

BMJ Open Can we streamline the concepts of knowledge translation, dissemination and implementation for lay stakeholders? A perspective

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ABSTRACT

Objective To initiate a critical dialogue within the evidence-based practice (EBP) communities regarding the necessity of clear and accessible concepts that bridge the gap between research and practical use for non-expert stakeholders.

Key arguments There has been consistent evidence of failure to translate high-quality biomedical and health research findings into clinical practice and policy implementation. Research findings are not making their way into practice in a timely fashion and are believed to take two decades before an intervention can make its way to patients' bedsides. Numerous concepts, models and theories have been developed to address this research application gap to guide experts in effectively applying research outcomes to practice. Unfortunately, there are no simplified descriptions of these concepts for use by lay stakeholders, such as patient representatives who may contribute meaningfully to clinical and other health research. To address this gap, as a first step towards developing and validating user-friendly concepts, we propose definitions for three commonly used concepts: knowledge translation, dissemination and implementation in a lay language. We also offer a simplified framework that connects these concepts. The suggested definitions and framework need refinement and confirmation from a broad range of non-expert stakeholders.

Conclusion Insufficient simplified definitions to explain research in practical terms have led to confusion among stakeholders with limited expertise in EBP. In this context, scientific knowledge that is easy to comprehend and use is vital for non-experts to engage meaningfully and speed up the application of clinical research outcomes in patient care.

LACK OF INCLUSION OF LAY STAKEHOLDERS IN CONCEPT DEVELOPMENT

In the USA, despite spending more than 3.5 trillion dollars per year, the country falls behind in terms of quality of healthcare, quality of life, equity, and low life expectancy compared with other high-income countries.^{1,2} The COVID-19 pandemic is a testament to this vulnerability.³ This may mean that Americans may not receive the benefits of

evidence-based research in a timely manner. Often research findings are not implemented into practice due to a lack of effort to move scientific discovery to patients' bedsides.^{4,5} It has been predicted that only 14% of the new evidence-based clinical research may take up to 17 years to apply to clinical practice, for example, acute, preventive and long-term care.⁶⁻⁹ Similar impacts are also anticipated in Canada. By 'evidence', we refer to 'the constructs of best research evidence, clinical expertise, patient's morals, values, and beliefs and information from the practice context' that are consistent and reflective of the theme of this perspective.¹⁰ For this article, we also adopted the definition of evidence-based practice (EBP) as 'a process used to review, analyze, and translate the latest scientific evidence. The goal is to quickly incorporate the best available research, along with clinical experience and patient preference, into clinical practice, so nurses (and other healthcare professionals) can make informed patient-care decisions'.¹¹

The increasing emphasis on implementing research findings into practical use, commonly referred to as EBP, aims to tackle the issue of underused research and resource inefficiencies in the USA, Canada and other regions worldwide. This need has led to the rise of numerous concepts, for example, *knowledge translation* (KT), *implementation science* (IS), *dissemination and implementation* (D&I), *dissemination, implementation, knowledge exchange and transfer* and many more. Consequently, individuals and institutions described these terms based on the specific context of their practice.¹²⁻²³ As a result, there is a lot of misunderstanding and ambiguity about these concepts, specifically among lay stakeholders. For example, KT is often mistaken for D&I and vice versa. Unfortunately, the target audience of these concepts has traditionally been

experts, including researchers, evidence-based practitioners, policymakers, clinicians and the like.²⁴ This article is intended for non-expert stakeholders with limited familiarity with EBP, such as patient representatives, caregivers and members of the general public. The term ‘lay stakeholders’ typically refers to individuals or groups with an interest or concern in a particular issue who are not experts or professionals in the field. In contrast to ‘expert stakeholders’, who have specialised knowledge and experience, lay stakeholders may bring a different perspective to the issue based on their personal experiences, values and beliefs.^{25 26}

It is well known that lay stakeholders are often not actively involved in clinical practice guideline development and other EBP activities.^{27–31} As a result, their needs and preferences are usually not reflected in the guidelines, resulting in a lack of uptake, resource waste and delay of improved patient outcomes.^{28 32} Many organisations and advocacy groups believe patients and members of the public should be involved in research studies to provide a unique perspective. This ensures that the study addresses their needs and experiences and helps increase their engagement.^{31 33} Studies have also demonstrated when lay stakeholders such as patient representatives are empowered with easy-to-understand research knowledge; they can meaningfully participate in research activities and enrich the development and implementation of evidence-based interventions.^{33–37} To address this challenge, efforts like developing the ‘integrated KT’ research approach or patient training curriculums have been taken to ensure the meaningful participation of patient representatives and caregivers in evidence-based research activities.^{24 31 37 38} Notwithstanding the availability of these models, there remains a requirement for simplified concepts that elucidate the connection between research and application. These concepts can supplement the models and increase the involvement of non-expert stakeholders, ultimately leading to better patient health outcomes. From this standpoint, we present an alternative and easy-to-understand interpretation of three frequently used concepts: KT, dissemination and implementation. The goal is to describe the research-to-application process in a way that non-expert stakeholders can comprehend. Additionally, we suggest a simplified conceptual framework that illustrates the interconnections between these concepts.

UNPRECEDENTED EVOLUTION OF THE CONCEPTS

Terminologies like KT and D&I are commonly used to describe research knowledge into practice or EBP. For example, a team of researchers found 29 terms from 33 agencies in nine countries for the operational definition of KT.¹² To demonstrate the intensifying interests and overwhelming advancement in describing these concepts, we performed a search on Google on 25 July 2022, to find definitions and compared them with a previous study by Graham and colleagues in 2006.¹³

For KT, our search generated 583 000 000 hits compared with 11 800; for dissemination, 139 000 000 hits compared with 8 930 000; and for implementation, 1 370 000 000 hits compared with 59 800 000 in 2006.¹³ We have performed an additional search on Google for the definition of IS and retrieved 5 170 000 000 hits. These results show a significant increase in the use of these concepts over time for different contexts. Although our search yielded definitions for each concept, some shared similar perspectives. In contrast, others had varying ideas depending on the source type, and we were still unable to find more simplistic descriptions for lay stakeholders.

UNIVERSALLY USED DEFINITIONS FOR KT, IMPLEMENTATION AND DISSEMINATION

- ▶ *KT* was introduced by the Canadian Institutes of Health Research (CIHR) in 2000.¹⁷ According to CIHR, *KT* is ‘a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system’.³⁹ The primary purpose of CIHR was to provide a direction for researchers and policymakers in the Canadian healthcare system. The concept has crossed international boundaries and is being used interchangeably by others. For example, *KT* is used in the USA as dissemination, diffusion, implementation, research use, knowledge transfer and IS. In the UK and Europe, the concept is used as research utilization and IS. The definition of CIHR is well accepted in EBP communities due to integrating the major elements of research to the application process—synthesis, dissemination and application. The concept developers also provided the *knowledge to action framework* developed using 33 change theories for experts to understand the structured approach to moving research knowledge to clinical practice.¹³
- ▶ Dissemination is often used interchangeably with *KT*. It is defined as ‘the targeted distribution of information and intervention materials to specific public health or clinical practice audiences. The intent is to spread knowledge and associated evidence-based interventions’.¹⁴
- ▶ Implementation is often used together with dissemination, though the focus of implementation is how to apply an intervention to change practice. Implementation is ‘the use of strategies to adopt and integrate evidence-based health interventions and change practice patterns within specific settings’.¹⁵

PROPOSED SIMPLIFIED DEFINITIONS FOR LAY STAKEHOLDERS

By using the existing definitions, we offer a new and simplified description for each of the concepts in the following lay language:

- ▶ *Knowledge generation*: ‘The creation of evidence-based new knowledge or intervention based on a systematic

method to translating or synthesising existing scientific evidence'. The definition of KT by CIHR incorporates knowledge creation, dissemination and implementation. Our purpose is to separate them for lay stakeholders' easy understanding. Therefore, instead of offering a new definition for KT, we propose a definition for the first concept of KT as knowledge generation. Systematic reviews or meta-analyses are highly recommended when synthesising scientific studies such as clinical trials to provide a high level of evidence of the effectiveness of treatments. This summary or synthesis is then used to develop evidence-based interventions, such as patient education materials, clinical practice guidelines or decision aids. Depending on the type of intervention and intended audience, multiple stakeholders, such as patient representatives, caregivers, representatives from the public, clinicians, researchers and policy-makers should be engaged during the knowledge generation stage.

- ▶ **Dissemination:** 'The well-thought distribution of new knowledge or intervention to the relevant stakeholders who will benefit from the knowledge'. This definition means you may want to design a knowledge synthesis project with stakeholders' collaboration (ie, patient representatives, caregivers, clinicians, EBP experts, etc) to summarise the literature on a given topic and based on the stakeholders' needs (knowledge generation). Then, develop patient education materials with collaboration between patient representatives and clinicians. By adopting different dissemination strategies, these materials will then be distributed to the targeted audience. Examples of dissemination strategies may include sharing knowledge through social media platforms, presenting at diverse stakeholders' conferences, publishing in peer-reviewed journals, press releases, etc. Therefore, knowledge generation and dissemination are interconnected.
- ▶ **Implementation:** 'The application or adoption of new knowledge using different strategies based on the stakeholders' preferences in specific settings'. This means you first want to study the barriers to adoption

and then develop strategies with engaging stakeholders to apply the knowledge to a specific context. Examples of implementation strategies may include training stakeholders who will benefit from the new knowledge or intervention.

A comparison between the existing and proposed definitions is shown in [table 1](#).

The last stage should be to monitor the uptake of the new knowledge and to evaluate if the knowledge or intervention has improved patients' health outcomes. Then, when necessary, repeat the steps from knowledge generation to implementation.

PROPOSED CONCEPTUAL FRAMEWORK OF KNOWLEDGE GENERATION TO DISSEMINATE-IMPLEMENT

In addition to the established definitions for expert use, numerous frameworks and models exist to describe these concepts for research and practice.¹²⁻²³ However, as the number of definitions and models proliferates, there is also a lack of evidence of a unified framework for lay stakeholders' use. Our proposed definitions serve as the basis for the simplified framework presented in [figure 1](#), which showcases the relationship between the concepts we have outlined.

While each concept has unique defining features, they share common elements that link them to a central theme of involving diverse stakeholders in active engagement. We suggest that patient representatives, caregivers and members of the public should have a significant role in every stage. At the same time, continuous evaluation of the outcomes is also crucial for successfully applying evidence-based interventions and health research to be more responsive to the needs of diverse individuals.

IMPLICATIONS AND NEXT DIRECTIONS

The definitions and framework that have been suggested have not undergone complete development and validation by lay stakeholders. Instead, they were formulated based on the authors' previous involvement in EBP and collaboration with lay stakeholders.³⁷ Additional research

Table 1 Comparison between established and proposed definitions of the concepts

	Existing definition	Proposed simplified definition
Knowledge translation	'A dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system'. ³⁹	The creation of evidence-based new knowledge or intervention based on a systematic method to translating or synthesising existing scientific evidence (knowledge generation)
Dissemination	'The targeted distribution of information and intervention materials to specific public health or clinical practice audiences. The intent is to spread knowledge and associated evidence-based interventions'. ¹⁴	The well-thought distribution of new knowledge or intervention to the relevant stakeholders who will benefit from the knowledge
Implementation	'The use of strategies to adopt and integrate evidence-based health interventions and change practice patterns within specific settings'. ¹⁵	The application or adoption of new knowledge using different strategies based on the stakeholders' preferences in specific settings

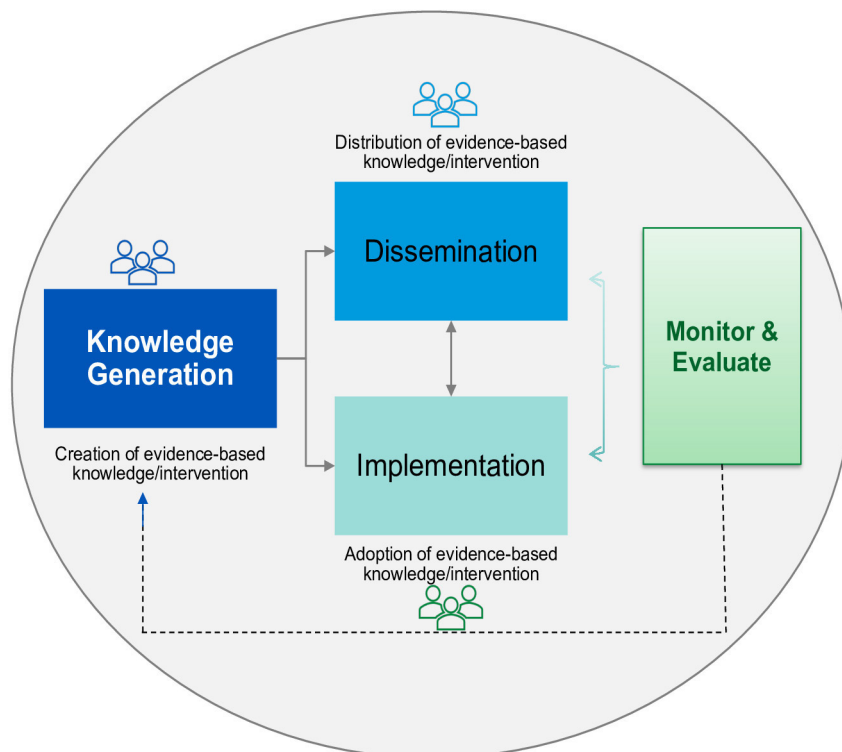


Figure 1 Integrated knowledge generation to disseminate–implement framework.

that includes input from various lay stakeholders and their feedback is necessary to establish the generalisability of the definitions and proposed framework.

Our perspective is intended to spark a positive academic dialogue among educators, clinicians, policymakers in health services, evidence-based practitioners, information professionals, researchers and lay stakeholders. In addition, we aim to promote the creation of scientific concepts that are accessible to non-experts in EBP, enabling research to be translated into patient care in a timely manner.

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Contributors LD led the conceptualisation, developed the definitions, designed the framework, and wrote the manuscript. KGM significantly refined the concepts and partially wrote the manuscript.

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