

# Counter-Terrorism Medicine

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2ND ANNUAL FRENCH-AMERICAN CONFERENCE ON  
EMERGENCY MEDICINE:  
FOCUS ON COUNTER-TERRORISM MEDICINE



Wednesday, October 11, 2017 - Friday, October 13, 2017



Map All Hazards and prevent them  
 Measures all risks and minimize  
 Move risk index to Zero (manmade)  
 Maximize Safety Measures  
 Monetary Fund Allocation  
 Monitor Land use risk, policies and procedures  
 Manage structural and nonstructural facilities  
 Maintain public awareness on disaster

- Hazards Assessment
- Disaster Committees
- Resource Allocation
- Disaster legislation
- Disaster Plan (ERP)
- Emergency Alert System
- Training and Education
- Disaster Drills



**Pre – Event 50 %**

Rehabilitation (Physical, Mental, Social)  
 Reconstruction and Rebuild  
 Repair Damages  
 Resources Provisions  
 Replace Supplies  
 Recover Vital Services  
 Reinforce Safety  
 Resume life back to norm

- Situational Awareness
- Activate ERP
- Geographic Mapping
- Setup Communication Center
- Field Team Deployment
- Setup EOC/ICS/HICS
- Implement Safety Strategy
- Prevent Damage
- Evacuation and Search and Rescue

**Post- Event 50%**

**During Event 25%**

# Terrorist attacks

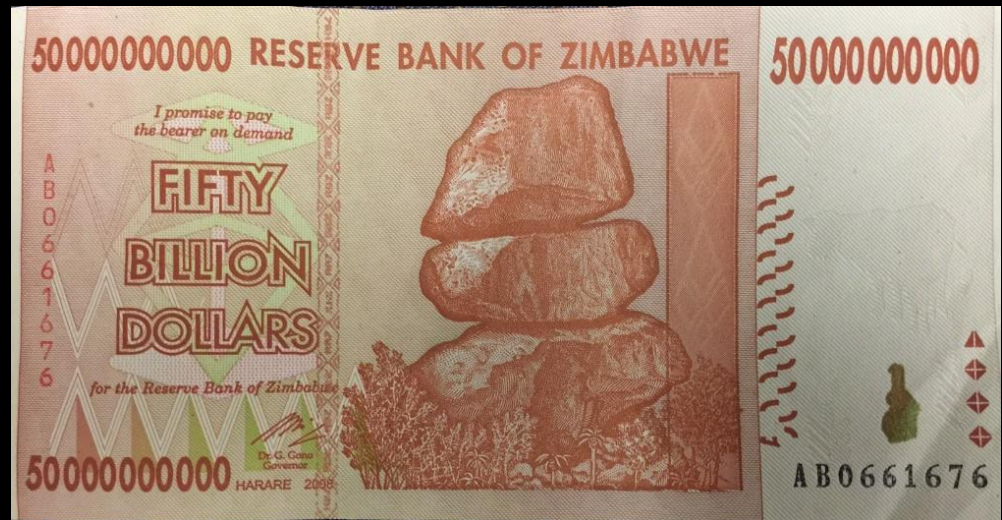
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- *Intentional* incident
- Inflict as much death, destruction, and suffering as possible
- Goal=create widespread public fear
- Achieve political/ideological aims
- Rarely require exit strategy

# The Economic Cost of Terrorism

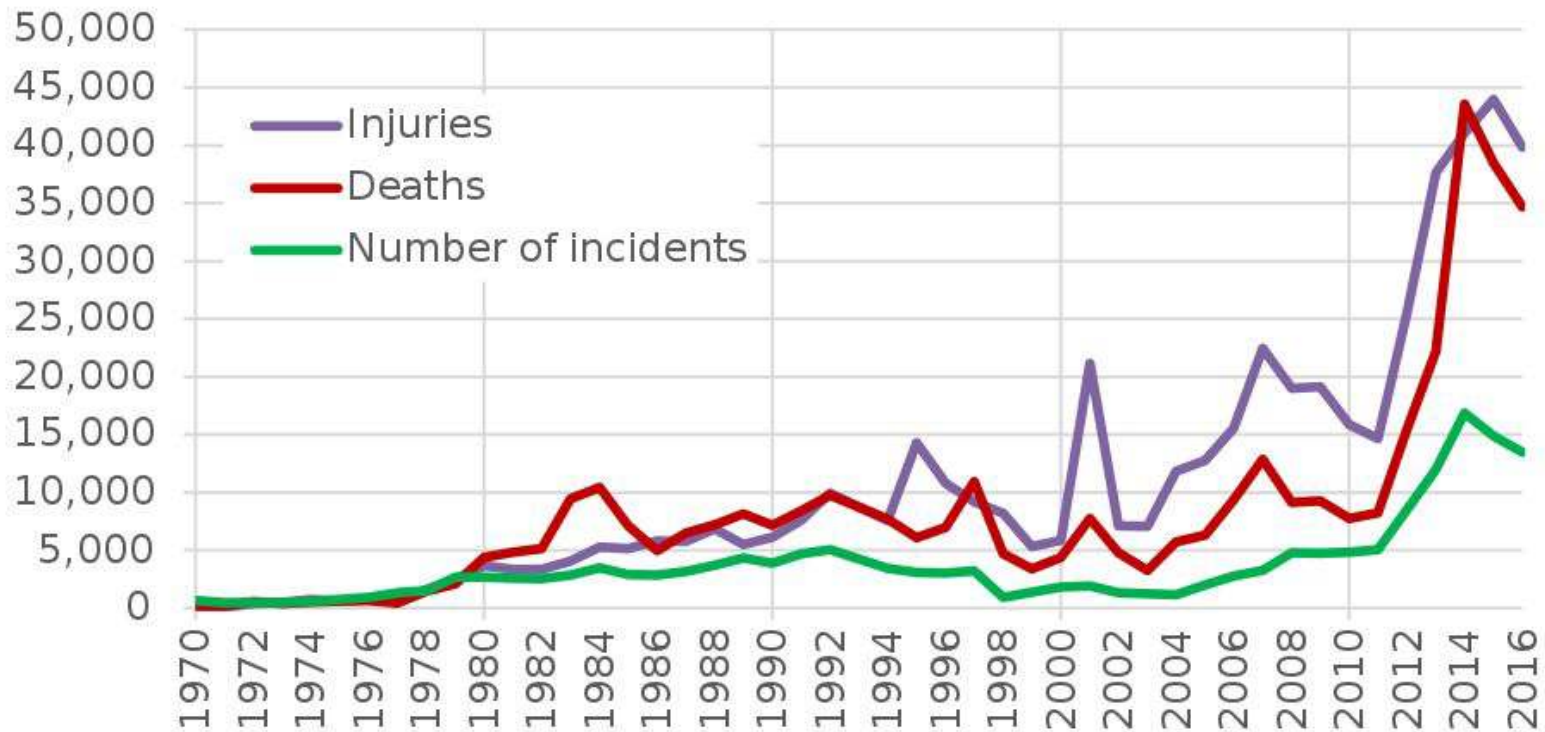
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- 2011 \$12B
- 2012 \$16B
- 2013 \$34B
- 2014 \$51B
- The future???



# Rising Death Toll

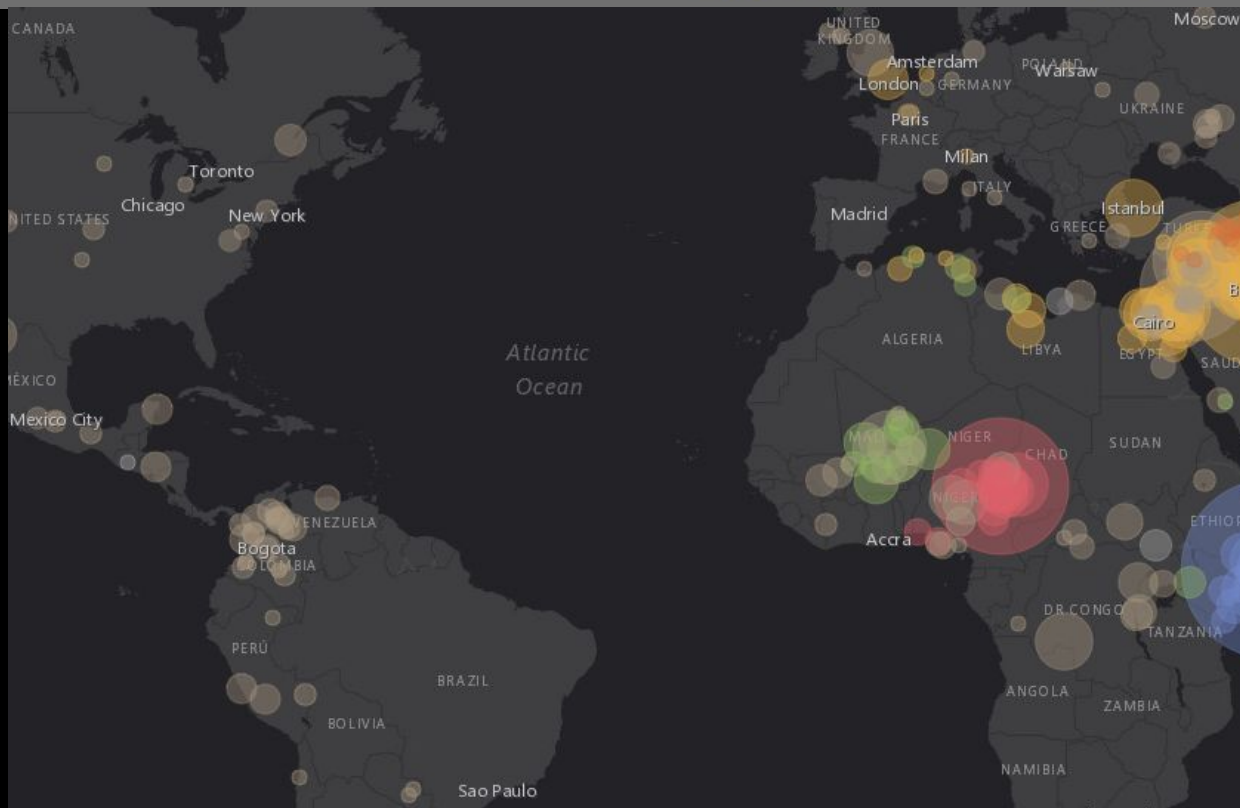
Terrorist incidents worldwide



# A Global Problem

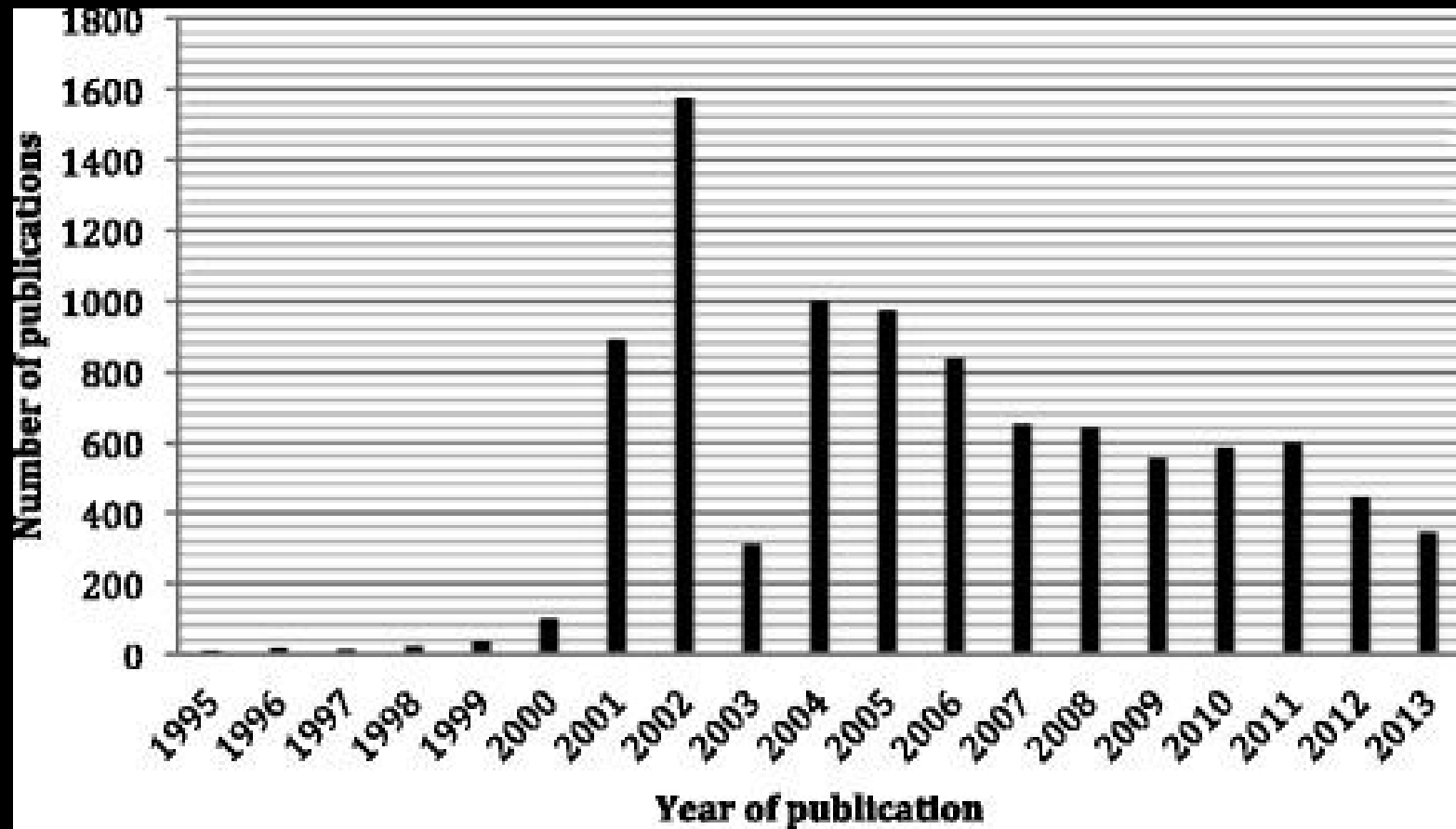
2017 Terrorist Attacks

1,041 attacks, 6,501 fatalities





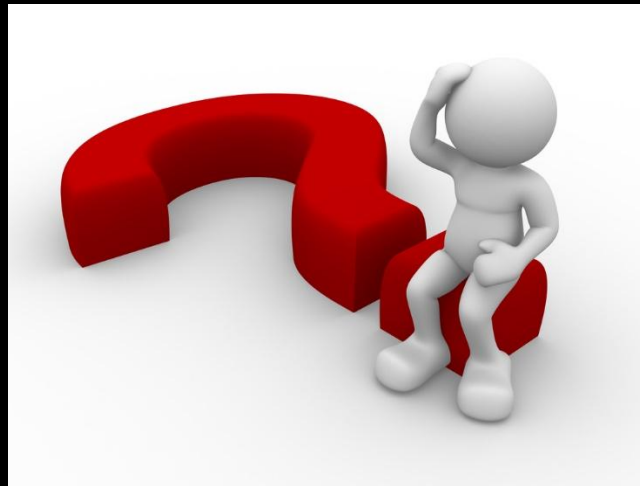
# Terrorism in the Literature



# What do these attacks have in Common:

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- Paris
- Madrid
- Berlin
- Nice
- Boston
- Mumbai
- Las Vegas



# Soft Targets, Asymmetry



	<b>TOKYO</b>	<b>MADRID</b>	<b>LONDON</b>	<b>MUMBAI</b>	<b>MOSCOW/ST PETERSBURG</b>
<b>OUT-OF HOSPITAL RESPONSE</b>					
<b>Fatalities</b>	12	191	56	187	27
<b>Injured</b>	5500	1800	700	871	132
<b>Time of attack</b>	07.48-08.00	07.39- 07.42	08.50 (trains) 09.47 (bus)	18.24 – 18.35	21.35
<b>Number of attack sites</b>	5	4	4	7	1
<b>Initial confusion over the cause of the attack</b>	Yes – during the first hour, calls came from all 15 affected stations, at the time TMACC did not realized it was one cause. (Okumura 1998)	No indication of competing views, it was quickly confirmed that there were four sites caused by terrorism. (Gomez 2007)	Yes - Initially, an electrical power surge was reported, also a train derailment was reported (Lockey 2005)		Yes – confusion over cause remained, villagers reported a loud slap, indicating an explosion (Reuters 2009) also speculations over an electrical fault.
<b>Ambulances</b>	131 (Okumura 1998)	291 (Ceb 2004)	200 vehicles, 400 staff (eyerman 6 strom 2008)		Except ambulances going to S.t Petersburg, there were 40-50 ambulances at a collection point in Novgorod.
<b>Firefighters</b>	Fire department responsible for 182 emergency medical teams and 1,650 emergency medical technicians (Okumura 1998)	200 (Ceb 2004)	250 (eyerman & strom 2008)		
<b>Volunteers</b>		500 (Ceb 2004)	Played an important role (LRRR:3)	1000 volunteers turned up at the main hospital	Not in an organized way due to the location, nearby villagers performed the initial response
<b>Prehospital triage</b>	Triage was done by emergency medical services (under responsibility of the fire department) however a large number victims went to hospitals	No form of triage system using for example color markings was used (Bolling 2007)	Yes, Edgware Road and Tavistock by ambulance service and medically trained bystanders, Aldgate and King's Cross by London HEMS staff	No triage system in place	Villagers became first responders, had to sort out the dead from the living (the New York Times (2009-09-28) No systematic approach seemed to be in place in the later rescue

	themselves (Okumura 1998)				work(interview)
<b>Over triage</b>		68% (at (GMUGH)(frykberg 2005)	63% (Aylwin 2006)	8% (at King Edward VII Memorial Hospital (lancet)	
<b>Field hospitals</b>	Emergency rescue quarters were established at the sites, no decontamination of victims on site (Okumura 1998)	Within 30 min at the four incident sites (Gomez 2007)	Lightly injured persons were taken to hospitals by bus, stopped when the bus bomb took place (fors 2006)	No	A mobile hospital was set up close to the scene
<b>Immediately dead at scene</b>		177 (9%) (Fuentes 2008)	53 (7%) (Aylwin 2006)		
<b>Critical mortality rate</b>		19,5 % (Fuentes 2008)	15% (Aylwin 2006)		
<b>“Immediate fatalities + non critical injuries”</b>	82.5% as mild cases , 16.7 moderately 0,78, 5 patients – severely	YES	YES	YES	YES
<b>Waited for cbrne experts to arrive</b>	No	No	No (fors 35)	No	No
<b>Articulated strategy to avoid overstretching of resources</b>	No, instead all available resources were sent to the first incident site		Yes (Fors 2006)		No
<b>Evacuation of commuters</b>			The underground was evacuated in 44 min. This was the second evacuation of the entire network in living memory, previous was in 1991.  250 000 persons were evacuated		
<b>Total time for evacuation of all</b>		In 2.39 hours (Gomez 2007)	Within 3 hours (home office 2006)		

# 21<sup>st</sup> Century Asymmetric Attacks

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- Las Vegas Attack 2017
- Brussels Attacks 2016
- Iraq Stadium attack 2016
- Paris Attacks 2015
- Boston Marathon 2013
- Mumbai Attacks 2008
- Madrid Train Bombings 2004
- 9/11 Attacks 2001





# WTC attack

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- NYC 2001
- Unprecedented
- Total est. economic losses = 30-50 billion USD
- Over 3000 lives lost, 40 nations
- An anomaly....or the shape of things to come?



# Madrid Train Bombings 2004



# Madrid

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- Ten explosions on four trains (13 IEDs)
- Triggered during rush hour
- Detonated near the stations
- Some bombs seemed aimed at rescuers
- 191 dead, 1800 injured

# Mumbai Attacks-2008

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# Mumbai

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- 10 attackers came-in by speedboat
- 12 coordinated attacks over 4 days
- Bombings and shootings, hostage-taking
- Police outgunned, city paralyzed
- Many foreigners caught-up in attacks
- Killed 164, Injured 308

# Boston Marathon Bombing



# Secondary Device



# Boston Marathon Bombing

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- Two detonations
- Staggered, ? Intended for those fleeing
- Finish line targeted
- 3 dead, 264 injured

# Paris Attacks





# Paris Attacks

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- Three teams, six distinct attacks
- Three suicide bombings in 1 attack, a 4<sup>th</sup> in another attack
- Shootings in 4 separate attacks
- Two shooters detonated suicide vests as police entered
- 130 killed, 368 injured

# Brussels Attacks

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- Two bomb attacks, airport and train station
- 30 killed, 260+ injured



# Las Vegas-2017

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Shooter in high-rise hotel

Attack type:

Mass shooting

Weapons:

AK-47 assault rifles

fully automatic

Armor-penetrating ammunition

Deaths: 58

400+ Non-fatal injuries

1 gunman



# Unique Modalities.....

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- Nice
- Berlin
- London
- Barcelona
- Manchester
- Las Vegas

# Commonalities

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- Unprecedented
- Asymmetric
- Soft targets
- Multi-modality
- Responders targeted
- No exit strategy

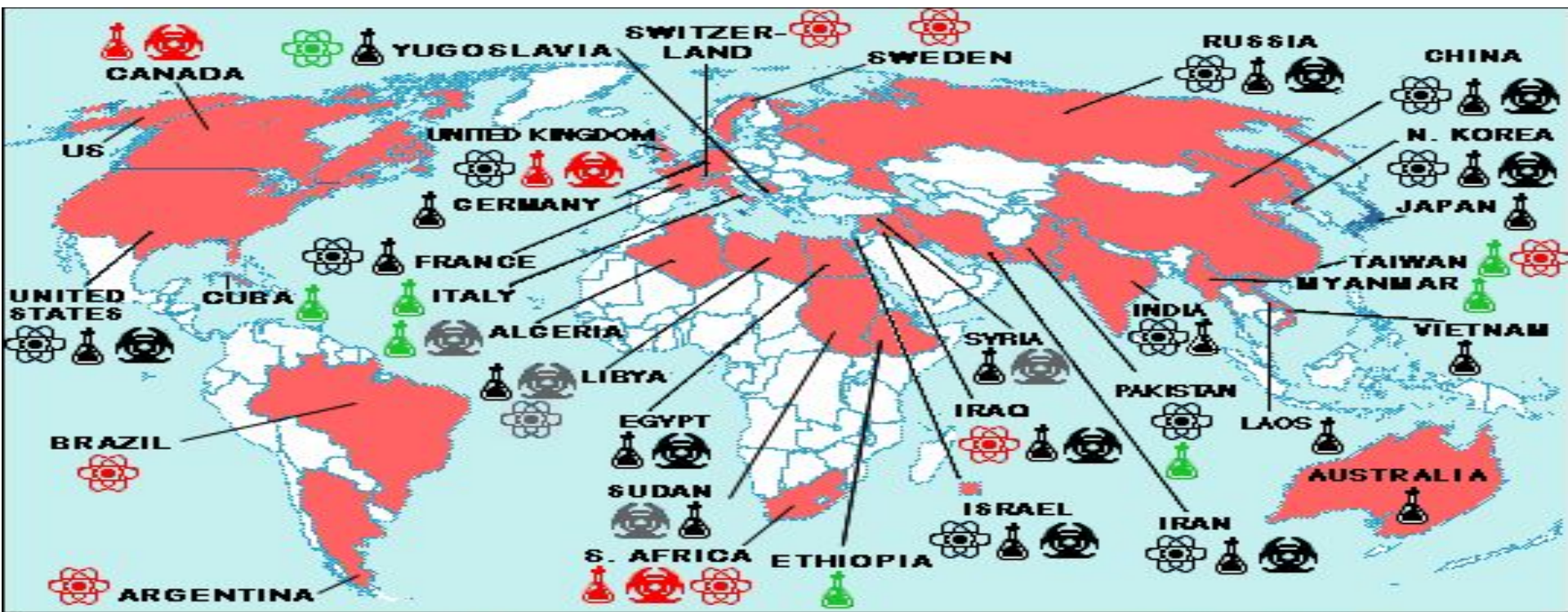


# How vulnerable are we?

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101110011101
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111010011111
1100011010010
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threat



**WMD Existing Now**

**WMD In Development**

 Nuclear
  Chemical
  Biological

 Nuclear
  Chemical
  Biological

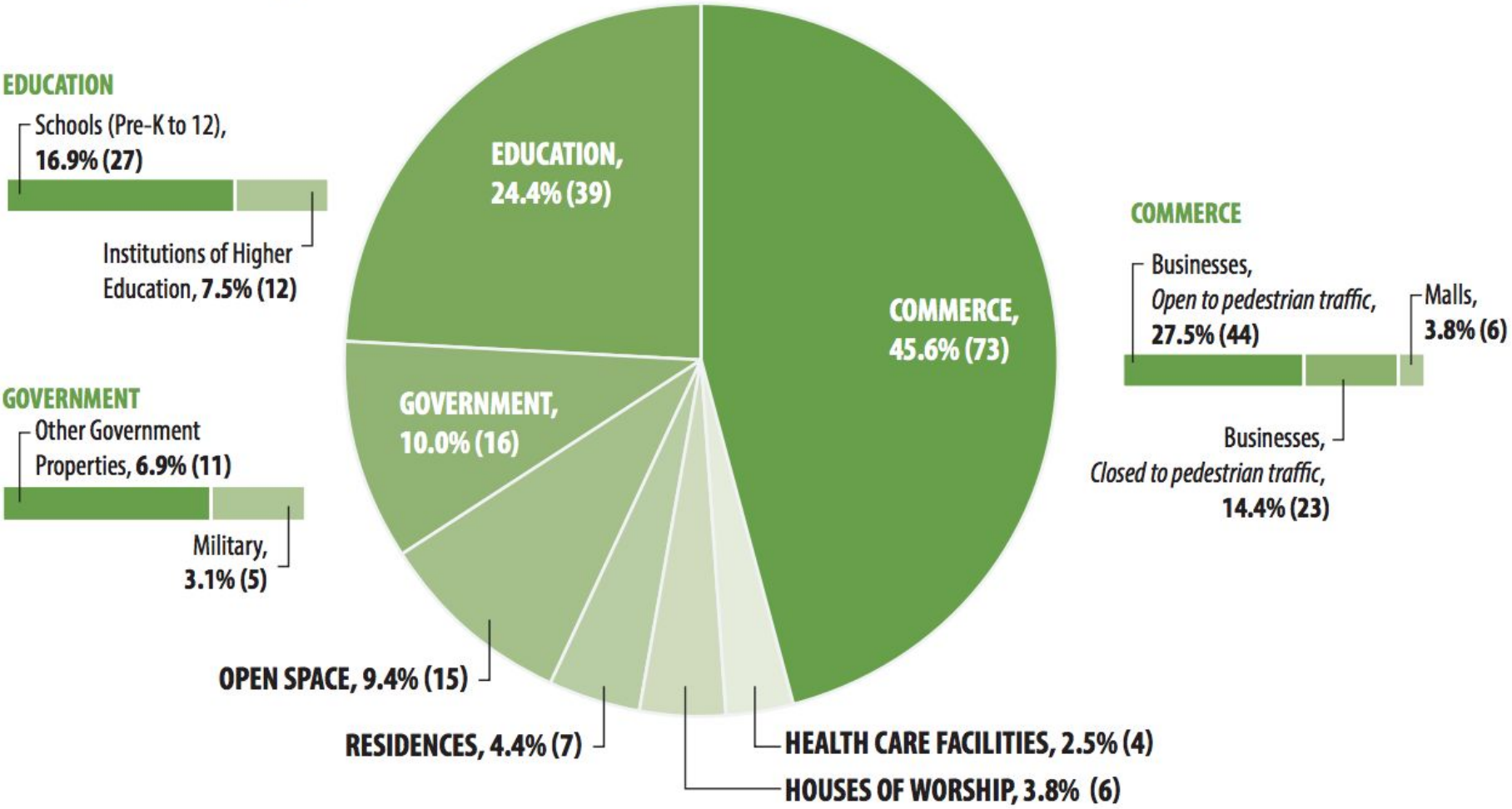
**WMD Probable or Possible**

**Formerly Possessed WMD**

 Nuclear
  Chemical
  Biological

 Nuclear
  Chemical
  Biological

# A Study of 160 Active Shooter Incidents in the United States Between 2000 - 2013: Location Categories





# What is different about terrorism?

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- Preventable (counter-terrorism)
- Risk/vulnerability assessment
  - target selection
- Response (roles)
  - Security
  - Law enforcement
  - Intelligence



# Questions for Policy Makers:

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- What targets should we worry about?
- How should we prepare?
- What strategies should we adopt?
- How should these be organized?
- Is this different from other types of disasters?



# Counter-Terrorism Medicine

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- Acts of terrorism should be considered an emerging healthcare crisis
- Mitigation, Preparedness, and Response
- Same principles of Disaster Management apply to terrorist attacks: Scene Safety!
- Think Outside the Box and prepare for asymmetry, multi-modality

# Response Strategy

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- Identification of a terrorist event (CBRNE)
- Scene Safety- Still active?
- Staggered attack
- Dismantling event
- Patient care
- Remember secondary targeting



# Scene Safety: always a priority

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# Reactive or Proactive?

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# Counter-Terrorism Medicine

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- Target Hardening-EMS, hospitals
- Proactive
- Perform an AVA along with your HVA
- Response “Time Out”
- CBRNE