Running head: TOBACCO CESSATION AND MENTAL HEALTH NURSES

An Assessment of Hospital-Based Mental Health Nurses' Tobacco Cessation Practices in

Two Northeastern Ontario LHIN Regions

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Abstract

This is the first Canadian study to examine acute care mental health nurses'

adherence to clinician-level (4A protocol) and systems-level recommendations from the

Registered Nurses Association of Ontario's best practice guidelines (2007). This study

also examined respondents' beliefs, confidence, and perceived facilitators and barriers.

Persons with a mental illness can and want to quit smoking but have higher tobacco use

prevalence and quit at lower rates than do smokers in the general population. Psychiatric

nurses are well positioned to intervene given their daily one-on-one patient contact.

A questionnaire was mailed (in three steps) to 141 registered nurses who provide

care to mental health inpatients within two Northern Ontario regions. A response rate of

50% (70/141) was attained. Over three-quarters of respondents performed at least one of

the strategies listed within each step of the 4A protocol (*ask, advise, assist, arrange*) but

strategies were performed between 'seldom' and 'occasionally' and few (6%) spent more

than the recommended 10 minutes or more for persons with a mental health disorder.

Patient motivation was both the biggest barrier and facilitator to intervening. A general

lack of systems-level strategies was identified, few had received tobacco cessation

training, and only 19% had seen the RNAO guidelines. However, the majority had high

confidence and positive beliefs about intervening, felt intervening was 'somewhat' part of

their role, and expressed interest in further training.

The findings suggest that improvements are needed to increase the frequency of

intervention and amount of time spent intervening. Psychiatric inpatient facilities could

play a key role towards supporting nurses to meet their patients' tobacco cessation needs

and help reduce this patient populations' disproportionately high smoking prevalence.

Acknowledgments

First and foremost, I offer my sincerest gratitude to my supervisor, Dr. Patricia Smith, who has supported and encouraged me throughout my thesis. Her positive comments and helpful suggestions have allowed me to grow in so many ways. I've learned so much throughout this process and it will surely be of use to me throughout my career. I am appreciative of all the time and dedication she spent towards helping me succeed and consider myself lucky for having such a great supervisor. As well, I thank all the nurses who participated in this study as it would not have been possible otherwise.

I cannot end without thanking my husband Serge for his continuing encouragement despite a number of challenges I faced throughout this process. There are also many family members and friends I have to thank for their ongoing support and who have helped me to attain this goal in so many different ways.

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Chapter 1: Introduction

Overview

This cross-sectional study was designed to measure the tobacco cessation practice of acute care mental health nurses, who work within two regions in Northeastern Ontario, within the framework of the clinician-level and systems-level recommendations from the Registered Nurses Association of Ontario's (RNAO) tobacco cessation best practice guidelines (2007). Respondents' beliefs, confidence, and perceived facilitators and barriers were also examined in order to provide a more comprehensive view of this topic. Post-hoc exploratory analyses compared some items based on work region, systems-level strategies, confidence, and beliefs.

The initial aim of this study was to find out psychiatric nurses' tobacco cessation activities with inpatients given the absence of published Canadian studies on this topic. At the same time, the Registered Nurses Association of Ontario (RNAO; 2007) had recently updated their tobacco cessation guidelines. Integrating tobacco cessation into daily nursing practice is a strong focus of this RNAO document and relevant for hospital-based nurses who have ample one-on-one opportunities to intervene with their patients on tobacco cessation. Patients with a mental health illness would especially benefit from tobacco cessation interventions since they have some of the highest tobacco use prevalence rates of all clinical populations (Williams & Ziedonis, 2004). As such, the focus of this study remained on acute care mental health nurses' tobacco cessation activities but further focused on the RNAO's clinician-level and systems-level recommendations as a framework within which to examine their practice.

Background

Nursing Interventions

Studies have demonstrated the positive impact that nursing interventions have on the tobacco use status of patients. A systematic Cochrane Review by Rice and Stead (2008) showed that nursing interventions were effective in helping patients quit tobacco. This review consisted of forty-two randomized clinical trials from 1983 to 2007 that focused on the nurse as the intervention provider. Study settings included the hospital and the community where participants had differing health states (e.g., cardiovascular disease, diabetes, respiratory disease). Rice and Stead (2008) found that a brief advice intervention lasting 10 minutes or less with up to one follow-up visit given by a nurse (with or without written materials) to patients who smoke increased the likelihood of quitting compared to patients who did not receive such advice (usual care). Studies they reviewed with higher intensity interventions lasting more than 10 minutes (with additional strategies and/or materials and follow-up contact) did not have larger treatment effects. Rice and Stead (2008) concluded through a meta-analysis that nurses who provided advice and support could increase their patients' success in quitting smoking but emphasized the need and challenge to incorporate these interventions into daily nursing practice. Although their findings showed the effects of the nursing interventions to be modest, they were nonetheless positive.

The Rice and Stead (2008) meta-analysis is consistent with another meta-analysis by Wewers, Sarna, and Rice (2006) where smokers who received smoking cessation advice from a nurse were approximately 50% more likely to quit compared to other smokers who did not receive a nursing intervention. Schultz (2003) reviewed ten studies

published between 1996 and 2001 in which smoking cessation interventions were mainly delivered by a nurse in a hospital setting. Six of these studies were randomized controlled trials (RCT) in which four demonstrated that the nurse-delivered interventions had a statistically significant effect on patient quit rates. The author concluded that nurse delivered interventions can have a positive influence on patient quit rates.

While taking all of this evidence into consideration, the RNAO (2007) developed tobacco cessation best practice guidelines designed to support nurses and their clients in making decisions about appropriate health care. These guidelines also provide nurses with educational tools to help them learn more about tobacco cessation and ways to integrate interventions into daily practice.

RNAO Tobacco Cessation Guidelines

Since 1999 to the time of this study, the RNAO developed 42 nursing best practice guidelines documents, of which tobacco cessation was originally developed in 2003 and revised in 2007. The RNAO guidelines are based on a systematic review of existing guidelines and literature in order to create their own set of guidelines for nurses (RNAO, 2007). A list of the steps that the RNAO undertook to develop their tobacco cessation best practice guidelines document is provided in Appendix A.

The RNAO has disseminated the smoking cessation best practice guidelines document through a variety of channels with the goal to increase nurses' utilization of these recommendations in their daily practice (RNAO, 2009a). Some examples include an e-learning module, an implementation toolkit, and a dedicated website. Such initiatives aim to provide nurses and organizations with the necessary skills and knowledge to conduct interventions on the topic of smoking cessation. The RNAO also

has a program to train nurses as Best Practice Champions. These nurses are expected to work within their own organization to implement any of the RNAO's 42 best practice guidelines via staff development and operational support (RNAO, 2009a).

The US Department of Health and Human Services' (USDHHS; Fiore et al., 2008) tobacco cessation best practice guidelines were used to develop the RNAO guidelines (2007). The USDHHS guidelines (Fiore et al., 2008) document is the most comprehensive set of recommendations developed on this topic to date since it is based on a series of meta-analyses stemming from approximately 8,700 research articles published between 1975 and 2007. This guideline document was originally published in 1996 and has since undergone updates in 2000 and 2008. One major difference between the USDHHS guidelines (Fiore et al., 2008) and the RNAO (2007) guidelines is that the RNAO removed the 3rd A (Assess) from the protocol which is found is most other guidelines (e.g., Institute for Clinical Systems Improvements, 2004). The RNAO did not give any rationale as to why they removed this component from the protocol.

The RNAO's (2007) tobacco cessation best practice guidelines contain 12 recommendations to promote and facilitate nurses' integration of smoking cessation into daily practice. They are categorized into three areas: clinician-level (seven recommendations), systems-level (four recommendations), and education (one recommendation). Each recommendation is supported by strength of evidence rating as evaluated by the expert panel. The RNAO has also developed supporting documents such as assessment tools, fact sheets, and evaluation and monitoring indicators for nurses to use when intervening on tobacco cessation.

At the clinician-level, the RNAO's (2007) 4A protocol recommends that every nurse *ask* each patient about smoking use and intentions to quit, *advise* each patient to quit tobacco use, *assist* each patient to quit using a brief or intensive intervention, and *arrange* follow-up or referral to further services for quitting tobacco use. This protocol can be implemented as a minimal intervention (1-3 minutes) or as an intensive intervention ($\geq$10 minutes). The latter requires the nurse to have increased knowledge about assisting patients quit tobacco use (RNAO, 2007). The meta-analysis conducted by the USDHHS (Fiore et al., 2008) showed that intensive interventions lasting more than 10 minutes by health clinicians were most effective (Fiore et al., 2008). The *ask, advise, assist*, and *arrange* 4A protocol is one of the foundational interventions that nurses can implement to help patients quit tobacco use.

At the systems-level, the RNAO (2007) guidelines suggest that workplaces have a role to create an environment that supports the implementation of tobacco cessation interventions by nurses and enhance their opportunities to help patients quit tobacco use. An important aspect of systems-level strategies focuses on training. Nurses must currently have, or have access to, training on tobacco dependence to enable them to have the knowledge and skills to effectively help patients quit smoking. Cessation resources such as pamphlets and referral forms also need to be available for nurses to use with patients. Lastly, environmental prompts are needed in the workplace for nurses to continuously be cued to ask and chart on tobacco cessation. Examples of such cues include inserting sections addressing tobacco cessation on patient history and discharge forms (RNAO, 2007).

Tobacco Cessation Guidelines and the Psychiatric Population

The USDHHS tobacco cessation best practice guidelines considers persons with a mental health illness as a special population and recommends that the effective interventions outlined in their Guideline should be used for all tobacco users (Fiore et al., 2008). The RNAO (2007) further recommends that intensive interventions (lasting more than 10 minutes) are especially recommended for special populations such as those with a psychiatric disorder.

There is currently momentum and leadership within the American Psychiatric Nurses Association (APNA) to advocate for, direct and support all nurses to provide tobacco cessation interventions to persons with a mental health illness (Naegle, Baird, & Stein, 2009). The APNA has set out to increase by 5% (per year) the amount of mental health nurses who refer smokers to treatment and the provision of tobacco cessation interventions by mental health nurses according to best clinical practice (American Nurses Association [APNA], 2008). The APNA mainly recommends the USDHHS guidelines for practice as well as another document that adapted the USDHHS guidelines specifically for nurses who work with patients who have a mental health illness (APNA, 2008). Although the APNA is American-based, it nonetheless creates further impetus for all mental health nurses to address tobacco cessation with their patients.

Hospitals as a Context

Hospitalization is an important period of time where healthcare providers have multiple opportunities to promote smoking cessation with patients or to at least start the cessation dialogue prior to discharge (Rice & Stead, 2008; Rigotti, 2000). Hospitalization may interrupt a patient's usual smoking routine and facilitate periods of smoking

abstinence for patients who may otherwise have continued to smoke regularly. This is further facilitated by the fact that all hospitals in Ontario are legislated to be smoke-free, with few exemptions (Ministry of Health Promotion, 2005).

Nurses have the most contact with patients as they represent just under half of all health care workers in Canada (Canadian Institute of Health Information [CIHI], 2005) and approximately half of Ontario nurses work in an acute care hospital setting (College of Nurses of Ontario [CNO], 2007). This circumstance creates an opportunity for nurses to initiate the smoking cessation dialogue with patients. In addition, hospital-based mental health care professionals have one-on-one contact with psychiatric patients on a daily basis in a smoke-free environment where patients typically have longer hospital stays (average 149 days in a psychiatric hospital and 17 days in acute care hospital psychiatric units) than in other acute care hospital settings (average 7 days in non-psychiatric acute care hospital; CIHI, 2005; Ministry of Health Promotion, 2005). These extended stays provide mental health professionals with multiple opportunities to offer tobacco cessation interventions and also discuss cessation beyond the hospitalization period.

Study Overview

This study was designed to address gaps in the literature given the absence of Canadian studies on acute care mental health nurses' tobacco cessation practice within the context of the RNAO's (2007) tobacco cessation best practice guidelines. This cross-sectional study consisted of a questionnaire mailed to acute care mental health nurses from two Northeastern Local Health Integrated Network (LHIN) regions. The potential participant list was acquired from the College of Nurses of Ontario with specific

eligibility criteria where nurses had to provide direct inpatient care within psychiatric

facilities in either the North East or North Simcoe Muskoka LHIN regions. The

questionnaire consisted of 61 items grouped under 54 questions and focused on the

RNAO's (2007) systems-level interventions and strategies according to the 4A protocol,

as well as factors potentially influencing the performance of cessation interventions--

perceived role, beliefs, confidence, and facilitators and barriers. Demographical

information was also gathered in order to develop a respondent profile. This study

utilized the first three steps of the five step mail-out methodology developed by Dillman

(2000), which has been shown to improve response rates.

Aims and Objectives

The primary aims of the study were: i) to provide a cross-sectional assessment of

the extent to which mental health nurses who work in acute care mental health

institutions in two Northeastern Ontario regions adhered to the RNAO (2007) 4A

protocol for tobacco cessation interventions, ii) to determine what systems-level supports

were in place, and, iii) to document factors that potentially influenced nurses' integrating

tobacco interventions into their daily practice. There were three main objectives, each

with a series of research questions.

Objective 1: Determine the existence of systems-level strategies for tobacco cessation

within psychiatric facilities.

Primary research questions:

1) What percentage of psychiatric facilities have protocols/policies for

   identifying and documenting tobacco use and tobacco cessation counselling?

2) What percentage of psychiatric facilities provide tobacco cessation resources to nurses and patients and what do they provide?

3) What percentage of nurses have received tobacco cessation training, what would they like to know more about, and what format would they prefer for future training?

4) On average, what is the nurses' level of interest to learn more on helping patients quit smoking?

5) What percentage of nurses have seen and read the RNAO's (2007) tobacco cessation best practice guideline document?

Objective 2: Determine the extent to which mental health nurses working in acute care settings adhered to the RNAO 4A protocol for minimal and intensive interventions.

Primary research questions:

1) What percentage of nurses followed the RNAO's 4A protocol (2007), *ask, advise, assist,* and *arrange,* for tobacco intervention in the last year and how frequently did they do it?

2) What specific strategies do nurses perform within each component of the 4A protocol and how frequently do they perform each task?

3) How much time are nurses spending counselling patients on tobacco cessation?

Exploratory research question:

1) Are there response differences on nurses' performance of 4A protocol components or tobacco cessation strategies between those who have systems-level strategies and those who do not?

Objective 3: Document factors that could potentially influence nurses' performance of tobacco cessation interventions.

Primary research questions:

1) Do nurses perceive tobacco cessation as part of their role?

2) What percentage of nurses have positive beliefs in providing tobacco cessation interventions, what is the average level of beliefs, and what are their beliefs for specific tobacco cessation strategies?

3) What percentage of nurses have confidence performing tobacco cessation strategies, what is the average overall level of confidence, and what is their confidence for specific tobacco cessation strategies?

4) What are nurses' main facilitators and barriers in advising or counselling patients on tobacco cessation?

Exploratory research questions:

1) Is there a relationship between respondents' confidence level and their completion of each component of the 4A protocol or strategies?

2) Is there a relationship between respondents' beliefs on tobacco cessation and their completion of each component of the 4A protocol or strategies?

Chapter 2: Literature Review

Systematic Search Strategy

A systematic search was conducted to identify grey literature and published literature that primarily focused on the performance of tobacco cessation strategies and the adherence to tobacco cessation guidelines by acute care mental health nurses. The search strategy was extended to include other types of nurses (e.g., oncology) and mental health care professionals (e. g., psychiatrists) in order to provide comparison data or fill gaps where data lacked or did not exist. The reference list from identified articles and documents were scanned for additional references. Information was also sought to attain background information on the use of tobacco by persons with a mental health illness.

The following databases were searched for academic literature: CINHAL, MEDLINE, PsycINFO Evidence Based Medicine Reviews Multifile, PubMed, Sociological Abstracts, and ProQuest Nursing and Allied Health Source. These databases were searched for articles published from January 1, 1995 to September 1, 2009 and used a combination of the following key words: smoking, smoking cessation, tobacco cessation, tobacco treatment, mental health, psychiatry, mental illness, clinical practice guideline, treatment guidelines, nurse, mental health nurse, psychiatric nurse, psychiatrist, minimal intervention, and brief intervention. Articles included in this literature review do not represent all articles published on this topic; only those deemed most relevant and appropriate for this review were included.

The grey literature search mainly included Google and Google Scholar internet search engines with combinations of these same key words. Specific Canadian websites (e.g., Health Canada and Statistics Canada) were searched for background and

demographic information. An online search of various health care professional associations and colleges was also conducted to find tobacco cessation best practice guideline documents.

Psychiatric Population and Tobacco Use

It is important to first examine the body of evidence that validates the need to focus on the psychiatric population within the context of tobacco use and cessation. It is clear that persons with a mental health illness have high rates of tobacco use and face a number of challenges resulting in lower quit rates than the general population. However, studies show that many can and want to quit tobacco use and health care providers are well positioned to assist them through this process.

Prevalence Rates

Studies on individuals with a mental health disorder have consistently showed that they have a higher smoking prevalence than the general population (Diaz, Rendon, Velásquez, Susce, & de Leon, 2006; Hughes, Hatasukami, Mitchell, & Dahlgran, 1986; Lasser et al., 2000). The majority of individuals with a mental illness smoke—50-90%, depending on the illness, compared to only 20% in the general population, and they smoke substantially more cigarettes than the general population (de Leon et al., 1995; de Leon & Diaz, 2005; Grant, Hasin, Chou, Stinson, & Dawson, 2004; Rosen-Chase & Dyson, 1999; Tidey, Rohsenow, Kaplan, & Swift, 2005; Van Dongen, 1999; Williams & Ziedonis, 2004).

Lasser et al. (2000) found that current smokers without a mental illness had a mean peak consumption (the amount of cigarettes smoked when they smoked the most) of 22.6 cigarettes in the past month versus 26.2 cigarettes for those who had a mental

illness in the past month. These authors estimated that persons with a psychiatric disorder smoked approximately 44% of all cigarettes consumed in the United States (US; Lasser et al., 2000). Another study also found that nicotine dependent individuals with a mental illness represented only 7% of the entire population but consumed 34% of all cigarettes smoked in the US (Grant et al., 2004). These studies demonstrate the large and disproportionate burden of tobacco use by those with a mental illness.

Immediate Health Consequences of Quitting Tobacco Use

Smoking abstinence due to entering a smoke-free psychiatric facility could potentially lead to a number of health consequences. Given that smoking increases the hepatic metabolism of many psychotropic drugs, smoking abstinence could lead to increased blood medication levels and in turn, increased medication side-effects (Desai, Seabolt, & Jann, 2001; Zullino, Delessert, Eap, Preisig, & Baumann, 2002). In addition, it has been postulated that persons with a history of major depression who quit smoking could see a re-emergence of depressive symptoms (Glassman, Covey, Stetner, & Rivelli, 2001) but this relationship has not been consistently found (Tsoh et al., 2000). As well, persons with depression may have prolonged withdrawal symptoms when quitting smoking (Covey, Glassman, & Stetner, 1997). This could discourage some patients from remaining abstinent if these withdrawal symptoms are not remedied. Interventions are therefore needed to monitor these effects in order to promote a safe withdrawal process from tobacco.

Long-Term Health Consequences from Tobacco Use

Persons with a psychiatric disorder who use tobacco are at risk for tobacco-related diseases. Cardiovascular and respiratory mortality and morbidity for persons with a

mental illness were found to be at rates significantly higher than those found in the general population (Brown, Inskip, & Barraclough, 2000; Ösby, Brandt, Correia, Ekbom, & Sparén, 2001). Some authors suggested that this excessive morbidity and mortality may be associated with the higher smoking rates found in this population (Ösby et al., 2001). One study found that cigarette smokers with schizophrenia had a significantly higher overall standardized mortality ratio from premature death causes and smoking-related diseases than the general population (Brown et al., 2000).

Cessation

On the whole, quit rates in the psychiatric population are generally lower than that of the general population (Diaz et al., 2006; Lasser et al., 2000). A meta-analysis by de Leon and Diaz (2005) found six studies that compared smoking cessation rates of persons with schizophrenia to those of the general population. Persons with schizophrenia had a smoking cessation rate of 9% compared to a range of 14% to 49% in the general population. Variables such as a high number of cigarettes smoked, decreased readiness and confidence to quit, few and brief past quit attempts, a high nicotine dependence, and a history of drug or alcohol problems were all found to negatively affect cessation outcomes in persons with a mental illness (Breslau & Johnson, 2000; El-Guebaly, Cathcart, Currie, Brown, & Gloster, 2002; Prochaska, Rossi, et al., 2004).

However, studies have also demonstrated that many persons with a mental illness want to quit, are motivated to quit, and can be successful in doing so (Addington, el-Guebaly, Addington, & Hodgins, 1997; Addington, el-Guebaly, Campbell, Hodgins, & Addington, 1998; El-Guebaly et al., 2002; Green & Clarke, 2005; Lasser et al., 2000). One Canadian study found that 79% of psychiatric in-patients expressed concern about

their smoking and 51% were interested in quitting (Solty, Crockford, White, & Currie, 2009). Some intrinsic patient barriers may be key to focus on when helping them quit smoking.

Barriers to Quitting

Neurobiological factors have been hypothesized as playing a major role in nicotine addiction among persons with a psychiatric disorder, especially among those with schizophrenia and affective disorders (Sacco, Bannon, & George, 2004). When triggered by tobacco use, this complex neurotransmitter system is linked to a reduction of negative symptoms and improvement of the spatial working memory in persons with schizophrenia, and also a reduction in the side-effects from certain psychiatric medications (George et al. 2000; Goff, Henderson, & Amico, 1992; Lyon, 1999; Ziedonis & Williams, 2003). These factors could therefore reinforce continued tobacco use.

Genetic factors have also been hypothesized to be a determinant of high smoking rates among persons with psychiatric disorders (Kalman, Morissette, & George, 2005). One study on female twins by Kendler et al. (1993) found that shared genetic factors explained the association between smoking and major depression. Leonard et al. (2000) compared the post-mortem brain tissue from smokers with and without schizophrenia to those without schizophrenia. They found that some genes in those who had schizophrenia and smoked were expressed at different levels than persons with schizophrenia and did not smoke. Kuhen (2006) hypothesized that this abnormal gene expression is actually normalized by smoking for persons with schizophrenia.

Psychosocial factors could also reinforce continued tobacco use among persons with a mental illness. Lawn, Pols, and Barber (2002) conducted a qualitative study with

psychiatric clients in a community setting and found that many viewed smoking as one of the only things in their lives they had control over, and saw smoking as part of their identity and that there was no purpose in quitting smoking. Some also reported self-medicating the physical symptoms from their psychiatric illness and were fearful that quitting smoking would trigger an illness relapse. Other studies found persons with a mental health disorder smoked cigarettes to deal with stress and boredom, as a way to socialize and relax, and attributed many benefits to smoking (Spring, Pingitore, & McChargue, 2003; Van Dongen, 1999).

This review of literature also revealed a long-standing history in psychiatry that could contribute to a barrier to quitting whereby mental health clinicians reinforce tobacco use by patients (Lawn, 2004; Lawn & Condon, 2006; Robson & Gray, 2005). Participants with a mental illness in one qualitative study spoke of cigarettes being used by hospital staff as rewards or punishment tools. They viewed the hospital as a place where smoking was reinforced and that some patients may resultantly initiate smoking during hospitalization (Lawn et al., 2002). Such notions were substantiated by another study were 36% of psychiatric in-patient nurse managers reported knowing instances where patients were admitted as non-smokers and started smoking during their hospital stay. They also stated that staff gave cigarettes to patients and used them as a reward or to prevent negative behaviours (Wye et al., 2009).

Psychiatric staff from another study felt they should be allowed to smoke with patients and that doing so had therapeutic value (Stubbs, Haw, & Garner, 2004). They also had less favourable attitudes towards in-patient smoke-free bans and to providing tobacco treatment interventions when compared to other general hospital staff (McNally

et al., 2006). In all, the circumstances, behaviours, and attitudes described above do not encourage patients to quit smoking. Rather, they conflict with staffs' health promotion roles.

Facilitators to Quitting

There were no studies that outlined psychiatric patient-related factors that facilitated quit attempts. The majority of studies focused on the success rates of different types of interventions that providers could use to help persons with a mental illness quit tobacco use.

Behavioural therapies such as motivationally based interventions have been shown to benefit smoking cessation in persons with a mental illness (Addington et al., 1998). One study by Steinberg, Ziedonis, Krejci, and Brandon (2004) found more patients with schizophrenia who received a one hour motivational interview sought tobacco dependence treatment (32%) versus those who received 40 minutes of psychoeducational counselling (11%) or a 5 minute brief assessment (0%). Other treatment modules that could further improve cessation outcomes included combining behavioural treatments with pharmacotherapy (George et al., 2000; Kalman et al., 2005) or combining pharmacotherapies (George et al., 2002).

In all, there are many reasons listed above which point to the need to assist persons with a mental health illness to quit tobacco use. Due to their psychiatric problems, they potentially come into contact with the health care system a number of times. Each presents a window of opportunity for psychiatric health professionals such as nurses, to intervene on tobacco cessation and help them through this process. It is

therefore vital to find out what psychiatric facilities and mental health nurses are currently doing to help patients quit smoking.

Tobacco Cessation Guideline Outcomes

This review of literature did not reveal any studies focusing specifically on the adherence by mental health nurses to the RNAO's clinician-level or systems-level tobacco cessation guidelines (2007).

Systems-Level Interventions

Nurses in general. There were eight nurse-focused studies that inquired on the topic of systems-level tobacco cessation strategies. Roberts (2009) found that 53% of Canadian primary care nurses from First Nations communities had methods for documenting tobacco use and 46% for documenting tobacco cessation counselling while 24% had policies/protocols for identifying tobacco use and 13% for tobacco cessation counselling. Almost all nurses also reported that posters, pamphlets, and self-help materials were available at their workplace (Roberts, 2009). However, Schultz, Bottorff, and Johnson (2006) conducted a qualitative study with hospital-based nurses and found a lack of policies and protocols on tobacco cessation, a lack of in-services on brief tobacco cessation interventions, limited available patient education materials, and a lack of nursing documentation of tobacco use on patients' records. The latter points to an overall lack of systems-level strategies to support these nurses to implement tobacco cessation interventions into their daily nursing practice.

One study with hospital-based nurses from two Western Canadian hospital sites found that 88-90% perceived a need for additional training/skills on tobacco cessation (Schultz, Johnson, & Bottorff, 2006). Two nurse-based studies also found that only 11-

18% reported that they received tobacco cessation training (Gomm, Lincoln, Egeland, &

Rosenburg, 2002; Roberts, 2009) This is congruent with other studies which also found

that nurses lacked knowledge and skills to effectively assist their patients to quit smoking

(McCarty, Hennrikus, Lando, & Vessey, 2001; Sarna & Bialous, 2005; Schultz, Johnson,

et al., 2006; Whyte, Watson, & McIntosh, 2006;). However, one study found that a

majority of Quebec nurses (59%) were interested in training to update their cessation

counselling skills (Tremblay, Cournoyer, Jukic, & O'Loughlin, 2005). Overall, these

studies all point to a need for more training by nurses on tobacco cessation and

demonstrate that many nurses are agreeable to updating their skills.

Mental health nurses. This literature review found three mental health nurse based

studies that provided some but limited insight on the topic of tobacco cessation policies

and procedures within psychiatric settings. Wye et al. (2009) found that over half of

psychiatric unit nurse managers felt that the onus was on the staff members to decide if

they should assess and record patients' smoking status and provide the appropriate

intervention (Wye et al., 2009). A minority reported conducting chart audits for smoking

status (22%) and tobacco cessation interventions (7%; Wye et al., 2009). Another study

found that few psychiatric nurses reported tobacco cessation as a high work priority for

themselves or their organization (Sharp, Blaakman, Cole, & Evinger, 2009). As such, this

lack of staff accountability and low work priority does not actively encourage staff to

assist patients with quitting smoking. Prochaska, Gill, and Hall (2004) reviewed 250

discharged charts from an in-patient psychiatric smoke-free hospital and found little

documentation on the delivery of tobacco cessation services. Overall, the data above may

point to a lack of protocols and policies on tobacco cessation within psychiatric facilities.

Mental health professionals. Three studies with other mental health professionals were found relative to the topic of training on tobacco cessation, a component of systemic supports. Leffingwell and Babitzke (2006) showed that only 15% of psychologists reported that they received training on tobacco cessation while 91% of psychiatry residents in another study received none or inadequate on-the-job training on tobacco cessation (Prochaska, Fromont, & Hall, 2005). Similar findings were also reported in other studies where psychiatric staff lacked training on tobacco cessation (Zvolensky et al., 2005). These are important findings given that those who received formal training reported significantly higher levels of preparedness to intervene and spent more time intervening compared to respondents without any training (Zvolensky et al., 2005).

Clinician-Level Interventions

Only one of the 17 studies reviewed on clinician-level interventions organized their data according to the entire 4A protocol. Other studies either focused on the USDHHS 5A protocol (Fiore et al., 2008) or select tobacco cessation strategies or components of the 4A protocol.

Nurses in general. Seven major studies were found that focused on nurses' clinician-level interventions. Study results were mixed where some reported higher performance rates of certain cessation strategies by nurses while others performed similar strategies to a lesser degree. A Western Canadian study that surveyed 365 acute care nurses from 2 hospitals was the only study that focused on tobacco cessation strategies within each component of the 4A protocol (Schultz, Johnson, et al., 2006). At one site, between 51-85% 'almost always or frequently' performed at least one tobacco cessation strategy related to *ask* (3 items), 32-46% for *advise* strategies (4 items), 9-36% for *assist*

strategies (5 items), and 0-3% for *arrange* strategies (2 items). Rates for the second site

for these same items were 57-90% for *ask* strategies, 46-51% for *advise* strategies, 15-

66% for *assist* strategies, and 12-38% for *arrange* strategies. These results were

comparable (with some variations noted) to those from an American study with nurses

from 35 hospitals that utilized the USDHHS guidelines (Fiore et al., 2008) as a

framework (Sarna, Bialous, Wells, Kotlerman, Wewers, et al., 2009). The latter

American study found that 73% of nurses 'always' or 'usually' - *asked* about tobacco

use, 62% *advised* on the risks of tobacco and quitting benefits, 62% *assessed* motivation,

37% *assisted* to quit, 22% *arranged* referrals to resources, and 10% recommended

quitlines (Sarna, Bialous, Wells, Kotlerman, Wewers, et al., 2009).

Some of the highest rates were found in one study with nurses within First

Nations communities in Northwestern Ontario which focused on their practice of the

USDHHS' 5A protocol (Fiore et al., 2008). Ninety-four percent *asked* about tobacco use,

97% *advised* patients to quit, 94% *assessed* readiness to quit, 90% *assisted* with quitting,

and 77% *arranged* follow-up (Roberts, 2009). However, rates were calculated as those

performing tobacco cessation activities 'frequently', 'occasionally', and 'seldom'

whereas the other studies noted above reported only on their top two scale anchors and as

a result, had lower rates. The means of *ask* and *advise* items corresponded to performing

those strategies 'occasionally', *assess* and *assist* item means ranged from 'seldom' to

'occasionally', while the mean of the one *arrange* item corresponded to 'occasionally'.

Roberts' (2009) study utilized a modified version of the questionnaire from another study

which focused on acute care nurses tobacco cessation activities within Hong Kong

hospitals (Johnston et al., 2005). The Johnston et al. (2005) study found the overall mean

for all *ask* and *advise* items corresponded to performing the strategies 'occasionally' while those related to *asses*, *assist*, and *arrange* corresponded to 'seldom'.

Two other nurse-based studies utilized the USDHHS guidelines (Fiore et al., 2008) as a framework (Good, Frazier, Wetta-Hall, Ablah, & Molgaard, 2004; Sarna et al., 2000). One study focused on oncology nurses and measured the frequency of tobacco cessation intervention as 'every day/week' on the questionnaire while the other focused on office-based nurses and measured the frequency of intervention as 'regularly'. In these studies, 51-64% assessed and documented tobacco use, 28-38% assessed readiness to quit, 32-35% provided cessation advice, and 23-24% recommended nicotine replacement therapy (NRT; Good et al., 2004; Sarna et al., 2000).

Lastly, one study focused on hospital nurses who worked in a rural setting and was designed to assess their behaviours in relation to the UDSHHS guidelines (Fiore et al., 2008; Gomm et al., 2002). They found that 88% of nurses were aware of their patients' smoking status but only 47% provided advice to quit (Gomm et al., 2002).

The studies mentioned above demonstrate that while many nurses performed strategies consistent with the first component of the protocol (*ask*), few implemented strategies consistent with other components of the 4A or 5A protocol. It was also apparent that the performance rates for the majority of strategies were moderate to low and therefore represent sub-optimal practices.

Mental health nurses. Only five studies detailed the current state of strategies undertaken by acute care mental health nurses to help their patients quit tobacco use. Two studies included self-reported data from mental health nurses while the other three studies focused on data reported by others on mental health nurses' tobacco cessation practices.

Varying levels of activities within each component of the 4A protocol or strategies by

mental health nurses were found within these studies.

Sarna, Bialous, Wells, and Kotlerman (2009) conducted a secondary analysis of a

web-based survey with American psychiatric nurses who provided care to adult in-

patients. They assessed the delivery of the USDHHS 5A protocol (Fiore et al., 2008) and

found that 87% *asked* about tobacco use status, 70% *advised* on tobacco use risks and

benefits to quitting, 74% *assessed* patient motivation, 49% *assisted* patients to quit, and

21% *arranged* for follow-up and referred to resources 'always' or 'usually'. The majority

of respondents (73%) were staff nurses but this study also included advance practice

nurses (19%) and head nurses or supervisors (8%; Sarna, Bialous, Wells, & Kotlerman,

2009). The American Psychiatric Nurses Association (APNA) also recently surveyed its

members on their tobacco cessation practices based on an *ask-advise-refer* model. The

majority of psychiatric nurses 'routinely' screened for smoking status (91%) and advised

to quit (85%) but fewer referred to tobacco cessation resources (61%) and reported that

they or their organizations provided intensive interventions on tobacco cessation (29%;

Sharp et al., 2009). This study included mental health nurses who worked in various

types of settings and 41% of them worked with inpatients. In general, both of these

studies demonstrated moderate to high levels of performance of each component of the

4A protocol.

Australian nurse unit managers from 123 in-patient psychiatric units reported that

50% of their staff assessed patients for smoking status (Wye et al., 2009). Between 46-

58% performed 5 of the 10 tobacco cessation activities listed in their questionnaire

'always' or 'frequently'. These strategies included: brief advice to quit, brief advice to

cut down, educate about smoking risks, inform on quitting methods, and provide NRT. Forty-three percent of staff 'never' negotiated a quit date, 33% 'never' referred to a quitline, and 25% 'never' repeated advice to quit (Wye et al., 2009). It was unclear if responses reflected the performance of nurses or all staff in general.

Studies on patient recall of nursing tobacco cessation interventions reported much lower rates. Only 37% of psychiatric in-patients in one Canadian study recalled receiving advice to quit from their nurse while 26% were provided with smoking cessation options (Solty et al., 2009). This is similar to results found by Green and Clarke (2005) who examined psychiatric outpatient recall on the tobacco cessation interventions they received while hospitalized. Only a few participants recalled being offered assistance to quit smoking while in the hospital and one recalled being advised against quitting smoking.

Mental health professionals. Five studies were found that focused on the clinician-level tobacco cessation interventions by other mental health professionals. Three of these studies included psychologists, psychiatry residents, or anxiety specialists where between 30-58% of them *asked* patients about their smoking status (Leffingwell & Babitzke, 2006; Prochaska, Gill, et al., 2004; Zvolensky et al., 2005). Another study with psychiatric residents found a declining level of activity within each component of the USDHHS 5A protocol (Fiore et al., 2008) where 58% *asked*, 29% *advised*, 17% *assessed*, 18% *assisted*, and 13% *arranged* follow-up 'often or always' (Prochaska et al., 2005)

Johnson et al., (in press) also examined the tobacco cessation practices of community mental health care providers where 23% of respondents were nurses. This Canadian study found that 31% assessed smoking status at intake, 21% assessed interest

to reduce or quit tobacco, 20% provided individual counselling, and 18% discussed

tobacco cessation with patients (reported as 'often/always').

Factors Potentially Influencing Tobacco Cessation Interventions

Facilitators and Barriers

Nurses in general. Ten studies were found that provided relevant information on

facilitators and barriers to providing tobacco cessation interventions by nurses. Nurses

perceived unmotivated patients, lack of time, lack of resources, their own smoking status,

heavy workload, and a fear of adding to patients' stress as barriers to assisting patients

quit smoking (Gomm et al., 2002; McCarty, Hennrikus, et al., 2001; Roberts, 2009; Sarna

& Bialous, 2005). Sarna et al. (2000) found that almost three-quarters of oncology nurses

(74%) perceived an unmotivated patient as their number one barrier to assisting them to

quit smoking. In another study, a lack of interest among patients to quit smoking was also

cited by nurses (84%) as their top barrier to cessation followed by patient resistance to

advice (79%; Tremblay et al., 2005). Research shows that more patients receive advice

from a nurse when they show openness to education or ask for assistance to quit

(McCarty, Zander, Hennrikus, & Lando, 2001; Pelkonen & Kankkunen, 2001). Acute

care nurses from two Western Canadian hospitals were also less likely to intervene on

tobacco cessation when they had a low perceived ability to do so (Schultz, Hossain, &

Johnson, 2009).

Studies have also identified factors that nurses perceive as encouraging them to

assist their patients to quit smoking. Over three-quarter of primary care nurses identified

knowledge about tobacco and health, improved patient health, patient motivation,

available resources, and belief that tobacco cessation is part of their role as facilitators to

tobacco cessation interventions (Roberts, 2009). Schultz et al. (2009) found that acute care nurses were more likely to intervene on tobacco cessation when they perceived that their colleague intervened, had a positive role attitude, and perceived working in an environment rich with tobacco resources. Patient health benefits, decreased risks of tobacco related health effects, and motivated patients were identified by over 80% of hospital-based nurses as reasons why they address tobacco cessation (Schultz, Johnson, et al., 2006). Another study found important motivators to include patients who want to quit, health benefits to quitting, nursing role expectation, sufficient time, confidence in smoking cessation abilities, and physicians request for nursing involvement (Sarna et al., 2000). Overall, patient motivation, available resources, and patient health were facilitators cited in a number of the studies noted above.

Mental health nurses and other mental health professionals. This review of the literature did not reveal any studies explicitly focusing on the perceived facilitators of mental health nurses or other mental health professionals in providing tobacco cessation interventions. Three studies were found that briefly examined mental health providers' perceived barriers. Staff who worked at a psychiatric veterans affairs hospital identified a lack of training, a lack of time to intervene, being a smoker themselves, not being a nurse, a perception that patients either did not want to quit or were unable to learn to quit, and felt that it was a patient's personal choice to use tobacco as barriers to intervening on tobacco (Essenmacher, Gutierrez, Sauer, & Duffy, 2008). Mental health care providers who currently smoke or were former smokers were less likely to perform certain tobacco cessation strategies (Johnson et al., in press; Sarna, Bialous, Wells, & Kotlerman, 2009).

Beliefs

Nurses in general. Seven studies provided information on nurses' beliefs in

providing tobacco cessation interventions. Four of them revealed that nurses had a

positive attitude towards assisting their patients to quit smoking (Johnston et al., 2005;

McCarty, Hennrikus, et al., 2001; Nagle, Schofield, & Redman, 1999, Roberts, 2009).

Schultz, Johnson, et al. (2006) also found that over 50% of hospital-based nurses had

positive attitudes on 7 of their 12 belief items relating to tobacco cessation. However, two

studies found that some nurses expressed doubt about the effectiveness of advising

patients to quit smoking (McCarty, Zander, et al., 2001; Pelkonen & Kankkunen, 2001).

Mental health nurses. Three studies examined mental health nurses' beliefs about

tobacco cessation. Compared to other health care providers, mental health nurses had

significantly more positive views on smoking, that is, favouring the therapeutic value of

smoking (Dickens, Stubbs, & Haw, 2004). Some psychiatric nurses stated that they

experience ethical dilemmas on the topic of smoking cessation (Lawn & Condon, 2006).

They believed in a patient's right to smoke, that restricting smoking may hinder recovery,

and viewed smoking as causing less damage than the mental illness. Another study found

that psychiatric nurses felt their patients had low ability and low motivation to quit

smoking (Sharp et al., 2009). In turn, those who referred patients to tobacco cessation

resources perceived their patients to be more motivated to quit (Sharp et al., 2009).

Mental health professionals. Three studies with other mental health professionals

found them to have positive beliefs on smoking cessation and another focused on the

influence of provider beliefs on tobacco cessation practice. Ninety-four percent of

psychiatry residents in one study expressed a moderate to high interest in receiving

training about tobacco cessation, and less than 20% of them endorsed negative attitudes to counselling patients (Prochaska et al., 2005). Seventy-five percent of psychologists in another study stated that tobacco cessation would improve their patient's quality of life (Hjalmarson & Saloojee, 2005). However, Johnson et al. (in press) found community mental health providers were less likely to intervene on tobacco cessation when they perceived a lack of time or resources to do so, felt their patients lacked interest in quitting or that they could not quit on their own.

Despite the small number of studies available on this topic, overall results from the 13 studies mentioned above suggest that mental health nurses had the least positive views on tobacco cessation compared to nurses in general and other mental health professionals.

Confidence

Nurses in general. Four studies provided mixed results on nurses' perceived confidence to intervene on tobacco cessation. Over 50% of nurses within First Nations Communities in Northwestern Ontario were either 'very confident' or 'confident' performing all 8 tobacco cessation strategies listed and had mean ranges that corresponded to 'confident' (Roberts, 2009). The confidence items for these 8 tobacco cessation strategies were based on a study with hospital-based nurses in Hong Kong that assessed nurses' self-perceived competence using a 4-point scale ranging from 'very incompetent' to 'very competent' (Johnston et al., 2005). That study, however, found nurses had an overall average competency score corresponding to 'incompetent' for all 8 tobacco cessation strategies (Johnston et al., 2005). These latter findings are similar to results from another Canadian study where only 24-36% agreed they had confidence in

their abilities to help patients quit smoking (Schultz, Johnson, et al., 2006). Another study with hospital and remote area nurses found that almost all nurses (95%) were 'very confident' or 'confident' in *asking* about a patients' smoking status but just under half (47%) had his same confidence in *advising* patients to quit (Gomm et al., 2002).

Mental health nurses and other mental health professionals. Two studies inquired on mental health nurses' confidence in providing tobacco cessation interventions. Sharp et al. (2009) found that mental health nurses had low levels of confidence on their ability to help their patients quit smoking. However, those who referred their patients to tobacco cessation resources rated themselves with higher levels of confidence in their abilities to help their patients quit smoking (Sharp et al., 2009). Another study by Johnson et al. (in press) found that community mental health providers were most confident in their ability to discuss ways their patients could reduce or quit smoking, had moderate levels of confidence on their ability to counsel, and low confidence on their ability to recommend nicotine replacement therapy (NRT). Greater confidence to provide cessation counselling was also a predictor for ever assessing smoking status at intake and discussing tobacco use with patients (Johnson et al., in press).

There was an overall lack of studies examining confidence with any mental health professionals named above. Of the six studies reviewed, data provided some but minimal insight and measured different aspects of their confidence which made it impossible to compare study results.

Perceived Role

Nurses in general. A total of seven studies detailed information about nurses' perceived role on tobacco cessation. Two qualitative studies found that nurses saw helping patients quit tobacco as part of their role (McCarty, Zander, et al., 2001; Whyte et al., 2006). Four additional studies provided specific rates on this topic where 85% of Canadian primary care nurses in First Nations communities, 75% of Australian hospital-based nurses, 72% of American oncology nurses, and 50% of office-based nurses felt that tobacco cessation was part of their role (Good et al., 2004; Nagle et al., 1999; Roberts, 2009; Sarna et al., 2000). As well, 57-61% of Western Canadian hospital-based nurses agreed that tobacco cessation was an expected part of their role (Schultz, Johnson, et al., 2006).

Mental health nurses. No studies were found that specifically examined mental health nurses' perceived role on cessation but one study collected data closely related to this topic. Lawn & Condon (2006) found that some mental health nurses used cigarettes and smoking as part of patient treatment and management, and perceived cigarettes as a tool to build a relationship with patients who use tobacco (Lawn & Condon, 2006). These findings point to a perceived role to utilize cigarettes as a treatment tool rather than a role in tobacco cessation. This complements a long-standing history in psychiatry where smoking was and continues to be ingrained in its culture (Robson & Gray, 2005; Lawn & Condon, 2006; Lawn, 2004).

Mental health professionals. Among other types of mental health providers, three studies were found which asked about their perception of role on tobacco cessation. Only 27% of psychologists stated that tobacco cessation was part of their responsibilities as a

mental health professional (Leffingwell & Babitzke, 2006). This is similar to another study where 74% of psychologists perceived that tobacco cessation was not part of their responsibilities (Hjalmarson & Saloojee, 2005). Johnson et al. (in press) focused on community mental health providers and found that workers were less likely to intervene on tobacco cessation when they did not feel it was part of their role.

Conclusion

Results from this literature review did not reveal any studies which focused on the adherence of hospital-based mental health nurses to the RNAO's 4A protocol (2007) and only a few studies examined factors that could potentially influence their practice and systems-level supports. Although some studies included acute care mental health nurses, they were part of a larger sample which also included other mental health care providers or mental health nurses from various practice settings (e.g., outpatient) or backgrounds (e.g., supervisor). As such, results were not necessarily reflecting the practice of this target group. Studies conducted with other mental health professionals and nurses from other specialties (e.g., oncology) provided some but limited insight into this topic. It was therefore important to gather this information specifically from acute care mental health nurses' perspective in order to establish baseline data on this topic.

Chapter 3: Methodology

Study Design

This cross-sectional study involved a mailed survey. The mailing list was

obtained from the College of Nurses of Ontario (CNO). Ethical clearance from the

Lakehead University Research Ethics Board was granted for this study in February 2008.

Target Population

Eligibility

Eligibility criteria included registered nurses from the general class, who provided

direct care to patients, and were employed at a mental health centre/psychiatric hospital

within one of the two health regions in Northeastern Ontario--the North East Local

Health Integration Network (LHIN) and North Simcoe Muskoka LHIN.

Geographical Setting

There are currently 14 Local Health Integrated Networks throughout Ontario that

are mandated to plan, integrate and fund local health services (Local Health Integrated

Network [LHIN], 2009a). The North East and North Simcoe Muskoka LHIN regions

were chosen as geographical boundaries for this study since both were in Northeastern

Ontario, had a similar number of potential participants within each region, had eight

schedule 1 facilities (must provide essential psychiatric services including in-patient), and

were financially feasible in terms of the number of mail outs required (Ministry of Health

and Long-Term Care, 2009). It was not financially viable to mail a questionnaire to all of

the approximately 1900 Ontario nurses who provide direct care to patients in a mental

health centre/psychiatric hospital. As well, outcomes from this study could be compared

to those from two recent studies. Both utilized an almost identical questionnaire but the

Smith and Sellick (2008) study surveyed all acute care health professionals (including hospital-based mental health nurses) from the North West LHIN region while the Roberts (2009) study surveyed nurses within First Nations communities in Northwestern Ontario.

The North East region (LHIN #13) services a population of over 560,000 (LHIN, 2009b). Its largest psychiatric in-patient facility is in North Bay with 162 beds followed by Sudbury with 57 beds (Northeast Mental Health Centre, 2009). The North Simcoe Muskoka region (LHIN # 12) has a total population base of approximately 425,000 (LHIN, 2009c). Its largest psychiatric in-patient facility is in Penetanguishene, which has 312 beds, and is of maximum security (Mental Health Centre Penetanguishene, 2009). A map of all LHIN regions in Ontario is provided in Appendix B.

Estimated Response Rate

For this study, it was estimated that a best case scenario response rate would be 50%, a worst case scenario would be 30%, and a most likely response rate between 30-50%. Other studies using similar methodologies with nurse respondents yielded response rates of 39%, 50%, and 58% (A. Dragan, personal communications, January 22, 2007; Johnston et al., 2005; Sarna et al., 2000). The table below outlines the number of respondents (n) that corresponded with various estimated response rates. These sample sizes included mental health nurses who work in either an acute care addictions or a psychiatric setting, as the registry does not differentiate between the two.

Table 1

Estimated Response Rates to Number of Potential Respondents

Potential Participants (n=195)	
Estimated Response Rate	Number of Respondents (n)
30%	59
40%	78
50%	98

These estimates were based on 2007 statistical data from the College of Nurses of Ontario (CNO) website where 278 nurses in the defined geographic area met all of the eligibility criteria for this study (CNO, 2007). However, a representative from the CNO indicated that approximately 70% of members would consent to participate in nursing research (CNO Knowledge Management Department, personal communication, 2006). Therefore, addresses of approximately 195 participant names and addresses were predicted to be acquired from the CNO to participate in this study.

Measures

The questionnaire used in this study was an adapted version of one previously used in another study within acute care hospitals in Northwestern Ontario (Smith, Sellick, Brink, & Edwardson, 2009), which in turn, was constructed mainly from a previously validated survey (Johnston et al., 2005) with additions from other previously validated surveys with items that map directly onto the USDHHS guidelines (Fiore et al., 2008).

The questionnaire for this study (Appendix C) contained a total of 61 items grouped under 54 questions. Items were either grouped under one question or arranged in a 'check all that apply' format to make it easier for the respondent to fill out the questionnaire. Items were broken down into the following four areas: a) basic demographic information; b) systems-level interventions; c) 4A protocol; and, d) factors potentially influencing tobacco cessation interventions—perceived role, confidence, facilitators and barriers. The references for the original source of each item are provided below.

Demographics

There were a total of 10 demographic items: 1) year of graduation (open-ended); 2) education level (check one answer; options included certificate, diploma, bachelors, masters, and doctorate); 3) work area (check one answer; options included addiction, mental health/psychiatry, crisis intervention, and 'other' [with a request to specify in an open-ended text field]); 4) years worked in current practice area (open-ended); 5) employment status (check one answer; options included full-time, part-time, and casual); 6) town of work (open-ended); 7) type of work facility (check one answer; options included psychiatric hospital, general hospital, addiction and psychiatric hospital, community-based, and 'other' [with a request to specify in an open-ended text field]); 8) tobacco use status (check one answer; options included daily, occasionally, formerly, and have never used tobacco); 9) quitting timeline (check one answer; options included quit within the last 6 months and quit more than 6 months ago; Prochaska & Di Clemente, 1983); and 10) request for information or assistance with quitting (check one answer; options included yes and no). See Appendix C for a copy of the questionnaire utilized in this study.

Systems-Level Strategies

There were a total of 14 items in the questionnaire related to strategies implemented by workplaces to support tobacco cessation intervention efforts and training.

Protocols/policies. Four nominal scale items grouped under two questions were created by Smith et al. (2009) based on the USDHHS guidelines (Fiore et al., 2008). The first question asked: 'Does your workplace have a written protocol/policy for identifying

tobacco use and tobacco cessation counselling?' and listed two items (tobacco use and tobacco cessation counselling) where the respondent would check-off their answer on a three option forced choice format (1 'yes', 2 'no', 3 'don't know'). The second question asked: 'Does your workplace have methods for documenting tobacco use and tobacco cessation counselling in patients' medical record?' and listed the same items and answer format mentioned above.

Patient materials. Another nominal scale question developed by Smith et al. (2009) based on the USDHHS guidelines (Fiore et al., 2008) asked 'Are any of the following materials available in waiting rooms, lounges, or patient rooms at your workplace?' and listed four items (posters encouraging tobacco cessation, pamphlets or self-help materials on tobacco cessation, quit line contact information, and community-based tobacco cessation program information) where the respondent would check-off their answer (for each item) scored on a three option forced choice format (1 'yes', 2 'no', 3 'don't know').

Training. There were four items for training: 1) 'Have you received any tobacco cessation training?' (nominal scale yes/no; Smith et al., 2009); 2) 'How interested are you in learning more about how to help your patients quit tobacco use?' (4-point forced choice interval scale – 1 'very interested' to 4 'not at all interested'; Prochaska et al., 2005); 3) 'If you were to receive tobacco cessation training, or further training, what areas would you like to know more about?'. This was a k-type (check all that apply) nominal scale question with the following 11 options: asking and/or advising patients about tobacco use, assessing readiness to quit, providing social support, recruiting social support outside the hospital, counselling patients to quit, assisting patients who continue

to smoke, counselling to avoid relapse, finding and/or recommending post-discharge cessation services, and selecting self-help materials for patients; and, 'other' (with a request to specify in an open-ended text field; Johnston et al., 2005) and, 4) 'Which of the following resources would you use to learn more about tobacco cessation for your patients?'. Respondents were offered six choices in a check all that apply nominal scale format (brief in-service, 1-hour, 1/2 –day, and/or full-day workshop, self-study materials, 'other' [with a request to specify in an open-ended text field]).

Guideline awareness. Two nominal scale questions specific to awareness of RNAO guidelines were asked: 1) 'Have you seen the Registered Nurses Association of Ontario document called: Integrating Smoking Cessation into Daily Nursing Practice?' (1 'yes' 2 'no'; 2007), and 'Have you read the document?' (1 'yes' 2 'no'; 2007). The two latter items were grouped under one question and created specifically for this study since no similar items were found in the literature.

Clinician-Level Practice

RNAO 4A protocol. Twenty items represented tobacco cessation strategies used by mental health nurses and grouped within each of the RNAO's 4A protocol components (2007) as follows: *ask* (1 item), *advise* (4 items), *assist* (13 items), *arrange* (2 items). All of these items were scored on a 4-point forced choice interval scale (1 'never' to 4 'frequently'). The stem for all items was: 'In relation to your work with inpatients…please indicate how often you performed the following activities in the past 12 months'. The one *ask* item included the following strategies: assess tobacco use status and history (Johnston et al., 2005). This one ask strategy also represented the overall ask subscale of the 5A protocol. The four *advise* items included the following strategies:

advice to quit, explain the harmful effects of tobacco use and second-hand smoke, and encouraging those who have started smoking again to quit (Johnston et al., 2005). The responses to these four strategies were averaged to create an overall *advise* subscale. The 13 *assist* items included the following strategies: recommend NRT, buproprion and varenicline tartrate (Smith et al., 2009), offer self-help materials (Johnston et al., 2005), assess readiness to quit (Prochaska et al., 2005), motivate patients to quit (Johnston et al., 2005), help set a quit date (Zvolensky et al., 2005), suggest actions to quit or cut down, recommend alternatives to using tobacco, organize health talks, teach coping skills, discuss tobacco use with family members (Johnston et al., 2005), and instruct on over-the-counter medication for tobacco cessation (Smith et al., 2009). The responses to these 13 assist strategies were averaged to create an overall assist subscale. The two *arrange* items included the following strategies: refer to another healthcare professional and to cessation resources (Johnston et al., 2005).

Two additional computations were made in order to report the percentage of nurses adhering to each of the subscales. One computation provided a measure of the percentage of respondents who intervened at all, even if seldom, for each of the subscales, and the other provided a measure of the percentage of respondents who intervened 'occasionally' or 'frequently'. For both computations, an overall 'yes/no' item was created by dichotomizing the 4-point interval scale for each item into 'yes' (frequently, occasionally, and seldom) and 'no' (never) for the first computation and 'yes' (frequently and occasionally) and 'no' (seldom and never) for the second computation, and then summed across each component of the 4A protocol. Any sum >0 indicated that the respondent performed any strategies within that component of the 4A

protocol according to the criteria of either 'seldom', 'occasionally', or 'frequently' as for the first computation, or 'occasionally' or 'frequently' for the second.

Time spent counselling. One ordinal scale item was designed to measure the average length of time respondents spent counselling on tobacco cessation. The question asked: 'If you counsel patient about tobacco use and/or cessation, how much time, on average, do you spend doing this with each patient during each visit?' (I do not counsel patients about tobacco use and/or cessation, less than 3 minutes, 3 to 10 minutes, or more than 10 minutes). This item was developed by Smith et al. (2009) based upon the meta-analyses of clinical interventions in the USDHHS guidelines (Fiore et al., 2008) in an attempt to measure whether interventions, on average, met the minimal (3 minute) or more intensive (10 minute) recommendations.

Factors Potentially Influencing Tobacco Cessation Interventions

Beliefs. Six items inquired about respondents' beliefs about delivering tobacco cessation interventions. The stem was: 'In relation to your work with inpatients...how strongly do you agree or disagree with the following statements?'(4-point forced choice interval scale – 4 strongly agree to 1 strongly disagree; Johnston et al., 2005) for five items: 1) Brief advice (e.g.,, 3 minutes) to help patients stop tobacco use is effective, 2) Nurses should advise patients to quit using tobacco even if help is not requested; 3) Health education on the risk of tobacco use is an important area of nursing care; 4) Nurses should educate other tobacco users in the patient's household about tobacco use, if at all possible; and 5) Nurses should use every opportunity to educate patients about the health effects of tobacco use. The sixth item asked: 'To what extent do you feel that delivering a tobacco cessation intervention is a part of your role as a nurse working with

inpatients that have an addiction and/or mental health illness?' (3-point forced choice ordinal scale – not at all, somewhat, and very much; Smith et al., 2009).

The 4-point interval scale of five belief items (on how strongly respondents agreed or disagreed with statements on delivering tobacco cessation interventions) was also dichotomized to a binary scale by combining 'strongly agree' with 'agree' and 'disagree' with 'strongly disagree'. This recode permitted additional analyses in order to calculate the percentages of respondents who had positive views on these roles versus those who did not.

Confidence. There were eight items on mental health nurses' confidence in performing strategies on the topics of: advising to quit, teaching about health risks, finding out patients' tobacco use beliefs, counteracting negative attitudes, negotiating a quit date, recognizing withdrawal symptoms, discussing quitting methods, giving advice on NRT, and using resource materials. The stem was: 'In relation to your work...please indicate how confident you feel or would feel performing the following strategies' (4-point forced choice interval scale – 4 'very confident' to 1 'not confident'; Johnston et al., 2005).

The 4-point interval scale of the eight confidence items was also dichotomized to a binary scale by combining 'very confident', 'confident', and 'somewhat confident' into 'has confidence' and keeping the last scale rating of 'not confident' as is. This recode permitted additional analyses in order to compare the percentages of respondents who had any level of confidence to those who had no confidence in performing certain tobacco cessation strategies. The 4-point interval scale of all confidence items was also

recoded to combine 'very confident' and 'confident' in order to additionally analyse results from only those who had higher levels of confidence.

Facilitators. This k-type nominal scale (check all that apply) item asked: 'Which of the following items encourage, or would encourage, you to advise or counsel inpatients...to quit using tobacco' and contained 15 options on these topics: tobacco use knowledge; patient motivation; role perception; skills in counselling; confidence; personal beliefs; support from management and colleagues; past successes; reasonable workload; availability of resources; physician request for nursing involvement; and 'other' (with a request to specify in an open-ended text field; Johnston et al., 2005).

Barriers. This k-type nominal scale (check all that apply) item asked: 'Which of the following items discourage you from advising or counselling inpatients...to quit using tobacco?' and contained 19 options on these topics: lack of time, skills, knowledge, confidence, recognition, resources, and support from colleagues, heavy workload, low priority, personal discomfort, personal beliefs, unsuccessful past interventions (Johnston et al., 2005), limited direct patient care, absence of hospital mandate/policies, lack of patient motivation, lack of educational resources, personal beliefs on the effectiveness of interventions, reluctance to provide cessation advice, and 'other' (with a request to specify in an open-ended text field; Smith et al., 2009).

Procedure

Development of Mailing List

The College of Nurses of Ontario's (CNO) mailing list services was used to develop a mailing list. There are no other ways to develop such a large mailing list which could meet all the eligibility criteria for this study. This is a service provided by the CNO

designed for research purposes and available at a cost of $300 for students in post-

graduate programs doing research in nursing. Eligibility to receive this mailing list

required approval from an Ethics Review Board (CNO, 2006).

Survey Mailout

This study utilized the first three steps of a five step mail-out methodology

developed by Dillman (2000) which has been shown to improve response rates. The first

step involved a survey package that was mailed to all eligible participants which included

a cover letter briefly explaining the study, how to complete the questionnaire, and a

deadline date of 5 weeks after the initial mailout, the actual questionnaire, and a stamped

return envelope. One week later, non-respondents were sent a reminder card asking them

to complete and mail the questionnaire they had recently received. Two weeks after the

reminder card mailout, non-respondents were mailed a second survey package which

included a modified cover letter (with an additional paragraph indicating their

questionnaire was not yet received), the actual questionnaire, and a stamped return

envelope.

Non-respondents were tracked by an identification number on the consent form

that was cross-referenced with the master mailing list. Only non-respondents were

included in subsequent mailings as per the Dillman (2000) method mentioned above.

This data collection phase took 5 weeks to complete and all surveys were tracked for

response receipt dates. Thank you letters were subsequently mailed once data collection

was completed which could be used as proof of nursing reflection practice towards the

respondents' Professional Practice Portfolio (CNO, 2005).

Of note, the first (pre-contact letter) and last step (final contact made via telephone or priority mail) of the Dillman (2000) mailout methodology were omitted after careful consideration of study costs and benefits. Participants' telephone contact information was not attainable and the costs of sending a prenotice letter and a final contact by priority mail would have resulted in a smaller participant pool in order to meet budget constraints. Other studies were reviewed which utilized a similar three-step mailout methodology and attained satisfactory response rates (A. Dragan, personal communications, January 22, 2007; Johnston et al., 2005; Sarna et al., 2000). The three mailout steps chosen were those thought to be the most important steps towards maximizing response rates while maintaining an adequate number of potential participants within budget restraints.

<div align="center">Data Analysis</div>

All data for this study were initially entered into an Epi Info version 3.4.3 template database and then verified to ensure that the entered data matched hard copy survey responses. These data were then exported and analysed using SPSS, version 13.

Data Cleaning

Prior to analysis, data were screened for accuracy of data entry and missing values. Screening for outliers and out of range data was also conducted on open-ended demographic data. All hand-written comments on the questionnaire or in open text fields were pasted into an Excel spreadsheet and summarized under recurrent themes and reported as such.

For all items where the respondent could only choose only one answer from a list of options, any missing cases were coded as '999' for data entry accuracy purposes and

were excluded from the analyses. The denominator therefore varied among these items. For all 'check all that apply' items, non-responses were coded as '0' in order to calculate percentages for each option. For all open-ended items, any blank fields were coded as '999' and excluded from the analyses.

Primary Outcomes

The primary analyses for this study consisted of frequency counts and percentages for categorical variables (nominal and ordinal scaled) and measures of central tendency for continuous variables (interval scaled) for all items relating to demographics, systems-level strategies, clinician-level strategies, and factors potentially influencing tobacco cessation interventions.

Exploratory Outcomes

T-tests were conducted to compare the frequency with which respondents performed the components of the 4A protocol or tobacco cessation strategies between those who had systems level strategies to those who did not. It was first attempted to match a systems-level strategy to its most relevant tobacco cessation strategy and when no such strategy existed, it was then matched to its most relevant overall component of the 4A protocol. It was not possible to include training in these analyses based on the small number of respondents who received training on tobacco cessation (n=6).

Correlational analyses were conducted to determine if there was any relationship between respondents' confidence and beliefs to the performance of each component of the 4A protocol and/or tobacco cessation strategies. It was first attempted to match a confidence or belief item to their most relevant strategy and when no such strategy existed, it was then matched to its most relevant component of the 4A protocol. Of note,

Bonferroni adjustment was used, setting p at < .01 to control for Type 1 errors for all secondary outcome analyses.

Post-Hoc Outcomes

Post-hoc outcomes were conducted based on results that showed almost half of respondents worked in Penetanguishene (North Simcoe Muskoka LHIN) where the only psychiatric hospital is a maximum security facility with a no smoking policy anywhere on the grounds. Patients would therefore have no opportunities to smoke during their admission. The other half of respondents worked in the North East LHIN region where some patients are allowed to go outside to smoke. This study therefore sought to find out if there were any intervention differences between both LHIN regions. T-tests were conducted to compare the frequency of tobacco cessation interventions among those working in the North East LHIN region and those in the North Simcoe Muskoka LHIN region based on each component of the 4A protocol. T-tests were conducted to also compare responses between the two regions on respondents' role perception, amount of time they spent counselling, and their level of interest to learn more on tobacco cessation. Of note, Bonferroni adjustment was again used for all exploratory analyses, setting p at < .01 to control for Type 1 errors.

Chapter 4: Results

Response Rate and Demographics

Response Rate

One hundred and fifty six potential participant addresses were received from the College of Nurses of Ontario which represented 20% fewer (156/195) than the amount originally predicted. Of these addresses, 141 were valid (90%) and used to send surveys. Of the 15 that were not valid, 6 did not meet this study's eligibility criteria (2 stated they were not actively working, 1 did not work directly with patients, and 3 did not work with this study's target group), 5 had an invalid address, and 4 were not within the two selected LHIN regions. Of the 141 surveys sent, a total of 71 surveys were returned. One was excluded since it was illegible due to water damage, resulting in a final response rate of 50% (70/141), representing 25% of the estimated 278 mental health nurses in the region according to CNO (2007).

The Dillman (2000) mailout methodology provided an additional four ways to understand and interpret the response rates for research purposes (Figure 1). This information was also useful to interpret the return on investment and the need for multiple mailouts. The absolute response rates for each step, calculated as the number of surveys received compared to the number distributed for each step were 10% (14/141) for step 1 (the initial survey), 24% (30/127) for step 2 (the first reminder sent 7 days after the initial survey was mailed), and 27% (26/97) for step 3 (3 weeks after the initial survey was mailed). The relative response rates for each step, calculated as the number of surveys received for each step compared to the total sent (N=141), were 10% (14/141) for step 1, 21% (30/141) for step 2, and 18% (26/141) for step 3. The cumulative response

rates for each step, calculated by successive addition of the total number of surveys

received at each step compared to the total sent (N=141), were 10% (14/141) for step 1,

31% (44/141) for step 2, and 50% (70/141) for step 3. The percentage of the total number

of surveys received for each step, calculated as the number of surveys received for each

step compared to the total amount received (N=70), were 20% (14/70) after step one,

43% (30/70) after step 2, and 36% (25/70) after step 3.
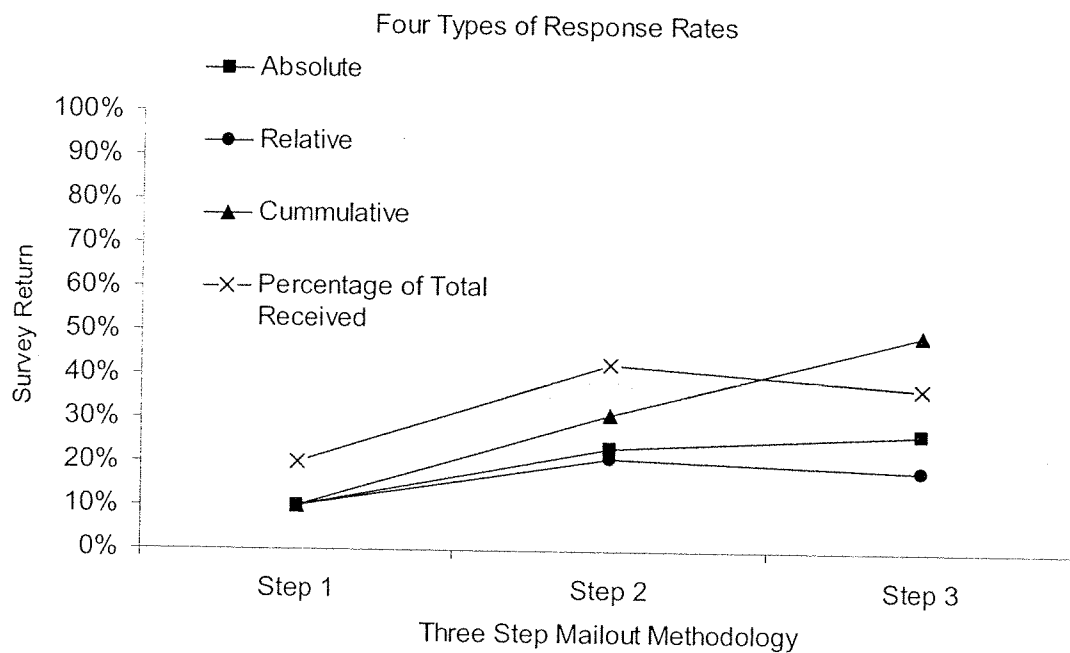
Figure 1. Four survey response rates for each of the three step Dillman (2000) mailout
methodology.

Basic Demographics

Seventy-two percent of respondents reported a diploma as their highest level of

education (Table 2). Only 10 nurses (15%) smoked cigarettes daily or occasionally and 4

of them requested information on quitting tobacco use (Table 2).

Table 2

Highest Level of Education and Personal Tobacco Use

	%	n/N
Education level		
Certificate	3	2/69
Diploma	72	50/69
Bachelors	25	17/69
Personal use of tobacco		
Never	53	36/68
Daily	6	4/68
Occasionally	9	6/68
Formerly	32	22/68
Quit within the last 6 months	18	4/22
Quit more than 6 months ago	82	18/22
Request for information in quitting (smokers only)	40	4/10

Note. Percentages do not always add up to 100% due to rounding of numbers.

Work Profile

About half (48%, 33/69) of all respondents worked in the North Simcoe Muskoka

(NSM) LHIN region and the other half worked in the North East (NE) region (52%,

36/69; Figure 2). Ninety percent (62/69) respondents worked full-time, 90% (62/69)

worked in mental health, and 84% (58/69) worked in psychiatric hospitals. Very few

worked part-time or casual, few worked in crisis intervention or addictions, and few

worked in facilities other than hospitals (Table 3). In the NSM region, all but 2 worked in

Penetanguishene. In the NE region, about 2/3 (22/36) worked in North Bay and 1/3

(11/36) worked in Sudbury; only 3 worked in Sault Ste Marie. Overall, approximately

half of all respondents were from Penetanguishene and 1/3 from North Bay (Figure 2).

Respondents' Region of Work (N=69)
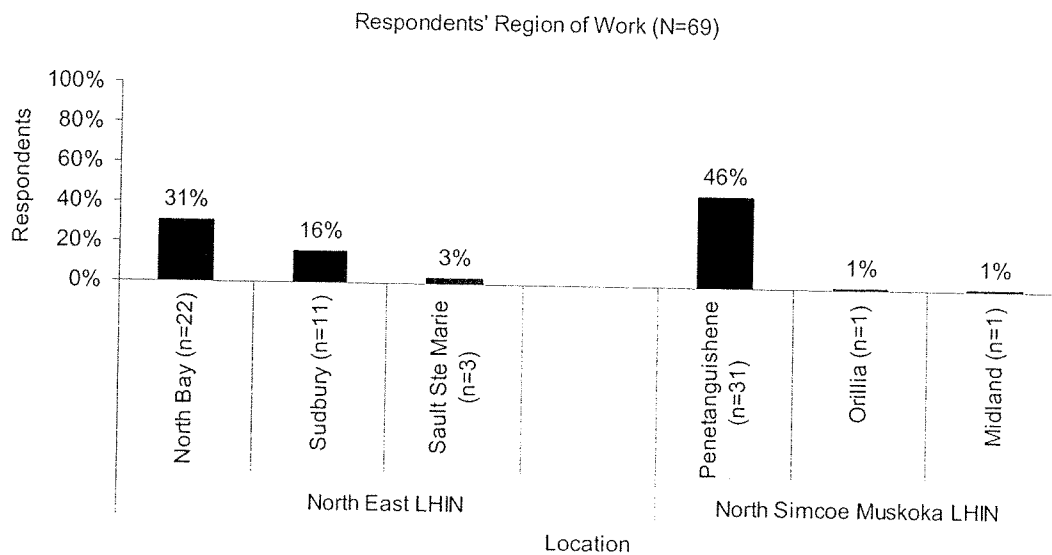
Figure 2. Respondents' region of work according to both Local Health Integration Network (LHIN) regions.

Table 3

Respondents' Area of Work and Type of Work Facility

	%	n/N
Current work status		
Full-time	90	62/69
Part-time	7	5/69
Casual	3	2/69
Area of work		
Mental health/psychiatry	90	62/69
Crisis intervention	1	1/69
Addictions	0	0/69
Other[a]	9	6/69
Type of work facility		
Psychiatric hospital	84	58/69
Addiction and psychiatric hospital	9	6/69
General hospital	4	3/69
Community-based	0	0/69
Other[b]	3	2/69

Note. Percentages do not always add up to 100% due to rounding of numbers.
[a] Others identified areas of work as forensics (n=2), geriatric (n=1), mental health and crisis intervention (n=1), the assertive community treatment team and crisis intervention (n=1), and mental health and infection control (n=1). [b] Others identified work facilities as a mental health and long term care centre (n=1) and an addiction/psychiatric hospital and a community-based setting (n=1).

Systems-Level Interventions

Methods for Identifying and Documenting Interventions

The majority of respondents reported that their workplace had written policies or methods for identifying and for documenting tobacco use, but slightly less than half reported written policies or methods for identifying and for documenting tobacco cessation counselling (Table 4).

Table 4
Workplace Tobacco Cessation Strategies

	% (yes)	n/N
Workplace Protocol/Policy		
Identifying tobacco use	78	53/68
Identifying tobacco cessation counselling	46	30/65
Methods for Medical Records		
Documenting tobacco use	66	46/70
Documenting tobacco cessation counselling	47	32/68
Tobacco Cessation Materials in Waiting Rooms, Lounges, or Patient Rooms		
Posters	50	35/70
Pamphlets/self-help materials	50	35/70
Quit line contact information	28	19/69
Community-based program information	28	19/69

Note. Between 10-18% did not know whether they had policies or methods for identifying tobacco use (6/68), documenting tobacco use (8/70), providing tobacco cessation counselling (11/65), or documenting tobacco cessation counselling (12/68).

Tobacco Cessation Materials

Almost half of the respondents indicated that posters and pamphlets/self-help materials were available in their workplace, and less than one third indicated that quit line contact information and community-based program information were available (Table 4). About one-third of respondents did not know if materials on quit lines (28%, 19/69) or community-based programs (33%, 23/69) were available at their workplace.

Tobacco Cessation Training and Awareness of RNAO Guidelines

A large majority of respondents did not receive any tobacco cessation training (Table 5). Respondents were, on average, moderately interested to learn more on how to help their patients quit tobacco use (M=2.0 on a scale of 1 [no interest] – 4 [very interested], SD=0.8). Only 7% were not interested in tobacco cessation training. As well, thirteen out of 68 nurses (19%) had seen the RNAO guidelines, among whom 10 had read them (77%).

Using a check-all-that-apply list of possible topics for future training, respondents most frequently chose counselling patients to avoid relapse (66%, 46/70) and assessing readiness to quit (63%, 44/70). Six of the 10 training topics were chosen by at least 50% of respondents (Table 5). In contrast, only 13% (9/70) wanted training on how to ask patients about tobacco use. Seven percent of nurses (5/70) checked off 'other' and provided additional training areas of interest which included encouraging co-workers to quit tobacco use (n=1), hospital policies on tobacco cessation (n=1), explaining the importance of quitting tobacco use when dealing with severe mental health and addiction issues (n=1), counselling patients required to quit due to hospitalization (n=1), and specific treatments (such as NRT; n=1).

Post-hoc analyses. T-test analyses showed no significant differences between the two LHIN regions respondents' interest to learn more on tobacco cessation (see Appendix D for a summary table comparing outcomes between the two LHIN regions).

Table 5

Interest in Learning More about Tobacco Training Areas and Resources

	%	n/N
Received Tobacco Cessation Training [a]	9	6/66
Areas of Interest on Tobacco Cessation Training [b]		
Counselling patients to avoid relapse	66	46/70
Assessing patients' readiness to quit using tobacco	63	44/70
What self-help materials to give patients who use tobacco	57	40/70
Counselling patient to quit	57	40/70
Helping patient recruit social support outside the hospital environment	56	39/70
Finding/recommending post-discharge tobacco cessation services	51	36/70
Providing social support as a part of cessation treatment	49	34/70
What to do if a patient continues to use tobacco	46	32/70
Advising patients to stop using tobacco	39	27/70
Asking patients about tobacco use	13	9/70
Preferred Training Formats for Tobacco Cessation Training [b]		
Self-study materials	57	40/70
1- hour workshop	37	26/70
1/2 - day workshop	37	26/70
Full-day workshop	36	25/70
Brief in-service during departmental meeting	29	20/70

[a] Percentage represents those who checked of 'yes'. [b] All items were measured on a check-all-that-apply format. Percentages in table represent respondents who checked off that individual item.

On the check-all-that-apply list of possible training formats, respondents most frequently chose self-study materials (57%, 40/70) and least frequently chose a brief in-service during departmental meeting (29%, 20/70; Table 5). Four respondents checked off 'other' and provided comments about additional training formats they would prefer: a series of 1-hour sessions (n=1), 1/2 hour individual and 1/2 hour group training (n=1), having a staff person dedicated to tobacco cessation (n=1), and any resources with sufficient data for learning (n=1).

Clinical-Level Interventions

Time Spent Counselling

Seventy-one percent (50/70) of respondents reported spending at least some time counselling patients about tobacco use and/or cessation while 29% (20/70) did not counsel. Among those who spent time counselling, about half spent 1-3 minutes (33% of all respondents, 23/70), about half spent 3-10 minutes (33% of all respondents, 23/70), and only 8% spent more than 10 minutes (6% of all respondent, 4/70).

4A Protocol

The mean frequency for each 4A protocol component decreased successively in that respondents performed *ask* more often than *advise*; *advise* was performed more often than *assist* , and *assist* was performed more often than *arrange* (Table 6). The means for *ask* and *advise* correspond to intervening 'occasionally' while the means for *assist* and *arrange* correspond to intervening 'seldom' (Table 6). Only 10 of the 20 tobacco cessation strategies were performed by at least 50% of respondents 'frequently' or 'occasionally' and few respondents performed any strategy 'frequently' (Table 6). One respondent did not complete the questionnaire section pertaining to their performance of the 4A protocol strategies--he/she instead wrote a comment in the margin stating that the items were not relevant as his/her workplace facility was smoke-free.

Table 6
4A Protocol

	Frequently	Occasionally	Seldom	Never	M	SD
Ask[a]					**3.1**	**1.0**
•Assess tobacco use status and history	42%	33%	16%	9%	3.1	1.0
Advise[a]					**2.6**	**0.8**
•Explain tobacco use effects	28%	40%	25%	7%	2.9	0.9
•Advise to quit using tobacco	26%	38%	17%	19%	2.7	1.1
•Explain second-hand smoke effects	17%	38%	29%	16%	2.6	1.0
•Encourage patients to quitting again	17%	32%	29%	22%	2.4	1.0
Assist[a]					**2.2**	**0.7**
•Recommend alternatives for tobacco	28%	45%	16%	12%	2.9	0.9
•Suggest actions to quit or cut down	29%	36%	23%	12%	2.8	1.0
•Recommend or suggest NRT	28%	38%	18%	16%	2.8	1.0
•Assess patients' readiness to quit	26%	32%	20%	22%	2.6	1.1
•Motivate patients to quit	19%	41%	26%	15%	2.6	1.0
•Teach coping skills to prevent relapse	10%	39%	29%	22%	2.4	0.9
•Instruct on the use of over-the-counter or prescription medication	6%	28%	24%	43%	2.0	1.0
•Help set a quit-date	3%	28%	33%	36%	2.0	0.9
•Offer self-help cessation materials	1%	29%	32%	38%	1.9	0.9
•Recommend or suggest buproprion	1%	23%	26%	49%	1.8	0.9
•Organize health talks about tobacco	2%	15%	29%	54%	1.6	0.8
•Discuss patients' tobacco use with their family	1%	10%	28%	61%	1.5	0.7
•Recommend/suggest varenicline tartrate	0%	7%	10%	82%	1.3	0.6
Arrange[a]					**2.0**	**0.8**
•Refer to other healthcare professionals for tobacco cessation counselling	4%	33%	26%	36%	2.1	0.9
•Refer to cessation resources (e.g. helpline)	4%	28%	32%	36%	2.0	0.9

Note. Percentages do not always add up to 100% due to rounding of numbers. Items were scored on a scale of 1-4 where 1=never, 2=seldom, 3=occasionally, and 4=frequently.
[a] *Ask, advise, assist, and arrange* represent a computated mean of all relevant strategies performed within each of these 4A protocol components.

On the *ask* subscale, 91% (63/69) reported that they *asked*, even if seldom. The

average frequency of *asking* was equivalent to 'occasionally' on the four-point scale

(never, seldom, occasionally, frequently) used to measure *ask* (Table 6). If respondents

who 'never' or 'seldom' *asked* are excluded and only those who *ask* 'frequently' or

'occasionally' are included, the *ask* rate drops from 91% to 75% (52/69).

On the *advise* subscale, 96% (66/69) of respondents performed at least one of the 4 *advise* strategies in the past 12 months (even if seldom) with an overall average frequency corresponding to 'occasionally' on the four-point scale (Table 6). The *advise* subscale rate drops from 96% to 81% (56/69) when only those who performed at least one *advise* strategy 'frequently' or 'occasionally' were examined. Based on the frequencies with which each of the strategies in the *advise* subscale were performed, explaining the harmful effects of tobacco use was the *advise* strategy performed the most frequently, with an average equivalent to 'occasionally' (M=2.9, SD=0.9), and 68% (46/68) reported performing it 'frequently' or 'occasionally' (Table 6). Encouraging patients to try quitting again was the *advise* strategy performed the least frequently, with an average equivalent to 'seldom' (M=2.4, SD=1.0), and 49% (34/69) of respondents performed this strategy 'frequently' or 'occasionally' (Table 6). The other 3 *advise* strategies were each performed 'frequently' or 'occasionally' by over half of respondents (Table 6).

On the *assist* subscale, 93% (64/69) of respondents performed at least one of the 13 *assist* strategies in the last 12 months (even if seldom) with an overall average frequency corresponding to 'seldom' on the four-point scale (Table 6). The *assist* subscale rate drops from 93% to 88% (61/69) when only those who performed at least one *assist* strategy 'frequently' or 'occasionally' were examined. Based on the frequencies with which each of the strategies in the *assist* subscale were performed, suggesting actions to quit or cut down, recommending alternatives to using tobacco, recommending or suggesting NRT, assessing patients' readiness to quit, and motivating patients to quit were performed most frequently, with a average equivalent to

'occasionally' (M=2.6-2.8, SD=0.9-1.1), and between 58-73% performed these five strategies 'frequently' or 'occasionally' (Table 6). The remaining 8 *assist* strategies were performed 'frequently' or 'occasionally' by less than 50% of respondents (Table 6). Organizing health talks, discussing patients' tobacco use with their family, and recommending or suggesting varenicline tartrate were the *assist* strategies performed the least frequently, where the average of the first two strategies were equivalent to 'seldom' (M=1.5-1.6, SD=0.7-0.8) and the average of the latter strategy corresponded to 'never' (M=1.3, SD=0.6), and only 7-16% of respondents reported performing these three *assist* strategies 'frequently' or 'occasionally' (Table 6).

On the *arrange* subscale, 75% (52/69) of respondents performed at least one of the 2 *arrange* strategies over the last 12 months (even if seldom) with an overall average frequency corresponding to 'seldom' on the four-point scale (Table 6). The *arrange* subscale rate drops from 75% to 54% (37/69) when only those who performed at least one *arrange* strategy 'frequently' or 'occasionally' were examined. Both *arrange* strategies were only performed by 32-38% of respondents 'frequently' or 'occasionally' and had an average corresponding to 'seldom' (M=2.0-2.1, SD=0.9; Table 6).

Exploratory analyses. Exploratory analyses were used to compare respondents who reported that they had systems level strategies and those who did not on their performance of the 4A components or individual strategies. Only 1 of the 11 analyses performed was significant (Table 7). Those who had pamphlets or self-help materials on tobacco cessation available at their workplace offered such materials significantly more often than those who did not have this systems level strategy (t [58]=-3.8, p=0.00; Table 7).

Table 7

Independent Sample T-tests on the Performance of 4A Protocol Components or Strategies by Nurses With and Without Systems-Level Strategies

	Has system Frequency[a]		No system Frequency[a]		
	% (n/N)	M ± SD	% (n/N)	M ± SD	p
System: document tobacco use	64% (45/70)		23% (16/70)		
Ask		3.1 ± 1.0		2.9 ± 1.0	0.39
System: document tobacco cessation counselling	45% (31/69)		35% (24/69)		
Advise		2.8 ± 0.8		2.5 ± 0.9	0.21
Assist		2.3 ± 0.6		2.0 ± 0.6	0.10
Arrange		2.2 ± 0.7		1.9 ± 0.8	0.14
System: availability of posters	49% (34/69)		42% (29/69)		
Ask		3.1 ± 1.0		3.0 ± 1.1	0.75
Advise		2.6 ± 0.8		2.6 ± 0.9	0.79
Assist		2.2 ± 0.7		2.1 ± 0.7	0.73
Arrange		2.1 ± 0.8		2.0 ± 0.8	0.44
System: availability of pamphlets or self-help materials	49% (34/69)		38% (26/69)		
Strategy - offering self-help materials		2.2 ± 0.8		1.5 ± 0.6	0.00
System: availability of quit line contact information	28% (19/69)		45% (31/69)		
Strategy - referring to other health care professionals		2.1 ± 0.9		1.9 ± 0.9	0.51
System: availability of community-based tobacco cessation program information	28% (19/69)		39% (27/69)		
Strategy - referring to cessation resources		2.4 ± 0.8		2.0 ± 0.9	0.09

Note. Percentages do not add up to 100% since grouping variables utilized were 'yes' and 'no' and excluded 'don't know' answers. One respondent was missing data for each of the predictor variables and was excluded from the analyses so the numerators and denominators do not match those for the systems-level outcomes in Table 4.

[a]Strategies were scored on a scale where 1=never, 2=seldom, 3=occasionally, and 4=frequently.

Post-hoc analyses. Chi-square analyses showed no significant differences between the two LHIN regions in the percentage of respondents who *asked, advised, assisted,* and *arranged* (see Appendix D for a summary table comparing outcomes between the two LHIN regions). T-test analyses also showed no significant differences between the two LHIN regions on the frequency in which nurses *asked, advised, assisted,* and *arranged* and no significant differences between regions on the amount of time they spent counselling on tobacco cessation (Appendix D).

Factors Potentially Influencing Tobacco Cessation Interventions

Beliefs

Thirty-two percent (22/68) believed that delivering a tobacco cessation intervention was 'very much' part of their role while the majority (60%, 41/68) believed that it was 'somewhat' part of their role, and only 7% (5/68) felt it was 'not at all' part of their role.

The majority of respondents 'strongly agreed' or 'agreed' with the following statements: health education on the risk of tobacco use was an important area of nursing care (94%; 66/70), nurses should use every opportunity to educate patients about the health effects of tobacco use (77%, 53/69), nurses should advise patients to quit even if help is not requested (64%, 45/70), and nurses should educate other tobacco users in the patient's household about tobacco use (61%, 42/69; Table 8). In contrast, only one third of respondents (34%, 24/70) believed that brief advice to help patients stop tobacco use is effective. Four of the 5 item means corresponded to 'agree' while the item relating to the belief that brief advice is effective corresponded to 'disagree' (Table 8).

Exploratory analyses. Exploratory analyses were also conducted on each belief item to determine the relationship with their corresponding strategy under one of the 4A components. Those with higher levels of agreement on the effectiveness of brief advice and providing advice even if help was not requested reported higher frequency of advising their patients to quit (Table 9). None of the other three belief items were significantly correlated with their corresponding strategy.

Table 8

Respondents' Beliefs towards Providing Tobacco Cessation Interventions

Belief items	Strongly Agree	Agree	Disagree	Strongly Disagree	M^a	SD^a
•Education on the risk of tobacco use is an important area of nursing[b]	49%	46%	1%	4%	3.4	0.7
•Nurses should educate patients about the health effects of tobacco use[c]	25%	52%	17%	6%	3.0	0.8
•Nurses should advise patients to quit even if help is not requested[c]	21%	43%	21%	14%	2.7	1.0
•Nurses should educate smokers in the patient's household on tobacco[b]	12%	49%	28%	12%	2.6	0.8
•Brief advice to help patients stop tobacco use is effective[c]	9%	26%	36%	30%	2.1	0.9

Note. Percentages do not always add up to 100% due to rounding of numbers.
[a]M and SD were scored on a scale of 1-4 where 1='strongly disagree', 2='disagree', 3='agree', 4='strongly disagree'. [b]The denominator was N=69. [c]The denominator was N=70.

Table 9

Correlations between Belief Items and their Corresponding 4A Protocol Strategies

Belief items	Strategy	N	r
Provide cessation advice even if help not requested	Advise patients to quit	69	0.5*
Brief cessation advice is effective	Advise patients to quit	69	0.4*
Education on the risk of tobacco use is important	Explain the harmful effects	68	0.2
Educate on tobacco's health effects	Explain the harmful effects	67	0.3
Educate other tobacco users in the patient's household	Discuss with family members	69	0.1

*Correlation was significant < 0.01.

Post-hoc analyses. T-tests showed no significant differences between the two

LHIN regions on respondents' perceived role on tobacco cessation (Appendix D).

Confidence

The overall confidence score averaging across all items was 2.8 (SD=0.6) which

corresponds to 'confident'. Depending on the activity listed, 81-97% reported at least

some level of confidence ('very confident', 'confident', and 'somewhat confident') in

performing it and at least 50% were 'confident' or 'very confident' (Table 10). On

average, teaching the general health risks of tobacco, finding out beliefs about tobacco

and health, and discussing quitting methods were the top three activities respondents felt

most confident performing and the mean scores (M=3.0-3.1) were consistent with

'confident' on the scaling of these items (Table 10). On average, respondents were least

confident to counteract tobacco users' beliefs on tobacco use and health with the lowest

mean score (M=2.4) which corresponds to 'somewhat confident'. The means of all other

items raged from 2.5-3.1 which corresponds to 'confident' (Table 10).

Table 10
Confidence towards Providing Tobacco Cessation Interventions

Confidence items	Very Confident	Confident	Somewhat Confident	Not Confident	M[a]	SD[a]
Teaching the general health risks of tobacco	21%	66%	10%	3%	3.1	0.7
Finding out beliefs on tobacco use and health	23%	64%	10%	3%	3.1	0.7
Discussing quitting methods	26%	51%	17%	6%	3.0	0.8
Using written materials to help patients quit	21%	50%	21%	7%	2.9	0.8
Giving advice about NRT	20%	51%	20%	9%	2.8	0.9
Advising on how to quit	14%	44%	33%	9%	2.6	0.8
Counteracting beliefs on tobacco and health	4%	46%	33%	17%	2.4	0.8
Negotiating a quit date	10%	46%	26%	19%	2.5	0.9

Note. Percentages do not always add up to 100% due to rounding of numbers. The denominator was N=70 for all items listed.
[a]M and SD were scored scored on a scale of 1-4 where 1='not confident', 2='somewhat confident', 3='confident', and 4='very confident'.

Exploratory analyses. Exploratory analyses were performed on each confidence

item to determine their relationship with its corresponding component of the 4A protocol

or strategy. One confidence item could not be directly linked to a strategy and was

instead linked to its overall component of the 4A protocol. Eight of the 10 correlations

were significant (Table 11). Those who had higher levels of confidence advising patients

on how to quit using tobacco advised patients to quit more often. Confidence in

negotiating a quit date was significantly correlated with helping patients set a quit date as

was confidence to use leaflets and other written materials with offering self-help

materials to patients more. Respondents' confidence in discussing different methods of quitting was significantly correlated with performing *assist* strategies. All strategies under the latter component of the protocol were separated into 2 groups – behavioural and medications (sub-group: over-the-counter medications only and prescription medications only), and correlated with this same confidence item. All correlations were significant except for the one related to prescription medication. Confidence in teaching health risks was not significantly correlated to the strategy of explaining the harmful effects of tobacco use.

Table 11

Correlations between Confidence Items and their Corresponding 4A Protocol Strategies

Confidence Items	4A Strategies	r^a
Advise on how to quit	Advise patients to quit	0.4*
Negotiate a target quit date	Help patients set a quit date	0.4*
Discuss quitting methods	*Assist* (protocol component)	0.3*
	Behavioural	0.5*
	All medications	0.4*
	Over the counter	0.4*
	Prescription	0.3
Give advice about nicotine replacement therapy (NRT)	Recommend /suggest NRT	0.6*
Use leaflets/written materials	Offer self-help materials	0.3*
Teach general tobacco health risks	Explain the harmful effects	0.3

*Correlation was significant < 0.01.
^{a} r=Pearson correlation.

Facilitators to Providing Tobacco Cessation Interventions

Using a check-all-that-apply list of facilitating factors that would encourage respondents to advise or counsel their patients to quit tobacco use, nurses most frequently chose patients' motivation to quit using tobacco (84%, 59/70) and knowledge that quitting tobacco use can improve the health of patients (70%, 49/70; Table 12). In contrast, only 36% (25/70, respectively) identified that a physician's request for nursing

involvement in tobacco cessation and the belief that helping patients to stop using

tobacco is of high priority were facilitators to providing tobacco cessation interventions.

Table 12

Respondents' Facilitators to Providing Tobacco Cessation Interventions (N=70)

Facilitators	%[a]	n
Patients' motivation to quit using tobacco	84	59
Knowledge that quitting tobacco use can improve the health of patients	70	49
Resources available to help with tobacco cessation interventions	64	45
Adequate skills in tobacco cessation counselling	60	42
Sufficient knowledge about tobacco and health	56	39
Support from management	56	39
Reasonable workload that allows time to intervene with tobacco cessation	54	38
Knowledge that quitting most cost effective to prevent chronic disease and cancer	51	36
Support from colleagues	51	36
Belief that helping patients to quit is part of your role and responsibilities	46	32
Confidence in helping patients to stop using tobacco	44	31
Past successes helping patients to quit	43	30
Belief that helping patients to stop using tobacco is of high priority	36	25
Physician request for nursing involvement in tobacco cessation	36	25

Note. All items measured on a 'check all that apply' format.

[a] Percentages represent respondents who checked off that item as an item that 'encourage' them to advise or counsel patients to quit using tobacco.

Twenty-seven percent (19/70) of respondents provided additional comments

regarding facilitators. Eight comments were a repetition from a previously checked off

facilitator item by the same respondent. These repeated items related to patient

motivation to quit (n=4), reasonable workloads (n=4), and resources available on tobacco

cessation (n=1). Four respondents felt strongly about certain facilitators by putting stars

beside the items relating to patient motivation (n=2), reasonable workload (n=1), support

from management (n=2), resources available to help with tobacco cessation interventions

(n=1), and support from colleagues (n=1). Additional facilitators were added by

respondents on the following topics: patient request for tobacco cessation intervention

(n=1), patients' ability to understand the importance of quitting tobacco use (n=1),

workplace tobacco cessation program (n=1), enforcement of no smoking policy by

management (n=1), confidence to answer patients' tobacco cessation questions (n=1),

and a no smoking policy for staff and in-patients on any of the facility grounds (n=1).

Barriers to Providing Tobacco Cessation Interventions

Respondents were asked to choose from a check-all-that-apply list, barriers that

would discourage them from advising or counselling their patients to quit using tobacco.

Lack of patient interest or motivation to quit (74%, 52/70) and lack of resources (50%,

35/70) were the only two barriers identified by at least half of respondents (Table 13). All

other barriers were chosen by less than half of respondents. Lack of knowledge about

tobacco and health (14%, 10/70), discomfort with suggesting patients alter their lifestyles

(13%, 9/70), and limited direct patient care were the three items least identified by nurses

as barriers to intervening with tobacco (11%, 8/70).

Table 13

Respondents' Barriers to Providing Tobacco Cessation Interventions (N = 70)

Barriers[a]	%	n
Lack of patient interest or motivation to quit	74	52
Lack of resources	50	35
Belief that tobacco use is a type of coping mechanism for patients under stress	49	34
Lack of time	47	33
Heavy workload	43	30
Lack of tobacco cessation counselling skills	44	31
Lack of availability of educational materials	37	26
Lack of confidence in delivering tobacco cessation interventions	30	21
Limited effectiveness of tobacco cessation interventions	30	21
Lack of support from colleagues	31	22
No existing hospital mandate or policy to intervene	26	18
Lack of recognition/rewards/reimbursement for intervening	23	16
Belief that helping patients to stop using tobacco is of low priority	23	16
Belief that unwanted advice upsets the nurse-patient relationship	21	15
Past intervention experiences tended to be unsuccessful	21	15
Lack of knowledge about tobacco and health	14	10
Discomfort with suggesting patients alter their lifestyles	13	9
Limited direct patient care	11	8

Note. All items measured on a 'check all that apply' format.
[a] Percentages represent respondents who checked off that item as an item that 'discourage' them to advise or counsel patients to quit using tobacco.

Twenty percent (14/70) of respondents provided additional comments regarding barriers. Eleven comments were a repetition of previously checked off barrier items by the same respondent. These repeated items related to lack of patient motivation to quit (n=4), tobacco use being of low work priority (n=3), tobacco being a coping mechanism for patients under stress (n=2), unsuccessful past intervention experiences (n=1), and a heavy workload (n=1). One respondent felt strongly about certain barriers by putting a star beside the items relating to the lack of patient motivation, lack of hospital mandate to intervene, and tobacco being a coping mechanism for patients under stress. Additional barriers were noted on the following topics: patients being forced to quit tobacco use while in hospital (n=3), lack of hospital policy on tobacco use by patients and staff (n=2), patients who restart to smoke after hospital admission (n=1), and a respondent's lack of personal experience in quitting tobacco use (n=1).

Additional Comments by Respondents

Within all comments received, there were 13 comments made by 10 respondents (14%) that could be considered related to respondents' work facility and the propensity to intervene with tobacco or not. Some were categorized as a facilitator or a barrier (mentioned above) while others could not be placed in either category due to insufficient additional information. Eight topics were revealed about respondents' work facility. It was reported that work facilities: were smoke-free (n=6), were not smoke-free (n=1), were maximum security (n=1), allowed patients to order cigarettes (n=1), allowed workers to order cigarettes for patients (n=1), prohibited any tobacco product on-site (n=1), or had people smoking in outside doorways (n=1). All respondents whose comments mentioned that they worked in a smoke-free maximum security facility were

from the North Simcoe Muskoka region. Two respondents also made comments that they did not perceive a need to intervene because their facility was smoke-free. One of them additionally wrote 'not applicable' beside the entire section relating to their practice of tobacco cessation strategies.

Chapter 5: Discussion

The findings showed that from a systems-level perspective, there was an overall lack of systems-level guidelines being implemented by psychiatric institutions. Although the majority of respondents adhered to the 4A protocol for clinician-level guidelines (even if seldom), the average frequency with which tobacco cessation strategies were performed by nurses in this study was 'seldom' to 'occasional' which represents sub-optimal practice. As well, the majority of respondents spent the minimum 1-3 minutes (or 3-10 minutes) but not the recommended 10 minutes for patients with a mental illness. Relative to the influencing factors, the majority of respondents perceived intervening to be part of their role. Beliefs were positive overall although a bit less certain on the effectiveness of brief advice; however, exploratory analyses showed that the majority of beliefs were not related to intervening. The majority of nurses were confident performing tobacco cessation activities and, in contrast to beliefs, exploratory analyses showed confidence was related to intervening on certain strategies or components of the 4A protocol. Respondents' biggest barrier to intervening was lack of patient motivation to quit which in its opposite, high patient motivation to quit was the biggest facilitator to intervening.

Recruitment Strategy and Response Rates

Utilizing a three-step mail out Dillman methodology (2000) along with attaining a potential participant mailing list from the CNO were important factors towards achieving the target response rate of 50% suggesting results could be reasonably generalized to all acute care mental health nurses from both LHIN regions. These findings should

encourage other researchers to utilize a similar recruitment strategy in order to maximize their response rates.

Although Dillman (2000) recommends a five-step methodology, this and other studies demonstrated that a three step mail-out methodology can result in satisfactory response rates and is more cost effective due to conducting two fewer steps. This study's response rate increased 5-fold from 10% at step 1 to 50% at the third and final step which highlights the positive effects of consecutively conducting all three mail out steps and is comparable to the 58% (A. Dragan, personal communications, January 22, 2007) and 41% (Roberts, 2009) achieved in other three-step mail out survey studies with nurses. This study had a lower response rate at step 2 (31%) than a two-step mail-out study (38%; Sarna et al., 2000) but finished with a much higher final response rate because of the third and final mail-out step. Implementing fewer than three steps could therefore have a negative effect on a study's response rate.

As well, the CNO address database provided easy access to a potential participant list that met specific eligibility criteria for a minimal cost of $300. It would have been time consuming and possibly unfeasible to attain such a specific participant list in a short period of time. The only drawback to using the CNO database was that 20% fewer addresses were received than originally predicted. Compared to all Ontario registered nurses, fewer acute care mental health nurses consented to participate in nursing research. This information should be considered by other researchers when planning to conduct studies using the CNO address database.

Respondent Profile

The demographic profile of potential participants requested from the CNO was consistent with those who responded to this study. Respondents' profile was also similar to all Ontario registered nurses in terms of education levels and years since nursing graduation (CIHI, 2007, raw data from the Regulated Nursing Database; Y. Chen, personal communication, April 20, 2009). This comparable profile confirms that the nurses targeted to participate matched those who actually participated.

The tobacco use rate was another important factor to consider when examining respondents' profile. This study's current tobacco use rate of 15% and former use of 32% were comparable to Canadian data of 18% of those aged 15 and older for current smokers and 29% for former smokers (Health Canada, 2008a). The rates were almost identical to these of other acute care nurses who worked in Northwestern Ontario hospitals (13% current smokers and 30% former smokers; Smith & Sellick, 2008) and primary care nurses within First Nations communities also in Northwestern Ontario (15% current smokers and 32% former smokers; Roberts, 2009), both whom responded to a similar survey.

However, this study's tobacco use rate was much lower than the general population from the North East and North Simcoe Muskoka LHIN regions (25-26%) and all of Ontario (20% ; Statistics Canada, 2008). It is also lower than an American study where 20% of mental health nurses were current smokers (Sarna, Bialous, Wells, & Kotlerman, 2009). Some authors found that nurses from psychiatric settings had higher rates of smoking than those from other nursing specialties (Storr, Trinkoff, & Hughes, 2000; Trinkoff & Storr, 1998). In all, it is cautionary to consider that the sample of

smokers in this study is under-represented possibly inducing positive bias in results. It is also possible that a disproportionate amount of nurses who smoke did not provide consent to the CNO to participate in nursing research. Of note, this study was not able to calculate age-adjusted rates of tobacco use and the sample attained could have been older in age, which would in turn indicate that a lower smoking rate would be expected. It is recommended that future research collect age data.

Attaining comparative tobacco use rates is important since studies have found nurses' smoking status to negatively influence their practice, attitudes, and beliefs in helping patients to quit tobacco use (Puska, Barrueco, Roussos, Hider, & Hogues, 2005; Slater, McElwee, Fleming, & McKenna, 2006; Willaing & Ladelund, 2004). The sample size of tobacco users in this study was small at 10 respondents thereby limiting analyses that could be performed to compare responses according to tobacco use status.

System-Level Interventions

Protocols and Policies

This study found a systems-level gap between prompting respondents to identify and document tobacco use and identify and document counselling. Although almost 50% of respondents reported that their workplace had protocols and policies to identify and methods to document tobacco cessation counselling, this percentage was smaller than those who had such protocols and policies for identifying and methods for documenting tobacco use. It would instead be ideal to have similar results for these items given that identifying and documenting tobacco use should lead to identifying and documenting counselling. All of these rates were higher than those reported in the Roberts (2009) study.

Workplace policies and methods for documenting tobacco use and counselling were not significantly related to how often respondents performed certain components of the 4A protocol. Such findings were unexpected and conflicted with those from other studies reviewed by the authors of the USDHHS guidelines (Fiore et al., 2008) where systems-level strategies improved rates of clinician interventions. Both the USDHHS (Fiore et al., 2008) and the RNAO (2007) guidelines concluded that there was sufficient evidence to recommend systems-level interventions as a strategy to facilitate the integration of tobacco cessation into practice. Mental health care facilities might instead need to implement a number of systems-level strategies concurrently in order to maximize impact as recommended in the USDHHS guidelines (Fiore et al., 2008). Combining such supports may provide improved momentum to increase how often and how many mental health nurses perform strategies within each component of the 4A protocol.

Workplace Materials

This study had conflicting results on the influence of available resource materials on respondents' tobacco cessation practice. Over half identified the availability of resources as a facilitating factor on tobacco cessation and that they intervened more often when pamphlets and self-help materials were available. However, based on this study's results, the availability of posters, quit line contact information, and community-based resources did not influence the frequency of practice on certain strategies or components of the protocol.

Results from this study also highlight the need for psychiatric facilities to not only provide the resources but also ensure nurses are knowledgeable on where these resources

are kept and how to use them, understand their content, and that a process is in place to maintain a stock. This need was evidenced by the fact that about one-third of respondents did not know if materials on quit lines or community-based programs were available at their workplace. There is evidence which encourages organizations to invest in tobacco cessation resources because it has been linked with improved nursing attitudes and practice on this topic (Schultz et al., 2009). Such resources are often made available or created by local public health units. The RNAO offers resources at low or no cost on the tobacco-related paged on their website, which includes a health education fact sheet for patients as well as posters and a pocket guide to prompt and assist nurses to perform minimal tobacco cessation interventions (RNAO, 2009b). A dedicated tobacco treatment coordinator (or clinical resource nurse) could take leadership in knowing about and accessing such resources and then developing a plan for nurses to utilize them with patients (Fiore et al., 2008).

Training

Training of mental health nurses on tobacco cessation was the largest system-level gap identified by this study. Only 9% received tobacco cessation training but on average, respondents were 'moderately interested' in learning more on how to help their patients quit tobacco use. This is comparable to studies where nurses from other specialties also identified a lack of skills in the area of tobacco cessation (Gomm et al., 2002; McCarty, Hennrikus, et al., 2001; Roberts, 2009; Sarna & Bialous, 2005; Sarna et al., 2000; Whyte et al., 2006). Studies have shown that health care professionals who received tobacco cessation training were more likely to perform tobacco cessation strategies (Fiore et al., 2008). Other studies reported similar findings where nurses who

received tobacco cessation training were more likely to intervene (Borrelli, Lee, & Novack, 2008; Freund, Campbell, Paul, Sakrouge, & Wiggers, 2005) and had better knowledge about and attitudes toward tobacco cessation (McEwan & West, 2001). The higher rates of smoking among mental health patients coupled with research indicating that training increases the performance of tobacco cessations strategies are the two main reasons why psychiatric facilities need to ensure their nurses are trained in tobacco cessation. The training topics chosen by over half of respondents (counselling to avoid relapse or quit, assessing readiness to quit, and knowing more on self-help materials, outside social supports, and post-discharge services) should be the first ones addressed. This will meet nurses' expressed learning needs and may also stimulate discussions around other future training topics on tobacco cessation.

Training need not be onerous or costly to psychiatric facilities as the preferred method selected by respondents was self-study materials. There are a number of self-study resources offered by the RNAO available free of charge including a mini-course with 4 modules that nurses can complete online (www.tobaccofreernao.ca). This web course provides the learner with the basic tools and information needed to apply the 4A protocol (RNAO, 2009c). Psychiatric facilities could promote the availability, access, and use of such resources to nursing staff as a means to encourage training on tobacco cessation. They may also encourage nurses to include tobacco cessation within their Learning Plan as part of the Quality Assurance Program mandated by the CNO (2009).

Knowledge of the RNAO Guidelines

This is the first study to report on nurses' awareness of the RNAO guidelines (2007). In general, best practice guidelines were set out by the RNAO as a way for nurses

to provide consistent interventions based on the best available evidence (RNAO, 2005). Based on results from this study, it is unlikely that this goal is being met by respondents.

Only 13 respondents (19%) reported that they had seen the RNAO guidelines (2007) which is only slightly higher than an American study conducted 10 years ago where 10% of oncology nurses were aware of the USDHHS guidelines (Fiore et al., 2008; Sarna et al., 2000). Given the promotion of these guidelines by the RNAO, it was unexpected that so few had seen this document. Wye et al. (2009) found that only 23% of psychiatric nurse unit managers reported that tobacco cessation guidelines were made available at their workplace. This suggests that perhaps a different approach needs to be considered not only by the RNAO but also by psychiatric facilities to promote the implementation of guidelines. One such approach focuses on leadership strategies to promote and sustain the use of guidelines in practice (Gifford, Davies, Edwards, & Graham, 2006). Nursing leaders can do this by facilitating the use of guidelines, creating a positive environment to implement guidelines, and supporting related organization structures and processes (Gifford et al., 2006).

It was, however, encouraging that the majority of those who had seen the guidelines (77%) had read them. This suggests that if respondents were made aware of the guidelines, many of them could possibly ensue to reading them as well. This is in line with another of this study's finding where respondents were on average, 'moderately' interested in learning more on tobacco cessation. The RNAO could play an important role by partnering with these psychiatric facilities to plan strategies to better and further promote the knowledge of and use of tobacco cessation guidelines.

Clinician-Level Interventions

Adherence to the 4A Protocol

Overall. This is the first Canadian study to examine acute care mental health nurses' adherence to the 4A protocol for tobacco intervention. As a whole, it is encouraging that the majority of mental health nurses from this study performed at least one strategy (even if seldom) within each component of the 4A protocol (91% *asked*, 96% *advised*, 93% *assisted*, and 75% *arranged*). These rates are almost identical to those from another study with primary care nurses working in First Nations communities from Northwestern Ontario where 94% *asked*, 97% *advised*, 94% *assessed*, 90% *assisted*, and 77% *arranged* (even if seldom; Roberts, 2009). These results are comparable because both the Roberts' (2009) study and this study calculated percentages that represent those performing 4A protocol strategies even if seldom and utilized a modified version of the questionnaire originally developed by Johnston et al. (2005). Even if these rates dropped to 75% *asked*, 81% *advised*, 88% *assisted*, and 54% *arranged* if those who seldom performed these interventions are excluded, it continues to demonstrate that respondents have a base of skills to build on but that emphasis needs to be placed on increasing the frequency in which they intervene.

Although the *ask* rate was lower than *advise* and *assist*, the frequency mean, in terms of how often nurses performed the components of the 4A protocol, decreased successively from the first 4A protocol component (*ask*) to the last (*arrange*) suggesting that *ask* was the most frequently performed component, followed by *advise*, *assist*, and *arrange*. This rate variation is likely linked to the fact that *ask* represents only one item in terms of measurement whereas *advise* and *assist* are made up of a number of items

thereby increasing the possibility that respondents performed a strategy within that 4A protocol component.

Respondents' frequency of intervening with tobacco intervention strategies did not meet the RNAO (2007) or the USDHHS (Fiore et al., 2008) guideline recommendation that the protocol (4A or 5A) be initiated with every patient who smokes on every encounter, which given the scales used in this study, would correspond to intervening 'frequently'. The mean frequencies for *ask* and *advise* corresponded to intervening 'occasionally' while the mean frequencies for *assist* and *arrange* corresponded to intervening 'seldom'. These frequencies are similar to those reported by Johnston et al. (2005) and Roberts (2009), studies which used the same questionnaire (with some modifications) as the current study. They are also the only other studies that provided an overall mean score for frequency of interventions performed by nurses for each component of the 4A or 5A protocol. Although nurses from the Johnston et al. study were from Hong Kong and the nurses from the Roberts study were from remote nursing stations in NW Ontario Aboriginal communities, this comparability is important since the questionnaire used in this study was adapted from Johnston's study and the frequency scales were identical.

It is difficult to compare this study's frequency of intervening with the 4A protocol with studies other than the Johnston et al. (2005) and Roberts (2009) studies. There is a lack of consistency across questionnaires and differing measurement scales and reporting of results among other studies. For example, other studies utilized a variety of top category scale anchors that were dichotomized for reporting purposes (e.g., almost always/frequently and always/often). In the current study, it was difficult to present such

dichotomies because each 4A subscale was calculated as a means computation of the strategies within each (e.g., there were 4 strategies under *advise*, the average of which made up the *advise* subscale). Other studies have also not report mean frequencies whereas this study did as it provides an important overall examination of respondents' activity levels.

In all, the frequency means of all 4A protocol components indicates that additional interventions for respondents are needed to level-up this standard of practice towards performing these strategies on a more frequent basis. This may be done by addressing the barriers and reinforcing the facilitators identified in this study possibly through systems-level interventions and training. The use of tobacco cessation champions in the workplace as a strategy to increase colleagues' tobacco cessation behaviours has been suggested (Schultz et al., 2009). It may also be beneficial for psychiatric facilities to focus on certain factors such as nurses' role, attitudes, abilities, available resources, and helping current nurse smokers quit, as these may positively influence tobacco cessation practices (Schultz et al., 2009).

Ask. Compared to all the other 4A protocol strategies, asking patients about their tobacco use status and history had the highest mean frequency and was the most 'frequently' performed strategy. The Johnston et al. (2005) study also reported this strategy as having the highest frequency mean of all strategies while it had the second highest frequency mean for the Roberts (2009) study.

The reasons for this level of activity may be related to this strategy needing the least amount of skills and time to perform and the majority of respondents' workplaces had protocols/policies to identify and document a patient's tobacco use. *Asking* patients

about their tobacco use and history leads to all the other tobacco intervention components of the protocol and has been found to positively influence quit rates (Fiore et al., 2008; Rigotti, 2000). From a different perspective, this step is especially key for mental health nursing because smoking can increase the hepatic metabolism of certain psychotropic drugs so smoking abstinence due to entering a smoke-free facility could potentially lead to increased blood medication levels and increased medication side-effects (de Leon, 2004; Ziedonis & George, 1997; Zullino et al., 2002). Medication levels would therefore need to be monitored and managed at least throughout the hospital stay highlighting the importance of at least asking about tobacco use.

This study found that 75% of respondents reported assessing tobacco use and history 'frequently' or 'occasionally'. This rate was lower than those reported with other mental health nurses that ranged from 86-91% (Johnson et al., in press; Sarna, Bialous, Wells, & Kotlerman, 2009; Sharp et al., 2009), higher that those reported with other mental health professionals that ranged from 30-58% (Leffingwell & Babitzke, 2006; Prochaska et al., 2005; Zvolensky et al., 2005), and similar to those of other nurse-based studies which ranged from 52-73% (Good et al., 2004; Sarna, Bialous, Wells, Kotlerman, Wewers, et al., 2009; Sarna et al., 2000;) but lower than the one study with western Canadian hospital-based nurses at 85-90% (Schultz, Johnson, et al., 2006).

Advise. Relative to individual strategies making up the *advise* subscale, explaining the harmful effects of tobacco use was performed by the largest number of respondents (even if seldom) and had the highest frequency mean of all *advise* strategies. The Johnston et al. (2005) study also reported this strategy as having the highest frequency mean of this study's four *advise* strategies while it had the second highest frequency

mean in the Roberts (2009) study. Compared to other studies, it is difficult to ascertain if this strategy was also performed by the largest amount of respondents on the *advise* subscale given the inconsistency of items representing *advise* and the lack of frequency means reported. Sixty-eight of this study's respondents performed this *advise* strategy 'frequently' or 'occasionally' which is higher than the 39-62% reported in other nurse-based and mental health professional focused studies on a comparable item about discussing tobacco health effects with patients (Leffingwell & Babitzke, 2006; Sarna, Bialous, Wells, Kotlerman, Wewers, et al., 2009; Schultz, Johnson, et al., 2006; Wye et al., 2009).

The majority of respondents also felt confident performing this strategy and believed that education on the risk of tobacco use was an important area of nursing care. Such results could be influenced by nursing undergraduate curriculums which often focus on the health effects of tobacco (Wewers, Kidd, Armbruster, & Sarna, 2004). Nurses may therefore feel they have the required knowledge and skills on this strategy leading them to perform it.

Encouraging patients who have relapsed to try quitting again had the lowest frequency mean of all *advise* strategies corresponding to 'seldom' and just under half performed this strategy 'frequently' or 'occasionally'. Johnston et al. (2005) had a comparable frequency mean whereas the Roberts (2009) study had a higher mean corresponding to 'occasionally'. Both of these studies also found this strategy to have the lowest mean amongst this study's strategies making up the *advise* subscale. Apart from these two studies, there were no other comparative studies that inquired about

interventions dealing with relapsed smokers. Other studies focused on interventions to prevent relapse (Sarna et al., 2000; Schultz, Johnson, et al., 2006).

This is a key *advise* strategy since it is well established that tobacco dependence is a chronic addiction needing repeated interventions to successfully quit that is characterized by periods of relapse and remission (Fiore et al., 2008). Given the high rates of tobacco use amongst persons with a mental illness and the unique barriers they face in quitting, it is important for mental health nurses to actively re-engage their patients in the quitting process. A perceived lack of patient motivation to quit tobacco identified as the biggest barrier to intervening by this study's respondents may be linked to their lack of encouraging relapsed patients to quit again. As such, encountering a patient who recently re-started to smoke cigarettes may further reinforce this perception and resultantly discourage respondents from intervening in any way. Psychiatric hospital administrators should place a special focus on this barrier possibly via training sessions since it may influence the frequency in which nurses intervene on this strategy.

Assist. The individual *assist* strategies that were performed by the largest number of respondents (even if seldom) and had the highest frequency means of all *assist* strategies were: suggesting actions to quit/cut down, recommending alternatives to using tobacco, motivating patients to quit, recommending/suggesting NRT, and assessing readiness to quit. Theses five assist strategies also had the largest number of respondents performing them 'frequently' or 'occasionally'. Four of these strategies (this study reported on an additional *assist* strategy) also had the highest frequency means in both the Johnston et al. (2005) and Roberts (2009) studies.

These are fundamental one-on-one strategies needed to assist patients quit tobacco use. However, the five strategies mentioned above were only done on average 'occasionally', seven of the remaining strategies were done on average 'seldom' and another was done on average 'never'. Respondents therefore applied a variety of basic *assist* strategies but improvements are needed to increase the frequency with which they are implemented. Further investigation is also needed to find out why certain strategies were more frequently performed or performed by more respondents' since this information could reveal additional barriers and facilitators.

The recommendation or suggestion of varenicline tartrate was performed by the least amount of respondents and was the only *assist* strategy that corresponded to 'never' performing it. No other study reported on this strategy. This is one of the newest medications to be approved for tobacco use cessation. Respondents may not yet be aware of or be familiar with this medication resulting in a possible lack of comfort in recommending or suggesting this medication to patients. Part of this responsibility also rests on psychiatrists who may or may not be prescribing this medication. Thus, psychiatric facilities need to find out how often this medication is being utilized and then decide if further training is needed for the dispensing nurses. Of note, Health Canada released a warning on the use of varenicline tartrate (Champix) due its potential neuropsychiatric effects but this safety information was released after the completion of the questionnaire by respondents (Health Canada, 2008b).

With regards to other *assist* items relating to respondents' recommendations or suggestion of smoking cessation aids, over 50% of respondents recommended or suggested NRT 'frequently' or 'occasionally' but only a quarter recommended or

suggested buproprion. This result was also found in the Roberts (2009) study while these items were not in the Johnston et al. (2005) study. It was not possible to know if this variance also existed in other studies as none reported on all two items or instead had one item for smoking cessation aids in general. However, this study had an identical rate of recommending or suggesting NRT to one of the study sites from the Schultz, Johnson, et al. (2006) study at 66% which is a higher rate than two other nurse-based studies on this same item (23-48%; Good et al., 2004; Sarna et al., 2000). This is an encouraging finding that may benefit from further investigation relating to factors that facilitate respondents' activity levels to recommend or suggest NRT (e.g. workplace policies, standing physician's orders). This information could then be used to see if these same factors could also facilitate the performance of other strategies promoting the use of smoking cessation aids such as bupropion that were less frequently performed.

Organizing health talks and discussing patients' tobacco use with their family were also on average, 'seldom' performed and few performed these strategies 'frequently' or 'occasionally' (12-16%). This may speak to certain barriers identified in this study such as lack of time given that these strategies do require additional time on the part of the nurse. Organizing health talks on tobacco use may also necessitate more advanced tobacco cessation skills whereas few respondents reported receiving any tobacco cessation training. The frequency means for these two items were slightly higher in the Johnston et al. (2005) study while these items were not in the Roberts (2009) study. No comparable items were found in other studies relating to organizing health talks but one study also found that few hospital-based nurses reported to have a conversation with a family member on tobacco use (Schultz, Johnson, et al., 2006).

Arrange. As found in other studies, *arrange* was the least frequently performed of all components of either the 4A or 5A protocol (Prochaska et al., 2005; Sarna, Bialous, Wells, & Kotlerman, 2009, Schultz, Johnson, et al., 2006). There are two main reasons that may be linked to this result. First, it is possible that respondents were not referring patients due to an actual lack of internal or external cessation services or due to a lack of knowledge of such services. Psychiatric facilities need to investigate if such barriers exist in order to address them accordingly. Second, the declining level of activity found at each successive 4A component (as evidenced by frequency means) naturally led to the fewest respondents intervening on the last component. As such, it is possible that increasing the level of activity on the first three components would result in an increased activity level on the fourth and final component *arrange.*

Mental health facilities could ensure an internal referral process by dedicating a staff person available to intervene during multiple sessions and at session lengths longer than 10 minutes (Fiore et al., 2008). This coordinator could also link with external community agencies that either currently offer or have a mandate to offer cessation services. An example of such resource is a tobacco treatment clinic at a local public health unit. The Sudbury and District Health Unit is one of many health units in Ontario that provide one-on-one counselling services on tobacco cessation available to anyone in the community (V. Kuula-Ross, personal communication, April 5, 2009). Training on tobacco cessation could also be provided to the workers of community services involved with discharged psychiatric patients (e.g., Community Mental Health Association) to ensure continuity of care on tobacco cessation or provide services to those wanting to quit post-hospital discharge.

The frequency means of both arrange strategies were almost identical to those of the Johnston et al. (2005) study while Roberts (2009) only asked about referring to cessation resources which had a slightly higher frequency mean. It was again difficult to compare to other studies mainly due to differing *arrange* strategies and measurement scales. With this caution in mind, the 32-38% of respondents who 'frequently' or 'occasionally' performed these two *arrange* strategies was higher than the 20-22% of nurses from two studies who 'always' or 'usually' referred to resources (Sarna, Bialous, Wells, & Kotletman, 2009; Sarna, Bialous, Wells, Kotlerman, Wewers, et al., 2009), the 5-6% of nurses who referred to a tobacco smoking cessation specialist or practitioner 'everyday/week' (Sarna et al., 2000), and the 3-12% of nurses who referred 'almost always' or 'frequently' to community-based programs (Schultz, Johnson, et al., 2006). But, this study's *arrange* strategy rates were lower than the 61% of mental health nurses who 'routinely' referred to tobacco resources (Sharp et al., 2009). Although this study's *arrange* strategy rates were generally higher than those of other comparable studies, these strategies were nonetheless infrequently done by the majority of respondents suggesting that interventions are needed to further encourage tobacco cessation referrals.

Time Spent Counselling

This is the first study to measure the amount of time acute care mental health nurses spent counselling patients with a mental illness. The majority (66%) of mental health nurses in this study met the minimum of 1-3 minutes recommended for general patients (33% spent less than 3 minutes and 33% spent 3-10 minutes), but only 6% spent more than 10 minutes, the recommended minimum time for patients with mental illness (RNAO, 2007). The majority were therefore not spending an adequate amount to meet

the complex tobacco cessation needs of persons with a mental illness. The RNAO guidelines (2007) recommends that nurses in general spend at least 1-3 minutes counselling patients on tobacco cessation but that intensive interventions requiring more than 10 minutes are recommended for persons with a mental health disorder. Although the RNAO does not elaborate reasons for this difference in time recommendations, it is possibly due to a range of genetic, biological, and psychosocial factors specific to persons with a mental illness which are known to reinforce their tobacco use and undermine quit attempts (Kalman et al., 2005; Lawn et al., 2002; Sacco et al., 2004).

In terms of time spent counselling, there were no comparative studies on this topic with mental health nurses. However, two studies were found with nurses from other specialties where 36-38% spent 1-3 minutes, 55-56% spent 3-10 minutes, and 6% spent over 10 minutes (Borreli et al., 2001; Robert, 2009). Although this study has similar results for the 1-3 minute and over 10 minute categories, fewer respondents from the current study spent 3-10 minutes compared to the Borreli et al. (2001) and Roberts (2009) studies. It is also notable that many more respondents from the current study did not counsel (29% vs. 0-2%; Borreli et al., 2001; Roberts, 2009). Regardless, it was positive that the majority of respondents (71%) spent any amount of time counselling since psychiatric staff have been found to have less favourable attitudes towards intervening compared to general hospital staff (McNally et al., 2006). It remains, however, important for psychiatric facilities and the RNAO to work towards moving the time spent intervening beyond 10 minutes and mobilizing those who do not intervene in order to adequately meet the needs of this patient population.

LHIN Region Comparison

Although the main and largest psychiatric facility in the North Simcoe Muskoka region was of maximum security (cannot leave facility to smoke) and that all comments relating to working in a smoke-free facility or not intervening because of this were written by this same regions' respondents, no differences in tobacco cessation practice (based on each component of the 4A protocol), role perception, amount of time spent, and interest to learn more on tobacco cessation were found between the two LHIN regions. This was unexpected as respondent comments were leading to an assumption that fewer from the North Simcoe Muskoka region intervened on tobacco because their facility was smoke-free and less time intervening may be spent because their patients are forced to quit on admission. There were no similar studies found with such comparisons based on a facility's tobacco use policies. This is an important finding that psychiatric facilities need to consider in that an on-site workplace policy is possibly not enough to either encourage or discourage tobacco cessation interventions by nurses. Instead, focus should be placed on implementing the systems-level strategies recommended by the USDHHS (Fiore et al., 2008) and the RNAO (2007) as a means to facilitate tobacco cessation interventions by nurses.

<div align="center">

Beliefs and Confidence

</div>

Beliefs

Role. It was encouraging that the majority of nurses in this study (93%) felt that tobacco cessation was 'very much' or 'somewhat' part of their role. This finding is higher than other studies where 50-85% of nurses from other specialties felt that tobacco cessation was part of their role (Gomm et al., 2002; Good et al., 2004; Nagle et al., 1999;

Sarna et al., 2000; Schultz, Johnson, et al., 2006). However, only one third felt it was 'very much' part of their role, and the majority (60%) believed it was only 'somewhat' part of their role. Regardless of the extent of this belief, it suggests a certain level of openness to their role in intervening on tobacco cessation. It also demonstrates a possible shift in attitude from one which favours tobacco use by patients (Lawn, 2004; Lawn & Condon, 2006; Robson & Gray, 2005) to another where the nurse increasingly believes they should help mental health patients quit tobacco. Psychiatric hospital educators could possibly strengthen this perception by highlighting the positive effects nurses can have on helping their patients quit smoking.

Tobacco cessation beliefs. Respondents had positive beliefs about providing advice (even if help was not requested), educating patients and their household on tobacco use, and using every opportunity to educate on tobacco health effects. Other studies have found similar rates of positive nurse attitudes on tobacco cessation (Johnston et al., 2005; Nagle et al., 1999; Roberts, 2009). Although no relationship was found between 3 of the 5 belief items to its corresponding task, Borrelli et al. (2001) found that positive attitudes were associated with nurses' performance of tobacco cessation interventions and played a key role in improving patient quit rates. Beliefs should therefore be considered as a possible factor influencing nursing practice and be included in brief training which has been shown to be an effective tool to facilitate nurses' attitudes and behaviours on tobacco cessation (Borrelli et al., 2008).

In addition, the majority of respondents did not believe that brief advice lasting 1-3 minutes was effective and studies with psychiatric patients have also found this to be the case (Addington et al., 1998, George et al., 2000; Kalman et al., 2005). But those who

believed it to be effective performed it more often. This creates a challenge that could possibly be overcome in the way brief advice is presented to mental health nurses. It should be acknowledged that brief advice may not ensure quitting success and instead place emphasis on conducting an intervention lasting more than 10 minutes as recommended by the RNAO (2007) for persons with a mental illness. Although possible that those who currently provide brief advice may be discouraged by the knowledge that it is not effective, it remains best to encourage intervention within the scope of a longer and more intense intervention. Future similar studies may want to consider revising the belief item 'Brief advice (e.g.,, 3 minutes) to help patients to stop tobacco use is effective' to instead reflect the recommended 10 minutes (intensive intervention). As such, this would better reflect their beliefs and provide more meaningful data from a mental health perspective.

Confidence

Compared to other studies, respondents' confidence levels were mixed. With regards to the Roberts (2009) study with primary care nurses from First Nations communities in Northwestern Ontario, a comparable percentage of respondents were 'very confident' and 'confident' on 5 of the 8 confidence items while more respondents from this study reported this confidence level on providing advice on NRT but fewer for using leaflets/written materials and providing advise to quit. Confidence means were also similar for the majority of confidence items. Compared to the Johnston et al. (2005) study with hospital-based nurses from Hong Kong on which the current study's questionnaire was based, the mean score on every confidence item in this study was slightly higher. This study's overall mean confidence for all items corresponded to 'confident' compared

to overall mean of 'incompetent' for the Johnston et al. (2005) study. Both of these studies measured the same confidence items but the scale utilized by Johnston et al. (2005) measured self-perceived competence levels rather than confidence. Compared to other studies that used difference questionnaires, more respondents from the current study were confident to intervene on tobacco cessation (Schultz, Johnson, et al., 2006; Sharp et al., 2009). However, both of the latter studies utilized different scales and measured different confidence items. Despite these mixed comparison results, respondents' from this study were generally confident which can be considered a strength.

Exploratory analyses showed that confidence for specific strategies or protocol components (helping set a quit date, *assist*, recommending/suggesting nicotine replacement therapy, and offering self-help materials) were significantly correlated with doing them. Other studies have also found that high confidence levels positively influenced the performance of tobacco cessation tasks (Johnson et al., in press, Sharp et al., 2009). This suggests that if focus was placed on increasing respondents' confidence, this may lead to an increased number of respondents who perform related tasks and components of the 4A protocol. Such findings should encourage tobacco cessation trainers to include exercises aimed at improving nurses' confidence in implementing cessation tasks. Training on tobacco dependence has been shown to have a positive impact on nurses' perceived confidence (Butler, Rayens, Zhang, Maggio, Riker, & Hahn, 2009).

The confidence item of discussing quitting methods was not significantly correlated with tasks related to recommending or suggesting prescribed tobacco cessation mediations (buproprion and varenicline tartrate). This could be the result of correlating a

global task with a specific task which may not result in a significant relationship (Munro, 2005). In the future, it is advisable to have a confidence item that corresponds directly to an action item.

Respondents' Facilitators and Barriers

Motivation

Similar to previous studies, lack of motivation was the main barrier and in turn, patient motivation was also one of the main facilitating factors to intervening with tobacco use (Roberts, 2009; Sarna et al., 2000; Schultz, Johnson, et al., 2006). Other facilitators and barriers were chosen by respondents but were not as prevalent as patient motivation. Some studies found persons with a mental illness quit tobacco use at a lower rate than the general population (Lasser et al., 2000) and made few quit attempts (Solty et al., 2009). This could be perceived by respondents as a lack of motivation to quit. Personal judgements were reflected by this study's respondent comments stating their patients 'don't want to quit' or were 'being forced to quit'. This was similar to beliefs found in another study where psychiatric nurses felt their patients had low ability and low motivation to quit smoking (Sharp et al., 2009). However, it is critical to clarify that although fewer quit, persons with a mental illness can and want to quit smoking (Addington et al., 1997; Addington et al., 1998; Diaz et al., 2006; El-Guebaly et al., 2002; Green & Clarke, 2005).

Training could address this issue by emphasizing motivation as a facilitator to intervening. One study showed that after receiving brief training, nurses had greater beliefs that their patients were motivated to quit tobacco use (Borrelli et al., 2008). Borrelli et al. (2001) also found that nurses were twice as likely to provide assistance and

spent more time counselling patients when they believed the patient would quit as a result of their intervention and would also adhere with the quit plan. Two-sided persuasion may be a practical training tool on this topic (Perloff, 2003). The trainer first acknowledges nurses' challenges to motivate patients to quit and then redirects them to the research indicating that patients can and want to quit smoking. It may also be helpful to emphasize the need to view tobacco use as a chronic disease where treatment options are presented and assistance offered (Fiore et al., 2008). The patient can then make an informed decision about what they want to do about accepting treatment or not.

There is one major difference between the USDHHS guidelines (Fiore et al., 2008) and the RNAO guidelines in that the RNAO removed *assess* which helps direct clinicians to the appropriate intervention based on patients' motivation to quit. In the USDHHS guidelines (Fiore et al., 2008), *assess* branches into two directions – one for those ready to quit and one for those who are not. This is an important and relevant step for mental health nurses to complete as it focuses on assessing patients' willingness to quit and then intervening accordingly. It also details the use of the '5R's' – relevance, risks, rewards, roadblocks, and repetition, as an appropriate strategy to enhance patient motivation to quit and for use with those unwilling to quit.

Workplace Culture

Although this study did not list workplace culture as a barrier to intervening, respondent comments suggested that certain workplace practices could possibly be encouraging rather than discouraging tobacco use by patients. Two respondents indicated that their facility orders cigarettes to be delivered on-site for patient use while another indicated that staff smoke with patients. This creates an atmosphere that encourages

tobacco use and reinforces the notion found in other studies that tobacco is ingrained in the culture of psychiatric facilities (Lawn, 2004; Lawn & Condon, 2006; Robson & Gray, 2005). This was further demonstrated by one comment stating that some patients enter their facility as non-smokers and then restart smoking post-admission. Systems-level strategies could address this issue by promoting policies that support and encourage tobacco cessation (Fiore et al., 2008).

The College of Nurses of Ontario (2006) has a practice standard document on the topic of therapeutic nurse-patient relationship where a section deals with maintaining boundaries. Purchasing cigarettes for patients and smoking with patients could be considered as boundary crossing, confusing the nurses' role (to promote the health and well-being of patients), and going beyond the limits of such therapeutic relationship. Similar ethical dilemmas were also expressed by acute care nurses from another Canadian study (Schultz, Bottorff, et al., 2006). Instead, a nurse might want to help the patient consider other more appropriate resources (e.g., family members or friends) for providing cigarettes. One respondent stated that his/her facility used to order cigarettes for patients but, as a means to promote health, were advised by their employer to not supply or order cigarettes for patients who instead must provide their own. This may demonstrate a shift where some facilities put the onus on the patient to provide their own cigarettes. Workplaces may also consider designating outside smoking areas which separate patients from staff as an additional means to discourage the two from smoking together.

Study Limitations

There were a number of limitations to this study. The results are not necessarily generalizable to nurses working in disciplines other than acute care psychiatry because nurses in these settings work with a population that differs from other nursing practice in many ways that could potentially affect tobacco interventions. For example--higher rate of tobacco use among their patient population, challenges of working with different cognitive deficits, reinforcing properties of nicotine for some psychiatric patient populations, and the issues of monitoring some psychotropic medications that are metabolized differently with and without nicotine in the bloodstream. The results are also not necessarily generalizable to mental health nurses working in other parts of the province or country as there could be a number of influencing factors specific to the nurses who work within the two regions and/or specialty nursing group, and therefore not applicable to nurses from other regions. For example, other regions may have more or less community-based tobacco cessation services that could ultimately influence *arrange* rates.

Finally, the generalizability could also be limited by the sampling methodology. Although this study's response rate was comparable to that of other studies which used a similar methodology with nurses, as with all studies, there could still remain differences between those who responded and those who did not. It is possible that nurses who provided consent to the CNO to participate in research and those who responded to the survey were more active with regards to tobacco cessation interventions compared to those who did not. This could be substantiated by the fact that only 10 participants were smokers. Also, the addresses received from the CNO were only for mental health nurses

who consented to participate in nursing research. Again, there may be differences between participant responses from the list received and the entire pool of acute care mental health nurses.

Another limitation to the study was that the results were based on self-report and not verified for accuracy (e.g., inventory of actual workplace policies for comparison). As such, it is not known if they were a true reflection of nurses' perceptions and actions. As seen in another study, it was likely that respondents over-reported in order to provide answers reflecting what they thought were the most desired responses (Braun et al., 2004). Therefore, this would create an overestimation of the actual situation.

Another limitation relates to the overall untested validity and reliability of the questionnaire. However, the majority of questions were mainly adapted from a previously validated questionnaire (Johnston et al., 2005; see Methodology for all item references). It is also notable that two other previous studies utilized this survey instrument with hospital-based nurses (Smith & Sellick, 2008) and primary health care nurses (Roberts, 2009) often yielding similar responses. These are important factors that enhance the questionnaires' reliability and validity. Some wording was adapted to better reflect this study's target group (mental health nurses) and work setting (psychiatric facility) but did not change overall content.

The use of rating scales is a measurement limitation since terms were not defined on the questionnaire and could be misinterpreted (Neuten & Rubinson, 2002). For example, each respondent interpreted the term 'frequently' with how often they performed that task. This term may be interpreted differently from one respondent to another thereby increasing response variability. In order to minimize this limitation, other

researchers would be encouraged to qualify each of the rating scale terms in order for respondents to have an objective and consistent guide in choosing their answers (e.g., frequently = 100% of patients who smoke).

The results from the correlations performed between nurses' beliefs and confidence and their performance of strategies should be interpreted with caution. As much as possible, belief and confidence items were matched to their most relevant task or components of the 4A protocol. However, the correlations conducted in this study were exploratory and therefore limited to matching items that were currently in the questionnaire. Some items may not be significantly correlated as they possibly measured different constructs (Fishbein & Ajzen, 1975; Netemeyer, Bearden, & Sharma, 2003; Viswanathan, 2005). Researchers conducting similar studies are encouraged to ensure that the belief and confidence items have a corresponding task measuring a similar construct. This limitation does not however negate this study's results as they provided exploratory insight into possible relationships between respondents' beliefs and confidence and how these may play a role in the performance of tobacco cessation strategies and components of the 4A protocol.

This study's sample size limited the types of exploratory analyses conducted. For example, a larger sample size would be needed to compare responses of nurses who currently smoke to those who do not - similarly done in another study (Dickens et al., 2004). However, a larger study sample would come at a greater financial cost but could also be a benefit in terms of refining and targeting training to save on resources. Other researchers are therefore encouraged to consider the costs and benefits of a larger sample size.

Future Research

Qualitative Focus

Findings from this study provided quantitative information on what respondents are currently doing to assist their patients with tobacco cessation. It would also be valuable for other researchers to conduct a qualitative study with acute care mental health nurses and focus on certain stand-out items from this study such as patient motivation to further find out respondents' personal experience on this topic. There were also a number of hand-written comments that provided a glimpse into respondents' perspectives on helping their patients quit tobacco use. A qualitative methodology would allow a more in-depth look at these topics and further explain 'why' such comments and responses were reported. One qualitative study by Schultz, Bottorff, et al. (2006) examined some of these issues with Canadian hospital-based nurses and could be used as a model to build a similar study with acute care mental health nurses. Some authors have recommended that researchers who study chronic diseases need to consider combining both quantitative and qualitative methods (Casebeer & Verhoef, 1997). The latter may be of consideration to other researchers conducting a similar study in other LHIN regions.

Corresponding Beliefs and Confidence to Strategies

It would be helpful for future studies to conduct a more in-depth examination of the influence of mental health nurses' beliefs and confidence on their performance of strategies. A similar study was conducted with home healthcare nurses (Borrelli et al., 2001). The current study found some evidence that such relationships exist but was challenged in matching belief and confidence items to a task measuring the same concept. The questionnaire utilized in this study was not designed for such matching. Future

researchers are therefore encouraged to include strategies that measure a similar construct to belief and confidence items. This would better reflect possible correlations between nurses' beliefs and confidence with their performance of tobacco cessation strategies.

Modeling Analysis

Researchers may want to consider developing theoretical models to test relationships between various factors that may influence mental health nurses' tobacco cessation activities. Such modeling analysis would move beyond the descriptive nature of this study towards results providing further direction on effective ways to increase provider interventions. Schultz et al. (2009) have developed and tested a theoretical model which examines a number of factors that influence nurses' (from a variety of hospital-based specialties) tobacco reduction activities. This latter study could be replicated but with a specific focus on acute care mental health nurses.

<center>Summary</center>

This is the first Canadian study to provide baseline data on what acute care mental health nurses and their workplaces are doing to help patients quit, about the nurses' beliefs and confidence, as well as their perceived facilitators and barriers to intervene. It highlights strong points as well as areas for improvement. Some systems-level strategies are in place while other are not. Respondents from this study also minimally adhered to the RNAO's 4A protocol guideline recommendation. The majority of nurses performed at least one tobacco cessation strategy (even if seldom) within each component of the protocol but not frequently, and they spent the RNAO's minimal intervention time for general patients but not the recommended 10 minutes for persons with a mental health illness. Respondents perceived tobacco cessation as part of their role but the majority felt

it was only 'somewhat' part of their role, they had positive beliefs about performing strategies but the majority of beliefs were not related to intervention behaviours, and the majority were confident in performing strategies and for the most part, confidence was related to how frequently they intervened.

The frequency with which respondents' performed tobacco cessation strategies is a major gap, but that could potentially be modified with systems-level issues such as training but training does require coordination and resources. Consistent with other studies, respondents clearly identified patient motivation as a factor influencing their practice and the majority have moderate interest in learning more about tobacco cessation. This should encourage psychiatric facilities to place emphasis on the topic of patient motivation throughout training and clarify any misconceptions respondents' may have about unmotivated patients.

Finally, the findings suggest a lack of success by the RNAO to promote the guidelines as the majority of nurses in the current study had never heard of them, and although the RNAO provides free online training, the majority of respondents had never received any training. The RNAO (2007) guidelines also do not address a key area where they have cut out *assess* which is fundamental to understanding how to effectively work with patients who do not want to quit (lack motivation) or who have recently quit. Skipping this component of the 4A protocol assumes that all patients want to quit smoking which may not be realistic when working with mental health patients. Although other guidelines do exist, it is unlikely that mental health nurses are familiar with them given their current lack of awareness of the RNAO guidelines (2007).

Conclusion

Helping patients who have a mental illness quit smoking is a sadly overlooked area. The findings from this study are a stepping stone towards decreasing the high rates of smoking among this patients population. It represents a start to finding out what is currently being done, current strengths to build on and areas for improvement, and directs where to go from here. The RNAO and psychiatric facilities have intertwining roles that in tandem could provide leadership to guide mental health nurses in helping their patients quit tobacco use. Utilizing this study's results to influence practice could be vital towards ensuring that persons with a mental health illness are provided with meaningful opportunities to quit tobacco. Indeed, 'failure to act on tobacco dependence equals harm' (APNA, 2008).

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Appendix A

Steps Taken to Develop the RNAO Best Practice Guidelines on Tobacco Cessation

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1. In 2001, the RNAO formed an expert panel of nurses and researchers with a background in smoking cessation to oversee the guideline development process which consisted of 10 development panel members and seven project team members.

2. Conducted a search for published systematic reviews and clinical practice guidelines (dated no earlier than 1996), articles (dated from 1995-2001) and websites (in 2001).

    a. Developed shortlist of 8 existing guidelines related to smoking cessation which were reviewed and critically appraised by the expert panel

3. Developed draft set of recommendations
    a. Twenty-one external stakeholders reviewed and provided feedback
    b. Recommendations revised

4. Piloted recommendations in practice at four sites of the Centre for Addiction and Mental Health in Toronto
    a. Expert panel reviewed pilot evaluation results

5. Finalized, published, and disseminated the document in 2003

6. Undertook bi-annual monitoring of recommendations via a 'current awareness' review

7. Full review by expert panel in 2006 consisting of nine revision panel members and 11 project team members

8. Conducted a search for recently published systematic reviews, clinical practice guidelines and studies dated from 2003-2006. A website search was also conducted in 2006 for these same documents.

9. Revised existing guidelines and recommendations to reflect new findings.

10. Published and disseminated revised document in 2007

(RNAO, 2007)

Appendix B

Local Health Integration Network Regions in Ontario

1. Erie St. Clair
2. South West
3. Waterloo Wellington
4. Hamilton Niagara Haldimand Brant
5. Central West
6. Mississauga Halton
7. Toronto Central

8. Central
9. Central East
10. South East
11. Champlain
12. North Simcoe Muskoka
13. North East
14. North West
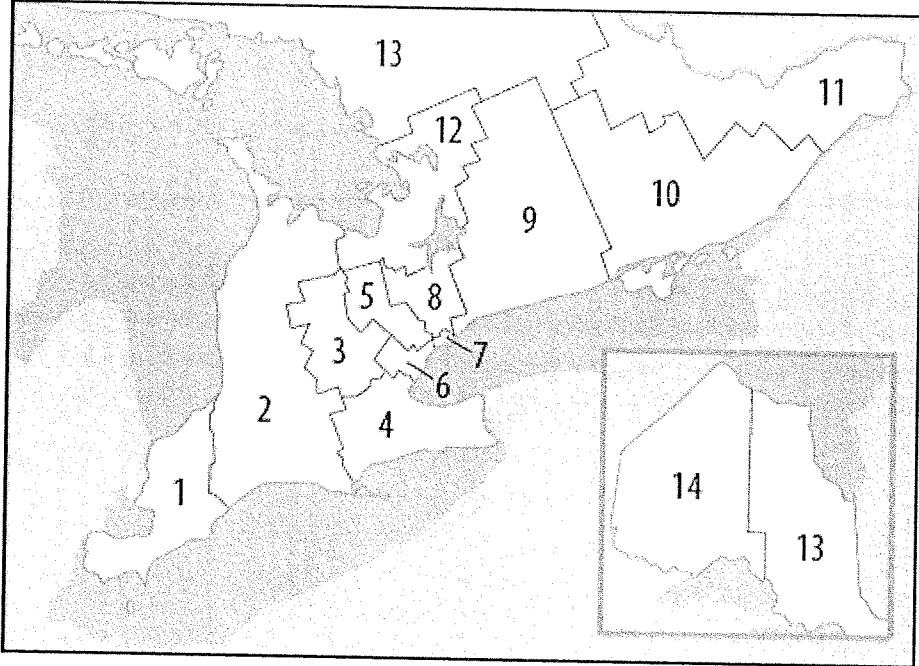
(LHIN, 2009a)

Appendix C

Survey Instrument

Please answer the following questions in relation to your current workplace in either a mental health/psychiatric or addictions inpatient setting by putting a '√' in the appropriate box to indicate your answer.

1. Does your workplace have a written protocol/policy for <u>identifying</u> tobacco use and tobacco cessation counselling?

	Yes	No	Don't Know
a. Tobacco use	☐	☐	☐
b. Tobacco cessation counselling	☐	☐	☐

2. Does your workplace have methods for <u>documenting</u> tobacco use and tobacco cessation counselling in patients' medical records?

	Yes	No	Don't Know
a. Tobacco use	☐	☐	☐
b. Tobacco cessation counselling	☐	☐	☐

3. Are any of the following materials available in waiting rooms, lounges, or patient rooms at your workplace?

	Yes	No	Don't Know
a. Posters encouraging tobacco cessation	☐	☐	☐
b. Pamphlets or self-help materials on tobacco cessation	☐	☐	☐
c. Quit line contact information	☐	☐	☐
d. Community-based tobacco cessation program information	☐	☐	☐

In relation to your work with inpatients that have an addiction and/or mental health illness, please indicate how strongly you agree or disagree with the following statements. Circle your choices.

	Strongly Agree	Agree	Disagree	Strongly Disagree
4. Brief advice (e.g.,, 3 minutes) to help patients stop tobacco use is effective.	4	3	2	1
5. Nurses should advise patients to quit using tobacco even if help is not requested.	4	3	2	1
6. Health education on the risk of tobacco use is an important area of nursing care.	4	3	2	1
7. Nurses should educate other tobacco users in the patient's household about tobacco use, if at all possible.	4	3	2	1
8. Nurses should use every opportunity to educate patients about the health effects of tobacco use.	4	3	2	1

In relation to your work with inpatients that have an addiction and/or mental health illness, please indicate how confident you feel or would feel performing the following tasks. Circle your choices.

	Very Confident	Confident	Somewhat Confident	Not Confident
9. Advising tobacco users on how to quit using tobacco.	4	3	2	1
10. Teaching tobacco users about the general health risks of using tobacco.	4	3	2	1
11. Finding out tobacco users' beliefs about tobacco use and health.	4	3	2	1
12. Counteracting tobacco users' negative attitudes about giving up using tobacco.	4	3	2	1
13. Negotiating a target date for patients to quit using tobacco.	4	3	2	1
14. Discussing different methods of quitting tobacco use.	4	3	2	1
15. Giving advice about nicotine replacement therapy.	4	3	2	1
16. Using leaflets and other written materials to help patients quit using tobacco.	4	3	2	1

In relation to your work with inpatients that have an addiction and/or mental health illness, please indicate how often you performed the following activities <u>in the past 12 months</u>. Circle your choices.

	Frequently	Occasionally	Seldom	Never
17. Assess patients' tobacco use status and history	4	3	2	1
18. Advise patients to quit using tobacco.	4	3	2	1
19. Assess patients' readiness to quit using tobacco.	4	3	2	1
20. Explain the harmful effects of tobacco use to patients.	4	3	2	1
21. Explain the harmful effects of second-hand smoke.	4	3	2	1
22. Motivate patients to quit using tobacco.	4	3	2	1
23. Help patients to set a quit-date.	4	3	2	1
24. Suggest specific actions that patients could do to make quitting or cutting down easier.	4	3	2	1

	Frequently	Occasionally	Seldom	Never
25. Recommend alternatives to using tobacco to patients.	4	3	2	1
26. Organize health talks about tobacco for patients.	4	3	2	1
27. Teach coping skills to patients to prevent relapse.	4	3	2	1
28. Encourage patients who have relapsed to try quitting again.	4	3	2	1
29. With patient's consent, discuss his/her tobacco use with his/her family members.	4	3	2	1
30. Recommend or suggest nicotine replacement therapies.	4	3	2	1
31. Recommend or suggest buproprion (Zyban/Wellbutrin).	4	3	2	1
32. Recommend or suggest varenicline tartrate (Champix).	4	3	2	1
33. Instruct patients in the use of over-the-counter or prescription medication for tobacco cessation.	4	3	2	1
34. Refer patients to cessation resources (e.g.,, helplines).	4	3	2	1
35. Offer self-help cessation materials to patients.	4	3	2	1
36. Refer patients to other healthcare professionals for tobacco cessation counselling.	4	3	2	1

37. If you counsel patients about tobacco use and/or cessation, how much time, on average, do you spend doing this with each patient during each visit?

☐ less than 3 minutes
☐ 3 to 10 minutes
☐ more than 10 minutes
☐ I do not counsel patients about tobacco use and/or cessation

38. To what extent do you feel that delivering a tobacco cessation intervention is a part of your role as a nurse working with inpatients that have an addiction and/or mental health illness?

☐ Not at all ☐ Somewhat ☐ Very Much

39. Which of the following items <u>encourage</u>, or would encourage, you to advise or counsel inpatients that have an addiction and/or mental health illness to quit using tobacco? (Please check all that apply.)

☐ Knowledge that quitting tobacco use can improve the health of patients
☐ Knowledge that quitting is the most cost effective intervention to prevent chronic disease and cancer
☐ Patients' motivation to quit using tobacco
☐ Belief that helping patients to stop using tobacco is part of your role and responsibilities
☐ Sufficient knowledge about tobacco and health
☐ Adequate skills in tobacco cessation counselling
☐ Confidence in helping patients to stop using tobacco
☐ Belief that helping patients to stop using tobacco is of high priority
☐ Support from management
☐ Support from colleagues
☐ Past successes helping patients to quit
☐ Reasonable workload that allows time to intervene with tobacco cessation
☐ Resources available to help with tobacco cessation interventions
☐ Physician request for nursing involvement in tobacco cessation
☐ Other (please specify) _____

40. Which of the following items <u>discourage</u> you from advising or counseling inpatients that have an addiction and/or mental health illness to quit using tobacco? (Please check all that apply.)

☐ Lack of time
☐ Lack of tobacco cessation counselling skills
☐ Lack of knowledge about tobacco and health
☐ Lack of confidence in delivering tobacco cessation interventions
☐ Lack of recognition/rewards/reimbursement for intervening
☐ Lack of resources (e.g.,, person-power)
☐ Lack of support from colleagues
☐ Heavy workload
☐ Belief that helping patients to stop using tobacco is of low priority
☐ Discomfort with suggesting patients alter their lifestyles
☐ Belief that tobacco use is a type of coping mechanism for patients under stress
☐ Past intervention experiences tended to be unsuccessful
☐ Limited direct patient care
☐ No existing hospital mandate or policy to intervene
☐ Lack of patient interest or motivation to quit
☐ Lack of availability of educational materials
☐ Belief that unwanted advice upsets the nurse-patient relationship
☐ Limited effectiveness of tobacco cessation interventions
☐ Other (please specify) _____ .

41. Have you received any tobacco cessation training?

☐ Yes　　　☐ No

42. How interested are you in learning more about how to help your patients quit tobacco use?

☐Very   ☐Moderately   ☐Not very   ☐Not at all
interested   interested   interested   interested

43. Have you seen the Registered Nurses Association of Ontario document called: 'Integrating Smoking Cessation into Daily Nursing Practice'?

☐ Yes   ☐ No
↓
Have you read the document?

☐ Yes   ☐ No

44. If you were to receive tobacco cessation training, or further training, what areas would you like to know more about? (Please check all that apply.)

☐ How to ask patients about tobacco use
☐ How to advise a patient to stop using tobacco
☐ How to assess the patient's readiness to quit using tobacco
☐ How to provide social support as a part of cessation treatment for patients who use tobacco
☐ How to help patients recruit social support outside the hospital environment
☐ How to counsel patients to quit
☐ What to do if a patient continues to use tobacco
☐ How to counsel patients to avoid relapse
☐ How to find/recommend post-discharge tobacco cessation services
☐ What self-help materials to give patients who use tobacco
☐ Other (please specify): _____

45. Which of the following resources would you use to learn more about tobacco cessation for your patients? (Please check all that apply.)

☐ Brief (e.g.,, 10-minute) in-service during departmental meeting
☐ 1-hour workshop
☐ 1/2 -day workshop
☐ Full-day workshop
☐ Self-study materials (e.g.,, video/CD/DVD, books, pamphlets, web, etc.)
☐ Other (please specify): _____

<u>The questions in this last section ask you about your professional background and personal demographics.</u>

46. What year did you graduate from your basic nursing education? _____

47. What is the highest level of education you have completed? (Please check one only)

☐ Certificate
☐ Diploma
☐ Bachelors (baccalaureate)
☐ Masters
☐ Doctorate   ☐ Other (please specify) _____

48. In what area do you work the most hours? (Please check one only)

☐ Addictions
☐ Mental health/psychiatry
☐ Crisis intervention
☐ Other (please specify): _____

49. How many years have you worked in your current area of practice? _____

50. Are you: ☐ Full-time
            ☐ Part-time
            ☐ Casual

51. In which city/town do you work in? (Please print city/town name)

_____

52. What type of facility do you work in? (Please check one only)

☐ Psychiatric hospital (uniquely admits inpatients with a mental health illness)
☐ General hospital (psychiatric unit within a larger hospital)
☐ Addiction and psychiatric hospital (admits inpatients with an addiction and/or mental health illness)
☐ Community-based (i.e. Assertive Community Treatment Team)
☐ Other (please specify): _____

53. Do you smoke cigarettes or use other tobacco products?

☐ Daily
☐ Occasionally
☐ Formerly (now quit)
          ↓
      ☐ Quit within the last 6 months
      ☐ Quit more than 6 months ago
☐ Have never used tobacco

54. If you currently smoke or use other tobacco products, would you like information about, or assistance with, quitting?

☐ Yes   ☐ No

Thank you for taking the time to complete and return this survey.

Appendix D

Comparison of 4A Tasks, Role Perception, Time Spent Counselling, and Interest in Learning More on Tobacco Cessation for the Two LHIN[a] Regions

	North Simcoe Muskoka LHIN				North East LHIN			
	%	n/N	M	SD	%	n/N	M	SD
4A Protocol[b]								
Ask	85	28/33	2.0	1.1	97	34/35	3.2	0.9
Advise	97	32/33	2.6	0.9	94	33/35	2.7	0.8
Assist	91	30/33	2.2	0.7	94	33/35	2.2	0.6
Arrange	73	24/33	1.9	0.7	77	27/35	2.1	0.8
Perceived role[c]	91	29/32	2.3	0.6	94	33/35	2.2	0.5
Time spent counselling[d]	68	23/34	2.3	1.3	74	26/35	2.3	1.2
Interest to learn more on helping patients quit[e]	79	26/33	2.0	0.8	83	29/35	1.9	0.8

[a] LHIN=Local Health Integration Network. [b] Percentages represent those who performed the task (even if seldom). M and SD were scored on a scale of 1-4 where 1=never, 2=seldom, 3=occasionally, and 4=frequently. [c] M and SD were scored on a scale of 1-3 where 1=not at all, 2=somewhat, and 3=very much. [d] M and SD were scored on a scale of 1-4 where 1=< 3 minutes, 2=3 to 10 minutes, 3= >10 minutes, and 4=does not counsel. [e] M and SD were scored on a scale of 1-4 where 1=very interested, 2=moderately interested, 3=not very interested, and 4=not at all interested.