

MARY WIKTOROWICZ



MY RESEARCH

Mary Wiktorowicz, Professor
School of Health Policy and Management/School of Global Health
Associate Director, Dahdaleh Institute for Global Health Research,
York University

Designing One Health Governance for Antimicrobial Stewardship Interventions	Cécile Aenishaenslin, Arne Ruckert, Tarra Penney, Adrian Viens, Suzanne Hindmarsh, James Orbinski, Kumanan Wilson, Srikanth Kondreddy, Andrew Morrison, Alex Wong, Dider Wernli	Joint Program Initiative on AMR (JPIAMR)	Funded – Year 1
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AMR is a problem of governance and institutional failure

“Navigating global changes requires a coevolving set of collaborative, global institutions.”

Walker et al. (2009) *Looming global-scale failures and missing institutions*

AMR must be addressed through governance and policy solutions.

RESEARCH QUESTIONS

1. How can human and animal health, agricultural and environmental **governance systems be reoriented** to prioritize integrated initiatives to improve AMR and AMU surveillance and AB stewardship?
2. How might **changes in local AMU systems interact with governance systems** to impact on human and animal health, food, agricultural and environmental sectors, livelihoods and cultural practices?
3. What are the **policy design solutions** needed to implement the emergent evidence from the institutional, legal and systems analysis?

METHODS

Clarify global and national governance structures and policy landscapes.

1. **Institutional, impact and legal epidemiologic** analyses in **Canada, Netherlands, Senegal, Philippines, Hungary, US** and at the global level will enable mapping of international and national policy and law
 - Scoping review
 - Interviews with key governance and policy stakeholders
 - Identify and compare international and national regulatory approaches/policies/laws
2. **Systems analysis and case study research** (Senegal, Philippines, Netherlands, Hungary, Canada) will help to identify local contextual interdependencies among laws, regulations and implications for livelihoods, cultural practices and food security
3. **Co-creation Design workshops** will help translate the empirical evidence into a set of policy design recommendations and implementation toolkit

ALEX WONG



MY RESEARCH

Alex Wong, Carleton University

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
Coronavirus in the Built Environment (CUBE)		Various – CIHR, NSERC, Institutional	Ongoing
AMR, environment, and One Health	Zarowsky, Carabin, Mac-Seing (policy brief) Wiktorowicz et al. (JPIAMR)		

MY RESEARCH

Alex Wong, Carleton University

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Coronavirus in the Built Environment (CUBE)		Various – CIHR, NSERC, Institutional	Ongoing
AMR, environment, and One Health	Zarowsky, Carabin, Mac-Seing (policy brief) Wiktorowicz et al. (JPIAMR)		

*Moving to Texas A&M this summer

Institute for Advancing Health Through Agriculture,
Department of Plant Pathology and Microbiology

CÉCILE AENISHAENSLIN



MY RESEARCH

Cécile Aenishaenslin
Université de Montréal

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
1. Evaluating the added value of integrated One Health surveillance for AMR and AMU	Sarah Médiouni, Hélène Carabin, CIPARS team	UdeM, Global1HN, Scholarship S.M.	Ongoing
2. CoEvalAMR II: Convergence in evaluation frameworks for integrated surveillance systems for AMR and AMU	Mary Wiktorowicz, Arne Ruckert, Hélène Carabin, Sarah Médiouni, Antoine Boudreau-Leblanc	CIHR/JPI AMR	Ongoing
3. Strengthening the Integration of One Health and Indigenous Knowledges in the Governance of Climate-Sensitive Infectious Diseases in the Canadian Arctic	Sean Hillier, Kate Zinzser, Hélène Carabin, Léa Delesalle, Charlotte Nury, Carol-Ann Villeneuve	Seed funding from Global1HN	Completed



Convergence in Evaluation
frameworks for integrated
surveillance of AMU and AMR

CoEvalAMR II

Cécile Aenishaenslin
Université de Montréal

OBJECTIVES

1. To develop guidance for the evaluation of One Health surveillance for AMR and AMU
2. To advance evaluation methods and tools
3. To promote knowledge exchanges and peer-learning
4. To produce knowledge on the added value of One Health surveillance

OUTCOMES

- Monthly webinars
- Governance evaluation in the context of surveillance: Literature Review completed, first set of evaluation dimensions
- Impact evaluation: Development of an evaluation tool, first set of attributes, Expert elicitation for validation during ISVEE2022
- Several case studies ongoing: Canada (CIPARS), France (OH collaborations), Italy (ClassyFarm)
- Workshops: ICAHS completed, IVSEE upcoming
- Website: <https://coevalamr.fp7-risksur.eu/>

CoEvalAMR II

Cécile Aenishaenslin
Université de Montréal

Strengthening the Integration of One Health and Indigenous Knowledges in the Governance of Climate-Sensitive Infectious Diseases in the Canadian Arctic

OBJECTIVES

- Evaluate the implementation of OH in current surveillance systems for CSID in the Canadian or Circumpolar Arctic.
- Analyze the current integration of Indigenous knowledges and ways of knowing and being and priorities in the governance of CSID using an equity framework.
- *Co-develop a framework for prioritizing CSID to be targeted for surveillance and research in partnerships with Indigenous communities*

OUTCOMES

Method:

- Grey & scientific (rapid) literature review
- Key informant survey

Main results:

- Difficult access to information on existing surveillance programs
- Few surveillance activities conducted with a One Health approach
- Few formal surveillance programs vs research projects
- Lack of evidence of integration of Indigenous knowledges and ways of knowing

Manuscript in preparation

SEAN HILLIER



MY RESEARCH

**Sean Hillier, Assistant Professor & Research
Chair in Indigenous Health Policy & One Health,
York Univeristy**

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
Community-led wildlife health monitoring for a resilient and healthy Nunavik		Canada-Inuit Nunangat-United Kingdom Arctic Research Programme (CINUK)	Funded

MY RESEARCH

Sean Hillier, Assistant Professor & Research
Chair in Indigenous Health Policy & One Health,
York University

OBJECTIVES

The **overall objective** of this project is to build a community-led Inuit wildlife health monitoring program to detect climate-sensitive infectious diseases and trends in current diseases that impact wildlife, the safety and security of country food, and Inuit health.

Developing an understanding of the One Health approach by and for Inuit

WHAT WE ARE LEARNING

1. Understanding the needs of Inuit for a wildlife health monitoring system to detect diseases, especially climate-sensitive infectious diseases that can threaten food security, food safety, and human health.
2. Providing tools and guidance to Inuit so they can build an efficient early warning system to detect climate-sensitive diseases affecting their health and well-being through food security.

JENNIFER HEGEWISCH-TAYLOR



One Health Group-RESEARCH

Jennifer Hegewisch-Taylor, Anahí Dreser, Celso Ramos, Alondra Aragón, Eric Piña, Hortensia Reyes, Blanca Pelcastre, et al. National Institute of Public Health

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN*	FUNDING	STATUS
One Health principles in the emergency response in Mexico, in the context of COVID-19: A rapid scan of the governance and equity dimensions	Hegewisch-Taylor J*, Dreser A*, Aragón-Gama A, Ramos C, Reyes Morales H, Pelcastre B, Moreno A, Technical Group, Arne Ruckert*	CIHR, 1HNetwork	Ongoing
TP: Characterization of the antimicrobial resistance surveillance systems in Mexico through a One Health approach.	Camacho J, Hegewisch-Taylor J*, Dreser A*, Echaniz G	Governance	Ongoing
TP: Knowledge, attitudes and practices regarding veterinary antimicrobial prescription, sales and use in two municipalities of Mexico	López C, Hegewisch-Taylor* J, Ramos C	Equity	Ongoing
TP: Designing a behavioral change communication strategy for the prevention of rickettsiosis transmission in Mexico	Santos J, Aragón-Gama A, Ramos C		Ongoing
TP: Knowledge, attitudes and practices in the population about Chagas disease and perception of health personnel, Mexico	Piña E, Ramos C,		Completed

MUCH MORE THAN RESEARCH!



Figure by Gabriel Millán

Linking research & public policy

- 1. Health side events G20: PPR, AMR & Governance Discussions & country capacities self evaluation tool
- 2. Review of the OH JPA
- 3. TrACSS & NAP implementation meetings
- 4. Rabies & Wildlife (HEI University, CSO)
- 5. Involvement with the OH approach/recommendations
 - Health & Animal Ministry, Health council, Animal committee, natl & intl universities, etc. (Zoonoses/AMR)
- 6. Policy Brief

Training OH professionals

- Thesis projects
- Professional practice
- 2nd edition of OH course

OH KT (Dissemination & Divuligation)

- Governance
- Zoonoses
- AMR

MAYUMI WAKIMOTO



MY RESEARCH

Mayumi D. Wakimoto

INI/Fiocruz

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
Environmental scan of One Health Preparedness and response	Ronald Labonté, Arne Ruckert, Valdilea Veloso, Rodrigo C. Menezes	CIHR	Finished

MY RESEARCH

Mayumi D. Wakimoto
INI/Fiocruz

OBJECTIVES

To draw on Brazilian preparedness and response to COVID-19 and zoonoses to assess if OH principles and equity considerations influence health policy response during infectious disease outbreaks.

WHAT WE ARE LEARNING

The response to the pandemic did not fully utilize the resources of the Brazilian state, due to the lack of central coordination and articulation among the sectors involved.
Formally adopting and strengthening a OH approach with associated legislative and regulatory change could contribute to preventing or reducing such social and health inequalities in the future.



COVID-19 and zoonoses in Brazil: Environmental scan of one health preparedness and response

Mayumi Duarte Wakimoto^{a,*}, Rodrigo Caldas Menezes^b, Sandro Antonio Pereira^a, Tiago Nery^a,
Julio Castro-Alves^b, Stephanie Lema S. Penetra^b, Arne Ruckert^b, Ronald Labonté^b,
Valdiléa Gonçalves Veloso^b

^a Instituto Nacional de Infectologia Evandro Chagas, Fundação Oswaldo Cruz, RJ 21040-900, Brazil

^b School of Public Health and Epidemiology, Faculty of Medicine, University of Ottawa, Canada

MY RESEARCH

Mayumi D. Wakimoto

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
Artificial intelligence applied to horizon scanning for emerging and reemerging diseases	Valdiléa Veloso	INOVA - FIOCRUZ	Approved
Evaluation of biodefense protocols in the integrated security of brazilian land borders. Phd student: Renata Simões Barros.	Rodrigo Caldas Menezes	CAPES-Brazil	Approved

MY RESEARCH

Mayumi D. Wakimoto
INI/Fiocruz

OBJECTIVES

Evaluate the use of Artificial Intelligence applied to Horizon Scan to strengthen surveillance of emerging and reemerging diseases

Evaluate the Brazilian Army's preparedness and response regarding the biodefense of Brazilian borders against the entry of zoonotic biological agents during the COVID-19 pandemic.

WHAT WE ARE LEARNING

The Horizon Scan defined as the systematic identification and investigation of emerging issues that are relevant to the topic of interest, might support and enhance health surveillance in Brazil, indicating trends and drivers of change, in a plausible way in the future. The application of Artificial Intelligence consists of the implementation and evaluation of algorithms that accelerate the systematic search for evidence, exploring the redundancy of information inherent to the scenario, and that identify emerging phenomena and trends.

Obtain data on governance, necessary infrastructure, barriers and enablers necessary to strengthen biological protection and integrated security of Brazilian land borders. The study may contribute positively to the development of integrated protocols for national biodefense, thus strengthening the national biosecurity against zoonoses or potential agents of bioterrorism in Brazil.

RICHAR RODRIGUEZ



MY RESEARCH

RICHAR RODRIGUEZ
CENTRAL UNIOVERISTE OF ECUADOR

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
Social impact of the treatment of Covid-19 with ivermectin in rural and urban areas of Ecuador.	Hélène Carabin Ron Labonté Arne Ruckert	5000US	Ongoing

MY RESEARCH

OBJECTIVES

To evaluate through a rapid environmental scan the use of ivermectin in rural and urban areas, its application, beneficial, toxic and social effects and relate them to the main social, economic, and health determinants

WHAT WE ARE LEARNING

We have learned the importance of the use of Ivermectin in Ecuador. This anti-parasite drug is extensively used on livestock, but humans used it as a treatment or preventive medicine during the pandemic. We are analyzing the questionnaire info to see the influence of ivermectin on people who used or know a familiar.

J. S. THAKUR



Anti microbial Resistance (AMR) and One Health in Indian Context

Dr. JS Thakur, Professor,

**Dept. Of Community Medicine & School of Public
Health, PGIMER, Chandigarh, India**

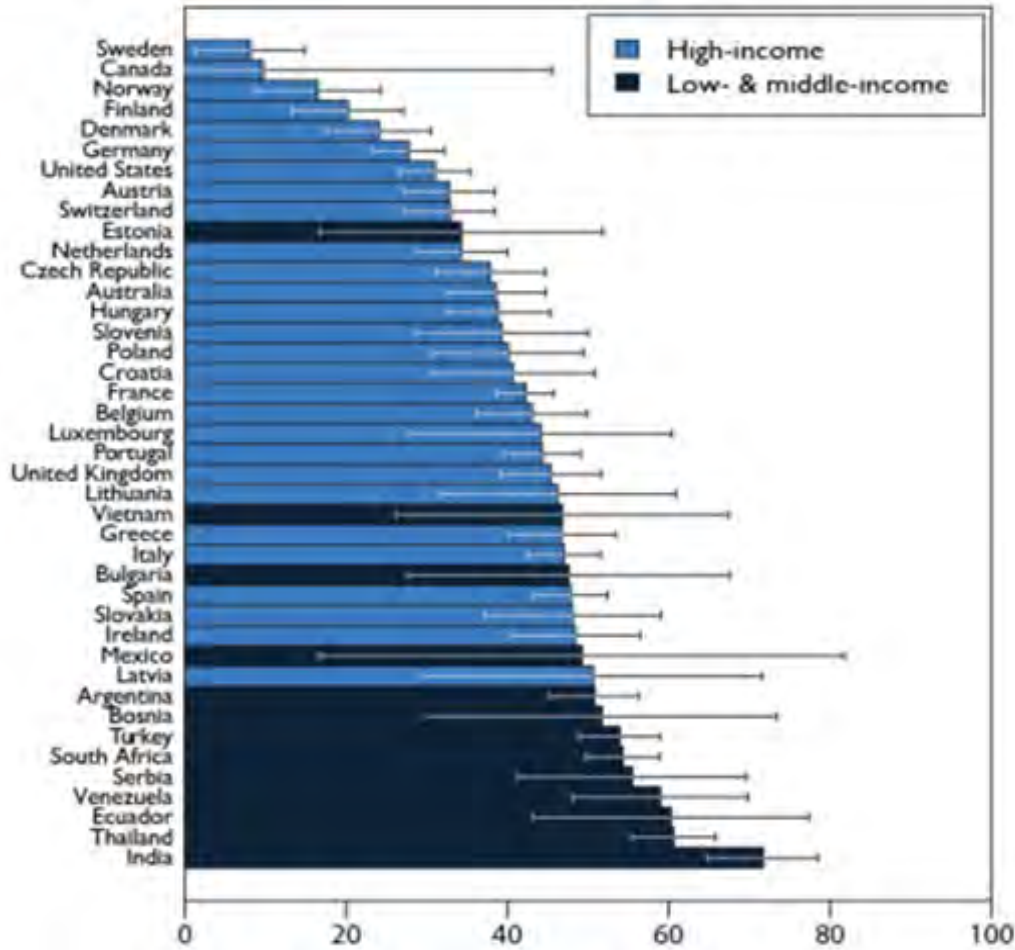
Email-jsthakur64@gmail.com



India- Leading in Antimicrobial Usage and Resistance

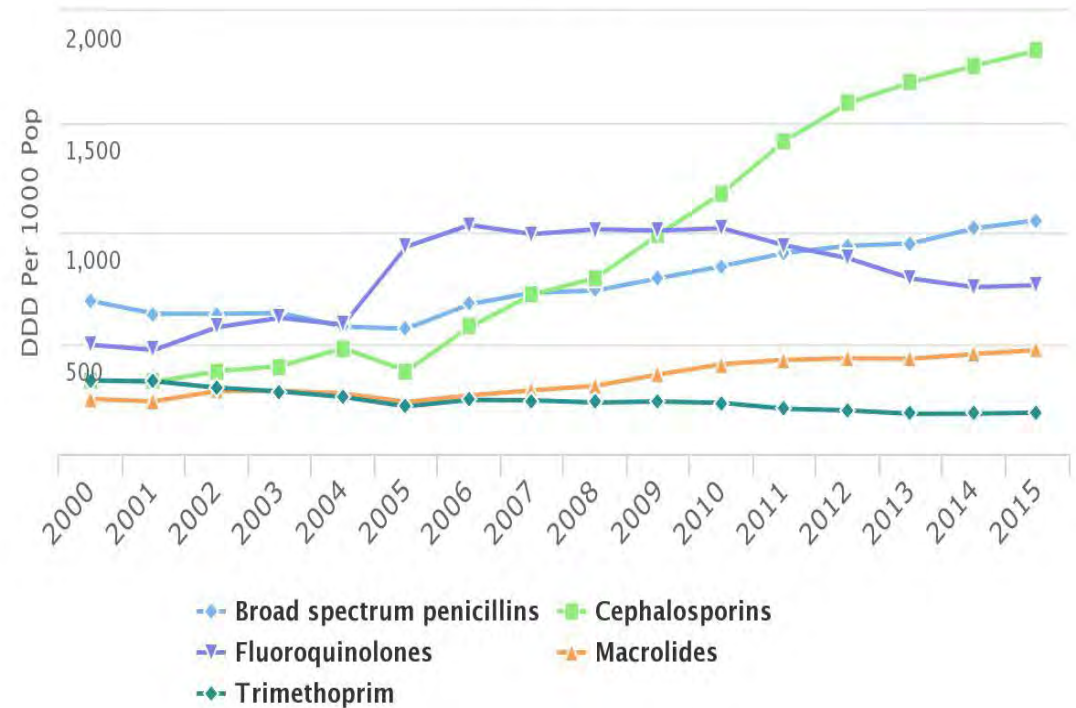
- Largest consumers of antibiotics

- Highest burden of drug-resistant pathogens worldwide



Antibiotic Use in India

Source: IQVIA



Center for Disease Dynamics, Economics & Policy (cddep.org)

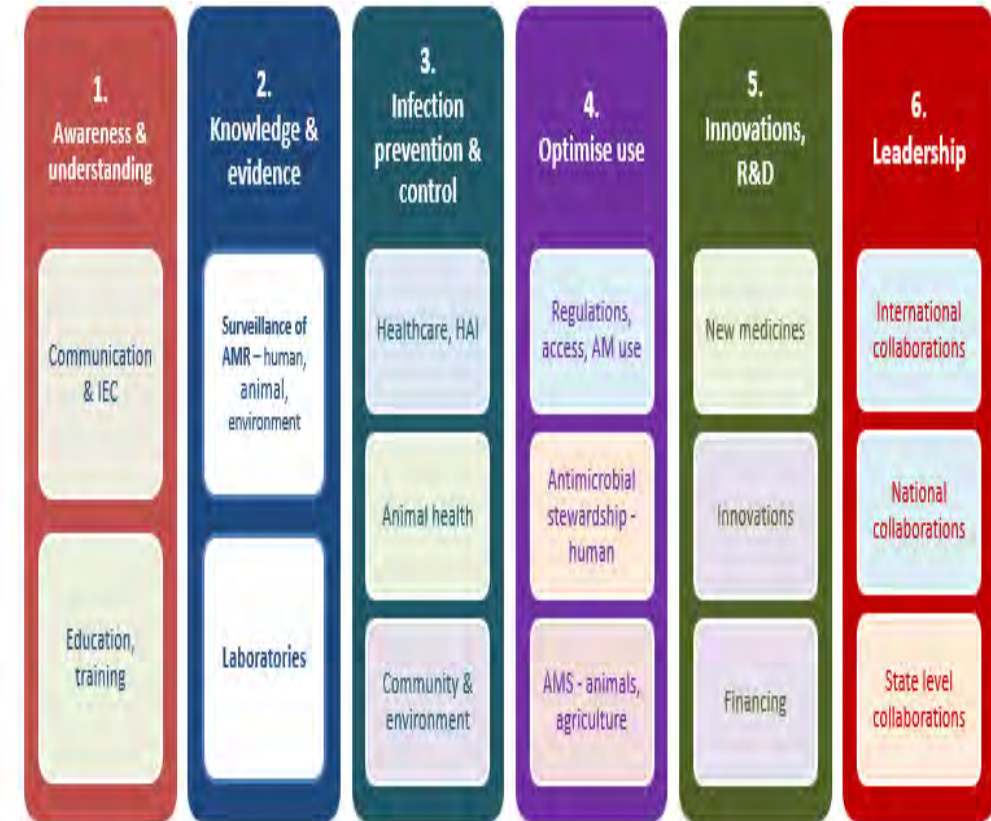
Source - Klein EY, Tseng KK, Pant S, Laxminarayan R. Tracking global trends in the effectiveness of antibiotic therapy using the Drug Resistance Index. *BMJ global health*. 2019 Apr 1;4(2):e001315.

The Center for Disease Dynamics, Economics & Policy (CDDEP) ResistanceMap website at <http://resistancemap.cddep.org/resmap/c/in/India>.

<https://doi.org/10.1371/journal.pmed.1001974.g001>

Actions taken at national level to combat Antimicrobial Resistance

- 2010 National Task Force set up
- 2011 National Policy for Containment of AMR adopted
- Sept 2011 Jaipur Declaration by Health Ministers of South-East Asia Region
- 2012 National Programme on AMR (AMR Surveillance- 35 state medical college labs in 26 States/UTs)
- 2017 National action Plan on AMR (NAP-AMR) & Delhi Declaration
- The Food Safety and Standards (Contaminants, Toxins and Residues) Regulations in food animals
- 2020 National Guidelines for Infection Prevention and Control Healthcare Facilities
- 2020, the GOI also introduced legislation aimed at limiting harmful antibiotic residues released by pharmaceutical manufacturing plants.
- State Action Plans for Containment of Antimicrobial Resistance





PGIMER, Chandigarh & Work on AMR and One Health

PGIMER at Glance

- ❖ Postgraduate Institute of Medical Education and Research, Chandigarh is **an autonomous body** and a premier tertiary care institution of national importance in the country.
- ❖ **Functioning under the Ministry of Health and Family Welfare, Government of India**
- ❖ Everyday around 10,000-15,000 patients come to PGIMER

Mandate of PGIMER

- ❖ To Provide high quality Patient care.
- ❖ State of the art facilities and super specialty centers with **40 teaching department** offering MD, DM Programms
- ❖ Attain Self-Sufficiency in postgraduate medical education and to meet the country's need for highly
- ❖ Qualified medical teachers in all medical and surgical disciplines.
- ❖ Undertake Basic Community based research

Department of Community Medicine and School of Public Health

- ❖ Established to deliver healthcare to the marginalized population,
- ❖ To demonstrate various healthcare service delivery models through community based research.
- ❖ Teaching and Training program offered are MD in Community Medicine , Doctor of Philosophy and Masters in Public Health
- ❖ Worked in past on one health with Veterinary University of Punjab and University of Saskatchewan

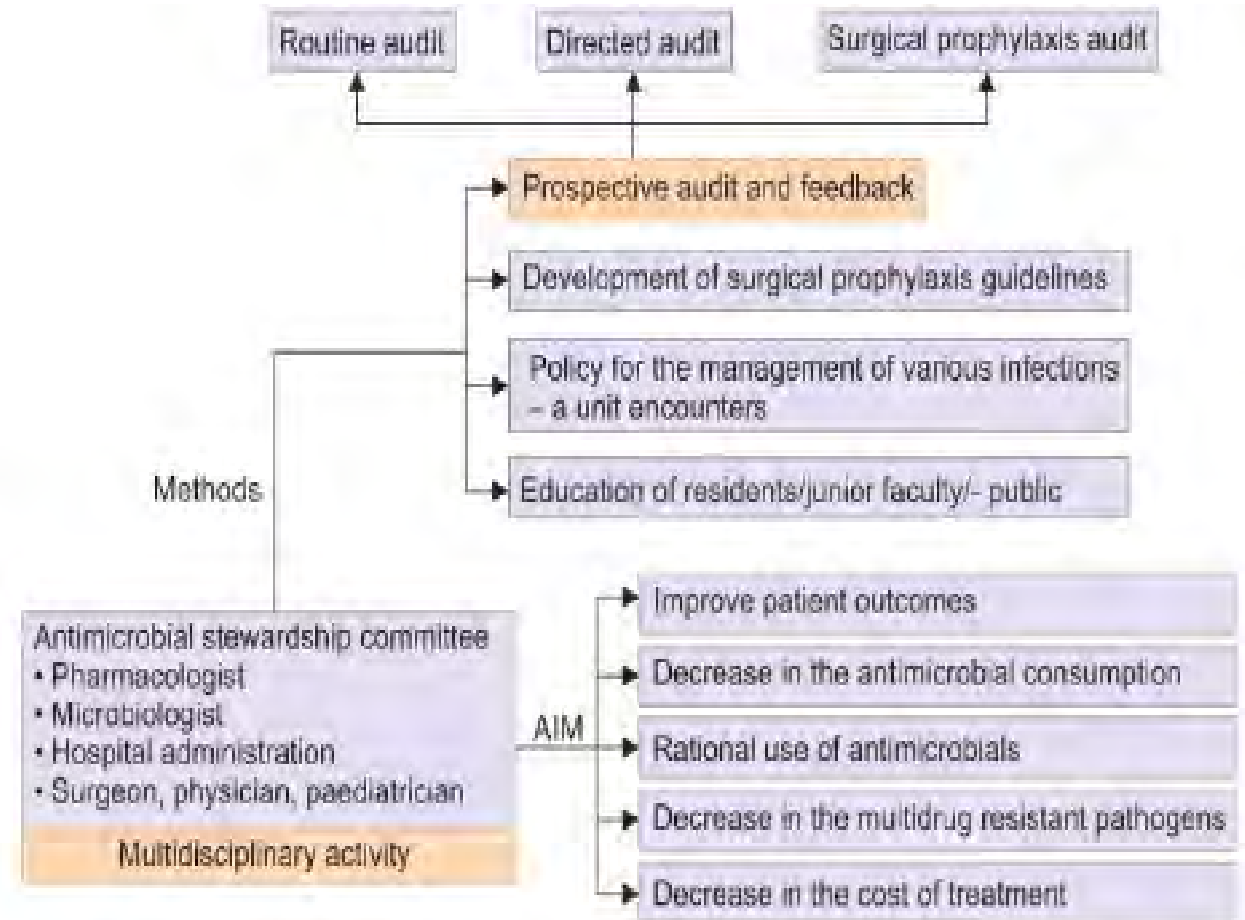
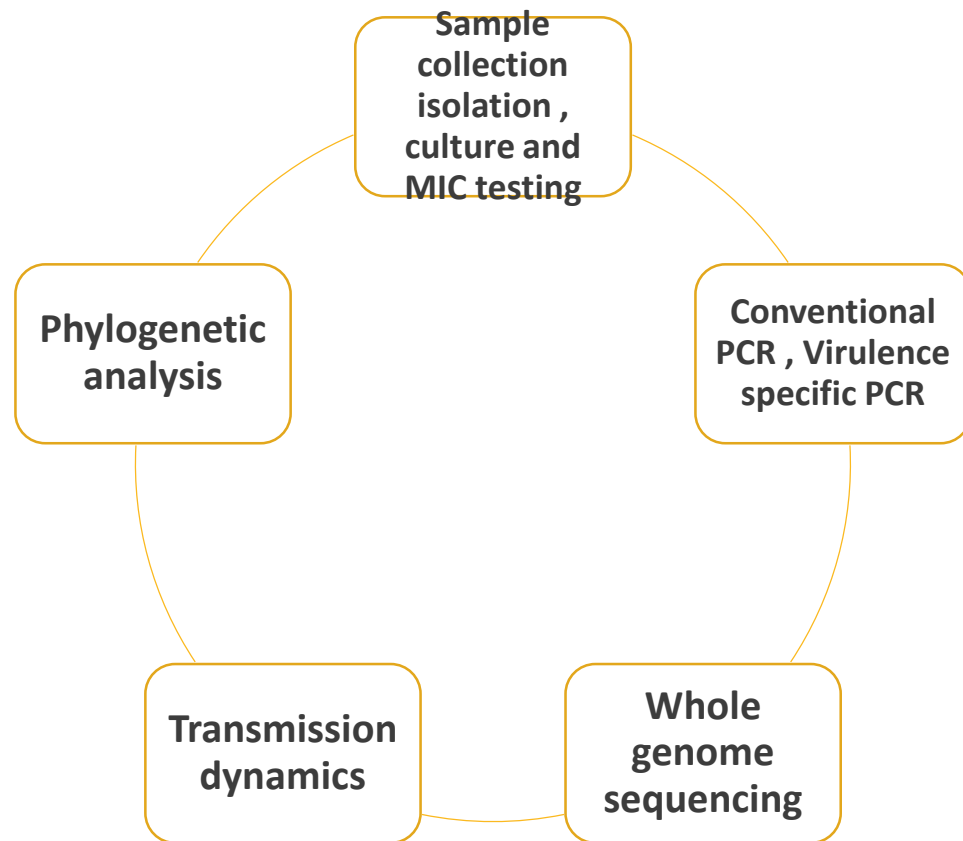
Department of Medical Microbiology

- ❖ Department conducts MD, PhD and MSc training programs ranked at the top in the country
- ❖ National Accreditation Board of Laboratories Accredited Labs
- ❖ Center of Advance Research in Mycology and WHO Collaborating Center for Reference & Research on Fungi of Medical Importance
- ❖ National Culture Collection for Pathogenic Fungi
- ❖ **Nodal Coordinating Center for Surveillance of Antimicrobial Resistance in members of Enterobacteriaceae**
- ❖ **Nodal Coordinating Center for Antimicrobial Resistance in Fungi**

Source: www.pgimer.edu.in, http://pgimer.edu.in/PGIMER_PORTAL/PGIMERPORTAL/Department/Global,

<https://www.pgimicrobiology.org/>

Antimicrobial resistance surveillance and Antimicrobial Stewardship at PGIMER , Chandigarh , India



Source: www.pgimer.edu.in, <https://www.pgimicrobiology.org/>

Arora P, Singh G, Ray P, Shafiq N, Gautam V, Kumar G, Rohilla R, Saha S. Antimicrobial Stewardship Program of Postgraduate Institute of Medical Education and Research, Chandigarh: running fast to catch the missed bus. Journal of Postgraduate Medicine, Education and Research. 2017 Sep 1;51(3):123-7.

Smart Village Initiative for Sustainable Agriculture, One Health and Wellness in Punjab

- Adopted One Village Gurah in Tehsil Majri, District Mohali, Punjab to develop it as a smart village
- Focus on Sustainable Agriculture, Veterinary and One Health and Wellness by addressing Social Determinants of One health, Planetary health
- Project Led by Village Panchayat in partnership with a NGO with technical support from PGIMER, Chandigarh
- Demographic, health and environmental Survey has already been completed
- Modest Centre for Sustainable Development, Health and Wellness is being developed in the Village
- A project has been approved under JPIAMR grant (2022-25) entitled as “Development of a sustainable One Health approach to address AMR in India”
- **1HN Global Health Network is a Partner in this One health Initiative at Rural level in Punjab state**

ARNE RUCKERT



MY RESEARCH

Arne Ruckert, REP4 University of Ottawa

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
Environmental Scan of One Health Policies and Programs in Canada	Phaedra Henley (University of Global Health Equity, Rwanda)	Global 1HN Seed Grant	On-going
Convergence in Evaluation Frameworks for Integrated Surveillance of Antimicrobial Resistance	Cécile Aenishaenslin (UMontreal) and Mary Wiktorowisz (YorkU)	JPIAMR Grant	On-going

MY RESEARCH

Arne Ruckert

OBJECTIVES of OH Scan in Canada

Identify existing One Health frameworks, programs, policies, legislation and assess to what extent One Health approach is operationalized in Canada

Identify entry points for better One Health operationalization and recommend One Health governance reforms

Outputs

Research report based on document analysis of grey literature (complete and to be published on Global 1HN website)

Scoping review (under way) and to be published as journal article combining findings from academic and grey literature (tbd)

Policy Brief (tbd)

ANDREA WINKLER



MY RESEARCH

Prof. Dr. Dr. Andrea S. Winkler
 Co(joint)-Director Center for Global Health
 Department of Neurology, Technical University of Munich
 Center for Global Health, Einsteinstraße 1, 81675 München

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
CYSTINET-Africa – cysticercosis and taeniasis network of sub-Saharan Africa	Prof. Hélène Carabin, advisor	10 Mio Euros (BMBF)	Ongoing
SOLID – point-of-care diagnostics for cysticercosis and taeniasis	–	3 Mio Euros (EDCTP and BMBF)	Ongoing
ADOPT – paediatric formulation of PZA for schistosomiasis in sub-Saharan Africa	–	1.5 Mio Euros (EDCTP and GHIT)	Ongoing
<i>The Lancet</i> One Health Commission (LOHC)	Prof. Hélène Carabin, commissioner	300.000 Euros (BMBF and The University of Oslo)	Ongoing
ICTC – integrated control of cysticercosis/taeniasis	Prof. Hélène Carabin, advisor and data analyst	1.6 Mio US \$ (BMGF)	Closed
Neurocysticercosis in sub-Saharan Africa	Prof. Hélène Carabin, advisor and data analyst	1 Mio Euros (DFG)	Closed

MY RESEARCH

Prof. Dr. Dr. Andrea S. Winkler
Co(joint)-Director Center for Global Health
Department of Neurology, Technical University of Munich
Center for Global Health, Einsteinstraße 1, 81675 München

OBJECTIVES	OUTCOMES
Epidemiology, neurology, immunology, disease management, risk factors (human, animal and environment), breed susceptibility, animal models of disease, knowledge sharing with communities, digital data transfer for early translation into policy, guidelines development with WHO; Tanzania, Mozambique and Zambia	Ongoing
Development and implement of a point-of-care antibody tests for cysticercosis and taeniosis in Tanzania and Zambia	Ongoing
Development and implementation of a paediatric formulation of PZA for mass drug administration (MDA) for schistosomiasis control in Ivory Coast, Kenya and Uganda – public-private partnership with Merck	Ongoing
Evidence synthesis of the value of One Health and suggestions for One Health implementation and operationalisation through One Health governance, One Health economics and financing and One Health knowledge sharing	Ongoing
Assessment of neurological side effects in people suffering from clinically latent neurocysticercosis after MDA with PZA/ALB for schistosomiasis in co-endemic areas of Malawi	Neurological side effects occur although rarely, but can be severe
Epidemiology, risk factors and costs, antigen isolation for potential diagnostic development in Uganda, Tanzania and Zambia	Prevalence of neurocysticercosis varies according to settings, risk factors are rooted within the socio-economic context and costs are high, diagnostic performance with crude antigen was unsatisfactory

HERMAN BARKEMA



MY RESEARCH

Herman W. Barkema, Univ. of Calgary

NAME OF THE PROJECT	COLLABORATORS WITHIN G1HN	FUNDING	STATUS
AMR – One Health Consortium	Aidan Hollis John Conly Joe Harrison Rebecca Irwin Elissa Rennert-May Scott Weese	\$16.3M Alberta Ministry of Jobs, Economy and Innovation	Active with 34 projects (and counting)

MY RESEARCH

Herman W. Barkema, Univ. of Calgary

OBJECTIVES

Pan-Alberta Consortium using a **transdisciplinary**, multisectoral **One Health approach** to promote self-sustaining clinical, epidemiologic, basic and social sciences, and translational research on AMR in Alberta that will be scalable to all of Canada and beyond.

WHAT WE ARE LEARNING

That working together with all AMR researchers in Alberta (and beyond) from different backgrounds is a lot of fun and leads to excellent results.

Website: <https://research.ucalgary.ca/amr>