

**A NEEDS ASSESSMENT OF PRIMARY CARE PHYSICIANS DELIVERING
DIABETES CARE**

BY

KELLY-LYNN BEKAR

A Practicum Project
Submitted to the Faculty of Graduate Studies
In Partial Fulfillment of the Requirements for the Degree of

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DIABETES CARE**

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KELLY-LYNN BEKAR

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of
Manitoba in partial fulfillment of the requirement of the degree**

Of

Master of Nursing

Kelly-Lynn Bekar © 2005

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ABSTRACT

Diabetes mellitus is a major public health issue, increasing at alarming rates in Canada and around the world (International Diabetes Federation, 2002). The disease and its attendant morbidity and mortality, exact huge personal, public, and economic costs (Vinicor, 2001). Despite the availability of national, evidenced-based clinical practice guidelines, and a plethora of approaches/interventions to promote their usage, large documented gaps exist between desired levels of diabetes care and the level of care currently observed in practice settings.

This pilot project was designed to explore physicians' perceptions of the barriers to implementation of quality diabetes care and ascertain their perception of strategies that may effectively address these barriers and support them in their role as front-line providers. A focus group discussion was conducted with four primary care physicians. Three major themes evolved from content analysis of the data arising from this discussion: 1) a pervading sense of frustration at the perceived chronic, deteriorating nature of diabetes and the perceived inability to positively affect its progression due to a myriad of intervening factors; 2) conflicting satisfaction with the usefulness of clinical practice guidelines; 3) concern for the present system in which diabetes care is delivered and for the perceived lack of a strategic care and funding model addressing diabetes prevention through treatment.

To dare is to lose one's footing momentarily.

Not to dare is to lose oneself forever.

Soren Kierkegaard

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CHAPTER ONE - INTRODUCTION

Statement of the Problem

Diabetes mellitus (DM) is a major public health issue, increasing at alarming rates in Canada and around the world (International Diabetes Federation, 2002). The disease and its attendant morbidity and mortality, exact huge personal, public, and economic costs (Vinicor, 2001). In 1998 the first evidenced-based clinical practice guidelines (CPGs) were developed by the Clinical & Scientific Section of the Canadian Diabetes Association (CDA), based upon unequivocal research that demonstrated improved glycemic control is related to improved clinical outcomes for persons with diabetes (Meltzer et al., 1998). In December of 2003, an Expert Committee representing key stakeholders from across Canada released updated CPGs, justified by an increasing volume of published research evidence relevant to the prevention and management of DM. The assumption, however, that these CPGs are incorporated into practice by family physicians whom are frequently the principal medical contact for the person with DM, is not supported by empirical data or anecdotal discussions.

With health care reform an ongoing priority of both the federal and provincial governments, Canada is actively evaluating its healthcare system and shifting towards an evidence-based model to allocate resources. This places healthcare under increasing pressure to update and incorporate new research and new strategies into practice (Canadian Diabetes Association Clinical Practice Guidelines Expert Committee, 2003). This challenge is occurring in the world of diabetes.

With diabetes increasing at alarming rates and because of its economic consequences to our health care system, an abundance of studies have been conducted about care provided to people with diabetes, the people who provide that care, and methods aimed at improving the care delivered. However, through a review of the literature it has become evident that strategies to improve diabetes care have often been implemented in isolation of consultation with physicians.

The purpose of this project was to acquire an understanding of the perception of the needs and barriers to the implementation of diabetes CPGs by primary care physicians within the Winnipeg Regional Health Authority (WRHA) and their perception of strategies needed to address these needs.

Significance

Prevalence

The discovery of insulin at the University of Toronto, Canada, turned the historically lethal disease of DM into a chronic health threat with the potential for devastating vascular, metabolic, and human complications (Vinicor, 2001). Referred to as "The Lifestyle Epidemic of the 20th Century," global increases in both type 1 and type 2 diabetes have been observed in all ages, sexes, races, and education levels (Penckofer & Gulanick, 2002). The World Health Organization cites further distressing data that indicate the societal and individual burden of diabetes will only worsen before it gets better as the population ages and rates of obesity rise (Canadian Diabetes Association, 2000).

In Canada the most recently available data from the National Diabetes Surveillance Strategy indicate that in 1998/99, the physician-diagnosed prevalence of DM in adults ≥ 20 years of age was 4.8%, although population-based studies suggest the true prevalence may be $>7\%$ (Canadian Diabetes Association Clinical Practice Guidelines Expert Committee, 2003). United States statistics demonstrate that for every known person with diabetes, there is someone with undiagnosed diabetes (Winnipeg Regional Health Authority, 2003). Assuming that the same situation is true in Canada, statistics most likely underestimate the prevalence of the disease. Demographic trends that will continue to contribute to an increased prevalence of diabetes in Canada include an aging population (Statistics Canada, 2002), increasing immigration from high-risk populations, and growth in the Aboriginal population (Statistics Canada, 2003).

In Manitoba and the Winnipeg Health Region (WHR), the prevalence and incidence of diabetes has shown a consistent increase over the last 11 years. In adults ≥ 25 years, 7.4% of the population has been diagnosed, with 57,391 Manitobans living with DM as of June 01, 1999 (Manitoba Health, 2002). Evidence from the 1995 *Manitoba Diabetes Burden of Illness Study* indicated that the cost of diabetes and its complications in those individuals 15 years and older was $>18\%$ of the 1995/96 provincial health care budget (Manitoba Health, 1998). Diabetes is increasing at alarming rates with huge personal and societal implications.

Costs

Many 'dire' predictions exist about the coming onslaught on healthcare services from diabetes-fueled morbidity (Tobe & Leiter, 2002) although economic analyses of the exact cost of diabetes to the healthcare system have produced estimates that vary widely. One recent study calculated the economic cost in Canada in 1998 for treating people with diabetes and its complications at between 4.76 and 5.23 billion dollars US (Dawson et al., 2002). The financial burden of DM extends to the person and family living with diabetes. Statistics provide a basis for estimation that indicate a person with DM incurs medical costs that are two to three times higher than that of a person without the disorder (Canadian Diabetes Association, 2003).

In Canada, with more than 60,000 new cases diagnosed annually, diabetes is a leading cause of death by disease, accounting for at least 5,500 deaths a year, and possibly contributing to as many as 25,000 (Health Canada, 2000). In the spring of 2002, the CDA in a presentation to the Romanow Commission on the Future of Healthcare warned that unless Canada takes definitive action, DM and its complications have the potential to bankrupt our healthcare system (Canadian Diabetes Association, 2002). Improvement in diabetes prevention and care is critical.

Purpose of the Project

Due to the prevalence of DM and its costs to our health care system, an abundance of studies have been conducted about care provided to people with diabetes, the people who provide that care, and methods aimed at improving the

care delivered. However, a review of the literature, as well as discussions with individuals with DM and health professionals responsible for program planning, education, or delivery of care to people with DM, indicate that a pervasive gap exists between desired levels of diabetes care and levels of care currently observed in clinical practice. People with diabetes who do not receive quality care suffer the consequence of this gap. Although there exists a plethora of literature written about strategies used to change physician practice, these strategies often have been implemented in isolation of consultation with physicians, their use divorced from an understanding of the barriers/needs that dictate practice reality. There exists no published Canadian or Winnipeg physician needs assessment in relation to implementing the CPGs for diabetes. It is this reality that influences the implementation of CPGs. If we are to increase the application of research into practice, a better understanding of the actual needs of physicians and their perception of strategies to address these needs in relation to implementing the CPGs for diabetes is required to effectively coordinate and enhance appropriate dissemination and implementation strategies. If we cannot name it, we cannot control it, finance it, teach it, research it, or put it into public policy (Clark & Lang, 1992). Therefore, the purpose of this project was to acquire an understanding of primary care physicians' perception of what are the needs and barriers to the implementation of CPGs for diabetes within the Winnipeg Regional Health Authority (WRHA) and their perception of strategies that would effectively address these needs and support them in this role.

The “value added” by understanding physicians’ needs and suggestions for implementing CPGs is important in altering the course of this and other chronic diseases, ensuring Manitobans receive the best possible health care while controlling expenditures. It has been said that to know diabetes is to know medicine and health care, as the primary defect in fuel metabolism, affects multiple organs with implications for virtually every system of the body and every specialty of medicine (Ratner, 1996). Persons with DM usually have at least one other chronic condition, so care improvements for DM will naturally evolve into care for many other major chronic diseases.

In-depth knowledge of physicians’ reality and needs would enhance the identification of suitable partnerships, management structures, and the strategic allocation of appropriate resources for effective implementation of the CPGs. Specifically, it is hoped that findings emanating from this project will assist in the decision-making of persons involved in integrating the Regional Diabetes Program (RDP) into the Manitoba primary health care system.

Recognizing and understanding needs/barriers in the primary care physician’s office within the WRHA may help to recognize and understand barriers in other settings within Manitoba as well as in other provinces managing this disorder.

CHAPTER TWO - REVIEW OF THE LITERATURE

Classification of Diabetes

The earliest known record of diabetes dates back more than 3,000 years when writings characterized diabetes as persons passing frequent and large amounts of sweet urine, to which ants and flies were attracted. A complex metabolic disorder, DM is diagnosed by the presence of hyperglycemia due to defective insulin secretion, insulin action, or both (Meltzer et al., 1998). However, hyperglycemia in reality is only one component of the pathology and clinical manifestation of this multifaceted complex metabolic syndrome.

There exist two primary forms of diabetes. Type 2 DM accounts for more than 90% of the total cases and occurs when the pancreas does not produce enough insulin to meet the body's needs or the body is resistant to the insulin made (Health Canada, 2000). Type 1 DM accounts for the remaining 10% of the total cases and occurs when the pancreas is unable to produce insulin.

Complications of Diabetes

While the cause of the different types of diabetes varies, the complications are the same and account for substantial morbidity and mortality (WRHA, 2003). Researchers have struggled for decades to understand how and why hyperglycemia and hyperinsulinemia contribute to the development of diabetes' associated complications. Increasingly recognized as a vascular disease, what is known is that the long-term complications of DM associated with these abnormalities include both macrovascular complications (coronary artery disease, cerebrovascular disease, peripheral vascular disease) and

microvascular complications (retinopathy, nephropathy, neuropathy) (Meltzer et al., 1998). While estimated rates of complications associated with diabetes vary between populations and with study design, it has been estimated that approximately 60% of individuals have one or more complications, while almost 25% have two or more complications (Liebl et al., 2002). Statistics indicate that DM is the leading cause of blindness, kidney failure, and non-traumatic amputations in industrialized countries (Quinn, 2002). Type 2 DM is associated with a two to three fold increased risk of cardiovascular disease, with 80% of deaths from DM related to coronary heart disease. Infectious disease such as colds, flu, and Severe Acute Respiratory Syndrome are known to affect people living with diabetes more virulently than other Canadians (CDA, 2003).

It is obvious that "There is no such thing as 'mild' diabetes" (Tobe & Leiter, 2002, p. iii). With the significant impact diabetes has upon those Canadians living with it and on our health care system as a whole, science supports taking a comprehensive approach to the management of diabetes in Canada (Canadian Diabetes Association, 2003).

Clinical Practice Guidelines

Recognized as the standard for diabetes care, implementation of the *Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada* is essential to ensure access to timely diabetes education and common standards of diabetes care for all Canadians with diabetes (Canadian Diabetes Association, 2003). Defined as systematically developed statements based on literature review and expert

opinion, CPGs are designed to reduce variation in practice, incorporate recent evidence, and assist practitioner and patient decisions about appropriate health care for specific clinical circumstances (Sackett, Richardson, Rosenberg & Haynes, 1997). However, with physicians inundated with CPGs over the last decade, disparate opinions concerning CPGs exist (Woolf, Grol, Hutchinson, Eccles, & Grimshaw, 1998). Seen by its' champions as the "magic bullet", conversely by its' critics as "cookbook medicine," one thing is definite – CPGs are pervasive and are here to stay in this era of evidence-based everything (Muir-Gray, 1997).

The newly released 2003 CPGs for diabetes incorporate advances in prevention, diagnosis and management. The aim of evidence-based health care is to provide the means by which current best evidence from research can be judiciously and conscientiously applied in the prevention, detection, and care of human health disorders (Haynes & Haines, 1998). With DM increasingly managed in the primary care setting, this responsibility is predominantly assumed by the physician, the principal medical contact for anyone with this disease (Harris et al., 1998). Although convincing scientific and economic evidence exists to reduce the burden of diabetes, excessive morbidity, mortality, and costs remain prevalent (Vinicor, 2001).

Despite comprehensive dissemination and education strategies of diabetes guidelines and their rationale, the assumption that physicians scrutinize and incorporate these CPGs into practice is not supported by multiple studies involving retrospective medical chart reviews in family practice clinics,

representative national cohort surveys, or in qualitative studies (Casey & Egede, 1999; Harris, Webster-Bogaert, Lillie & Lank, 2000; Larme & Pugh, 2001; Lawler & Viviani, 1998; Worrall, Freake, Kelland, Pickel, & Keenan, 1997). CPGs by themselves have therefore not shown a significant effect on either physician behavior or patient outcomes. United States national data suggest a sizable proportion of individuals with DM are unlikely to have received diabetes education, have sub-optimal glycemic control, uncontrolled hypertension, and dyslipidemia (Wagner et al., 2001). Similar findings closer to home are evident. Data from a study undertaken through the Department of Continuing Medical Education at the University of Manitoba using administrative data from Manitobans ≥ 25 years of ages and algorithms to track physicians' care for persons with diabetes, indicate a wide gap exists between current level of care and 'best care' (Kvern, Ludwig, Griffith, & Anderson, 2002).

Barriers to Implementation of Clinical Practice Guidelines

The process of research dissemination and utilization is decidedly ambitious and complex. Many studies and discussions have been conducted with physicians, certified diabetes educators, researchers, and agency personnel to examine the attitude of health professionals in primary care towards DM guidelines and to explore what happens to diabetes CPGs in real-world clinical settings. A review of this literature offers recurring themes of numerous intervening variables that may account in part for the gap between recommendations for preventive strategies and the implementation of such strategies, thus contributing to the persistent burden of DM.

Common themes of concern that emerge are attitude, knowledge level, and contextual factors. A systems model used to describe delivery of preventive services includes these factors and others, amongst predisposing, enabling, and reinforcing factors. Themes common to this model indicate that quality medical care is dependent upon knowledge, attitudes, beliefs of preventive skills, the practice organization of physicians (reminder and recall systems), patient factors (positive feedback, changes in risk behaviors), and reimbursement policies (Jaen, Stange, & Nutting, 1994). Not dissimilar is the competing demands model described by Jaen et al. (1994). In this model the premise of interrelated and competing factors involving patients, physicians, and the practice environment affects physician delivery of preventive care services (Appendix A).

Contributing factors include the fact that some physicians lack knowledge of the CPGs or do not consider them relevant to their practice setting, believing them to have been developed by academics distanced from the reality of practicing physicians (Daniels et al., 2000). Further, "Some physicians have an overly positive view of the quality of their chronic illness care and do not see a need to change practice systems" (Bodenheimer, Wagner, Grumbach, 2002, p. 1913). Skeptics of CPGs may question whether they are truly a means to improve quality of care or are in fact a disguised audit (Merritt, Palmer, Bergman, & Shiono, 1997). Furthermore, with great authority placed in the clinical experience, CPG recommendations may be discounted if they are not congruent with physicians' previously held beliefs/practices. This argument, however, is ameliorated in the diabetes guidelines. The guideline's authors clearly state that

the guidelines are not intended to replace clinical judgment, nor intended as an exclusive source of guidance for the treatment of DM, but rather were designed to provide a framework for decision-making. Lack of consultation and introduction of CPGs without preceding education sessions have resulted in negative attitudes towards CPGs (Daniels et al., 2000). Again, these perceptions would not accurately reflect the process of working groups involved in the extensive consultation and dissemination done by the CDA. Some physicians have highly judgmental attitudes about diabetes believing lifestyle can easily be changed if only the patient exerts self-discipline (Hiss, 1996). Negative attitudes further stem from the fact that low public awareness of the seriousness of DM may result in a delayed diagnosis until the individual is at an advanced stage, and then many disregard physician recommendations (Hiss, 1996; Larne & Pugh, 2001). The asymptomatic character and long latent period between onset of hyperglycemia and overt complications have resulted in some patients and physicians perceiving type 2 DM as a mild illness and therefore, it is not accorded the time or aggressive management it necessitates (Hiss, 1996). A further barrier to implementation may include the common reaction of normal resistance to change as some people put a great deal of effort into staying as they are. It is apparent that there are many other more powerful determinants of practice behavior in primary care than simply the existence of evidence or guidelines (Tudiver, Herbert, & Vivek, 1998).

Contextual Barriers to Usage of Clinical Practice Guidelines

Although the above factors may contribute in part to poor adherence of CPGs, Glasgow (1995) purports looking beyond provider knowledge and attitudes to the broader practice context for factors that may influence provider behaviors. Many studies have found these to be even more important barriers to optimal care. As a complex, chronic, multi-system disease, DM fits poorly in a health care delivery system designed to deal with treatment of acute and episodic illness, making care more often reactive instead of proactive (Hiss, 1996; Lawler & Viviani, 1997; Yawn, Zyzanski, Goodwin, Gotler, & Stange, 2001). In a study by Larne and Pugh (2001), physicians commented on the limits of their own medical treatment, which emphasized treatment over prevention. This study also showed that the practice economics of a fee-for-service payment system acted as a barrier to implementation of CPGs. To pay overhead costs and make a profit, a large number of patients must be seen, limiting the time for education and care. A shortage of physicians, low public awareness of the seriousness of diabetes, lack of office resource staff, or other health professionals to support them in diabetes care further contributes to the inability to implement standards of care (Larne & Pugh, 2001).

Compounding these issues is the fact that physicians and hospitals have lagged behind industry and business in adopting information technology (IT). "Computer-based clinical decision support systems have been found to improve clinicians' adherence to guidelines" (Hetlevik, Holmen, Kruger, Kristensen, Iversen, Furuseth, 2000, p. 211). Several large, well-designed trials have

demonstrated that the quality of patient care is improved with IT (Pinkowish, 2002). Barriers to using IT include a lack of financial and management support, the complexity of medical systems needed, and the failure of some medical IT applications to meet the needs of the user (Pinkowish, 2002).

Continuing Medical Education Strategies

The barriers to implementation of evidence-based research CPGs are diverse and complex, as are the wide spectrum of methods used to improve their implementation into practice, enhance professional performance, and improve patient outcomes. Theoretical underpinnings of these methods include: the Information Deficit Model; the Transtheoretical Model of Stages of Change; Social-Cognitive, and Learning Theories to promote behavior change; and management theories that emphasize organizational condition needed to improve care (Haines & Donald, 1998).

In DM, large-scale efforts to improve the use of evidence-based research have relied principally upon continuing medical education (CME). CME can be defined as any educational intervention that attempts to persuade physicians to modify their practice performance by communicating clinical information and include: *educational materials* (printed, audiovisual, computer-produced information); *formal CME programs* (conferences, seminars, workshops, small group sessions, teleconferences); *out-reach visits*, including academic detailing; *local opinion leaders or educational influentials*; *patient-mediated interventions* (patient education materials); *audit with feedback* and; *reminders* (Davis, Thomson, Oxman, & Haynes, 1995). Other methods used to change physicians'

practices include local consensus processes, administrative rules, financial incentives, and disease management tools.

A robust body of research assessing the outcomes of different CME strategies exists, including increasing numbers of randomized control trials (RCT). While the most stringent test of CME programs is whether the patients of physicians enrolled have better health outcomes, most studies have not looked for changes in patient outcomes, but rather have focused on examining changes in physicians' practices (Greco & Eisenberg, 1993). A 2000 Cochrane review of 41 studies of more than 200 practices and 48,000 patients - *Interventions to improve the management of diabetes mellitus in primary care, outpatient, and community settings* - provides valuable information. Participants included physicians, nurses, and pharmacists. The review demonstrated that although a large number of multifaceted professional, organizational, and patient education interventions/models are being tested, the choice of intervention used in practice settings has often not been guided by theoretical or empirical rationale or a formal body of knowledge (Renders et al., 2000). Furthermore, studies evaluating the effectiveness of these complex interventions often had poor methodological quality and few reported outcomes at both the process and patient outcome level (Renders et al., 2000). A number of consistent themes were identified by the Cochrane and other systematic reviews indicating that although physician performance may be altered by many of these CME interventions, findings are most often small, less often moderate, and rarely large (Bero et al., 1998; Davis et al., 1995; Renders et al., 2000). Greco & Eisenberg

(1993) purport that no one particular type of intervention is inherently effective and whether an intervention succeeds or not is dependent upon the circumstances in which it is used. Those interventions demonstrating changes in professional performance, and less consistently, changes in patient outcomes (if measured), include multifaceted more complex intervention strategies involving the use of computer recall and reminders, outreach visits, opinion leaders, patient education, and a more enhanced role of the nurse (Oxman et al, 1995; Renders et al., 2000). When barriers to change were addressed or gaps were demonstrated and resources deployed to help the learner, change appeared to occur relatively frequently (Davis et al., 1995). The effectiveness of these interventions on patient outcomes such as glycemic control, cardiovascular risk factors, or well-being is less clear (Renders et al., 2000).

Chronic Care Model

The chronic care illness model proposes a comprehensive multidimensional system change solution to bridging the identified chasm between acute primary care practice and optimal diabetes care and outcomes (Wagner et al., 2001). The chronic care model identifies six essential elements to the delivery of quality chronic care: community resources and policies, health care organization, self-management support, delivery system design, decision support, and clinical information systems (Bodenheimer, Wagner, & Grumbach, 2002). Although adoption of the entire model presents major challenges, portions of the model can be implemented and have been shown to be beneficial. A systematic review of 32 of 39 studies featuring elements of the chronic care model, revealed that

interventions based on four and even fewer components of the model, improved at least one process or outcome measure for people with DM (Bodenheimer et al., 2002).

Summary

The 'explosion' of diabetes along with its human, societal, and economic costs is a compelling health care dilemma. As a result of the increasing burden of the disease and its complications, but most importantly because of the potential to prevent these complications with earlier diagnosis and more aggressive screening and treatment, efforts to enhance implementation of CPGs is paramount. A review of the literature shows the process of the adoption of research evidence into health-care decision-making is influenced by a variety of factors with complex inter-relationships among these factors. Although a plethora of approaches and interventions exist to promote uptake of research findings, evidence from the literature indicates that their use has met with varying success. In part this is attributable to the fact that the choice of intervention used often has not been based on a needs assessment rationale to understand the motivations and conditions underlying the practice. If we are to address the competing demands that interfere with quality diabetes care and ensure that evidence-based research is translated into real-world clinical practice that makes a difference, we must employ appropriate strategies to define barriers to change, and carefully select the interventions to promote change tailored to the problem, the audience, and the resources available. As first line providers, physicians' voices must be heard to arrive at a practical knowledge and understanding that

escapes literature abstraction. Proceeding without dialogue and in ignorance of these variables, obliterates a physician's reality and leads to development of programs and policies divorced from the knowledge, beliefs, and context that situate practice possibilities and limits.

CHAPTER THREE - METHODOLOGY

Design

The function of the design is to answer the research question (LoBiondo & Haber, 1994). A qualitative research design was chosen for the purpose of this study.

In primary care research, qualitative techniques are increasingly recognized as valuable research tools. Grounded in the social sciences, the evolution of qualitative methods arose because empirical approaches had proven to be of limited service in fully describing/answering some of the challenging and pressing questions, especially where human subjectivity and interpretation were involved (Thorne, 1997). Krasner (2000) stated that the early philosophers of qualitative research "...argued that human phenomena could not and should not be reduced to mathematical formulas" (p. 70). Qualitative methods are used to answer research questions that begin with "how" or "what," a particular strength in allowing a contextual understanding of the topic being investigated (Creswell, 1998). The principal claim of qualitative researchers is that qualitative research techniques offer a holistic approach to capturing the selective reality of a situation and preserving the complexity of human behavior by in-depth examination and understanding of the authentic perceptions, sentiments, and opinions of the participants in these events (Chew-Graham, May, & Perry, 2002; Sim, 1998).

Several different methods of data collection exist in qualitative studies including questionnaires/surveys, interviews, focus groups, and participant observation. All approaches "...share a similar goal in that they seek to arrive at

an understanding of a particular phenomenon from the perspective of those experiencing the phenomenon" (Woodgate, 2000, p. 194).

In that qualitative research techniques can be used to examine the complexities of humans and their environments it seems evident that this would be a useful design to explore the practice reality of primary care physicians and begin to concretely address the delivery of quality, evidence-based diabetes care.

Setting

Manitoba is a province in western Canada, with a stable population of approximately 1.1 million people, of which 646,733 live in Winnipeg, the capital city (Manitoba Health, 1998; Griffith, 2002). According to Dr. Jane Griffith, an epidemiologist with Manitoba Health's Diabetes and Chronic Diseases Unit, Manitoba has the highest prevalence of diabetes of any province in Canada (personal communication, October, 2002). As of June 01, 1999 there were a total of 57,391 Manitobans living with diabetes, with 31,718 of these persons residing in the Winnipeg Health Region (Griffith, 2002).

This project was conducted in Winnipeg at a primary health clinic founded in 1971 by residents of the inner city. Seven physicians are employed at this clinic. Request for use of this site for this project was addressed to (Appendix B) and received from the clinic coordinator (Appendix C). A review of the clinic's population by the clinic coordinator estimated the prevalence of DM at approximately 17.4%.

Sample and Recruitment

Convenience sampling was used to recruit primary care physicians to the study. Potential participants received a 'Letter of Invitation' (Appendix D) outlining the current burden of diabetes, the purpose of the project, and a request to participate.

According to Nieswiadomy (2002) there are no set rules about the necessary sample size or time frame for a qualitative study. She claims the quality of information obtained is more important than is the amount of information and rather than sampling a certain number of individuals or dictating a specific time frame, the researcher stops data collection when saturation of data has occurred. Nieswiadomy (2002) defines saturation as the time when the researcher is hearing a repetition of themes or salient points and no new information is being obtained. Although the significance of achieving saturation is recognized and appreciated, as a pilot project with time constraints, the realization of saturation may not be achieved.

Protection of Human Rights

Written informed consent (Appendix E) was obtained from each physician after they had been informed of the purpose of the study, their role in the study, and ensured of confidentiality in the handling of information. Opportunity for questions at the time of obtaining the consent was provided. Participation in the focus group was entirely voluntary. Participants were aware they were free to withdraw from the focus group at any time and refrain from answering any

questions, without prejudice or consequence. A copy of the consent form was left with each physician for his/her records and reference.

Participants were assured that no identifying names would be used in the recording of data, in the transcription of audiotapes, analysis of data, or in reports of this study. Assurance was given that comments spoken in the focus group would be kept confidential between those in attendance. The researchers, physicians, and the transcriber were each required to sign a Pledge of Confidentiality (Appendix F, G, & H). Prior to the release of any findings participants had the right to request the deletion of any of their comments. All audiotapes were erased once accurate transcription was verified.

The project posed no risk to participants. The Director of Continuing Medical Education at The College of Family Physicians of Canada stated that the information appraisal and the critical reflection on practice necessitated by the focus group, enabled the physicians who attended to collect Mainpro-C credits. At the conclusion of the focus group, the researcher supplied the form '*Linking Learning to Practice*' that was to be completed and submitted to document their participation.

In accordance with the policy of the University of Manitoba, Faculty of Graduate Studies, the project proposal (Appendix I) was submitted to and granted approval by the Education/Nursing Research Ethics Board (Appendix J).

Feedback to the Agency/Group

The physicians were able to request a written report of the completed research, by indicating their wishes on the bottom of the consent form.

Data Collection

When the objective is to find out what people believe, think, feel, or what their motives, plans, and attitudes are, the easiest and most effective method is to ask questions directly of the person (Brink & Wood, 2001). As noted earlier, common approaches to collecting information in qualitative studies include questionnaires/surveys, interviews, focus groups, and participant observation. Each approach has inherent advantages and disadvantages, with the sample population and project purpose, influencing the collection method(s) chosen.

Questionnaires and Interviews

Questionnaires and interviews are common methods designed to collect primary self-reported data, the major difference between the two being the presence of an interviewer.

Written questionnaires are a standardized, generally quick and relatively inexpensive method to obtain data anonymously from large numbers of people over wide geographic areas, but response rates are often low, respondents may fail to answer certain questions, and there is no opportunity to clarify items that may have been misunderstood (Brink & Wood, 2001). Furthermore, while they can provide insight into current organization and consequence of care, written questionnaires are not well suited to explain why events happen as they do (Crombie, 1996). Watson et al. (1999) assert that surveys/questionnaires are a relatively crude instrument for ascertaining professional views.

Interviews can secure data not available through written responses and generally result in a higher response rate than do questionnaires (Brink & Wood,

2001). Interviews consist of several different types and may be conducted over the telephone or face-to-face. A structured interview is much like a questionnaire, with specific questions asked with little room to deviate from the desired responses, while an unstructured interview contains open-ended questions, which can lead into more detailed information as data are uncovered and clarification can be provided if a question is misinterpreted (Phillips, 1991). Most interviews fall somewhere in between and are called semi-structured interviews. The advantages of interviews include direct observation of the responses of the subject, opportunities to clarify questions if they have been misunderstood, and the ability to probe for information (Brink and Wood, 2001). Major disadvantages are that arrangements for interviews may be difficult to make and interviews may be time consuming and expensive, requiring training or preparation to ensure the process is conducted in an effective manner (Nieswiadomy, 2002).

Focus Groups

Focus groups provide a valuable tool for exploratory research and are a relatively inexpensive method for eliciting perceptions and acquiring in-depth feedback, allowing the facilitator to be directly involved, yet encouraging a greater degree of spontaneity compared with the interview technique (Sims, 1998). A focus group is a carefully planned yet loosely formatted small group discussion conducted by an experienced facilitator allowing for group interaction and in-depth probing and confirmation, with groups members influencing each other by responding to ideas and comments in the discussion (Watson, Shickle,

Qureshi, Emery, & Austoker, 1999). This interaction within the group may generate and allow for a testing of new ideas and hypothesis not previously considered by the researcher (Phillips, 1991). It has been found that in groups where participants share a common experience, individuals may be more ready to discuss issues surrounding that experience (Torn & McNichol, 1998).

Whereas semi-structured interviews allow for in-depth exploration of an individual's opinions, the focus group is an effective method to elicit multiple readings of the same reality. While typically having good validity, main criticisms of focus groups include that they may do little more than confirm and support assumptions and prejudices (Reed & Payton, 1997), analysis of data can be time consuming and tedious, and because they are not based in a natural setting, participants may not truly state what they actually think or feel (McDougall, 1999). Both interviews and focus groups have previously been used successfully in the primary care setting.

Participant observation had not been considered, due to the time involved to visit and become familiar with numerous practices. Relying on the physician's reporting of the practice reality was therefore deemed more efficient.

While the relative ease and cost-effectiveness of mailing out questionnaires is inviting, low response rates and questionnaire fatigue experienced by physicians is a large deterrent, as is the inability to clarify/probe responses. The burden of diabetes dictates that an accurate and thorough understanding of barriers and acceptable and realistic solutions be obtained with opportunity permitted to explore/understand this information. The interaction afforded by focus groups in

combination with the facilitator's ability to explore information provided, makes it a productive and valuable method of data collection. Hence, physician needs and experiences were explored using a qualitative approach utilizing a focus group of four physicians.

In data collection, the role of the focus group moderator and the method of recording data are crucial considerations (Sim, 1998). Most interviewers prefer a group of 5 to 15 participants with the average number of questions suggested for a 90-minute session around 12 (Beyea & Nicoll, 2000). Open-ended questions were intentionally utilized whenever possible to allow participants to share their experiences, in their own words, rather than being forced into pre-established lines of thinking developed by the researchers (Speziale & Carpenter, 2002). The list of pre-developed questions was designed around the predisposing, enabling, and reinforcing model and the competing demands model. The questions were used to direct discussion and to ensure adequate coverage of the topic with flexibility allowed for new information (Appendix I).

Two researchers were present during the focus group. The primary researcher facilitated the discussion while the second researcher recorded responses. Sim (1998) stresses the pivotal role of the researcher within the focus group to the nature and quality of data collected. The facilitator's personality, social identity, and interpersonal skills will powerfully influence the quality of the interaction that takes place and the data collected (Vaughn et al., 1996). Sim (1998) emphasizes the facilitator must strike the right balance between an active and passive role in generating interest and dialogue around

the topic and between participants without leading the group to reinforce existing expectations or confirm a prior hypothesis. Seidman (1998) and Stevens (1996) offer specific suggestions for the researcher regarding interviewing techniques:

- Listen more, talk less
- Ask open-ended questions
- Follow-up on what the participant says, but keep interruptions to a minimum
- Ask questions when you do not understand
- Avoid leading questions with tones that imply an expectation
- Keep participants focused and ask for concrete details
- Avoid reinforcing your participants' responses
- Follow your hunches, trust your instincts
- Tolerate silence
- Welcome diversity of opinion

Although there is no way of fully abolishing or controlling for observer presence in qualitative research (Millward, 1995) the facilitator remained cognizant of the aforementioned concepts. The focus group discussion was audio-taped and manually transcribed to written word (verbatim). The audiotape and the transcription were reviewed by the primary investigator to ensure accuracy. The transcription was returned to each of the physician participants to verify accuracy of their statements.

Analysis

Qualitative researchers must “listen” carefully to what they have seen, heard, and experienced in order to discover meanings. Analysis therefore actually begins when data collection begins (Speziale & Carpenter, 2002). Described by Thorne (2000) as the most complex and mysterious of all the phases in a qualitative project, data analysis demands a systematic, prescribed, and sequential process where the information obtained from the group discussion is interpreted into verifiable qualitative results. The analysis is considered systematic if a logical prescribed process has been followed and can be verified when another researcher arrives at similar conclusions using the raw data and available documents (Crawford & Acorn, 1997).

Analysis of the transcribed interview took place by content analysis to identify recurrent themes (mentioned by more than one provider) and was compared with field notes for accuracy. Content analysis as defined by LoBiondo-Wood and Haber (2002) is a technique for the objective, systematic and quantitative description of communications or subjective data and therefore was appropriate for this project. Gulanick and Keough (1997) state that most methodologies for data analysis consist of three phases: sorting, categorization, and interpretation. Sorting entails the labeling of the individual comments pertinent to each of the question into prescribed groups; categorization involves the aggregation of similar comment groups into categories; while interpretation involves the extraction of themes from these categories (Berkal, 2001). DeSantis and Ugarriza (2000) describe a theme as an abstract entity that brings meaning to a

recurrent experience and its variant manifestation, capturing and unifying the basis of an experience into a meaningful whole. They assert that during analysis, themes emerge from the data; they are not superimposed on it.

Regardless of the approach used, the responsibility of the researcher is to analyze raw data and bring to life particular phenomena illuminating the experiences of those who have lived them (Speziale & Carpenter, 2002). The purpose of this is that "...stories illuminate meaning, meaning stimulates interpretation, and interpretation can change outcomes" (Krasner, 2001, p. 72).

Data Validity

Two different investigators separately coded/analyzed each interview, subsequently coming together to reach a consensus on themes. The investigator who moderated the focus group conducted the primary analysis of data while another investigator performed an independent review. Once the initial analysis was completed, discussion by both parties occurred to verify themes. Torn & McNichol (1998) purport inter-coder reliability enhances the validity of data analysis. Themes arising from the interview were compared to themes emerging from the literature and returned to the group to ensure that what was heard was in fact what was meant by the focus group participants. The physicians did not respond.

Summary

Diabetes mellitus is a major public health issue increasingly threatening the well-being and lives of Canadians and populations around the world. Despite the availability of national, evidenced-based CPGs, well-documented gaps exist

between desired levels of diabetes care and levels of care currently observed in practice settings.

Literature supports the physician's unique experiences in influencing the ability to implement these CPGs. The purpose of this qualitative study with primary care physicians using a focus group approach, was to develop an understanding of physicians' perception of what are the needs/barriers to implementation of CPGs for diabetes, and their perception of strategies that would effectively address these needs and support them in this role. Successful bridging of the barriers from evidence to practice will decrease the delay between research generation and application, increasing the number of patients for whom best practice is offered.

CHAPTER FOUR - FINDINGS

Analysis of the responses to the 10 open-ended questions posed to the four primary care physicians participating in the focus group is presented herein. Results are presented under each of the 10 research questions. During the course of the 60-minute focus group additional questions arose. These questions are included in the text in the chronological order that they arose and are demarcated by the assignment of the number of the original question, followed by a letter. A brief summary of findings is provided at the conclusion of the chapter along with salient themes extracted from the findings.

Question 1: Satisfaction with Level of Care Provision

The first research question was intended to develop an understanding of the physicians' satisfaction with the care they are able to provide their patient's with diabetes. The question asked, *"How satisfied are you with the level of care you are able to provide your patients with diabetes at this time? Are you satisfied, with the care that you're able to provide your patients with diabetes at this time?"*

Physician responses to this question varied from satisfaction, to extreme frustration at their perceived impotence in positively impacting upon health outcomes, to doubt about the validity of the evidence for the diabetes CPGs in advocating strict control, to mixed satisfaction with the availability of professional and human resources to complement care.

Frustration was directed at the multi-system involvement of diabetes and its chronicity and progressiveness, despite aggressive intervention and medicines to 'temporarily' control sugar levels. Comments below illustrate these themes.

Diabetes is a chronic disease. It gets worse with age, with time...But with as much intervention as we have at our disposal, we can prolong the doom and gloom but eventually, it's gonna show it's ugly face...by providing this care for diabetes, we're prolonging the inevitable...

I agree. There's often times when I sit back and think, am I really doing anything for this person?...Yeah and I mean add another medicine and see that in the short term their sugars improve a little bit, and that gives me a little bit of positive feedback. But over the course of a year or two, I still see them declining. It's so disheartening.

While the physicians acknowledged the direction provided by the CDA guidelines, questions arose as to their evidence base, as well as to their impact on long-term outcomes.

No matter what you do, the blood sugar is going to get out of control. The UKPDS doesn't show any change in macro-vascular complications and even micro-vascular complication was in there, very minimal, so why we spending all this effort on them? Very intensive control and year after year guidelines on the blood sugar control actually gets tighter and tighter and I don't really know what evidence came out to tell us we should do this. I suppose the more you focus you know, on the blood pressure and hypoglycemia and we do have evidence for it. ..I really want to probably be doing all those social things that is recommended by the guidelines and with this care map...But how much of those guidelines are coming out from the evidence base that it's really helping the patients?...I'm saying there are a few of them seems to be quite helping but I see more so that other things are really expensive way of seeing a patient and watching them disintegrating no matter what we're doing. We just expend money for and lots of push from the guidelines to just watching them disintegrating...It doesn't look right if we're spending all this if this input isn't making a huge difference...

Satisfaction varied regarding the amount of time they were able to spend with the patient to provide quality care for diabetes.

...Only fifteen minutes to meet with a patient. Do pretty well considering our patient loads, but I don't think I do as well as I'd like because I don't have enough time.

In terms of time actually, we probably have a bit more time to spend with these patients...what you're doing...you are doing it pretty fast.

I would say I'm moderately satisfied with the service I'm able to provide my patients with diabetes. Certainly I would agree that there's room for improvement. Often I think the biggest component I feel sometimes missing with patients is the ability to really spend the education piece with patients to empower them to be able to manage and then sort of be ...the person that's the most responsible for their diabetes management... shift that responsibility from the physician to the patient...can only happen with more education...if the patient is empowered with information, could make more choices that sort of fit their goals and their life.

Diverse physician responses were elicited when asked about their satisfaction with the utilization of other professionals to enhance diabetes care.

No. Not satisfied for so many reasons. Diabetes involves so many systems and so many complications and so many players in the disciplinary team need to be involved, that I feel that sometimes it slips through the cracks...

Yes. I'm satisfied with the level of care that I'm able to provide my patients with diabetes. Compares to the level of care that was available to the patients 20 to 30 years ago. Specifically in this clinic, we have all sorts of resources to help us, help the doctors care for the diabetic patients.

I'm again kind of satisfied with the level of care especially with the involvement of other people in our discipline, which quite helps with the dietitian and education...

Question 2: Implementation and Performance of Complication

Risk Factor Assessment

The second question was specifically aimed at determining physician satisfaction with screening for the myriad of complications that diabetes may

result in. It queried: *"How satisfied are you with your implementation and performance of risk factor assessment for complications of diabetes?"*

Physicians appeared generally satisfied with their ability to comprehensively assess risk factors, although time constraints necessitated that assessments be done over several visits. This is evidenced by the following responses:

I do have to risk assess over several appointments...it is time consuming, but I'm satisfied that I do within...a block of six months, and touch on everything I need to touch on...

Yeah, I think for the most part we're able to address most issues over a block of time.

...we do have flow sheets now on our charts which are useful. A few of us have the guidelines in our office...I think we rely a little bit on tools like that, but a lot of it is just from memory... we're all sort of thinking about this within the confines of time of the appointment.

Monofilament testing and eye screening specifically arose as two areas of risk factor and complication assessment where physicians recognized room for improvement existed.

I think that I would say what gets thought of the least is the monofilament testing because I do find it time consuming. Just because patients that are poorly mobile [sic], taking their socks and shoes off can be very time consuming.

When it comes to retinopathy screening I'll often ask the question... helpful if it was just automatic that all ophthalmologists and optometrists sent off the letter to the family doctors, because I like seeing stuff on the chart. As far as urine screening and the periodic hemoglobin A1C, I feel that's up to date and then the yearly cholesterol and every visit blood pressure check I think that is a fairly consistent one.

...with ophthalmology I do end up sending them and often times with non-compliant patients, they don't go for follow-up and so I maybe I should change my answer because I'm not completely satisfied with my approach because they slip

through the cracks after the first visit. ...they don't re-book sometimes and I find that the ophthalmologist puts the ball back in our courts as family doctors, which is sort of appropriate, to make sure the patient follows up in one year...I have to remember to follow them up in one year, sometimes it slips. But things that are readily available in our clinic, like an albumin/creatinine or a lipid profile those are sort of within our immediate control and I think that we're pretty good at handling that stuff.

Question 3: Benefits/Drawbacks of Clinical Practice

Guidelines

The third research question was intended to discern physician opinions regarding the value of CPGs within the realities of primary care. The question asked was: *"In your opinion, what are the benefits or drawbacks to CPGs in general?"*

The primary finding was that the direction that guidelines provide when beginning to practice as a novice, as well as for physicians faced with a vast variety of disease conditions, was positive:

...What I wanted to learn first of all was the clinical guideline...to understand what the standards of care is here. So I really love the guidelines. I reviewed all the critical care ones...it makes it pretty easy to know what you do.

...I would...say that guidelines are an essential part to having a general practice with a large breadth of practice cause they do help understand the standards of care and know that you're keeping up to the other colleagues.

Areas of concern that surfaced included the origin of CPGs as possibly derived from clinical experience differing from the physician's specific practice base, whether CPGs are evidenced-based, and the occasional practical difficulties of implementing what the guidelines advocate.

...sometimes the problems with family physicians is you definitely don't have time and training...to go back and see how evidence based are these guidelines...you just follow what you are told in the guidelines. I did that for the diabetic and I found that not all of them are evidence based...we can't trust something we are told when we don't know how good those guidelines are...otherwise it makes it pretty easy to know what you do...A lot of guidelines written by the specialist and my impression is a bit more number oriented and disease oriented rather than patient oriented, so that's what I don't like about some guidelines. There is less involvement of the primary physicians and how these guidelines make any difference. We spend all this expense on everything and think this is the most appropriate way to do things and it works, but might be from the patient point of view, it doesn't.

...impractical with guidelines...Certain medications are recommended as first or second line and the government will not supplement those medications for people on social assistance or Aboriginal affairs. They sort of lag behind the guidelines, so we have guidelines in front us that are giving us standards of care. We can't implement it because it's impractical from a financial standpoint...it's frustrating and then we have to end up lobbying for it...

...we don't have the time to go back and really understand relative risk reductions versus absolute risk reductions. Sometimes I wonder if we're using relative risk reductions, if we're sometimes being misled, and misleading patients. Is the one in one thousand chance of reducing an event, is that really important for a patient and would they choose to go on a certain therapy with that real information and often that's not necessarily available?

Question 4: *Familiarity with 2003 Canadian Diabetes Association Clinical Practice Guidelines*

The diabetes CPGs were released in December of 2003. The fourth question asked, "*How familiar are you with the 2003 national CPGs for diabetes?*"

One physician had not yet had a chance to review the guidelines. Another physician liked the presentation of the guidelines and although she felt fairly

familiar with some of its general recommendations, given its length (152 pages), kept it in her office to refer to specifics as needed. One other physician also commented on the length of the guidelines:

I certainly made an effort to read them when they first came out, but now if I was to try and regurgitate that information I know that they would be old. It's quite a large document to refer back to.

This was interpreted to mean that the physician had read the guidelines when they were first released, but now would have limited recall of its recommendations.

Question 5: Practice Use of Diabetes Clinical Practice Guidelines

The fifth question was posed to determine if the guidelines were used during physician interactions with clients with DM. Specifically, it asked: *"Do you use the 2003 CPGs for diabetes? If so, how often and why do you use them? If not, why not?"*

The three physicians that had read the guidelines expressed that they used them frequently.

I do use them. I use them with every patient.

I use the diabetes guidelines more than any other guideline.

Physician reasons for using the guidelines included the sentiments that they provided a standard of care and that the clinic at which they worked used flow sheets on the chart specifically based upon the 2003 guidelines.

...they represent the standard of care that's expected of me as a family physician in Manitoba...Maybe not necessarily because I think it's going to make much of a difference...

...the flow sheets that we use in this clinic are all based on the 2003 guidelines. Any time I'm seeing a diabetic patient and updating the flow sheet I'm using the guidelines.

The physician who had not had a chance to read the guidelines cited:

Time restraints...They are a very long document. There are many guidelines.

Question 6: Impact of CPGs on Care Provided for People with Diabetes

The ultimate goal of any CPG is to enhance care provided for the population for which it was developed. To ascertain if the physicians felt that this goal is being achieved by the diabetes guidelines, the following question was posed, *"Do you think the CPGs for diabetes improve the care for people with diabetes? If yes, how? If not, why?"*

All the physicians agreed that the CPGs for diabetes improved the care provided by serving as a guide of what to screen for, how often to do that screening and how often to follow-up with patients. The following statements reflect these themes.

...[the guidelines] remind me that I'm supposed to be seeing them every 3 months at least and so I do book people back every 3 months and that improves their care...They have good follow-up.

...[the guidelines] remind us of the multi-system nature of diabetes...I'm not just thinking what are your blood sugars, I'm thinking what is your blood pressure, what is your cholesterol, when has your eyes been checked? It helps remind us to not miss some of those things...

...[the guidelines] do improve the care...I don't feel like I'm flailing in the dark. I have some set things I check every time I see a patient. Probably makes the patient feel...better because I have certain questions that I ask...every time and they seem to notice a pattern...they start to learn from it...

Question 6A: "Do you get a sense from your clientele whether they know there is a standard of care for diabetes for them and whether it's sort of that proactive...time to have blood work done? Do the patients have the sense of the standards of care? Is there awareness that there should be a standard of care for their diabetes?"

Although it was felt by physicians that some clients may appreciate that a standard of care exists, the general opinion was that it was largely up to the physician to implement that standard.

I think some patients have an awareness of the standard of care. ..the ones...I expect wouldn't...wouldn't and they would rely more on me to be exercising that standard...

I try and I'll give a couple of numbers...and say, remember this, write it down and often I'll have patients that don't remember. ..I'll keep trying and keep reminding that there's a standard of care...

...If for some reason we were able to educate everyone about the standard of care and they were able to come and remind me what I need to do, that'd be fantastic, but I don't think our current population would be the type...I shouldn't underestimate them...but I don't think it's a reality.

...patients are thinking more...thinking everything has a standard of care...that every single doctor is doing the same thing...My patients are not typically involved...

Question 6B: "With the guidelines available on the website...do you ever refer people to those guidelines? Do they ask about the guidelines? Do they know that those guidelines are available to them?"

The general consensus was that because of the population the clinic served, referring people to the guidelines may be "too much of a jump" and in fact

may even be counter-productive. The availability of internet access arose as a compounding factor.

They don't ask and I don't refer them...I expect that they wouldn't have readily available internet access. I should maybe consider that some of my patients may have access. I'm not sure that they'd be able to interpret them though. They're sort of on a health care professional level...may end up with more anxiety or more questions...

...going from a simple office visit to all of a sudden the diabetes guidelines, it's too much of a jump...most of our patients won't make that step...If that education component could be improved over time...may sort of make the step to where reading the guidelines might be useful...a lot of our...population probably won't make that step...may be possible that some of those steps in between could be. I think that's where my goal would be-to just improve understanding better on a more basic level.

I usually don't give patients to the official sites...if there's a patient handout or a part of that guideline is related to patient education, I think definitely you want to do that and that might help.

Question 7: Resources/Services Utilized in Providing

Diabetes Care

The following question was posed to determine what resources the physicians used: *"What resources or services do you currently utilize in providing care and prevention to people with diabetes?"*

Professionals readily available in the clinic were used as were outside specialists pertinent to the client condition.

...We have a multidisciplinary clinic here so, I think we're all using similar resources. The family doctors, our nursing staff, our dietitian, our diabetic nurse educator, our counselor, ophthalmology specialists, nephrology specialists, vascular specialists.

The Diabetes Education Centre at the local hospital was not used often, nor was the local endocrinologist. Reasons cited included the long waiting time to get in and the increased risk of non-attendance at these appointments when resources outside the clinic are used.

It takes a long time. A couple of months maybe. [to get in to the diabetes education center (DEC) or to see the endocrinologist]

I use the DEC infrequently because I like to have them under this roof. I think compliance is increased if they're under this roof....

I don't use an endocrinologist for management or teaching diabetes. I would say hardly ever.

It's rare that I consult them.

I forgot about them.

Ophthalmology and optometry were used but the process of follow-up arose again as an issue.

I've only used ophthalmology. I found them helpful for the first visit, but then they write back to me and say please help to organize the next visit in one year and then it slips through the cracks...kind of hoping they would have their own system that could bring patients back to them without me having to follow up on that, cause it often gets filed to the back. With the new flow sheets, it might improve that.

Two of the physicians specifically addressed the usefulness of the new flow sheets based on the 2003 CPGs that have recently been added to the chart.

...I find flow sheets valuable for a number of different problems that require looking at a large amount of data in a quick period of time.

Electronic charting, while not yet available at the clinic, was a resource the physicians felt would be helpful.

Help keep... things from falling through the cracks...

Flow sheets are the step in between. We are looking at all these numbers and we want to see the trend and if you have to flip through three years of stacked up data, it takes a lot of time. Flow sheets are good and the popup and the computerized medical record, paperless record, would be ideal.

Question 8: Practice Challenges/Barriers

In order to understand difficulties physicians faced in providing care to patients with diabetes in their daily practice, the following question was asked: *"What challenges or barriers in your practice do you currently face in relation to the delivery of diabetes care? What makes it hard for you?"*

This question quickly elicited responses indicating a variety of challenges, including: difficulty in impacting the progressive chronology of diabetes; time limitations; the personal cost of diabetes to patients in relation to purchasing of medications and the time needed away from work required to attend appointments; lack of transportation; mistrust of health care providers; long waiting lists and off-site location of specialists; and the lack of emphasis on prevention.

The notion of am I really doing anything for this person in the long run? A bit of frustration with that.

The nature of the disease makes it difficult.

Time constraints.

Excessive workloads doesn't always leave a lot of time for teaching.

Medication expense. Some of my working poor can't afford it.

Even the time it takes to come to multidisciplinary appointments. If they're working poor, they have to work and they can't get off work...

Availability of the care provider (specialists, diabetes educators, person for insulin starts). It can take a couple months to access some of these resources. It is nice to have a diabetes educator to troubleshoot treatment plans with.

Not being under one roof adds to the difficulty of following up to make sure that they've been to that appointment or following up and seeing through on that. Disrupts continuity if refer off-site. Many lack transportation to other appointments.

Here we do have a multi-disciplinary team. If I want to consult I write one sentence and the chart is in front of them and the other person knows about them, so it is much easier than telling somebody out of this practice, that this is the history of the diabetes. In most of the cases you aren't providing all of that information that they could need so they have to reproduce all that information. It is a huge difference if you have them on site.

We can collaborate quickly and make changes a lot quicker and even informally in the hallway. If off-site and going somewhere else for their diabetes education the physician being team leader, not sure what is happening or what medications the educator is thinking.

Due to poor past experiences some clients have had with the health system do not trust their care providers.

Little emphasis on prevention and early detection and lack of appreciation or even ability by patients of the importance of/for prevention.

There is no strategic plan or vision from prevention through to treatment.

Question 9: Improving Diabetes Care

Physicians are the primary providers of health care for patients with diabetes.

Ascertaining their view of improvements needed to enhance delivery of care for these patients is paramount. This was the basis for the

following question - *"If you had the chance to make a wish list, what in your opinion needs to be done to enhance, support, or improve the delivery of diabetes care?"*

The concept of prevention arose as the first response.

Better physical education and nutrition education in schools.

More prevention.

The use of electronic records to retrieve information and follow trends was seen as helpful. Increased availability of resources again rose as an issue as did utilizing human resources, specifically nursing skills, more appropriately.

Resources to be more available.

Have a diabetic footcare nurse booked periodically to come and see patients. Currently about a 3 month wait right now and only for seniors. Need more foot assessment and foot care resources.

I wish that diabetes medicines were covered for everyone....I see that a lot of my folks can't afford them.

Delegation of function. Have nursing staff do monofilament test every 3 months or 6 months on all our patients. Take a look at who is doing what and who could be used the most appropriate...to do these things so patients are best managed.

Have the diabetic patient seen and booked also with a nurse for 15-30 minutes to spend time doing more education, doing part of the physician's visit...That would be a really good utilization of nursing skills and would really help with empowering patients to become more in control of their diabetes management...They should be the primary managers of their diabetes.

I think the concept of the community health center is a good one for diabetes care...puts resources under one roof...We should be looking more and more at those centers.

Question 9A: "Is salary reimbursement an issue for having to see patients for an income or is that a non-issue?"

The physicians participating in the focus group were not fee-for-service and did not view fee-for-service as an appropriate method of remuneration for caring for persons with diabetes.

...a lot of people with diabetes have multiple medical problems and so we really do have, when you're not fee-for-service, the opportunity to not push diabetes on to the back burner because of other sort of more pressing/urgent medical or psychosocial issues. Patients can be very complex and other things need to be addressed and in a fee-for-service world, it must be extremely challenging.

I think we have a more ideal setup...than someone in fee-for-service practice. They don't have much incentive to spend a lot of time covering everything that needs to be covered in a diabetic visit...we are contract payment paid, so we can book them for longer...

Fee-for-service just isn't conducive for diabetic care.

Discussion evolved around what an appropriate model for diabetes care and remuneration may look like.

...if they [professionals/educators] came into your place, rather than you losing them [patients]. Your patients wouldn't go to them. It would be more ideal because their patient chart would be here... It would be better to move one person here than to move all the patients over there.

It's also good to have the diabetes nurse educator here to feel part of the team and foster those relationships and we can put a face to the name...

In regard to sharing our resources with fee-for-service clinics in our area. We're so strapped with out patient population at our clinic, my fear would be that we would lose access to them if we were to share them.

...a different billing code or a different billing fee for the amount of time.

The basic issue is we need to take care of our patient in front of us right now...don't have time...pressure not to spend the time because we have a full waiting room and we are only getting whatever amount to see this person anyway...most effective way of remunerating that doctor is by contract payment or salary payment and having the ability to book 20 minutes or a half hour with them...I do think it saves money.

As far as remuneration goes there needs to be choices. There's certain models that fit different people's practices based on location...

Question 10: Additional Comments

To ensure that the physicians had sufficient opportunity to share their views the final question asked *"Is there any topic not touched upon you would like to comment on or anything you would like to add?"*

No additional feedback was received. The list of questions asked during the focus group were given to the physicians to take with them. They were encouraged to contact the researcher if they wished to add anything to any of their responses.

Summary

The physicians in attendance varied in their degree of satisfaction with the quality of care they were able to provide their patients with diabetes. Great frustration was expressed by all the physicians at what appears to be the progressive and deteriorating nature of diabetes, despite aggressive intervention

and the intensive control advocated for by the clinical practice guidelines for diabetes.

All but one physician had read the 2003 CDA guidelines. Time restraints, the length of the diabetes CPGs, along with the myriad of other guidelines in practice, were cited as the reason for not having read them.

The diabetes guidelines and the flow sheets on patient charts based upon these guidelines, were viewed by physician respondents as improving the care provided for people with diabetes. The guidelines served as a reminder of the multi-system nature of diabetes and thus provided an outline to guide the visit. As family physicians with a large breadth of practice, the CPGs represented the standard of care that was expected of them.

The responses in respect to improving patient outcomes were not as positive. The costs interred in implementing recommendations advocated for by the guidelines in comparison to the absolute risk reduction achieved for the person with diabetes, was questioned. The physicians also queried the source of evidence for the guidelines and the process of guideline development as development was seen to be largely done by specialists. It was felt that this process resulted in more number/disease oriented guidelines rather than patient oriented guidelines.

Frustration was expressed at the lack of government/agency financial endorsement of guideline recommended first line medications. This created extra work for the physicians in having to write letters and lobby for evidenced-based recommendations.

Shortage of time to properly educate people with diabetes on how to self-manage and the necessity of risk assessing over several visits was identified as a source of frustration.

The computerized, paperless, medical record with pop-up reminders was seen as an ideal tool to enhance care for people with diabetes by serving as a reminder as to what tests/interventions need be performed, when, and appropriate goals. It would also provide for quick trending of data on clients with diabetes.

The physicians who participated in the focus group work in a clinic with access to a number of onsite professionals. The expeditious involvement in the collaborative management of diabetes that these professionals provide was deemed as being very helpful. Off-site visits were identified as disruptive to continuity of care. Long waiting lists to the local diabetes education centre and endocrinologist was a deterrent to referral and thus these resources were utilized infrequently. The time off work needed to attend specialist appointments was identified as an issue for the working poor as was lack of transportation to off-site appointments. Mistrust by patients due to poor past experiences within the health care system was cited as an additional complicating factor in off-site referrals. Referral outside of the clinic also necessitated time for the reproduction of patient information/records followed by additional time waiting to receive their recommendations.

Discussion occurred around what a more appropriate model for the delivery of diabetes care may look like. Ideas offered by the physicians included having

more readily available resources by having human resources "under one roof." The specialists would come to the people. For this exact reason, the community health center was seen as a positive concept. Delegation of function and the importance of having nurses play a larger role in the diabetes visit were raised. It was thought this would be helpful in educating and empowering patients to participate in and take more responsibility for controlling their diabetes. The availability of the guidelines on the CDA website was not seen as a useful independent education tool for the physicians' client population.

The physicians in attendance are contract paid and felt strongly that fee-for-service was not conducive to good diabetes care. Discussion evolved around what a more appropriate funding model may look like. A specific funding model was not advocated. Rather it was suggested that different practices may require different funding models and therefore choices and perhaps a different billing code/fee should be made available to capture the time spent with patients.

Prevention of diabetes was articulated by physicians as a challenge in their practice. Individual and system factors were cited including the lack of appreciation/awareness by people regarding the role of prevention. The physicians felt this was compounded by the health care system's lack of a strategic plan for diabetes prevention through treatment.

In summarizing the findings, three major themes seemed to evolve. First was the pervading sense of frustration at the chronic, deteriorating nature of diabetes and the perceived inability to positively alter this progression despite aggressive intervention. The origin of this frustration was multi-factorial and permeated

many of the questions. Second, was the conflicting satisfaction with the usefulness of clinical practice guidelines, specifically the CDA guidelines. Third, was concern for the present system addressing diabetes care and the perceived lack of a strategic diabetes care model addressing prevention through treatment along with a viable remuneration to fund its existence. These themes will be elaborated upon in the next chapter.

CHAPTER FIVE - DISCUSSION

Within this chapter a discussion of the three themes that emerged from an analysis of the data in the findings chapter is presented. Limitations of the project and implications for research, practice, and education are also addressed.

Three major themes evolved from the data: 1) a pervading sense of frustration at the perceived chronic, deteriorating nature of diabetes and the perceived inability to positively affect this progression due to a myriad of intervening factors; 2) conflicting satisfaction with the usefulness of clinical practice guidelines, specifically the CDA guidelines; and 3) concern for the present system delivering diabetes care and the lack of a strategic diabetes care model addressing prevention through treatment along with viable remuneration to fund its existence.

Themes

Theme 1: Frustration

A sense of frustration suffused many of the physician responses to questions throughout the focus group. The source of this frustration was multifactorial including: the perceived non-effectiveness and cost of diabetes guidelines in impacting the natural progression of diabetes; time constraints; referral issues; lack of a strategic model addressing diabetes prevention through treatment; and economic issues confronting both patients and physicians. These factors existed in a complex, interrelated manner to complicate diabetes care and potentially impact upon patient outcomes, creating frustration for patients and

physicians alike. These factors are discussed in more detail in the following sections.

Theme 2: Mixed Satisfaction with Clinical Practice Guidelines

Although the physicians had reservations about CPGs, the general view was positive. Guidelines were seen by the physicians as representing a standard of care. With a large breadth of practice, the guidelines served as a reminder of the multi-system nature of diabetes and were articulated as being useful in directing intervention during the client visit. Overall, the guidelines were felt to improve the care provided for persons with DM. The long length (152 pages) of the 2003 CDA CPGs was referred to on several occasions. Although the physicians who had read the DM guidelines stated that they definitely used them in practice, the effect of purported recommendations on patient outcomes has been discouraging, viewed as a "really expensive way of seeing a patient and watching them disintegrating no matter what we're doing." The origin of evidence for the CDA guidelines and other guidelines was questioned as was the process of guideline development. Perceived to be largely developed by specialists with minimal primary care physician involvement, the resultant guidelines were seen to be more number and disease oriented guidelines rather than patient oriented guidelines. The availability of the web-based version of the CDA guidelines was not deemed helpful to the physicians' particular client population. The availability of internet access, along with the lack of time for education to improve the basic understanding of DM that would assist in the interpretation of the guidelines, were cited as barriers. It was felt that a handout or a part of the guideline that is

related to patient education would be helpful, but it was not specifically asked if patient tools from the web based version of the CDA guidelines were used or distributed. Frustration was directed at the government for lagging behind the guidelines in failing to supplement first or second line medication choices advocated for by the guidelines. This made the guidelines impractical from a financial standpoint and made more work for the physician in having to write letters and lobby for coverage. The inclusion of recommendations that do not appreciate the realities of primary care may reduce the legitimacy of the guidelines for some practitioners (Daniels, et al., 2000).

Theme 3: Diabetes Care Model-Present and Future

Concern for the present system that attempts to provide care for people with diabetes and the *perceived* lack of a strategic plan for diabetes prevention through treatment arose as the third theme.

Present Model. According to United States statistics, "Chronic illness accounts for three quarters of total national health care expenditures," (Bodenheimer, et al., 2002, p. 1775). It is assumed that the Canadian health care system would parallel this trend. Yet, historically and even today, our health care system remains most efficient at managing acute and episodic illness. Thus, it is logical that the current burden imposed by chronic illness, specifically the complex, multi-system spectra of DM and its complications, would fit poorly into such a system.

Frustration was directed at the remuneration reality that confronts physicians, specifically fee-for-service physicians. The economic necessity to see many

patients limits the length of the visit and directly impacts upon the quality of diabetes care. While the physicians in the study are contract paid and felt this was a much better model of remuneration, the issue of time still arose repeatedly. Given the number of complications and the number of different health professionals on the diabetes team, risk factor assessment needed to occur over several months and increased the risk for missing/neglecting issues.

The paper chart used in the clinic made retrieval of information time consuming for the physician and trending of patient information difficult. This, along with the lack of computer technology and electronic records, was felt by physicians to contribute to the risk of missing/neglecting processes of care. The flow sheet in patient charts based on the 2003 CDA guidelines was felt to be helpful in guiding the patient visit and in recording and reviewing the processes of care.

Services available in the clinic, such as blood pressure monitoring, nutrition counseling, and laboratory assessments of blood and urine, were felt to be done well. The physicians stated that because of time constraints, the time consuming task of monofilament testing for the assessment of peripheral neuropathy was often neglected. Time for education was also extremely limited. "A cornerstone of diabetes care is patient education in self-care strategies..." (Rhee et al., 2005, p. 410) the goal of which is for the patient to become the principal caregiver. This requires time to involve, educate, and support patients and their families in acquiring the knowledge and skills to self-manage (Bodenheimer, et. al, 2002). Brief office visits are not conducive to developing self-management skills and this

was felt by the physicians to be the biggest component missing with patients. The benefits of self-management are reaped by the both the individual and the health care system. Empowered to make informed decisions about their care, persons with diabetes rely less on health-care professionals and are often proactive about preventing problems from developing or progressing (Lightfoot, 2005).

Referral to off-site services posed difficulties in relation to: the time and cost needed to duplicate patient data; long waiting lists; time needed to attend appointments; mistrust of health providers by clients; transportation issues; time spent waiting for referral recommendations; and the difficulty of ensuring adequate and timely follow-up.

The many demands raised by the physicians that vie for their attention and complicate medical encounters are reflected in current theoretical models used to describe the delivery of preventive services. These include the predisposing, enabling, and reinforcing model and the competing demands model discussed earlier in the paper.

Future Model. Suggestions put forth by the physicians in attendance to address barriers to care are very similar to the support systems proposed by the chronic care model. Physicians articulated the importance of having a strategic plan for diabetes prevention, including more physical education and nutritional education in schools, through to treatment. Suggestions offered included an accessible multi-disciplinary team under "one roof" to make the process of referral/consultation more efficient, foster relations, and ultimately, enhance the

continuity of care for people with diabetes and improve patient outcomes. Specialists would come to the clinic, instead of everyone going to their office. For this reason, the concept of community health centers was seen as positive and the physicians felt that “developing more and more of those centers” was important.

A delivery system change was advocated for in which the nurse played an enhanced role in the visit of the person with DM undertaking education, foot assessments, and monofilament testing. Both the literature and the CDA guidelines acknowledge the importance of a multi-disciplinary team approach in providing optimal chronic care. The under-utilization and under-valuation of support professionals’ expertise, directly impacts self-management of the person diagnosed with diabetes.

Electronic charting systems with clinical decision and reminder supports was viewed by physicians as an important tool that would enhance client care, expedite the retrieval of patient data, and enable trending of data. Several large, well-designed trials have shown that computer systems improve the quality of patient care (Pinkowish, 2002).

The physicians articulated the complexity of care necessitated by their patients with diabetes. It was strongly felt that fee-for-service remuneration was not an appropriate funding model for diabetes and did not provide “much incentive to spend a lot of time covering everything that needs to be covered in a diabetic visit for the low yield that they (the physician) receive for actually seeing the patient.” Contract or salary payment was viewed more positively in that it

allowed the physician to book longer appointments and in the long-term would save money. Another physician stated that there needed to be options for different remuneration models as some would fit better than others, dependent on different practice locations/realities.

Limitations

The findings from this study must be discussed in light of its limitations. Sample size was small ($n = 4$), homogenous, and reflective of one specific mode of physician delivery system in Winnipeg. The use of only one practice site potentially limited the types of barriers and needs captured. The physicians participating in this study are salaried, which may influence transferability of findings. As with any focus group the individual facilitator will impact upon the degree of elaboration and the depth of responses. The primary investigator of the pilot project had been the diabetes nurse educator at the clinic during the previous 11 months and thus was known to the physicians. This may have biased responses, the extent of which cannot be discerned. Although these factors may have influenced results, difficulties of recruitment necessitated the approach utilized. Initial recruitment for this study had been attempted by phone contact of physicians in a variety of practice settings, in different areas of the city. Although these physicians were known to the investigator as being interested in diabetes, this method of recruitment was unsuccessful.

Implications for Research, Practice, and Education

Research

While the results of this study have limited generalizability, it provided a forum for discussion with physicians for examining issues and exploring ideas for improvement surrounding the deliverance of diabetes care in a primary care setting. A number of issues for future research arose.

The 2003 CDA CPGs were drafted over a two year period by a volunteer Expert Committee representing key stakeholders across Canada, with a broad-based review to ensure that diabetes community at large had input into the document (Canadian Diabetes Association Clinical Practice Guidelines Expert Committee, 2003). The author of this project had the opportunity to attend and offer opinion at a guideline review. How much of the broad based review by the diabetes community included primary care physician input? The answer to this question would either provide substance to the concern expressed by the physicians participating in this study that the CDA CPGs were developed largely by specialists, or would serve to quell this concern.

Within the province of Manitoba, the Regional Diabetes Program (RDP) exists, addressing the physicians' concern of a model for diabetes prevention through treatment. The RDP is a model designed to strategically address the epidemic of diabetes and reduce the burden of illness province wide by implementing a broader, public health approach to diabetes and to assist the development of RHA implementation plans to meet the needs of their health regions within defined budgets, using new and innovative approaches. It

attempts to identify challenges and opportunities for partnership and link with partners across province and engage them to contribute to PHC initiative.

Regions have a three year plan to implement the RDP but no new monies have been provided. While the model exists, the challenge is how to fund it and determine what incentives are needed to engage physicians in adopting it (Kelly McQuillen, August 9, 2005, personal communication). Research with physicians around Manitoba has begun and must continue to elicit ideas regarding acceptable funding/incentive models.

To determine how continuity of care may be enhanced and to ensure that each participant's skills are utilized most proficiently, concurrent discussion must occur with all the team players involved in diabetes management, including those persons diagnosed with diabetes.

Practice

Reflection on practice is an active exercise in the critical analysis of care (Atkins, 2000), with the ultimate goal of improving upon care and acquiring new understanding and knowledge to guide thought and action in future encounters. Implications for Manitoba Health and care providers exist at the practice level. With the alarming increases in diabetes and its accompanying personal, societal, and economic sequale, improvements in diabetes prevention and management are critical. McKinlay (1979) used the image of a swiftly flowing river to represent illness and in his analogy, physicians are so caught up rescuing victims from the river there exists no time to look upstream and see who is pushing patients into the perilous waters. McKinlay (1979) used this story to demonstrate the ultimate

futility of “downstream endeavors” (short-term, individual-based interventions) and challenged health care providers to focus more of their energies “upstream” where the problems originate. This is especially strong advice for the government and the myriad of health professionals involved in the epidemic of diabetes. Upstream endeavors focus on modifying political, economic, and environmental factors that have been shown to be the precursors of poor health throughout the world (Butterfield, 1990).

The 2003 CPGs for diabetes are 152 pages long. For busy family physicians, a shorter, condensed version of the guidelines is more likely to be read. The *Manitoba Diabetes Care Recommendations*, authored by Manitoba Health, condenses the 2003 DM CPGs into a 40 page user friendly document. It is currently being printed.

A computerized primary health care chart with the capability to address the broad breadth of practice that primary care physicians manage is critical. Its benefits would include: easing the workload of the primary care provider; positively impacting the care for people with diabetes; and assisting Manitoba Health and the WRHA in data trending.

“The core diabetes health care team includes the physician (family physician and/or specialist) and the diabetes educators (nurse and dietitian),” (Canadian Diabetes Association Clinical Practice Guidelines Expert Committee, 2003, p. S14). For nurses and dietitians, an expanded role in the visit of the person with diabetes in regards to health promotion, disease prevention, and counseling

would utilize their skills more comprehensively and enhance self-management by the patient with diabetes.

For Manitoba Health's Diabetes and Chronic Diseases Unit, family physicians, the CDA, and all persons providing care for or affected by diabetes, it is important to continue advocating to ease the financial burden confronting persons with DM.

Education

The challenge of implementing the CDA CPGS in a decade in which physicians are bombarded by guidelines was identified as a challenge by the CDA Guideline Expert Committee and because of this, a dissemination plan was developed. During guideline development, several basic principles were adopted to ensure that the empirical basis underlying each recommendation was explicitly identified in order to facilitate the critical scrutiny and analysis of each recommendation by organizations and individuals (Canadian Diabetes Association Clinical Practice Guidelines Expert Committee, 2003). Yet, despite the dissemination strategy and despite the critical appraisal of scientific evidence and the existence of convincing research data available to confirm that effective treatment of diabetes can result in significant reduction in morbidity and mortality, the physicians had serious qualms regarding the evidence on which the CDA guidelines are based, as well as their effectiveness. The dissemination strategy is unknown to the author, but perhaps needs to be re-addressed/re-emphasized. Although the physicians stated they implemented guideline recommendations it increases the risk of non-adherence to guideline recommendations.

Conclusion

Critical reflection upon this project has reinforced my long-standing concerns for a health care system that have haunted me both as a health care consumer and as a nurse with over 19 years of experience. Insights garnered during this practicum form the basis for the following conclusion.

Several indicators point to a health care system that is in a state of crisis and reform. Originating in 1961, Tommy Douglas passed universal health legislation and a health system designed to treat acute illness was formed. Today, chronic illness abounds and is absorbing much of our nation's health care resources. The prevalence of diabetes is of epidemic proportions and is but one example of a chronic disorder that challenges the original foundations of our present-day health system.

Although the Canadian health care system is actively in a state of reform, the need for change has been recognized for several decades. Rodger and Gallagher (2000) specifically described 1974 as a pivotal year in Canada when the federal Ministry of Health, following a national-provincial health program, emphasized health promotion and called for a redirection in health care. They also discussed the Canada Health Act amendment of 1984 enabling nurses and health professionals other than physicians to be fully used in a reformed health care system. The above, represent eloquent concepts especially relevant to Canada's increasing and ageing population, however, these concepts have been incorporated into our health care system at a painstakingly slow pace. Rather, solutions sought in the past, including more physicians, increased wages, more

drugs, and more expensive and technologically sophisticated diagnostic/treatment equipment are those still most often pursued. Einstein purported, 'You can't keep doing the same experiment and expecting different results' (Einstein, 2005). This is sage advice for a health care system in crisis, in which continued application of the same solutions will not yield commensurate improvements in diabetes or chronic illness, making the plausibility of even sustaining the status quo of our inefficient system questionable. This reflexive response does nothing to address core foundational issues, but serves only to perpetuate a treat and cure, and as one physician described his practice, a "put out the fires approach to health care."

Physicians are struggling. The health of Canadians is suffering. From my experience, Canadians are often more informed about automobiles, real estate, interest rates, and weather patterns, than they are their health. While we need expert diagnosticians and it is essential to strive for technological advancement, it is equally imperative for Canadians who are experts in their own reality, to become informed participants in their own health care. This requires the commitment of expert educators, motivators, and change agents. For those with chronic illness it is even more crucial. Terry Tafoya, a native physician (keynote speaker, *Moving Primary Care Forward* conference, April, 2004) said it best, - "We cannot always cure, but we can heal and provide a sense of hope and connection to a greater whole." That is the true magic in health care.

The evolution and the findings of this project speak to how critical, the successful and expedient management of the ongoing health reform is. It is time

for those with the power to make the influential policy decisions, to make the difficult decisions. It is time to coordinate and utilize the extensive knowledge/abilities of the varying health professionals to their ultimate potential. It is time for the utilization of computer technology in medicine to parallel the explosion of knowledge. It is time to support a chronic care model that supports the achievement of positive outcomes. Failure to fully utilize the expertise of all our professionals and without proper funding and structure, health care costs will continue to spiral, positive outcomes will remain but a vision, and health care professionals will remain frustrated and disillusioned. Ultimately all Canadians suffer.

It is obvious, that however one chooses to define health care it is a challenging and complex entity. Diabetes is but one disorder that exposes the blemishes of our present system. If we hope to have any realistic impact on reigning in the diabetes epidemic or grander yet, a vision of a world without diabetes, (Beebe, 1999) care providers, educators, researchers, and politicians must unite to achieve realization of a true primary health care system that fosters the delivery of quality chronic care. "It has been said that the only difference between an hallucination and a vision is the number of people who see it" (Beebe, 1999, p. 180). Treating, curing, and preventing diabetes is no small vision as history has proven, but if each who sees the vision helps others to see it as well, anything is possible.

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APPENDIX A

Competing Demands Model

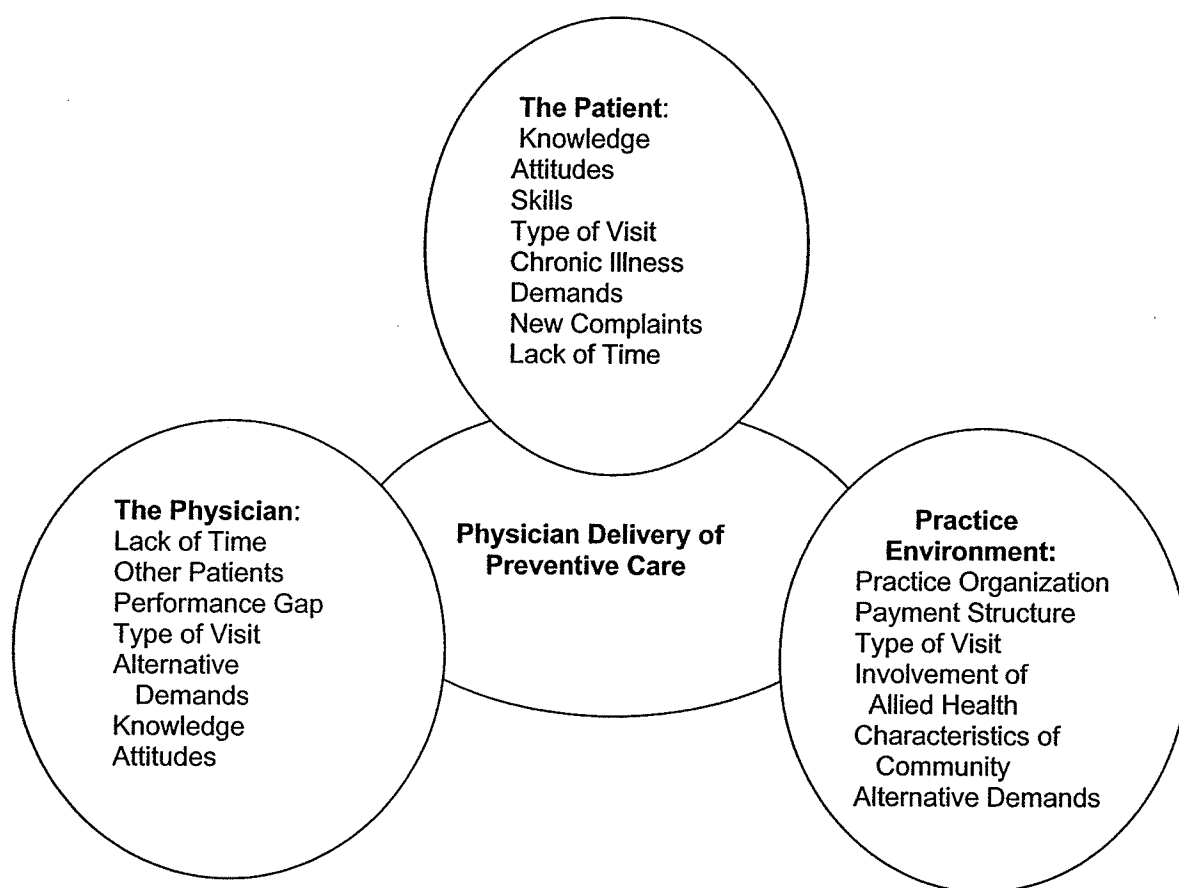


Figure 1. The competing demands model: interrelated factors involving patients, physicians, and the practice environment that affect physician delivery of preventive care services.

(Jaen et al, 1994, p. 168)



UNIVERSITY
OF MANITOBA
May 20, 2004

Faculty of Nursing

APPENDIX B

Site Request

Helen Glass Centre for Nursing
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-7452
Fax (204) 474-7682

KATHI CHRISTENSON
CLINIC COORDINATOR
HEALTH ACTION CENTRE
425 ELGIN
WINNIPEG, MANITOBA
R3A 1P2

Dear Ms. Christenson:

I am writing to request access to Health Action Centre for the purpose of conducting my practicum project.

The purpose of the project is to acquire an understanding of primary care physician's perception of what are the needs and barriers to the implementation of the Clinical Practice Guidelines for diabetes within the Winnipeg Regional Health Authority and their perception of strategies that would effectively address these needs and support them in this role. This project is undertaken in partial fulfillment of the requirements for the degree of Master of Nursing at the University of Manitoba.

The proposed project will involve one focus group discussion with the physicians. The significance of the project and the manner in which it will be conducted is outlined in the attached proposal. The focus group will be arranged at the convenience of those involved and will not infringe on clinic activities.

Approval from the Education/Nursing Research Ethics Board is pending. Dr. Bill Diehl-Jones has agreed to chair my practicum committee and is fully aware of the details of my project.

Thank you for your consideration of this request. If you have any questions please do not hesitate to contact either myself or Dr. Diehl-Jones (477-7136).

Sincerely,

KELLY-LYNN BEKAR RN BN CDE
NURSE PRACTITIONER STUDENT
ILE DES CHENES, MANITOBA

cc Dr. Bill Diehl-Jones



Winnipeg Regional
Health Authority

Office régional de la
santé de Winnipeg

APPENDIX C

Site Approval

Health Action Centre
425 Elgin Avenue
Winnipeg, Manitoba
R3A 1P2 CANADA

TEL: 204/940.1626

FAX: 204/942.7828

EMAIL: _____@wrha.mb.ca

July 30, 2004

Kelly-Lynn Bekar

Ile Des Chenes, MB

Dear Kelly-Lynn:

Thank you for your letter of May 20, 2004. I have considered your request and reviewed your proposal and I am certainly agreeable to your use of Health Action Centre to conduct your practicum project.

If I can be of any further assistance, please do not hesitate to contact me.

Yours sincerely,

Kathi Christenson
Clinic Coordinator

APPENDIX D

Letter of Invitation

October 8, 2004

HEALTH ACTION CENTRE
425 ELGIN
WINNIPEG, MANITOBA
R3A 1P2

Dear Primary Care Physician:

Diabetes mellitus (DM) is a major public health issue, increasing at alarming rates in Canada and around the world. The disease and its attendant morbidity and mortality exact huge personal, public and societal costs. In the spring of 2002, the Canadian Diabetes Association in a presentation to the Romanow Commission on the Future of Healthcare, warned that unless Canada takes definitive action, DM and its complications have the potential to bankrupt our healthcare system.

As a nurse practitioner student, in partial fulfillment of a Master of Nursing degree, it is expected that I (Kelly-Lynn Bekar RN BN CDE) conduct a practicum project. I propose to conduct a qualitative investigation utilizing a focus group format to develop an understanding of primary care physicians' perception of what are the needs/barriers to implementation of the Clinical Practice Guidelines (CPGs) for Diabetes and their perception of strategies that would effectively address these needs and support them in this role.

As a primary care physician your participation in this focus group is requested and would be gratefully appreciated. I have attached a Letter of Invitation/Informed Consent that will provide more details of the process and extent of involvement this would entail. As a front line health provider, it is important that your voice be heard to arrive at a practical knowledge that escapes literature abstraction. Successful bridging of the barriers from evidence to practice will decrease the delay between research generation and application, increasing the number of patients to whom best practice is offered.

I will contact you in approximately two weeks, but please do not hesitate to contact me before that if you have any questions. Thank you for your consideration of this request.

Respectfully,

Kelly-Lynn Bekar RN BN CDE

APPENDIX E

Letter of Invitation/Focus Group Informed Consent

"Needs Assessment of Primary Care Physicians Delivering Diabetes Care"

Investigator: Kelly-Lynn Bekar RN BN CDE

Advisor: Dr. Bill Diehl-Jones 474-7136

Diabetes mellitus is a major public health issue increasingly threatening the well-being and lives of Canadians and populations throughout the world. The purpose of this project is to gain an understanding of primary care physicians' perception of Clinical Practice Guidelines and what are the needs/barriers to implementation of the *2003 Clinical Practice Guidelines for the Management of Diabetes* and their perception of strategies that would effectively address these needs and support them in this role. Kelly-Lynn Bekar, a registered nurse, certified diabetes educator, and nurse practitioner student, will be conducting this qualitative pilot project as partial fulfillment of the requirements for a Master of Nursing degree from the University of Manitoba. Kelly-Lynn presently holds a .1 EFT term position as a Diabetes Nurse Educator at Health Action Centre, December 2003-December 2004.

As a primary care physician, your participation in a 60-90 minute audio taped focus group discussion, facilitated by Kelly-Lynn Bekar, is requested. Kelly McQuillen, Manager of Diabetes and Chronic Diseases Unit, will also be in attendance to make notes of verbal/non-verbal transactions. Your participation in this focus group is entirely voluntary. You are free to withdraw from the discussion at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. No written or verbal reports of this study will identify names of participants or any identifying data which would reveal the primary care facility. All group participants, inclusive of the researchers, physicians, as well as the transcriptionist, will be required to sign a Pledge of Confidentiality. After the focus group, a transcribed copy of the tapes will be given to you for review of accuracy. At any time prior to the release of the findings, you may request to have any of your comments deleted. The investigator's Project Chair Dr. Bill-Diehl Jones, and committee members Dr. Wendy M. Fallis (477- 3372), Dr. Bruce Martin (789-3711) and Kelly I. McQuillen (788-6746) will have access to the transcripts.

There is no risk to you from participating in this project. While I can not be definite at this time in how the data will be utilized it is hoped that data generated from this project will assist Manitoba Health and the Winnipeg Regional Health Authority in identifying partnerships for the delivery of diabetes care as well as direct the strategic allocation of resources to enhance the dissemination and

implementation methods utilized, to ensure that that these evidence-based guidelines are effectively translated into clinical reality, increasing the number of patients with diabetes to whom best practice is offered. The data may be presented at the Diabetes Education Network Conference.

The Director of Continuing Medical Education at The College of Family Physicians of Canada has stated that the information appraisal and critical reflection on practice the focus group necessitates will enable you to collect Mainpro-C credits. At the conclusion of the focus group, I will supply the form *Linking Learning to Practice* that must be completed and submitted to The College.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the practicum project and consent to participate. In no way does this waive your legal rights nor release the investigator or involved institutions from their legal and professional responsibilities. You are free to withdraw from the project at any time. A copy of this consent form will be left with you for your records and reference. I encourage you to ask for clarification or new information throughout your participation as questions arise.

This research has been approved by the Education/Nursing Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Secretariat at 474-8418 or e-mail Margaret_Bowman@umanitoba.ca.

Participant's Signature

Date

Researcher's Signature

Date

OVER→

I would like a summary of the results of this study:

Name: _____

Number: _____

Address: _____

Committee Members

Dr. Bill Diehl-Jones Faculty of Nursing

Dr. Wendy M. Fallis Faculty of Nursing and Director of Research and
Evaluation - Victoria General Hospital

Dr. Bruce D. Martin Director of Northern Medical Unit
Assistant Professor Faculty of Nursing
Lecturer Department of Family Medicine, Faculty of
Medicine

Kelly I. McQuillen Manager of Manitoba Health Diabetes and Chronic
Diseases Unit

APPENDIX F**Pledge of Confidentiality for Researchers****STUDY: A NEEDS ASSESSMENT OF PRIMARY CARE PHYSICIANS
DELIVERING DIABETES CARE****PLEDGE OF CONFIDENTIALITY FOR RESEARCHERS**

This form is intended to further ensure confidentiality of data obtained during the study entitled "**A Needs Assessment of Primary Care Physicians Delivering Diabetes Care.**" All researchers involved in this research study will be asked to read the following statement and sign their name indicating they agree to honor this pledge.

I hereby promise to keep confidential any information that I may become privy to during the course of this study. I agree to discuss material directly related to this study only with other members of the committee or with the principal investigator responsible for this study-Kelly-Lynn Bekar. I agree to remove names and obvious identifiers of participants and/or facilities from all data collected and from any papers or presentations for which I utilize the data.

NAME: _____

SIGNATURE: _____

PRINCIPAL INVESTIGATOR'S SIGNATURE: _____

DATE: _____

APPENDIX G**Pledge of Confidentiality for Physicians****STUDY: A NEEDS ASSESSMENT OF PRIMARY CARE PHYSICIANS
DELIVERING DIABETES CARE****PLEDGE OF CONFIDENTIALITY FOR PHYSICIANS**

This form is intended to further ensure confidentiality of data obtained during the study entitled "**A Needs Assessment of Primary Care Physicians Delivering Diabetes Care.**" Physicians participating in the focus group will be asked to read the following statement and sign their name indicating they agree to honor this pledge.

I hereby promise to keep confidential any information that I may become privy to during the course of this study. I agree to discuss material directly related to this study only with the principal investigator responsible for this study-Kelly-Lynn Bekar.

NAME: _____

SIGNATURE: _____

PRINCIPAL INVESTIGATOR'S SIGNATURE: _____

DATE: _____

APPENDIX H**Pledge of Confidentiality for Transcriber****STUDY: A NEEDS ASSESSMENT OF PRIMARY CARE PHYSICIANS
DELIVERING DIABETES CARE****PLEDGE OF CONFIDENTIALITY FOR TRANSCRIBER**

This form is intended to further ensure confidentiality of data obtained during the study entitled "**A Needs Assessment of Primary Care Physicians Delivering Diabetes Care.**" The transcriber responsible for this research study will be asked to read the following statement and sign their name indicating they agree to honor this pledge.

I hereby promise to keep confidential any information that I may become privy to during the course of this study. I agree to discuss material directly related to this study only with the principal investigator responsible for this study-Kelly-Lynn Bekar. I agree to remove names and obvious identifiers of participants/site location from all audio-taped interviews that I transcribe.

NAME: _____

SIGNATURE: _____

PRINCIPAL INVESTIGATOR'S SIGNATURE: _____

DATE: _____

APPENDIX I

Project Proposal

1. Project Summary

As a nurse practitioner student, in partial fulfillment of a Master of Nursing degree, it is expected that I (Kelly-Lynn Bekar RN BN CDE) conduct a practicum project. I propose to conduct a qualitative investigation utilizing a focus group format to develop an understanding of primary care physicians' perception of what are the needs/barriers to implementation of the Clinical Practice Guidelines (CPGs) for Diabetes and their perception of strategies that would effectively address these needs and support them in this role.

Rationale for the Project:

Diabetes mellitus (DM) is a major public health issue, increasing at alarming rates in Canada and around the world. The disease and its attendant morbidity and mortality exact huge personal, public and economic costs. In the spring of 2002, the Canadian Diabetes Association in a presentation to the Romanow Commission on the Future of Healthcare, warned that unless Canada takes definitive action, DM and its complications have the potential to bankrupt our healthcare system. The World Health Organization cites further distressing data that indicates the burden of diabetes will only get worse before it gets better as the population ages and rates of obesity rise. Improvement of diabetes care is critical. Despite the availability of national, evidenced-based CPGs, well-documented gaps exist between desired levels of diabetes care and levels of care currently observed in practice settings. Literature supports the physician's unique experiences in influencing the ability to implement CPGs. As first line health care providers, physicians' voices must be heard to arrive at a practical knowledge that escapes literature abstraction. Successful bridging of the barriers from evidence to practice will decrease the delay between research generation and application, increasing the number of patients to whom best practice is offered.

2. Research Instruments

The focus group discussion will last approximately 60-90 minutes. If scheduling does not enable 4-6 physicians to be present during one focus group, an alternative option will be to undertake two focus groups with 2-3 physicians. The format for the discussion will be semi-structured and will be tape-recorded. A list of pre-developed questions will be used to direct discussion with flexibility allowed for open dialogue. See attached.

Two researchers, myself-Kelly-Lynn Bekar and Kelly McQuillen will be present during the focus group. As principal researcher, I will guide the discussion, while Kelly McQuillen will take notes on the focus group interactions and non-verbal

communication to enhance clarity of audio-taped discussions. Each focus group discussion will be manually transcribed. After the focus group, a transcribed copy of the tapes will be given to physician participants for review of accuracy. At any time prior to the release of the findings, participants may request to have any of their comments deleted. I, Kelly-Lynn Bekar with the assistance of committee members will separately code/analyze each interview, coming together after to reach a consensus on groupings. Themes arising from the interview will be compared to themes emerging from the literature and returned to the group to ensure what was heard was in fact what was meant/intended by the focus group participants.

3. Project Setting & Study Subjects

The project will be conducted at Health Action Centre, a primary health centre founded in 1971 by residents of the inner city in downtown Winnipeg. Health Action Centre employs seven physicians. Each physician will be mailed a 'letter of invitation'/consent form outlining the current burden of diabetes, the purpose of the study, and the request for their involvement.

4. Informed Consent

Consent will be obtained in writing. Please see *Focus Group Informed Consent Form*.

5. Deception

There will be no deception of the participants in the focus group.

6. Feedback/Debriefing

The physicians may request a written report of the completed research by indicating their wishes on the consent form.

7. Risks and Benefits

There is no risk to the physicians from participating in this project. It is hoped that their participation will assist in identifying partnerships for the delivery of diabetes care as well as provide information on how to strategically allocate resources to enhance the dissemination and implementation methods utilized, to ensure that these evidence-based guidelines are effectively translated into clinical reality, increasing the number of patients with diabetes to whom best practice is offered. The Director of Continuing Medical Education at The College of Family Physicians of Canada has stated that the information appraisal and critical reflection on practice the focus group necessitates will enable the physicians in attendance to collect Mainpro-C credits. At the conclusion of the

focus group, I will supply the form *Linking Learning to Practice* that must be completed and submitted.

8. Anonymity and Confidentiality

A copy of the consent form will be left with the physicians for their records and reference.

No names or identifying data, that would in any way reveal the identity of participants or the site facility, will be used in the recording of the data or in the writing of the project paper. All focus group participants as well as the transcriptionist will be required to sign a Pledge of Confidentiality. Audio-cassettes will be erased once accurate transcription of data is verified. Transcripts will be stored in a locked filing cabinet in a secure room in the Manitoba Nursing Research Institute for a period of one year, after which they will be destroyed.

9. Compensation

Compensation will not be provided to study participants.

Committee Members

Dr. Bill Diehl-Jones Faculty of Nursing

Dr. Wendy M. Fallis Faculty of Nursing and Director of Research and
Evaluation - Victoria General Hospital

Dr. Bruce D. Martin Director of Northern Medical Unit
Assistant Professor Faculty of Nursing
Lecturer Department of Family Medicine, Faculty of
Medicine

Kelly I. McQuillen Manager of Manitoba Health Diabetes and Chronic
Diseases Unit

Question Guide for Focus Group

Introduction: I would like to begin our session with an extension of my heartfelt appreciation to each of you for agreeing to participate in this focus group on what is a very crucial topic. By any indicator, diabetes is a major clinical and public health challenge throughout the world, and data are convincing that the burden will only get worse before it gets better. My name is Kelly-Lynn Bekar and as a nurse practitioner student, in partial fulfillment of a Master of Nursing degree, I am conducting this session in order to develop an understanding of primary care physicians' perception of Clinical Practice Guidelines and what are the needs/barriers to implementation of the Clinical Practice Guidelines for Diabetes and acquire your thoughts and ideas of strategies that would help address these needs and support you in providing care for your clients with diabetes.

Kelly McQuillen is the Manager of the Diabetes and Chronic Diseases at Manitoba Health and in addition to being a member of my practicum committee, she will be assisting in the focus group by taking notes in addition to tape recording our session together. The focus group discussion will last approximately 60-90 minutes. While I have a list of 10 pre-developed questions I will pose to direct discussion, I would like you to also feel free to add anything. Please know that any participation in this discussion is entirely voluntary and you are free to refrain from answering any questions that you may not wish to without consequence. I encourage you to ask questions at any time during our discussion. I would also at this time remind you that each of the participants and researchers have signed Pledge of Confidentiality and the importance of honoring that pledge.

1. How satisfied are you with the level of care you are able to provide your patients with DM?
2. How satisfied are you with your implementation and performance of risk factor assessment for complications of DM?
3. In your opinion what are the benefits/drawbacks of Clinical Practice Guidelines (CPGs) in general?
4. How familiar are you with the 2003 national CPGs for diabetes?
5. Do you use the CPGs for diabetes? Why or why not?

6. Do you think the CPGs for DM improve the care for people with diabetes? If yes how? If not, Why?
7. What other resource/services do you currently utilize in providing care and prevention to people with DM? – MDCR, a diabetes educator, endocrinologist, internal medicine, registered dietitian, mental health?
8. What challenges/barriers in your practice do you currently face in relation to the delivery of diabetes care? –IT, reminders, on-site educators, characteristics of the community, people, payment structure
9. What needs to be done/change to enhance, support or improve diabetes management in your client practice?
10. Is there anything else you would like to add to the discussion?

Conclusion: I would like to conclude this evening's session by once again extending my appreciation to each of you for taking time to be a part of this focus group. It is absolutely crucial for those on the frontline to have their opinions and ideas heard. Thank you for sharing yours with us. Once the transcriptionist has transcribed the audio recording to written word, each of you will receive a copy in order to ensure that we have accurately recorded your comments. At that time you may delete any comments you so wish or if need be, clarify any comments. Once again THANK YOU so much for your participation!



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OF MANITOBA

APPENDIX J

Ethics Approval
RESEARCH SERVICES &
PROGRAMS
Office of the Vice-President (Research)

244 Engineering Bldg.
Winnipeg, MB R3T 5V6
Telephone: (204) 474-8418
Fax: (204) 261-0325
www.umanitoba.ca/research

APPROVAL CERTIFICATE

04 October 2004

TO: Kelly-Lynn Bekar
Principal Investigator

FROM: Stan Straw, Chair
Education/Nursing Research Ethics Board (ENREB)

Re: Protocol #E2004:082
"A Needs Assessment of Primary Care Physicians Delivering
Diabetes Care"

Please be advised that your above-referenced protocol has received human ethics approval by the **Education/Nursing Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note that, if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.



UNIVERSITY
OF MANITOBA

RESEARCH SERVICES &
PROGRAMS

Office of the Vice-President (Research)

244 Engineering Bldg.
Winnipeg, MB R3T 5V6
Telephone: (204) 474-8418
Fax: (204) 261-0325
www.umanitoba.ca/research

AMENDMENT APPROVAL

19 October 2004

TO: Kelly-Lynn Bekar
Principal Investigator

FROM: Stan Straw, Chair
Education/Nursing Research Ethics Board (ENREB)

Re: Protocol #E2004:082
"A Needs Assessment of Primary Care Physicians Delivering
Diabetes Care"

This will acknowledge your e-memo dated October 14, 2004 requesting amendment to the above-noted protocol.

Approval is given for this amendment. Any further changes to the protocol must be reported to the Human Ethics Secretariat in advance of implementation.