

# NACCHO PREP-inars: The Public Health Preparedness Webinar Series

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**The Institute of Medicine Report on Prepositioning of Antibiotics for Anthrax; Next Steps for Local Public Health**



**Public Health**  
Prevent. Promote. Protect.

**NACCHO**  
National Association of County & City Health Officials

# Speaker Introductions

Robert Bass,  
Executive Director, Maryland Institute for Emergency Medical Services Systems, and  
Chair, IOM Committee on Prepositioned Medical Countermeasures for the Public

Herminia Palacio,  
Executive Director, Harris County Public Health and Environmental Services, Texas, and  
Member, IOM Committee on Prepositioned Medical Countermeasures for the Public





# Prepositioning Antibiotics for Anthrax

Webinar Hosted by NACCHO

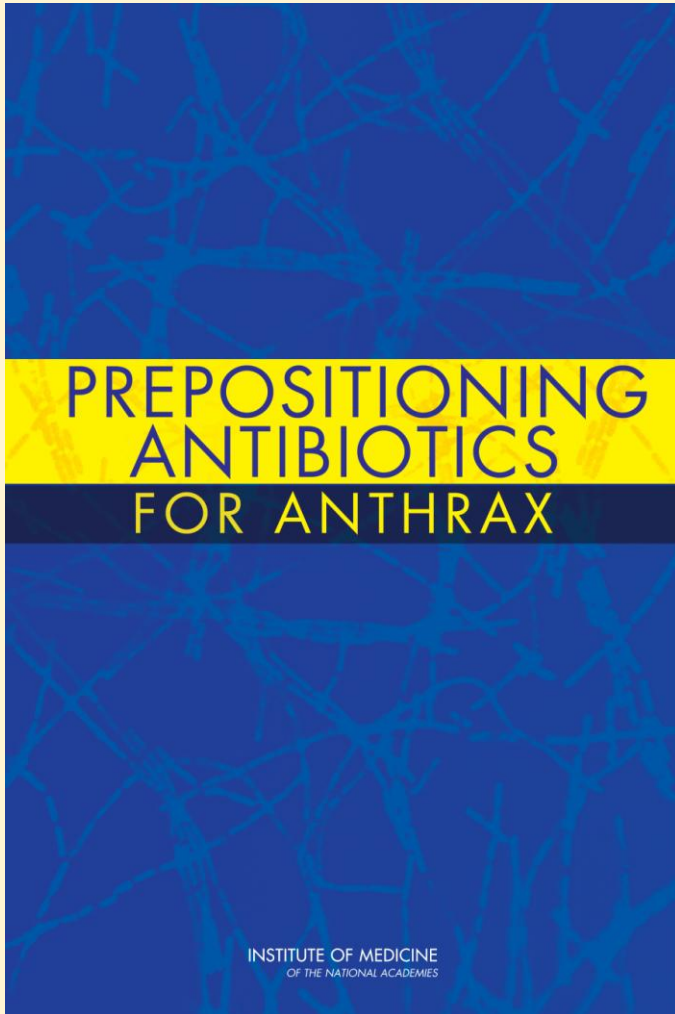
November 7, 2011



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Released September 30, 2011

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# Abbreviated Statement of Task

In response to a request from the HHS Office of the Assistant Secretary for Preparedness and Response, the Institute of Medicine will convene an ad hoc committee of subject matter experts to inform the use of prepositioned medical countermeasures for the public. The committee will focus on prepositioning antibiotics for protection against a terrorist attack using *Bacillus anthracis*...

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# Committee Membership

**Robert Bass** (Chair), Maryland Institute for Emergency Medical Services Systems

**Tia Powell** (Vice-chair), Montefiore-Einstein Center for Bioethics

**Margaret Brandeau**, Stanford University

**Brad Brekke**, Target Corporation

**Robert Burhans**, (retired) New York State Department of Health

**Tony Cox, Jr.**, Cox Associates

**Robert Hoffman**, New York City Poison Control Center

**Daniel Lucey**, Georgetown University Medical Center

**Kevin Massey**, Lutheran Disaster Response

**Erin Mullen**, Pharmaceutical Researchers and Manufacturers of America

**Joanne Nigg**, University of Delaware

**Herminia Palacio**, Harris County Public Health and Environmental Services, TX

**Andrew Pavia**, University of Utah School of Medicine

**Stephen Pollock**, University of Michigan

**Reed Tuckson**, UnitedHealth Group

**Jeffrey Upperman**, Children's Hospital Los Angeles

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# Methodology

- Literature review
- Commissioned paper on economic costs and time savings associated with prepositioning
- First-order mathematical model assessing quantitative aspects of potential health benefits versus likely costs
- Public workshop & open sessions focusing on:
  - Federal, state, & local perspectives
  - Public engagement on prepositioning
  - Prepositioning efforts in other domains
  - Modeling anthrax
  - Legal and regulatory issues
  - Safety issues
  - Ethical Issues
  - Prepositioning for vulnerable & at-risk populations
  - Private sector perspectives & workplace caches
  - Hospital & community health center caches
  - Other prepositioning strategies
  - Models, costs, & effectiveness

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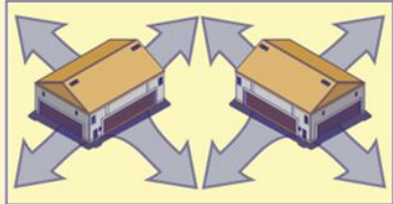
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# Prepositioning Medical Countermeasures (MCM)



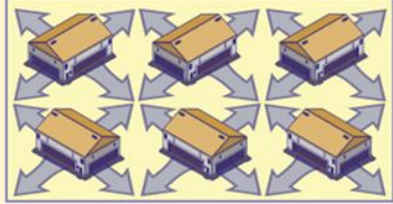
## Centralized MCM (No Prepositioning)

- E.g., centralized SNS warehouses; centralized commercially-managed stockpiles



## Forward-Deployed MCM: stored *near* the locations from which they will be dispensed

- E.g., MCM forward-deployed by SNS, VA, DoD, state and local governments, or pharmaceutical distributors



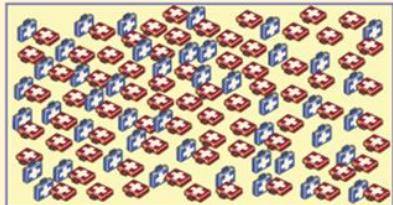
## Cached MCM: stored *at* the locations from which they will be dispensed

- E.g., caches in health care facilities or workplaces



## Predispensed MCM: stored *by the intended users* or by heads of households or other nonmedical caregivers for use by those in their care

- Personal stockpiles or MedKit (EUA or FDA-approved)



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# Briefing Overview

- Findings about anthrax incubation period and implications for prepositioning
- Recommendations at the state/local/tribal level
- Decision-aiding framework
- Recommendations at the federal/national level

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# Findings about anthrax incubation period and implications for prepositioning

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# Review of literature on anthrax incubation period

- Limited available data on human inhalational anthrax shows expected incubation periods of **4 to 8 days or longer**
- Much of the modeling used to derive shorter estimates is based on data from the 1979 accidental release of *B. anthracis* spores in Sverdlovsk, USSR, which potentially underestimates the minimum incubation period
- No compelling evidence to suggest that jurisdictions must plan to complete dispensing of initial prophylaxis faster than 96 hours from time of exposure



## Total Time from Exposure to Prophylaxis (96 hours)

Detection and Decision  
Time

(< 48 hours?)

Distribution and  
Dispensing Time

(48 hours)

The current CRI goal of completing initial prophylaxis within 48 hours of the decision to dispense is appropriate

- Incremental improvements may be achievable and could protect against unforeseen delays
- If detection or decision making is delayed, faster distribution and dispensing may be needed to minimize symptomatic disease in the exposed population

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# State, Local, and Tribal-Level Recommendations

**\*Note: abbreviated recommendations are presented here; see report for full text and details.**

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# Recommendations: State/Local/Tribal

**(Rec. 5-2) Integrate ethical principles and public engagement into the development of prepositioning strategies within the overall context of public health planning for bioterrorism response...**

**(Rec. 5-3) Consider the risk of attack, assess detection and dispensing capability, and evaluate the use of prepositioning strategies to complement points of dispensing...**

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# Recommendations: State/Local/Tribal

**(Rec. 5-4) Give priority to improving dispensing capability and developing prepositioning strategies such as forward-deployed or cached medical countermeasures.**

- **The committee does not recommend predispending for the general public**

*(continued...)*

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*(Rec. 5-4 continued)*

- **Predispensing may be appropriate for certain groups or individuals that lack timely access to MCM through other mechanisms. For example:**
  - **First responders, critical infrastructure personnel, and their families**
    - **Note: where possible, committee recommends workplace caches for these groups**
  - **Individuals with certain medical conditions who should not go to a POD (e.g., compromised immune system) and who do not have someone who could bring MCM to them**
    - **Note: this decision would be made in conjunction with the individual's physician and is allowed under current prescribing practices**

# Decision-Aiding Framework

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# The Need for a Decision-Aiding Framework

One size does not fit all

A community's characteristics—such as risk, current capability and infrastructure, and available resources—will determine which prepositioning strategies will be appropriate, if any



# Decision-Aiding Framework

Assessment of Risk  
& Current  
Capabilities

Incorporation  
of Ethical  
Principles

Evaluation of  
Prepositioning  
Strategies

Risk of  
Attack

Detection  
Capability

Dispensing  
Capability

Promote public health, stewardship, distributive justice, reciprocal obligations, transparency and accountability, proportionality, community engagement,

Health  
benefits  
& risks

Practicality

Costs

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# Assessment of Risk and Current

## Risk of Attack

- Prepositioning may be more appropriate for communities that face a higher risk of an anthrax attack.

## Detection Capability

- Prepositioning may be more appropriate in communities in which detection could be delayed.

## Dispensing Capability

- Prepositioning may not provide additional value in communities that are already capable of rapidly dispensing to their entire population.

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# Incorporation of Ethical Principles

Promotion of public health

Stewardship

Distributive justice

Reciprocal obligations

Transparency and accountability

Proportionality

Community engagement

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# Estimating Health Benefits

In general, prepositioning strategies can help decrease time-to-prophylaxis.

Report contains first-order mathematical model to help illustrate the potential health benefits (measured in expected deaths averted) of different prepositioning strategies under different attack scenarios in different types of communities

- An excel spreadsheet of the model can be downloaded from [www.iom.edu/anthraxreadiness](http://www.iom.edu/anthraxreadiness)

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# Estimating Costs

In general, prepositioning MCM closer to intended users increases costs, as it requires management of a larger number of stockpiles to provide equivalent coverage.

Costs may be borne by various entities, depending on how the strategy is implemented

- E.g., public health (federal, state, and/or local); private sector workplaces; individuals; health insurers
- The committee described the strategies but did not recommend specific implementation strategies

Report contains discussion of economic costs involved and example of calculations for one community (Minn./St. Paul)

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# Health Benefits and Costs

Decision-aiding framework can be used to understand the incremental benefits, costs, and tradeoffs associated with each positioning strategy

In a limited funding environment every dollar spent on prepositioning is one dollar less spent on other public health preparedness priorities

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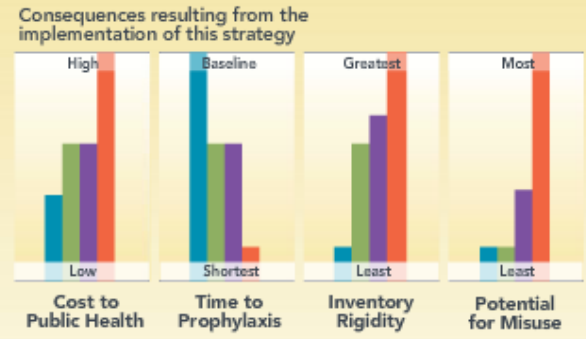
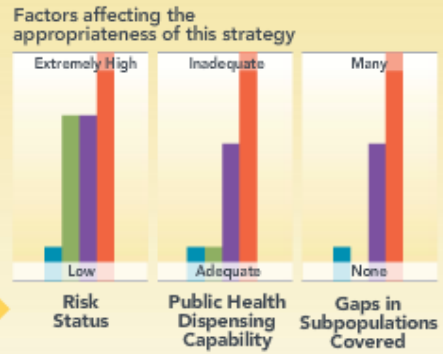
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## Appropriateness & Consequences of Alternative Prepositioning Strategies

A combination of factors affect the decision of which medical countermeasures (MCM) positioning strategies—if any—to employ in a community, including risk, community demographics, and infrastructure. Each strategy has consequences in cost, time to prophylaxis, flexibility/rigidity, and potential for misuse. Select the positioning strategies below to explore how these factors compare.

- No Prepositioning
- Forward-Deployed
- Cached
- Predispensed



Click for more detail

This graphic illustrates the factors and trade-offs related to each prepositioning strategy. Terms such as “high” and “moderate” are used qualitatively and represent relative differences among the positioning strategies. Combinations of strategies in a single community may be appropriate.

Read the report.

**Positioning Antibiotics for Anthrax**



Explore this interactive graphic at: [www.iom.edu/anthraxreadiness](http://www.iom.edu/anthraxreadiness) (Click on: “Appropriateness and Consequences of Alternative Prepositioning Strategies – Launch Graphic”)

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# Federal- and National-Level Recommendations

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**(Rec 5-5) Do not pursue development of a Food and Drug Administration-approved MedKit unless this is supported by additional safety and cost research.**

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## **(Rec. 5-1) Enhance assessment of performance in implementing distribution and dispensing plans for MCM.**

CDC should continue to facilitate assessment of state, local, and tribal jurisdictions' performance in implementing dispensing plans for MCM, in addition to assessing planning efforts. More specifically, CDC, in collaboration with state, local, and tribal jurisdictions, should facilitate assessment of the entire distribution and dispensing system by:

- demonstrating Strategic National Stockpile distribution capabilities to high-risk jurisdictions;
- facilitating large-scale, realistic exercises in high-risk jurisdictions to test dispensing capability; and
- continuing efforts to identify objective criteria and metrics for evaluating the performance of jurisdictions in implementing mass dispensing.

## **(Rec 4-1) Develop national guidance for public-private coordination in the prepositioning, distribution, and dispensing of medical countermeasures.**

### Motivation for Recommendation

- Private-sector entities may be interested in developing systems through which they can help ensure the safety of employees and their families and to provide for business continuity.
- Many large private-sector companies already have systems through which they communicate effectively with their employees, and often have medical staff and other resources that could be used to enhance dispensing capacity within their communities during a time of crisis.
- However, potential private-sector partners face many barriers, including liability, cost, legal and regulatory issues, and the complexities of working across multiple jurisdictions during the development of MCM dispensing plans.

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**(Rec 6-1) Perform additional research to better inform decision making about prepositioning strategies.**



# ***Obtain Additional Information***

Report Website <http://iom.edu/anthraxreadiness>

- Download the report
- View interactive informational graphics
- Download the mathematical model as an excel spreadsheet
- Download public meeting agendas and presentations

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