Appendix A: Focus Group Moderator’s Guide

Risk Perception of climate change and Lyme disease

*To start off, I want us to brainstorm a list. When I say the phrase “climate change” - what comes to mind? It can be anything…*

* *Do you see climate change as a risk to you personally?*
* *How big is this risk?*
* *How about to your community? In what way?*
* *How big is this risk to your community?*

*OK, how about Lyme disease - what are some of the first things that come to mind when I say Lyme disease?*

* *When did you first hear about Lyme disease? Have you seen anything or heard anything about it lately? Where was that?*
* *Do you know anyone with Lyme disease?*
* *Do you think there is a risk of Lyme disease in Manitoba? How big is this risk? Is it getting bigger or smaller?*
* *How do you prevent Lyme disease? What are the things you’re supposed to do?*
* *Do you think Lyme disease is connected to climate change? In what way?*

Communication materials presentation

*I’ve got some materials here I want to show you and get your thoughts on. We’ll go one-by-one.* (Present in randomized order)

Article - Discussion

*I’ve got an article here for you to read on your own. While you’re reading it, I want you to do two things:*

1. *With the green highlighter, I want you to highlight everything that’s new to you, stuff you didn’t know - green is “news to you.”*
2. *You’ve each got one dot. At the end, when you’re done reading, put that dot next to the most surprising thing, the thing that had the most impact on you.*

* *What’s the key message of this article, if you had to put it into words?*
* *Did this seem trustworthy or credible? Why/why not?*
* *Was it clear? Or confusing? What parts?*
* *How did your understanding of Lyme disease change - if at all?*
* *Do you think you’d change your behaviour because of this article? In what way?*
* *Where would you expect to see this article? What’s the best way to get it in front of you? Would you actually read it? What would motivate you to read it?*
* *Is there anything the university could do to improve this article?*

Video - Discussion

*Now, I’ve got a short video to show you. We’ll just watch it once and then we’ll chat about it…*

* *What’s the key message of this video, if you had to put it into words?*
* *What was one thing you learned you didn’t know?*
* *Did you connect with the video emotionally? If so, how?*
* *How did your understanding of Lyme disease change - if at all?*
* *Do you think you’d change your behaviour? In what way?*
* *Is there anything the university could do to improve this video?*

Maps - Discussion

*Now, I want to show you some map(s). You can get up and study these a little closer if you want. I’m going to give you a couple of minutes to really have a look at these…*

* *What’s your key takeaway from these maps?*
* *Did they seem credible or not? Why/why not?*
* *Were they clear? Or confusing? What parts?*
* *Did your understanding of Lyme disease change? If so, how?*
* *Do you think you’d change your behaviour because of these maps? In what way?*
* *Where would you expect to see these maps?*
* *Is there anything the university could do to improve these maps?*

Comparison of Materials and Closing

* *Thinking across the three options, did the different approaches to communication impact you differently?*
* *Do you see value in each approach? If so/if not, why?*
* *Any final thoughts? If you would prefer to write any thoughts or reflections you have you can do so on the paper provided and leave them on your tables for us to collect afterwards.*

Appendix B: Coding scheme and definitions

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| Perceptions of climate change | | | |
| Level 1 code | Level 2 code | Level 3 code | Definition |
| Climate Impacts |  |  |  |
|  | Temperature changes |  | Abnormality in temperature ranges or rate of change compared to previous |
|  | Weather changes, extremes |  |  |
|  |  | Floods, Rain, Storms | Floods, typhoons, changes in precipitation, hurricanes. |
|  |  | Snow | Abnormal snowfall, snowstorms and blizzards. |
|  |  | Weather changes | This was defined as extreme weather fluctuations, changes in weather throughout the years or abnormal weather. |
|  | Health and human impacts |  | Direct or indirect climate-related health impacts on humans (e.g. increase in asthma, diseases) and other impacts on humans such as through food production (e.g. food shortages) |
|  | Ice, oceans, water |  | Impacts of climate change on water or oceans (e.g. rising sea levels, glaciers and ice melting, pollution of oceans). |
|  | Loss of wildlife, habitat, biodiversity |  | Extinction or decline of animals and/or habitat |
|  | Pests, invasive species |  | More pests and invasive species becoming more apparent because of climate change and changing weather (e.g. ticks, pine beetles, etc.) |
|  | Fire, drought |  | Increasing wildfires, drought, dryness. |
|  | Air quality, smog |  | Smog, worsened air quality, air pollution in cities etc. |
|  | Skepticism of impacts and changes (S) |  | Doubts or denial of impacts being climate-driven |
|  |  |  |  |
|  |  |  |  |
| Causes |  |  |  |
|  | Culture/mentality |  | Attitudes and culture of society as a whole being the problem for climate change (e.g. culture of dependency) |
|  | Economy |  | Climate change being driven by economic profit. |
|  | Fossil fuels, emissions |  | In this category fossil fuels, and vehicles are considered to be contributing to climate change. |
|  | Government inaction |  | Government failing to act or impeding action on climate change |
|  | Pollution |  | Solid waste (e.g. garbage) and air pollution (worsened air quality) as part of the problem of climate change. |
|  | Population growth and urban sprawl |  | Growth of cities and town transforming and impeding on natural environments, contributing to climate change |
|  | Responsibility for the problem |  | The role of humans and specific cities or countries in driving the problem of climate change |
|  | Manufactured problem (S) |  | Denial of climate change as a real problem, belief that is manufactured for profits or political gain, or a perception that climate change is being blown out of proportion |
| Risk & Awareness |  |  |  |
|  | Lack of public knowledge |  | A deficit of public knowledge on climate change or the risks in general. |
|  | Media coverage |  |  |
|  |  | Hearing it from media | Getting information on climate change through the media |
|  |  | Media hype (S) | Belief that climate change is being exaggerated by the media |
|  | Change is constant (S) |  | Belief that climate change is natural or normal, or part of a cycle that is constantly changing |
|  | Skepticism or denial of the risk (S) |  | Belief that climate change is not a risk personally or more generally, that the problem is not worsening |
|  | Temporal Risk |  | When people believe the risk of climate change will be realized |
|  | Geographic risk |  |  |
|  |  | Globally | The risk of climate change for people around the world, or specifically in other countries |
|  |  | Locally | The risk of climate change for the specific area or city that participants live in |
|  |  | Personally | The risk of climate change to participants personally |
| Solutions and politics |  |  |  |
|  | Adaptation |  | The necessity and measures of adapting to climate change. |
|  | Energy Transition |  | The necessity and measures of transitioning away from fossil fuel energy. |
|  | Individual and collective action |  | The role of individual and/or collective action |
|  | Disbelief or skepticism of solutions (S) |  | Skepticism or doubt around some of the climate change solutions (e.g. electric cars) |
|  | Climate Science |  | Scientific consensus on climate change |
|  | Lack of scientific knowledge (S) |  | Belief that there is a lack of climate or weather data, and other scientific information on climate change |
|  | Government, politics |  | The political dimensions of climate change |

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| Perceptions of Lyme Disease | | | |
| Level 1 code | Level 2 code | Level 3 code | Definition |
| Lack of Knowledge |  |  |  |
|  | Public |  | A deficit of knowledge on Lyme disease amongst the public, such as lack of public education on symptoms, consequences, and causes. |
|  | Medical |  | A deficit of knowledge on Lyme Disease amongst doctors and medical professionals, such as misinformation or lack of capacity around diagnosis. |
| Causes of Spread |  |  |  |
|  | Climate Change |  | Blacklegged ticks spreading and migrating because of specifically climate change. |
|  | Habitat change |  | Blacklegged ticks migrating or moving because of loss of habitat cause by humans (e.g. deforestation, encroachment) |
|  | Migration |  | Blacklegged ticks moving around on animals or otherwise naturally migrating to new areas |
|  | Weather |  | Tick spreading is due to weather or humidity. |
|  | Spread is not climate change related (LS) |  | The cause of ticks spreading is specifically not climate change related |
|  | Natural spread, Cycles in ticks (LS) |  | Spread of ticks to new areas is natural or part of a pattern or cycle in their populations |
| Illness Representation |  |  |  |
|  | Causes |  | The source of Lyme Disease, such as the specific ticks that carry the disease |
|  | Symptoms |  | The physical (e.g. bullseye rashes) and mental (e.g. depression) impacts of Lyme Disease. |
|  | Definition |  | Participants feelings about ticks (e.g. disgust) or feelings about Lyme Disease (e.g. scared). |
|  | Consequences |  | Outcomes of having Lyme Disease (e.g. loss of job, needing to travel to get treatment, etc.) |
|  | Trajectory |  | Trajectory was defined as the course of living with Lyme Disease (e.g. curable, chronic) |
|  | Treatment & Prevention |  |  |
|  |  | Preventative Behaviour | What can be or has been done to avoid getting bitten by ticks and contracting Lyme Disease (e.g. applying bug spray) |
|  |  | Treatment | The process, location, cost, etc of medical treatment to cure or lessen Lyme disease symptoms |
| Risk and Awareness |  |  |  |
|  | Temporal and geographic dimensions or risk |  | Who could get Lyme Disease, where they could get it (e.g. walking their dog, in their grass, etc.) and when they could get it (e.g. seasonality, etc.) |
|  | Increasing public awareness |  | Hearing about Lyme Disease more, increasing discussion of the disease in the public sphere |
|  | Source or risk information |  | Sources of information about Lyme Disease (e.g. radio, news, relationships) |
|  |  | Media coverage | Coverage of Lyme Disease information through media specifically |
|  | Diagnosis or risk increasing (LS) |  | Skepticism amongst participants about whether the risk of Lyme Disease is increasing or if increasing number of reported cases is just a result of doctors becoming more aware of Lyme Disease and how to diagnose it. |
|  | Risk is not new (LS) |  | Ticks are not new, and have been around for a long time. |
|  | Absence of risk (LS) |  | Lack of concern about Lyme Disease, belief that the disease risk is not significant |