Guidelines and Standards for Weapons of Mass Destruction Response

Satellite Conference and Live Webcast

Thursday, August 3, 2006

12:00 - 1:30 p.m. (Central Time)

Produced by the Alabama Department of Public Health
Video Communications and Distance Learning Division

Faculty

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Program Objectives

- Describe the potential operational environments of WMD disaster response in the context of outcome oriented guidelines and standards.
- Discuss the recommended guidelines and standards for WMD response in the context of resolving shortfalls in planning to improve outcomes.

Program Objectives

- Discuss the operational model for managing an attack with:
  - Non-infectious biological agents.
  - Infectious biological agents.
  - Viral agents.
  - Bacteriological toxins.
  - Nerve agents.
  - Choking or blood agents.
  - Vesicants.
  - Radiological weapons.

Goals

- Identify unresolved issues in WMD disaster planning and response.
- Propose models for operational response.
- Highlight operational challenges inherent in these models.

Goals

- Suggest useful standards and guidelines.
- Provoke discussion and critical evaluation of existing plans and processes.
- Develop effective integrated capabilities for consequence management of WMD events.

Purpose

- That others may live.
- Lifesaver exercises.

General Challenges

- Unknown threat response
  - Radiation, Biological, Chemical
    - Identification.
    - Confirmation.
  - Personal protection.
  - Initial casualty management.
  - Backup.

General Standards

- **Minimum planning requirements for at least 500 victims.**
- **Respiratory support for 20% of casualties in hot and cold zone.**
- **Capability to handle 10% of population at risk as stress disorder.**

Biological Agents

- **Non-infectious (Anthrax)**
  - **Dust borne, persistent but non-contagious.**
  - **Highly lethal but prophylaxis effective.**
- **Highly infectious bacterial (Plague and Tularemia)**
  - **Self multiplying with short cycle time.**

Biological Agents

- Highly infectious viral (Smallpox and Exotic Hemorrhagic)
  - Identification, isolation and vaccination.
- Toxin – Botulism
  - Non-persistent chemical.
  - Specific time critical therapeutics.

Chemical Agents

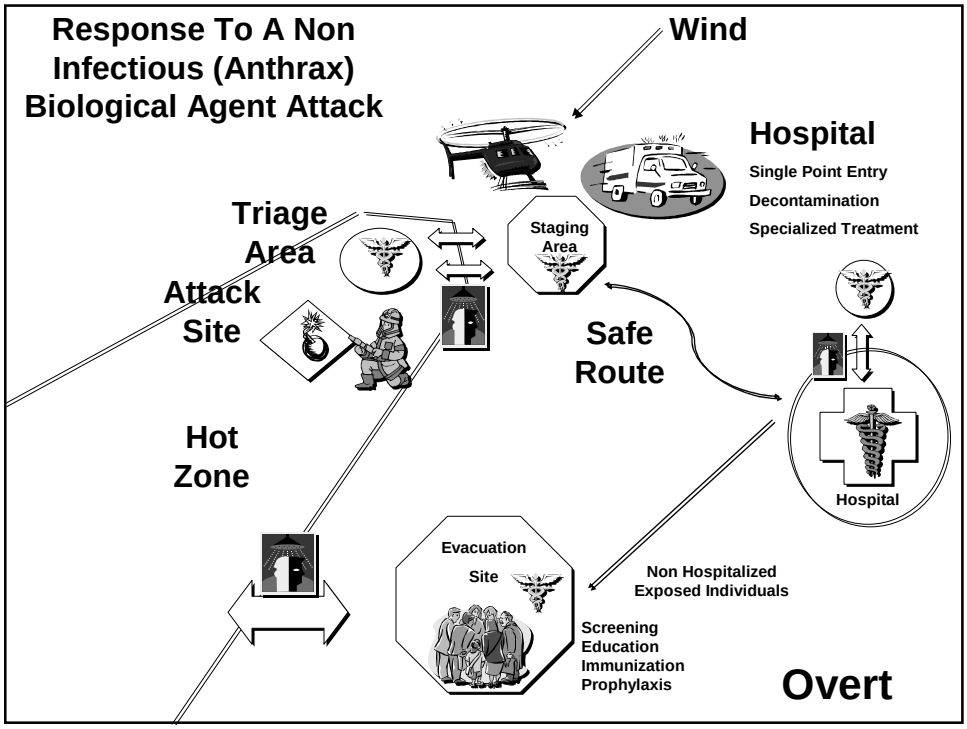
- Chemical – Nerve
  - Fast acting.
  - High immediate lethality.
  - Potent.
  - Persistent.
    - Secondary site contamination.

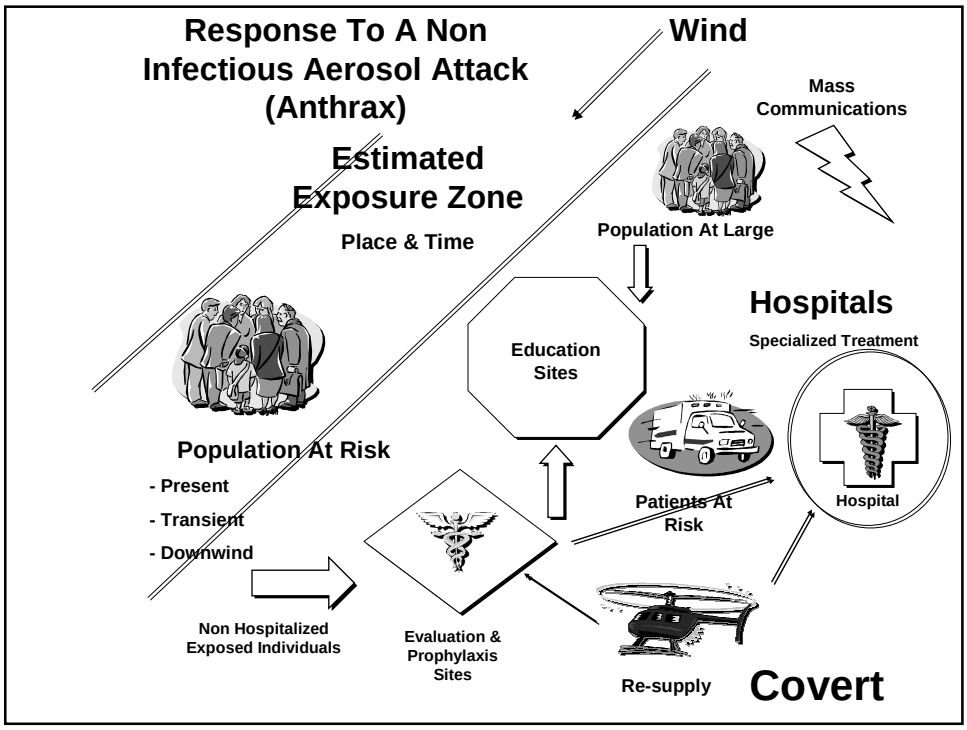
Chemical Agents

- Chemical – vesicant
  - Low immediate lethality.
  - Immediate and delayed effects.
  - Persistent - secondary site contamination.
- Chemical – choking and cyanides
  - Airborne: non-persistent.
  - Peripheral and central acting agents.
    - Immediate and delayed effects.

Radiological Agents

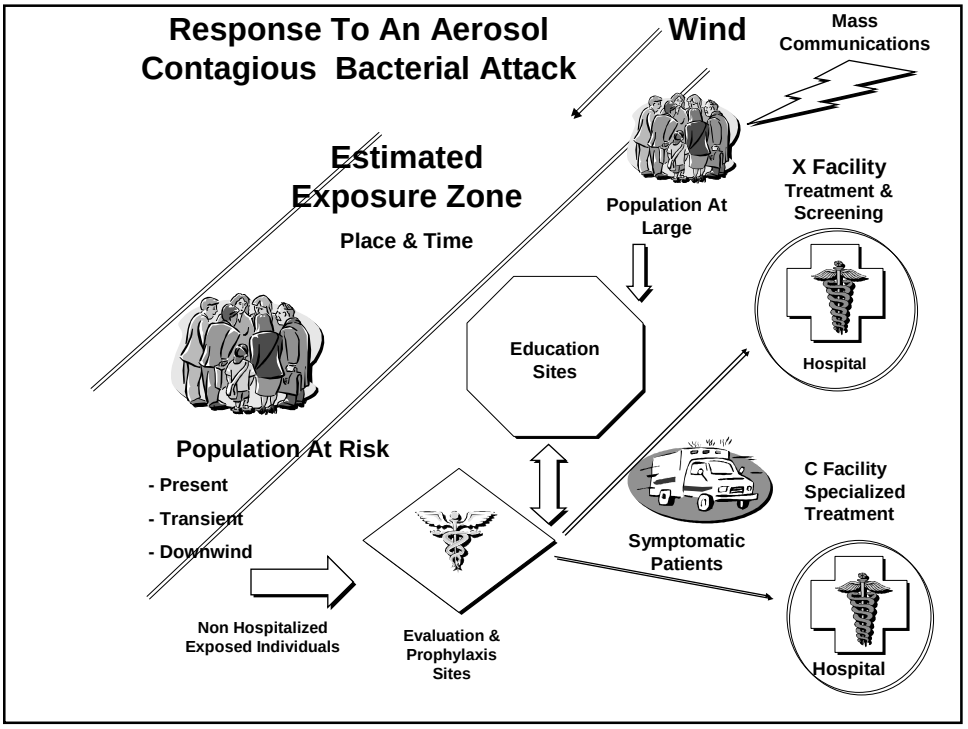
- Low dose
  - RDD.
  - Broken arrow.
  - Minor reactor mishap.
    - Three Mile Island.
- High dose
  - Nuclear detonation.
  - Reactor disaster
    - Cheronobyl.


Response To A Non Infectious (Anthrax) Biological Agent Attack
Wind
Hospital
Single Point Entry
Decontamination
Specialized Treatment
Triage Area
Staging Area
Attack Site
Safe Route
Hot Zone
Hospital
Evacuation Site
Non Hospitalized Exposed Individuals
Screening
Education
Immunization
Prophylaxis
Overt


Response To A Non Infectious Aerosol Attack (Anthrax)
Wind
Mass Communications
Estimated Exposure Zone
Place & Time
Population At Large
Hospitals
Specialized Treatment
Education Sites
Population At Risk
- Present
- Transient
- Downwind
Patients At Risk
Hospital
Non Hospitalized Exposed Individuals
Evaluation & Prophylaxis Sites
Re-supply
Covert

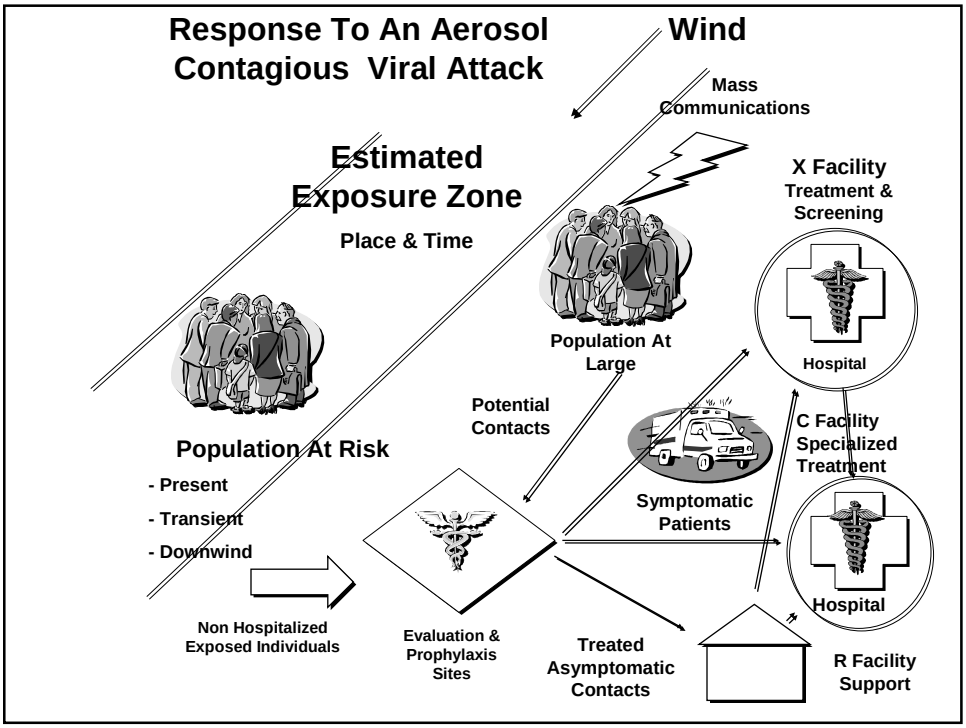
Biological Non-contagious

- **Identify agent** **T+15**
- **Identify population at risk** **T+30**
- **Approved plan activation** **T+30**
- **Public announcement** **T+40**
- **Evacuation site (Overt)** **1h**
- **Complete prophylaxis** **48h**
- **Reverse flow evacuation** **96**
- **100% Exposure ID**



Biological Contagious

- **Public announcement 1h**
- **Evaluation site 1h**
- **X facility 2h**
- **C facility 6h**
- **Detailed instructions 2h**
- **Implement quarantine 2h**



Smallpox Infection Timeline

Post-exposure vaccination fully or partially protective through day 4 after exposure.

Average smallpox case infects 3 to 5 people. About half of close contacts are infected.

First symptoms develop 7 to 17 days after exposure; average depicted here as day 11.

After symptoms develop, isolate case. Trace and vaccinate contacts.

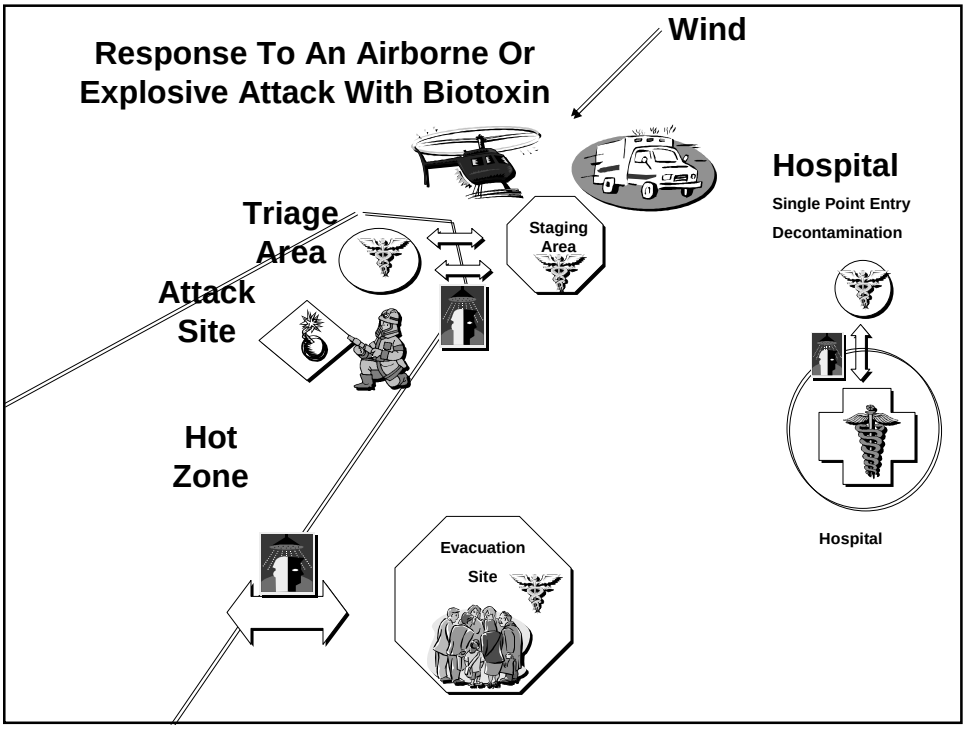
Communic-ability	Exposure = Day 0	Symptoms	Day of Symptoms	Disease Progress
	Day 1			Virus introduced to respiratory tract
	2			
	3			
	4			Virus appears in lymph nodes
	5			
Not contagious	6	No symptoms		Virus replicates in lymph system
	7			
	8			
	9			
	10			
	11		Day 1	
	12	First symptoms	2	Fever, backache, headache, nausea, malaise
	13		3	
Contagious	14		4	
	15		5	Macules (spots)
	16		6	
Very contagious	17		7	Papules (bumps, pimples)
	18		8	
	19		9	Vesicles (blisters)
	20		10	
	21		11	
	22	Rash	12	Pustules (pus-filled blisters)
Contagious	23		13	
	24		14	
	25		15	
	26		16	
Scabs contagious	27		17	Scabs
	28		18	
	29		19	
	30		20	
Not contagious	31			Scars
	32			

Ring Vaccination: Search and Containment

- Find cases
- Provide ring of "immunity" or "containment" around case
  - Isolate and vaccinate
- Targets area of greatest need
  - most efficient vaccine use
  - decreases adverse events
- Used to eradicate smallpox
  - required to control disease even with 'routine immunization'

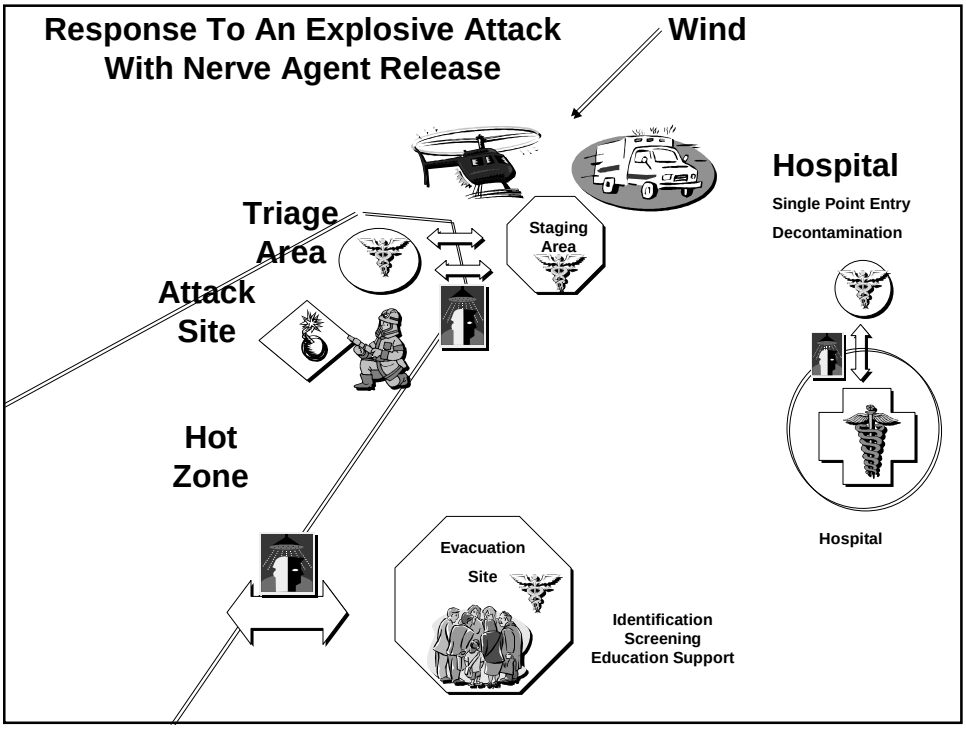
Viral Contagious

- Identify population at risk.
- Vaccination strategy.
- Vaccine
  - Availability.
  - Cold chain.
  - Security.
- Evaluation/vaccination sites.
- C facility manning and support.
- R facility.



Biotoxin

- **Treatment center** **T+15**
- **Antitoxin** **T+30**
- **Respiratory support** **T+30**
- **Evacuation site** **1h**
- **Long term care** **48h**

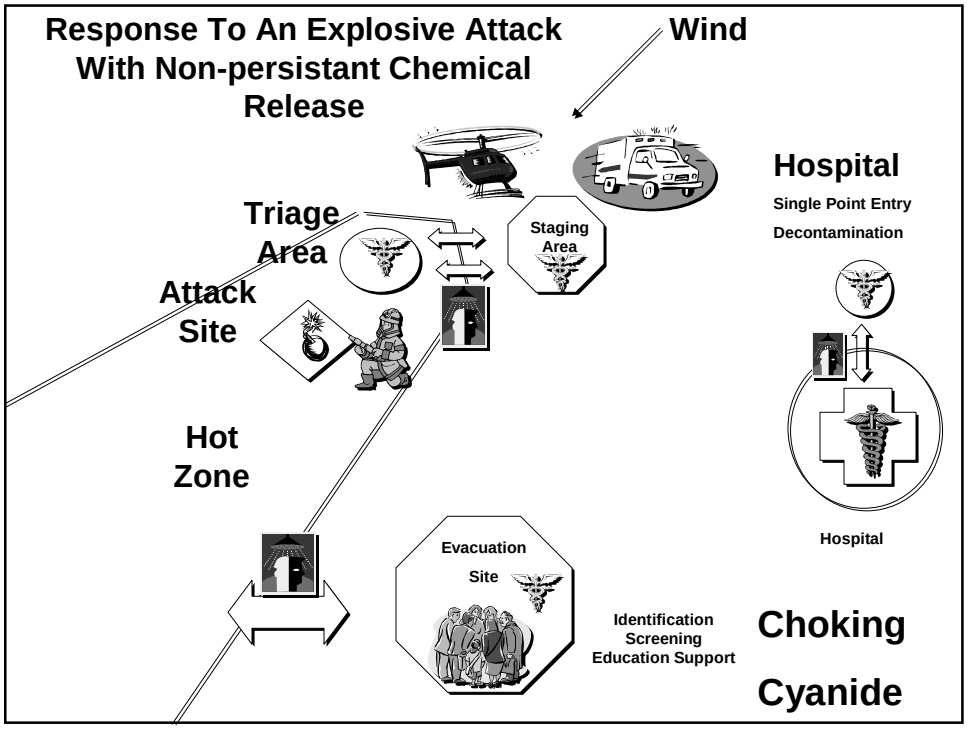


Standards Chemical Agents

- Field decontamination capability for processing 15 litter or 100 ambulatory patients/hr. within 30 minutes and 3 times that number within 1 hour.

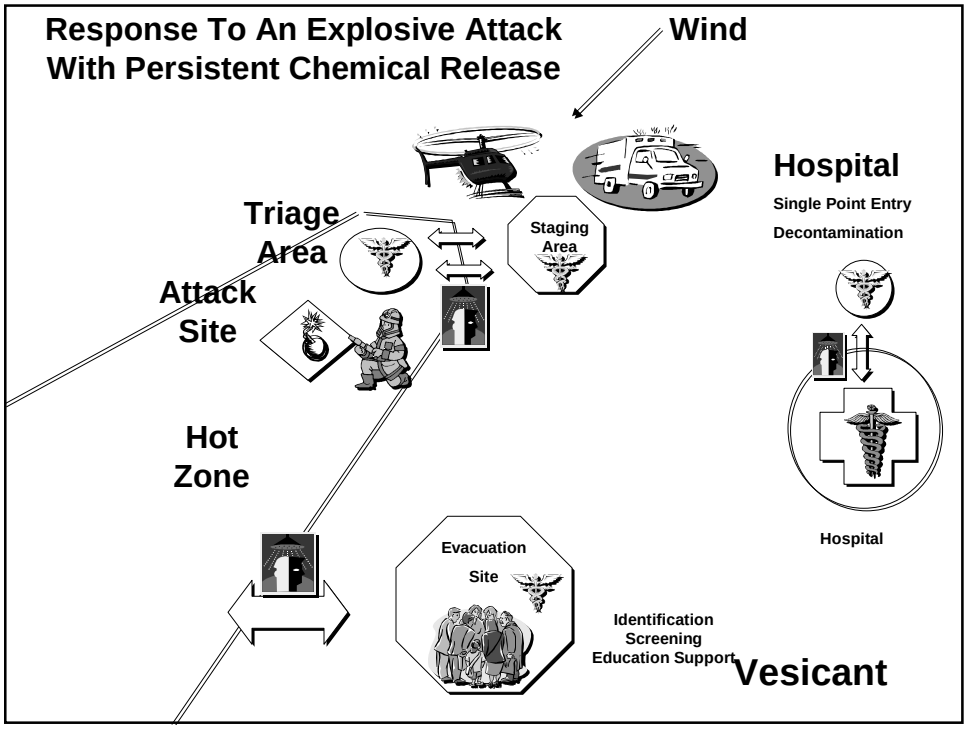
Chemical - Nerve

• Hot zone cordon	T+15
• Hot zone crowd control	T+15
• Local hospital lockdown	T+15
• Hot zone triage/treatment	T+30
• Respiratory support	T+30
• Patient decontamination	T+30
• Medication availability	T+30
• Surgical immediate	1h



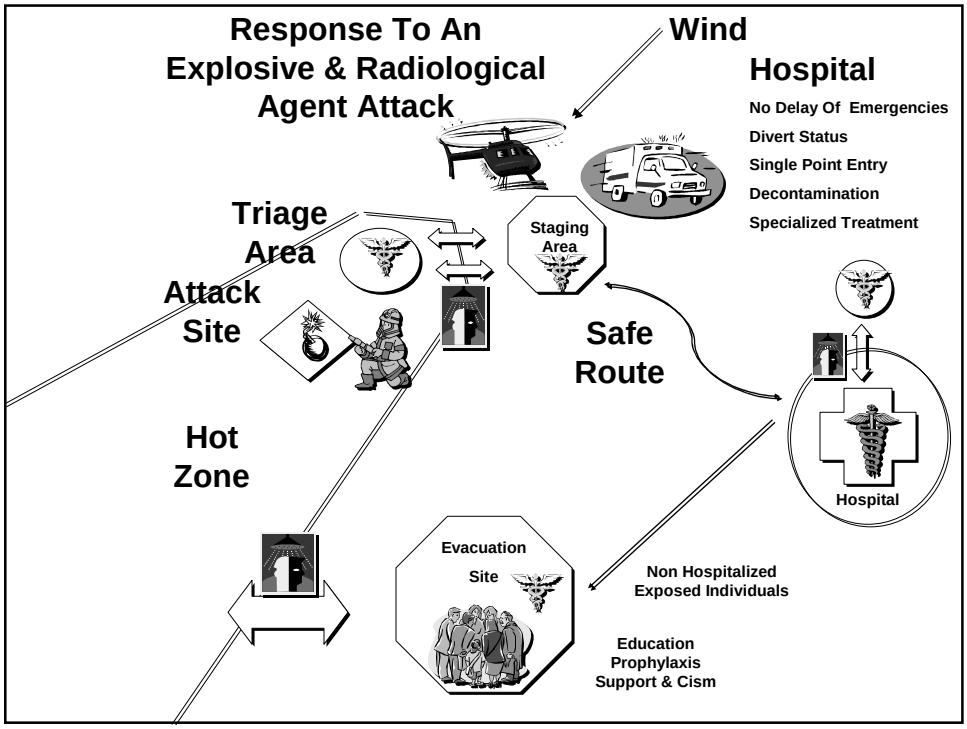
Chemical Non-persistent

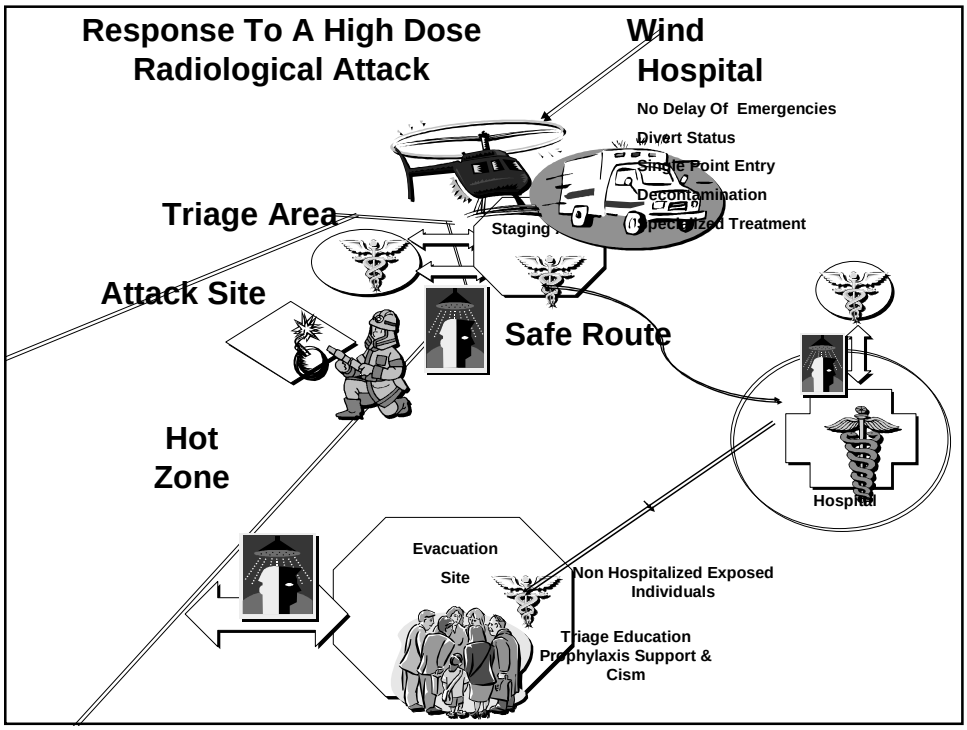
- **Agent identification** **T+15**
- **Public announcement** **T+30**
- **Respiratory support** **T+30**
- **Evacuation site** **1h**
- **Inpatient capability** **1h**
- **Specialty treatment** **2h**



Chemical - Vesicant

• Hot zone cordon	T+15
• Hot zone crowd control	T+15
• Local hospital lockdown	T+15
• Public announcement	T+30
• Hot zone triage/treatment	T+30
• Patient decontamination	T+30
• Inpatient capability	2h
• Specialty treatment	6h


Response To An Explosive & Radiological Agent Attack
Wind
Hospital
No Delay Of Emergencies
Divert Status
Single Point Entry
Decontamination
Specialized Treatment
Triage Area
Staging Area
Attack Site
Safe Route
Hot Zone
Hospital
Evacuation Site
Non Hospitalized Exposed Individuals
Education
Prophylaxis
Support & Cism


Response To A High Dose Radiological Attack
Wind
Hospital
No Delay Of Emergencies
Divert Status
Single Point Entry
Decontamination
Specialized Treatment
Triage Area
Staging
Attack Site
Safe Route
Hot Zone
Hospital
Evacuation Site
Non Hospitalized Exposed Individuals
Triage Education
Prophylaxis Support & Cism

Radiological Agent

• Identify dose model	T+15
• PPE	T+15
• Safe route	T+20
• Public announcement	T+30
• Specialty ER	T+30
• Decontamination	T+30
• Dose determination	T+30
• Urgent specialty surgery	36h

Summary

- Models
- Standards
- Planning and Exercise
- Operations
- "Plans are Nothing, Planning is Everything."
  - –Gen. George Patton

Halloween Of The Future

“If we don’t deal with these issues now, then our children will face them in the future.”

Trick or Treat

Upcoming Programs

Applications of North Carolina's GIS for Agriculture Emergencies

Thursday, August 10, 2006

12:00 - 1:30 p.m. (Central Time)

For a complete list of upcoming programs visit: www.adph.org/alphtn.