



BARDA Medical Countermeasures First Responder Engagement

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Division of Chemical, Biological, Radiological, and Nuclear Countermeasures

Biomedical Advanced Research and Development Authority (BARDA)

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ASPR's mission:

Assist the country in
preparing for,
responding to,
and **recovering**
from public health
emergencies and
disasters.



The BARDA Model

BARDA develops and makes available medical countermeasures (MCMs) by forming unique public-private partnerships to drive innovation off the bench to the patient to save lives.



Flexible, nimble authorities

Multi-year funding

Cutting edge expertise

Facilitate partnerships

Promote innovation

Why are we here?

First Responders Engagement Goals



Familiarize participants with BARDA MCM efforts



Review strategy to facilitate response to chemical emergencies with input from the end user

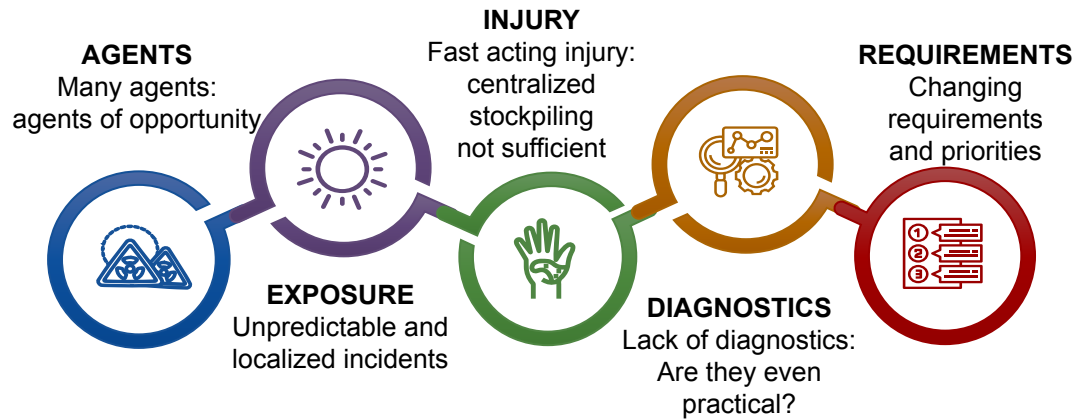


Gather feedback on MCM needs for emergency response
Obtain advice/ideas on how to engage with first responders

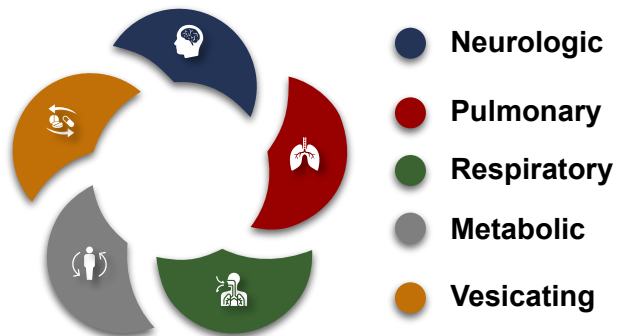
Chemical Preparedness and Response



Chemical Preparedness Unique Challenges



FIVE PRIORITY TOXIDROMES



How does one deal with an ever expanding list of threat agents? (184 and counting!)



Threat-agnostic approach -
Treat the injury, not the agent!

Time is of the essence!

- Medical intervention must occur **RAPIDLY**
- MCMs need to be far-forward positioned (ideally with end user)
- First responders should have all tools available to identify and treat chemical injury



End-user engagement is critical for our work in preparedness and response

Chemical MCM Program – Strategic Objectives



MISSION

Improve health outcomes for all victims of chemical exposure

GOAL

Ensure that MCMs for chemical injury are readily available for the end-users



STRATEGIC OBJECTIVES

Multi-purpose

Develop a threat-agonist pipeline of countermeasures

- Broad spectrum use for chemical and conventional indications
- Ease of availability during chemical emergency

Repurpose

Repurpose common drugs for chemical indications

- Facilitate use of readily available drugs for chemical injury
- Far forward positioned drugs: already with the end-user

User-Focused

Improve end user engagement

- Ensure that first responders have the products they need
- Create a communication channel directly with the end user
- Bring awareness and obtain input on BARDA's products designed for emergency response

BARDA Programs Supporting First Responders

(CHEMICAL THREATS)

Broad Spectrum Treatments

» Nalmefene (OPVEE)

- Potent and long-lasting reversal of opioid overdose (including fentanyl)

» Silverlon

- Cleared for sulfur mustard, thermal, and rad/nuc burns

» Midazolam (SEIZALAM)

- Commonly used benzodiazepine
- Approved for status epilepticus
 - Includes nerve agent seizures

Emergency Response Resources

» PRISM

- Guidance on Human Decontamination



» CHEMM – Chemical Hazards Emergency Medical Management

- Information resource on medical management of chemical incidents
- Plan to develop a user-friendly app

In the Works...

» Sublingual Atropine

- Eye drops administered under the tongue for nerve agent poisoning

» Respiratory Stimulants

- Restore breathing, keep them asleep
- Effective against mixed OD

» Improved autoinjectors

- No glass (2-PAM)
- No needles (midazolam – adult/ped)

» ReDirect – Repurposing of drugs for treatment of chemical injury



OPVEE (Nasal Nalmefene Spray) – BARDA's 76th Approval

- **Opioids Public Health Emergency Since 2017**
 - Community overdose
 - Fake and adulterated pills
 - Potential mass exposure events
- **Increase in fentanyl overdoses**
 - Fentanyl half-life = ~4 hours
 - Naloxone half-life = ~1 hour
 - Repeat administration may be required to prevent re-narcotization
 - **Nalmefene half-life = >10 hours**
- **Effective and easy-to-use treatments needed**
 - Bystanders/family members
 - Police and First Responders

Over 150 people die every day from overdoses related to synthetic opioids like fentanyl – Centers for Disease Control and Prevention



Nalmefene provides a potent and long-lasting reversal of opioid-induced respiratory depression

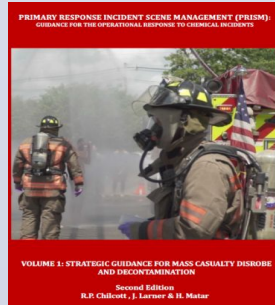
- Approved for people 12 years old and over
- *May lead to extended duration of withdrawal symptoms in opioid use disorder sufferers*

PRISM: Primary Response Incident Scene Management



PRISM GUIDANCE

Evidence-based guidance for human chemical decontamination



- » Developed in collaboration with first responders and agencies in over 35 municipalities across 22 states
- » 3 volumes with different levels of detail

Strategic Guidance: How? Why? Evidence Base? Rationale?

Tactical Guidance: How? Why?

Operational Guidance: How?

LABORATORY STUDIES

- » Evaluated decontamination procedures in tests with excised human skin

	DPC		MPC			
	Pre-Barrier	Post-Barrier	Pre-Barrier	Post-Barrier		
Control Unbarriered						
Control Barriered						
HP Unbarriered						
HP Barriered						
LP Unbarriered						
LP Barriered						

CLINICAL STUDIES

- » Decontamination Exercises with first responder organizations
 - Boston Fire & EMS
 - Rhode Island First Responders
 - CDP, Anniston, AL
 - Los Angeles Fire, EMS
- Operation DOWNPOUR



Disrobing and Dry Decontamination
Self-Care with Guidance



Ladder Pipe System
First Responders Using Fire Trucks



Technical Decontamination
Specialists Using Decontamination Units

First responders can remove up to 99.9% percent of chemical contamination using the triple protocol method

CHEMM Emergency Response Website

CHEMM (Chemical Hazards Emergency Medical Management)



- » Support first responders, first receivers, & other healthcare providers plan for and manage events involving chemicals
- » Provide a comprehensive resource readily available in real time with updated information
- » Plans to develop a user-friendly app for Emergency Medical Management.
 - » Currently updating for content and ease of use
 - » Need end user input to develop a tool YOU can use

ASPIRE (Algorithm Suggesting Proportionate Incident Response Engagement)



- » Included in CHEMM
- » Decision aid tool for human decontamination
 - » Helps end-user determine the need for decontamination

Operational Resources and Medical Expertise for Radiological and Nuclear Threats



10kT Detonation

Two major metropolitan areas



Field care



En route



Definitive

Resources

Operational needs

- > Medical provider familiarity with products
 - > Limit cold chain reliance
 - > Improve ease of use

Burn & Blast Trauma Care Priorities



Takeaways

THREATS



- » Response to chemical and radiological emergencies presents unique challenges
- » **Treat the injury, not the agent**

STRATEGY



- » Focus on **threat-agnostic treatments** that address common symptoms/injuries caused by chemical and radiological exposure
- » Improve everyday standard of care
- » *Repurpose commonly available drugs where possible*

SUCCESS



- » Enablers of **success**:
 - Clear regulatory guidance
 - Education and training
 - End-user input

Our Questions for You.....

**Your thoughts
about BARDA
MCM efforts**



**Advice on how to
engage first responder
community in MCM...**

Need
Development
Utilization
Deployment

THANK YOU

QUESTIONS?



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BARDA
<https://medicalcountermeasures.gov/>



medicalcountermeasures.gov
Portal to BARDA: Register to request a TechWatch meeting!



[sam.gov/](https://sam.gov)
Official announcements and info for all government contract solicitations



aspr.hhs.gov/BARDA/
Program description, information, news, announcements



drive.hhs.gov
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