



The Methods Clusters

In 2016, the BC SUPPORT Unit funded a five-year initiative to study the methods of patient-oriented research: the “**Methods Clusters**”.

We started our work by **listening to stakeholders**—including patients, researchers, policy makers, and practitioners. Together, we identified **6 areas** where more methods research was most important. These became the **6 Clusters**:



*Knowledge
Translation and
Implementation
Science*



*Patient-Centered
Measurement*



*Data Science and
Health
Informatics*



*Patient
Engagement*



*Health Economics
and Simulation
Modelling*



*Real-World
Clinical Trials*

Each Cluster consulted stakeholders to discuss their **priorities** for patient-oriented research. **35 priorities** surfaced.

To address these priorities, the Clusters funded **42 different projects**. All of these projects were **patient-oriented**: we **studied** patient-oriented research by **doing** patient-oriented research.



This PDF provides a snapshot of the **Knowledge Translation and Implementation Science** Methods Cluster as of March 2022.



Knowledge Translation and Implementation Science Overview

“**Knowledge Translation**” is one way to use health research to improve health. It refers to the various actions working to improve the use of research evidence in practice, including:

- **Synthesis:** integrating study findings into the larger body of knowledge on a topic
- **Dissemination:** identifying appropriate audiences and tailoring messages to the audience
- **Exchange:** interaction between researchers and research users resulting in mutual learning
- **Application:** the iterative process by which knowledge is put into practice

“**Implementation Science**” is the academic field devoted to understanding how to get research findings used in everyday healthcare settings.



[Read a blog post](#) by Cluster leads Linda Li & Bev Holmes: [Do we need to translate “Knowledge Translation Science?”](#)

“There’s a growing scientific community studying how research evidence is used, and how we can use it better. But our language may still be tripping us up.”

Consulting with researchers, policy makers, and practitioners, this Cluster:

- *Identified **4 priorities** to focus on*
- *Funded **5 projects** to address them*

This Cluster was led by **Linda Li**, with advisor **Bev Holmes**.

***Dr. Li** is Professor, Harold Robinson/Arthritis Society Chair in Arthritic Diseases, and Canada Research Chair in Patient-Oriented Knowledge Translation at the Department of Physical Therapy, University of British Columbia. She is also a Senior Scientist at the Arthritis Research Canada. Linda earned a BSc in Physiotherapy at McGill University, a MSc at University of Western Ontario, and a PhD in Clinical Epidemiology at University of Toronto.*

***Dr. Holmes’** bio is available at the [Michael Smith Health Research BC website](#).*



Knowledge Translation and Implementation Science Navigation

Knowledge Translation and Implementation Science Overview	1
Knowledge Translation and Implementation Science Navigation	2
Projects: Overview	3
Priorities	5
Projects	7
<i>Studying consensus methods in integrated KT to promote patient-oriented research</i>	7
Project summary	7
Project findings	8
Team	9
<i>A hermeneutic approach to advancing implementation science</i>	10
Project summary	10
Publications	11
Project lead	11
<i>Systems-thinking tools for evidence-informed planning</i>	12
Project summary	12
The systems-thinking toolbox: causal loop diagrams (CLD)	13
The systems-thinking toolbox: social network analysis (SNA)	14
Team	15
<i>Using documentary as a method of knowledge translation to reach the "sandwich generation"</i>	16
Project summary	16
Project findings	17
Presentations	18
Team	19
<i>Integrated KT 2.0 - development of an online citizen science portal</i>	20
Project summary	20
Project findings	21
Presentations	21
Team	21



Knowledge Translation and Implementation Science

Projects: Overview

Studying Consensus Methods in Integrated KT to Promote Patient-Oriented Research

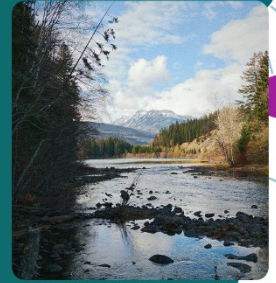


Knowledge Translation & Implementation Science



Consensus methods can help us identify the needs and priorities of communities. But, there is limited understanding of best approaches, and few guides on how to use them. This project sought to understand consensus methods better.

A Hermeneutic Approach to Advancing Implementation Science

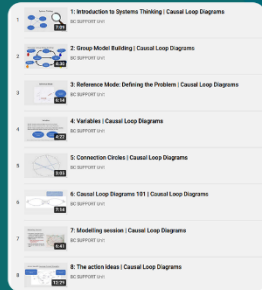


Knowledge Translation & Implementation Science



This project combined philosophy with health research, studying and using hermeneutics to understand health care and implementation.

Systems-Thinking Tools for Evidence-Informed Planning



Knowledge Translation & Implementation Science



This project created a user-friendly set of “systems-thinking tools” that community groups can use to solve complex problems, independently.

Using Documentary as a Method of Knowledge Translation to Reach the “Sandwich Generation”



Knowledge Translation & Implementation Science

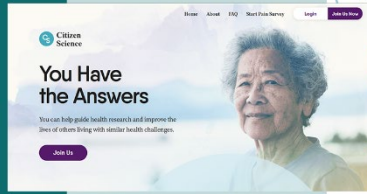


This project explored how documentary could be used to facilitate the uptake of health-related research evidence among the “sandwich generation.”



Integrated KT 2.0

Development of an Online Citizen Science Portal



**Knowledge Translation &
Implementation Science**



This project developed a website that has enabled the public to become "Citizen Scientists" by sharing information about their experiences of living with pain.

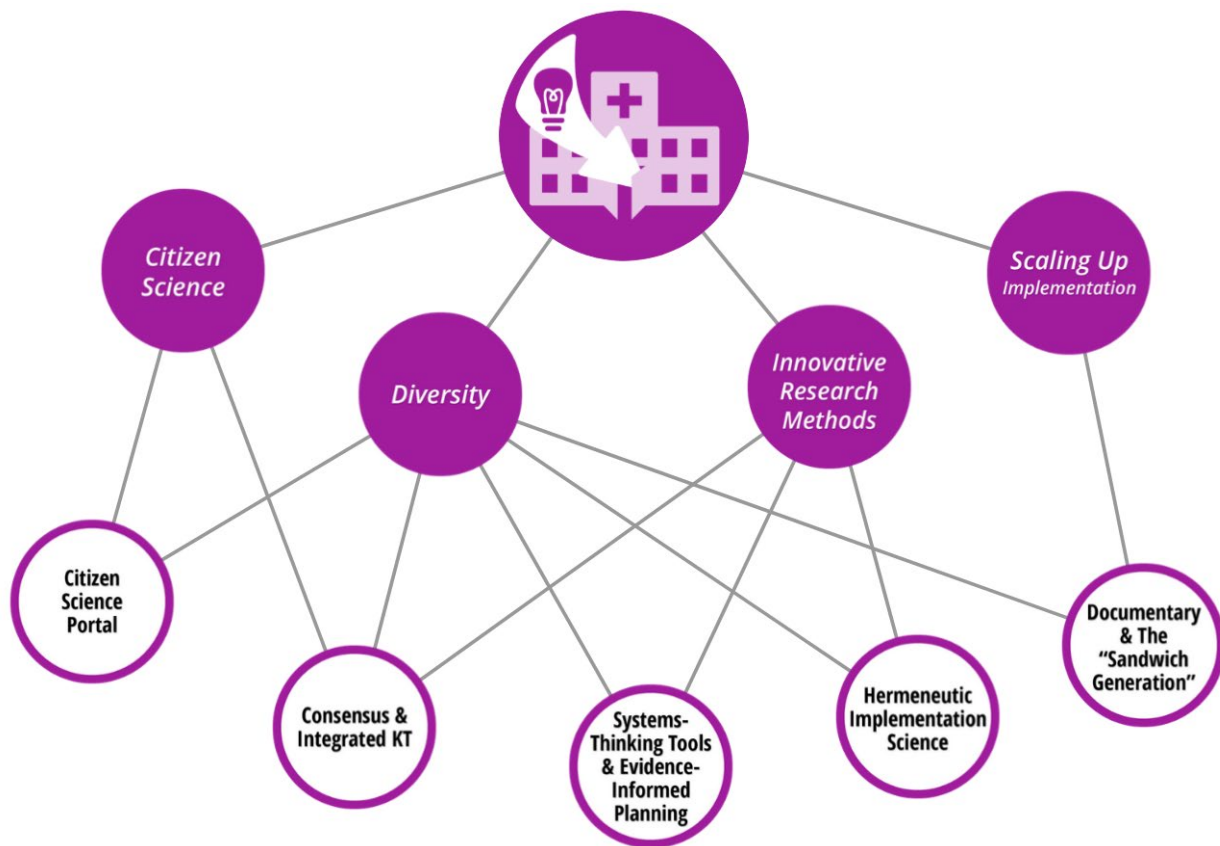


Knowledge Translation and Implementation Science

Priorities

Each Cluster consulted stakeholders to discuss their priorities for patient-oriented research. The Patient-Centred Measurement Methods Cluster identified **4 priorities** for potential projects.

This Cluster then funded **5 projects** based on these priorities.



This diagram shows the connections between the priorities (solid purple) and projects (purple outline) of the Knowledge Translation and Implementation Science Methods Cluster. A list of the Cluster's priorities, and projects they funded based on them, is below.



Study innovative research methods

The projects that addressed this priority were:

- *Systems-Thinking Tools for Evidence-Informed Planning*
- *A Hermeneutic Approach to Advancing Implementation Science*
- *Studying Consensus Methods in Integrated KT to Promote Patient-Oriented Research*

Develop and study new methods to ensure diversity in knowledge translation and implementation science

The projects that addressed this priority were:

- *Integrated KT 2.0: Development of an Online Citizen Science Portal*
- *Systems-Thinking Tools for Evidence-Informed Planning*
- *A Hermeneutic Approach to Advancing Implementation Science*
- *Using Documentary as a Method of Knowledge Translation to Reach the “Sandwich Generation”*
- *Studying Consensus Methods in Integrated KT to Promote Patient-Oriented Research*

Develop and study knowledge translation interventions based on the citizen science approach

The projects that addressed this priority were:

- *Integrated KT 2.0: Development of an Online Citizen Science Portal*
- *Studying Consensus Methods in Integrated KT to Promote Patient-Oriented Research*

Study innovative methods for scaling up effective implementation interventions

The project that addressed this priority was:

- *Using Documentary as a Method of Knowledge Translation to Reach the “Sandwich Generation”*



Knowledge Translation and Implementation Science

Projects

Studying consensus methods in integrated KT to promote patient-oriented research

Contact: nelly.oelke@ubc.ca, heather.gainforth@ubc.ca,
katrina.plamondon@ubc.ca, Davina.Banner-Lukaris@unbc.ca, Ashmita.rai@ubc.ca

This project addressed the priorities:

- *Develop and study KT interventions based on the citizen science approach*
- *Develop and study new methods to ensure diversity in KT and implementation science*
- *Study innovative research methods*

Project summary

Integrated knowledge translation (IKT) is a research approach that involves including stakeholders, including patients, as equal partners in research teams so that results of the study are more relevant and useful.

This approach often requires the use of **consensus methods** for us to understand decisions and priorities for service delivery, policy change, and research. “Consensus” is when a group of individuals come to an agreement and support a specific outcome (in the best interest of the group) and work together to create solutions.

However, although these consensus methods have become more popular in helping identify the needs and priorities of communities, there is limited understanding about which is the best approach and few resources to guide teams in how to use them.



Our project sought to understand consensus methods better.

Project findings

Phase 1: Literature review

We reviewed academic articles on consensus methods and partnerships.

We found that there is a lack of information on consensus methods in research partnerships, including:

- How consensus was reached
- Different approaches to consensus
- Issues of being included, inequity, and power imbalance

There is a need to clearly define consensus, approaches to consensus, and partnerships for consensus.

Phase 2A: Dialogues

We completed dialogues to better understand how patients and/or community members can be meaningfully included in research.

We found:

1. The **systems of research** shape how people are included in research
2. **Standards for being accountable** are not completely or easily accessed
3. **To be inclusive** requires attention, intention, planning and supports
4. **Inclusion** is based on relationship



Phase 2B: Four projects using consensus approaches

We used different consensus approaches, such as deliberative dialogue (face to face or virtual) and a Delphi survey in four health authorities in BC (Island Health, Northern Health, Fraser Health, and Interior Health), in four different areas of health care.

We learned that:

- Different training is needed for patients, family members, and caregivers to use a virtual platform
- Language is important for understanding
- Different groups of patients have different needs.

In all cases, we have found that consensus on key actions and priorities for action were successful when patients, family members, and caregivers were included in consensus-building processes.

Phase 3: Sharing our findings

We are in the process of sharing our research findings.

Team

[Dr. Nelly Oelke, PI](#); [Dr. Heather Gainforth, Co-PI](#); [Dr. Katrina Plamondon, Co-PI](#); [Dr. Davina Banner, Co-PI](#); Dr. Kathryn Sibley, Co-I; Dr. Jennifer Baumbusch, Co-I; [Ashmita Rai](#); Dr. Miranda Cary; Alison Hoens; Ursula Wick; Kimberly Strain



A hermeneutic approach to advancing implementation science

This project addressed the priorities:

- *Develop and study new methods to ensure diversity in KT and implementation science*
- *Study innovative research methods*

Project summary

Changing health care is difficult. Many changes suggested by research are only partially implemented or not implemented at all. Often, research about implementation looks at only one innovation at a time, typically in a top-down manner.

This project will study a bottom-up approach that considers how health care research and innovation actually happen in rural and remote communities.

The project takes an approach called hermeneutics. Hermeneutic research seeks understanding through the interpretation of meaning and language. The project will attempt to understand how knowledge is created and extended during implementation or innovation.

The project team will summarize existing knowledge in this area. Next, the team will conduct interviews and observations to understand how knowledge is created and used to improve clinical practice or policies.

The results of this study will show how learning and change occurs in everyday practice. It will help other research teams know about different approaches to studying implementation, especially in rural and remote communities.



Publications

McCaffrey G, Wilson E, Jonatansdottir S, et al. [But is It Hermeneutic Enough?: Reading for Methodological Salience in a Scoping Review of Hermeneutics and Implementation Science](#). *International Journal of Qualitative Methods*. January 2022.

Project lead

Martha MacLeod



Systems-thinking tools for evidence-informed planning

Contact: blizzardk@douglascollege.ca

This project addressed the priorities:

- *Develop and study new methods to ensure diversity in KT and implementation science*
- *Study innovative research methods*

Project summary

“Systems thinking” is an approach to addressing complex problems where all parts of the system are considered, as well as the ways they interact and change over time.

- For example, to understand how to reduce teenage smoking, a systems-thinking approach would consider as peer pressure, tobacco advertising, teenage attitudes toward smoking, pricing of cigarettes, and so on, as well as how these factors affect each other.

Usually, systems-thinking involves researchers and specialized consultants, especially since the language used in existing tools and resources is academic and technical. Our team aimed to overcome these barriers.

This project created a user-friendly set of systems-thinking tools that community groups can use to solve complex problems—independently, and with no prior knowledge about systems-thinking.

We worked in partnership with the Association of Neighbourhood Houses of BC and the City of Vancouver to develop and test this set of tools. The feedback and involvement of community members was invaluable and greatly improved our work and outputs.



The systems-thinking toolbox: causal loop diagrams (CLD)

When to use:

Causal Loop Diagrams are used to understand an issue facing the community from a broad perspective.

*They are useful for **engagement** and to develop **shared understanding** of the root causes of an issue, particularly a systemic issue.*

Training videos:

[Playlist of all 9 videos](#) (approx. 1hr total)

1. [Introduction to Systems Thinking](#) (7 mins)
2. [Group Model Building](#) (5 mins)
3. [Reference Mode: Defining the Problem](#) (6 mins)
4. [Variables](#) (4 mins)
5. [Connection Circles](#) (4 mins)
6. [CLD 101](#) (7 mins)
7. [Modelling session](#) (7 mins)
8. [The action ideas](#) (13 mins)
9. [Vensim Tutorial](#) (6 mins)

Supporting resources:

1. [Connection Circles from the Case Study](#)
2. [CLD from the Case Study](#)
3. [Action items from the Case Study](#)
4. [PowerPoint slides from Case Study modelling session](#)
This can be adapted for your own session.
5. [Agenda from modelling session](#)
This can be adapted for your own session.



6. [Scriptopedia](#)
*This website contains detailed scripts that have been used for previous group model building projects.
You can download the scripts and adapt them to your own projects.*
7. [Adapted script for the Group Model Building \(GMB\) session](#)
This was adapted from the scripts available on Scriptopedia.
8. [Meadows: leverage points](#)
This website contains descriptions of different types of leverage points in a system that can be used as intervention points for program planning.
9. [Book: Hovmand, P.S. \(2014\) Community Based System Dynamics.](#)
This book contains a detailed process for doing system dynamics with community groups written by an expert in this field.

The systems-thinking toolbox: social network analysis (SNA)

When to use:

Social Network Analysis is used to understand **the players involved** as a systems level that are well situated to influence solutions to an issue in community.

Training videos:

[Playlist of all 8 videos](#) (approx. 1.5 hrs total)

1. [Introduction to SNA Training Series](#) (4 mins)
2. [What is Network Analysis and Why is it Valuable?](#) (12 mins)
3. [Purpose of the Network](#) (10 mins)
4. [Bounding the Network](#) (10 mins)
5. [Relationship Activity](#) (11 mins)
6. [Mapping the Network](#) (12 mins)
7. [Interpreting and Identifying Next Steps](#) (16 mins)
8. [Appendix: Collecting SNA data](#) (6 mins)



Supporting resources:

1. [Additional Resources](#)
2. [Workshop Details](#)
3. [Workshop Evaluation](#)

Team

Dr. Allan Best, PI; Dr. Jennifer Terpstral; Dr. Robin H. Lemaire; Zahra Esmail; Mary Clare Zak; Dr. Josh Hayward; Dr. Shazhan Amed; Dr. Brenda Poon; Jen Bitz; [Kim Blizzard](#) [✉](#); Amanda Kwan



Using documentary as a method of knowledge translation to reach the "sandwich generation"

This project addressed the priorities:

- *Develop and study new methods to ensure diversity in KT and implementation science*
- *Study innovative methods for scaling up effective implementation interventions*

Project summary

Documentaries are one way to learn about things that affect our health. However, busy parents also may not have time to watch a full-length documentary and may prefer other ways to learn. The aim of our project was to determine what works, for whom, how, and in what circumstances to facilitate uptake of health-related research evidence among “the sandwich generation.”

Parents who are ‘sandwiched’ between the demands of caregiving for children and aging parents have limited time to engage with health information. Textual information from books and other print media may not be very effective or acceptable for this target audience.

In this study, we explored the best ways to share pieces of information from a documentary, [Let Them Eat Dirt](#), that provides detailed information about the effect of germs on children.

Documentary filming and production

During documentary filming and production, we explored documentary formats and delivery preferences. Through individual interviews with parents of young children, we asked about:

- short (1-2 minute) video clips versus a full 60 minute film
- “supporting material” that delivered key messages



- the types of health information parents needed to make informed decisions.

Documentary release

Once the documentary was released, we then shared a link to watch it and supporting materials.

After participants engaged with this content, we conducted follow-up interviews, conducted a focus group, and selectively recruited additional participants to diversify our sample. Some things we asked about were:

- Watch time
- Preferred supporting material
- Effects of the documentary and supporting material

Parent advisory group

We also created the “Parent Advisory Group”, active since December 2019, to engage our patient partners, after our three founding patient partners had to step away to attend to other demands. This has been effective in facilitating discussions about the project, interpreting data, and co-designing strategies for knowledge dissemination.

The advisory has also had the benefit of being a ‘peer-based knowledge exchange setting’, where parents of young children can ask questions and raise new ideas. Feedback from the group indicates this has been particularly valuable during the social isolation of the pandemic.

Project findings

The results of our project suggest that documentary is an effective method of educating parents.



What works? Short formats, passively disseminated, with ‘aha’ moments.

In what circumstances? ‘On demand’ formats that can be viewed on mobile devices.

To what effect? Entertaining documentaries can support two core “Knowledge Translation” outcomes: knowledge and behaviour intentions. It also supports an understudied, patient-oriented “Knowledge Translation” outcome: entertainment. If viewers felt they were escaping into an entertaining story, it made the educational elements more enjoyable and easier to remember. These results were observed both pre-COVID-19 and during the first year of pandemic conditions.

We also noted that, after engaging with the documentary, participants frequently asked, “what next?”

The aim of *Let Them Eat Dirt* was to provide knowledge about microbes and child health, but information alone did not satisfy parents’ needs.

To make informed choices, patients not only need, but also prefer to have evidence plus **evidence-informed ‘how-to’ actions**—in other words, not only information, but also **recommendations and strategies**.

Presentations

May 2020: [“How to Do Knowledge Translation in a Pandemic”](#) KT Connects, Michael Smith Foundation for Health Research.

Nov 2020: “Developing Knowledge Translation Videos.” Women’s Health Research Cluster, UBC.

Nov 2019: “Panel: Using film and video to share knowledge with the public; lessons learned.” Putting Patients First 2019: Working Together Across the Research Cycle, Vancouver.



March 2019: “Patient-Centred Knowledge Translation: What It Means and How We Get There.” Providence Health Care Knowledge Translation Community of Practice, St. Paul’s Hospital, Vancouver, BC.

Jan 2019: “Using Documentary as a Method of Knowledge Translation to Reach the ‘Sandwich Generation.’” Centre for Health Outcomes and Evaluation Sciences (CHÉOS) Work in Progress Seminar, St. Paul’s Hospital, Vancouver, BC.

- [Read a CHÉOS blog post published prior to this presentation](#)

Aug 2018: “Using documentary as a method of knowledge translation to reach the ‘sandwich generation.’” ECHO KT Research Lab, University of Alberta, Edmonton, AB.

Team

Dr. Sarah Munro, PI, Dr. B. Brett Finlay, Dr. Stephanie Glegg, Annelise Larson, Parent Advisory Group; Rivkah Beth Medow; Julie Sou; Elizabeth Wilcox; Dr. Wendy V. Norman; Theodora Lamb; Jai Richards; Nicole White



Integrated KT 2.0 - development of an online citizen science portal

Contact: citizenscience@arthritisresearch.ca

This project addressed the priorities:

- *Develop and study KT interventions based on the citizen science approach*
- *Develop and study new methods to ensure diversity in KT and implementation science*

Project summary

“Nothing about us without us!” is a motto for patients as members of research teams. Recent advances in technology are creating new ways for the public to share their health data so that researchers can identify new and more relevant questions for research.

This project, guided by the concepts of citizen science (the public participating in science), has developed an online app that enables the public to share:

- self-reported health data (e.g., questionnaires)
- text data (e.g., patient stories)

The [Citizen Science website](#) went live in 2019. We have worked with patient groups such as the ILC (Improving the Lives of Children) Foundation, Pain BC, Complex Regional Pain Syndrome Canada, and various community pain groups across Canada to promote the website. Also, Pain BC and the Arthritis Society are supporting in sharing this initiative amongst their members. This platform is also now featured on [the government of Canada Citizen Science portal](#) as the only health citizen science project of this kind.



[Watch an explainer video](#) for the Citizen Science website, created to help recruit patient partners to participate in the project and use the website.

Runtime: 1:27

Project findings

To date, Citizen Science has interacted with 1,234 visitors across Canada and around the world; 434 Canadian have filled out some of the pain surveys. Of those, 18 visitors participated in an interview with us. We have used their valuable feedback to develop interactive graphs and charts for the public to [“see” the data](#)—Version 2 was launched in December 2021.

Presentations

“Citizen Science: big data, big idea”. Canadian Arthritis Research Conference. Victoria, BC. February 25 – 26, 2020.

“Consumer digital tools: friends or frenemies” Western Alliance for Rheumatology Meeting. Kelowna, BC. June 1, 2019.

Team

Linda Li, PI; Leanne Currie; Kim McGrail; Erin Michalak; Cheryl Koehn; Delia Cooper; Sunny Loo; Alison Hoens; Sarah Kesselring; [Tactica Interactive](#)