

NIH Plans for Development of Radiological and Nuclear Medical Countermeasures



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A Comprehensive Biodefense Research Agenda

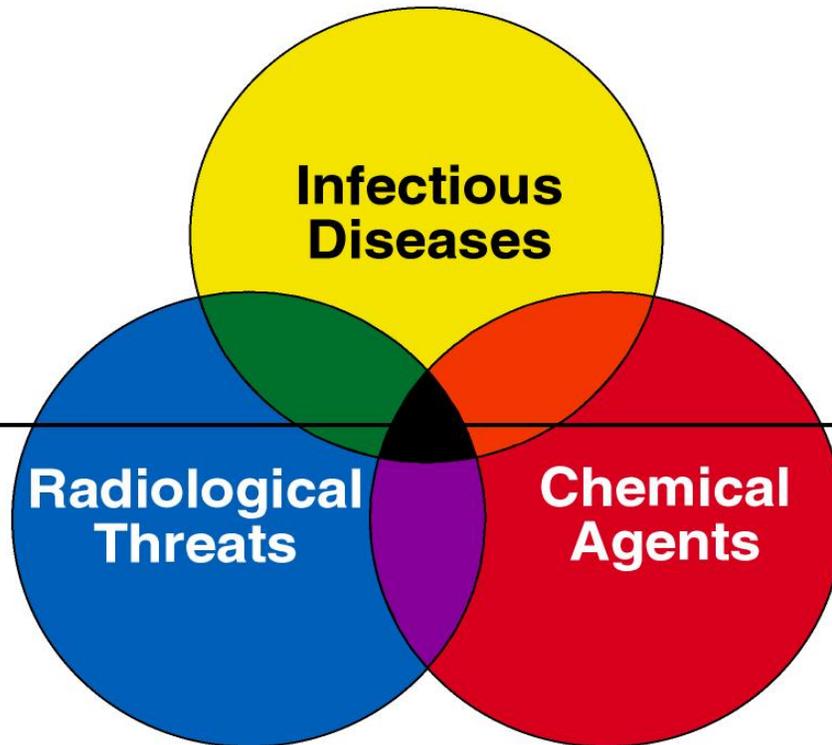
NIH

**Infectious
Diseases**

**Radiological
Threats**

**Chemical
Agents**

**DHS
EPA
DOE
DoD
FDA
USDA
etc.**



Radiological and Nuclear Threats

- Nuclear explosion
- Attacks on nuclear power plants, reactors, storage/waste sites & laboratories with radioactive material
- Detonation of Radiation Dispersal Device (RDD)
- Placement of Ionizing Radiation Source in Public Places
- Contamination of Food or Water



NIH Research Planning Activities

■ Expert Workshops:

- **Non-human Primate Models of Acute Radiation Syndrome and Hematopoietic Recovery (Fall 2004)**
- **Rapid Drug Screening Assays (Fall 2004)**
- **Protection & Recovery from Radiation-Induced Mucosal Injury (Fall 2004)**
- **Biomarkers and Bioassays of Radiation Injury (Fall 2004)**
- **Animal Models of Radiation Injury, Protection, and Therapy (Spring 2004)**
- **Hematopoietic Stem Cell Expansion & Immune Reconstitution (Spring 2004)**
- **Models and Procedures for Evaluating Radioprotectors (NCI, Winter 2003)**
- **Radiobiology Workshop on Medical Countermeasures (Winter 2003)**

■ Collaborations: OPHEP (HHS), NCI, AFRRI, and other agencies

NIH Blue Ribbon Panel

**“NIH Strategic Plan &
Research Agenda for Medical
Countermeasures against
Radiological/Nuclear Threats”**

October 2004

Some Issues Addressed by Blue Ribbon Panel

- **Biodosimetry**
 - Rapid assessment tools for first responders
 - Quantification of internal and external radiation exposure
- **Medical products**
 - **Radioprotectants**
(pre-exposure scenarios)
 - **Radiation mitigators**
(decorporation agents, chelators, eliminators)
 - **Restorative drugs**
(restoration of hematopoietic, gastrointestinal, and other damaged cells/tissues)
 - **Immunotherapies**
(immunomodulators, enhancement of innate immunity)

Some Issues Addressed by Blue Ribbon Panel

- **Basic and Translational Research**
 - **Mechanisms of acute injury**
 - **Predisposing factors associated with injury**
 - **Factors in protection, mitigation, treatment**
 - **Factors promoting immune reconstitution**
 - **Teratogenic, mutagenic and other adverse effects**
 - **Long-term effects of radiation injury**
- **Research Infrastructure**
 - **Collaborations across disciplines**
 - **Focused research centers in radiobiology**
 - **Animal model development**
 - **Product evaluation and development (GLP & GMP)**
 - **Standardized methods in research**
 - **Research personnel in radiobiology research**
 - **Information management and data banks**

Other Issues Addressed

■ Psychological Impact

- importance of early intervention & education

■ Preparedness Training & Education

- community-based education & risk management
- training of health care providers & first responders to different radiological threats

■ Radiobiology Researchers

- new R&D programs for researchers
- involvement of affiliated specialties in radiation-related research

NIAID/NIH FY2005 Plans for Medical Countermeasures

- Focused Product Development

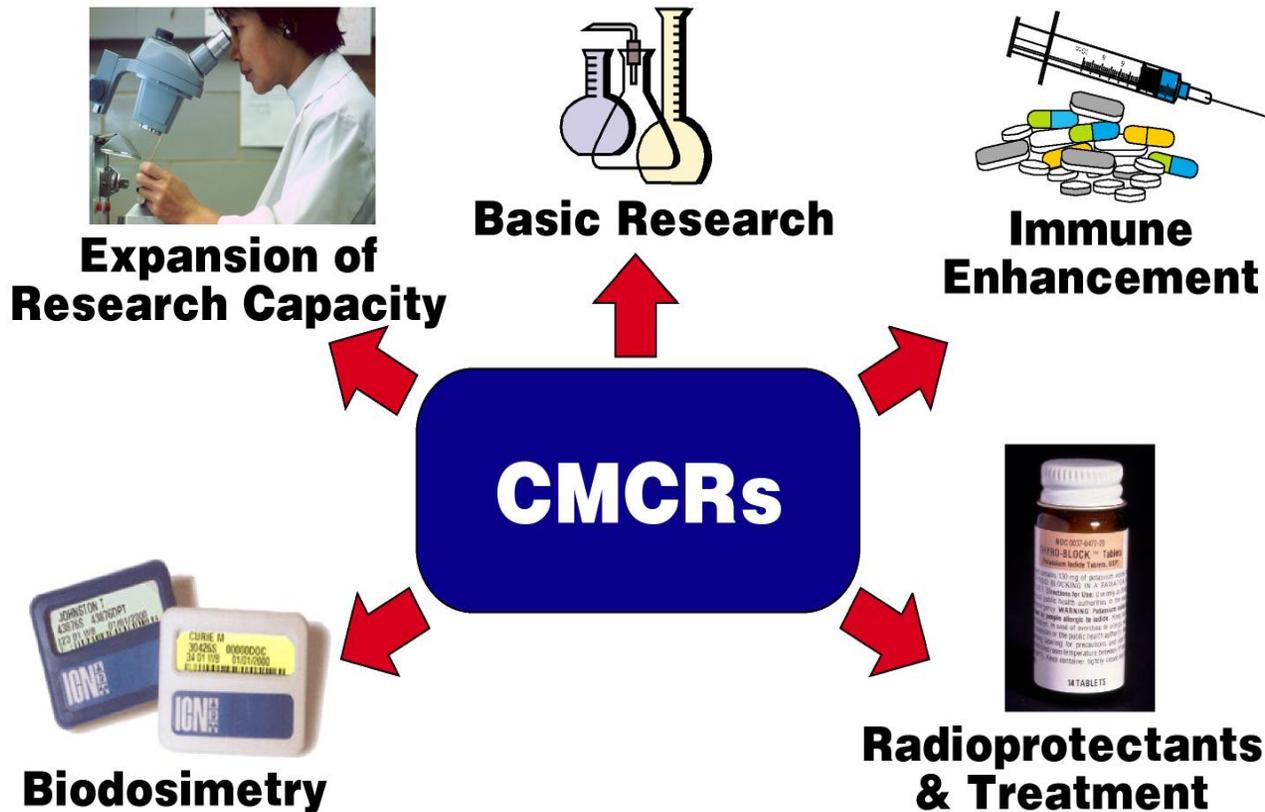
- Centers for Medical Countermeasures Against Radiation (CMCR)

(Centers will develop new medical products to protect against, mitigate the effects of and/or treat the long- and short-term consequences of radiation exposure)

- Selective Projects

Focus: Product Development

Centers for Medical Countermeasures Against Radiation (CMCRs)



FY 2005 - Centers for Medical Countermeasures Against Radiation (CMCRs) – RFA-A1-04-045

■ Dates for Submission:

Letters of Intent due: January 24, 2005

Applications due: February 22, 2005

■ CMCR Public Briefing: Dec. 15, 2004

■ Website for more info:

www.niaid.nih.gov/biodefense

Partnership Effort

