

Mapping One Health Governance in Canada: Findings from a Seed Grant

January 26, 2023

Taylor Brown • Arne Ruckert

University of Ottawa • Université d'Ottawa



About me

- BSc Anthropology & Forensic Science, Trent University (2021)
- Master of Public Health (MPH) 2021-23, uOttawa
 - Global Health stream
 - Summer practicum at the Globalization and Health Equity Research Unit
- Currently working at PHAC
 - Knowledge Mobilization Unit/CCDIC

Outline

Introduction

Background

Methods

Findings

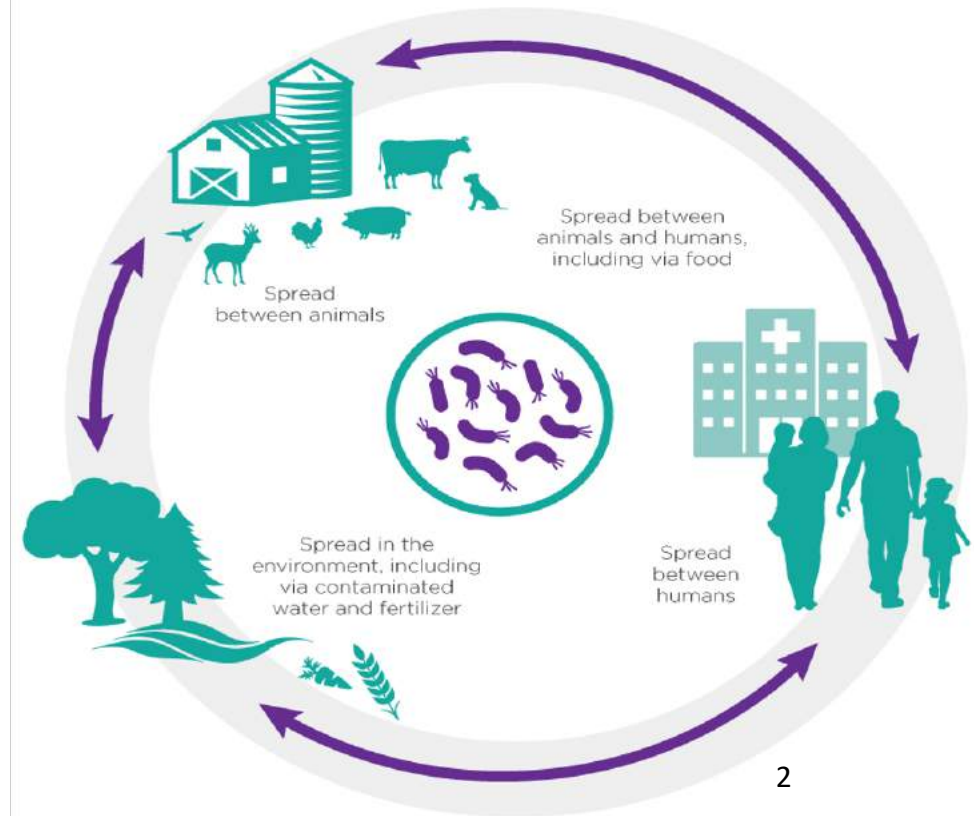
Significance of Findings

Discussion

The One Health (OH) Approach

A unifying, collaborative approach that appreciates the linkages between humans, animals, and the wider environment.

This approach demands integrated action from multiple sectors, disciplines, and communities across varying levels of society to achieve and maintain optimal health outcomes for all.¹



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Background

- Many health challenges today transcend international borders
- One Health (OH) governance requires strong global and national leadership
- The OH governance mechanisms used in Canada at the federal level had yet to be explored
 - Frameworks, plans, policies, programs, projects, House of Commons committee meetings

UN Research Roadmap

For the COVID-19 Recovery



BEST-BUY

9. What mechanisms can enable different parts of government to work together on critical “One Health” challenges that cross human, animal and environmental health, such as antimicrobial resistance, extreme weather, food insecurity, habitat destruction and water degradation? [RP1.3.4]

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**SUSTAINABLE
DEVELOPMENT
GOALS**

Purpose of Research

Identify the mechanisms currently used in Canada to govern AMR, climate change, environmental degradation, food insecurity, and infectious disease and pandemic preparedness

Assess:

- If the OH approach is explicitly recognized
- If OH principles are apparent
- If the OH approach has been formally implemented

Illuminate the barriers and facilitators to integrating the OH approach

Inform policymakers and stakeholders

Methods

Study design:

Document analysis and scoping review of grey literature

- Complemented by the academic literature

Framework:

Arksey & O'Malley (2005)⁴

Steps:

- 1) Identifying the research question(s)
- 2) Identifying relevant literature
- 3) Selecting the literature
- 4) Charting the data

Identifying the Research Questions

What governance mechanisms are used in Canada to address AMR, climate change, environmental degradation, food insecurity, and infectious disease and pandemic preparedness?

Do these mechanisms explicitly recognize the OH approach?

Are OH principles apparent in these mechanisms?

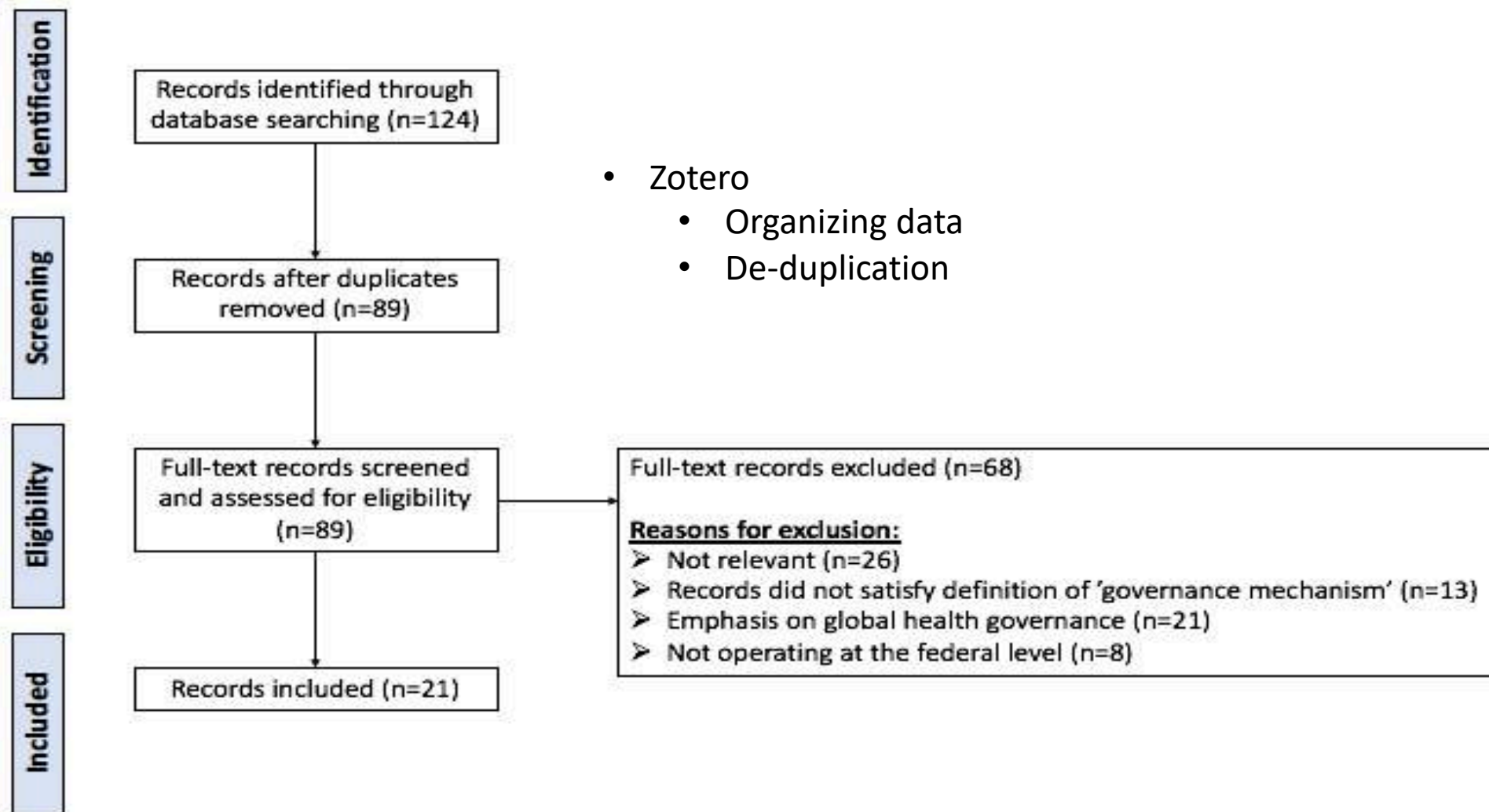
Has the OH approach been formally implemented?

Intersectoral committees, multisectoral coordination mechanisms, One Health legislation, joint risk assessments

Identifying Relevant Literature

Concept	Keyword	Databases
One Health governance	One Health approach; multisectoral; transdisciplinary; framework; policy; program; project; research	www.Canada.ca ; www.ourcommons.ca ; www.sencanada.ca ; www.Google.ca
Antimicrobial resistance	Antimicrobial resistance; AMR	
Climate change	Climate change; weather patterns; climate action	
Environmental degradation	Environment; habitat destruction; water degradation; water contamination; biodiversity; ecosystem	
Food Insecurity	Food insecurity; food security	
Infectious disease and pandemic preparedness	Infectious disease; communicable disease; zoonotic disease; pandemic; pandemic prevention; pandemic preparedness; pandemic response	
Barriers and facilitators to One Health governance	Challenges; limitations; barriers; gaps; facilitators; enabling mechanisms; collaboration; coordination	

Selecting the Literature



Organizing and Charting the Data

- Documents were thematically coded using NVivo10
 - Original coding structure

Grey Literature Type and Source	Governance Mechanism Involved	Title	Leading Organization	Date	'One Health' Explicitly Recognized	'One Health' Principles Apparent	Associated Health Challenge	Findings
Government Document; Canada.ca	Plan	2019-20 Departmental Plan	Public Health Agency of Canada (PHAC)	2019	Yes	Yes	AMR	Progress in the fight against AMR depends on coordination between F/P/T governments and non-government organizations to complete the Pan-Canadian Action Plan for AMR.
Government Document; Canada.ca	Plan	2020-21 Departmental Plan	PHAC	2020	Yes	Yes	AMR	PHAC aims to improve AMR and antimicrobial use (AMU) surveillance across human, animal, and environmental health sectors.
Government Document; Canada.ca	Plan	2021-22 Departmental Plan	PHAC	2021	No	Yes	AMR	AMR and AMU rates will be monitored to identify areas for intervention. Improvements will be made in laboratory services and communication to support monitoring.

Findings

Grey literature

- Government documents (n=15)
- Webpages (n=3)
- Hearings (n=3)

Sources

- Canada.ca (n=14)
- Google.ca (n=4)
- OurCommons.ca (n=3)

Overall number of governance mechanisms

- Framework (n=6)
- Plan (n=6)
- Policy (n=3)
- Program (n=2)
- Project (n=1)
- Hearing (n=3)

Health challenge and number of governance mechanisms

- AMR (n=9)
- Climate change (n=3)
- Environmental degradation (n=1)
- Food insecurity (n=2)
- Infectious disease and pandemic preparedness (n=6)

Antimicrobial resistance

Mechanisms

- *Talking Antimicrobial Resistance and Antimicrobial Use: A Pan-Canadian Framework for Action (2017)*²
- Departmental Plans (2019-2023)⁵⁻⁷
- Codex Alimentarius (2005;2021)⁸
- House of Commons committee meetings (2017)⁹⁻¹¹

Actors involved

- Public Health Agency of Canada (PHAC)
- Health Canada
- Association of Medical Microbiology and Infectious Disease Canada and the Veterinary Medicine Association

OH recognized	OH principles apparent	OH approach implemented
8/9	9/9	0/9

Climate change

Mechanism

- Climate Change and Health Adaptation Program (2008)¹²
- *Pan-Canadian Framework on Clean Growth and Climate Change* (2016)¹³
- *2030 Emissions Reductions Plan* (2022)¹⁴

Actors involved

- Indigenous Services Canada (ISC)
- Environment and Climate Change Canada (ECCC)

OH recognized	OH principles apparent	OH approach implemented
0/3	3/3	0/3

Environmental degradation

Mechanism

- *Canada's Biodiversity Outcomes Framework and 2020 Goals & Targets (2016)*¹⁵

Actors involved

- ECCC

OH recognized	OH principles apparent	OH approach implemented
0/1	1/1	0/1

Food insecurity

Mechanisms

- *Biosecurity for Canadian Dairy Farmers (2013)*¹⁶
- *Food Policy for Canada (2019)*¹⁷

Actors involved

- Canadian Food Inspection Agency (CFIA)
- Agriculture and Agri-food Canada (AAFC)

OH recognized	OH principles apparent	OH approach implemented
1/2	2/2	0/2

Infectious disease & pandemic preparedness

Mechanisms

- *Pandemic Influenza Preparedness: Planning for the Health Sector (1988;2018)*¹⁸
- *Lyme Disease in Canada: A Federal Framework (2017)*¹⁹
- *A Pan-Canadian Approach to Wildlife Health (2019)*²⁰
- *North American Plan for Animal and Pandemic Influenza (2012)*²¹
- PulseNet (2002)²²
- Emerging Infectious Diseases Modelling Initiative (2020)²³

Actors involved

- PHAC & Government of Canada
- Federal, provincial, territorial (FPT) governments
- Pan-Canadian Public Health Network (PHN)
- Canadian Wildlife Cooperative
- Natural Sciences and Engineering Research Council of Canada (NSERC)

OH recognized	OH principles apparent	OH approach implemented
3/6	6/6	0/6

Significance of findings

OH recognized → OH principles apparent → OH approach implemented
57% 95% 0%

Barriers

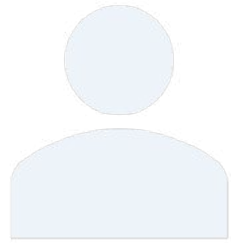
- Human and animal health prioritized over environmental²⁴⁻⁵
- Environmental health sector working in a silo²⁶⁻⁷

Facilitators

- Commitment to developing and enhancing collaborative mechanisms
 - E.g., Pan-Canadian Antimicrobial Stewardship Network²
- Consistent funding and infrastructure developments²⁷⁻⁸

Recommendations

1. Set up a One Health Council (or a similar type of infrastructure)
2. Invest in One Health Council initiatives
3. Collective and transparent goal-setting



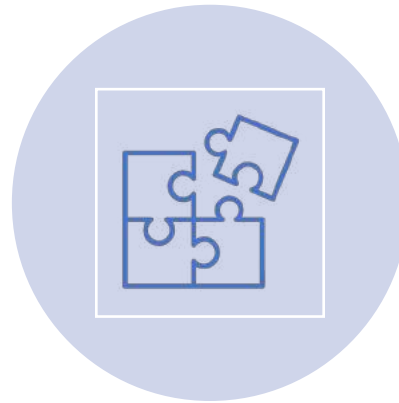
Limitations

- English-only documents searched for and retrieved
- Non-federal governance mechanisms missed
- Academic articles excluded
 - Canada's Communicable Diseases Report (CCDR)

Conclusions



COLLABORATIVE
MECHANISMS ARE KEY



UNIFIED APPROACH TO
HEALTH



LESSONS LEARNED FROM
COVID-19

THANK YOU



References

1. One Health High-Level Expert Panel (OHHLEP). (2022). *One Health: A new definition for a sustainable and healthy future*. 18(6), e1010537. <https://doi.org/10.1371/journal.ppat.1010537>
2. Public Health Agency of Canada. (2017b). *Tackling antimicrobial resistance and antimicrobial use: A pan-Canadian framework for action*. (pp. 1–41). Minister of Health. http://epe.lac-bac.gc.ca/100/201/301/weekly_acquisitions_list-ef/2017/17
3. United Nations. (2020). *UN Research Roadmap for the COVID-19 Recovery: Leveraging the Power of Science for a More Equitable, Resilient and Sustainable Future* (p. 128). United Nations. <https://www.un.org/en/pdfs/UNCOVID19ResearchRoadmap.pdf>
4. Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32.
5. Public Health Agency of Canada. (2019a). *2019-20 Departmental Plan* (pp. 1–42). Public Health Agency of Canada. <https://www.canada.ca/content/dam/phac-aspc/documents/corporate/transparency/corporate-management-reporting/reports-plans-priorities/2019-2020-report-plans-priorities/phac-aspc-2019-2020-departmental-plan-eng.pdf>
6. Public Health Agency of Canada. (2020). *2020-21 Departmental Plan* (pp. 1–47). Public Health Agency of Canada. https://www.canada.ca/content/dam/phac-aspc/documents/corporate/transparency/corporate-management-reporting/reports-plans-priorities/2020-2021-departmental-plan/phac_2020-21_dp_main_report-eng.pdf
7. Public Health Agency of Canada. (2022). *2022-23 Departmental Plan*. Public Health Agency of Canada. <https://www.canada.ca/content/dam/phac-aspc/documents/corporate/transparency/corporate-management-reporting/reports-plans-priorities/2022-2023-departmental-plan/departamental-plan.pdf>
8. Food and Agriculture Organization of the United Nations, & World Health Organization. (2005). *Codex Alimentarius.pdf*. Food and Agriculture Organization. https://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?ink=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252Fstandards%252FCXC%2B61-2005%252FCXC_061e.pdf
9. Standing Committee on Health, 078, 1st, 18 (2017). <https://www.ourcommons.ca/Content/Committee/421/HESA/Evidence/EV9250800/HESAEV78-E.PDF>
10. Standing Committee on Health, 062, 1st, 1 (2017). <https://www.ourcommons.ca/Content/Committee/421/HESA/Evidence/EV9060059/HESAEV62-E.PDF>
11. Standing Committee on Health, 076, 1st, 1 (2017). <https://www.ourcommons.ca/Content/Committee/421/HESA/Evidence/EV9224283/HESAEV76-E.PDF>
12. Canada & Environment and Climate Change Canada. (2016b). *Pan-Canadian framework on clean growth and climate change: Canada's plan to address climate change and grow the economy*. (pp. 1–86). Environment and Climate Change Canada. <http://www.deslibris.ca/ID/10065393>
13. Government of Canada. (2022). *Climate Change and Health Adaptation Program*. Government of Canada. <https://www.sac-isc.gc.ca/eng/1536238477403/1536780059794#s1>
14. Canada & Environment and Climate Change Canada. (2022). *2030 emissions reduction plan: Canada's next steps to clean air and a strong economy*. (pp. 1–271). Environment and Climate Change Canada. <http://central.bac-lac.gc.ca/.redirect?app=damspub&id=a8669f3f-9023-4c3c-9b88-f56c638276bb>
15. Canada & Environment and Climate Change Canada. (2016a). *Canada's biodiversity outcomes framework and 2020 goals & targets*. (pp. 1–16). Environment and Climate Change Canada.
16. Canadian Food Inspection Agency, Dairy Farmers of Canada, & Growing Forward (Canada). (2013). *Biosecurity for Canadian dairy farms: Producer planning guide*. (pp. 1–52). Public Health Agency of Canada. <https://central.bac-lac.gc.ca/.item?id=A104-106-1-2013-eng&op=pdf&app=Library>
17. Agriculture and Agri-Food Canada. (2019). *Food policy for Canada: Everyone at the table*. (pp. 1–13). Agriculture and Agri-Food Canada. https://epe.lac-bac.gc.ca/100/201/301/weekly_acquisitions_list-ef/2020/2020/publications.gc.ca/collections/collection_2020/aac-aafc/A22-628-2019-eng.pdf

References

18. Public Health Agency of Canada & Pan-Canadian Public Health Network. (2018). *Canadian pandemic influenza preparedness: Planning guidance for the health sector*. (pp. 1–64). Minister of Health. http://epe.lac-bac.gc.ca/100/201/301/weekly_acquisitions_list-ef/2019/19-06/publications.gc.ca/collections/collection_2019/aspc-phac/HP40-144-2018-eng.pdf
19. Public Health Agency of Canada. (2017a). *Lyme Disease in Canada: A Federal Framework* (pp. 1–36). Government of Canada. <https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/diseases-conditions/lyme-disease-canada-federal-framework/lyme-disease-canada-federal-framework-eng.pdf>
20. Federal, Provincial, and Territorial Governments of Canada, & Canadian Wildlife Health Cooperative. (2018). *A Pan-Canadian Approach to Wildlife Health* (pp. 1–19). http://www.cwhc-rcsf.ca/docs/technical_reports/EN_PanCanadian%20Approach%20to%20Wildlife%20Health%20Final.pdf
21. North American Leaders Summit. (2012). *North American plan for animal and pandemic influenza*. (pp. 1–80). publisher not identified. <https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/nml-pndmc-nflnz/nml-pndmc-nflnz-eng.pdf>
22. Public Health Agency of Canada. (2019b). *PulseNet Canada*. Government of Canada. <https://www.canada.ca/en/public-health/programs/pulsenet-canada.html>
23. Natural Sciences and Engineering Research Council of Canada. (2020). *Emerging Infectious Diseases Modelling Initiative*. Natural Sciences and Engineering Research Council of Canada. https://www.nserc-crsng.gc.ca/Professors-Professeurs/Grants-Subs/EIDM-EIDM_eng.asp
24. McCubbin, K. D., Anholt, R. M., de Jong, E., Ida, J. A., Nóbrega, D. B., Kastelic, J. P., Conly, J. M., Götte, M., McAllister, T. A., Orsel, K., Lewis, I., Jackson, L., Plastow, G., Wieden, H.-J., McCoy, K., Leslie, M., Robinson, J. L., Hardcastle, L., Hollis, A., ... Barkema, H. W. (2021). Knowledge Gaps in the Understanding of Antimicrobial Resistance in Canada. *Frontiers in Public Health*, 9. Scopus. <https://doi.org/10.3389/fpubh.2021.726484>
25. Taing, L., Bhatia, H., Kaiser, R. A., Qadir, M., & Mehmood, H. (2022). A Rapid Review of Environmental Health Gaps in Antimicrobial Resistance and Water-Related Research from 1990-2020. *International Journal of Environmental Research and Public Health*, 19(11), 6549. <https://doi.org/10.3390/ijerph19116549>
26. Jenkins, E. J., Simon, A., Bachand, N., & Stephen, C. (2015). Wildlife parasites in a One Health world. *Trends in Parasitology*, 31(5), 174–180. Scopus. <https://doi.org/10.1016/j.pt.2015.01.002>
27. Zhao, J., Smith, T., Lavigne, M., Aenishaenslin, C., Cox, R., Fazil, A., Johnson, A., Sanchez, J., & Hermant, B. (2022). A Rapid Literature Review of Multi-Criteria Decision Support Methods in the Context of One Health for All-Hazards Threat Prioritization. *Frontiers in Public Health*, 10. Scopus. <https://doi.org/10.3389/fpubh.2022.861594>
28. Stephen, C., & Stemshorn, B. (2016). Leadership, governance and partnerships are essential One Health competencies. *One Health*, 2, 161–163. <https://doi.org/10.1016/j.onehlt.2016.10.002>