Improved Civilian Medical Countermeasures Against Chemical Threats

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BARDA Priorities: Chemical Threat Medical Countermeasures

• Decontamination

• Specific Threat Agents of Interest
  — Nerve agents and Pesticides
  — Vesicants (Mustard)
  — Pulmonary Agents
  — Blood and Metabolic Agents
  — Toxic Industrial Chemicals and Emerging Threats

• General Considerations
  — Safe in children, pregnant women, and the elderly
  — Easy to administer
  — Realistic treatment window
We Need Better Countermeasures for Kids!

Nerve Agent Victims, Syria: August 2013

BARDA Concept-of-Operations (CONOPs) for Nerve Agent Exposure

Nerve Agent Release

Pre-Exposure -30 min

Acute 0 min 30 min

Delayed/Hospital 1 hour days

Long-Term / Chronic months years

Goals:

Counter acute lethal effects:
• Decontaminate
• Reactivate AChE
• Block AChR overstimulation
• Arrest seizure

Treatment

EMS CHEMPACK (autoinjectors)
• Atropine (anticholinergic)
• 2-PAM (reactivator)
• Diazepam (anticonvulsant)

Goals:

Continue acute care /
• Treat slow-onset agents
• Block AChR overstimulation
• Arrest recurring seizures
• Mitigate neurological damage

Hospital Care
• Atropine (anticholinergic)
• Diazepam (anticonvulsant)
• ??? } product gap

Treatment

Hospital Care/Home Care
• ??? } product gap
• ???
• ???

Goals:

Treat long-term effects:
• Treat long-term effects
• Treat chronic effects
• ???
• ??? } knowledge gap

Hospital Care
• Atropine (anticholinergic)
• 2-PAM (reactivator)
• Diazepam (anticonvulsant)
• ???

Treatment

 product gap
Enabling Community Resiliency

• Adapting already in-use emergency response paradigms

• New uses for drugs already in hospitals and on ambulances

• Treatments for chronic and long-term effects of chemical exposure

Chemical MCM Near Term Priorities

• Approval of existing MCMs for pediatric use

• New Therapeutics for Chemical Agents
  — Safe, efficacious, and easy to use
  — Realistic

• Animal Models
  — Realistic routes of exposure
  — Time course and effects of sub-lethal exposure

• Mitigation of long-term and chronic effects
Questions?

• [www.medicalcountermeasures.gov](http://www.medicalcountermeasures.gov)
  - Portal to BARDA
  - View BAA priorities
  - Register and Request a Meeting

• Contact Us

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