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SPECIAL ISSUE: HOMELAND SECURITY: OPERATIONS RESEARCH INITIATIVES AND APPLICATIONS

483 Homeland Security: Operations Research Initiatives and Applications

James K. Lowe

486 Responding to Emergencies: Lessons Learned and the Need for Analysis

Richard C. Larson, Michael D. Metzger, and Michael F. Cahn

A review of recent major emergencies shows the need for research to develop decision-oriented OR models to improve preparation for and response to emergencies.

502 Global Optimization of Emergency Evacuation Assignments

Lee D. Han, Fang Yuan, Shih-Miao Chin, and Holing Hwang

A large-scale emergency evacuation case study showed that a one-destination model yielded substantial improvement over a conventional multiple-destination model, reducing the overall evacuation time by more than 60 percent.

514 A Survey of Operations Research Models and Applications in Homeland Security

P. Daniel Wright, Matthew J. Liberatore, and Robert L. Nydick

Operations researchers have many opportunities to work on homeland security.

530 Defending Critical Infrastructure

Gerald Brown, Matthew Carlyle, Javier Salmerón, and Kevin Wood

An operations research team at the Naval Postgraduate School applied new bilevel and trilevel optimization models to make critical infrastructure more resilient against terrorist attacks.

545 How Effective Is Security Screening of Airline Passengers?

Susan E. Martonosi and Arnold Barnett

Improving the baseline level of screening for all passengers might lower the likelihood of attack more than would improved profiling of high-risk passengers.

553 Tactical Prevention of Suicide Bombings in Israel

Edward H. Kaplan, Alex Mintz, and Shaul Mishal

Of possible counterterror tactics, preventive arrests appear to lower the rate of suicide-bombing attacks, while targeted killings do not.

562 Designing the Response to an Anthrax Attack

Mark H. Whitworth

The Center for Emergency Response Analytics used discrete event simulation to help a community plan its response to an anthrax attack.

569 **Montgomery County's Public Health Service Uses Operations Research to Plan Emergency Mass Dispensing and Vaccination Clinics**

Kay Aaby, Jeffrey W. Herrmann, Carol S. Jordan, Mark Treadwell, and Kathy Wood

Montgomery County uses discrete-event simulation, capacity-planning, and queueing-system models plus full-scale simulations of disease outbreaks to plan the physical design of clinics.

580 **Responding to Bioterrorist Smallpox in San Antonio**

George Miller, Stephen Randolph, and Jan E. Patterson

San Antonio, Texas uses recommendations based on a discrete-event simulation in planning a response to a bioterrorist attack.

591 **Large-Scale Dispensing for Emergency Response to Bioterrorism and Infectious-Disease Outbreak**

Eva K. Lee, Siddhartha Maheshwary, Jacquelyn Mason, and William Glisson

The paper describes the use of RealOpt®, a simulation and decision-support system for planning large-scale emergency dispensing clinics to respond to biological threats and infectious-disease outbreaks.

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Optimization Modeling with Spreadsheets

Kenneth R. Baker

Markov Chains: Models, Algorithms and Applications

Wai-Ki Ching and Michael K. Ng

Scatter Search: Methodology and Implementations in C

Manuel Laguna and Rafael Marti

Tutorials in Operations Research: Emerging Theory, Methods, and Applications

J. Cole Smith, ed.

Practical Mathematical Optimization: An Introduction to Basic Optimization Theory and Classical and New Gradient-Based Algorithms

Jan A. Snyman