetrator Orientation, 1994–2021**



Source: Data compiled by CSIS Transnational Threats Project.

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# Latest development in CTM

- Homegrown terror
- Potentially high level of expertise training
- Exploit healthcare vulnerabilities





## Program in Counter-Terrorism Medicine



# Tactical Emergency Casualty Care



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Certificate

# Specialist Certificate in Disaster and Terror Medicine

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**WADEM 2023**

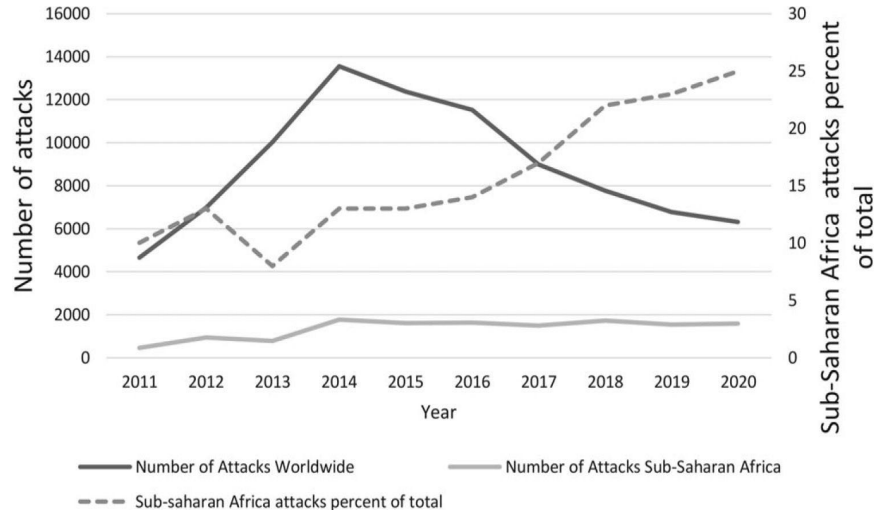
# **The Future of Counter Terrorism Medicine**

March 6, 2023  
Ryan Hata, MD



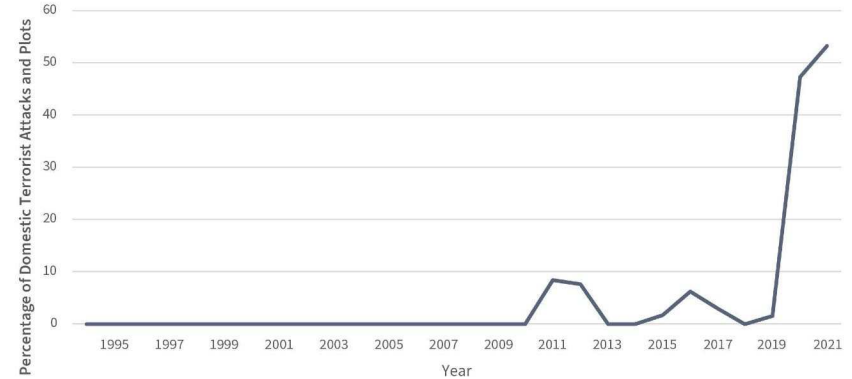
# Regions and Motivations

Number of attacks in Sub-Saharan Africa  
(Percent of worldwide total)



Percentage of U.S. terrorist attacks  
and plots related to demonstrations 1994-2021

**Figure 1: Percentage of U.S. Terrorist Attacks and Plots Related to Demonstrations, 1994–2021**



Source: Data compiled by CSIS Transnational Threats Project.

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# Technology: Internet and the Dark Web

- Access to information
- Rapid expansion of knowledge
- Ease of access to materials



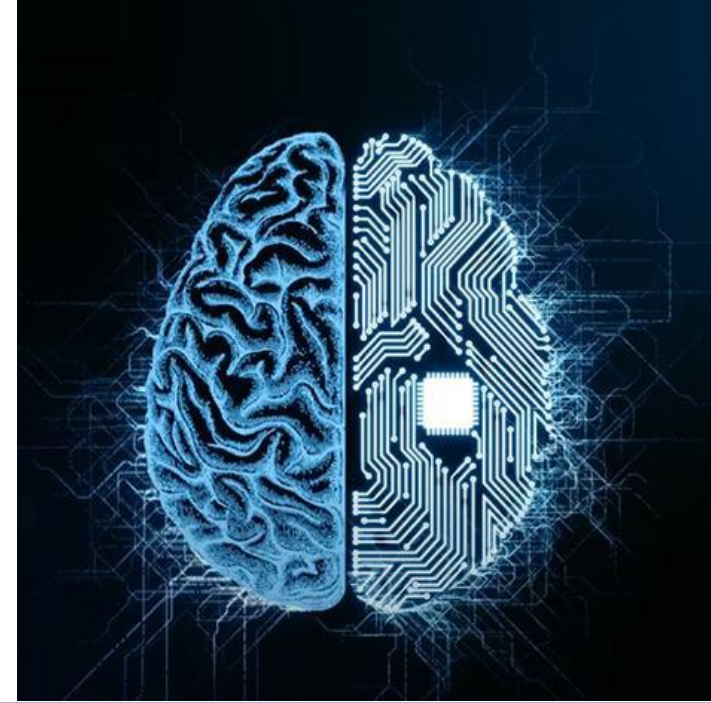
# Technology: Drones

- Novel delivery systems
- Anonymity and precision
- Swarm technology



# Technology: AI and NLP

- Enhancing cyber capabilities
- Enabling physical attacks
- Providing financial means
- Spreading propaganda and disinformation



UN Office of counter terrorism and UN Interregional crime and justice research institute 2021 report: Algorithms and Terrorism: The malicious use of artificial intelligence for terrorist purposes.



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# Cybersecurity

- Disable Systems
- Steal Information
- Alter Data
- Compromise Devices



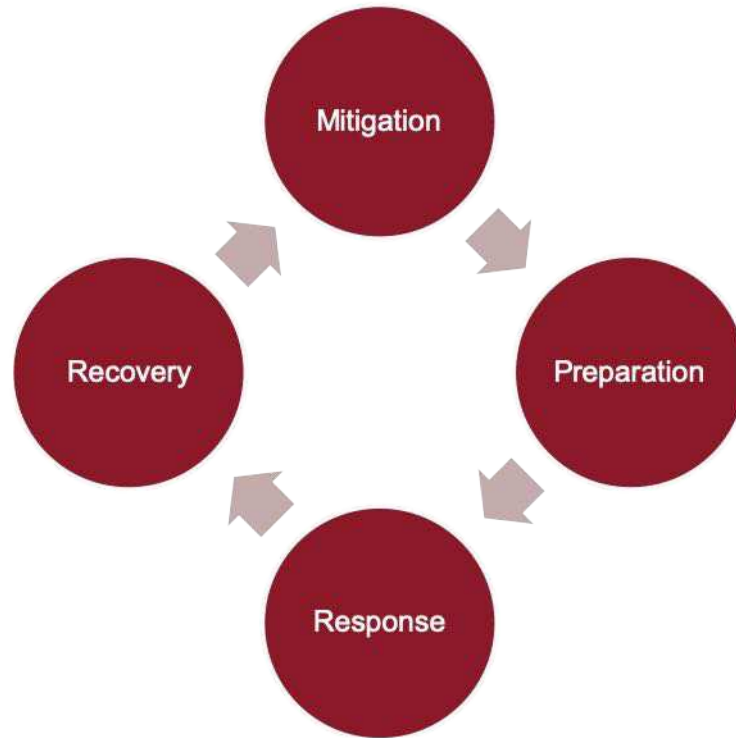
# Healthcare Cyberthreats: Who and Why?

- External Threats (61%)
- Internal Threats (39%)
- Financial (95%)
- Espionage (4%)
- Convenience (1%)
- Grudge (1%)

Data Breach Investigations Report (DBIR) 2022. Verizon. Published 2022.



# Cyber-disaster Medicine



Dameff, C, et. al. Cyber disaster medicine: a new frontier for emergency medicine. *Annals of Emergency Medicine*. Published January 17, 2020



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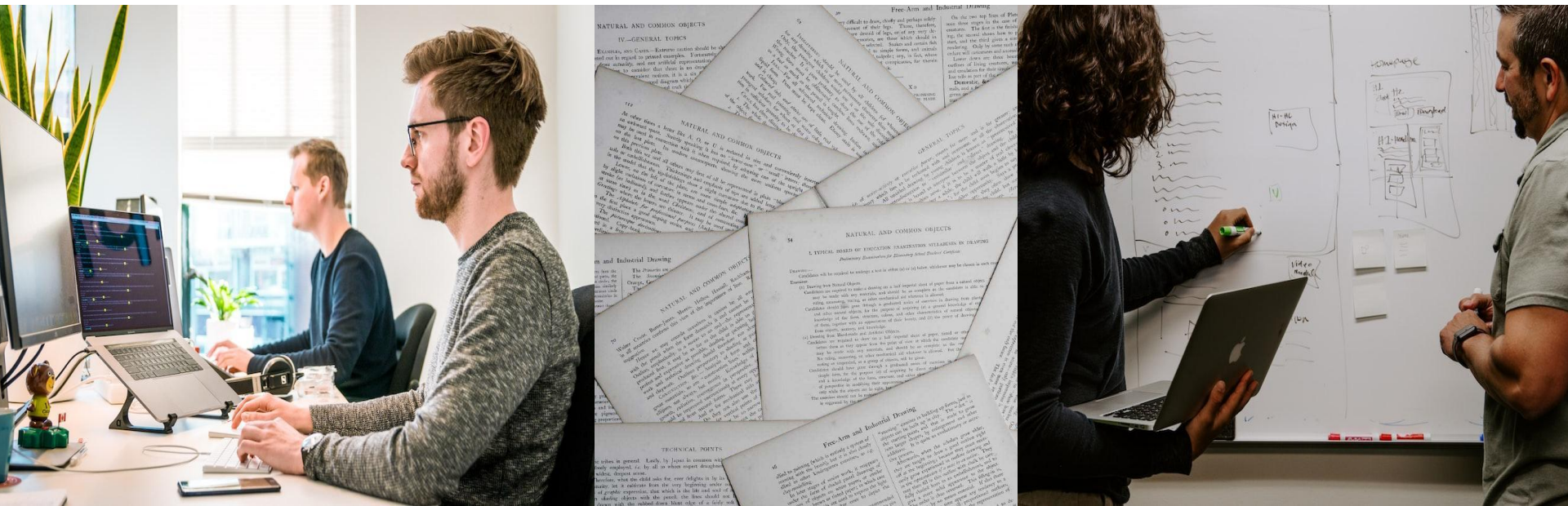


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# Research, Education, Collaboration



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