
Meeting of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction

3 December 2012

English only

2012 Meeting

Geneva, 10–14 December 2012

Item 6 of the provisional agenda

Standing agenda item: cooperation and assistance, with a particular focus on strengthening cooperation and assistance under Article X

International Activities of the Government of Canada related to Article X of the Biological and Toxin Weapons Convention: Update 2012

Submitted by Canada

1. Canada places great importance on cooperation and assistance under Article X of the Biological and Toxin Weapons Convention (BTWC), and remains committed to international cooperation and collaboration in fields related to health and life sciences. Such cooperation is essential to curbing the threat posed by disease, be it naturally occurring, the result of accidental releases from laboratories performing peaceful research, or a deliberate biological weapons attack.

2. In accordance with the Final Declaration of the Seventh Review Conference, in which States Parties are encouraged to submit detailed information on their implementation of Article X at minimum once every second year, Canada has prepared the following annex providing details on various ongoing projects organized and/or funded by the Government of Canada that fall under Article X of the BTWC.

3. As Canada considers that a wide range of topics fall under Article X implementation, so too do the projects listed in this paper. The projects listed herein aim to:

(a) improve States Parties' capacities to perform surveillance, detection, diagnosis, and containment of infectious disease;

(b) improve capacities to prepare, assess risks, and respond to outbreaks of infectious disease, be they the result of naturally occurring pathogens, accidental releases, or biological weapons use; and

(c) provide training in biosafety, biosecurity, and bioethics.

4. This submission for the 2012 Meeting of States Parties (MSP) contains only projects that were active during calendar year 2012. This paper should be viewed in conjunction with two previous papers prepared by Canada on this subject, including a 2009 paper covering international activities in disease surveillance, detection, diagnosis, and containment (BWC/MSP/2009/MX/WP.6) and Canada's contribution to the

Implementation Support Unit's report on the Implementation of Article X submitted at the Seventh Review Conference (BWC/CONF.VII/INF.8).

5. This paper is intended to show only a brief overview of Canada's international activities related to this year's BTWC program of work. For additional information on Canada's projects, please contact C. Andrew Halliday at the Non-Proliferation and Disarmament Division by phone at +1-613-944-5103 or by e-mail at christopherandrew.halliday@international.gc.ca. Additionally, to get in contact with the organizations that fund these projects, please consult Canada's entry on the Article X database.

Annex

Projects

Project Title African Centre for Laboratory Equipment Maintenance

Themes Biocontainment, biorisk management, biosafety

Dept. Responsible Global Partnership Program of Foreign Affairs and International Trade Canada

Other Partners US Centres for Disease Control and Prevention

Project Value \$700,000 CAD

Project Duration 2012-2013

Area Affected Western Africa

Description Canada is helping create local and regional capacity for maintenance and certification of equipment used for surveillance, detection and diagnosis of dangerous biological agents, thereby increasing the longevity and utility of critical biological laboratory equipment provided by Canada and other international donors in Africa.

Project Title Biorisk Management in the Former Soviet Union

Themes Biosafety Biosecurity

Dept. Responsible Global Partnership Program of Foreign Affairs and International Trade Canada

Other Partners N/A

Project Value \$62,000 CAD

Project Duration 2008-2012

Area Affected Former Soviet Union

Description Canada's Global Partnership Program (GPP) has supported the development, dissemination and implementation of CWA 15793:2008 "Laboratory Biorisk Management Standard" in the countries of the Former Soviet Union. In 2012, GPP supported a project for full implementation of CWA 15793 at Ukraine's CSES (Kyiv).

Project Title Biosecurity and bioterrorism response workshop in Almaty, Kazakhstan

Themes Biological weapons response training

Dept. Responsible Global Partnership Program of Foreign Affairs and International Trade Canada

Other Partners INTERPOL

Project Value \$160,000 CAD

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| Project Duration | 2011-2012 |
| Area Affected | Former Soviet Union |
| Description | A five-day course delivered by INTERPOL and international experts to law enforcement, public health, and public safety communities from Central Asia and the Caucasus on biosecurity considerations and bioterrorism response planning. |
| Project Title | Canada-Asia Regional Emerging Infectious Disease (CAREID) project |
| Themes | Disease surveillance, detection, diagnosis, and containment |
| Dept. Responsible | Canadian International Development Agency (CIDA), Public Health Agency of Canada (PHAC) |
| Other Partners | N/A |
| Project Value | \$4,300,000 CAD |
| Project Duration | 2004-2012 |
| Area Affected | Vietnam, Philippines, Laos, and Cambodia |
| Description | <p>The goal of the Canada-Asia Regional Emerging Infectious Disease (CAREID) project is to reduce the threat of emerging infectious diseases (EIDs) in South East Asia. The project aims to strengthen the capacity of national public health systems in Cambodia, Laos, Vietnam and the Philippines and is anticipating additional collaboration with Thailand.</p> <p>CAREID is focused on improving surveillance, outbreak investigation and response; strengthening laboratory systems and capacity and environmental dimensions as well as increasing preparedness to respond appropriately to emerging infectious disease emergencies and more effective, gender-sensitive risk communications. Capacity development, knowledge and skill transfer will take place through training/workshops at regional, sub-regional and bilateral levels.</p> <p>The project is fully integrated with the WHO Asia/Pacific Regional Strategy on EIDs. Wherever possible, the project collaborates with the ASEAN+3 and the regional offices of the World Health Organization.</p> <p>The Project is in its final stage reporting on achieved outputs and immediate and intermediate outcomes. These include improved capacity of health professionals from Cambodia, Lao PDR, the Philippines and Vietnam to respond effectively to emerging infectious diseases, improved professional communication between epidemiologists and laboratory staff, risk communication to deal with an infectious disease outbreak. As an executing agency, PHAC worked closely with the partners from the receiving countries and Thailand as collaborator, CIDA, WHO and other donors and organisations from the region to secure sustainable results.</p> |
| Project Title | Canadian Biosafety Symposium |

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| Themes | Biosafety and Biosecurity |
| Dept. Responsible | Office of Biohazard Containment & Safety of the Canadian Food Inspection Agency; Pathogen Regulation Directorate and National Microbiology Laboratory of the Public Health Agency of Canada |
| Other Partners | International Centre for Infectious Diseases (ICID), Canadian Biological Safety Association (CABS), |
| Project Value | N.A. |
| Project Duration | Symposium last two days, pre-course last two days, annually. |
| Area Affected | International event, Ottawa Canada in 2013 |
| Description | PHAC and CFIA have been heavily involved in the planning of this symposium since its inception. The Canadian Biosafety Symposium was held from June 4-7, 2012 in Vancouver, British Columbia. The symposium is an annual collaborative event organized by the CFIA, PHAC, CABS and ICID and annually welcomes between 125-150 participants from across Canada and internationally. The 2012 Symposium included international representatives from Cambodia, Egypt, Laos PDR, Morocco, Mauritania, Philippines, Thailand, Tanzania and Vietnam. In addition to presentations supporting the theme of "Research, Innovation and Ethics" which included a presentation on Biological non-proliferation in Canada with a focus on the consequences of the BTWC., pre-symposium events included optional site-tours of containment facilities and workshops on laboratory biosecurity and on investigating the root cause of incidents. The 2013 Symposium which will be held in Ottawa, Ontario from June 3-6, 2013, and will continue to focus on building capacity through training, networking and knowledge sharing. |
| Project Title | Capacity building for biosecurity and disease surveillance in the Caribbean and Central America |
| Themes | Disease surveillance, detection, and containment |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | World Health Organization (WHO) |
| Project Value | \$950,000 CAD |
| Project Duration | 2012-2013 |
| Area Affected | Caribbean, Central America |
| Description | Provision of specialized IATA-certified pathogen collection and transport kits, advanced molecular diagnostics field kits and related training to the Pan-American Health Organization (PAHO) for repositioning in strategic locations across the Caribbean and Central America. |
| Project Title | CAPEX |
| Themes | CBRNE response training and capability exercise |

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| Dept. Responsible | Royal Canadian Mounted Police |
| Other Partners | <p>Canada: Public Safety Canada, Royal Canadian Mounted Police – National CBRNE Response Team (ED&TS and NFISS CBRNE) Canadian Forces – Canadian Joint Incident Response Unit (CJIRU), Public Health Agency of Canada (PHAC - NML / MERT), Chemical Support - (DRDC Suffield and Environment Canada), Radiological Support - Federal Radiological Response Team (FRAT), Defence Research & Development Canada-Ottawa, Health Canada, Natural Resources Canada</p> <p>United States: US Department of State, US Department of Defence (20th Support Command CBRN) Technical Support Working Group (TSWG), US Department of Justice (FBI HazMat Operations Unit, Hazardous Materials Response Team Unit, Hazardous Materials Science Response Unit and Chemical Radiological Nuclear Sciences Unit)</p> <p>United Kingdom: Home Office (Met Police) Defence Science and Technology Laboratory (dstl), National Police Improvement Agency (NPIA)</p> <p>Australia: Australian Federal Police (AFP), Defence Science and Technology Organization (DSTO)</p> |
| Project Value | N.A. |
| Project Duration | 2011 and 2013 |
| Area Affected | International event that in 2011 took place in the UK and in 2013 is planned for the US |
| Description | Canada participated in demonstrating the National CBRNE response team capabilities in separate Chemical, Biological, Radiological, Nuclear and Explosives scenarios centered on device/threat identification and mitigation and eventual intelligence and fast forensics capabilities. |
| Project Title | Caribbean Public Health Agency (CARPHA) |
| Themes | Disease detection and diagnosis |
| Dept. Responsible | Office of International Affairs for the Health Portfolio |
| Other Partners | Pan-American Health Organization (PAHO) |
| Project Value | \$800,000 CAD |
| Project Duration | 2008-2014 |
| Area Affected | Caribbean Community (CARICOM) |
| Description | To ensure the safety and health security of Canadians at home and in the Region, the Public Health Agency of Canada (PHAC) is supporting the Caribbean Community (CARICOM) in the creation of a pan-Caribbean public health agency (CARPHA) which would enhance the overall capacity of Caribbean regional health institutions to improve their governance in addressing public health issues. CARPHA will provide an opportunity to address existing gaps in responding to common public health challenges (e.g. pandemics such as H1N1) and strengthening public health capacity |

in its Member States.

CARPHA involves the integration of five existing regional health institutions into a single self-administered integrated health agency, under the CARICOM governance structure. PHAC has been a member of the CARPHA Advisory Committee since 2008. To date, PHAC has provided in-kind policy and technical support to the CARPHA initiative and has participated in various technical meetings focussed on conceptualizing CARPHA. Other international members of the Advisory Board include PAHO, US Centres for Disease Control, and the UK Department of Health. To date, total contributions to CARPHA are \$800,000 CAD.

CARPHA became a legal entity in July 2011, and CARPHA will be located in Trinidad and Tobago. It is expected that CARPHA will be fully functional by January 2013.

Support to CARPHA, builds upon PHAC's ongoing collaboration with individual countries of the Caribbean and multilaterally with institutions like PAHO and CARICOM. The Government of Canada's Americas Strategy (2012-2017) identifies the Caribbean as a key region of focus, and the CARPHA initiative is included under the second goal "to address insecurity and to advance freedom, democracy, human rights and the rule of law through capacity building."

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| Project Title | Contract for an OIE laboratory (or Collaborating Centre) Twinning Project: Technical support to the LNDV for the diagnosis and control of Avian Influenza and Newcastle Disease |
| Themes | Disease surveillance, detection, and diagnosis |
| Dept. Responsible | National Centre for Foreign Animal Disease of the Canadian Food Inspection Agency |
| Other Partners | World Organization for Animal Health (OIE); National Veterinary Diagnostic Laboratory (LNDV-ICA-Colombia) |
| Project Value | €99,092 |
| Project Duration | Ongoing |
| Area Affected | Colombia |
| Description | The project aims to implement laboratory diagnostic methods at the National Veterinary Diagnostic Laboratory of the Colombian Agriculture Institute (ICA) in Bogotá, Colombia for the surveillance, identification and characterization of Avian Influenza and Newcastle Disease viruses. This will be based on OIE Standards and will be accomplished with the support of the parent laboratory, the National Centre for Foreign Animal Disease (NCFAD) located in Winnipeg, Canada. The three-year project will involve direct interactions between scientists and technicians of candidate and parent laboratories. Workshops and hands-on training in select diagnostic test methods and test result evaluation, as well as trouble-shooting, quality assurance, inter-laboratory comparison testing through the exchange of proficiency panels, and reagent preparation will form the basis of the twinning project. |

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| Project Title | Counter terrorism simulation exercise: response to a bioterrorist attack |
| Themes | Disease detection, containment, and response |
| Dept. Responsible | Global Partnership Program and Counter-Terrorism Capacity Building Program of Foreign Affairs and International Trade Canada |
| Other Partners | Secretariat of the Inter-American Committee against Terrorism (CICTE) of the Organization of American States (OAS) |
| Project Value | \$1,355,000 CAD |
| Project Duration | 2008-2013 |
| Area Affected | Phase I: Mexico (host country), Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama; Phase II: Barbados (host country), Antigua and Barbuda, Bahamas, Belize, Dominica, Grenada, Guyana, Jamaica, Haiti, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago; Phase III: Argentina, Bahamas, Chile, Colombia, Costa Rica, Ecuador, Mexico, Panama, Trinidad and Tobago. |
| Description | <p>The primary objective of this project is to help OAS/CICTE Member States better prepare to deal with potential terrorist incidents by engaging senior policy-makers in realistic table-top exercises designed to bring specific issues of contingency planning and threat mitigation to their attention, with the goal of helping them to prepare or improve existing, formal terrorist contingency plans and promote interagency coordination to implement those plans.</p> <p>Phase I involved a Table-top simulation of a bioterrorist attack on an international airport in Mexico (e.g. Cancun International), with participants from Mexico and other observers.</p> <p>Phase II involves a Table-top simulation of a bioterrorist attack on a Caribbean international airport (e.g. Grantley Adams International Airport, Barbados), with participants from Barbados and other observers. This project is set to conclude on 31 March 2013.</p> <p>Phase III helps OAS/CICTE member states better prepare to deal with potential terrorist incidents by engaging senior policy-makers in realistic table-top exercise designed to bring specific issues of contingency planning and threat mitigation to their attention, with the goal of helping them to prepare or improve existing formal terrorist contingency plans and promote interagency coordination to implement those plans.</p> |
| Project Title | Ecology-epistologic monitoring of murine rodents as basis carriers of parasitic and infectious diseases in central Tajikistan |
| Themes | Disease surveillance |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | N/A |

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| Project Value | \$299,624 USD |
| Project Duration | 2009-2012 |
| Area Affected | Tajikistan |
| Description | A project for the investigation of parasite fauna in murine rodents and the various parasites for different types of hosts, including a determination of the infectiousness of the rodents by the pathogenic organisms and parasite diseases, and the development and implementation of measures to regulate numbers of murine rodents (thereby reducing the likelihood of epidemic and epizootic diseases.) |
| Project Title | Enhanced biological security and disease surveillance in the Caribbean |
| Themes | Disease surveillance, detection, and containment |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | Pan-American Health Organization (PAHO); Caribbean Public Health Agency (CARPHA) |
| Project Value | \$2,500,000 CAD |
| Project Duration | 2012-2014 |
| Area Affected | Caribbean |
| Description | Strengthened biological security and disease diagnostics capacity in the Caribbean region through the fabrication, equipping, installation and commissioning of a modular BSL3 laboratory at the Caribbean Epidemiology Centre (CAREC) based in Trinidad and Tobago. |
| Project Title | European Enforcement Project |
| Themes | Capacity Building |
| Dept. Responsible | Pathogen Regulation Directorate – Emergency Management and Regulatory Affairs Branch of the Public Health Agency of Canada |
| Other Partners | International partners |
| Project Value | N/A |
| Project Duration | Ongoing |
| Area Affected | Global |
| Description | The European Enforcement Project (EEP) annual meeting of federal inspectors responsible for human pathogens in the European Union (EU) and forms a Europe-wide network for inspectors and inspectorates of the EU Member States to exchange experiences (breaches and failures of biocontainment, threats, etc.) and establish methodologies for the harmonisation of approaches to inspection and enforcement of work with contained use of microorganisms. Since 1997 network members have produced practical documents such as procedures and checklists for inspection, guidance on sampling methodologies, hosted shared inspection visits of facilities and deliberate release sites, and held annual conferences. As the |

sole non-EU member permitted entry into these closed-door meetings, PHAC's participation in these frank discussions by federal authorities allows PHAC a unique opportunity to share international best practices and lessons.

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| Project Title | Field Epidemiology and Technical Support |
| Themes | Disease surveillance and detection |
| Dept. Responsible | Public Health Agency of Canada |
| Other Partners | N/A |
| Project Value | N.A. |
| Project Duration | Ongoing |
| Area Affected | Member-countries of Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), the World Health Organization (WHO), and Pan American Health Organization (PAHO). |
| Description | <p>PHAC supports global public health capacity building through the development, delivery, and participation in various field epidemiology initiatives.</p> <p>Achieved through:</p> <ul style="list-style-type: none">• involvement with a global network of field epidemiology training programs called "TEPHINET" – which includes over 40 countries and WHO participation• direct involvement and support of WHO global initiatives• support to governments directly <p>Activities include:</p> <ul style="list-style-type: none">• development and delivery of applied epidemiology and surveillance training (i.e. outbreak response);• provision of short-term technical expertise to:• assess training and/or other technical needs around surveillance and outbreak response• develop and deliver training;• participate in expert working groups (i.e. WHO technical working groups around training and professional development)• provision of training opportunities (i.e. invitation to Canadian courses)• collaboration in providing training (i.e., course development and delivery)• participation in international training conferences• provision of technical experts for outbreak response (through WHO and/or other mechanisms) <p>For example:</p> |

- Support to Canada-Asia Regional Emerging Infectious Diseases (CAREID) project as led by PHAC's Infectious Disease Prevention and Control Branch – includes surveillance and outbreak response assessments and training. Most recent technical assessment conducted in February 2009 in Southeast Asia.
- Support to WHO Global Outbreak Alert and Response Network (GOARN) requests for international mobilizations - considered on a case-by-case basis by PHAC Management, and are coordinated by PHAC's Centre for Emergency Preparedness and Response.

Examples of PHAC mobilisations include:

- Mobilisation of PHAC Field Epidemiologists to WHO/PAHO for H1N1 epidemiologic assistance in Caribbean, including surveillance activities (July 2009)
- Mobilisation of PHAC Epidemiologists to WHO/PAHO in support of cholera outbreak response in Haiti (Jan-Mar 2011)
- Mobilisation of resources to collaborate in joint Mexico-Canada-US trilateral epidemiologic, including surveillance, to support an investigation of H1N1 in Mexico (May-June 2009)
- Development and delivery of training to support specialised public health surveillance for Mass Gathering events (e.g. Vancouver Olympic Games, International Arctic Winter Games);
- Support of WHO-CDC Stop Transmission of Polio initiatives (ongoing), deploy field epidemiologists annually, includes strengthening surveillances (three field epidemiologists being deployed to Africa in June 2011; one mobilized in July 2012, and two to be mobilized in February 2013).
- Support of WHO-CDC Stop Transmission of Polio initiatives (ongoing); deploy technical staff annually, includes strengthening surveillance (three field epidemiologists being deployed to Africa in June 2011). An additional three field epidemiologists have been mobilised for consecutive missions in support of this initiative. (May – December 2012)
- Mobilisation of two PHAC epidemiologists consecutively to WHO/PAHO Belize to support capacity building and compliance with their global responsibility under the International Health Regulations (IHR). (October 2011 - April 2012)
- Mobilisation of resources to support the Caribbean Epidemiology Centre (CAREC) Trinidad and Tobago with the qualitative analysis of the readability, comprehension and interpretation of the Global School Health Survey Questionnaire by adolescents in three CAREC member

countries (March - May 2012 and September – November 2012)

- Consecutive mobilisations of three PHAC field epidemiologists to WHO/PAHO Bahamas and the Turks and Caicos, to build capacity at the Ministry of Health for communicable disease control through early detection of key epidemic-prone diseases and appropriate response in line with their global responsibility under the IHR. (January – December 2012)
- Mobilized two French speaking field epidemiologists to support a request from US CDC to support their efforts of the Global Polio Eradication Initiative in Central African Republic (May 2012 and September 2012).

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| Project Title | Global Health Security Action Group – Lab Network |
| Themes | Disease surveillance |
| Dept. Responsible | Infectious Disease Prevention and Control Branch of the Public Health Agency of Canada |
| Other Partners | Other Global Health Security Action Group Working Groups, WHO (Observer) European Commission |
| Project Value | N.A. |
| Project Duration | 2001 - Ongoing |
| Area Affected | G7 + Mexico |
| Description | <p>In the wake of the 9/11 terrorist attacks, laboratory representatives from the G7 countries and Mexico met to share their concerns and capabilities and to discuss ways of working more collaboratively together. These meetings resulted in the establishment of a laboratory working group of the Global Health Security Action Group (GHSAG).</p> <p>The Infectious Disease Prevention and Control Branch’s National Microbiology Laboratory (NML) plays a central role in coordinating the activities of the laboratory network of GHSAG and is the home of the lab network secretariat.</p> <p>The Lab network’s objective is to ensure GHSAG member laboratories work together to support the GHSI and GHSAG activities by:</p> <ul style="list-style-type: none">• Ensuring a coordinated and validated diagnostic capability for bioterrorist threat agents;• Mapping the diagnostic capacity of member laboratories• Discussing, sharing, and providing training in new diagnostic methods;• Improving the response capability;• Contributing to global surveillance for biothreats and sharing information with GHSAG member laboratories; |

- Providing a mutual surge capacity;
- Liaising with other working groups and their secretariats; and,
- Ensuring that minimal common standards for bio-safety and bio-security guidelines are in place at all GHSAG laboratories.

In 2010, the GHSAG Secretariat undertook a comprehensive lessons learned exercise with regards to the H1N1 outbreak and response, which involved all working groups under the GHSAG umbrella. From 2010 – 2012 the NML together with other PHAC, Health Canada and Defense participants contributed to the completion of the biological Threat Risk Assessment Tool Development lead by the Risk Management and Communication Working Group and Germany.

The NML has participated in several wet-lab workshops since 2010 and has also co-hosted workshops, namely a Filovirus detection workshop (CAN/ITA) in 2011, and an Unknown pathogen detection workshop (CAN/UK) in 2012.

The NML and CDC/USA developed a GHSAG Lab Network position paper on hand-held devices for detection of bio-threat agents in 2011.

Canada (NML) and UK (HPA) shared their experiences and lessons learned while preparing for and supporting the Olympic Games in Vancouver 2010 and London in 2012.

The GHSAG Laboratory Network is working to establish closer technical linkages with and support of other networks such as the Emerging Dangerous Pathogen Laboratory Network (EDLPN), The International Federation of Biosafety Associations (IFBA), and with Coordinating Organizations for Regional Disease Surveillance (CORDS). The Laboratory Network has identified Dual Use Research of Concern (DURC) as a critical initiative to be undertaken.

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| Project Title | Global Health Security Initiative / Global Health Security Action Group |
| Themes | Disease surveillance |
| Dept. Responsible | Office of the International Affairs (OIA) for the Health Portfolio |
| Other Partners | None |
| Project Value | N/A |
| Project Duration | N/A |
| Area Affected | Canada, European Commission, France, Germany, Italy, Japan, Mexico, the United Kingdom, the United States and the World Health Organization |
| Description | The Global Health Security Initiative (GHSI) is an informal, international partnership between G7 countries and Mexico to strengthen health preparedness and response globally to threats of chemical, biological, radio-nuclear (CBRN) terrorism and pandemic |

influenza.

Through the GHSI, Health Ministers from Canada, France, Germany, Italy, Japan, Mexico, the United Kingdom and the United States, as well as the European Commission and the World Health Organization, discuss global trends and emerging CBRN threats to identify areas for collaborative work.

In support of the Initiative, the Global Health Security Action Group (GHSAG) provides GHSI countries with an opportunity to share trusted information on issues of international concern with respect to CBRN and pandemic threats, and to facilitate the development of collaborative tools with the objective to improve emergency preparedness in the long term as well as immediate response to health crisis. The GHSAG is composed of a series of working groups that carry-out work mandated by GHSI Ministers, build the common evidence base, and advance policy and scientific cooperation among members.

Canada, through the Public Health Agency of Canada (PHAC) and Health Canada, is an active member of the GHSI/GHSAG.

The GHSAG Secretariat is supported by the Office of International Affairs for the Health Portfolio. PAHC also acts as the chair of the Global Laboratory Network, as well as the co-chair of the Risk Management and Communications Working Group, along with the United Kingdom.

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| Project Title | International Biological Sciences Security Management Workshop |
| Themes | Biosafety and Biosecurity / Capacity Building |
| Dept. Responsible | Pathogen Regulation Directorate and National Microbiology Laboratory of the Public Health Agency of Canada |
| Other Partners | Carleton University's Normand Paterson School of International Affairs Office of Professional Training and Development (NPSIA-PT&D), independent instructors from the University of Bradford (UK) |
| Project Value | N.A. |
| Project Duration | 10 day workshop, August 13-24 2012 |
| Area Affected | International event |
| Description | In August 2012, the Public Health Agency of Canada in collaboration with Carleton University's NPSIA-PT&D and global experts in the field of dual-use biosecurity and bioethics developed and presented a two-week pilot workshop highlighting the similarities, overlaps and contradictions between the biosafety, biosecurity (laboratory and dual-use) and bioethical fields. The workshop was presented to a full cohort of 20 participants from Canada, Cambodia, Democratic Republic of Laos, Denmark, Germany, Philippines, Russia, Trinidad and Tobago. |
| Project Title | International Expert Group on Biosafety and Biosecurity Regulation – IEGBBR (formerly the Global Human Pathogens Biosafety and |

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| | Biosecurity Group) |
| Themes | Capacity Building |
| Dept. Responsible | Pathogen Regulation Directorate – Emergency Management and Regulatory Affairs Branch of the Public Health Agency of Canada |
| Other Partners | International partners |
| Project Value | N/A |
| Project Duration | Ongoing |
| Area Affected | Global |
| Description | This group was initiated in 2007, with the first meeting in Ottawa, Canada. The third biennial meeting of this group took place in Singapore in February of 2011 with 20 participants from 12 Countries, including Canada, and the World Health Organization and saw the participation of 7 new countries. Meeting participants are mainly regulatory personnel representing competent authorities, as well as personnel involved in promoting biosafety and biosecurity standards and culture in their country. The meetings provide an opportunity for United Nations members to network, cooperate, and develop expertise to promote a more global or mutual response to emerging biosafety and biosecurity issues and threats. In early 2012, the IEGBBR provided expert advice as to biosafety and biocontainment to the WHO on the engineered H5N1 virus that was recently developed. |
| Project Title | International Federation of Biosafety Associations (IFBA) |
| Themes | Biosafety and Biosecurity |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | N/A |
| Project Value | \$499,000 CAD |
| Project Duration | 2009-2012 |
| Area Affected | Global |
| Description | An important part of the Global Partnership Program’s biological non-proliferation mandate is to support and promote biosafety on a national and international level through collaboration among national and regional biosafety organizations worldwide, including the International Federation of Biosafety Associations (IFBA). GPP is currently an observer within IFBA and has supported its initiatives for several years. |
| Project Title | International High Containment Workshop |
| Themes | Laboratory Biorisk Management (Biosafety, Biosecurity, Bioethics) |
| Dept. Responsible | Office of Biorisk Management, National Microbiology Laboratory, Public Health Agency of Canada |
| Other Partners | N/A |

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| Project Value | N/A |
| Project Duration | Ongoing |
| Area Affected | Global |
| Description | <p>This workshop addresses the increasing needs of biosafety professionals, facility operators and managers for advanced training in critical aspects of biocontainment.</p> <p>This rigorous five-day course allows participants to work hands-on in the special containment and facility support areas (BSL 3 and 4) of the Canadian Science Centre for Human and Animal Health, one of the world's most recognized containment laboratory complexes.</p> <p>Workshop topics include for example:</p> <ul style="list-style-type: none">• Design and operation of containment laboratories• Methodology and application of risk assessments• Personal protective equipment use and assessment• Principles and practices of containment laboratory entry/exit• Assessment and performance verification of primary and secondary containment devices• Monitoring and testing for decontamination; practices and procedures• Response to emergencies and biological spills• Implementation of high impact training programs• Safety and quality management systems in the laboratory• Lessons learned in facility design and construction |
| Project Title | International Laboratory Biorisk Management Workshop |
| Themes | Laboratory Biorisk Management (Biosafety, Biosecurity and Bioethics) |
| Dept. Responsible | Office of Biorisk Management, National Microbiology Laboratory, Public Health Agency of Canada |
| Other Partners | N/A |
| Project Value | N/A |
| Project Duration | Ongoing |
| Area Affected | Global |
| Description | <p>This five day intensive workshop focuses on how to implement a bioethics, biosafety and biosecurity management system centered on the new international CEN Workshop Agreement (CWA) 15793:2008 and the WHO "Responsible life sciences research for global health security" Guidance Document.</p> <p>This unique workshop combines high impact lectures, hands-on tabletop exercises and role-playing. Addressing key aspects of assessment, mitigation, performance and responsible life science research, the increasing need for a comprehensive overhaul of the</p> |

existing biosafety, biosecurity and bioethics approach within the laboratory and research setting is explored. By using new tools, real life examples and case studies for dual-use, bioethics, biorisk assessment, project management and performance improvement the importance and benefits of a comprehensive biorisk management system is emphasized. In addition, implementation strategies and lessons learned are discussed by experts within the National Microbiology Laboratory and other laboratories based on their experiences with the implementation of the CWA 15793:2008.

This workshop is specifically designed for today's laboratory managers and directors, scientists, biosafety professionals and safety managers, research and laboratory staff.

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| Project Title | International standard for laboratory biorisk management |
| Themes | Laboratory Biorisk Management (biosafety, biosecurity and bioethics) |
| Dept. Responsible | Office of Biorisk Management, National Microbiology Laboratory, Infectious Disease Prevention and Control Branch of the Public Health Agency of Canada |
| Other Partners | Foreign Affairs and International Trade Canada, World Health Organization, other international biosafety associations |
| Project Value | \$750,000 |
| Project Duration | 2007-2012 |
| Area Affected | Worldwide |
| Description | <p>The Office of Biorisk Management (OBM) in partnership with DFAIT, WHO and international biosafety associations, organizations and laboratories promotes disease containment and laboratory biosafety, biosecurity and biotechics.</p> <p>In November 2007, the first International Standard for Laboratory Biosafety and Biosecurity was approved after three years of hard work (published as CWA 15793:2008). Currently being implemented by laboratories around the world, the standard allows for the establishment of a common biosafety and biosecurity management system that minimizes the risks potentially posed by laboratory operations to employees, the community and the environment.</p> <p>Through the Infectious Disease Prevention and Control Branch's National Microbiology Laboratory, PHAC was a major contributor to this project, along with other key stakeholders (e.g., the European, Asia Pacific and American Biological Safety Associations, WHO, Det Norske Veritas). In 2011 the CWA 15793 was reissued as CWA 15793:2011. In 2012, a new CWA was published by the same groups and organizations; the CWA 16393:2012 Laboratory Biorisk Management - Guidelines for the Implementation of CWA 15793:2008.</p> |
| Project Title | Investigation of Plague epidemiology and epizootiology for the purpose of biosafety of the population in Issyk-Kul Region of the |

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| | Kyrgyz Republic |
| Themes | Disease surveillance and containment |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | Canadian Food Inspection Agency |
| Project Value | \$244,220 USD |
| Project Duration | 2010-2013 |
| Area Affected | Kyrgyz Republic |
| Description | A project to evaluate the natural and artificial factors associated with the circulation of plague pathogen in the alpine part of Central Asia, with a long-term goal of breaking the natural cycle of marmot–flea–marmot–man plague infection. This will help control the spread of plague infection in the Issyk-Kul region and neighboring areas of Kazakhstan and China. |
| Project Title | Joint US-Canada Science and Technology Collaboration for Animal Health Threats |
| Themes | Disease surveillance, diagnosis, risk assessment, preparedness, and response |
| Dept. Responsible | Canadian Food Inspection Agency |
| Other Partners | USDA's Agricultural Research Service, USDA's Animal and Plant Health Inspection Service, US Department of Homeland Security, DRDC's Centre for Security Science, RCMP |
| Project Value | N/A |
| Project Duration | Ongoing |
| Area Affected | Canada -US |
| Description | The objective of this initiative is to develop a coordinated and strategic science and technology (S&T) collaboration in risk assessment, surveillance, diagnostics, preparedness, response, research and strategic planning to enhance both countries' capabilities to respond, individually or jointly, to intentional and unintentional animal health threats. The collaboration includes examining the trends, current status and gaps regarding emerging animal health threats and by identifying joint actions to address capacity development needs. Bilateral working groups have been established, including Surveillance and Diagnostics, Risk Assessment, Preparedness, Response and Research Coordination. A web-based share point serves as an effective communication tool for this bilateral collaboration initiative. This collaboration should also increase Canada-US effectiveness if called upon to support another country if requested, per Article VII. |
| Project Title | National Microbiology Laboratory (NML) Prion Diseases Program (PDP) |
| Themes | Disease surveillance and diagnosis |

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| Dept. Responsible | Infectious Disease Prevention and Control Branch of the Public Health Agency of Canada |
| Other Partners | Health Canada, Canadian Food Inspection Agency |
| Project Value | N.A. |
| Project Duration | Ongoing |
| Area Affected | All 11 members of EUROCJD – Australia, Austria, Canada, France, Germany, Italy, Netherlands, Slovakia, Spain, Switzerland, and UK |
| Description | <p>The NML Prion Diseases Program (PDP) is the only public health program for human prion diseases in Canada. PDP provides national leadership by conducting surveillance, performing research and delivering diagnostic technical services to minimize infectious risks posed to Canadians by these rare, transmissible, lethal degenerative brain diseases. Activities include comprehensive detection and detailed characterization of all cases of human prion diseases that occur in Canada; tracking of rates and investigation of causes; development and validation of improved technologies for earlier and more accurate diagnosis; and studies of biological mechanisms of disease.</p> <p>Internationally, PDP is a member of an 11-country surveillance consortium (the European Creutzfeldt-Jakob Disease Surveillance Network) with the goals of sharing data, establishing best practices and optimizing global approaches to public health for human prion diseases. These activities are also considered essential to help Canada deal with trade issues arising from animal prion diseases with zoonotic potential, such as bovine spongiform encephalopathy (BSE) and Chronic Wasting Disease (CWD). PDP works on this level with the Canadian Food Inspection Agency and Health Canada, as part of an interdepartmental federal program to respond to BSE. Other federal partners include Canadian Blood Services and Héma-Québec, and other international linkages include the US FDA and the World Health Organization.</p> |
| Project Title | NATO deployment health surveillance |
| Themes | Disease surveillance |
| Dept. Responsible | Department of National Defence |
| Other Partners | NATO |
| Project Value | N.A. |
| Project Duration | Since 2003 |
| Area Affected | NATO deployments |
| Description | The Directorate of Force Health Protection within the Canadian Forces Health Services Group has been contributing to efforts to improve NATO disease and injury surveillance since 2003. The current surveillance system, known as EpiNATO, has significant limitations. This activity has taken place at NATO Military Preventive Medicine Working Group meetings and at specific NATO workshops. |

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| Project Title | Prevention of distribution of infectious diseases by trans-boundary rivers of the south of the Kyrgyz Republic with the purpose of maintenance of bacteriological safety in Fergana Valley |
| Themes | Disease surveillance and treatment |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | UK Ministry of Defence |
| Project Value | \$268,155 USD |
| Project Duration | 2011-2013 |
| Area Affected | Kyrgyz Republic |
| Description | A project to establish research centres to analyze water distribution in the Fergana Valley, and to develop treatments against epidemic and infectious diseases with the use of local raw materials. |

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| Project Title | Procinorte – Animal Health Task Force |
| Themes | Disease surveillance, diagnosis, risk assessment, and preparedness |
| Dept. Responsible | Canadian Food Inspection Agency |
| Other Partners | USDA's Agricultural Research Service and Mexico's INIFAP and SENASICA |
| Project Value | N.A. |
| Project Duration | Ongoing |
| Area Affected | Mexico-US-Canada |
| Description | Procinorte is a mechanism to promote the cooperation in research and technology transfer in the Northern Region for a competitive and sustainable agricultural development. |

The objectives of Procinorte are:

- To promote dialogue to identify priority research issues common to the three countries and to influence the regional, hemispheric and global agendas.
- To facilitate the exchange of experiences, information and training through building linkages among public and private country institutions of the Northern Region and with the major research and technology transfer actors in the region, the hemisphere and the world.
- To facilitate collaboration among the countries to solve problems of mutual interest.

Procinorte task forces include: Animal Health, Agricultural Libraries and Information Services, Genetic Resources, Tropical and Subtropical Fruits, Plant Health.

Current activities of the Animal Health Task Force are focussed on animal influenzas, with a wet workshop being planned for November 2011 to be held at the NCFAD in Winnipeg. A web-based share point serves as a central communication tool for the

task force members.

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| Project Title | Public Health Agency of Canada – Mobile Lab |
| Themes | Disease diagnosis and containment |
| Dept. Responsible | Microbiological Emergency Response Team (MERT) - Infectious Disease Prevention and Control Branch of the Public Health Agency of Canada |
| Other Partners | N/A |
| Project Value | N.A. |
| Project Duration | As needed |
| Area Affected | Worldwide, where needed (mobile) |
| Description | <p>The National Microbiology Laboratory (NML) of the Infectious Disease Prevention and Control Branch of PHAC maintains and operates scalable state-of-the-art mobile laboratory options that can be deployed to fill a variety of needs; to respond to emergency outbreak situations anywhere in the world, to assist with site security at high profile events when required, and to respond to possible bioterrorism incidents if one were to occur. These deployable units can span the range of a “lab in a box”, able to be checked on commercial aircraft (what is used for remote, rapid response); a “mobicon”, a true containment level 2 in a trailer format that can be shipped by plane on very short notice; and a mobile truck lab with true containment level 3/4 capabilities that is usually used for preplanned deployment or forensic exploitation to triage all exhibits for biological contamination from a bio-crime scene.</p> <p>In the realm of rapid emergency outbreak response, team(s) of PHAC scientists have been deployed with the units at the request of the WHO’s Global Outbreak and Response Network (GOARN). Team members work closely with the WHO, local officials and other attending partners, and have extensive experience operating in the most remote areas of the world and the highest risk situations. Since 2003, the mobile laboratory units have responded to outbreaks of Nipah virus in Bangladesh, Crimean Congo hemorrhagic fever in Iran, SARS in Hong Kong and China (2003 and 2004), Avian influenza in Vietnam, Marburg virus in Angola and Rift Valley fever in Kenya and Ebola virus in the Democratic Republic of the Congo (2003, 2007, 2012).</p> <p>In addition to responding to infectious disease outbreaks, PHAC’s Microbiological Emergency Response Team (MERT) provides training to national and international partners involving mobile laboratory operations, in-field identification of biological agents, sampling procedures and coordination/execution of response exercises in their role within Canada’s National CBRNE team. MERT also supports national security operations, through mobile laboratory deployment and the development of site security and laboratory response plans. The NML has supported deployments for site security and bio-threat response exercises such as the Summit of Americas in Trinidad and Tobago (2008 and 2009), Beijing (2008), Francophone Summit (2008), CAPEX (2008 and 2010),</p> |

Mexico/H1N1 (2009), Vancouver 2010 Olympics, G8/G20 Summits (2010), and the annual Canadian National CBRNE team exercise, FireDrake.

The capacity is constantly evolving to evaluate, validate and incorporate newer, faster testing platforms, equipment and procedures. In addition, the establishment and expansion of the Canadian Laboratory Response Network by the NML serves to increase response capabilities within the country through dissemination of reagents to provincial partners for rapid local identification of Select Agents.

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| Project Title | PulseNet |
| Themes | Disease surveillance and detection |
| Dept. Responsible | Infectious Disease Prevention and Control Branch of the Public Health Agency of Canada |
| Other Partners | Other countries using PulseNet |
| Project Value | N.A. |
| Project Duration | Ongoing |
| Area Affected | Other countries using PulseNet |
| Description | Foodborne and waterborne diseases due to bacterial pathogens result in substantial human health and economic burdens. Strong national, molecular-level surveillance for these diseases are critically important. |

PulseNet Canada is a laboratory network that comprises the provincial public health laboratories as well as the Canadian Food Inspection Agency (CFIA). Through this network, the DNA "fingerprints" of cases of foodborne and waterborne bacterial disease across the country are centrally analyzed in real time (i.e., as the cases occur). Because of this electronic surveillance, data sharing and analysis, outbreaks caused by bacteria such as Salmonella, Listeria, E. coli, and Shigella are detected at the earliest possible stage, facilitating timely public health interventions including, for example, food recalls. PulseNet Canada utilizes Virtual Private Network (VPN) connections that directly link the databases of the member laboratories, plus a secure, internet-based discussion board hosted by CNPHI for communications among the partners.

Data are also shared across international jurisdictions through the PulseNet International network, which is comprised of 80 countries spanning Central and South America, Europe, the Middle East, Sub-Saharan Africa, and the Asia-Pacific region; this facilitates the identification of emerging regional and global trends. Additionally, Canada and the United States participate in a bilateral Memorandum of Understanding that enables real-time sharing and direct access to national-level foodborne disease data, ensuring that outbreaks and emergencies that span (or potentially span) both sides of the border can be identified and investigated without delay. This MOU was initially signed in 2005 and was renewed in 2010.

The joint development of next-generation subtyping methods in

collaboration with CPHLN, CFIA and other partners, and the distribution of validated methodologies to PulseNet Canada member laboratories has greatly facilitated capacity building. Additionally, PulseNet Canada provides the training and the Quality Assurance program for all member laboratories to ensure the highest quality, reliable data are consistently generated. These activities greatly impact our abilities to identify and investigate outbreaks.

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| Project Title | Real Property Safety and Security |
| Themes | Disease containment |
| Dept. Responsible | Infectious Disease Prevention and Control Branch of the Public Health Agency of Canada |
| Other Partners | Broad list of international partners |
| Project Value | N.A. |
| Project Duration | Ongoing |
| Area Affected | Worldwide |
| Description | <p>Real Property Safety and Security (RPSSD) has established a leadership role both nationally and internationally in the Operation and Maintenance of High Containment laboratories by providing among other things:</p> <ul style="list-style-type: none"> • Peer review for new high containment facilities in many countries; • Being a technical resource to other countries and design teams; • Bench Marking of facility O&M costs; • Leadership in decontamination technologies; • Commissioning support to foreign laboratories, and; • Provision of technical expertise to the high containment community <p>In May of 2009 a team of three individuals from RPSSD went to Nairobi Kenya to assist the new Emerging Pathogens Laboratory affiliated with the University of Manitoba with commissioning and testing requirements. An earlier trip was made in 2007 by two RPSSD personnel to test and certify HEPA filtration as well as Biosafety Cabinets. RPSSD continued to participate in a number of workshops to both acquire knowledge or to provide training and share expertise worldwide between 2009 and 2011. The department also plays a major role in the logistics of deployments of PHAC's mobile lab.</p> |
| Project Title | Strengthening Biological Security in Ghana |
| Themes | Biocontainment, biorisk management, biosafety, disease surveillance |

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| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | |
| Project Value | \$4,000,000 CAD |
| Project Duration | 2012-2013 |
| Area Affected | Ghana |
| Description | Canada is implementing security and biocontainment measures at three facilities of Ghana's Veterinary Services Directorate (VSD) lab network. |
| Project Title | Strengthening Biological Security in Kenya |
| Themes | Biosecurity, biocontainment, biorisk management, disease surveillance |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | Biosecurity Engagement Program of the United States Department of State |
| Project Value | \$1,307,000 CAD |
| Project Duration | 2011-2013 |
| Area Affected | Kenya, East Africa |
| Description | Canada is implementing several projects focused on strengthening capacities in Kenya for disease surveillance, biorisk management, biocontainment and biosecurity |
| Project Title | Strengthening Biological Security in Nigeria |
| Themes | Biosecurity, biocontainment, biorisk management, disease surveillance |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | |
| Project Value | \$2,150,000 CAD |
| Project Duration | 2012-2013 |
| Area Affected | Nigeria |
| Description | Canada is implementing urgently-needed biosecurity and biosafety improvements and providing disease diagnostics capacity at a veterinary facility in central Nigeria. |
| Project Title | Trichinella diagnostics, Proficiency Testing and Lab Certification for Trichinella Testing |
| Themes | Disease surveillance |
| Dept. Responsible | Canadian Food Inspection Agency |

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| Other Partners | OIE, International Commission on Trichinellosis, and National reference labs in EU, US, etc. |
| Project Value | N.A. |
| Project Duration | Ongoing |
| Area Affected | Worldwide |
| Description | Advice and participation to draft international standards and quality assurance mechanisms for the detection of Trichinella in pork and wildlife, and Certification of Trichinella Testing Labs. Confirmatory testing of positive international samples. |

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| Project Title | World Health Organization (WHO) |
| Themes | Disease surveillance |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | N/A |
| Project Value | \$3,130,100 CAD |
| Project Duration | 2010-2013 |
| Area Affected | Global |
| Description | <p>Canada's Global Partnership Program is providing funding to the WHO to support capacity-building for International Health Regulations implementation and Global Alert and Response activities:</p> <p>International Health Regulations (IHR):</p> <ul style="list-style-type: none"> • Promote and strengthen global biosafety and laboratory biosecurity; • Assist resource-limited countries to strengthen core capacities in deliberate disease detection, surveillance, control and response; • Strengthen health security at ports, airports and ground crossings; • Strengthen specialized networks for identifying and responding to deliberate biological attacks. <p>Global Alert and Response:</p> <ul style="list-style-type: none"> • Enhance regional and sub-regional alert and response strategies and teams to assess risk at regional and international levels and provide technical support to public health emergencies caused by deliberate outbreaks; • Strengthen Global Alert and Response Operations for deliberately caused disease through rollout of the global Event Management System (EMS); • Strengthen mass gathering (MG) health security measures in organizing countries; • Strengthen deliberate event (DE) alert, risk assessment and |

response mechanisms in collaboration with international law enforcement and security agencies;

- Improve collaboration, coordination and innovation for the containment of priority dangerous high consequence pathogens of bioterrorism concern;
- Strengthen disease surveillance for deliberate epidemics and control in conflict and disaster areas;
- Strengthen the international network composition and operations of the Global Outbreak Alert and Response Network (GOARN);
- Implement WHO guidance on "Responsible life science research for global health security".

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| Project Title | World Organisation for Animal Health (OIE) |
| Themes | Disease surveillance, detection, diagnosis, and response |
| Dept. Responsible | Global Partnership Program of Foreign Affairs and International Trade Canada |
| Other Partners | N/A |
| Project Value | \$2,000,000 CAD |
| Project Duration | 2010-2012 |
| Area Affected | Global |
| Description | <p>Canada's Global Partnership Program is providing funding to the OIE to support capacity-building activities for animal disease surveillance, detection, diagnosis and response activities:</p> <ul style="list-style-type: none"> • Support regional and sub-regional emergency preparedness and response strategies that are complementary to global systems, for a coordinated response to deliberately caused outbreaks; • Strengthen the surveillance and monitoring of infectious animal diseases and zoonoses; • Support to the implementation of International Health Regulations (IHR) and OIE global standards on disease notification; • Strengthen laboratory capacity to detect and respond to deliberate outbreaks through the OIE Laboratory Twinning Programme; • Support the evaluation and strengthening of veterinary services, tools and legislation; • Support an international oversight mechanism to ensure post-eradication freedom of rinderpest. |