Chapter 1.10
Technology Enabled Knowledge Translation:
Using Information and Communications Technologies to Accelerate Evidence Based Health Practices

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ABSTRACT

Because of the rapid growth of health evidence and knowledge generated through research, and growing complexity of the health system, clinical care gaps increasingly widen where best practices based on latest evidence are not routinely integrated into everyday health service delivery. Therefore, there is a strong need to inculcate knowledge translation strategies into our health system so as to promote seamless incorporation of new knowledge into routine service delivery and education to promote positive change in individuals and the health system towards eliminating the clinical care gaps. E-health, the use of information and communication technologies (ICT) in health which encompasses telehealth, health informatics, and e-learning, can play a prominently supportive role. This chapter examines the opportunities and challenges of technology enabled knowledge translation (TEKT) using ICT to accelerate knowledge translation in today's health system with two

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case studies for illustration. Future TEKT research and evaluation directions are also articulated.

KNOWLEDGE TRANSLATION: INTRODUCTION

The tenet of modern healthcare practice is evidence-based, established from knowledge generated through medical research and proven practice patterns. Evidence-based practice takes time to evolve. It is estimated that incorporating advances advocated by current research into routine, everyday medical practice takes one to two decades or more (Haynes, 1998; Sussman, Valente, Rohrbach et al., 2006). The causes of this apparent lag time of translating evidence into routine health practice are multifactorial, including but not restricted to: explosion of research and generation of resultant evidence, ineffective continuing education for health professionals to propagate the knowledge, lack of adoption of the knowledge by health professionals after exposure and education, the complexity of health management strategies that commonly demand more than simple changes in treatment approaches, reduction in healthcare resources, a lack of mutual understanding and dialogue between researchers that generated the research and health practitioners and health policy makers who need to translate the research into routine practices, and the practitioners' and policy makers' own beliefs and experiences that influence how knowledge will ultimately be utilized in clinical situations and quality assurance initiatives. As a result, a clinical care gap occurs when the best evidence is not routinely applied in clinical practice (Davis, 2006; Grol & Grimshaw, 2003).

Definition

Canadian Institutes of Health Research (CIHR), one of the three members of the Canadian Research Tri-council and the guiding force in Canadian Health Research, defines knowledge translation as "the exchange, synthesis, and ethically-sound application of knowledge, within a complex set of interactions among researchers and users, to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products, and a strengthened healthcare system" (CIHR, 2007). The Social Sciences and Humanities Research Council of Canada (SSHRC, 2006), another member of the Tri-council with focus on humanities research, defines knowledge mobilization as "moving knowledge into active service for the broadest possible common good." SSHRC further contextually defines knowledge to be "…understood to mean any or all of (1) findings from specific social sciences and humanities research, (2) the accumulated knowledge and experience of social sciences and humanities researchers, and (3) the accumulated knowledge and experience of stakeholders concerned with social, cultural, economic and related issues" (SSHRC, 2006). Both definitions speak to the central principle of the need for not only discovering new knowledge through research, but also utilizing the resultant knowledge effectively and routinely in order to fully realize the benefits of the body of research. For the rest of this chapter, knowledge translation (KT) will be used to denote this core concept of effective knowledge application.

Strategic Considerations

Strategically, effective and sustainable KT requires synchronized efforts at several levels towards a common vision of evidence based practice (Berwick, 2003; Katzenbach & Smith, 2005; Senge, 1994): the **personal** level where individuals influence their own behaviors towards change, the **team** level where groups of individuals work together collaboratively and cooperatively to drive towards group-based change, and the **system** level where health organizations and policy making bodies evolve and innovate on policies and establish