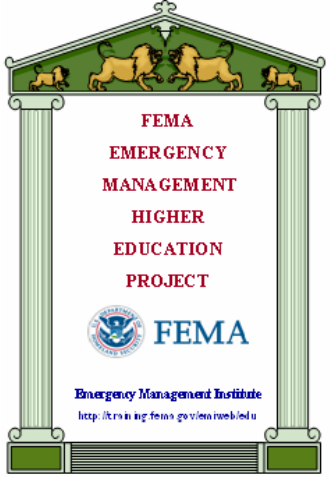


The Big Picture: Components of Surge

9th Annual Emergency Management Higher Education Conference

Major General (Ret) Donna Barbisch, DHA, MPH
Director, Institute for Global and Regional Readiness
June 6, 2006

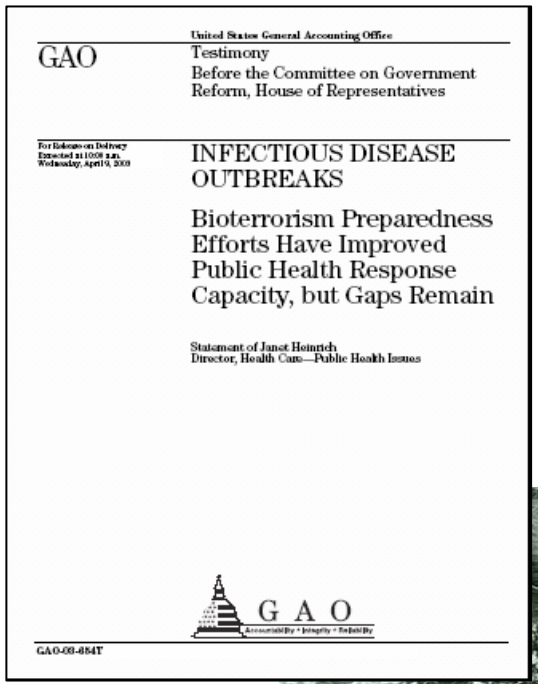
Objectives

- Define Healthcare Surge Capacity.
- Identify and Validate Planning Assumptions in Surge Capacity.
- List Appropriate Actions that will Improve Preparedness for Mass Casualty Management.

Surge Capacity

- Prepared for What?
- What is Surge Capacity?
- To What End?
  - How Much is Enough?
  - How Fast Do You Need It?
- Where Do You Get it?
- How Do You Maintain Capability?
- How Do You Link With Other Resources?

Sorting Fact From Fiction



United States General Accounting Office

GAO

Testimony
Before the Committee on Government Reform, House of Representatives

For Release on Delivery
Expected at 10:00 a.m.
Wednesday, April 9, 2003

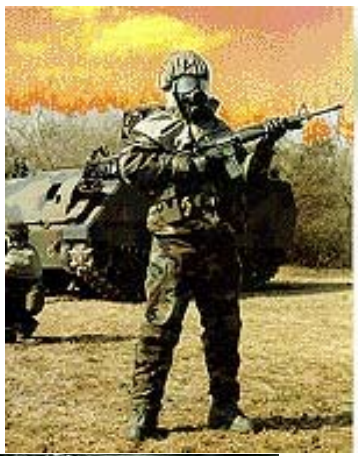
INFECTIOUS DISEASE OUTBREAKS

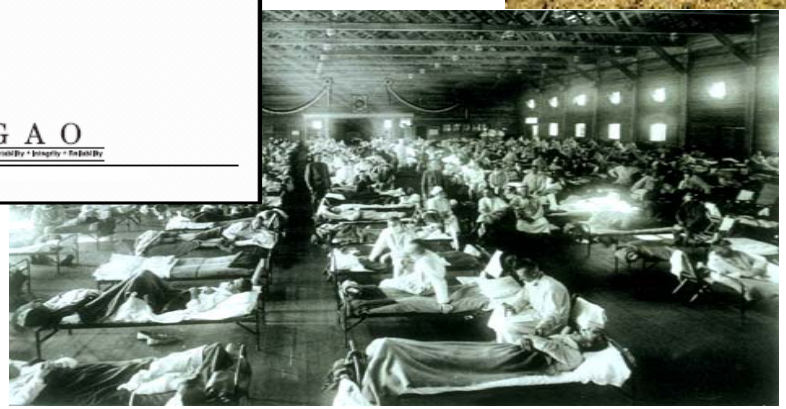
Bioterrorism Preparedness Efforts Have Improved Public Health Response Capacity, but Gaps Remain

Statement of Janet Heinrich
Director, Health Care—Public Health Issues

GAO

GAO-03-654T





Defining the issues

Surge

Webster dictionary definition:

To rise *suddenly* to an excessive or abnormal value

Surge Capacity

Surge capacity* – the ability to expand *care capabilities* in response to prolonged demand

> **"Surge capacity** encompasses potential patient beds; available space in which patients may be triaged, managed, vaccinated, decontaminated, or simply located; available personnel of all types; necessary medications, supplies and equipment; and even the legal capacity to deliver hea
> which exceed author

Healthcare (only?) focus

* Health Care at the Crossroads**:** Strate[illegible] for Creating and Sustaining Community-wide Emergency Preparedness Strategies. JCAHO 2003

Hospital Capacity is a Major Player…

But, Only One Part of the Solution

DC Population:

- Census: 750,000
- Actual: 2,000,000 ?

Hospitals:

- Staffed beds: 2,904 (non fed)

Non-hospital capacity:

- Clinic and medical office?
- Home health?
- Pharmacy?
- In home care?

The Education Challenge:
Moving From What We *Think* to What We *Know*

Seasonal Influenza

- Globally: 250,000 to 500,000 deaths each year
- In the United States each year:
  - 36,000 deaths
  - >200,000 hospitalizations
  - $37.5 billion in economic costs from influenza and pneumonia

Pandemic Influenza

- 30% of the population affected
- An ever-present threat

Planning Assumptions: Influenza Pandemic US Population 2005: 295,507,000

- 50% of ill persons will seek medical care
- Hospitalization and deaths will depend on the virulence of the virus

	Moderate (1957-like)	Severe (1918-like)
Illness	90 million (30%)	90 million (30%)
Outpatient medical care	45 million (50%)	45 million (50%)
Hospitalization	865,000 (4 x seasonal)	9, 900,000 (50 x seasonal)
ICU care	128,750	1,485,000
Mechanical ventilation	64,875	745,500
Deaths	209,000	1,903,000

Source: CDC

Influenza in Context

15 leading causes of death in 2002

Moderate pandemic: 209,000

Severe pandemic: 1,903,000

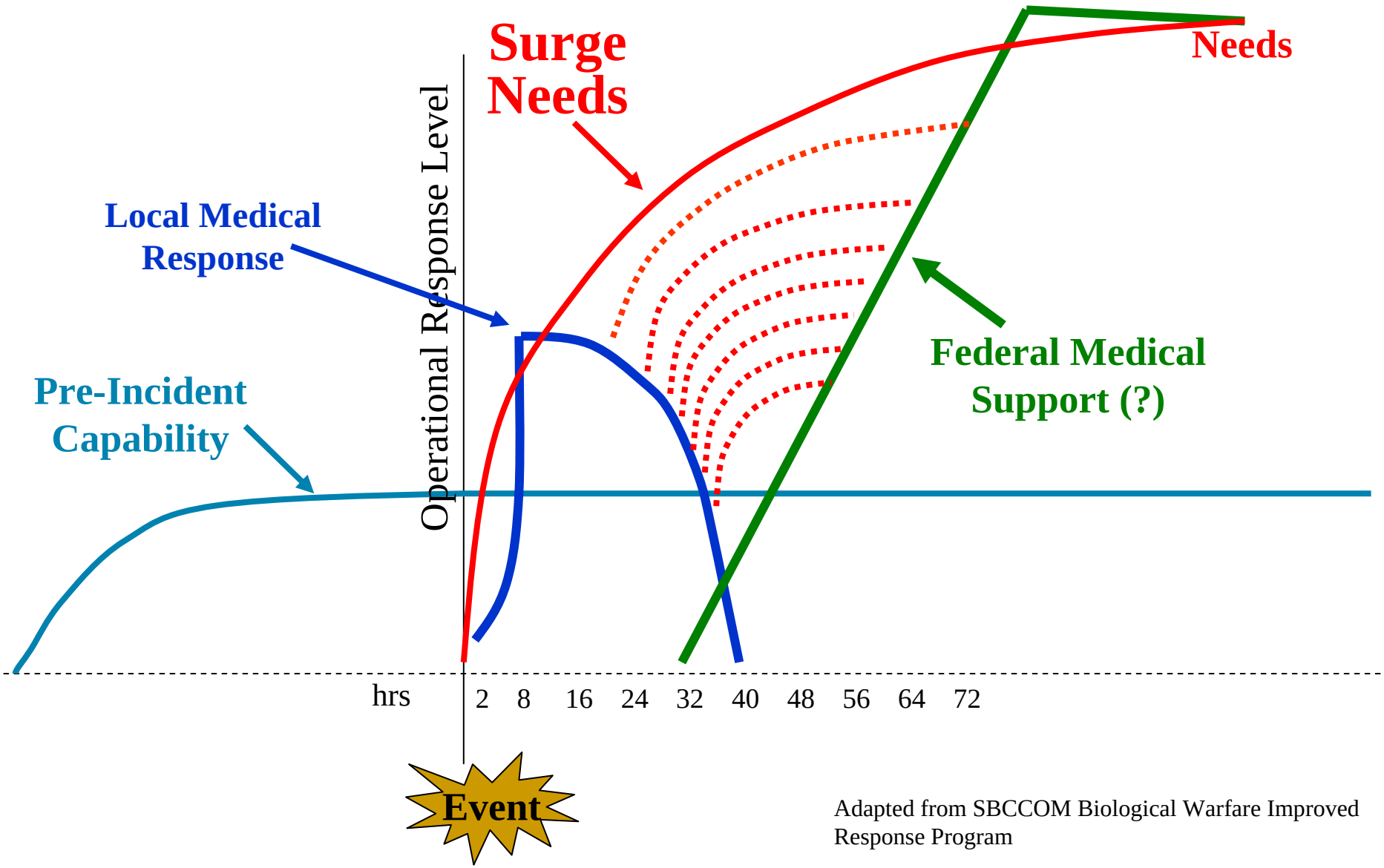
Rank[1]	Cause of death (Based on the *International Classification of Diseases, Tenth* ...)	Number	...ate
...	All causes	2,4...030	840.4
1	Diseases of heart (I00-I09,I11,I13,I20-...)	684,462	235.4
2	Malignant neoplasms (C00–C97)	554,643	190.7
3	Cerebrovascular diseases (I60–I69)	157,803	54.3
4	Chronic lower respiratory diseases (J40–J47)	126,128	43.4
5	Accidents (unintentional injuries) (V01–X59,Y85–Y86)	105,695	36.3
6	Diabetes mellitus (E10–E14)	73,965	25.4
7	Influenza and pneumonia (J10–J18)	64,847	22.3
8	Alzheimer's disease (G30)	63,343	21.8
9	Nephritis, nephrotic syndrome and nephrosis (N00–N07,N17–N19,N25–N27)	42,536	14.6
10	Septicemia (A40–A41)	34,243	11.8
11	Intentional self-harm (suicide) (*U03,X60–X84,Y87.0)	30,642	10.5
12	Chronic liver disease and cirrhosis (K70,K73–K74)	27,201	9.4
13	Essential (primary) hypertension and hypertensive renal disease (I10,I12)	21,841	7.5
14	Parkinson's disease (G20–G21)	17,898	6.2
15	Pneumonitis due to solids and liquids (J69)	17,457	6.0
...	All other causes	421,226	144.8

http://www.cdc.gov/nchs/data/nvsr/nvsr53/nvsr53_15.pdf

Reality Based Planning

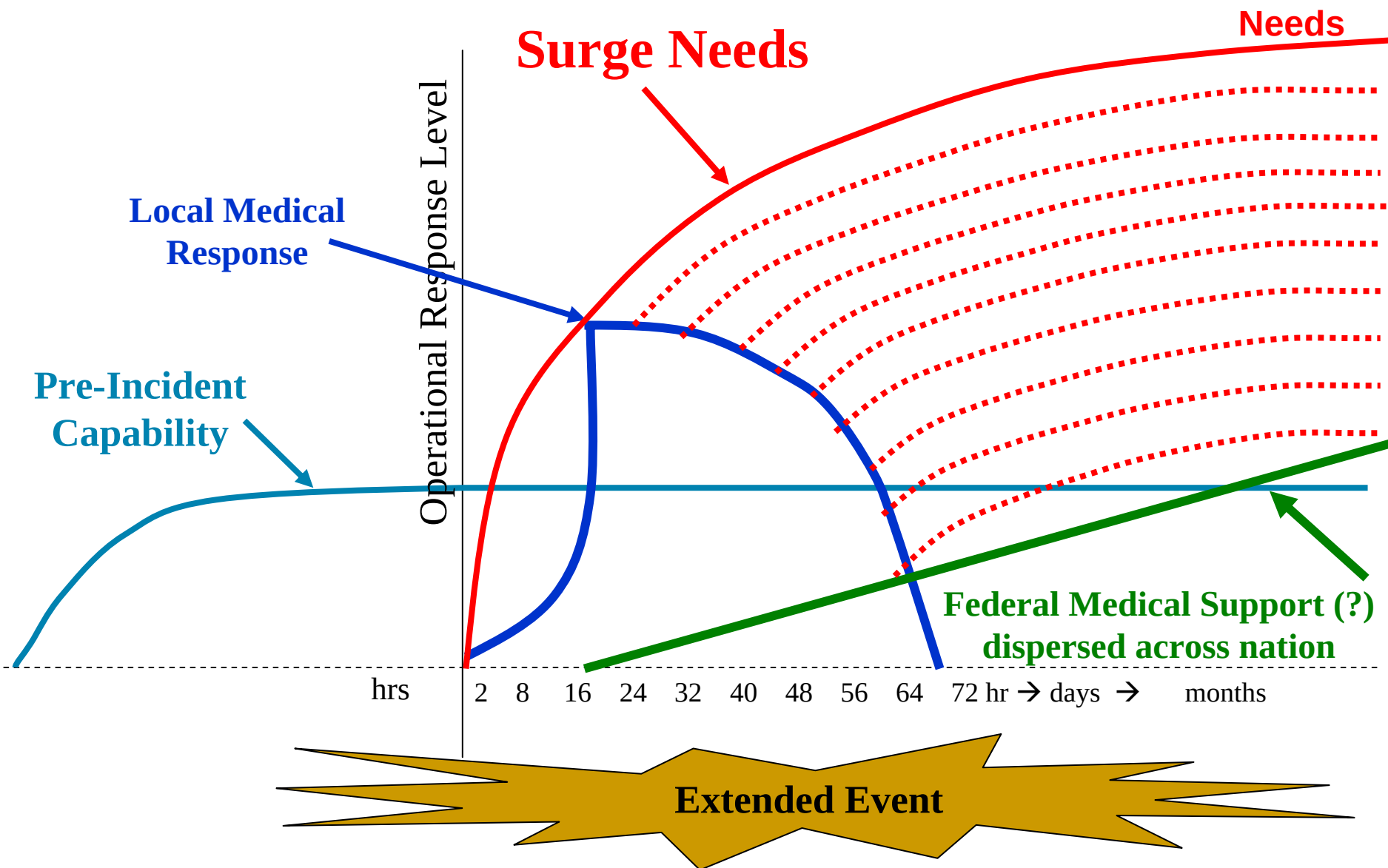
- Validate planning assumptions
  - Resources will be limited
  - Realistic expectation of who can be saved
- Identify the “manageable loss”: Those who can be saved given the limited resources
- Move from individual care to population based management
  - best outcomes for greatest number of people
  - Requires a change in triage protocols

Health and Medical Surge

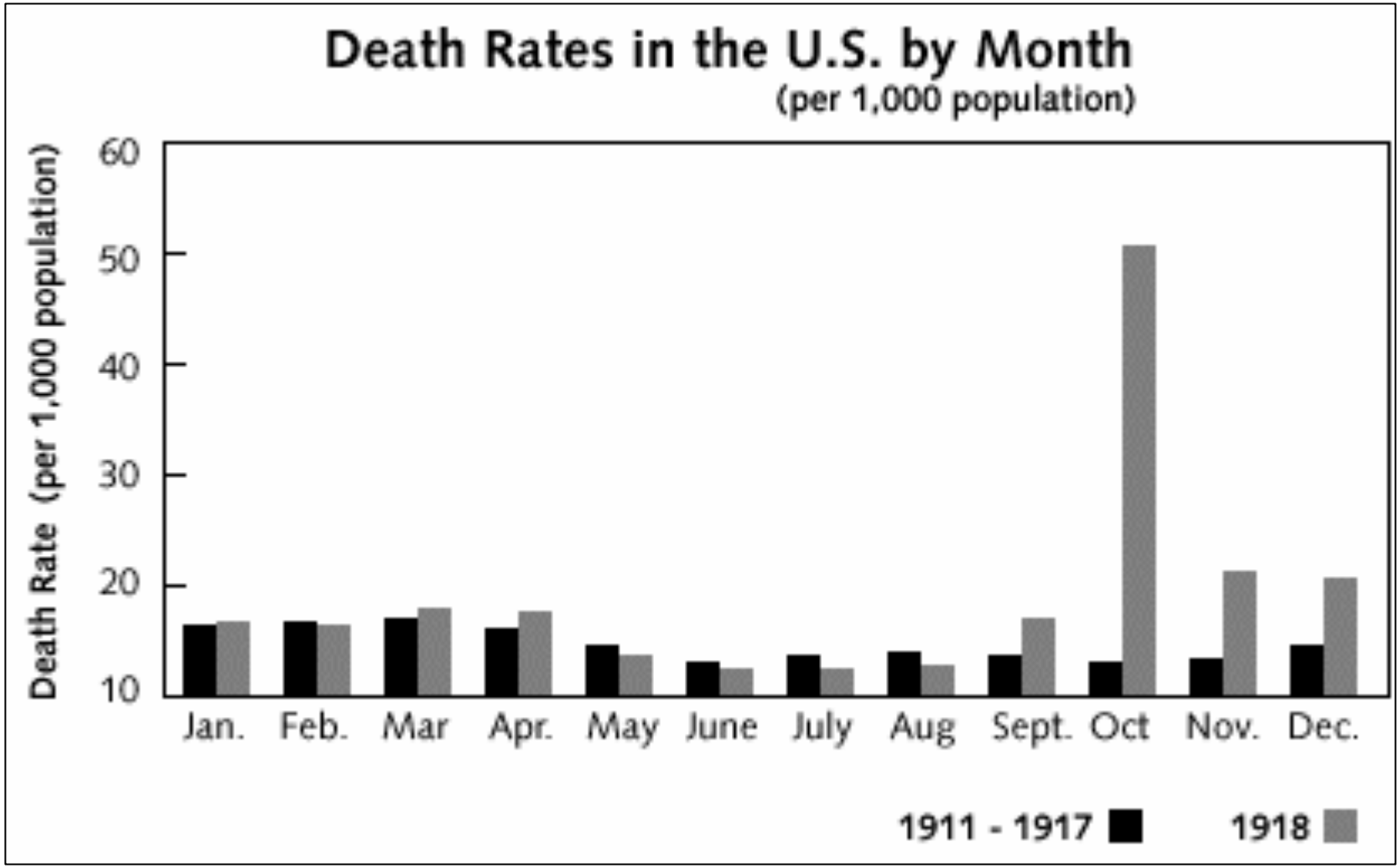


Adapted from SBCCOM Biological Warfare Improved Response Program

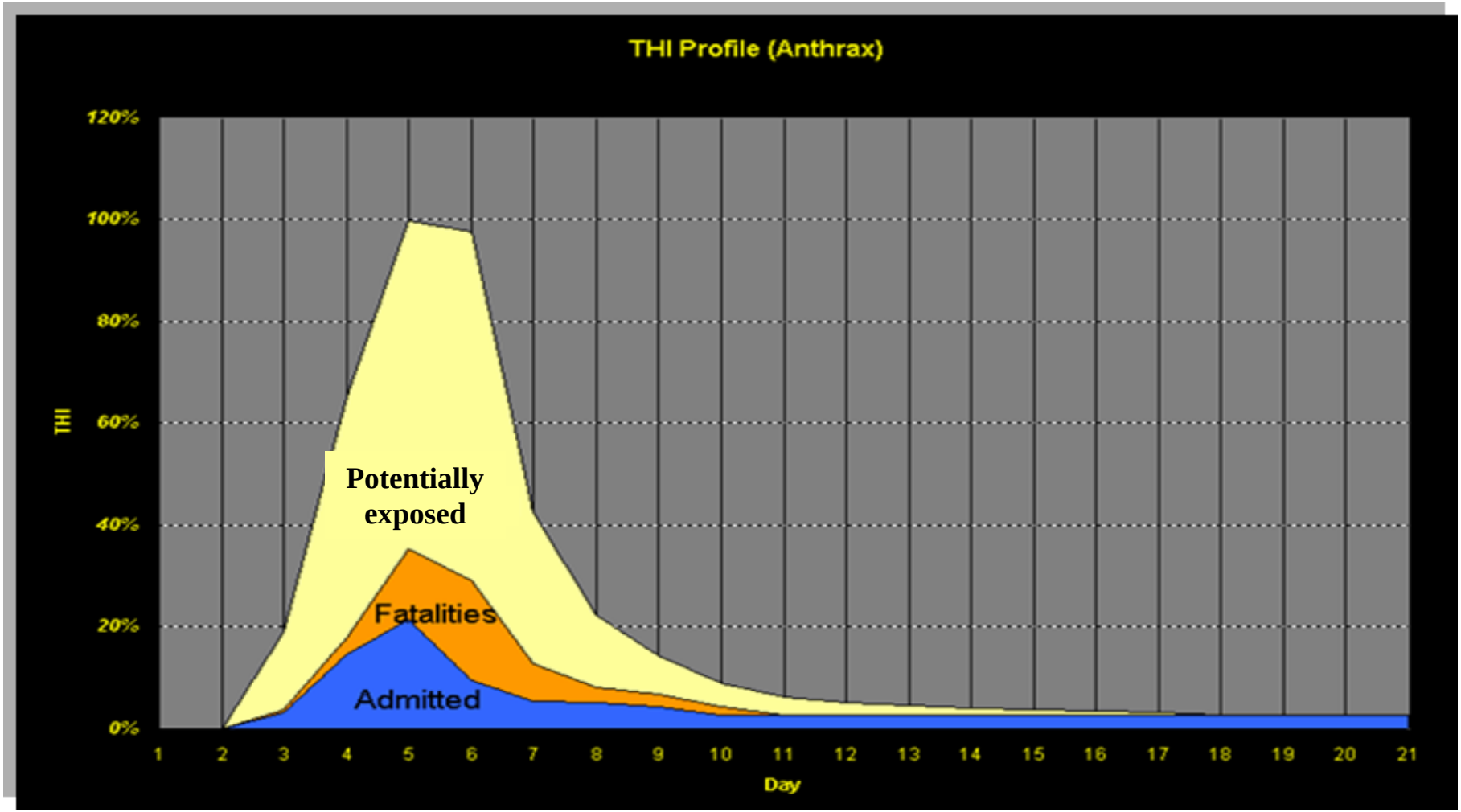
Health and Medical Surge



Pandemic Influenza 1918



Total Human Impact



Macro View: Surge Resources

Health and Medical Communities (descriptive terms)

Current HRSA program focus is hospital based:
National Bioterrorism Hospital Preparedness Program

- Pre-Hospital (EMS)
- **Hospital**
- Non-hospital Healthcare
  - Clinical providers
  - Physician offices
  - Clinics
  - Home health & hospice
  - Nursing homes
- Non-health*care* Health and Medical services
  - Laboratory
  - Radiology
  - Pharmacy
  - Occupational health
  - Epidemiology
  - Preventive health
- External Support to Health and Medical
  - Transportation
  - Security
  - Food & water
  - Electricity
  - Essential services

Surge Capacity

Functional areas beyond "Healthcare Organizations":

- Broad Incident Management Structure
- Communication Systems
- Non-hospital healthcare
  - Physician and clinic capability
  - Home health
  - Allied health
  - Hospice
- Stress Management
- Preventive Medicine/ Epidemiology
- Laboratory
- Mortuary Affairs
- Logistics
- Transportation
- Veterinary / Dental

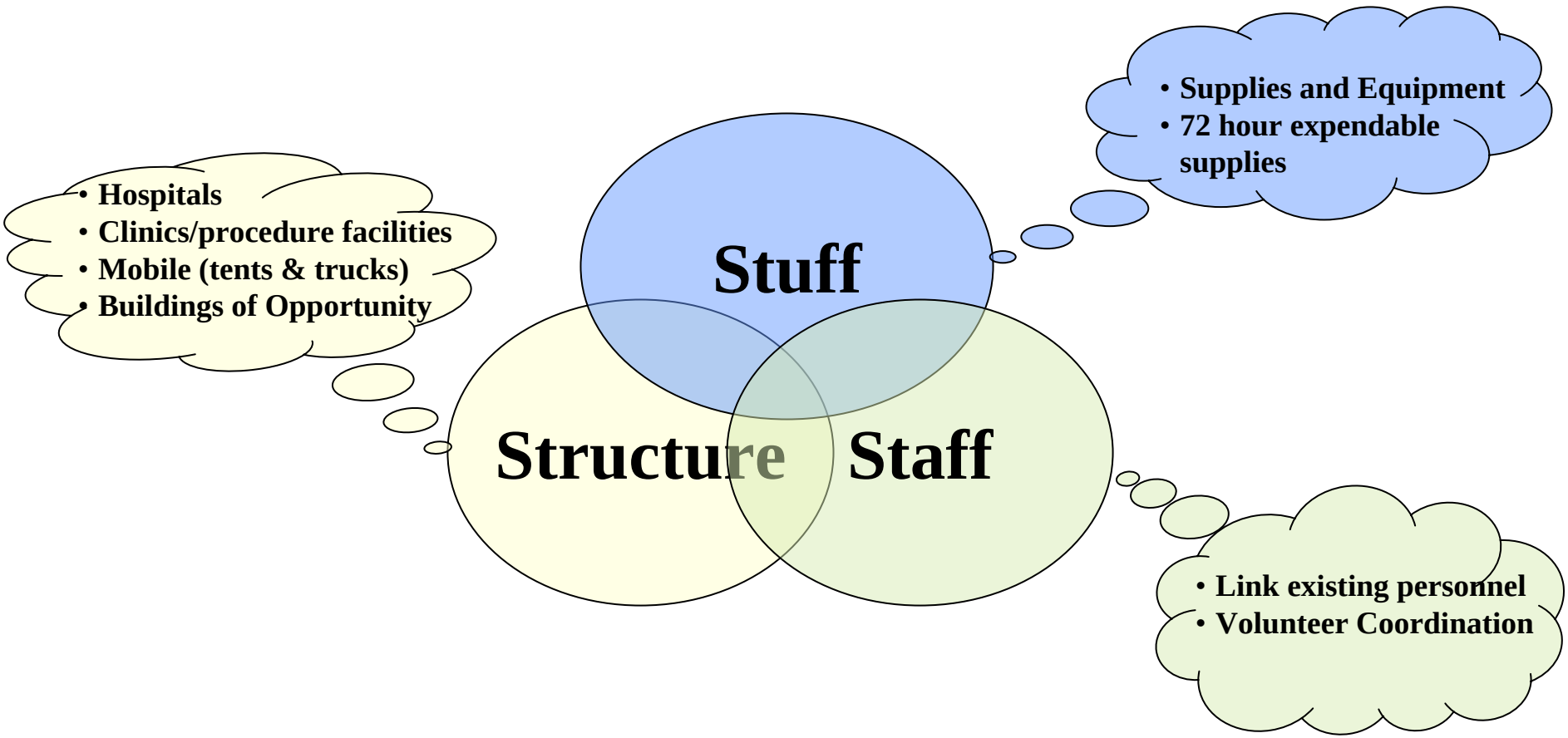
Changing Paradigms

Medical roles in Preparedness and Response:

- Define needs
- Establish priorities
- Coordinate resources
- Establish process to align and allocate or “triage” critical assets*

* **The Practice of Community Emergency Public Health (Burkle)**

Balanced Logistics Approach



MUST be Coordinated and Balanced across ALL domains

Educational Challenge

- Link validated concepts to training objectives
- Shift the status quo paradigm to actionable solutions in surge capacity
- Define impact of stovepiped solutions on other functional areas
- Establish metrics to measure progress

Surge Capacity:

From Concept
to
Operational Capability

CONCEPT of OPERATIONS
Immediate Impact

'GROUND ZERO'

- **Observable: instant impact**
- **Symmetrical: focal event**
- **Linear: event-driven response**
- **First responders are public safety agencies – EMS, fire, law enforcement**
- **Health ~ "secondary responder" "primary receiver"**

Source: Toby Clairmont

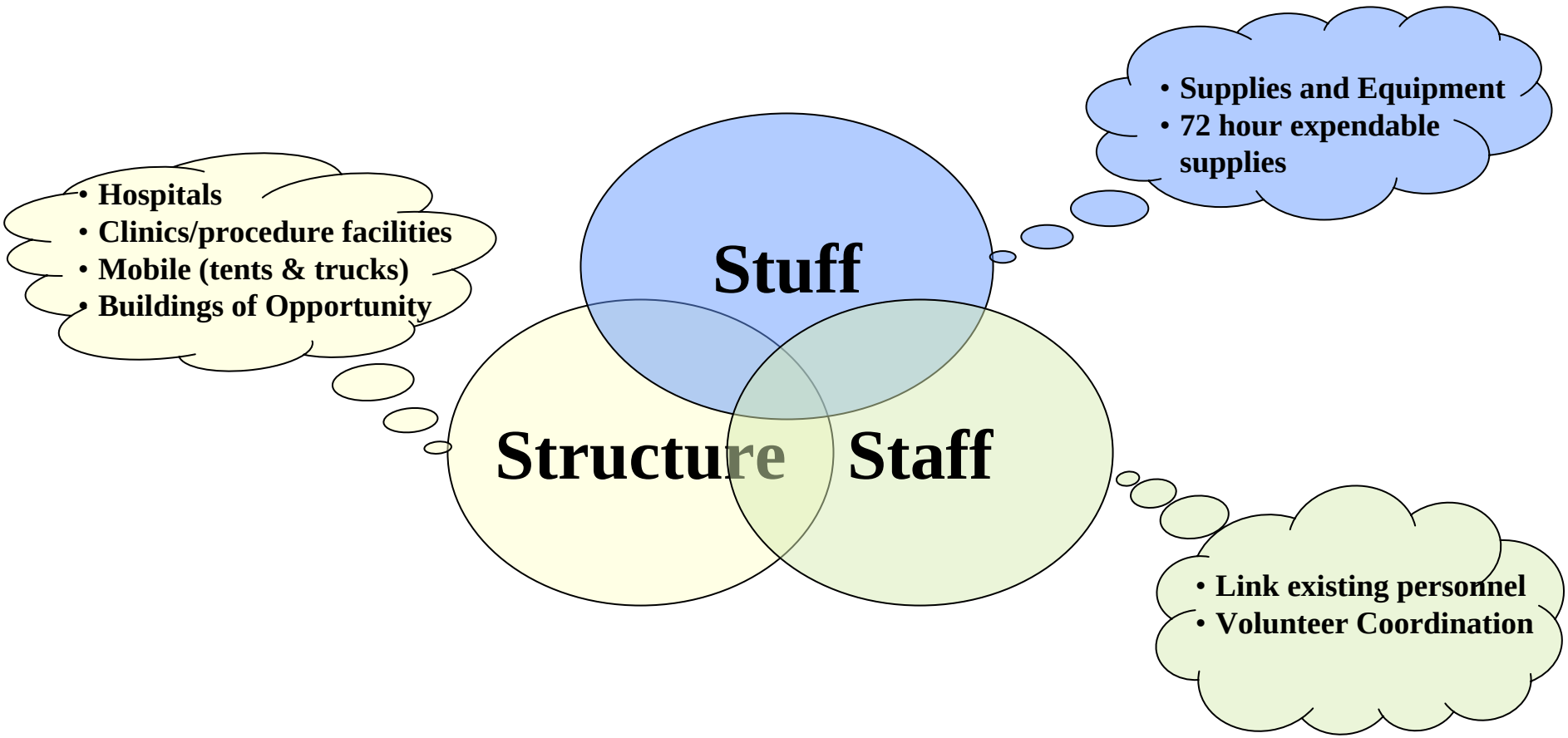
CONCEPT of OPERATIONS
Obscure Event

'GROUND ZERO'

- **No observable 'event'**
- **Asymmetrical: insidious emergence**
- **Non-linear: multi-focal event driven driven process**
- **First responders are primary care physicians, nurses, and Emergency Departments**
- **Traditional responders may be in a support role**
- **SARS best recent management experience**

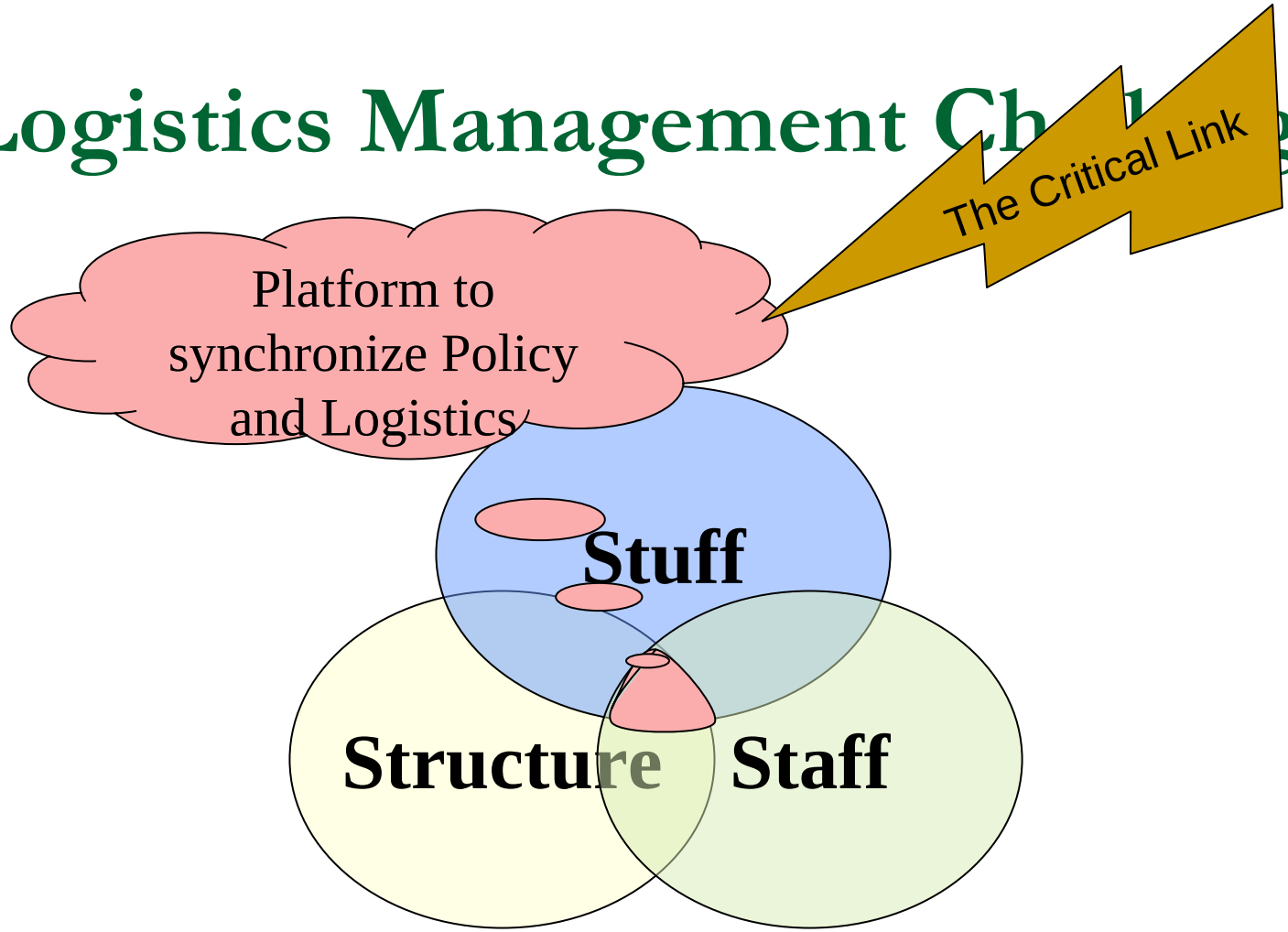
Source: Toby Clairmont

Balanced Logistics



MUST be Coordinated and Balanced across ALL domains

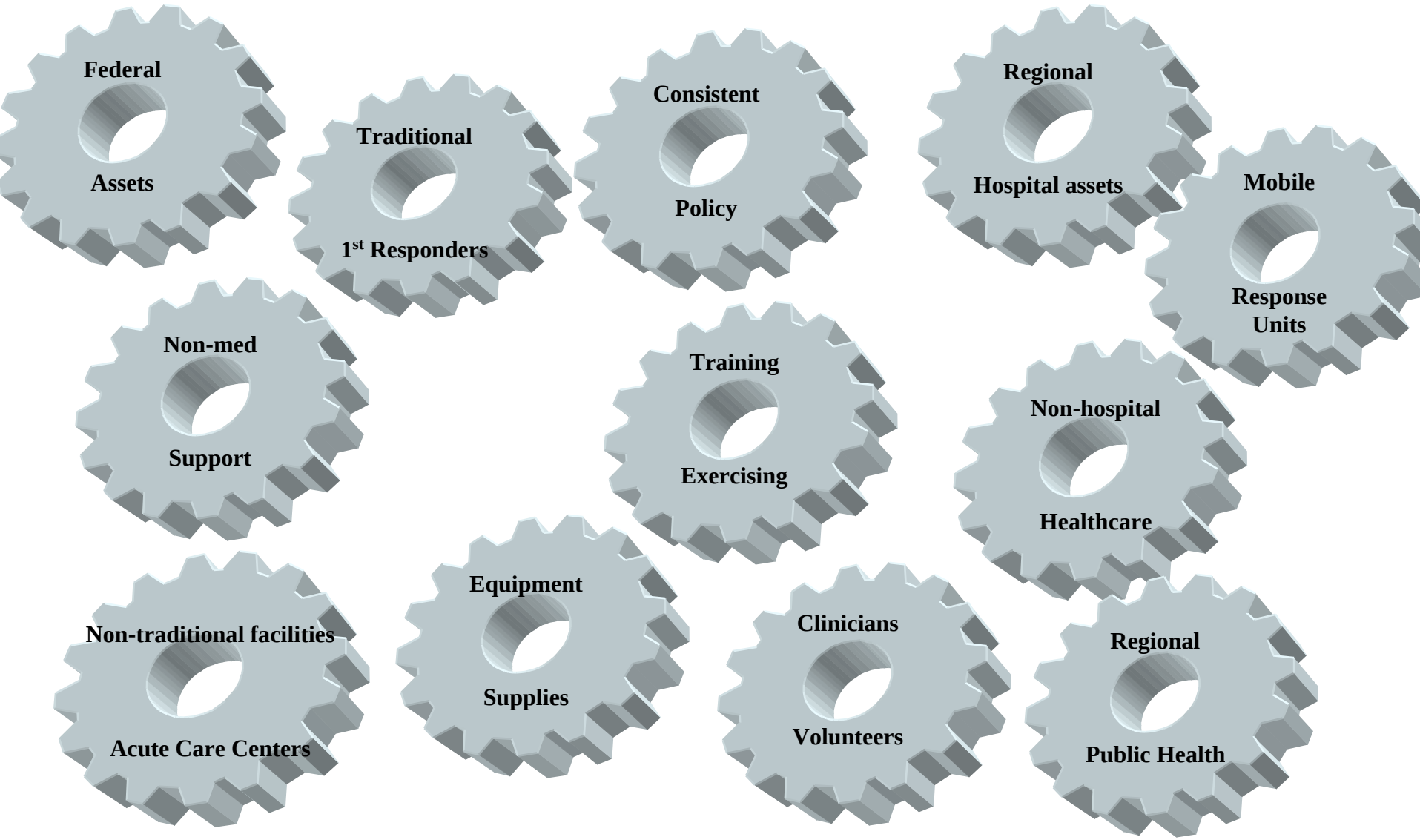
Logistics Management Ch[illegible]ges



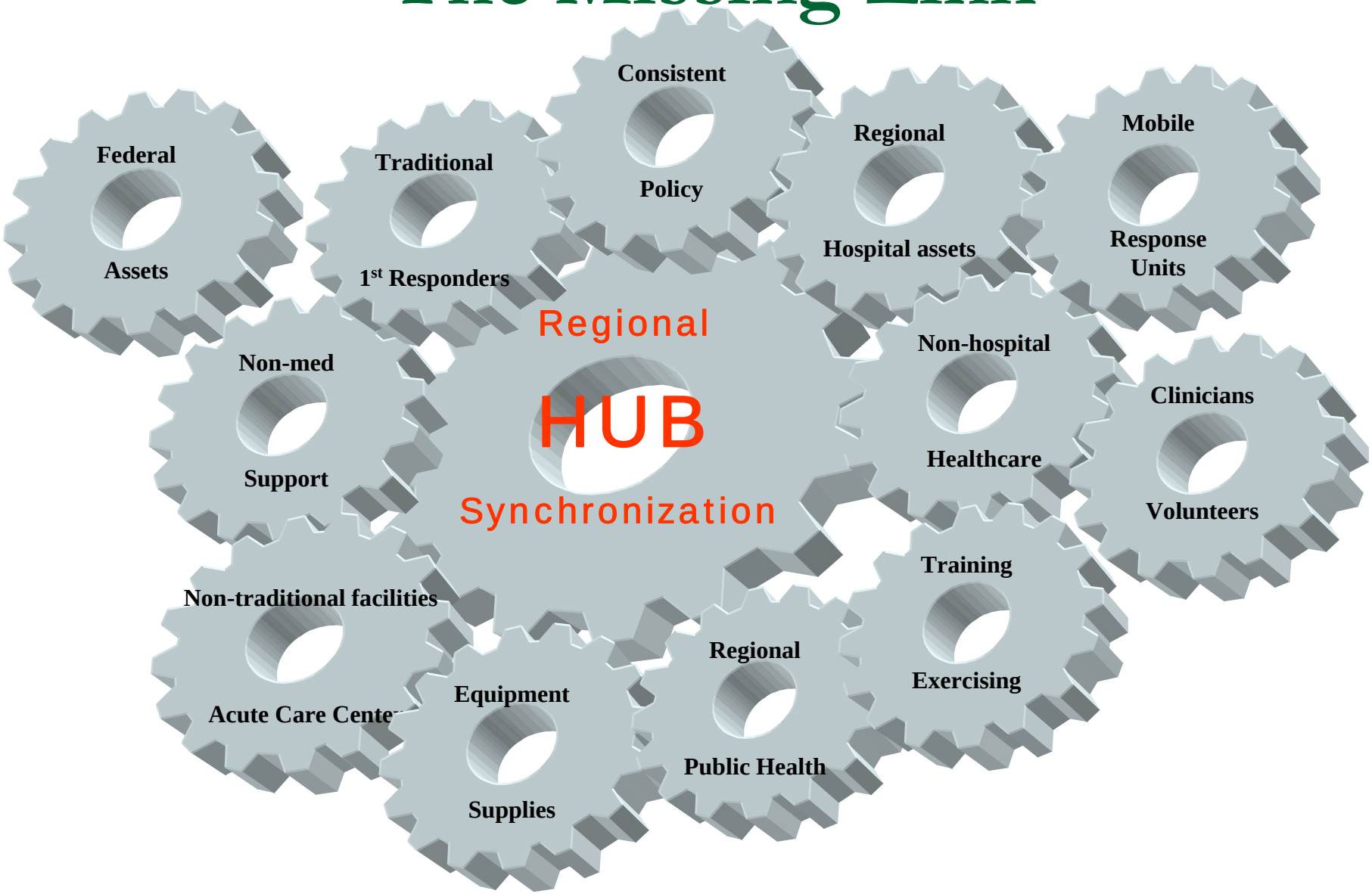
SYSTEM

MUST be Coordinated and Balanced across ALL domains

Surge Resources

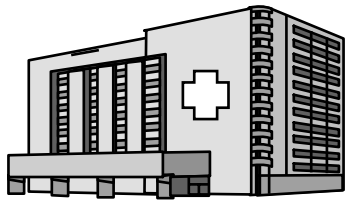


Integration
The Missing Link

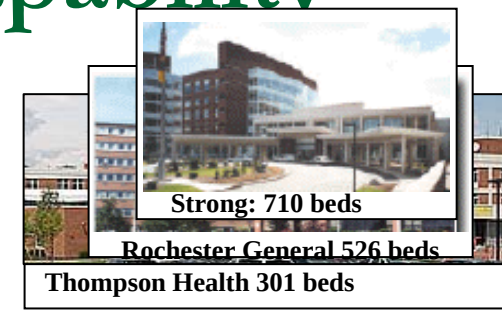


Modular / Phased Surge Capacity
Immediate and Sustained Capability

Phase IV: Federal assets



Rochester area total beds:2969



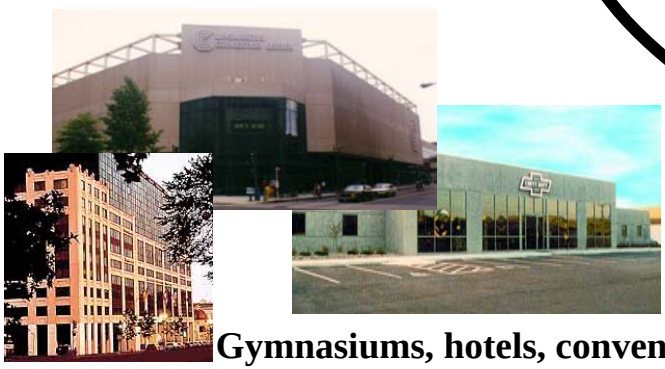
Phase I: Optimize within community

Existing healthcare assets
- **Clinics**
- **Physician offices, etc**

Phase II: Rapid Response Units

- **500 patient triage external to hospital**
- **50 patient minimal care**
- **8 patient critical care**
- **Isolation / quarantine capable**
- **Mobile—can deploy anywhere in region**

Phase III: More with Less



- **Buildings of opportunity**
- **1000+ in minimal or holding capacity**

Gymnasiums, hotels, convention centers, etc

Operational Hub

Tactical Operations and Training Coordination Center

Field operated facility responsible for:

- **Situational awareness**
- **Link regional policy and resources**
- **Develop and maintain strategic alliances**
- **Facilitate and integrate**
- **Communicate and reinforce**
- **Respond as staff advisors to medical incident commander**

Implementation: Phased Project Immediate →Sustainable→ Long term Surge Capacity

- **Provide capability for an event *today***
- **Initial response: Flexible, modular, and mobile to supplement healthcare surge at *any location***
- **Modular (building blocks):**
  - **responsive to *any event* as needed**
  - **Functionally packed equipment, all inclusive**
  - **Only deploy what is needed (sustainable cost effectiveness)**
- **Assess as it develops to improve long range capability**
- **Provide platform to facilitate synchronization**

Issues for Discussion

- Appropriate resources (stuff, staff, and structure) as event evolves
- Synchronization of policies and procedures
- Integrating resources across jurisdictional boundaries
- Measures of effectiveness

Surge Capacity

Life is full of wonderful opportunities temporarily disguised as overwhelmingly irresolvable problems