Knowledge translation has been given increasing attention by universities, researchers, policy makers, and grant funding bodies over the last two decades. Researchers are often asked to include a section in their grant applications about how the knowledge produced will be translated into outcomes.

Since then, many terms have emerged describing knowledge translation, utilization, exchange, dissemination, implementation science, and utilization. These terms are being used interchangeably in the literature. In the United Kingdom and Europe, the terms implementation science and research utilization are being used. In the United States, the terms dissemination, diffusion, knowledge, distribution transfer, and uptake are being used. In Canada, knowledge translation and exchanges are more commonly used.1

Knowledge translation is defined by the Canadian Institute of Health Research as the ‘exchange’, ‘synthesis’, and ethically sound ‘application’ of researcher findings with a complex system of relationships among researchers and knowledge users. It does not, however, cover how to implement knowledge. Implementation science definition addresses this gap of how to adopt a new intervention. This understanding arose from Everett Rogers who highlighted the fact that strong evidence alone is insufficient for behaviour change and that getting new ideas adopted in a healthcare service is often difficult despite being shown to be beneficial.2

Implementation research focuses on testing how interventions work in real settings and how to improve them. It also addresses any aspects of implementation that cover factors affecting implementation, processes of implementation, introduction of solutions into a health system, and promotion of sustainability.

Implementation science or ‘how to implement knowledge’ has risen because much of healthcare research is about practice or behavioural change as opposed to knowledge production. Implementation science has been defined by Eccles et al. (2006) as ‘the scientific study of methods to promote the systematic uptake of research findings and other evidence based practices into routine practice, and hence, to improve the quality and effectiveness of health services and care’. In other words, implementation science has been developed as a result of realizing that knowledge production and activities need to be systematically implemented into healthcare systems to benefit patients.3

Having a good solid knowledge base or a useful intervention is insufficient for practice and behavioural change – this notion triggered the establishment of the field of implementation science. Everett Rogers has proposed a theory for successful change and has identified five qualities for a successful innovation. These are: relative advantage to the users, compatibility with existing values and practices, simplicity and ease of use, ‘trialability’, and the ease of observable results. Understanding this theory and how it is related to the successful implementation of useful interventions is the key to understanding implementation science. Furthermore, appreciating the context of the place or healthcare services where the intervention is to be realized is essential for the successful adoption of any new interventions.4

There are many theories available for implementation. These have been categorized into five major frameworks in terms of their ultimate aims. Each of these frameworks has different characteristics and outcomes. These five main frameworks are: process frameworks such as the knowledge to action cycle; the determinants frameworks which specify the barriers and facilitators that influence the outcomes of the intervention such as the Promoting Action on Research Implementation in Health Services (PARIHS) framework; the classic theories that are based on Rogers, theory of diffusion which originate from other disciplines such as psychology and sociology; implementation theories such as organizational readiness theories by Weiner et al. and evaluation frameworks that aim to specify aspects of the implementation to be evaluated such as the ‘precede proceed’ model by Green and Kreuter (1999).5

In choosing which framework is best suited to the intervention at hand, it is best to identify what are the ultimate aims of the intervention and it may be acceptable to use more than one framework to progress implementation evidence into practice. There are many implementation frameworks that are published in the literature with overlapping theories. Some of them lack

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in terminology consistencies. Damschroder et al. 2009 has devised the Consolidated Framework for Implementation Research (CFIR) model. It offers an overarching classification to promote implementation theory development and verification about what works where and why across multiple contexts. They summarized five major domains including: intervention characteristics, outer settings, inner settings, characteristics of the individuals, and the process of implementation. In each of these domains, various constructs were identified to explain each of them. Examples of these constructs include the evidence strength and quality, patients’ needs and resources, the culture of the health service, and leadership engagement.

Ultimately, the requirements for successful implementation include: competency, leadership, organisational input, and performance assessment.

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Conflicts of interest

There are no conflicts of interest.

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