



IMPROVED MEDICAL COUNTERMEASURES AGAINST CHEMICAL THREATS

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The Chemical Threat

- Chemical weapons have been used in war and terrorism for >100 years
- Diverse Threats, Few Drugs
 - SNS Stocks MCMs only for OP Nerve Agents
 - Recent use of chlorine and sulfur mustard in Middle East
- PHEMCE Chem IPT Top Priorities
 - Pulmonary Threat Agents (Chlorine)
 - Vesicants
 - Cyanide
 - Nerve Agents



Chem Program Successes

- Decontamination guidance: [PRISM](#)
 - Broad-spectrum MCM for all chemical threats
 - Disrobe and Dry Decon Removes 99% of Contamination
- Acute nerve agent intoxication: Midazolam
 - Improved anticonvulsant for inclusion in CHEMPACK
 - Adult and pediatric-dose autoinjectors in 2018
 - *New Indication for status epilepticus*
- Vesicant cutaneous injury: Silverlon® wound dressing
 - Already stocked in SNS Burn-Blast Kit
 - *Cleared burn and wound dressing*



Civilian Chemical MCMs

Facts of Life

- First, the bad news:
 - *Chemical Injury Happens Fast!*
 - Civilians don't get pretreatments
 - It might take awhile for help to arrive
- Next, the better news:
 - Optimized Ladder Pipe Decontamination can remove >99% of chemical contamination.
 - Just removing contaminated clothing eliminates 90%!
 - Chemical-induced pathologies share many characteristics with more common clinical conditions
- Now, the insight:
 - *Treat the injury, not the agent!*

We are pursuing commercially available products to treat injuries/pathologies that may be caused by exposure to Chem agents



Near Term Focus Areas

- Pulmonary Injury from Chlorine and Vesicants
 - Commercial Indications: Pulmonary Edema, Inflammation, Fibrosis, COPD
- Drugs for Refractory Nerve Agent Seizures
 - Commercial Indications: Refractory seizure, status epilepticus, epilepsy
- Cyanide Treatments- Improved Ease of Use



We Are Pursuing Chemical Threat Indications for Common Drugs

- Midazolam for Nerve Agent Exposure
- Silverlon[®] Wound Dressing for Sulfur Mustard Burns
- Alteplase[®] for Sulfur Mustard Inhalation
- *Your Drug Here....*



Questions?

- www.medicalcountermeasures.gov
 - Portal to BARDA
 - View BAA priorities
 - Register and Request a Meeting

- Contact Us

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