

Activity reference number	HFM-239	Activity Title State-of-the-art in Research on Medical Countermeasures Against Biological Agents	Approval 2012
Type and serial number	RSY		Start April 2013 IS
Location(s) and Dates		Oct 2014, Vilnius (LTU)	End January 2015
Coordination with other bodies		, COMEDS, BIOMEDAC	
NATO Classification of activity		UU	Non NATO Invited Yes
Publication Data		MP	UU
Keywords		Biological Agents, Infectious Diseases, Medical Countermeasures (MCM), Therapeutic Drugs	

I. Background and Justification (Relevance to NATO):

The availability of medical countermeasures against biological agents (B-agents) or related highly contagious infectious diseases are a key issue in medical readiness and countering that threat. Prophylaxis in the form of vaccination, when available, is clearly preferable but may be impracticable for a broad spectrum of B-agents. Immunization presumes the availability of an approved vaccine that can be administered to healthy individuals in anticipation of a known biological threat; with the appropriate number of doses required for the vaccination regimen. The incubation time required for onset of disease following a B-agent exposure (if detected in a timely manner) offers the possibility for therapeutic intervention. Many therapeutic countermeasures have not been specifically tested and/or approved for use following B-agent exposure. Likewise, in the case of new or emerging diseases (e.g. SARS, avian influenza, etc.), the effectiveness of these countermeasures is likely unknown. A broad study of the mechanisms of B-agent related infectious disease, prophylaxis and therapy will provide a concise overview of the present state-of-the-art in medical countermeasures against B-agents, with a focus on their use in CBRN defense.

In addition to the broad underlying discussion of medical countermeasures (MCM) to emerging and evolving infectious diseases in general, HFM-RTG-186 identified fifteen B-agents of primary interest. Specifically, these were (1) variola major (smallpox), (2) Bacillus anthracis (including MDR) (anthrax), (3) Yersinia pestis (plague), (4) Francisella tularensis (tularemia), (5) filovirus Ebola and (6) filovirus Marburg (viral hemorrhagic fevers), (7) Clostridium botulinum toxin (botulism), (8) alphaviruses (VEE, EEE, WEE) (viral encephalitis), (9) Brucella species (brucellosis), (10) Burkholderia mallei (glanders), (11) Burkholderia pseudomallei (melioidosis), (12) Coxiella burnetii (Q-fever), (13) Staphylococcal enterotoxins, (14) Rickettsia prowazekii (typhus fever), and (15) ricin toxin. The TG's Final Report will include Chapters for the each of these agents or agent classes including description of pathogenicity, host response and current (approved / published) MCM (prophylaxis and treatment) for each.

II. Objective(s):

This Symposium will enable the exchange of current scientific data and practical issues associated with the state-of-the-art in research, development, test, and evaluation (RDT&E) on Medical Countermeasures against Biological Agents and emerging/evolving infectious diseases of military significance.

III. Topic To Be Covered:

1. Current research into mechanisms of action of infectious diseases;
2. Current RDT&E into prophylaxis against Biological agents;
3. Current research and development on diagnostic assays for Biological agents;
4. Current RDT&E into therapeutics against Biological agents;
5. Current RDT&E into broad-spectrum (multiple agent) medical countermeasures against B-agents.
6. Cutting edge technologies / platforms for diagnostics, vaccines and treatment. What discoveries are impacting diagnostics and MCMs (e.g., new technologies for vaccines/immune-modulators)

A: Vaccines

- stabilization techniques
- alternate delivery mechanisms
- in vitro models for understanding the human immune response
- immuno-modulators/formulations

B: Therapeutics/post-exposure treatments

- interfering RNAs
- small molecules: novel screening approaches
- developments in encapsulation and nanotechnology

C: Diagnostics

- a priori pathogen ID
- convergence of sample prep & diagnostic screen
- non-PCR based path ID

6. Emerging infectious Diseases (EID) & Bio-Med surveillance
 - Detection and diagnostics for IDs and bio-threat agents

IV. Deliverable (e.g. S/W Engage Model, Database,...) and/or end product (e.g. Final Report):

Meeting Proceedings, other deliverable(s) : none

V. Technical Team Leader And Lead Nation:

Chair : Dr Leonard SMITH United States

Lead Nation: United States

VI. Nations Willing/Invited to Participate:

NATO Nations and Bodies : Czech Republic, France, Netherlands, Norway, United Kingdom, United States

PfP Nations : all PfP invited

MD Nations : all MD invited

ICI Nations : none

Global Partners : Australia, Japan, New Zealand, Republic of Korea

Contact / Other Nations : Singapore

VII. National And/Or NATO Resources Needed (Physical and non-physical Assets):

Assistance is requested to contact all 26 NATO countries, as well as PfP and MD nations, to invite them to participate in the RSY. Introduce and coordinate activities of the RSY with interested members of COMEDS

VIII. STO/CSO Resources Needed:

General administrative guidance and support from NATO/CSO is requested, along with the technical and financial assistance in publishing and distributing the Meeting Proceedings.

Funding for TER and 2 KN speakers

Additional Information

Panel Mentor:

Dr John WADE, United States

Limited Participation Technical Team:

No

Comments:

Approved at the 30 HFM-PBM, Fall 2012

Approved by the STB in FT/SP December 2012.

Open to PfP, MD, Global Partners (Australia, Japan, New-Zealand and Republic of Korea) and Singapore (Contact Country).
Australia and Republic of Korea have expressed interest.

HFM-239, RSY
on
State-of-the-art in Research on Medical Countermeasures Against Biological Agents

I. Origin

A. Background

B. Justification (Relevance for NATO)

II. Objectives

III. Resources

A. Membership

Chair : Dr Leonard SMITH United States

Lead Nation: United States

Nations Willing/Invited to Participate: Czech Republic, France, Netherlands, Norway, United Kingdom, United States

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IV. Security Classification Level

The security level will be Unclassified/Unlimited

V. Participation By Partner Nations

PfP Nations : all PfP invited

MD Nations : all MD invited

ICI Nations : none

Global Partners : Australia, Japan, New Zealand, Republic of Korea

Contact / Other Nations : Singapore

VI. Liaison