

Global One Health Network

Annual Report

1 September, 2019 to 31 August, 2020

Message from the Co-Leads

We are pleased to present in the Report the work that began with the launching of our One Health Network for the Global Governance of Infectious Diseases and Antimicrobial Resistance (Global 1HN) in September 2019. The Network brings researchers and knowledge users from the social sciences together with those from the human, animal, and environmental health sciences to develop a transdisciplinary One Health approach to infectious diseases (IDs) and antimicrobial resistance (AMR) governance at global, national, and local levels.

This inception year of the Network was an exciting one. Our early months were spent establishing our Network administrative functions, our website (global1hn.ca), and detailed plans for each of our Working Groups and Research Enabling Platforms. In early March 2020, we held the first Annual General Meeting in Ottawa, which was attended by 35 Network members. Members gained a better understanding of how the Network is structured (see our organizational chart at the end of this report), shared the work that was beginning under each of the Network's four Research Enabling Platforms, and exchanged ideas on how to collaborate.

Less than two weeks after our meeting, with our members having traveled safely back to their domestic and international homes, the reality of COVID-19 began to impact all our lives. The pace of the Network's activities slowed somewhat as we all figured out how to work together remotely. From an oddly positive perspective, the pandemic provided our Network an incredible real-time case study of the global and domestic One Health governance of an emerging infectious disease originating from bats and believed to be first

transmitted to humans in live animal markets. Members would not have to depend only on historical analysis of governance successes and challenges by drawing on experiences of SARS, H1N1 or Ebola.

Membership of the Network in the first year stood at thirty Canadian scholars, seven national knowledge users and twelve international collaborators; we have been growing our membership since then. We are especially thankful to our Principal Knowledge User, Bersabel Ephrem, and her team, in particular Jacqueline Arthur, at the Centre for Communicable Disease and Infection Control at the Public Health Agency of Canada, for their support of the Network this year.

This inaugural report of the Network provides a snapshot of the activities under each of the Research Enabling Platforms, a summary of our efforts to enhance research capacity in the global governance of IDs and AMR, and an introduction to the Network's knowledge translation resources.

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THE NETWORK'S RESEARCH ENABLING PLATFORMS (REPs)

The network has fully established the four REPs, and a number of case studies are currently under way at each REP.

Governance in Information and Surveillance Systems (REP1)

Surveillance systems are essential to monitor changes in time and space in the occurrence of **Infectious Diseases (IDs)** and **Antimicrobial Resistance (AMR)**. They can inform the need for, and the effectiveness of, interventions to prevent and control the spread of IDs and AMR.

Surveillance systems for IDs and AMR are unique because they have the potential to monitor cases in animals and humans and could potentially include a component of monitoring for the presence of the pathogen or of enabling conditions for disease, intervention, or prevention in the environment. However, most existing surveillance systems do not integrate perspectives from across the animal, human, environmental health, and social sciences by incorporating One Health principles into ID and AMR surveillance systems design.

While numerous surveillance systems for AMR and IDs exist in Canada, most are based in different institutions and agencies. There is a lack of integration among and within sectors -- human, animals (farm/pets/wildlife), and the environment -- as well as between private and public institutions. In addition, difficulties exist in prioritizing diseases with a One Health perspective, such as different mandates, visions, and emergencies. A final concern being addressed by this platform are that current priorities may not reflect the priorities and concerns of minorities or vulnerable groups.

REP1 has started to identify frameworks for One Health information and surveillance systems, and to generate evidence through the following case studies:

- ◇ Improving surveillance through the integration of social media data into

and evaluation of the governance of the Global Public Health Information System (GPHIN) through a collaborative research project under way with PHAC.

- ◇ Evaluating the added value of a One Health approach to the surveillance of AMR.

This platform is co-directed by H  l  ne Carabin and C  cile Aenishaenslin, both at Universit   de Montr  al.

Governance in Prevention and Control Programs (REP 2)

Response to ID and AMR detection includes prevention and control measures, which typically occur within specific public health or agriculture departments and involve community engagement where many barriers to effective governance are located. The magnitude and nature of the response measures depend upon the urgency of the situation, such as an acute event (outbreak) or an endemic situation, and its frequency and severity for different species or populations.

An important challenge in responding to an ID or AMR event is the coordination and active collaboration required between various agencies for a unified, timely response, both in local communities and for global efforts to prevent pandemic transmission of IDs. This challenge can arise from a lack of mechanisms for inter-agency collaboration and an absence of operational support for a coordinated response applying One Health principles. To overcome such obstacles at different governance scales, a core group of motivated individuals with strong institutional support is needed to begin the process of fostering a commitment for sustainable coordination and collaboration. We will initiate transdisciplinary literature reviews using an equity lens to identify specific barriers and enablers to the implementation of global OH interventions to prevent or control IDs and AMR.

REP2 started a scoping review of barriers and enablers to the implementation of governance to prevent or control IDs and AMR and has begun Identifying

frameworks for governance evaluation through exploration of holistic One Health models of evaluating governance.

The two case studies under way at this REP include:

- ◇ A case study in Alberta on the provincial AMR strategy.
- ◇ A case study in Québec on the assessment of rodent-targeted interventions against Lyme disease.

This platform is co-directed by Aidan Hollis (University of Calgary) and Kate Zinszer (Université de Montréal).

Institutionalization (REP 3)

A central aspect of effective global governance is the institutionalization of policies and systems that help prevent and/or allow an effective response to ID and AMR threats. This research stream focuses on identifying political, economic, and cultural barriers to the institutionalization of effective global governance policies and systems for ID and AMR governance, and on identifying strategies for overcoming these barriers. In particular, this REP considers the barriers and opportunities posed by multi-level governance. Multi-level governance involves a system of policy negotiation and implementation at different scales – from international to local – with interaction between, and support required, at each scale to foster policy development, implementation, compliance, and accountability.

Case studies initiated under REP3 to improve our understanding of global health and disease governance include:

- ◇ Assessments in Brazil, Ecuador, Mexico, and Rwanda of the extent to which One Health principles are present in the response to COVID-19.
- ◇ A systems and legal analysis of the governance of wildlife trade for the

prevention of future pandemics that will include the regulation of wet markets.

This platform is co-directed by Mary Wiktorowicz (York University) and Suzanne Hindmarch (University of New Brunswick)

Equity in Governance Issues (REP 4)

While there is growing acknowledgment of the importance of equity considerations in global health governance more generally, there is also growing evidence that equity issues are central to effectively addressing IDs and AMR through global governance arrangements. REP4 aims to identify the extent to which equity considerations are present in the global governance of IDs and AMR contribute to embedding equity goals in global governance of ID and AMR.

Case studies under REP4 include:

- ◇ Establishing a monitoring platform for how One Health principles are embedded in the global policy response to the Coronavirus pandemic.
- ◇ The role of equity in the global governance of antimicrobial resistance.
- ◇ A social determinants of health analysis of the inequitable impacts of Coronavirus pandemic, and the policy response to COVID-19.

This platform is co-led by Sean Hillier (York University) and Arne Ruckert (University of Ottawa).

ENHANCING RESEARCH CAPACITY

The vision of the Network is to build and sustain a transdisciplinary Network to advance new knowledge and research aimed at improving the global governance of IDs and AMR. We hope to achieve this by enhancing research capacity in several ways.

Enhancing research capacity through dedicated research coordinator

A part-time research coordinator, Arne Ruckert, has been hired by the Network and has started to deliver on the research capacity work package.

Mapping of existing research capacity on One Health governance of IDs and AMR

The mapping exercise was one of the first activities to get started. The findings will be presented at the second annual network meeting. This mapping focused on key One Health research initiatives and One Health research networks relevant to the global governance of IDs and will lead to a series of recommendations on what other actors the network should engage with, and where synergies and complementarities might lie with other One Health research and networking activities.

Providing Network Seed Grants

These seed grants are intended to help jump-start novel research collaborations across the Network. Three Seed Grants have been granted in the first year of the Network's operation:

- ◇ **Seed Grant 1.** Strengthening the integration of One Health and Indigenous Knowledges in the Governance of Climate-Sensitive Infectious Diseases (CSID) in the Canadian Arctic. Cécile Aenishaenslin (Université de Montréal) and Sean Hillier (York University).

- ◇ **Seed Grant 2.** Genomics for Safe WATERs (Wastewater Antimicrobial Treatment and Elimination Regimes). Joe Harrison (University of Calgary).
- ◇ **Seed Grant 3.** Examining International Health Regulations (IHR, 2005) Compliance as a Political Priority in the Caribbean. Srikanth Kondreddy (Bruyère Research Institute).

Highly-Qualified Individual Training

3 PhD or Postdoctoral Scholarships

We expect to issue three doctoral or postdoctoral scholarships as part of the network capacity building work package over the course of the Network grant. The Network has thus far administered one PhD scholarship at York University and another one through the Université de Montréal in support to the Network. To provide more flexibility for identifying suitable candidates for the REPs that have not yet found one, we retooled this funding envelope to also allow usage of the funds for postdoctoral researchers (instead of only covering doctoral students). We expect that the two REPs that have not yet awarded their trainee funding, will do so in Year 2 of the Network through extending postdoctoral scholarships.

4 MA Scholarships or Research Bursaries

The Network received no applications to this competition open to all Network members. The Executive Committee has decided to retool this funding opportunity to also allow research support for undergraduate students through a similarly endowed Research Bursary, and to allow non-Canadian network members to apply for this funding opportunity.

Logistical support to develop new transdisciplinary One Health proposals

In the first year of the Network, a number of applications for funding for research related to One Health approaches to IDs or AMR governance at global, national, and local levels were either submitted or directly supported by the Global 1HN research coordinator.

The network has succeeded in generating additional financial support for network research activities under the four REPs through success in *the Canadian 2019 Novel Coronavirus (COVID-19) Rapid Research Funding Competition*, with the proposal “Better Governance for Zoonotic Disease Risk”.

Through this grant, Global 1HN generated an additional CAD 500,000 to be distributed to the four REPs, with the aim of establishing a real-time monitoring infrastructure to study and promote the embedding of One Health principles within the national and global governance of Infectious Diseases (ID). This will improve evidence-based decision-making in the public health response to COVID-19 and enhance international collaborative efforts to mitigate its spread using a One Health approach.

Knowledge Translation and Exchange (KTE)

The Network’s KTE activities are overseen by Melanie Rock (University of Calgary) and Christina Zarowsky (Université de Montréal) who have hired a part-time KT Coordinator, Aïda Minguez Menendez, located at Université de Montréal. A principal activity of the KTE group in the first year was to develop interactive platforms for ongoing engagement and KT. The most significant platforms include Global 1HN’s website which was launched in March 2020 and is updated on a weekly basis in regard to the Network members’ publications and news, and the introduction of Slack and MS Teams as means of instant communication across the network.

In addition, to start developing KTE across and beyond the Network, we established:

- ◇ A regular internal [webinar exchange series](#) to ensure on-going communication and regular knowledge exchange between Network members.

A GLIMPSE AT NETWORK ACTIVITIES IN YEAR 2

External Knowledge Translation Activity

A Global One Health Webinar Series for external KT which will kick off in February 2021, through a collaborative event with The O'Brien Institute at the University of Calgary.

Summer Institute

The Network is developing a transdisciplinary One Health Global Governance curriculum which will be offered in English and French as a 3-day Summer Institute. While the plan was to hold the first session in person at the University of Ottawa in the summer of 2021, we have decided to make this session a virtual one spread over a week. The second Summer Institute will be held at the Université de Montréal in Year 4.

Annual Network Meeting

We will be hosting our second annual network meeting in March 2021 in virtual format.

PUBLICATIONS BY NETWORK MEMBERS RELEVANT TO GLOBAL 1HN

Amuasi JH, Walzer C, Heymann D, **Carabin H**, Huong LT, Haines A, **Winkler AS**. Calling for a COVID-19 One Health research coalition. *The Lancet* 2020; 395: 1543-44. 7 May 2020.

Basham CA, Karim ME, Cook VJ, **Patrick DM**, Johnston JC. "Post-tuberculosis mortality risk among immigrants to British Columbia, Canada, 1985-2015: a time-dependent Cox regression analysis of linked immigration, public health, and vital statistics data", *Can J Public Health*. 14 July 2020.

Byers KA, Booker TR, Combs M, Himsworth CG, Munshi-South J, **Patrick DM**, Whitlock MC. Using genetic relatedness to understand heterogeneous distributions of urban rat-associated pathogens. *Evolutionary Applications*. 28 June 2020.

Blue G & **Rock M**. "Genomic trans-biopolitics: Why more-than-human geography is critical amid the COVID-19 pandemic", *Dialogues in Human Geography*. June 2020.

Beall R & Hollis, A. "Global clinical trial mobilization for COVID-19: higher, faster, stronger", *Drug Discovery Today*. August 2020.

Clarke L, Pelin A, Phan M and **Wong A**. "The effect of environmental heterogeneity on the fitness of antibiotic resistance mutations in *Escherichia coli*", *Evolutionary Ecology*. 2020, 34(3), 379-90.

Cooper AL, Low AJ, Koziol AG, Thomas MC, Leclair D, Tamber S, **Wong A**, Blais BW, and Carrillo CD. "Bioinformatic Analysis and Sequence Coverage Requirements for Whole Genome Sequence-Based Predictions of Serotype and Antimicrobial Resistance for *Salmonella* Isolates from Canadian Poultry". *Frontiers in Microbiology*. 2020, 11:549.

Hillier, S, Chaccour, E and Al-Shammaa, H. "Indigenous Nationhood in the Age of COVID-19: Reflections on the Evolution of Sovereignty in Settler-Colonial States", *Journal of Indigenous Social Development*. 2020, 9(3), 23-42.

Hillier, S, Chaccour, E, Al-Shammaa, H and Vorstermans, J. (2020) Commentary: Canada's Response to COVID-19 for Indigenous Peoples: A way

forward? *Canadian Journal of Public Health*. 2020, 111(6), 1000-1001.

Imada J, Kelton D, and **Barkema HW**. Epidemiology, global prevalence, and economics of infection. Chapter 1 in *Paratuberculosis: organism, disease, control*. Eds. M.A Behr, K. Stevenson, and V. Kapur. 2nd Ed. CAB International. pp. 1-13.

Journault AA, Richard L and **Aenishaenslin C**. “Lyme Disease Prevention: A Content Analysis of Canadian Patient Group and Government Websites”, *Zoonoses and Public Health*. March 2020, 67(2): 17785.

Knight A & **Kondreddy S**. “Caribbean response to COVID-19: a regional approach to pandemic preparedness and resilience”, *The Commonwealth Journal of International Affairs*. 2020, 109(4), 464-465.

Majowicz SE, Panagiotoglou D, Taylor M, Gohari MR, Kaplan GG, Chaurasia A, Leatherdale ST, Cook RJ, **Patrick DM**, Ethelberg S, Galanis E. “Determining the long-term health burden and risk of sequelae for 14 foodborne infections in British Columbia, Canada: protocol for a retrospective population-based cohort study”, *BMJ Open*. 31 August 2020, 10(8):e036560.

McKay R, Talbot B, Slatculescu A, Stone A, **Kulkarni MA**. “Woodchip borders at the forest ecotone as an environmental control measure to reduce questing tick density along recreational trails in Ottawa, Canada”, *Ticks and Tick Borne Dis*. March 2020, 11(2), 101361.

Otu A, Ebenso B, **Labonté R** and Yaya S. “Tackling COVID-19: Can the African continent play the long game?” *Journal of Global Health*. June 2020, 10(1), 010339.

Patrick D, Shihi H, Dai DLY, Al Mamun A, Rasali D and Rose C. “Decreasing antibiotic use, the gut microbiota, and asthma incidence in children: evidence from population-based and prospective cohort studies”, *The Lancet Respiratory Medicine*. March 2020, 8(11).

Pelletier J, Rocheleau JP, **Aenishaenslin C**, Beaudry F, Dimitri Masson G, Robbin Lindsay L, Ogden NH, Bouchard C and Leighton PA. “Evaluation of fluralaner as an oral acaricide to reduce tick infestation in a wild rodent reservoir of Lyme disease”, *Parasites & Vectors*. February 2020, 13(1), 73.

Ruckert, A, Fafard, P, Hindmarch, S, Morris, A, Packer, C, Patrick, D, Wesse, S, Wilson, K, Wong, A, and Labonté, R. “Governing Antimicrobial Resistance: A Scoping Review of Global Governance Mechanisms,” *Journal of Public Health Policy*. 2020, 41, 515-528.

Ruckert A, Zinszer K, Zarowsky C, Labonté R & Carabin H. “What Role for One Health in the COVID-19 Pandemic”, *Canadian Journal of Public Health*. 2020, 111, 641-644.

Talbot B, Leighton PA and **Kulkarni MA.** “Genetic Melting Pot in Blacklegged Ticks at the Northern Edge of their Expansion Front”, *J Hered.* August 2020, 111(4), 371-378.

von Tigerstrom B & **Wilson K.** “COVID-19 travel restrictions and the International Health Regulations (2005)”, *BMJ Global Health*. May 2020; 5:e002629.

Wenham C, Smith J, Morgan R on behalf of the Gender and COVID-19 Working Group. “COVID-19: the gendered impact of the outbreak”, *The Lancet*. March 2020, 395(10227), 846-848.

Wilson K, Halabi S and Gostin, LO. “The International Health Regulations (2005), the threat of populism and the COVID-19 pandemic”, *Globalization and Health*. July 2020, 16:70.

Wong A. “Hidden risk on the farm: Does Agricultural Use of Ionophores Contribute to the Burden of Antimicrobial Resistance?”, *mSphere*. 2019, 4:e00433-19.

Yaya S, Yeboah H, Charles CH, Otu A, and **Labonté R.** “Ethnic and racial disparities in COVID-19-related deaths: counting the trees, hiding the forest,” *BMJ Global Health*. 2020, 5:e002913.

PRESENTATIONS AND BLOGS BY NETWORK MEMBERS RELEVANT TO GLOBAL 1HN

Hollis A and Busby C. “International fund could drive equitable development of COVID-19 vaccine”, *Policy Options*. 3 April 2020. <https://policyoptions.irpp.org/magazines/april-2020/international-fund-could-drive-equitable-development-of-covid-19-vaccine/>

Labonté R. “Equity and the Pandemic”, Leaders in Public Health Program, PAHO, July 15, 2020.

Ruckert A, Carabin H and Labonté R. “Coronavirus: Fear of Pandemic or Pandemic of Fear?”, *The Conversation*. 31 January 2020. <https://theconversation.com/coronavirus-fear-of-a-pandemic-or-a-pandemic-of-fear-130934>

Ruckert A, Carabin H and Labonté R. “Coronavirus : stopper la pandémie réelle, et celle de la peur”, *The Conversation*. 3 February 2020. 2020 <https://theconversation.com/coronavirus-stopper-la-pandemie-reelle-et-celle-de-la-peur-131007>

Basham CA, Karim ME, Cook VJ, **Patrick DM** and Johnston JC. “Tuberculosis (TB) patients at increased risk of non-TB mortality: a population-based survival analysis of linked immigration and vital statistics data in British Columbia, Canada, 1985-2015”, 24th Annual Conference of the UNION-NAR (Tuberculosis Meeting), Chicago, 26-29 February 2020.

POLICY ADVOCACY BY NETWORK

Letter to the Advisory Group for the Independent Panel on Evidence for Action Against Antimicrobial Resistance

Letter to the Prime Minister and Minister of Nova Scotia to intervene and recognize the traditional Mi'kmaq fishers affirmed by Canada's Supreme Court

SUCCESSFUL PROPOSALS SUPPORTED BY GLOBAL 1HN

Labonté, R (NPA) University of Ottawa

Ogden, N (PKU), **Beall, R** (co-PA), **Carabin, H** Co-PA), **Graham, J** (co-PA), **Hollis, A** (co-PA), **Wiktorowicz, M** (co-PA), **Zarowsky, C** (Co-PA), de Montigny, S. (co-A), **Hillier, S** (co-A), **Rees, E** (co-A), **Ruckert, A** (co-A), **Weese, JS** (co-A).

Towards Better Governance of Zoonotic Disease Risk: One Health Principles in the Coronavirus. CIHR Novel Coronavirus Rapid Research Funding

Penny, T (NPA), York University

Bowman, K (co-A), Viens, A. (co-A), **Wiktorowicz, M** (co-PA), Wu, C (co-A), **Aenishaenslin, C** (co-A), **Carabin, H** (co-A), Desai, S (co-A), Tsasis, P (Co-A).

Evaluating the Governance of Emergent Pandemic Zoonoses: A Systems & Legal Analysis.

CIHR Operating Grant, COVID-19 Rapid Research Funding

OTHER SUCCESSFUL PROPOSALS BY NETWORK MEMBERS RELEVANT TO GLOBAL 1HN

Barkema, H (co-A), University of Calgary

Health impacts of optimized pre-conditioning in beef cattle.

Agriculture Funding Consortium

Fafard, P (PA), University of Ottawa

Senior public health leadership during the 2019 novel coronavirus outbreak:

Comparative approaches to mitigating the spread of infectious disease and its social consequences in Canada and abroad

CIHR Novel Coronavirus Rapid Research Funding

Hillier, S (PA), York University

Aging Well with HIV in Indigenous Communities: “Communities within Communities”

CIHR Development Grant Indigenous Gender & Wellbeing

Hillier, S (co-PA), York University

First Nations Wellness Initiative: Mitigating the Impact of COVID-19

CIHR Operating Grant: COVID-19 Mental Health & Substance Use Service Needs and Delivery

Hillier, S (co-A), York University

“CAN LhIVE WELL”: the Canadian HIV Wellness Research Initiative.

CIHR Planning and Dissemination Grant competition for HIV/AIDS and/or STBBIs

Kulkarni, M (PA), University of Ottawa

Assessing the impact of COVID-19 mitigation strategies on malaria control and malaria burden in rural Tanzania

CIHR Operating Grant, COVID-19 Rapid Research Funding (IDRC funded)

Patrick, DM (co-A), University of British Columbia

Rapid research in the CHILD Cohort to inform Canada’s response to the COVID-19 pandemic

CIHR Novel Coronavirus Rapid Research Funding

Patrick, DM (co-A), University of British Columbia

BC Seroepidemiology Study for Covid 19

MSFHR grant

Patrick, DM (co-A), University of British Columbia

Sex as a Biological Variable Supplement -- Rapid Response to Emerging Serious Pathogen Outbreaks Using Next-gen Data

CIHR Novel Coronavirus Rapid Research Funding

Patrick, DM (co-A), University of British Columbia

CATCO: Canadian Treatments for COVID 19

CIHR Novel Coronavirus Rapid Research Funding

Wilson, K (PA), Ottawa Hospital Research Institute

Canada's Response to COVID-19 in the context of the IHR (2005) and its opportunity to lead in global health security: a policy analysis.

CIHR Novel Coronavirus Rapid Research Funding

Wong, A (PA), Carleton University

Environmental sampling of SARS-CoV-2 in a healthcare setting

Carleton University COVID-19 Rapid Response Research Grant

Wong, A (PA), Carleton University

Evaluation of ultraviolet-C decontamination of medical masks during the COVID-19 crisis

NSERC Alliance COVID-19 Grant

Wong, A (PA), Carleton University

Infrastructure for Research on the Molecular Biology of SARS-CoV-2

CFI Exceptional Opportunities Fund - Covid-19

Wong, A (co-PA), Carleton University

Coronavirus in the built environment

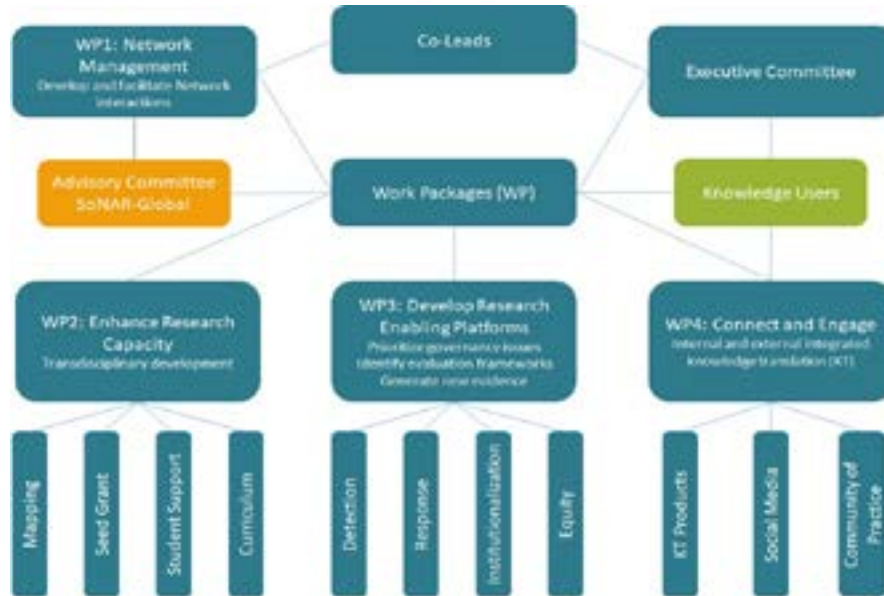
NSERC Alliance COVID-19 Grant

Zinszer, K (PA), Université de Montréal

A multi-country comparison of COVID-19 response: Planning, implementation, and health system resilience

CIHR Novel Coronavirus Rapid Research Funding

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This report is supported by the Global One Health Network, funded by a grant from the Canadian Institutes of Health Research (CIHR), Funding Reference No. NGR – 167542.

