

## PALLIUM CANADA'S NEW EVALUATION AND RESEARCH FRAMEWORK FOR THE LEAP AND ECHO PROGRAMS (2021)

### BACKGROUND

Evaluation is an essential component of any education program. It guides continuous quality improvement, implementation and spread. Education programs also present opportunities for research and other scholarship into areas such as learning approaches, delivery methods, and impact on learners, patients, and the health care system.

Pallium Canada has over the years undertaken various program evaluations and studies to assess the impact of the program and its Learning Essential Approaches to Palliative Care (LEAP) courseware.

See examples of this previous work in **Appendix 1**; some of the works represent collaborations between Pallium and external experts and researchers, while others were undertaken by evaluators or researchers independently of Pallium Canada:

In the early phases of Pallium Canada (Phases 1 and 2; 2000 to 2007), Pallium used a Results-Based Accountability Evaluation Framework promoted by Health Canada at the time. This included understanding processes, mechanisms, and contexts of implementation. It also adopted Kirkpatrick's Model<sup>1</sup> with its four levels to assess the impact of the courses (outcomes across four levels).

In November 2020, Pallium Canada commissioned a team at the Dr. Joshua Shadd Research Hub in the Division of Palliative Care, Department of Family Medicine at McMaster University, to review its evaluation framework and to propose a new evaluation and research framework for Pallium Canada's LEAP and its new Extension for Community Health Outcomes (ECHO) program (add links to the pages on Pallium's website to these two programs).

Frameworks or models are useful to provide guidance on how to approach evaluation. They can inform, for example, what aspects and domains to evaluate and those that need prioritization. Many models or frameworks that are based on evidence and experience exist and these can be harnessed to inform Pallium Canada's evaluation and research activities.

Pallium's new evaluation and research framework includes evaluation goals related to the delivery, implementation, spread of outcomes, and impact of Pallium Canada's LEAP and ECHO programs. These programs are also rich ground for generating new knowledge in several fields, including palliative care education, implementation and spread, and health care systems improvement. This can be achieved by using research approaches. Research approaches also lend themselves to many of the evaluation activities. We therefore see evaluation and research as being closely aligned and overlapping in this new Evaluation and Research Plan.

---

<sup>1</sup> Kirkpatrick D. *Evaluating Training Programs: The Four Levels*. San Francisco, USA: Berrett-Koehler; 1998.

## PROCESS UNDERTAKEN TO DEVELOP PALLIUM CANADA'S NEW EVALUATION AND RESEARCH FRAMEWORK

A multi-phased process was used to develop the framework. This included:

- **An environmental scan and critical literature review.** The goal was to a) identify existing frameworks, models and approaches that were relevant to Pallium Canada and the LEAP and ECHO programs; and b) identify current trends and guiding principles related to undertaking evaluations of education programs. Over 24 potentially relevant models, frameworks and approaches were identified through this process.
- **Mini- symposium with input from 15 national and international experts (palliative care educators, health care educators and evaluation experts).** This panel of experts provided extensive input on a prototype developed from the environmental scan and critical review, resulting in the final Evaluation and Research Framework described here.

### The New Framework: Overview

See **Diagram 1**

The new Framework consists of 3 parts, shown as 3 boxes on the diagram:

- **Box 1: Overall Approach**  
This box describes some overall principles that should guide evaluation and research of Pallium Canada's LEAP and ECHO programs. These include:
  - A pragmatic approach is needed given the complexity of education interventions and their contexts.<sup>2,3</sup> Education interventions are often complex (e.g., consist of multiple components or are part of a larger strategy with other elements such as service interventions) and occur in complex contexts with many different internal and external factors that influence the implementation and impact (an education program can be successful in one context but fail in another). Realist approaches are needed to evaluate and research the interventions in their real-world contexts (rather than artificial controlled environments that don't reflect the real world). Rigid evaluation frameworks don't allow for these complexities and real-world environments.<sup>4,5</sup>
  - Evaluations of impact at higher levels (such as impact on patients and the health care system) require more resources and often data sources that are not easily available. While more such evaluations are needed for Pallium's programs,

---

<sup>2</sup> Kaushik V, Walsh CA. Pragmatism as a research paradigm and its implications for social work research. *Soci Sci.* 2019;8(9): 255.

<sup>3</sup> Morgan D, Lister C, Winsall M, Devery K, Rawlings D. "It's given me confidence": a pragmatic qualitative evaluation exploring the perceived benefits of online end-of-life education on clinical care. *BMC Palliative Care* 2021;20: 57 <https://doi.org/10.1186/s12904-021-00753-y>

<sup>4</sup> Wong G, Greenhalgh T, Westhorp G, Pawson R. (2012). Realist methods in medical education research: What are they and what can they contribute? *Medical Education*, 46, 89–96.

<sup>5</sup> Wong G, Greenhalgh T, Westhorp G, Pawson R. (2012). Realist methods in medical education research: What are they and what can they contribute? *Medical Education*, 46, 89–96.

pragmatic approaches are needed that overcome the resource and design barriers inherent in higher level evaluations and research.

- Given the complexities described above, the many LEAP and ECHO products (e.g. different LEAP versions for different settings and disease groups, and ECHO communities of practice), and the many different contexts the programs are undertaken in (e.g. community, hospitals, long term care homes, medical and nursing schools, different regions, different provinces, etc.), this evaluation work cannot be done with one large evaluation study. Rather, a program with multiple sub-studies of evaluation and research is needed to evaluate and study the many components and contexts of LEAP and ECHO. Multiple methods, including mixed methods research, is also needed, depending on the question and evaluation focus at hand.
  - Evaluations tend to focus on outcomes such as changes in learners' competencies and impact on patients and the health care system. We refer to this as "Evaluation of Impact". However, it is important to also understand how the programs are adopted, adapted, implemented, and spread in different contexts (what for example facilitates or impedes uptake?). We refer to this as "Evaluation of Implementation". Both these aspects need to be evaluated.
  - Given the scope of the evaluation that is required, and many research and scholarship opportunities that LEAP and ECHO present with, this work of evaluation and research cannot be undertaken only by Pallium Canada. There are three models by which the work can be undertaken: A) Undertaken by Pallium and its internal team (Internal); B) Undertaken by Pallium in collaboration with a partner (Partnership); or C) Undertaken by third parties, such as independent researchers and evaluation teams. Pallium can assist the latter by providing pre- and post-intervention data that it routinely collects (e.g., course evaluations, pre- and post- course knowledge and comfort surveys), provided research ethics board approval is obtained and appropriate data sharing agreements that protect privacy and anonymity are completed.
- **Box 2: Evaluation of Impact using New World Kirkpatrick's Model (NWKM)**
    - To evaluate impact across different levels, we have adopted the updated version of Kirkpatrick's Model, called the New World Kirkpatrick Model (NWKM).<sup>6</sup>
    - The Model describes four levels of evaluation. Level 1 explores reach and the learner experience. Reach includes the number of learners and organizations who have taken a program and the learning experience. This experience importantly includes relevancy of the program to learners' everyday practices and work. Level 2 explores impact of the education on competencies (such as knowledge, attitudes, comfort or confidence, and skills). The NWKM also includes commitment-to-change (i.e., implement into practice what was learned). Level 3 relates to behaviours and drivers of change. Behaviours include what is actually done in practice (self-described or observed). Since Pallium supports

---

<sup>6</sup> Kirkpatrick Partners. *The New World Kirkpatrick Model*. Available at <https://www.kirkpatrickpartners.com/Our-Philosophy/The-New-World-Kirkpatrick-Model>. See also Kirkpatrick JD, Kirkpatrick WK. 2016. *Kirkpatrick's four levels of training evaluation*. Alexandria (VA): ATD Press.

interprofessional work and collaboration, the impact on interprofessional behaviour is included. Level 4 evaluates impact on patients and the health care system. To guide evaluation (and research) at this level, we adopted the quality improvement quadruple aim to serve as the lens by which to approach level 4.<sup>7, 8</sup> The quadruple aim includes improving the patient experience, improving the quality of care, reducing costs of finding efficiencies, and improving the care provider experience. It also includes return on investment (ROI), which is an economic evaluation of the value of the intervention.

- We have embedded within this part of the framework, some elements from other models and approaches. These include “reach” from Moore’s Framework<sup>9</sup> and some adaptations proposed by Barr<sup>10</sup> and Hammick and colleagues (interprofessional education),<sup>11</sup> Phillips’ return on investment (Return on Investment, ROI),<sup>12</sup> and value of the intervention to various stakeholders from the 3-Wishes project.<sup>13</sup>
- **Box 3: Evaluation of Implementation using the Consolidated Framework for Implementation Research (CFIR)**
  - To evaluate implementation, we adopted the Consolidated Framework for Implementation Research (CFIR).<sup>14,15</sup>
  - The CFIR consists of 5 empirically derived domains and a total of over 50 specific elements that one could evaluate related to implementation of an education program. For Pallium’s LEAP and ECHO programs, we have prioritized six elements related to implementation.
  - This also includes understanding the factors that facilitate or impede implementation and spread (and sustainability), and the context, processes, and drivers.

---

<sup>7</sup> Bodenheimer T, Sinsky C. From triple to quadruple aim: Care of the patient requires care of the provider. *Ann Fam Med* 2014;12: 573–576. doi: 10.1370/afm.1713

<sup>8</sup> Sikka R, Morath JM, Leape L. The quadruple aim: care, health, cost and meaning in work. *BMJ Qual Safety* 2015;24: 608–610.

<sup>9</sup> Moore DE Jr, Green JS, Gallis HA. Achieving desired results and improved outcomes: integrating planning and assessment throughout learning activities. *J Contin Educ Health Prof.* 2009;29(1): 1-15.

<sup>10</sup> Barr H. 2005. Evaluation, evidence and effectiveness. *J Interprof Care.* 19(6): 535–536.

<sup>11</sup> Hammick M, Freeth D, Koppel I, Reeves S, Barr H. A best evidence systematic review of interprofessional education: BEME guide no. 9. *Medical Teacher.* 2007;29(8): 735–751.

<sup>12</sup> Phillips JL. *Return on Investment in Training and Performance Improvement Programs*, 2nd Edition, Butterworth-Heinemann, Burlington, MA, 2003.

<sup>13</sup> Vanstone M, et al. Building organizational compassion among teams delivering end-of-life care in the intensive care unit: The 3 Wishes Project. *Pall Med* 2020, Vol. 34(9), 1263–1273. DOI: 10.1177/0269216320929538

<sup>14</sup> Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.* 2009 Aug 7; 4–50. doi: 10.1186/1748-5908-4-50

<sup>15</sup> Keith RE, Crosson JC., O’Malley AS, et al. Using the Consolidated Framework for Implementation Research (CFIR) to produce actionable findings: a rapid-cycle evaluation approach to improving implementation. *Implementation Sci* 12, 15 (2017). <https://doi.org/10.1186/s13012-017-0550-7>

## HOW TO USE PALLIUM CANADA'S NEW EVALUATION AND RESEARCH FRAMEWORK

- The framework provides guidance but does not have to be followed rigidly. An evaluation or research team does not have to address both impact and implementation and cover all the levels, domains, and constructs. Applying a pragmatic lens, the team may select the levels, domains and constructs that seem most applicable to the context and the resources available. Pallium encourages evaluations at “higher” levels but also recognizes the importance of the “lower” levels, particularly in areas such as reach, relevance, the learner experience and value to different stakeholders.
- Researchers are free to apply approaches or models that are not part of the framework if they link to levels and domains recommended in the overall framework.
- Pallium Canada collects a large amount of data that can be made available to evaluators and researchers; provided a research ethics board (REB) has reviewed and approved the proposed study (or received formal REB exemption if deemed to constitute quality improvement), and a data sharing agreement in place to ensure security, privacy, and anonymity. This data includes course evaluations, numbers of courses and learners and their professions, geographic locations of practices and care settings, pre- and post-course quizzes, and surveys (knowledge, attitudes, comfort) and commitments-to-change (immediately post-course and 4-months post course)
- A list of potential evaluation and research questions and priorities has been generated during the process of developing the plan. External partners may identify other research questions or priorities.
- The NWKM and CFIR models embedded within Pallium’s Evaluation framework do not necessarily describe the methods of evaluation/research or the sources of data to study the different levels and constructs.
- Select an appropriate evaluation or research method (quantitative, qualitative, or mixed methods) depending on the question at hand the level being studied.
- Any research related to and involving Indigenous Peoples should be led and informed by Indigenous researchers, elders, and experts. This is consistent with the guiding principles of ownership, control, access, and possession (OCAP) that includes Indigenous Knowledge.<sup>16</sup> Participatory Action Research,<sup>17,18</sup> in which Indigenous partners play a key role, provides an additional approach to undertake work, evaluations, and research in any work related to Indigenous Peoples.
- The research program will require prospective as well as retrospective studies. Retrospective studies can be undertaken with learners and facilitators who previously participated in LEAP courses, or managers and administrators of clinics, services, and hospitals or organizations who previously used LEAP courseware to train staff. Prospective studies can include realist approaches or, in select situations, experimental approaches, including controlled studies.

---

<sup>16</sup> First Nations Information Governance Centre. *The First Nations Principles of OCAP®*. <https://fnigc.ca/ocap-training/>

<sup>17</sup> Cargo M, Mercer SL. The value and challenges of participatory research: Strengthening its practice. *Annual Review of Public Health*. 2008; 29, 325–350. <https://doi.org/10.1146/annurev.publhealth.29.091307.083824>

<sup>18</sup> Rahman A. (2008). Some Trends in the Praxis of Participatory Action Research. In P. Reason and H. Bradbury (eds) *The SAGE Handbook of Action Research*. Sage, London, pp. 49–62.

## APPENDIX 1:

### LINKS TO PREVIOUS PALLIUM AND LEAP RELATED PROGRAM EVALUATIONS AND RESEARCH

- Pallium Canada operations 2001 to 2007:  
<https://www.emerald.com/insight/content/doi/10.1108/17511870810910065/full/html>
- “View from the Canopy”: An external evaluation of Pallium Canada’s work during phase 2 (2003 to 2007): <https://www.pallium.ca/wp-content/uploads/2019/07/View-from-the-Canopy-The-Pallium-Project-External-Evaluation-Report-2006.pdf>
- The impact of a hybrid education program for rural family medicine residents, that included LEAP courseware. <https://pubmed.ncbi.nlm.nih.gov/18772211/>
- Pallium Canada: A description of its model and factors that have facilitated and impeded its spread on a national level.  
<https://spcare.bmj.com/content/bmjspcare/early/2021/07/26/bmjspcare-2021-003036.full.pdf>
- Pallium Canada’s curriculum development framework:  
<https://www.liebertpub.com/doi/epdf/10.1089/jpm.2019.0292>
- The instructional design of LEAP courses:  
<https://www.liebertpub.com/doi/epdf/10.1089/pmr.2021.0023>
- The INTEGRATE project and its impact on professionals and services in Cancer Centres (LEAP Oncology training is part of the intervention):  
<https://onlinelibrary.wiley.com/doi/abs/10.1002/pon.5076>
- The INTEGRATE project and its impact on professionals, clinics and patients in primary care clinics (LEAP Core training is part of the intervention):  
<https://www.cfp.ca/content/67/4/270>
- The INTEGRATE project and its impact on the health care system (LEAP Core training is part of the intervention); an independent study undertaken by health services researchers:  
<https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0226597&type=printable>
- The impact of paramedics providing palliative care (LEAP Paramedics training is a component of the intervention):
- Paramedics providing palliative care (LEAP Paramedic training part of intervention); paper by independent researchers.  
<https://www.tandfonline.com/doi/full/10.1080/09699260.2021.1912690>

**Diagram 1: Pallium Canada LEAP and ECHO® Programs Evaluation Plan**

<b>Overall Approach</b>	
•	Use Pragmatist Approach given complexity of interventions and context <ul style="list-style-type: none"> <li>○ Incorporate elements from several key models and approaches (given different LEAP and ECHO® products at different stages and in different contexts and settings)</li> </ul>
•	Needs an overall program of evaluation with several evaluation and research sub-studies <ul style="list-style-type: none"> <li>○ Different methods (quantitative, qualitative, and mixed) and different approaches (prospective, retrospective)</li> </ul>
•	Evaluate impact (outcomes) as well as implementation
•	Requires dedicated resources: Internal (Pallium budget) and external (grants and partners) funds
•	Evaluation and research activities to be undertaken by: <ul style="list-style-type: none"> <li>○ Pallium itself (Internal)</li> <li>○ Pallium in collaboration with partners (Partnerships)</li> <li>○ External evaluators and researchers, and/or Pallium outsourcing to others (External)</li> </ul>



<b>EVALUATION PRIORITIES RELATED TO IMPACT</b>		
Level	Domain	Construct
Level 1	Reach and learner experience	Reach (number of learners and organizations)
		Relevancy of course to learners, learning experience and engagement, interprofessional learning experience, facilitator experiences.
Level 2	Impact on learning	Knowledge, attitudes, confidence/comfort, and skills
		Commitment-to-change (post course)
Level 3	Behaviour and drivers	Commitment-to-change reflections and changes in practice months post-course (self-described or observed)
		Impact on interprofessional teamwork
		Palliative care-related quality improvement activity in workplace
Level 4	Impact on Quadruple Aim	Patient and family experience
		Health provider experience
		Facilitator or user experience
		Value to managers and administrators
		Quality of care
		Costs and return on investment (ROI)
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #D9E1F2; border: 1px solid black; margin-right: 5px;"></div> <p style="font-size: small;">In all LEAP and/or ECHO® activities</p> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #F2F2F2; border: 1px solid black; margin-right: 5px;"></div> <p style="font-size: small;">Where feasible</p> </div> </div>		

Mainly derived from New World Kirkpatrick Model (NWK) and modifications that incorporate Quadruple Aim, "Reach" from Moore's 7-Levels of CME education and modifications by Barr for interprofessional training



<b>EVALUATION PRIORITIES RELATED TO IMPLEMENTATION</b> (for new products and where feasible)
What factors enhance uptake of the course or program?
What factors impede uptake of the course or program?
What strategies reinforce, encourage, or support implementation of what is learned?
What works for whom, in what circumstances, and why?*
To what extent does LEAP/ECHO® contribute if multi-pronged intervention?
Adaptability (and affordability) of the program to different contexts and needs?
Mainly derived from Consolidated Framework for Implementation Research (CFIR) with elements from Realist Evaluation Model, Contribution Analysis Model, and NWKM's drivers * includes interprofessional collaboration