



[Press Releases](#)

[Home](#) > [Press Releases](#) > [2009](#)

JOHNS HOPKINS OFFERS FREE SOFTWARE TOOL FOR LARGE-SCALE DISASTER "SURGE" PLANNING

-Computer Modeling Program Developed By Hopkins' Office of Critical Event Preparedness and Response and Applied Physics Lab Team

February 4, 2009- A team of Johns Hopkins experts is offering a free, Web-based tool it developed that calculates and predicts in advance the impact on individual hospitals of a flu epidemic, bioterrorist attack, flood or plane crash, accounting for such elements as numbers of victims, germ-carrying wind patterns, available medical resources, bacterial incubation periods and bomb size.

"Biological, chemical, radiological or explosive attacks can bring hospitals and local health agencies to their knees, quickly overwhelming their ability to care for mass casualties," says Gabor Kelen, M.D., head of emergency medicine at Johns Hopkins and director of Hopkins' Office of Critical Event Preparedness and Response (CEPAR). "Our software lets users put their own information into the modeling software, customize it to their needs, and predict what they will need to handle a surge in casualties."

Called EMCAPS (Electronic Mass Casualty Assessment & Planning Scenarios), the software program is believed to be the first that generates the anticipated outcomes of disaster planning scenarios developed by the Department of Homeland Security. The scenarios include patient estimates by injury type, estimated level of care required, and the need for decontamination facilities.

Developed by CEPAR and programmed by the Johns Hopkins Applied Physics Laboratory, EMCAPS's details are reported in the February edition of the *Annals of Emergency Medicine*. The program is available for download free of cost from Johns Hopkins' CEPAR Web site, <http://www.hopkins-cepar.org/>

EMCAPS Scenario Output
RDD - Dirty Bomb Scenario

Selected Injury:
Blast Size: 1000 lbs. ANFO
Population Density: 2 person per 100 ft²

Casualties:

Blast Injuries	
Dead	137
Trauma Injuries	281
Urgent Care Injuries	1,103
Injuries Not Requiring Hospitalization	443

Radiological Poisoning Injuries

Need Aggressive Treatment	1
Need Some Critical Treatment	44
Self-Medicate with Potable Info	6,167

"Comprehensive disaster preparedness planning requires the ability to expand care capabilities in response to sudden or prolonged demand," says James J. Scheulen, lead investigator for the EMCAPS project, executive director of CEPAR and chief administrative officer of the Johns Hopkins Department of Emergency Medicine.

"While the planning scenarios developed by the Department of Homeland Security form a good basis for constructing disaster exercises, EMCAPS adds value by giving hospitals a platform for providing a needed level of detail and accounting for local conditions that influence health care demand and response in their regions," says Meridith Thanner, Ph.D., a CEPAR research associate and program manager with the National Center for the Study of Preparedness and Catastrophic Event Response.

When designing the program, EMCAPS developers selected eight of 15 Department of Homeland Security scenarios that could result in large-scale health effects: inhalation anthrax; plague; food contamination; blister, nerve and toxic agents; dirty bombs and improvised explosive device (IED) attacks. The remaining scenarios, including natural disasters and cyber attacks, were excluded from the program because of either insufficient information for computer modeling or low casualty probability as a result of an attack.

The Johns Hopkins Office of Critical Event Preparedness and Response (CEPAR) serves as Johns Hopkins' command center for institution-wide planning for and reaction to a disaster. The agency combines the skills of Johns Hopkins Medicine faculty and staff, with the tactical planning capabilities of the Applied Physics Laboratory staff, the public health

investigative skills of the Johns Hopkins Bloomberg School of Public Health, and the faculty and facilities of the University's undergraduate and graduate main campus.

In 2005, CEPAR spearheaded the creation of the national Center for the Study of Preparedness and Catastrophic Event Response (PACER) to coordinate U.S. technological, medical and physical resources to ensure effective response to any disaster.

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