

This presentation should not be considered a final statement of NIOSH policy or of any agency or individual who was involved. This information is intended for use in advancing knowledge needed to protect workers. Comments regarding this presentation may be submitted to the NIOSH Docket Office.

Pittsburgh Matrix for PPE

Michael P. Allswede

Director, Strategic Medical Intelligence,
UPMC

CBRN Respirator Standards

The findings and conclusions in this presentation have not been formally disseminated by the National Institute for Occupational Safety and Health and should not be construed to represent any agency determination or policy.

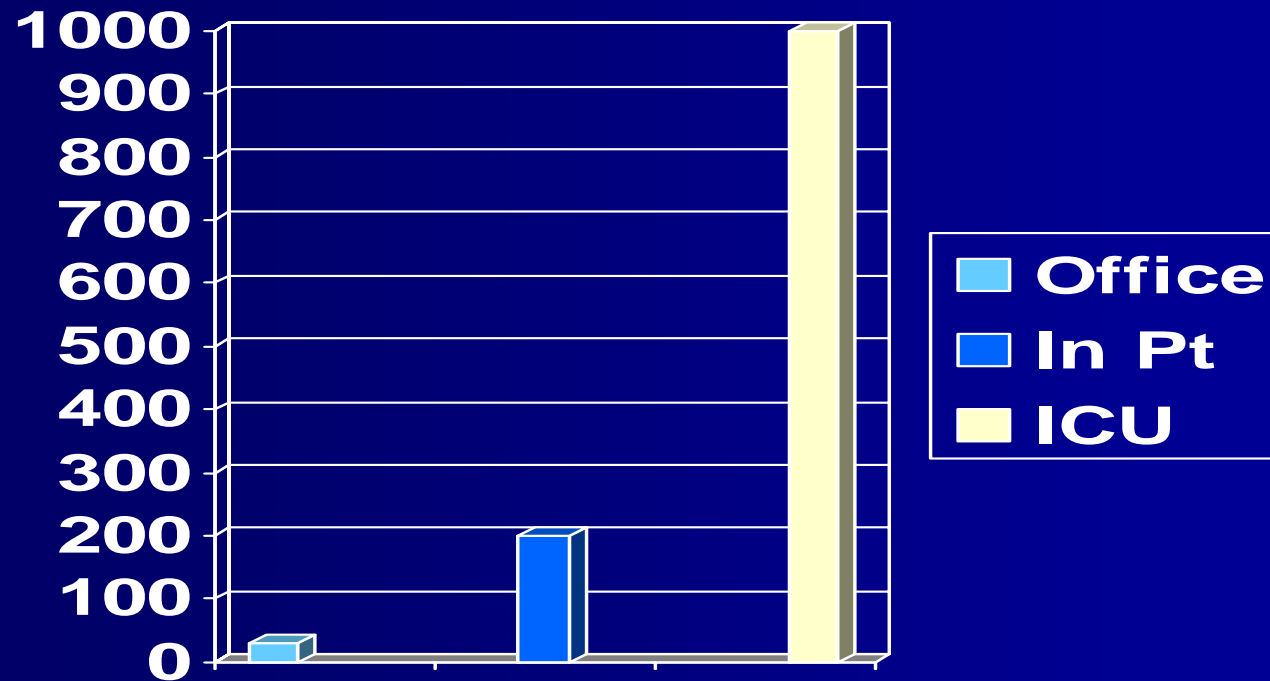
The Pittsburgh Matrix

Above all Resources					
Augmented Capacity					
Surge Capacity					
Current Capacity					
	Pre Release	Release	Symptom Occurrence	Illness Occurrence	Deaths/Epidemic

Allswede, MP, Watson SJ., *AHRQ Pittsburgh Matrix, 2002*

Demo of Matrix

UPMC Costs of Care



Gap Analysis

- Combines “Survivor Benefit” with Key Resources
- High Value Resources and Decisions are found in those vignettes with high survivor benefit
- Cost Bioterrorism Units (BTUs) determine per unit pricing for development of key determinants
- Expert panel can predict the impact of gap

Guides Facilities and National Strategy

- Threat will “float” with world events
- Assess value of mitigation strategies
 - Costs of strategy vs. lives saved
- New Technology
 - New tech or medical therapy will alter survival and the value of the asset can be compared with current to justify expenditure

Pre-Event Planning

- Working with local planners, the potential victim load is estimated
- Medical facilities are queried as to their bed counts, numbers of antibiotics, and available personnel to assess civic healthcare capacity
- Plot the number of victim load vs. capacity to determine scale of event

Pittsburgh Matrix for PPE

- PPE solutions must provide safety in the workplace
- PPE solutions must be affordable and easy to store and use
- PPE solutions must not impair work performance in medical niches

Four Studies

- Assessment of Air Movement Factors and Hospital Grading Scale
- Assessment of selected pathogens and chemicals in air
- Assessment of PPE strategies related to affordability and risk
- Assessment of PPE strategies with increasing scale

Assessment of Air Movement

- Fixed Features
 - Single Floor/multi-floor
 - Elevators
 - HVAC characteristics
- Variable Features
 - Use of Elevators/HVAC/Vacuum Tubes
 - Building “envelope”

Assessment of Selected Pathogens and Chemicals

- Pathogen transmission characteristics
 - Survival in suspended air
- Vapor risks
 - Gas characteristics
- Particulate risks
 - Radiation assessment

Assessment of Affordability and Risk

- Matrix assessment combining hospital types and pathogen risks to determine safety strategies for different job descriptions
- Matrix assessment of costs/benefits associated with each strategy
- PPE Recommendations related to risk, and affordability

Assessment of PPE needs with scale

- Assess PPE recommendations over surge capacity spectrum for hospital response to increased victim load.
- Recommendations on PPE strategy vs. facility improvements.