Improving Public Health Preparedness with Systems Engineering
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This research used mathematical and simulation models to develop and implement decision support tools that help public health officials plan and prepare for emergencies such as anthrax attacks, smallpox, and pandemic flu outbreaks.

Future work will develop model-based risk assessments of syndromic surveillance systems to determine how effectively they warn public health officials when emergencies are imminent, which will help officials redesign and enhance these systems and improve preparedness.

Models, Tools, and Outputs

- Discrete-event simulation model of smallpox mass vaccination clinic
- Queueing network approximations for Points of Dispensing (PODs, clinics)
- Clinic Planning Model Generator to estimate POD capacity and performance
- Anthrax Progression and Treatment Model to evaluate impact of pre-positioning

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