HUMAN-DOG INTERFACE WORKSHOP

11/12/2017

Québec city - December 11th, 2017

The *Qimuksiq Network* led by Francis Lévesque and the project *Balancing Illness and Wellness at the Human-Dog Interface in Northern Canada* led by André Ravel teamed up to organize a **multidisciplinary workshop about human-dog interface in Northern Canada**. The overarching goal of this workshop was to set up collaborations between Northern stakeholders (public governments, Indigenous organizations, local authorities, mushers, etc.) and public and animal-health and social researchers. Set in a context where many Indigenous people are concerned about the risks associated with dogs (i.e., bites, transmission of rabies and other diseases transmitted from dogs), which remain higher in the North than elsewhere in Canada, this workshop aimed at:

- **Informing the questions or topics at the dog-human interface in Northern communities, and**
- **Setting up collaboration for immediate synergistic actions between our projects, initiatives, actions.**

Acknowledgements

We would like to thank all the participants who were involved in the workshop. We thank Patricia Brunet for the organization of this workshop.

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Collaborators

We would also like to thank our research colleagues who helped with note-taking during this event.

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Workshop organizers and funding

The *Qimuksiq Network* led by Francis Lévesque (2016-2019):

Social Sciences and Humanities Research Council of Canada
Conseil de recherches en sciences humaines du Canada
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Indigenous Peoples, Dogs, and Wellness led by André Ravel (2017-2021):

CIHR IRSC
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Human-Dog Interface Workshop

QUÉBEC CITY - DECEMBER 11TH, 2017

Session 1

CONCERNS REGARDING DOGS IN NORTHERN COMMUNITIES

Objective: Listen to different actors (stakeholders, researchers) to identify concerns in Northern communities

This session aimed at identifying current concerns regarding the human-dog relationship in the North from different perspectives. Participants were invited to choose keywords to represent their main concern and then formed families by joining those with similar concerns. Then each family discussed and clarified concerns, listed the measures already put in place, even partially, and thought about other possible mitigating measures. Finally, each family shared their main findings with the other families. The text below captures the name, keywords, and thoughts of the four families that eventually showed up.

- Dog surpopulation
- Uncontrolled dog packs
- Overpopulation

Family: Overpopulation

Overpopulation seems to be the root cause of many issues (zoonoses such as rabies and parasitic diseases) as it affects dog and human health.

The *overpopulation* family elucidated **concerns** about inadequate access to resources to address this problem. Dog overpopulation may also lead to starvation and potentially affect dog welfare. Besides affecting dog health, overpopulation results in dog packs[1] which may induce fear among communities and decrease physical activity, consequently, individuals avoid walking on the streets and don't participate in some social activities. The presence of roaming dogs, particularly dog packs, also affects the human-dog relationship in a negative manner.

Some of the **measures** already put in place include bylaws such as dogs being tied up at all times raises concerns about dog welfare. When dog overpopulation leads to public safety issues, it is common to perform dog culls in the absence of other resources. Some communities (example from Northern Ontario) are becoming reluctant to this practice as it is a temporary solution that has an important psychological impact on humans, especially the youth. Regarding sterilization, there are external clinics – usually once a year – who offer their services, but it is not an ongoing, community-based, stable solution. This family suggested the use of innovative strategies to approach reproduction in dogs. Contraceptive implants would allow communities to deal with the overpopulation problem without relying on external veterinary

[1] Dog pack here defined as a larger group of dogs (may be 5-6 dogs, but 3 could also be considered a dog pack) who may become aggressive and roam through the community. The individual's perception of a "dog pack" may vary as it depends on the comfort level around dogs.

services, local individuals could be trained to install those implants (there are currently regulatory barriers).

A possible **mitigation** strategy could be to put in place local paravet resources. Although some communities may currently have bylaw or animal control officers, there is opportunity to implement the model from Veterinarians Without Borders or other groups which teach community members to perform basic veterinary tasks such as vaccination where there is a lack of veterinary services. This model used in remote communities in developing countries could be potentially be implemented in Northern Ontario, additionally, individuals could also be trained to install contraceptive implants.

- Affordable medical treatment
- Preventive medicine
- Access to vaccines
- Population reduction
- Addressing cruelty
- Lack of veterinary services
- Spread of rabies
- Diagnostic capacities

Family: Aputi

The *Aputi* family illustrated **concerns** about access to veterinary services and diagnostic capacities (particularly in Iqaluit, Nunavut). After listening to the *Overpopulation* family, the *Aputi* family noted several similarities regarding their concerns. Population control came up as the top priority followed by vaccination and affordability of veterinary services. Another main concern is respecting the sociocultural context, for instance, perceptions about changing a dog anatomically (referring to surgical sterilization) may vary among communities. Moreover, the lack of diagnostic capacities (unfit to the weather) and the time required for obtaining results from the laboratory may delay appropriate decision-making. Other concerns mentioned were the translocation of disease from the North to the South, the lack of interventions to address animal cruelty and the lack of preventative medicine for animals.

Current **measures** in Iqaluit include the presence of a shelter -the Iqaluit Humane Society (IHS) - a pound and a veterinarian. This veterinarian provides services to the Iqaluit area and visits other communities in Nunavut. Veterinary students go up North sometimes and other vets may travel to help in the IHS, however, this is not stable. Most of the time the only resource is troubleshooting through Google; duct tape and polysporin are commonly used.

Mitigation approaches suggested were partnering with human health services to encourage the liaison between human and animal health professionals, partner with pharmaceutical companies to implement alternatives to surgical sterilization (i.e., implants – current barriers are the high cost and location of companies in Australia). Lastly, it was suggested to improve communication strategies when promoting vaccination campaigns as people seem to be interested in vaccinating but are sometimes unaware of the campaigns taking place.

- Rabies
- Injuries from bites
- Dog Health
- Community health
- Zoonotic diseases
- Infectious diseases
- Preventing health risks while maintaining dog population health

Family: One Health

The *One Health* name was chosen to represent a broader aspect of their **concerns** than the rabies transmission risk in the North, including: zoonotic disease transmission risk (the risk is not well understood in the Northern context yet), bites and mental health linked to dog packs and dog attacks. Preserving and even promoting dog health was also highlighted, justifying the One Health name and perspective of the family. Regarding zoonotic diseases, rabies

transmission from arctic foxes to dogs and preventing human exposure was addressed. It was noted that we cannot rely on transmission patterns from the South, further research is needed. Other concerns mentioned were climate's change impact and broader socioeconomic changes on Northern communities as well as the lack of access to veterinary services.

Measures set in place across Northern Canada are vaccination programs – that work more or less - funded by healthcare services. In Nunavut, there is an educational program (Bite Smart) aimed at children, nonetheless, the impact of such programs remains unknown. Some interventions about dog population (i.e., dog culls) put in place are not socially acceptable.

Mitigation strategies addressed targeted mostly animal health; they encompassed the improvement of veterinary services, notably about vaccination programs, and more socially acceptable alternatives for dog overpopulation. In the same order of ideas, it was suggested to encourage observation rather than putting down an animal who bites. This will not only improve dog welfare but will also help understanding the rabies distribution in the North.

- Basic veterinary services
- Disease population control
- Security
- Fear of people
- Agency
- Traditional knowledge vs scientific
- Decreased physical activities
- Human safety rabies
- Children
- Sex-gender
- Mental Health
- Community continuity
- History
- Los of knowledge
- Dog-human relationships
- Role
- Relationship
- Role of dogs in Northern communities
- Human-dog relations
- Experiences
- Perceptions

Family: Evolving relationships

The human-dog relations and the relationships between different human groups regarding dogs were the main **concerns**. About human-dog relations, the link between dog health and community health was addressed: bites may induce fear of dogs (mental health) which in turn will decrease physical activity. Other elements included dog welfare (rights of dogs) and safety (i.e., hit by car), understanding the perception of dogs (their role, perceptions and relation with dogs depending on gender and sex, ownership of dogs) and how it's done in practice. About the relationships between human groups regarding dogs, the lack of integration of traditional and scientific knowledge, the broader structural socioeconomic problems, the persistence of issues of reconciliation, the agency of communities, and the removal of dogs under "rescue pretends" and its implications for the community were discussed.

Measures currently in place - that do not necessarily always work - are bylaws (tying up of dogs) that were imposed from the South onto the North, human welfare (hospital, clinics for dog bites), child welfare and animal welfare (SPCA, vaccination, spay/neuter and euthanizing). Many of these measures do not have a holistic nature. It was suggested to have a holistic approach to **mitigate** the dog-related issues in the North.

Conclusion of session 1

This first session demonstrated that different stakeholders share similar concerns about this complex issue. These evolve around infectious diseases and mental health embedded in a specific sociocultural context. Although there are currently measures put in place, they do not completely solve these issues which encourages us to use a different mitigation approach.

Session 2

PRESENTATIONS – RESEARCH & ACTION

Objective: Listen to researchers about previous actions or interventions and possible ways to address concerns regarding dogs

The following presentations were made, and their pdf documents were sent to the participants after the event:

Are social sciences useful?
Francis Lévesque – Université du Québec en Abitibi-Témiscamingue

Indigenous Peoples, Dogs, and Wellness: Balancing illness and wellness at the Human-Dog interface in Northern Canada
André Ravel, colleagues and collaborators – Université de Montréal

Novel approaches to dog population management in Northern Ontario
Catherine Filejski – Ontario Ministry of Health and Long-term Care

The Northern community health program in the Sahtu settlement area of the NWT: 2008-2017
Tessa Baker, Susan Kutz, Frank van der Meer, Melanie Rock – University of Calgary

Dog-related social problems and prevention: The situation in Alberta and implications for Northern communities
Melanie Rock, Sylvia Checkley – University of Calgary

PAWS – People, animals, water, and sustenance project
Sherilee Harper, Jan Sergeant, Jamal Shirley, Ashlee Cunsolo, Rebecca Guy, Karen Shapiro, Scott Weese, students and collaborators – University of Guelph

Session 3

FROM CONCERNS TO SYNERGISTIC ACTIONS

Objective: Identify synergetic actions to help each other reach our respective goals, projects, initiatives in response to our concerns

During this session, participants were invited to form 4 groups and propose possible actions based on the concerns raised in session 1 by answering the following question:

How could we help each other to achieve our respective goals, and how could we start within the next weeks?

Each group was composed of members from the different families and researchers from *the Indigenous Peoples, Dogs, and Wellness* (IPDW) project who were the animator-rapporteur and the note keeper. After discussing potential actions, the IPDW researchers remained in place at the table while everyone else moved together to the next table. Then the rapporteur explained the new comers at the table what the previous group said and the new group and the opportunity to add their perspective. The process was repeated four time in total. The goal of this activity was to identify concrete actions that could take place within the following weeks and considering that each participant has a specific role and perspective, determine how these could be implemented synergistically.

Below is the summary of the answers of all groups after their specific answers were combined whenever similar. The action list built during this session is provided at the end.

Sharing experiences

It was suggested to share successful and not so successful experiences with other researchers through an online platform. The goal of this platform would be to be aware of what has been done (e.g.: interventions, research projects, etc.) in other communities and to know whether it had a positive or negative impact. Scientific information is often difficult to access in the North, a free metadata library '*National database on dog health*' could be created to have open access to scientific journals, presentations, videos, two-click links to contact experts and trails of solutions to specific issues. This library could also include basic and advanced information on how to treat dogs in regards to both health and behavior, templates such as a database template for dog bites including the circumstances of the incident aiming to facilitate the transition from paper to an electronic database to make it readily accessible, and funding opportunities including a list of veterinary schools, sponsors, government and other sources. Although this database could be useful for community members and other stakeholders, it is important to keep in mind that there is potential for misuse of the information by activists. Moreover, data and files available in '*Open access*' should be still be validated according to cultural standards. This platform would not only encourage intersectoral collaboration (public health department, police and communities among others) but could also be used as social pressure for leaders who '*are currently not interested in the Northern issue*'.

Communication

An important aspect in sharing experiences is communication. A communication strategy was proposed to stay in contact with various stakeholders. Communicating with communities is also essential, Ontario has implemented a Facebook page to send important messages to the community. According to their experience, it is well received and potentially more popular than radio stations. Ideally, there should be complementary means of communication targeted at different audiences.

The communication approach should also raise awareness – mainly addressed to government bodies. This could be done by finding a '*first issue to attack with a positive solution*' '*showing the complexity of the global problem, including frequency and risk*'. For instance, in Nunavut there are many vaccines available for dogs but there is no staff trained to administer them, therefore they remain unused and expire. Keeping records of this could serve as evidence to show the need of change in the current approach.

Education

Preparing and sharing an education curriculum program in schools and kindergarten was suggested. It would need to be based on values linked to the relationships between kids and dogs as well as the elderly and their perceptions about dogs. In the same manner, elders should work with trainers supported by researchers but avoiding imposing the '*southern point of view*'. These programs should address fear related to dogs, include cultural activities such as dog sledding and most importantly, show how to take care of dogs and reduce bites. These programs do not necessarily need to be educational programs, other ways of learning considering the evolving relationships could also be explored.

Paravet services

The lack of veterinary services is a main concern for many communities. Implementing paravet services by training community members could improve animal welfare as well as reduce public health issues.

Microchipping all dogs and maintaining the records would be an important first step but establishing a standard practice would be needed (standard microchip, record maintenance). Alternatives to surgical sterilization such as birth control implants could be performed by community members (including the youth) and may result in a more sustainable approach since communities would not have to rely on external visits to start their own program.

About vaccination, a local vaccinator could be trained to perform this task ensuring that it respects the legislation for acts allowed by non-veterinarians. Proof of vaccination would also be required to avoid having to vaccinate a dog whose owner has moved, and isolation sites (post-bite) should be clearly identified in communities. For this purpose, a summary of allowed tasks by non-veterinarians will be prepared and distributed across the Northern communities. Vaccination protocols and funding also need to be addressed in this summary. The province of Quebec currently has a help line or e-mail to respond to dog health issues, a similar intervention could be put in place in other provinces or territories. Some interventions could be piloted through research projects to have a proof of concept.

There is a major concern about the lack of standardized protocols. There is a need for a consistent and trustworthy source of information including federal and provincial regulation as well as roles and responsibilities → What do we do when X problem arises? It is worth noting that although protocols need to be standardized, they also need to be adapted to each context.

Lastly, it is recommended to abstain from removing dogs from the North as it takes away the ownership from communities.

Making the link with other public health issues

In addition to addressing issues at the human-dog interface, other public health issues such as mental health, suicide and drug abuse can be incorporated in new interventions. For instance, participants highlighted the lack of sustainability in the way of dealing with dog bites: a child gets bit by a dog, then receives the required treatment. Because no follow up is done, the issue keeps reoccurring. It would be interesting to look into interventions that integrate mental health and the '*dog issue*' – an example from Alaska was mentioned ('*program with kids and dogs in Alaska linked to mental health*').

Conclusion of session 3: Action Plan

	Action	Status	Person in charge
1-	**Sharing contact information from all participants**	Done	André Ravel Francis Lévesque
2-	**Identify key actors not present but who need to be involved**		All the participants through the *Qimuksiq network* (Francis Lévesque)
3-	**Share list of resources (*Qimuksiq* network)**		Francis Lévesque
4-	**Share data collection sheets and survey forms (google drive per region? Something more private?)**		Francis Lévesque

5- Have an interactive map so that people can see what is being done across Canada		Francis Lévesque
6- Write letters to our different body governments (explain issues in Northern Canada, talk to Michelle Bell – community veterinary outreach in Ottawa)		Stefany Ildefonso (letters to be validated with all the participants)
7- E-mail kid books (7) on rabies, dog handling, etc.		Susan Kutz
8- Liaise with Veterinarians without borders (VWB) – about their resources for clinics in remote areas		Susan Kutz
9- Share the Nunavik rabies database template		Marie Rochette
10- Request to MAPAQ – obtain dog bites statistics per region (especially for Nothern regions)		Louise Valiquette
11- Plan a follow-up meeting of the arctic fox rabies workshop held on May 31st, 2016		Louise Valiquette
12- Write summary of what actions community members can do themselves (in terms of veterinary tasks concerning rabies vaccination)		Catherine Filejski
13- Liaise with program coordinator for '*Alaska dogs and mental health program*' and obtain information		Stefany Ildefonso

APPENDIX I – LIST OF PARTICIPANTS

Workshop participants

Iqaluit
Madeleine Redfern – City of Iqaluit
Janelle Kenney – Iqaluit Humane Society
Nicole Rebeck – Iqaluit Humane Society
Inukshuk Aksalnik – Qikiqtani Inuit Association
Bethany Scott – Qikiqtani Inuit Association
Wanda Joy – Departement of Health, Nunavut

Kuujjuaq
Michael Barret – Kativik Regional Governement
Ellen Avard – Nunavik Research Centre (Makivik)
Marie Rochette – Department of Health, Nunavik

Kuujjuaraapik
Pierre Roussel – Northern village of Kuujjuaraapik

Chisasibi
Kianoush Dehgahani – Cree Health Board
Reggie Tomatuk – Cree Health Board

Val d'Or
Francis Lévesque – École d'études autochtones, UQAT
Patricia Brunet – École d'études autochtones, UQAT
Danny Baril – École d'études autochtones, UQAT
Roxanne Blanchard-Gagné – École d'études autochtones, UQAT

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Louise Valiquette – Ministère de la Santé et des Services Sociaux
Frédéric Laugrand – Centre interuniversitaire d'études et de recherches autochtones, Université Laval

Montréal
André Ravel – Faculté de Médecine Vétérinaire, Université de Montréal
Christopher Fernandez-Prada – Faculté de Médecine Vétérinaire, Université de Montréal
Audrey Simon – Faculté de Médecine Vétérinaire, Université de Montréal
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Stefany Ildefonso – Faculté de Médecine Vétérinaire, Université de Montréal
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Cécile Aenishaenslin – McGill University
Johanne Saint-Charles – Département de Communication Sociale et Publique, Université du Québec à Montréal

Ottawa
Jan Hannah – International Fund for Animal Welfare

Toronto
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Danielle Julien – Department of Population Medicine, University of Guelph
Valli Fraser-Celin – Department of Geography, University of Guelph

Calgary
Susan Kutz – Faculty of Veterinary Medicine, University of Calgary
Tessa Baker – Faculty of Veterinary Medicine, University of Calgary
Sylvia Checkley – Faculty of Veterinary Medicine, University of Calgary
Melanie Rock – Faculty of Social Work, University of Calgary

Excused

Tunu Napartuk – Northern village of Kuujjuaq
Junior May – Qimuksiq Association
George Guanish – Kawawachikamach village representative
Kambibetas Mokoush – Kawawachikamach village representative
Robbie Kawapit – Whapmagoostui village representative
Patrick Leighton – Université de Montréal
Laine Chanteloup – Université de Limoges, France
Hagar Idlout-Sudlovenick – Qikiqtani Inuit Association

APPENDIX II – GEOGRAPHICAL DISTRIBUTION OF PARTICIPANTS

Iqaluit
City of Iqaluit – Madeleine Redfern
Iqaluit Humane Society – Janelle Kenney; Nicole Rebeck
Qikiqtani Inuit Association – Inukshuk Aksalnik; Bethany Scott; Hagar Idlout-Sudlovenick
Department of Health, Nunavut – Wanday Joy

Kuujjuaq
Kativik Regional Government – Michael Barrett
Nunavik Research Centre (Makivik) – Ellen Avard
Department of Health, Nunavik– Marie Rochette
Northern Village of Kuujjuaq – Tunu Napartuk
Qimuksiq Association – Junior May

Kawawachikamach
Village representative– George Guanish; Kambilbetas Mokoush

Whapmagoostui
Village representative– Robbie Kawapit

Kuujjuaraapik
Northern Village of Kuujjuaraapik – Pierre Roussel

Chisasibi
Cree Health Board – Kianoush Dehgahani; Reggie Tomatuk

Val-d'Or
École d'études autochtones UQAT – Francis Lévesque, Patricia Brunet, Danny Baril, Roxanne Blanchard-Gagné

Québec
MAPAQ – Caroline Fortin
MSSS – Louise Valliquette; Caroline Duschene
Université Laval/CIERA – Frédéric Laugrand

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Ontario Ministry of Health and Long-Term Care – Catherine Filejski

Guelph
University of Guelph – Carlee Wright; Jan Sargeant; Danielle Julien

Calgary
University of Calgary – Susan Kutz; Melanie Rock; Sylvia Checkley

APPENDIX III – KEYWORDS (SESSION 1)

Family	Key words	Details
Overpopulation	Dog surpopulation	dog health; dog-human relationship; no vet service; increased reproduction; increased bites; cull/tie up; implant; sterilization; train guard dogs in communities for youth
Overpopulation	Uncontrolled dogs packs	fear of people; dogs attacks/bites; diseases spread; tied up; cull / dog shoot; implants; sterilization; train guide dog
Overpopulation	Overpopulation	Lack of local resources to address issues related to overpopulation on an ongoing basis
Evolving relationship	Basic veterinary services (remote communities)	rabies vaccination; population control; treatment, disease injury; advise on reducing zoonotic disease risks
Evolving relationship	Disease population control	No vet services, cull tied up; Reproduiction control by implant or sterilization; overpopulation increses reproductions; increases bites
Evolving relationship	Security	for human: bites, agressions, fear; for dogs: accidents, be hungry
Evolving relationship	Fear of people	dog attacks; dog bites; children
Evolving relationship	Agency	that communities have what they need to understand and make decisions vs external stakeholders; that appropriate externals are working in community
Evolving relationship	Traditional Knowledge Vs scientific	important to combine both together
Evolving relationship	Decreased physical activities	people are afraid of walking outside due to fear of dogs are less physically active. This leads to more health problems
Evolving relationship	Human safety rabies	Attacks by dogs or rabbies fox
	Children	child welfare and dog welfare; 60's scoop reproduced via dog rescues - issues include transparency, information, do-good mentality of rescuers; childhood injuries, even note of death due to dog bites and attacks
Evolving relationship	Sex - gender	Men and women do not necessarily have the same relationships with dogs; female and male dogs do not have the same needs; perceptions about female and male dogs differ
Evolving relationship	Mental health; Community continuity	Dog health and welfare issues and population control through culling, negatively impacts community mental health + contributes to burn out in some professions (e.g. bylaw,

		teachers) thus reducing stability of community
Evolving relationship	History; loss of knowledge	loss of sled dog culture; Qimmit-dog slaughter
Evolving relationship	Dog-Human relationships	Preserve socio-cultural role of dogs to improve or keep wellness positive role
Evolving relationship	Role; relationship	human-dog relations; human-human relations concerning dogs
Evolving relationship	Role of dogs in northern communitiesl human-dog relations, experiences, perceptions	Human-dog (evolution, rescue, health, dog safety, safety, fear, impact of dog bites, gender/sex); Human-human concerning dogs (knowledge, working together, reconciliation, rights of dogs, structural issues, perception); removing dogs from communities + implications; reconciliation; children safety; rescue concerns; agency of communities/appropriate people for work; Transfer knowledge/science knowledge; involvement of communities; animal-community health; human safety; dog bylaws - south bylaws imposed in the North; tying dogs, child welfare system, clinics/hospitals for bites; NOT holistic measures, vaccination, sterilization, euthanizing
One Health	Rabies; injuries from bites (human)	Rabies trasnmission to humans due to lack of vaccination and no population control
One Health	Rabies	Rabies transmission between arctic foxes and dogs
One Health	Dog health; Community health	Do health concerns due to lack of access to regular veterinary services --> disease, welfare; community concerns around dog bites, injuries, fear of dogs, zonotic disease transmission
One Health	Zoonotic diseases	risk of rabies infection and other parasitic diseases; need vaccination, education - best way to offer veterinary services; related to human-animal bond, animal welfare
One Health	Rabies	Fox --> dog; human rabies
One Health	Rabies	Arctic fox rabies; prevention of human exposure
One Health	Infectious diseases	One of the biggest concerns for me is the transmission and developemnt of zoonotic diseases from dogs to humans and from humans to dogs, inlucing: parasites (Crypto, Giaridia, Toxo, E. granulosus etc), bacteria viruses

One Health	Preventing health risk while maintaining dog population health	bites / zoonoses; cultural impact; balancing risks and benefits from dogs
Aputi	Medical treatment; preventive medicine (vaccination; spaying/neutering)	Access to veterinary services - affordable
Aputi	Access to vaccines	concerns- services outside Iqaluit; stray dogs (sterilization, costs, length of stay), clinics + information (campaigns on disease prevention); travel for vets / specialists (preventative)
Aputi	Affordable Medical treatment; population reduction; addressing cruelty (education, enforcement, social intervention)	--
Aputi	Population control; lack of veterinary services	Provide control population with sterilization clinics; veterinary services include preventive (vaccination, deworming) but also curative
Aputi	Population control; spread of rabies	Vaccination; sterilization; access to vaccine and veterinarian services; local vaccines for rabies; diagnostic; unfit for the weather
Aputi	Diagnostic capacities	Lack of immediate diagnostic capacities can significantly impact the abilities to get an accurate idea of pathogens in canine population; as a consequence, it can also delay appropriate decision making; disease translocation north to south