BARDA Chemical Medical Countermeasures (MCM) Program

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GOAL

To improve health outcomes for all victims of chemical exposure
Intentional use of chemical weapons resulting in death since 1914

- Pulmonary
- Cyanide
- Nerve Agent
- Vesicant
- Opioid

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General Considerations for Civilian MCMs

• Challenges
  ▪ Chemical injury happens very fast!
  ▪ No pretreatments
  ▪ May take a while for help to arrive
General Considerations for Civilian MCMs

• Challenges
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• Addressing the challenges
  ▪ Proper decontamination can remove > 99% of chemical from skin
  ▪ Injury caused by chemicals share many characteristics with common clinical conditions

Treat the injury, not the agent
Treating the Symptoms of Chemical Exposure

Nerve agents
(Sarin, VX)
Cholinergic crisis, seizures

Pulmonary
(choking) agents
(Chlorine, phosgene)
Injure respiratory tract

Incapacitating agents
(Opioids, riot control agents)
Cause altered state of consciousness;
respiratory depression, irritation

Vesicants
(blistering agents)
(Sulfur mustards, lewisite)
Injure skin, eyes, and airways

Systemic asphyxiants (blood agents)
(Hydrogen cyanide, cyanogen chloride, hydrogen sulfide)
Cause apnea and organ problems

Enabling Community Resiliency

- Ensuring availability of lifesaving medicines

  New Uses for Common Medicines

- Improving Emergency Response

  PRISM Guidance for Chemical Decontamination
Repurposing for Chemical MCMs

Need: Have FDA-approved MCMs readily available in hospitals to treat victims of chemical threat attack

Strategy
Use existing hospital formularies to develop on-site MCM armamentarium

GOAL

Site of Need: Hospitals

Hospital Formulary

BREAKOUT SESSION: Repurposing for Chemical Medical Countermeasures – Day 2

ASPR
Opioids MCM Development

• Requirement initiated in FY’18
  ▪ Public Health Emergency
  ▪ Partnership with Opiant for development of Nalmefene for opioid overdose
    ✓ Co-funded by NIH/NIDA

• What we are looking for:
  • MCMs that target respiratory depression, rather than traditional opioid receptor antagonists
  • Fast acting, long lasting, and effective against a variety of opioids (e.g., fentanyl, carfentanil)
  • MCMs that are amenable for use in a mass-casualty setting

BREAKOUT SESSION: New Approaches to Combating Opioids @ 3:30PM
Our FY19 Priorities

- Program Priorities and Current Projects
  - Sulfur Mustard
  - Chlorine
  - Opioids
  - Nerve Agents
  - Cyanide
  - Novel Delivery Methods

Drugs in development or already approved for conventional indications strongly preferred
Our Current Portfolio

Nerve Agents

Vesicants
(Sulfur Mustard)

Cyanide

YOUR DRUG HERE

Pulmonary Agents
(Chlorine)

Novel Delivery
Mechanisms
(also nerve agent MCM)

Opioids

Chem Program Successes in 2018

Continue chem program growth

500% growth in 5 years!

Second Edition of PRISM Guidance

Developed in Partnership with University of Hertfordshire
Publication in Annals of Emergency Medicine

FDA approval of Meridian’s SEIZALAM for Status Epilepticus

Collaboration with DOD and NIH

Publication of efficacy of Ketamine for refractory seizures

Evaluation of US Federal Guidelines (Primary Response Incident Scene Management [PRISM]) for Mass Decontamination of Casualties During the Initial Operational Response to a Chemical Incident


Full Length Article
Addition of ketamine to standard-of-care countermeasures for acute organophosphate poisoning improves neurobiological outcomes

The Chem MCM Team

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- Kristen Herring
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- Alan Jacobson

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- Ethan Mueller
- Michele Riggs
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How to contact BARDA

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

www.fbo.gov/ ("FedBizOpps")
Official announcements and info for all government contract solicitations

https://www.phe.gov/about/BARDA/Pages/default.aspx
Program description, information, news, announcements

https://www.usajobs.gov/
Join the team!

www.drive.hhs.gov
DRIVE questions