



***Re-Visioning Biological Defense as a Strategic
Enabler for Health Protection***

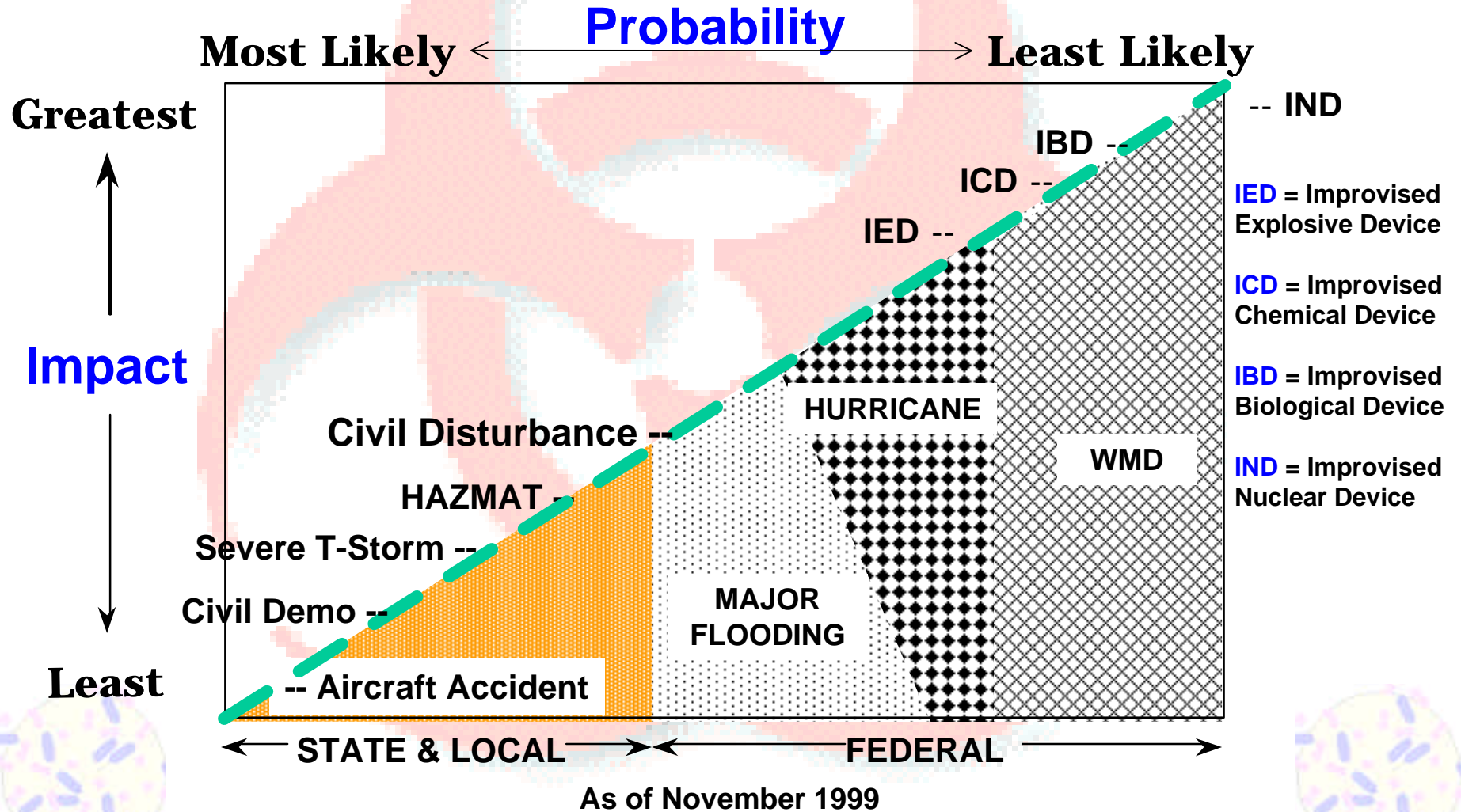
**LTC (P) Susanne Clark
USAWC Fellow**

Sclark@aepi.army.mil

Army Environmental Policy Institute

April 2003

Domestic Emergency Continuum



Bioterrorism

“...one of the most pressing and disturbing issues of our time -- the threat of germ weapons used by terrorists. That threat is real. Although the threat has low probability, I would argue strongly that there is an increasing probability -- with huge consequences.”

- **Senator Bill Frist, M.D., (R – TN), Statement to the Subcommittee on Labor, Health and Human Services, Education and Related Issues; October 3, 2001**



Purpose

- **Provide a brief overview and analysis of current military biodefense.**
 - **Discuss potential implications of “re-visioning” biodefense.**
- 
- 



Current Doctrine

- ❖ Contamination Avoidance
 - ❖ Protection
 - ❖ Restoration (Decontamination)
- 
- 
- 



A New Vision?

- ❖ **Sense – Situational Awareness**
- ❖ **Shape – Shape the Battlefield**
- ❖ **Shield – Soldier Protection**
- ❖ **Sustain – Maintain, restore military operations**

• *An Operational Concept for Biological Defense (Institute for Defense Analysis, 2002)*



Sensing: Th

- ❖ **Joint Biological Point Detection System (JBPDS)**
 - ❖ **Joint Biological Standoff Detection System (JBSDS)**
 - ❖ **Joint Service Lightweight Nuclear, Biological, Chemical Reconnaissance System (JSLNBCRS)**
 - ❖ **WMD Civil Support Teams (Homeland Defense)**
- 
- 

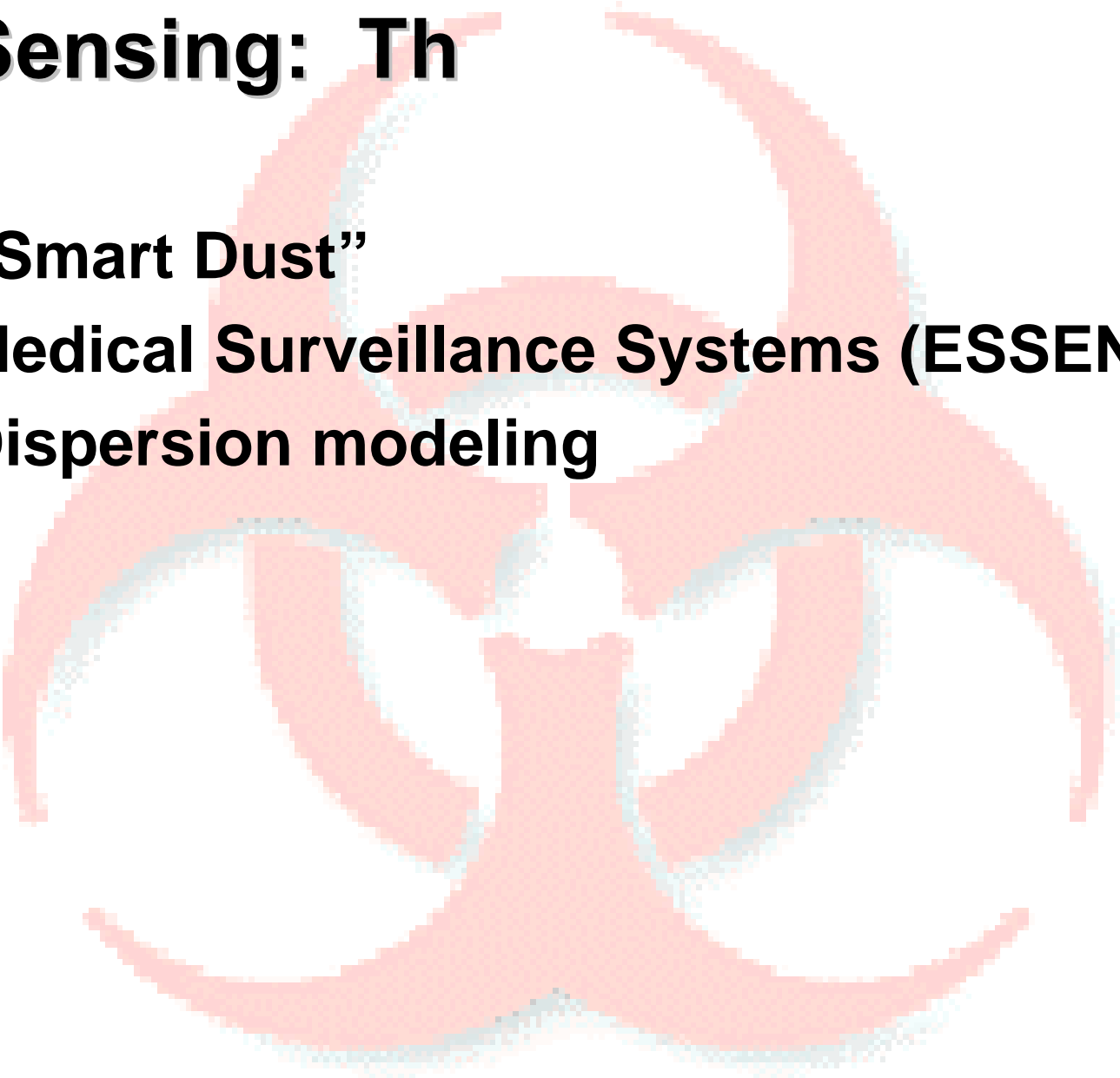
Broadening th

Early warning systems that define and discriminate threats in order to proactively protect.





Sensing: Th

- ❖ “Smart Dust”
 - ❖ Medical Surveillance Systems (ESSENCE)
 - ❖ Dispersion modeling
- 







Sensing: Th

❖ Medical Provider Training

- Medical Management of Biological and Chemical Casualties Course (U.S. Army)
- National Environmental Education and Training Foundation initiative

❖ Biomarkers

- Measure human response to threat agent
 - Predict survivability
 - Monitor long term health effects
 - Establish baseline health of the force
 - Track potential exposures
- 
- 



Sh

Battlespace



- ❖ **Joint Warning and Reporting Network (JWARN)**
 - ❖ **National Strategy to Combat Weapons of Mass Destruction**
 - Counterproliferation
 - Nonproliferation
 - Consequence management
- 

Broadening th

Shape the threat as well as the battlespace to minimize potential impact and effects.







Sh



❖ Threat assessments

- Agent
- Capabilities
- Nation/Terrorists
- Technology

❖ International laws

- 1972 Biological and Toxin Weapons Convention
 - Federation of American Scientists: “Code of Conduct for Biodefense Programs”, 2001
(<http://www.fas.org/bwc/index.html>)
 - Limitations on scientific research publications
- 
- 



Sh



- ❖ **Joint Service Lightweight Integrated Suit Technology (JSLIST)**
- ❖ **Joint Service General Protection Mask (JSGPM)**
- ❖ **Chemical Biological Protective Shelter (CBPS)**
- ❖ **Vehicular collective protection**





Broadening th

Develop modalities designed to protect the soldier from the toxin rather than protecting the soldier from the environment.





Sh



- ❖ Immunomodulation strategies
- ❖ Toxin neutralization
- ❖ Toxin sponges
- ❖ Medical prophylaxis: Vaccines, pre-treatments






Sustaining: Restoring Capabilities

- ❖ **Sorbent decontamination**
- ❖ **Bucket/brush brigade**
- ❖ **Modular Decontamination System (MDS)**
- ❖ **Medical countermeasures**



Broadening th

Design strategies that not only sustain individual and unit capabilities but also promote and improve capabilities.





Sustaining: Promoting Capabilities

- ❖ **Eliminate decontamination requirement**
 - disposable equipment, “soldiers”
 - impregnated strips on equipment
 - radiative strategies
- ❖ **Eliminate barrier protection requirement**
 - Pre-exposure pills/vaccines
 - Soldier internal medication pumps
- ❖ **Medical surveilling**







Are We (really) Ready?

“In the wake of Sept. 11th, there are questions about how prepared our nation is to respond to a biological attack, and rightfully so. Let me characterize our status this way: We are prepared to respond. But there is more we can do – and must do – to strengthen our response.”

- Opening statement made by HHS Secretary Tommy Thompson before the Senate Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies; October 3, 2001

“I would be confident that (our soldiers) are trained, that they’ve got the right equipment at the right place at the right time, and they have the confidence to complete their mission.”

- Closing statement by BG Steve Reeves, Program Executive Officer for Chemical and Biological Defense at a media briefing on Chemical and Biological Defense Readiness; March 3, 2003
- 
- 

Conclusion





References

Soldier Biological and Chemical Defense Command

<http://www.sbccom.army.mil>

Chemical and Biological Arms Control Institute

<http://www.cbaci.org>

**Briefing on Chemical and Biological Defense
Readiness; March 3, 2003**

<http://www.defenselink.mil>





Questions?

LTC Susanne Clark
Sclark@aepi.army.mil