Canadian Immunization Research Network (CIRN): Addressing Emerging Threats

Canadian Public Health Association Conference
May 2015

Dr. Scott Halperin
Nominated Principal Investigator, CIRN
Director, Canadian Center for Vaccinology
Professor, Dalhousie University
Outline

• Background
• Network design & function
• Infrastructure assets
• Case studies
• Opportunities & Challenges
• Discussion & Questions
Background

• From PCIRN (2009) → CIRN (2014)
• Pandemic Influenza (narrow) → VPDs (broad)
• PCIRN: 2009-2015
  – Focus on creating infrastructure, response capability, chanelling expertise; 100+ investigators, national
  – $18 million in CIHR grants 2009 – 2015
  – Evaluation, safety, surveillance, programs
• CIRN: 2014-2017
  – Leveraging PCIRN infrastructure, capacity, expertise
  – $6.9 million in CIHR grants to date
  – 130 investigators, 40+ institutions
  – Late-stage vaccine development through programs
Network Objectives

• Formal infrastructure for research, collaboration
• Knowledge exchange: researchers, users, and policy makers
• Testing safety, effectiveness
• Addressing vaccine hesitancy
• Program evaluation
• Training next generation of researchers

• Rapid response capacity...
CIRN Infrastructure

- Serious Outcomes Surveillance Network (SOS)
- Clinical Trials Network (CTN)
- Special Immunization Clinics Network (SIC)
- Reference Laboratory Network (RLN)
- Provincial Collaborative Network (PCN)
- Modeling and Economics Research Network (ModERN)
- Canadian National Vaccine Safety Network (CANVAS)
- Social Sciences and Humanities Network (SSHN)

CIRN (Canadian Immunization Research Network)
Network Capacity

**Impact**
Canadian Immunization Monitoring Program, Active Universe
Programme canadien de surveillance active de l'immunisation

- **CANVAS**
  - 8 Sites; 30,000+
  - Healthy subjects
  - Rapid safety reports

- **PCN**
  - Interprovincial
  - PH Labs
  - Databases

- **SOS**
- **CTN**
  - 40+ hospital sites
  - Adult population
  - Burden of disease
  - 10 Sites
  - Rapid Trials
  - Phase I/II/III
  - Adult/peds/other

- **SIC**
  - 13 Sites
  - AEFI
  - Ambulatory
  - Spec. populations

- **LUMMSS**
  - Support/Linkages/Testing

Informal, regular communication
Governance & Communication

Network Management Office
- Finance, Admin & Communications

Management Committee
- Strategy, funding and management decisions

Research Committee
- Research priorities, quality, peer review

Stakeholders Advisory Committee
- Public Health (Fed/Prov), industry, associations, PIs

International Advisory Committee
- CIRN members who provide strategic scientific oversight to the network
Key Assets – Rapid Response

- Infrastructure to deploy action
- Critical mass of expertise
- Common platforms & methodologies
- Communications mobilization process
- Template protocols, contracts, tools
- Ability to scale up for emerging threats
- PHAC/CiHR expedited funding-peer review
Rapid Response Process

Emerging threat identified

Network Specific

Brief Concept Outline

Research Committee Review

Management Committee Decision

General

Full Project Proposal

2-4 weeks response time total

RFP

CIHR/PHAC OTHER

CIHR/PHAC OTHER
Proven Capabilities

• **PCIRN Rapid Clinical Trials 2009-2012 (Influenza)**
  – Legacy of methodology, expertise, proven success
  – 10 Clinical trials in varying populations
  – Safety reports to PHAC within weeks of first vaccines

• **PCIRN Real-Time Safety Reporting**
  – Special AEFI report to PHAC on Agriflu, 2012-13

• **CIRN Phase 1 Ebola 2014 (VSV-EBOV)**
  – Rapid enrolment, vaccination, preliminary safety data
  – Collaboration with international sites & research teams

• **CIRN Outbreak Research 2015**
  – Study of Men B outbreak through CANVAS survey, NS
Phase 1 Ebola Timeline

- **Design**
  - Oct 5 - Nov 10: Protocol developed, grant application completed, contracts signed

- **Recruit**
  - Nov 14: Trial Announced publicly by PHAC/CIHR
  - Nov 14-18: 300+ individual responses by CCfV to public inquiries re participation

- **Screen**
  - Nov 18-26: 75 screening visits complete

- **10 Weeks**

- **Vaccinate**
  - Nov 27: First vaccinations
  - Dec 15: Last vaccinations

- **LSLV (March 2015)**
Opportunities

• Infrastructure and expertise to support pandemic research

• Capacity to study various targets in multiple populations

• Evaluation, Safety, Surveillance – real time reporting

• Sustainability

• Communications & access for public health

• Provides direct funding opportunities for PHAC to researchers through infrastructure
• Meeting the objectives and goals of the RFA on a budget of $2.2 million annually:
  – Lack of funding for ongoing infrastructure
  – Broader targets, fewer funds
  – Pandemic preparedness

• Sustainability

• Managing expectations
Questions/Comments
Global Research Collaboration for Infectious Disease Preparedness (GloPID-R)

Funders join forces for a better research response

Public Health 2015
May 27, 2015
Vancouver, Canada

Cornelius SCHMALTZ, MD
Deputy Head of Unit
'Infectious Diseases and Public Health'
DG Research & Innovation
European Commission
Lesson learned from Ebola

There is **no platform** for research funders to identify the best research solutions and channel the necessary funds rapidly.
A vital necessity

- **Research and innovation** are needed at the outset to develop essential diagnostics, vaccines and therapeutics

- *It is important to think, plan and invest in research and innovation before a health crisis occurs*
A novel solution

**GloPID-R: “Global Research Collaboration for Infectious Disease Preparedness”**

- The only initiative of its kind to bring together research funders and coordinate their response to epidemics at a global level
A novel solution

- **The GOAL**
  Spark a collaborative global research response *within 48 hours*, at the outset of an epidemic of pandemic potential

- GloPID-R aims to save valuable resources, avoid duplication of efforts and lost time
GloPID-R objectives

- Facilitate exchange of information
- Address scientific, legal, ethical and financial challenges
- Implement a 'One Health' approach with close cooperation between human and animal health researchers
- Establish a strategic agenda for research response
- Connect infectious disease research networks
- Create partnerships with low-income countries
GloPID-R members - uniting research funders worldwide
• CIHR- Canadian Institutes of Health and Research – Canada
• Consejo Nacional de Ciencia y Tecnología Mexico – Mexico
• European Commission- DG Research & Innovation – European Union
• Federal Ministry of Education and Research/PT-DLR - Germany
• INSERM / IMMI- Institut de microbiologie et des maladies infectieuses – France
• Instituto Butantan and Instituto Fiocruz – Brazil
• Instituto de Salud Carlos III – Spain
• Ministry of Science, Technology and Productive Innovation – Argentina
• National Health and Medical Research Council – Australia
• National Research Foundation of Korea - South Korea
• South African Medical Research Council - South Africa
• Thai National Institute of Health, Department of Medical Sciences - Thailand
• U.S. Department of Health and Human Services – USA
GloPID-R organisation

ASSEMBLY

CHAIR & VICE CHAIRS
European Commission, Brazil, Canada, France, South Africa

SECRETARIAT
FONDATION MÉRIEUX
AVIESAN

UNIVERSITY OF OXFORD
ISARIC

SCIENTIFIC BOARD
Milestones

2013
- The Heads of International Research Organisations (HIRO) agree to create an initiative to facilitate international collaboration between funders in the field of new and remerging epidemics
- European Commission and international funders launch the “Global Research Collaboration for Infectious Disease Preparedness” (GloPID-R)
- **October:** First GloPID-R meeting in Annecy

2014
- **September/October:** Second GloPID-R meeting in Montreal -10 founding members agree on a charter outlining GloPID-R’s goals and governance

2015
- **January:** a Secretariat is established to support GloPID-R members and goals
- **May 4-5:** Third GloPID-R meeting in Cape Town – Mexico, Germany and Argentina new members
GloPID-R meeting
‘Learning from Ebola - How to respond better to the next outbreak’

VINEYARD HOTEL, CAPE TOWN, SOUTH AFRICA 4th and 5th May 2015
GloPID-R Cape Town meeting objectives

Main Objectives

Analyse the problems encountered by researchers and research funders in the context of the Ebola epidemic

Propose ways to address these problems in future outbreaks
GloPID-R Cape Town
Next steps

• Preparedness plan for funders in case of an outbreak: communication structure, timelines, procedures, criteria for actions;
• Interim Scientific Advisory Board (SAB) established;
• Work on barriers: surveys to identify the political, ethical, regulatory, legal, societal (PERLES) (and other) barriers encountered in mounting a rapid research response to outbreaks;
• Mapping existing networks: survey to identify research networks and capabilities of relevance to GloPID-R
• Data sharing: interactions with ICMJE;
• Sample sharing: interactions with GHSI task force;
GloPID-R Cape Town
Next steps

• Explore link with **BSL-4 laboratories** (EDPLN)

• **Enhanced communication**: Video conferences with GloPID-R members every 3 months and GloPID-R website launched:  
  [http://www.glopid-r.org](http://www.glopid-r.org)

• **Expanded membership**: Japan, China and DR Congo potential new members

• **WHO** now official **observer** status in **GloPID-R**
We invite other funders to join!

THANK YOU!

Cornelius.Schmaltz@ec.europa.eu
Line.matthiessen@ec.europa.eu (GloPID-R chair)
Development of the VSV-based Ebola vaccine between and during outbreaks.

Presented by: Trina Racine, PhD
May 27th, 2015
Public Health 2015
Special Pathogens Program

Canadian Science Centre for Human & Animal Health, Winnipeg, Manitoba, Canada

National Microbiology Laboratory
Special Pathogens Program
Ebola virus

- Baltimore class V: (-)ssRNA virus
- Virion is filamentous in shape, 970 nm long, 80 nm in diameter on average
- Genome is 18-19kb in size
  Encodes for 7 genes (8 viral proteins)
- Reservoir species unknown but likely fruit bat
Ebola virus disease outcomes

- Death (up to 90% of humans) - 7-12 days after symptom appearance
- Convalescent phase - Can take months, secretion of live virus can still occur for months afterwards
Outbreak Response
Vaccine: why VSV vector?

Vesicular Stomatitis Virus (VSV) Vector

- **Rhabdovirus: ss (-) RNA**
  - grows to very high titres (>10^9 pfu/ml)
  - easily manipulated by recombinant DNA technologies

- generally not a human pathogen
  - no pre-existing immunity in humans

- rVSVs mediate protective immunity
  - induces strong B & T cell responses

- **Indiana strain**
  - Less pathogenic

- **Reverse genetics system**
  - Ability to tolerate the removal and addition of different genes
Vaccine: rVSV-ZEBOVGP Vaccine Design

VSV wt

N P M G L

rVSV-ZEBOVGP

N P M EBOVGP L

VSV WT

Glycoproteins switched

rVSV-ZEBOVGP
rVSV-ZEBOVGP Vaccine: Proof of concept

**VSV Vaccine: Route of Immunization**

**Vaccination Groups**
- $2 \times 10^7$ pfu

**Challenge**
- EBOV 1000 pfu

**Survival**
- 0/2

### rVSV-MARVGP
- Control
- IM = intramuscular
- 0/2

### rVSV-ZEBOVGP
- IM = intramuscular
- 2/2
- OR = oral
- 4/4
- IN = intranasal
- 4/4

**Cynomolgus Macaques**

**Note:** No haematological change post-immunisation or post-challenge

Qiu, X et al. 2009 PLoS ONE 4:e5547
Pre-clinical summary

- **rVSV-ZEBOVGP**
  - Effective vaccine stimulating B and T cell responses
  - Provides 100% protection 28 days after immunization
  - Can be used as a post-exposure therapy if given early after infection
    - Has been used twice for the West African Outbreak
  - Currently in phase II/III clinical trials
Timeline

Initial development and testing of vaccine

C GMP manufacturing and licensing to NewLink Genetics

Start of outbreak

First team deployed to SL

Donation of vaccine to WHO ~800 doses

Initiation of Phase I trials

Initiation of Phase II/III trials

Safety data published

April 2015

February/March 2015

October 2014

August/October 2014

July 2014

December 2013

2004/2005

2008
47 trials currently ongoing or completed

9 rVSV-ZEBOVGP trials currently ongoing

Source: http://ClinicalTrials.gov
## Ongoing rVSV-ZEBOVGP trials

<table>
<thead>
<tr>
<th>Product</th>
<th>Phase</th>
<th>Location</th>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>I</td>
<td>Germany</td>
<td>Germany</td>
</tr>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>I</td>
<td>Kenya</td>
<td>U of Oxford</td>
</tr>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>I</td>
<td>Geneva</td>
<td>University Hospital Geneva</td>
</tr>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>I</td>
<td>Halifax</td>
<td>CIHR/NewLink</td>
</tr>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>I</td>
<td>NIH/WRAIR</td>
<td>NewLink</td>
</tr>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>I</td>
<td>US</td>
<td>NewLink</td>
</tr>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>II/III</td>
<td>Sierra Leone</td>
<td>US CDC</td>
</tr>
<tr>
<td>(STRIVE)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>II</td>
<td>Liberia</td>
<td>NIAID</td>
</tr>
<tr>
<td>+ ChAd3 EBO Z</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(PREVAIL)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rVSV-ZEBOVGP</td>
<td>III</td>
<td>Guinea</td>
<td>Norway/WHO/Canada</td>
</tr>
</tbody>
</table>
Summary of Phase I Trials

- rVSV-ZEBOVGP found to be safe, well tolerated and immunogenic

- Warrant further investigation (testing in Guinea, Sierra Leone and Liberia – the three countries hardest hit by EBOV)

- A dose of $2 \times 10^7$ PFU was chosen for phase II/III trials

Progressing to Phase II/III studies:
- International ethics panel convened by WHO agreed to move forward to phase II/III studies with relatively small amount of phase I data available
Phase II/III studies

- PREVAIL (Partnership for Research on Ebola Vaccines in Liberia)
- STRIVE (Sierra Leone Trial to Introduce a Vaccine Against Ebola)
- Guinea
Thank you!

“I go home today. They cured me using this new miracle drug. I’m afraid it’ll be years before it’s approved for humans.”
Gary Kobinger
Special Pathogens Program
All those who deployed or will deploy to the outbreak
Provided funding for rVSV-ZEBOVGP
Canada - a relatively small population..... BUT

• **Strengths:**
  » Internationally recognized expertise in vaccinology and infectious disease research
  » Ability to work effectively in teams nationally and internationally
H1N1 and Ebola

How can we strengthen our common investigative capacity to respond to national and global infectious disease threats
Pre-existing Networks and Collaborations Designed to Meet the Urgent and Required Research Needs are Critical
Federal/ Provincial/ Territorial Networks

» Pan Canadian Public Health Network
  • Vaccine Supply Working Group
  • Vaccine Vigilance Working Group

» Canadian Pandemic Influenza Plan

» FluWatch/ Surveillance Working Group

» Infection Control Working Group
Federal Government Collaborations

» Public Health Agency/ Canadian Institutes for Health Research
  • PHAC CIHR Influenza Research Network
  • Canadian Immunization Research Network

» Vaccine Research, Innovation and Development Action Plan
  • 12 departments/ agencies
  • Public Health, AMR, MCMs, International development, Agricultural productivity, Industrial innovation
Academic/NGOs Networks

» PCIRN/ CIRN
» Immunization Program Active (IMPACT)
» Canadian Nosocomial Infection Surveillance Network
» Canadian Critical Care Trials Group
Key Action Plan Themes and Recommendations

1. Identify, communicate and target national needs and priorities
2. Expand market opportunities for vaccines and technologies
3. Strengthen networking, partnership development and collaboration
4. Enhance information and training, and promotion of best laboratory and manufacturing practices
5. Strengthen and strategically focus available R&D and commercialization support
6. Enhance the coordination, promotion and accessibility of federal programs and services for vaccine research, innovation and development.
Consultations on Vaccine Priorities

- Expert consultative workshops
  - broad vaccine interests, needs, opportunities and challenges (November 2012)
  - adjuvants (March 2013)
  - biomarkers for vaccine safety and efficacy (October 2014)

- Presentations and discussions
  - Hia vaccine development (July 2014)
  - PHAC internal analysis of AMR-related priorities (August 2014)
  - U.S. National Vaccine Advisory Committee (September 2014)
  - National Farmed Animal Health and Welfare Council (September 2014)
  - Vaccine Industry Committee (October 2014, April 2015)
  - International Centre for Infectious Diseases (October 2014)

- Bilateral discussions with key vaccine firms (December 2014)

- Surveys of CCMOH and CCVO on final candidate priorities (December 2014–January 2015)
## Human Vaccine Priorities

### Human Pathogen/ Vaccine

<table>
<thead>
<tr>
<th>Pathogens/ Diseases</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>Highest</td>
</tr>
<tr>
<td>Respiratory Syncytial virus</td>
<td>Medium</td>
</tr>
<tr>
<td>Clostridium difficile</td>
<td>Medium</td>
</tr>
<tr>
<td>Group A streptococcus</td>
<td>Medium</td>
</tr>
<tr>
<td>Streptococcus pneumoniae</td>
<td>Medium</td>
</tr>
<tr>
<td>Norovirus</td>
<td>Medium</td>
</tr>
<tr>
<td>Haemophilus influenzae non type b</td>
<td>Medium</td>
</tr>
<tr>
<td>Herpes zoster</td>
<td>Medium</td>
</tr>
<tr>
<td>Meningococcal serogroup B</td>
<td>Medium</td>
</tr>
<tr>
<td>Borrelia burgdorferi (Lyme disease)</td>
<td>Lower</td>
</tr>
<tr>
<td>Human papillomavirus</td>
<td>Lower</td>
</tr>
<tr>
<td>Group B streptococcus</td>
<td>Lower</td>
</tr>
<tr>
<td>Rabies virus</td>
<td>Lower</td>
</tr>
<tr>
<td>Dengue virus</td>
<td>Lower</td>
</tr>
<tr>
<td>Rotavirus</td>
<td>Lower</td>
</tr>
<tr>
<td>West Nile virus</td>
<td>Lower</td>
</tr>
</tbody>
</table>
## Human Vaccine Priorities

### MEDIUM TERM DEVELOPMENT (7−12 years)

<table>
<thead>
<tr>
<th>Pathogens/ Diseases</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis C</td>
<td>Highest</td>
</tr>
<tr>
<td>Bordetella pertussis (Whooping cough)</td>
<td>Medium</td>
</tr>
<tr>
<td>Chlamydia trachomatis</td>
<td>Lower</td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td></td>
</tr>
<tr>
<td>Herpes simplex type 2</td>
<td></td>
</tr>
<tr>
<td>Helicobacter pylori</td>
<td></td>
</tr>
<tr>
<td>Pseudomonas aeruginosa</td>
<td></td>
</tr>
<tr>
<td>Parvovirus B19</td>
<td></td>
</tr>
<tr>
<td>Cytomegalovirus (CMV)</td>
<td></td>
</tr>
</tbody>
</table>

### LONG TERM DEVELOPMENT (13+ years)

<table>
<thead>
<tr>
<th>Pathogens/ Diseases</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human immunodeficiency virus (HIV)</td>
<td>Highest</td>
</tr>
<tr>
<td>Universal Influenza</td>
<td></td>
</tr>
<tr>
<td>Mycobacterium tuberculosis (TB)</td>
<td></td>
</tr>
<tr>
<td>Neisseria gonorrhoeae</td>
<td></td>
</tr>
<tr>
<td>Vancomycin-resistant enterococcus</td>
<td>Lower</td>
</tr>
</tbody>
</table>
Partnering to create a more efficient and timely response
Response to threats: infectious disease outbreaks, and the role of Canadian research

Vancouver, May 27th, 2015

Marc Ouellette, PhD, FRSC, FCAHS
Scientific Director
CIHR-Institute of Infection and Immunity
In response to the SARS outbreak of 2003, CIHR launched a call, completed peer review of the applications, and began funding in just 17 days

- Pilot Project grants focusing on urgent biological questions
- 2\textsuperscript{nd} funding opportunity on the Public Health and Health Care System Preparedness and Response to SARS, supported research examining the larger public health issues.
- Catalyzed the formation of the Canadian SARS Research Consortium, with a mandate to coordinate, promote and support SARS research in Canada and develop international linkages and partnerships
Pandemic Preparedness Strategic Research Initiative (PPSRI)

- 5 year initiative to support pandemic influenza research in Canada
- Initial allocation of $21.5 million from the Government of Canada in 2006
- **Partnerships with federal and provincial agencies, and international research organizations** increased total available funds to $44.3 million
- 92 projects funded in total
- Created new knowledge (publications), increased capacity (training and mentorship), new guidelines, increased collaborations and partnerships
Canadian Immunization Research Network

- Created in 2014 as a follow up to the PHAC-CIHR Influenza Research Network (PCIRN – 2009-2015)
- A national research network to conduct coordinated, collaborative and multi-disciplinary vaccine evaluation research
- Investigate all aspects of the vaccine life cycle including safety, short- and long-term effectiveness and protection, vaccine hesitancy, uptake; including a rapid-response component
- Improve immunization programs to yield better public health outcomes
- Build strong links between researchers and key decision makers
Federal Vaccine Action Plan

• Enable vaccine innovation in Canada
• **Coordinate federal activities** to bring a focused effort to support vaccine development in Canada and by coordinating diverse support programs assist researchers and industry to overcome development hurdles

• PHAC, CIHR, Health Canada, Industry Canada, NRC, DRDC, AAFC, CFIA, Canadian Armed Forces, DFATD, IDRC, NSERC, SSHRC
Antimicrobial Resistance (AMR)

Canada UK Joint Health Research Program on Antibiotic Resistance

• Partnership between MRC UK & CIHR to develop joint research strategies;
• UK MRC & CIHR launched 2nd funding opportunity in 2010;
• Funded two teams/consortia on “Novel Antibiotic Targets in Cell Wall Biogenesis” & “Bacterial Resistance to Beta-Lactam Antibiotics” for a combined investment of $4 million & £2 million, respectively.

Antimicrobial Resistance (JPIAMR)

• Coordinates research that will lead to sustainable use of antibiotics to treat infections diseases & to a decrease in the number of patients with resistant infections.
• 19 Member states have joined forces in the JPIAMR
• The first Joint Call “InnovaResistance: Innovative Approaches to address antibacterial resistance” launched on January 27, 2014, funding started January 1st, 2015.
• CIHR providing $4 million to support the Canadian component of 6 international research teams (out of 7 funded).
Federal action plan on AMR

Surveillance
Detecting and monitoring trends and threats in order to inform strategies to reduce the risks and impacts of antimicrobial resistance.

• Action 1: Establish and strengthen surveillance systems to identify new threats or changing patterns in antimicrobial resistance and use, in human and animal settings.

Stewardship
Conserving the effectiveness of existing treatments through infection prevention and control guidelines, education and awareness, regulations, and oversight.

• Action 2: Strengthen the promotion of the appropriate use of antimicrobials in human and veterinary medicine.

• Action 3: Work with the animal agriculture sector partners to strengthen the regulatory framework on veterinary medicines and medicated feeds, including facilitating access to alternatives and encourage the adoption of practices in order to reduce the use of antimicrobials.

Innovation
Creating new solutions to counteract loss in antimicrobial effectiveness through research and development.

• Action 4: Promote innovation through funding collaborative research and development efforts on antimicrobial resistance both domestically and internationally
GloPID-R

• Global Research Collaboration for Infectious Disease Preparedness
• An initiative designed to facilitate international collaboration between health research funding organizations
• The goal is to facilitate an effective research response within 48 hours of a significant outbreak of a new or re-emerging infectious disease with pandemic potential, in order to save lives and economies worldwide
• To ensure that research capacity and capabilities are in place to support the conduct of scientific research
CIHR’s response to the Ebola crisis in West Africa

Touched on all aspects addressed by this panel

- Funding opportunity to support a phase I clinical trial of a VSV-EBOV Ebola vaccine
  - CIRN rapid research component, domestic partnerships, Canadian-developed vaccine

- Participation in an international consortium supporting a phase III clinical trial of VSV-EBOV Ebola vaccine in Guinea
  - International and domestic partnerships

- Funding opportunity to support Innovative Ebola Research
  - Alignment with international calls from other funders