Knowledge Translation and Its Application to Refractory Symptom and Palliative

Sedation Therapy Guidelines

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Abstract

Knowledge translation (KT) is being used to apply evidence-based knowledge and research to clinical practice in health care. The goal of KT approaches is to inform the provision of high quality and competent care to patients and families. This project describes and critiques a KT framework (knowledge-to-action cycle) for implementing Refractory Symptom and Palliative Sedation Therapy Guidelines (RS and PST) developed by clinicians at Fraser Health Authority. The writer focuses on the education interventions in the 'knowledge-to-action' framework. In addition, the action cycle is complemented with the 'awareness-to-adherence model' in order to create educational strategies for implementing the RS and PST practice guidelines. Ideally, successful guideline implementation will promote competencies of clinicians and the proper application of research into clinical practice.

Knowledge Translation and Its Application to Refractory Symptom and Palliative

Sedation Therapy Guideline

Keeping current is an important part of health care professionals' legal and professional responsibilities. Given the rapid changes in health care, continuing education to ensure evidence-based practice is essential for maintaining quality care. However, health care professionals often struggle to integrate the latest evidence into their practice due to limited resources, time shortages and lack of educational strategies. Clinical educators also face challenges due to the complexity of the learning environments and the diverse knowledge needs of professionals. Furthermore, despite the growth in health care research, findings and evidence are often not readily available for clinicians to use (Davis, 2006). Therefore, understanding the concept of knowledge translation (KT) is important to assist health professionals to access knowledge and incorporate newly generated research findings into their practice.

Although health care professionals may be enthusiastic to access new knowledge, learning is only effective if it is understood correctly and applied appropriately. Knowledge in health care settings is often presented in the form of clinical practice guidelines. An assumption underpinning this project is that when using a knowledge translation framework to implement clinical practice guidelines, the guidelines can be properly understood and applied in health care practices. Based in research, if a guideline is implemented successfully, it can "improve the process and outcomes of health care, decrease practice variation, and optimize resource utilization" (Luther, Nelson & Powell-Cope, 2004, p. 206).

The goal of this project is to introduce the concept of knowledge translation and a knowledge-to-action framework in order to develop an educational plan for implementing the Refractory Symptom and Palliative Sedation Guideline (RS and PST) for hospice nurses in Fraser Health Authority (FHA). I explore the action cycle phases in the knowledge translation framework and use examples to describe how nurses can apply each phase to guideline implementation. The ultimate intention is developing a process by which nurses can apply this knowledge to improve quality of care and quality of life at the end of life.

I am interested in the area of palliative sedation because of the complexity of the decision making process involved. Implementing a clinical guideline that includes ethical dilemmas can be more challenging than a straightforward clinical decision making tool. In part, this is due to the lack of consensus among clinicians regarding symptom assessment in determining when palliative sedation is appropriate (Boston & Bruce, 2011). Therefore, I have chosen the RS and PST guidelines developed by the Fraser Health Authority in 2011 and will develop an implementation plan.

The project is organized as follows. I begin by reviewing the importance of clinical practice guidelines overall and the core notions introduced in the RS and PST guideline. Next, I introduce the concepts of knowledge translation, the knowledge-to-action framework (Straus,Totroe & Graham, 2009a), and the awareness-to-adherence model (Pathman et al., 1996). Finally, using the intervention phase in the knowledge-to-action framework and the awareness-to-adherence model, I present recommendations for an education plan to implement the RS and PST guideline for the FHA hospice nurses.

Literature Review

Literature reviews help researchers to become familiar with and understand the multiple perspectives of what is known about a topic and provides a foundation and context for their research studies (Pilot & Beck, 2008). Reviewing existing literature not only broadens one's knowledge base but also provides an understanding of the current knowledge about a topic and what gaps in knowledge exist. For this project, the literature review is mainly focused on two areas: (a) Clinical practice guidelines- defining the term clinical practice guideline, specific knowledge regarding palliative sedation (PS), and how PS is practiced in other palliative care settings; and (b) Knowledge translation- what knowledge translation is, the importance of KT and how it has been used in guideline implementation.

To understand the development process of the RS and PST guideline, I examined the working documents from Fraser Health Authority. In searching for peer-reviewed literature I turned to EBSCO and Google Scholar using key words including knowledge translation, adult learning, guideline implementation, guideline education model, and palliative sedation. Valuable knowledge addressing KT was obtained through the Canadian Institutes of Health Research (CIHR) website. I also drew on the work by Straus, Tetroe and Graham (2009b), "Knowledge Translation in Health Care" to provide a clearer understanding of knowledge translation and its application in guideline implementation.

Refractory and Palliative Sedation Guideline (RS &PST Guideline)

Definition of Clinical Practice Guideline

Making decisions in clinical settings can be complicated for health care professionals, patients, and families as the process involves weighing the benefits and

potential risks of a particular intervention (Duff et al., 1996). Clinical practice guidelines are useful tools to guide clinical decision-making. A clinical practice guideline is a "systematically developed statement(s) to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances" (Field & Lohr,1990, p.38). A guideline should focus on a specific clinical situation and assist and support the clinical decision-making process. The purpose of such guidelines is to provide the best available scientific evidence to guide and support the most appropriate care (OpenClinical, 2010). Strengths of clinical guidelines include reducing improper and inconsistent practices, reducing costs, providing a reasonable basis for referral and resources, and highlighting existing literature on a specific topic (OpenClinical, 2010). Most importantly, a clinical practice guideline encourages continuing education and learning for health professionals by raising interesting clinical practice questions and providing already accepted evidence.

Clinicians currently use clinical practice guidelines on a routine basis as a tool to disseminate research based knowledge and reduce gaps between scientific evidence and clinical practice (Wallin, 2005). Rather than providing care through unsupported practice, clinicians often use guidelines to facilitate the evidence application to routine practice (Wallin, 2005). Clinical practice guidelines are said to be the collective wisdom of a group of multidisciplinary clinicians (Turner, 2009). However, developing a guideline is a challenging task because it requires the ability to collect and analyze scientific evidence and transforms complex information into a practical product (Field & Lohr 1990). There are various tools for developing and evaluating clinical practice guidelines (Broughton & Rathbone, 2001; Field & Lohr 1990; Guyatt et. al., 2010; Lyerla, 2008; Sign, 2010; Turner, 2009; van der Linde et. al., 2005). These tools share a common purpose of

promoting the excellence of guidelines that use quality evidence (Sign, 2010), thus ensuring effective and efficient health care (Broughton & Rathbone, 2001). In this project I will not evaluate guidelines but will explore how to effectively implement guidelines using a KT framework.

Palliative Sedation Background

Clinicians usually make every effort to relieve symptoms and to ensure a patient's quality of end-of -life care. Symptoms including pain, dyspnea, delirium, nausea and vomiting, hopelessness, anxiety, and loss of meaning (Beel, McClement & Harlos, 2002) are common at the end of life and usually relieved through expert care and medications. Nevertheless, there are times when distressing symptoms persist despite all efforts made. In such situations, clinicians are concerned when un-resolvable pain and suffering results in a patient's sense of overall helplessness and poor quality of life (Lynch, 2003). When this occurs and all avenues to relieve a patient's suffering are unsuccessful, then palliative sedation may be considered. Palliative sedation is defined by Graeff and Dean (2007) as "the use of specific sedative medications to relieve intolerable suffering from refractory symptoms by a reduction in patient consciousness, using appropriate drugs carefully titrated to the cessation of symptoms" (P.68). The purpose of sedation in this situation is to allow patients to die peacefully by ending intolerable suffering (Bruce & Boston, 2011). Given the subjective nature of feelings and suffering, it is the patient who determines whether symptoms are intolerable (Graeff & Dean, 2007). Often clinicians and families may experience moral, ethical, and legal challenges when making decisions in relation to sedation (Bruce, Hendrix & Gentry, 2006). Studies have found some clinicians have used palliative sedation for personal reasons. For example, one physician

may use sedation earlier than another because of differing philosophies on what constitutes a "good death" (Dean, 2007). Therefore, it is recommended that palliative sedation should be considered only when other measures have failed (Beel, McClement & Harlos, 2002).

Palliative sedation has become a controversial subject. Several authors point out that there is no consensus amongst clinicians on the meaning and intent of palliative sedation, and affirm that there is a need for a commonly agreed upon and accepted definition (Beel, et al., 2002; Graeff & Dean, 2007; Lynch, 2003; Rousseau, 2003). Currently there is a variety of different terms used including "palliative sedation," "sedation," "controlled sedation," "terminal sedation," "sedation for intractable distress of a dying patient," "total pharmacological sedation," and "sedation induced sleep" (Beel et al., 2002; Graeff & Dean, 2007; Fraser Health End of Life Program, 2011). Berger (2010) also refers to palliative sedation as "continuous palliative sedation to unconscious" or PSU (p.33). There is no internationally accepted guidance and concerns that clinicians are not using palliative sedation appropriately or properly. Further, there are concerns that it may be interpreted as euthanasia (Graeff & Dean, 2007).

In 2002 a proposal to develop evidence-based recommendations for palliative sedation was raised during an Internet discussion on palliative medicine in Europe (Graeff & Dean, 2007). The aim was to develop an internationally acceptable definition and recommendations on palliative sedation by a group of palliative clinicians from all over the world. Then in 2007, an international panel of 29 palliative care experts reviewed the literature systematically in an attempt to address the perceived need for internationally accepted definitions and standards for sedation at end of life (Graeff &

Dean, 2007). In 1997, United States Supreme Court rulings supported the concept of sedation when used to relieve intractable suffering at the end of life (Bruce, Hendrix & Gentry, 2007). In Canada, palliative sedation therapy guidelines were developed in both Alberta (Braun, Hagen & Clark, 2004) and Newfoundland (Graeff & Dean, 2007), but there were none in British Columbia in 2008. Therefore, because the End of Life program at Fraser Health Authority was growing quickly and its service population increasing, the FHA leaders sensed the need to develop a standard for palliative sedation therapy and took the lead in developing clinical guidelines for general practitioners and nurses.

RS and PST Guideline Development

Fraser Health Authority End of Life Care Program has developed a series of symptom management guidelines over the past 15 years. The purposes of these guidelines are to facilitate comfort care and promote quality end of life throughout a patient's dying process. Dr. Lynn Kobierski developed the first edition of symptom management guidelines in 1996 (Fraser Health Authority, 2009), which did not include the RS and PST guideline due to lack of recognition of the need at that time. Now there are more than 20 different palliative symptom guidelines available in FHA that provide recommendations based on expert clinician knowledge and scientific evidence (Fraser Health Authority, 2009). These guidelines describe some common symptoms for patients and families who live with advanced life threatening illness. Symptom management topics include pain management, dyspnea, nausea, exsanguinations, and other significant areas requiring appropriate decision-making in an end of life situation. The working group for the RS and PST guideline started in 2007 and the guideline will be released in 2011.

Developing a clinical practice guideline requires many hours of effort and energy from professional clinicians. The RS and PST guideline was developed by a task group in the FHA End of Life Program comprised of a palliative physician, a pharmacist, a social worker, and an advanced practice nurse (APN). There were also several physicians and APNs in the shared work group as well as providing consultation during guideline development. Throughout the development of this guideline, many reviews and consultations were provided by internal and external health care experts, and different professional groups including the FHA Practice Advisory Council and Quality Performance Committee.

The intention of the RS and PST guideline is to "offer guidance and support to Healthcare Professionals who encounter patients with refractory symptoms at end of life and consider Palliative Sedation Therapy (PST) as a means of alleviating suffering" (Roberts, 2010, p.1). The guideline is written for all health care professionals providing primary care in various settings within FHA. The guideline aims to ensure the appropriateness of palliative sedation application. For example, it emphasizes the importance of differentiating a genuine refractory symptom from difficult to manage symptom and appropriate decision making processes.

The first part of the RS and PST guideline provides definitions of terms including palliative care, refractory symptoms, difficult symptoms, suffering, existential suffering, moral distress, natural sedation, consequential sedation, respite sedation, family, assisted suicide, physician assisted suicide, and euthanasia. This guideline defines palliative sedation therapy as "intentional lowering of a patient's level of consciousness in the last days of life" (Fraser Health End of Life Program, 2011). This therapy involves lowering

the patient's consciousness by providing proportional and monitored sedative medication to relieve intolerable suffering from refractory symptoms (Fraser Health End of Life Program, 2011). This guideline stresses that the purpose of the sedation is to provide proportional use of medication sufficient enough to relieve symptoms until death occurs due to natural cause of the disease (within hours or days), which is different from physician assisted suicide when the intention is to facilitate death with no proportional medication use (Refractory and Palliative Sedation Therapy, 2011).

The RS and PST guideline also provides recommendations and step-by-step decision-making process for standard care. Table 1 summarizes each section of the guideline:

Table 1

Decision Making Process Summary of RS and PST Guideline

1. Differentiating between difficult to manage symptoms and true refractory symptoms	• Patient must be the one suffering from refractory symptoms. • Any further interventions likely to relieve symptoms in a tolerable time frame? • Consultation with hospice palliative care team is strongly recommended.
2. Outline criteria for PST	• Patient is terminally ill and death is anticipated within hours to days • Patient has refractory symptoms. • The intention is to relieve refractory symptoms. • Degree of sedation is proportionate to the severity of

	symptoms
	• Patient or the substitute decision maker is fully informed, involved in decision-making and provides consent for PST
	• Consultation should always be done for existential suffering
3. Guidelines for Decision-Making	• Actively involve patient and all team members in the process
	• Decision can be "for", "against", or "wait and see"
	• Team meetings with patients/families involve reviewing the intention, how PST is provided, ongoing care plan, and opportunity for closure.
4. Documentation	• Sedation scale for palliative sedation.
	• Summaries of discussions.
	• Ongoing plan of care for patient and family.
5. Support for patient, family and health care providers	• Planning for the initiation of PST considering the needs of the patient and family
	• Social, emotional, and spiritual supports for patient and families throughout the decision making process
	• Ongoing support for family and team members
	• Continue care for patient with respect and monitoring signs of refractory symptoms.
	• Care after death.
6. Pharmacological interventions	• Anxiolytic Sedatives: Midazolam and Lorazapam
	• Neuroleptic: Methotrimeprazine

| | • Sedative anti-epileptic: Phenobarbital |
| | • General anesthetic: Propofol (in hospital). |

(Roberts, 2010; Fraser Health End of Life Care, 2011).

So far in this paper I have introduced the functions of the clinical practice guideline and the details of the RS and PST guideline. The question now is implementation: how can institutions ensure health care clinicians understand the purpose of the RS and PST guideline and apply the guideline to their daily practice appropriately? As mentioned earlier, I will use the notion of *knowledge translation* and a *knowledge-to-action framework* to bridge the potential gap between developing RS and PST guidelines and clinicians using the guidelines in practice. Therefore I will now introduce approaches to broadly understanding what knowledge translation is and how it can be applied to guideline implementation.

Knowledge Translation

Definition of Knowledge Translation

Knowledge translation is one of many terms used to illustrate the process of putting knowledge into action (Straus et al., 2009a). Other terms used to describe similar ideas in different geographical areas in the world are "implementation of science," "research utilization," " dissemination and diffusion," "knowledge transfer," or " research utilization" (Straus et al., 2009a). In Canada, translation of research is a mandate of the Canadian Institutes of Health Research (CIHR), a federal agency for health research funding (Straus et al., 2009b). CIHR has defined knowledge translation as follows:

Knowledge translation is the exchange, synthesis and ethically-sound application of knowledge - within a complex system 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 health care system.

(Canadian Institutes of Health Research, 2004, para 6)

This definition has been adopted by others including the World Health Organization

(Straus et al., 2009). Knowledge translation is a broad concept that involves the process

between new knowledge creation and its application (CIHR, 2004). Knowledge

translation moves beyond simple information dissemination, which alone is not sufficient

to ensure the success of guideline implementation (Straus et al., 2009a). For example,

simply giving out an education pamphlet does not guarantee the receiver will fully learn

and absorb the knowledge in the pamphlet. In comparison, if the pamphlet is carefully

designed for the specific receiver group, with a clinician teaching as well as receiving

feedback from the receiver, the success rate of implementing the content of this pamphlet

is much higher. Successful knowledge translation strategies can promote linkage and

exchange, communication and education, policy change, and program and practice

improvement (CIHR, 2006).

The Importance of Knowledge Translation

New research findings continually provide health care professionals with updated

knowledge in practice settings. These findings are presented in textbooks, academic and

professional journals, or are developed into clinical practice guidelines. However,

clinicians notice gaps between scientific evidence and decision-making at all levels of

health care (Cochrane, et al., 2007; Davis, 2006; McWilliam et al., 2009; Straus, Tetroe,

& Graham, 2009). Decision makers including health care professionals, patients, informal

caregivers, managers, and policy-makers often fail to use evidence from research during

the decision-making process (Straus, et al., 2009a). Even when evidence is available for clinicians, it is either infrequently used or often incorrectly applied in practice (Davis, 2006). This results in inefficiencies in practice, reduced quality of life for patients, and increased health care costs (Davis, 2006; Straus, et al., 2009). Disseminating evidence to practice requires more effective methods because evidently methods used in the past years did not result in optimal levels of care (Grimshaw & Eccles, 2004). Therefore, knowledge translation, a way to put knowledge into action in health care settings, becomes an important tool to bridge the gaps between the best available evidence and health care practice.

Knowledge-to-Action Framework

The knowledge-to-action framework is a conceptual framework developed by Graham and colleagues that is built on planned-action theories[1] (Graham et al., 2009). This framework, termed the knowledge-to-action cycle, has been accepted and adopted by CIHR as a model of promoting research application (figure 1) (Graham et al., 2009). Knowledge-to-action is an interactive, dynamic, and complex framework that creates a connection between knowledge creation and knowledge application. The action cycle in this framework, which encompasses the actions needed for implementation, is designed using planned action theories, which actively promote practice changes. It is theorized that promoting practice changes leads to the successful implementation of a clinical guideline, which is the goal of this project. Therefore, I have chosen this particular framework to guide my development of an implementation plan for the RS and PST

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[1] Planned action theories examine processes that specifically cause or guide changes in practice. Further information about planned action theories in relation to knowledge-to-action framework (Graham et al., 2009) is described on page 19.

guideline. There are two important parts to this framework: First, knowledge creation at the centre of the process; and second, an action cycle for enacting knowledge in practice. In the middle of the knowledge-to-action framework is the knowledge creation tunnel. After the knowledge is created, the knowledge-to-action framework provides a step-by-step process to promote successful implementation guidelines. [2]

There are three stages in the knowledge creation tunnel: knowledge inquiry, knowledge synthesis, and knowledge products/tools. Knowledge inquiry is the first-generation knowledge resulting from primary research studies such as randomized trials (Straus et al., 2009b) or qualitative inquiry. Knowledge synthesis includes the process of interpreting the research results (first-generation knowledge) thus producing second-generation knowledge (Straus et al., 2009b). Third-generation knowledge such as clinical practice guidelines is at the end of the knowledge creation tunnel as a product or tool generated from knowledge synthesis. Ideally knowledge is refined and becomes more useful to the end users as it moves through the tunnel (Straus et al., 2009b). In the next paragraph, I will further explain how knowledge synthesis produces useful tools for health care clinicians.

Figure 1

Knowledge-to-Action Framework

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[2] Many clinicians have used this framework for guideline implementations and the strength and limitations of the framework will be discussed further after introduction of the framework.
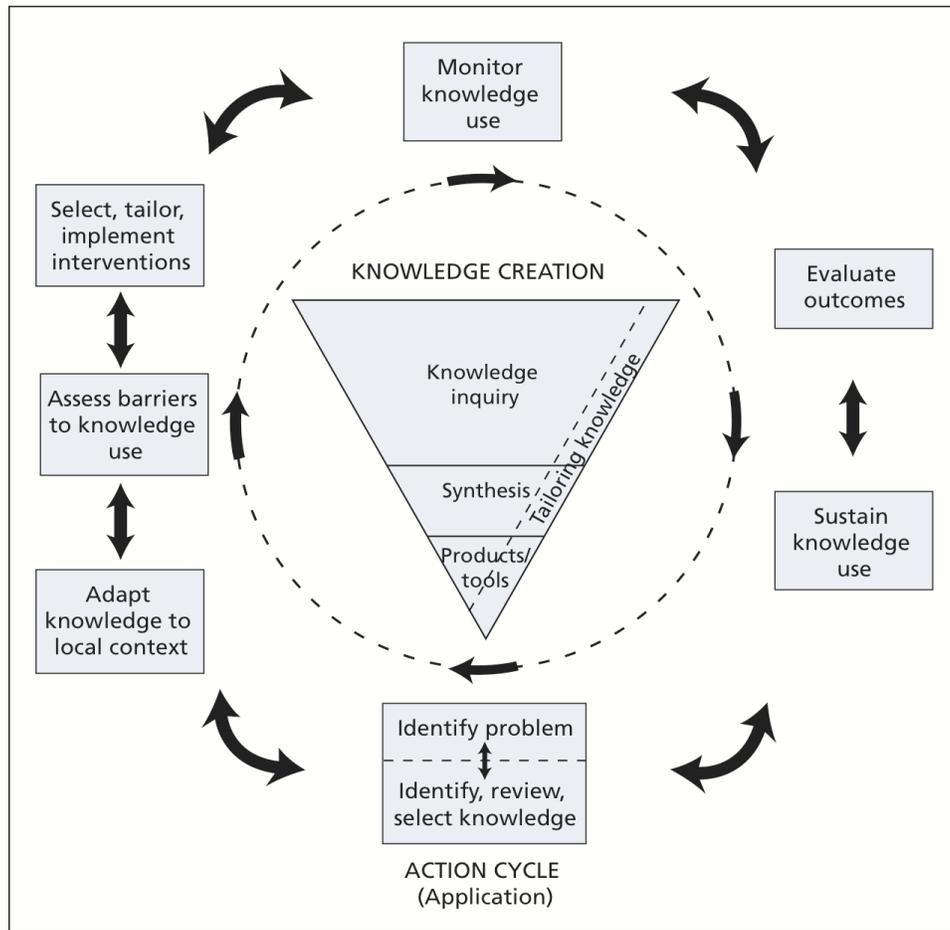
Figure 1: The knowledge-to-action framework.

(Straus, Tetroe & Graham, 2009a, p. 167)

Knowledge synthesis is central to knowledge translation because it is the bridge between research and decision-making (Tetzlaff, Tricco & Moher, 2009). The purpose of knowledge synthesis is to create connections between research findings and decision-making through interpreting the results of individual studies within the context of global evidence (Tetzlaff et al., 2009). The vital part of knowledge synthesis is to systematically review research findings on a topic to identify useful evidence (Straus, et al., 2009a). Quality of the evidence should be considered as well. Because research studies at times can be misleading or biased, this part of the knowledge creation tunnel becomes

increasingly important. Interpretation of the research results should be carefully thought out within the context of globally available evidence instead of relying on one individual research source (Tetzlaff et al., 2009). Systematic reviews and/or meta-analyses are used for knowledge synthesis. Systematic review includes developing the review question and protocol, locating studies, selecting studies, assessing bias risk in these studies, extracting data, and analyzing results from the studies (Tetzlaff et al., 2009). Once the results are analyzed, the researcher then presents, discusses and disseminates these results to produce user-friendly publications such as journal articles or media reports (Straus, et al., 2009b). These articles and reports then become the base for knowledge translation tools such as clinical practice guidelines.

The Action Cycle

The action cycle is a knowledge implementing process that maximizes clinicians' use of knowledge. This cycle is crucial when implementing a clinical practice guideline because it provides a step-to-step process to ensure clinicians are supported clinically, environmentally, and systematically when adapting knowledge to clinical practice. This cycle was developed after reviewing 31 planned action theories. A planned action theory aims to purposefully make changes in a group (Graham et al., 2006). Planned-action theories or models can be used with individuals; however, the goal is still to alter the ways of doing things in the social system (Graham et al., 2006). Planned-action theories and models help the change agent to control variables that may increase or decrease the possibility of changes to occur, thus promoting the desired change (Graham et al., 2006). Commonalities of diverse planned-action theories include: to identify a problem that

needs to be addressed, to identify, review, and select knowledge that is relevant to the problem, and to adapt knowledge to local context.

There are seven phases in the action cycle in the knowledge translation framework that are built on the commonalities of the planned-action theories. These phases can happen either sequentially or simultaneously. Additionally, knowledge creation can influence any phases in the action cycle (Straus, et al., 2009a). For example, when a new clinical practice guideline is developed, a hospital ward may consider adapting the knowledge to its local context and modifying the guideline for its own use. The seven phases of the action cycle are identifying the problem; identifying, reviewing, and selecting knowledge; adapting knowledge to local context; assessing barriers for knowledge use; selecting, tailoring, and implementing interventions; monitoring knowledge use; evaluating outcome; and finally sustaining knowledge use (Straus, et al., 2009a). Each phase is important to ensure the success of guideline implementation because missing a phase may result in limitations to knowledge dissemination and application. The details of each phase will be introduced in the next section in order to better understand the effort and the process needed to take place for complete guideline implementation according to the action cycle.

Phase one: identify knowledge and practice gap.

Given the complexity of nursing practice, nurses often encounter practice issues in the work setting. When this happens, we realize there are learning needs and look for knowledge and resources to educate ourselves in order to resolve this concern. An identified clinical issue can arise when there is a gap between knowledge and the actual clinical practice. This "filling the gap" action starts the action cycle. For example,

clinicians have found that more patients have required using a continuous infusion pump for pain control but not many nurses are familiar with any guidelines available in this area. Therefore the need for education is now recognized. There are two ways to identify the gap in learning needs. First is the quality indicator, which involves measures that monitor, assess and improve quality of care that affects patient outcome (Kitson & Straus, 2009). For example, a chart audit tool is a quality indicator to determine and measure what the actual gap is and how much the gap has influenced patient care. Alternatively, clinicians can become aware of the knowledge (for example, a new research article published in a nursing journal) and start to identify whether there is a knowledge-practice gap within this particular practice setting according to this new knowledge (Graham et al., 2006).

Clinicians at FHA initiated the RS and PST guideline development because some clinicians viewed palliative sedation interventions to be controversial and there were not clear practice supports in place to ensure thoughtful care to patients and families at this difficult time in their lives (Roberts, 2010). Although our goal in end of life care is to provide comfort care and decrease suffering, sometimes this is not attainable when patients experience refractory pain or suffering. Therefore this guideline intends to address this practice gap by reflecting the available collective knowledge or evidence to support clinical practice when a refractory symptom is identified.

Phase two: adapt knowledge to local context.

Once the gap and the necessary knowledge are identified, adapting the knowledge to the local context is the next phase to ensure the knowledge we choose is suitable for our own clinical setting. In this stage, clinicians in a particular setting make decisions

about the value, usefulness and appropriateness of the knowledge to their clinical setting (Graham et al., 2006). Although quality research evidence is valuable in improving care, we cannot expect that simple evidence dissemination will ensure the desired changes or solve the problem. Knowledge can seldom be taken directly and applied to practice without some sort of tailoring (Graham et al., 2006). The gap between a guideline and care delivery can only be widened without this step (Harrison, Graham & Fervers, 2009). Therefore clinicians need to make an effort and further translate the knowledge to evaluate, customize, and adapt an available guideline to fit a specific setting (Harrison et al., 2009). For example, the local patient population may not be able to accept recommendations from a guideline due to a specific cultural factor. Therefore, any evidence should be assessed with local data and circumstances such as the scope of practice, size of the service population, or current delivery or service model before implementation (Harrison et al., 2009).

The RS and PST guideline in FHA is intended for general health care professionals in different health care settings, including acute care, home health, and residential care. Since it is not possible to generate different versions of the guideline to suit each different practice setting, the working group paid extra attention to the content when developing the guideline to ensure the language and the recommendations of the guideline are easy to understand for clinicians who have limited palliative care experiences. The guideline also emphasizes the importance of having conversations with a palliative care consulting team when dealing with a refractory symptom. I would strongly recommend for palliative clinicians to work with the local team to support a sedation process with combined expertise and experience.

Phase three: assess barriers to knowledge use.

Clinicians need to know if there are barriers in the local environment that may

prevent change taking place after knowledge is ready to be implemented. They should

identify potential barriers that may impede or limit learning and change, and look for

ways to overcome these barriers (Graham et al., 2006). Obstacles that affect change in

practice can happen at all levels of the health care system, from patient to health care

professionals, the health care team and health care organization, and sometimes, on a

broad level such as political or economic factors (Grol & Grimshaw, 2003). Some

examples of barriers to implementing evidence are practice environment factors,

prevailing opinion factors, and knowledge and attitude factors (Table 2).

Table 2

Examples of Barriers to Implementation of Evidence

Practice Environment (organizational context)	- Financial disincentives (e.g. lack of reimbursement) - Organizational constraints (e.g. lack of time) - Perception of liability (e.g. risk of formal complaint) - Patient's expectations (e.g. expressed wishes related to prescription)
Prevailing opinion (social context)	- Standards of practice (e.g. routines) - Opinion leaders (e.g. key persons not agreeing with evidence) - Medical training (e.g. obsolete knowledge) - Advocacy (e.g. by pharmaceutical companies)
Knowledge and attitudes	Clinical uncertainty (e.g. unnecessary test for vague symptoms)

(professional context)	• Sense of competence (e.g. self confidence in skills) • Compulsion to act (e.g. The need to do something) • Information overload (e.g. inability to appraise evidence)

(Grol & Grimshaw, 2003, p. 1227)

There are commonly used conceptual models and tools to assess barriers. For example, a tool was developed using the Clinical Practice Guidelines Framework for Improvement to assess the barrier of adherence to a hand hygiene guideline (Legare, 2009). This tool consists of scales and includes statements regarding this hand hygiene guideline and attitude towards guidelines in general (Legare, 2009). The assessment should identify not only the barriers but also the support and facilitation factors that can assist successful implementation (Graham et al, 2006). It is important to remember that sometimes an identified barrier can also simultaneously serve as a facilitator. Therefore, identifying and developing a list of comprehensive barriers and facilitators will be helpful to further production of strategies for change (Legare, 2009).

Barriers to implementing the RS and PST guideline can differ greatly for each health care setting. In an organizational context, managers in different clinical settings may support the guideline implementation differently. Therefore staff in some settings may be able to attend education sessions whereas in other settings, employees may only receive handout materials. In the social and professional context, standards of practice in each setting may affect RS and PST guideline implementation. For example, staff in acute care settings may feel palliative sedation is out of their scope of practice and feel that their knowledge competency in palliative care in general is not adequate for providing care to palliative sedation patients and families. It is important to realize and

understand this possible barrier because this means the palliative consult team will need to provide extra support to gradually create a culture that allows the staff to feel comfortable with palliative care.

Phase four: Select, tailor, and implement knowledge.

The selecting, tailoring, and implementing of knowledge translation interventions is about planning and executing interventions to facilitate and promote awareness and knowledge (Graham, 2006). This is the phase when clinical guideline implementation is putting into action using different intervention strategies. Many different knowledge translation interventions are introduced in Straus et al.'s book (2009) including education interventions, linkage and exchange interventions, audit and feedback interventions, informatics interventions, patient-mediated interventions, and organizational interventions. Such interventions become very powerful implementation tools when they are tailored according to the barrier assessed in the last phase. Linking these interventions to the barriers requires creativity since there is no clear guidance on how to proceed; therefore, keeping an open mind, avoiding assumption, and exploring different possible methods will increase the possibility of change (Wensing, Bosch & Grol, 2009). A developing area of my interest is to plan education opportunities for front line nurses and to understand the rationale behind every education intervention. . Therefore, among all the possible interventions introduced by Straus, I have selected education intervention to make recommendations for the RS and PST guideline implementation plan in this paper.

We all learn, or not, from different types of education interventions. Education interventions can vary from one-to-one tutoring to a large group conference session in a hotel, from using a flip chart to computerized technology, from a formal meeting to

informal conversation, and from a classroom setting to a clinical setting. Self-directed

learning, such as self-learning modules, has also become a popular method to assist

learning in healthcare. Although there is no clear evidence suggesting multi-interventions

are better than single component intervention, Davis and Davis (2009) believe that multi-

component interventions can be more effective due to the capability of addressing

different identified barriers. Later in this paper, multi-component education interventions

are suggested for implementing the RS and PST guideline using the awareness-to-

adherence model.

Another type of intervention in knowledge translation is linkage and exchange

interventions. These refer to linking learners together for teaching and learning exchange.

Such interventions include educational outreach visits, opinion leadership, and

knowledge brokers (Eccles & Foy, 2009). Linkage and exchange interventions mainly

use interpersonal relationships between health care professionals to influence change

(Eccles & Foy, 2009). An educational outreach visit is a face-to-face visit with trained

personnel for health professionals in their own practice setting (Eccles & Foy, 2009). An

opinion leadership is an individual who can influence others' attitudes and behaviors in

the work place. He or she is usually the centre of the communication network and has

high interpersonal communication skills (Eccles & Foy, 2009). For example, an

experienced nurse who has high seniority and is well respected by other co-workers can

be a good opinion leader. Other professionals in the clinical setting can be easily

influenced by her and place trust in her behavior and attitude due to her positive

reputation. And finally, a knowledge broker is the link between researchers and

policymakers, with the role of merging to incorporate research into both policy and

practice (Eccles & Foy, 2009). Given that the hospices in FHA are small nursing units, I believe educational strategies that incorporate linkage and exchange will be the most powerful ways to attract nursing staff's attention.

Other intervention strategies introduced in knowledge translation are audit and feedback intervention and informatics intervention. Audit and feedback intervention usually includes chart audits that summarize clinical performance of health care (Foy & Eccles, 2009). This intervention is effective in professional practice because it helps to recognize and identify practice gaps, at the same time obtaining feedback from professionals (Foy & Eccles, 2009). Informatics intervention is an application to deliver evidence to health professionals. Often health care professionals need immediate access to information. Portable devises for internet access such as laptops is one example of informatics interventions that can provide instant ready knowledge access (Gupta & McKibbon, 2009).

Patient-mediated interventions aim to improve patient's knowledge and health behaviors by engaging patients' learning actively (O'Connor, 2009). This intervention includes strategies such as health literacy interventions, clinical decision making interventions, self-care interventions, and patient safety interventions. These strategies focus on involving different materials and resources to increase patients' knowledge and awareness of health care concerns and issues such as chronic illness and patient safety in health care settings (O'Connor, 2009). Different guidelines may require different intervention methods, depending on the nature of the guideline. For example, a guideline that focuses on a patient's self-medication program will need patient safety intervention methods rather than the education intervention methods that we are using in this project.

Phase five and six: monitor and evaluate knowledge use.

After the selected interventions have been implemented, knowledge use should be monitored and evaluated (Straus, Tetroe, Graham, Zwarestein & Bhattacharyya, 2009c). These phases are necessary to identify how and to what extent the knowledge has been disseminated to the knowledge users. This may include monitoring the knowledge that is being used or the impact of the knowledge being used (Straus, et al., 2009c). There are tools and strategies to monitor and evaluate the interventions. A staff satisfaction survey, for example, is one of the self-report tools an implementer can use to understand whether further interventions are needed. These measurements can also be categorized by patient level, health care provider level, and health organization level, depending on the goal of implementation (Straus, et al., 2009c). For the RS and PST guideline, a possible monitoring and evaluating tool is a feedback form that includes the guideline user's experiences in using the guideline.

Phase seven: sustain knowledge use.

Ensuring knowledge use is sustained is the final phase in the knowledge translation action cycle. According to Davis and Edwards (2009), researchers have paid little attention to sustainability of the interventions although many knowledge implementations are only valuable when they continue to be used. Many factors, including leadership, financial situation, network, and knowledge users' attitudes influence the continuing use of knowledge. Ensuring assessments are performed for these factors and planning for maintaining the status quo or problem solving will be essential to knowledge sustainability. In Fraser Health Authority, continuing education courses are offered not only regionally but also locally to ensure knowledge sustainability. Bedside

clinicians and Advanced Practice Nurses (APN) are also expected to identify practice issues and advocate for their own needs in further education or re-education. A good strategy to ensure continuing education on the RS and PST guideline is to coordinate the palliative sedation experience discussion and debriefing in one of the End of Life program education sessions so that the front line health care professionals will have ongoing opportunities to exchange knowledge and experiences.

Described above are the seven phases included in the knowledge translation knowledge-to- action cycle (Straus, Tetroe & Graham, 2009a) and the influences of this framework when it is applied to evidence-based-practice in health care. Many clinicians have used this framework when implementing a clinical practice guideline and found the framework useful. For example, Petzold, Korner-Britensky and Menon (2010) used action cycle to implement guidelines for stroke rehabilitation patients describe that the knowledge-to-action process for implementing evidence-based practice is influenced by personal and organizational barriers and facilitators. Since it is a complex process, Petzold et al. suggest following the knowledge-to-action framework to guide the process (2010). Also, Straus, Graham, Taylor and Lockyer (2008) find the knowledge-to-action process helpful to integrate knowledge translation in medical education. They also believe that it is important to identify and ensure the research finding is relevant to the clinician's needs at the beginning of the cycle process. Further, in a rural Campbell (2010) was able to enhance the community members' knowledge of their children's health using knowledge translation theory and the knowledge-to-action framework. She feels that all participants need to be involved and work collaboratively for the knowledge to be translated into action (Campbell, 2010), which is the key of this framework. Finally,

Majumdar (2009) reviewed research studies which used knowledge translation intervention and found a common problem involves evaluating a well-designed intervention. Therefore, Majumdar suggested testing the intervention out in a controlled fashion and comparing it with usual practice prior to extensive adoption and implementation (2009).

Theoretically, a better understanding of the knowledge translation framework will make it easier for clinicians to plan guideline implementation interventions for the RS and PST guideline. I have selected *an education intervention* for Fraser Health Hospice Residence nursing staff in this project in order to make recommendations for implementing the RS and PST guideline. I am using the awareness-to-adherence model to create implementation strategies because this model allows multi-component education interventions to take place in order to meet different knowledge users' needs and learning style.

Awareness-to-Adherence Model

The awareness-to-adherence model was originally created by Patham, Konrad, Freed, Freeman and Koch (1996) to implement and to ensure the compliance of a clinical guideline (pediatric vaccine recommendations) for physicians. It contains sequential steps of guideline awareness, agreement, and adaption, which finally generate adherence to the guideline (Patham et al., 1996). The awareness-to-adherence model targets change in behaviors and focuses on compliance. This corresponds to the planned action theories that the action cycle is based on. As mentioned earlier in this project, planned action theories deliberately facilitate change by predicting and controlling different change agents in the environment. Using different strategies and steps to implement the same

guideline increases and promotes the possibility of change. This model has been proven useful and comprehensive in implementing guidelines for GPs in the literature (Friedman et al., 2009; Pathman et al. 1996). Davis et al. (2003) have also mentioned it in their article describing research using knowledge translation and awareness-to-adherence model to increase physician use of a new medication. This research found an increase in physicians using the medication when using the awareness-to-adherence model in the implementation process (Davis et al. 2003).

Awareness, agreement, adoption, and adherence are the four phases in this guideline implementation model (Table 3). This model decompresses different intervention approaches so that the education strategies can have multi-components to serve different populations with different learning styles and learning barriers. As mentioned by Davis and Davis (2009), some review results show that traditional didactic conferences or mail-in materials provide the least evidence in changing or improving behaviors. However, Davis and Davis believe that according to the awareness-to-adherence model this statement may not be a fair critique for several reasons. First, conferences or mailed out materials make health professionals aware of the new information; second, large conferences provide more peer support when clinicians are aware of the information but may not agree with it; third, if clinicians need to adopt the new information, further online learning or small group discussion can be set up; and finally, once adoption occurs, the information can be sustained through reminders and feedback (Davis & Davis, 2009). Therefore, conferences and mailed out materials still hold their value in the implementation process.

Table 3

Awareness-to-adherence model

Phase 1 Awareness	• Traditional formal instruction; Didactic presentations • Reinforcement materials (handouts or Web-based materials that can be easily accessed) • Mailed or distributed informational materials • Academic detailing • Informatics-based educational interventions
Phase 2 Agreement	• Small group discussion (e.g., case-based dialogues) • Exposure to opinion leaders • Other community-based activities
Phase 3 Adoption	• Skill-based workshops • Feedback • Practice enablers (e.g., practice documents such as preprinted standing order sets)
Phase 4 Adherence	• Reminder systems • Feedback on practice and outcomes

(Friedman et.al, 2009, p.223)

RS and PST Guideline Implementation Plan

The first step when implementing a guideline is to identify and know the main audience. Therefore I would now like to introduce the structure of FHA hospice so that the implementation plans of the RS and PST guideline can be focused on supporting hospice nurses (audience) within this particular system. There are nine hospices in FHA in different geographical areas based on population distribution and needs. The hospice
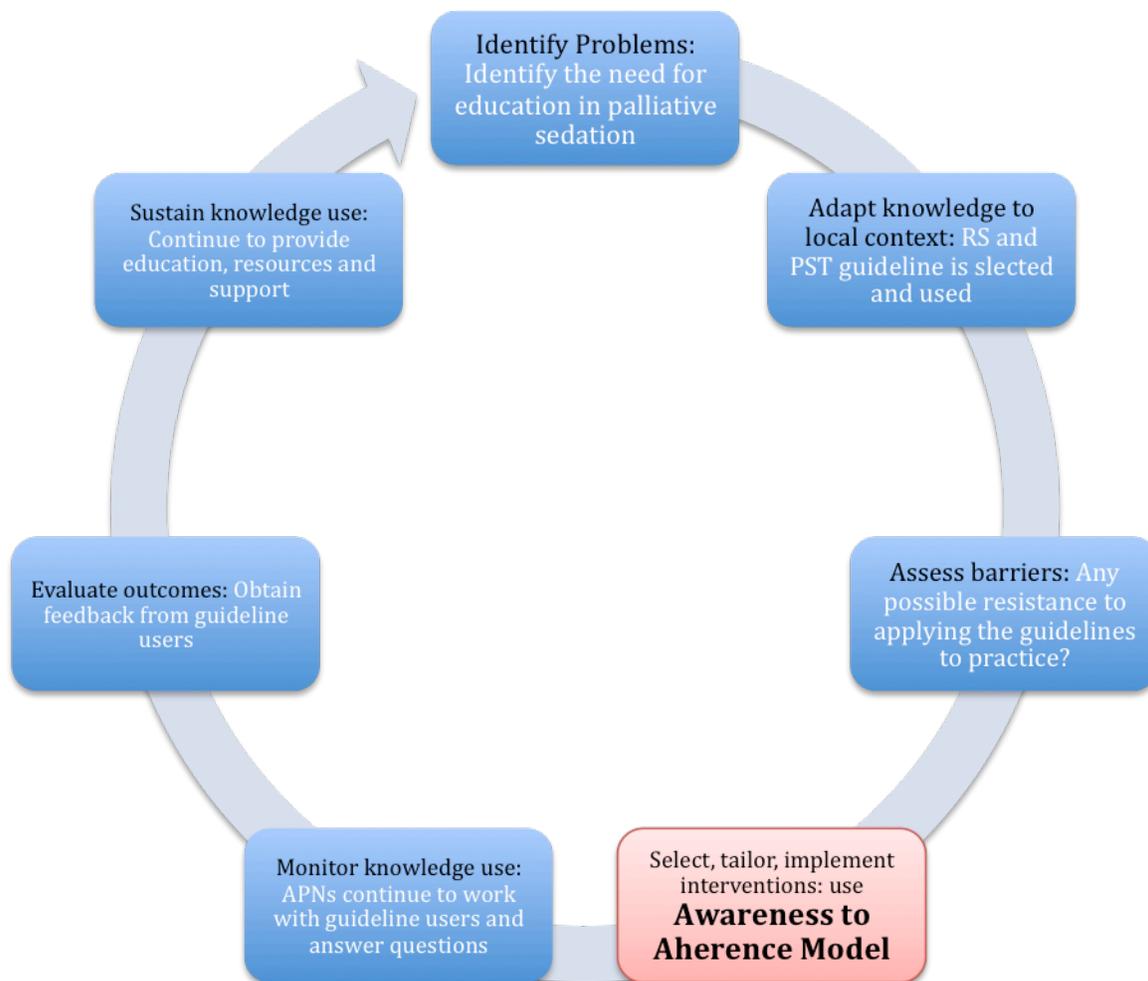
teams are comprised of nursing staff, hospice palliative care physicians, social workers, spiritual care practitioners, volunteer coordinators, managers, and advanced practice nurses. Regional education and resources are set up and available for hospice nursing staff including "hospice nurses networking day," "becoming a hospice workshop," "basic and beyond basic hospice palliative care training," "acuity and complexity workshop," and individual hospice staff education sessions. Given the limited financial resources, it is necessary to build the RS and PST guideline implementation education into the existing education sessions. All educational interventions can be delivered at the individual level, setting-specific level, and organizational level depending on the different awareness-to-adherence stage. I will suggest two to three different strategies in each awareness-to-adherence stage to suit different needs of each hospice team.

The goal of the guideline implementation should be to help hospice nurses to understand the definition of palliative sedation, the differences between difficult to manage symptoms and refractory symptoms, the differences between palliative sedation and physician assisted suicide or euthanasia, professional responsibility of each member prior, during, and after sedation, and for the nursing team specifically, the use of sedation scale, which is different from the scale hospice nurses have been using for pain and symptom management. The expectation is for the hospice nurses to understand and agree upon definitions and practical skills (the use of sedation scale), and identify how to obtain additional information and consultation if needed. Therefore the education interventions should focus on supporting nurses with their critical thinking and reflective practice while working with patients and families at a difficult and complex time.

The following sections are the recommendations made using the awareness-to-adherence model (that is integrated into the knowledge-to-action cycle). Each stage contains different plans depending on the awareness and the readiness of the knowledge users. Plans in each stage will prepare the knowledge users for further education in the next stage.

Figure 2

An example of RS and PST guideline implementation plan using action cycle

Identify Problems: Identify the need for education in palliative sedation

Adapt knowledge to local context: RS and PST guideline is slected and used

Sustain knowledge use: Continue to provide education, resources and support

Assess barriers: Any possible resistance to applying the guidelines to practice?

Evaluate outcomes: Obtain feedback from guideline users

Select, tailor, implement interventions: use **Awareness to Aherence Model**

Monitor knowledge use: APNs continue to work with guideline users and answer questions

Awareness

Change cannot happen when clinicians are not aware of the existing and relevant knowledge. The awareness stage is designed to trigger change by relaying information to guideline users (Davis et al., 2003). Ensuring all hospice nursing staff are aware of the new RS and PST guideline is the beginning step of implementation. Several strategies can be used at this stage. One of the strategies is the distribution of the electronic and hard copies of the guideline, which provides easy access for frontline users. Once the guideline is finalized, the complete version of the guideline will be sent to all local hospice leaders for distribution. Hospice nurses will receive an electronic copy for future quick reference and a hard copy posted on the unit. Local leaders, usually an APN in each hospice setting, are responsible for updating the symptom management guideline binder on the unit as well as raising awareness on the local level. For example, hospice staff meetings or local rounds would be ideal opportunities to provide information on newly developed guidelines. Another important strategy is to incorporate guideline information into current education events for hospice team members, such as the hospice nurse networking day. Networking day education can be a traditional lecture style presentation since there is usually a large group of nurses involved. Small group discussion and reflection time is also available throughout the networking day to enhance awareness after large group information session. At the awareness stage, the main philosophy and the goal of the guideline are presented to nurses, as well as detailed information, although it may not be taken up fully at this stage.

Agreement

Agreement is the stage when guideline users are actively interacting with the new knowledge and make decisions based on their attitudes and beliefs toward this guideline. At this stage, providing a supportive learning culture and environment is vital. Hospice nurses may have specific questions or concerns about using the RS and PST guideline and may need further answers or support from an APN (Heneghan, Mant & Glasziou, 2007). In the agreement stage, staff needs to be aware of the options, agree to the recommended clinical approaches in the guideline, and have the will to apply the recommendation to their own practice (Glasziou & Haynes, 2005). Strategies such as exposure to local opinion leaders, small group discussion, and topic specific activities are used to encourage hospice team members to buy-in the guideline. Local opinion leaders or mentors should be identified and prepared for mentoring hospice nurses. Due to the structure of the FHA hospice setting and the nature of this guideline, an advanced practice nurse such as a clinical nurse specialist, a clinical resource nurse, or a patient care coordinator should take the lead in this role. The opinion leader's function is to create and enhance mentor-mentee relationships in order to promote learning (Straus et al., 2008). Active listening, mentoring, and promoting reflective practice by opinion leaders to hospice nurses' discomfort with the sensitive issues in relation to RS and PST guideline will slowly bring the members to consensus, acceptance and ownership in learning knowledge (Schuman, Lynch & Abrahm, 2005).

Small group discussion offers problem based, interactive learning through questions and answers (Davis & Davis, 2009). Since the RS and PST guideline can trigger ethical and emotional discussion, small group discussion provides a safe environment for staff to ask questions or express their concerns. Facilitating better

understanding of the knowledge and assisting staff with rationalizing the purpose of the guideline will increase acceptance of the guideline. Twice a year, local hospice nursing staff education can provide an environment similar to small group discussion so that all hospice staff have the chance to discuss their personal learning from the awareness stage (reading distributed material or from a regional hospice networking day). Small group discussion can happen with or without an opinion leader depending on the goal.

Adoption

In the adoption stage, I recommend three educational strategies: obtaining feedback, facilitating skill based workshops, and creating practice tools. Obtaining feedback is an important step to ensure knowledge is being implemented effectively and efficiently. For example, the guideline implementer or the opinion leader could identify that more gaps need to be bridged if hospice team members feel uncomfortable using the guideline. Feedback can be obtained via e-mail, face-to-face conversation, or during small gathering such as rounds and staff meeting.

A skill-based workshop might be necessary depending on the feedback obtained. A skill-based workshop is an education strategy focusing on a specific problem or concern. An example of this type of education is a case based dialog (Friedman et al., 2009). For example, the palliative acuity and complexity workshop, which is a whole day case-based workshop, is a good way to incorporate the content of the RS and PST guideline. Often at this stage, hospice nurses (or audience) have a better idea of the guideline and may have faced a clinical situation where they need to implement the new knowledge they have learned into practice, or they may have incubated questions and concerns about the guideline and need further answers or explanations. Case scenarios

will also lead to a bigger picture of how a real case might look like and what signs and symptoms may trigger the consideration of palliative sedation.

Practice tools are not only part of education but are also crucial for enabling accurate and effective practice. For the RS and PST guideline, standard physician directives and an interdisciplinary daily worksheet, either stand-alone or incorporated into the current daily interdisciplinary worksheet, are recommended. A standard physician order sheet designed specifically for the RS and PST guideline serves a few functions: (a) clearly lists recommended medications and dosage calculation, which will be useful for on-call physicians when needing any medication changes; (b) is separate from the standard order sheet which decreases the risk of confusion and medication errors, and increases the alertness of nursing staff; and (c) clearly tracks the changes and progressive use of medications. However, because each individual sedation case and situation varies and the use of medications can be quite different from one another, further discussion will be needed to suit the individual case needs. Daily interdisciplinary worksheets serve the following functions: (a) remind of important daily practices such as sedation scale and physical/emotional support for patients and families; and (b) promote communication amongst the interdisciplinary team through checking in with each other during documentation. Standardized paperwork in all hospices is an important element because some physicians and nurses work in several hospices across FHA. If this recommendation is accepted, decision-making on how physician directives and interdisciplinary worksheets should look will need further discussion amongst all hospice clinicians.

Adherence

Once the hospice team members are familiar with the RS and PST guideline, or have some clinical experiences in the application of the guideline, local leaders would then facilitate the adherence of the guideline to ensure the consistency of future practices. Since a palliative sedation experience can be unique and sometimes difficult for the hospice nurses, feedback and debriefing of the experiences in the decision-making process following the guideline would be helpful in order for them to retain the acquired knowledge from their experiences. A local leader may lead a gathering for debriefing and reflection, specifically for a sedation case. Hospice team members who were involved in the decision-making process and the patient's or family's care should participate in the session. The discussion could include the process of decision-making, personal feelings and conflicts, and the outcome for the patient/family. The local leader could review the important aspects of the guideline during discussion to support team members' decision-making process since reinforcing the concepts of the guideline helps knowledge retention (Freidman et al., 2009). Another adherence tool is to receive and review nurses' experience in using the sedation scale and practice tools suggested above. This will provide nurses opportunities to continue to learn and be familiarized with the tools hence more proficient in using them.

The awareness-to-adherence model is an education intervention for knowledge translation when implementing a clinical practice guideline. It provides multi-component, comprehensive education planning including tools such as reading materials, traditional lecture, small group discussion, and practice tools that facilitate step by step learning. The recommendations of RS and PST guideline implementation are summarized in Table 4. The benefit of using this model is that hospice team members will not be exposed to a

large amount of information at one time. Rather, the recommendations enhance and adopt

different hospice team members' learning style.

Table 4

Education intervention recommendations

Stages	Recommendations	Responsible Person
Awareness	1. Distribution of the guideline via e-mail and keeping copies in symptom management guideline binder and each hospice unit.	Patient care coordinator and opinion leaders in each hospice site
	2. Providing RS and PST guideline education during hospice networking day (traditional style lecture).	APN and the guideline work team
Agreement	1. Local hospice staff education session (PowerPoint presentation and handouts)	Site opinion leader, nursing manager and APN
	2. For nursing staff, focus the education on differentiating difficult to manage symptoms and refractory symptoms, and using sedation scale specifically for palliative	Palliative care physician or APN

	sedation.	
Adoption	1. Case-based discussion within individual hospice. 2. Obtaining feedback from guideline users. 3. Practice tools: Daily interdisciplinary documentation notes	Site opinion leader and APN
Adherence	1. Debriefing and feedback session (sharing experiences). 2. Review practice process and tools	APN with or without a diffuser

Limitation

Due to the size of this project, the recommendations for the RS and PST guideline implementation plan are limited. First, I could only focus on one intervention strategy in this project. In implementing the RS and PST guideline, other interventions can be used in addition to education interventions for hospice staff, because multi-angled strategies will facilitate better outcomes for the implementation. For example, developing information materials for patients and families who are in the process of discussing palliative sedation (patient-mediate intervention) will ensure patients and families are actively involved in the decision-making process. However, I was not able to focus on other intervention strategies in this project. The second limitation is that the project only

focuses on the implementation part of the guideline. Although this project does not include the recommendations for all the phases in the knowledge cycle, it is important for knowledge translation to go through the complete knowledge cycle to ensure the success of guideline implementation. Due to the size of this project, other knowledge cycle phases will be assessed and followed through by the APN both locally and regionally. I strongly recommend assessing the needs and barriers of each hospice unit prior to setting up an education session. For example, a hospice may have had palliative sedation education prior to the guideline being developed. Therefore some nurses may have more knowledge of palliative sedation than those in other hospices where related education had not been done. Education implementation then can be tailored to suit each individual hospice's needs.

Conclusion

Supporting staff through continuing education in implementing new clinical practice guidelines is essential to ensure excellent competencies. An advanced practice nurse should be able to "maximize the use of graduate educational preparation, in-depth nursing knowledge and expertise in meeting health needs of individuals, families, groups, communities, and populations" (Canadian Nurses' Association, 2008, para 2). An APN needs to have a clear understanding of how knowledge translation works and its application to guideline implementation, which is to comprehend how knowledge can be translated and accessible to the end-user. Knowledge-to-action framework (Straus, Tetroe & Graham, 2009a) is one of the knowledge translation frameworks that comprises seven implementation phases to bridge the gaps between research and practice. In this project, I have recommended several education interventions for implementing RS and PST

guideline using awareness-to-adherence model (Patham et al., 1996). The recommendations are only one part of the knowledge-to-action framework and this does not provide a complete guideline implementation strategy. Each phase in the framework is important to ensure successful guideline implementation. Missing a phase may result in limitation to guideline dissemination and application. Therefore I strongly advocate for going through the complete framework when implementing new knowledge to front line guideline users. This includes reviewing the knowledge, adapting knowledge to a local context, assessing barriers, selecting and implementing interventions, monitoring knowledge use, evaluating outcomes and sustaining knowledge use. As nurses we hold professional responsibility for continuing learning and ensuring our knowledge is applied appropriately and effectively in our practices. We also need to remind ourselves that on-going research and knowledge application will enable and empower us to provide excellent quality of care in palliative care settings, thereby enhancing the quality of life for those who experience suffering at the end of life.

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