USAMRMC STRATEGIC COMMUNICATION PLAN

U.S. ARMY MEDICAL RESEARCH INSTITUTE OF CHEMICAL DEFENSE (USAMRICD)

MISSION

Discover and develop medical products and knowledge solutions against chemical threats through research, education and training, and consultation.

BACKGROUND

The USAMRICD is the Nation's center of excellence for medical chemical defense. Chemical warfare agents (CWAs) are extremely toxic compounds that are relatively inexpensive, as well as in some cases easy, to produce. These characteristics make them a feasible weapon of choice for terrorist organizations and rogue states that are not signatories to the 1993 Chemical Weapons Convention. The USAMRICD conducts research and training that mitigates and attempts to eliminate the threat posed by these chemical agents.

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The brain is a major target for the toxic effects of nerve agents (NAs). Inhibition of the enzyme acetylcholinesterase (AChE) in the brain results in seizures and contributes to the incapacitating behavioral, cognitive, and lethal effects of these agents. The USAMRICD has a comprehensive neuroprotection research program to evaluate medical countermeasures to protect and/or restore AChE activity, thereby preventing brain damage and possible long-term effects of exposure.

Other research programs include:

- **Nerve Agent Countermeasures:** Eliminate or mitigate the acute and long-term toxic manifestations of nerve agent (NA) exposures of military and civilian populations at risk.
- **Agent Mitigation:** Research approaches that mitigate the medical consequences of exposure to chemical threats by removing or detoxifying them *in vivo*.
- **Toxicants:** Discover and develop medical countermeasures and knowledge solutions against non-nerve agent chemical threats.
- **Analytical:** (1) Diagnostics/Forensics. Develop and implement analytical methods for human verification of exposure to chemical threat agents using detection of biomarkers or parent agent; (2) ADME. Study

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and elucidation of absorption, distribution, metabolism and excretion of countermeasures against chemical and biological threat agents as well as novel chemical threats using *in vitro* and *in vivo* models.

– **Knowledge Solutions:** Educate medical professionals and first responders in the management of chemical casualties and to provide consultation to military and civilian authorities.

The USAMRICD's Chemical Casualty Care Division (CCCD) is the lead agency for the DoD and the Department of Homeland Security postgraduate education and training in chemical casualty care for U.S. and international civilians and responders from government and non-government agencies. The education and training courses from CCCD arose from the need to treat and manage chemical agent and biological agent casualties and to address the practical challenges of hospital preparedness and respond to the full spectrum of chemical, biological, radiological, nuclear, and explosive (CBRNE) agents. A 2001 report from the U.S. Government Accounting Office cited CCCD's Field Management of Chemical and Biological Casualties course andthe Management of Chemical and Biological Casualties (MCBC) course as the gold standard for the military and civilians. CCCD consults with the executive branch of the U.S. Government, Homeland Security, Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), and state and local authorities in all phases (prevention, preparation, response, recovery, and mitigation) of disaster response relating to mass chemical casualties in both the military and civilian sectors.

QUESTIONS & ANSWERS

Q ***How does your subcommand impact return-to-duty rates or Force Health Protection and Readiness goals?***

A USAMRICD specializes in creating countermeasures for chemical and biological weapons that are in use. Countermeasures are developed with the intent to assist the Warfighter in quick mitigation in the event of a CBRNE exposure. Additionally, the purpose of USAMRICD's training mission is to fully prepare health care professionals to recognize and treat chemical and biological exposure, potentially increasing return-to-duty rates.

KEY THEMES AND MESSAGES

USAMRICD is the Nation's center of excellence for medical chemical defense, conducting research into the mechanisms of action of CWAs and toxins and developing medical countermeasures to these threats.

USAMRICD is the only medical research lab to maintain a unique facility for the storage, use, and distribution of chemical surety material (CWA).

USAMRICD trains and educates medical personnel in the medical management of chemical casualties.

USAMRICD provides subject matter expertise in developing defense and national policy in proper crisis management.

USAMRICD provides a facility for extramural labs to collaborate with USAMRICD in developing products for chemical agent defense.

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Q ***Does USAMRICD partner with any civilian hospitals or laboratories in its research?***

A USAMRICD's CCCD training courses address the practical challenges of hospital preparedness and response to the full spectrum of CBRNE agents. Training is attended by civilian clinicians (physicians, physician assistants, nurses, emergency medical technicians, dentists, veterinarians, and psychologists) and non-clinicians (hospital planners and public officials) from civilian hospitals. In addition, USAMRICD partners with numerous civilian laboratories in pursuit of medical chemical defense research. These include: (1) academic partners such as Ohio State University; University of Utah; University of California, San Diego; University of California, Irvine; and University of Colorado; (2) private sector firms such as Battelle and Southwest Research Institute and; (3) international partners such as the Defence Science and Technology Laboratory (Porton Down, UK).

Q ***Do military personnel or civilians participate as subjects in the research?***

A No, military and civilian personnel are not used as subjects in USAMRICD's research. Case studies from accidental exposure on military or civilian personnel would be used for lessons-learned purposes. The research is conducted on small rodents, rabbits, pigs, and nonhuman primates.

Q ***How do civilian medicine and military medicine benefit from one another in this research area?***

A Terrorism is a growing threat. Not only does research of countermeasures assist the Warfighter, but it also aids in helping to protect the civilian population from exposure to chemical and biological agents.

- **Neuroprotection (seizures):** In performing research for neuroprotection countermeasures, USAMRICD first analyzes drugs that have been formulated and approved for nervous system disorders such as Parkinson's disease, Alzheimer's disease, and epilepsy.
- **NIH's Countermeasures Against Chemical Threats (CounterACT) Grants:** The Institute is the premier lab for the development, for the military, of medical products against the effects of toxic chemicals. The NIH CounterACT program addresses the critical need for improved antidotes for civilian populations vulnerable to chemical agent poisoning by a terrorist attack.

Q ***What role, if any, do other government agencies (U.S. Food and Drug Administration, Environmental Protection Agency, etc.) play in USAMRICD's research?***

A The USAMRICD receives requests for consultation from the Federal Bureau of Investigation, National Defense University, Biomedical Advanced Research and Development Authority, CDC, NIH, Defense Advanced Research Projects Agency, Chemical Biological Medical Systems, Defense Threat Reduction Agency (DTRA), and other fellow Department of Army and DoD labs (the Joint Program Executive Office, Public Health Command, Edgewood Chemical Biological Center, Walter Reed Army Institute of Research, and the Uniformed Services University of the Health Sciences).

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Q *Are there any controversial issues involving USAMRICD's area of research (animal research, environmental impact, stem cell research, etc.)?*

A The use of animals is always a controversial issue to many animal rights groups. However, all research protocols at the USAMRICD are approved by its Animal Care and Use Committee, and all procedures are conducted in accordance with the principles stated in the Guide for the Care and Use of Laboratory Animals and the Animal Welfare Act of 1966 (P.L. 89-544), as amended. The USAMRICD has an exemplary animal care and use program that is fully accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International. Our stem cell research is focused on animal stem cells, primarily mouse stem cells.

Q *Who funds USAMRICD's research program?*

A Currently, DTRA funds a large portion of USAMRICD's programs. The USAMRICD also receives funding from NIH through an Interagency Agreement (IAA) and for the CounterACT Research Center of Excellence grant, which is worth $14.4 million over 5 years.

Q *What's on the horizon for this subcommand?*

A USAMRICD does not see a major shift in its mission. The laboratory is being replaced by a new, state-of-the-art $320 million facility that will open in 2014 and will be fully occupied by the summer of 2015. In addition, we are working to build a Good Laboratory Practice (GLP) advanced development capability.

Q *Do USAMRICD and its partners abide by animal use guidelines in their research?*

A Yes. All experimental protocols involving the use of animals are approved by the Institute's Animal Care and Use Committee, and all procedures are conducted in accordance with the principles stated in the Guide for the Care and Use of Laboratory Animals and the Animal Welfare Act of 1966 (P.L. 89-544), as amended. The USAMRICD is an Association for Assessment and Accreditation of Laboratory Animal Care International-accredited facility.

Q *Does USAMRICD's research involve the use of stem cells?*

A Yes. This is focused on animal stem cells.

Q *Is USAMRICD's research publicly available?*

A Yes, researchers at the USAMRICD publish their findings in peer-reviewed scientific journals. However, there is classified research also conducted at USAMRICD.

Q *Where does USAMRICD receive its funding?*

A DTRA – approximately $31 million; NIH – approximately $8 million; BARDA – approximately $2.5 million