BURNOUT AMONG CANADIAN PHYSICIANS

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Abstract

This study investigates the prevalence of burnout among Canadian physicians. The Boudreau Burnout Questionnaire (BBQ), distributed as part of the Canadian Medical Association Physician Resource Questionnaire (PRQ) 2003, was used to measure burnout levels, compared by gender, age, practice locale, and specialty. Using the Phase Model Approach (Golembiewski et al., 1986), 1870 physicians were categorized with respect to their HI or LO scores of emotional exhaustion, reduced personal achievement, and depersonalization. Overall, 45.7% of Canadian physicians were in advanced phases of burnout (Phases VI, VII, & VIII). A higher percentage of female physicians (47.6%) than male physicians (44.6%) reported levels of advanced burnout. Age negatively correlated with burnout measures, yet age groups 35 – 44 and 45 – 54 showed over 50% advanced burnout. Advanced burnout scores were almost identical across broad specialties. A slightly higher percentage of rural physicians (46.9%) than urban physicians (45.5%) reported levels of advanced burnout. These results indicate that burnout among Canadian physicians warrants attention.

Acknowledgments

I would like to acknowledge the dedication of our Canadian physicians to the practice of medicine and their commitment to improving the lives of our citizens in the face of changes to the Canadian Health Care System. It has been challenging trying to document the burnout experience faced by Canadian physicians but rewarding to think that by acknowledging the chronic pains felt by those giving their lives to healing others, some recourse may be taken to lessen their loads.

I would like to thank the members of my committee for the support, enthusiasm, and freedom to pursue an avenue close to my heart, and for allowing me to find the value in focused mental energy and perseverance—my supervisor, Dr. Bob Boudreau, for the opportunity of a life time for a Master's student, and for his wisdom and calmness; my second reader, Dr. Judith Kulig, for her inspiration and dedication to the field of health care; and my external examiner, Dr. Robert Wedel, for his interest, insight, and expedient response given his incredibly busy schedule.

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List of Abbreviations

AMA – Alberta Medical Association
BBQ – Boudreau Burnout Questionnaire
BO – Burnout
CMA – Canadian Medical Association
DOA – Dead on Arrival
DP – Depersonalization
DPP– Depersonalization/Personalization
EE – Emotional Exhaustion
EEE – Emotional Exhaustion/Energy
GP/FP– General Practitioners/Family Physicians
LPA – Lack of Personal Accomplishment/Personal Accomplishment
MBI – Maslach Burnout Inventory
Med Spec – Medical Specialists
MMBI – Modified Maslach Burnout Inventory
OB - Obstetrics
OMA – Ontario Medical Association
PA – Personal Accomplishment
PA(-) – Personal Accomplishment (reversed)
PRQ – Physicians Resource Questionnaire
RCPSC – The Royal College of Family Physicians and Surgeons of Canada
SMA – Saskatchewan Medical Association
Surg Spec – Surgical Specialists

CHAPTER ONE:

Nature of the Study

Motivation and Relevance

The great success is to go through life as a human being who never gets disenchanted. The great wisdom is to overcome disappointment.

Albert Schweitzer (1926/1990)

Thoughts of burnout, of becoming entirely disenchanted, disappointed, and disengaged from work, of being occupationally depleted of energy and enthusiasm are thoughts which compel us to find ways of avoiding this condition. In its extreme form burnout has been labelled "full-term burnout" (Golembiewski, Munzenrider, & Stevenson, 1986), "supernova burnout" (Berglas, 2001), "loss of soul" (Walker, 1997), "meaning burnout" (Skovholt, 2001), "professional burnout" (Kushnir, Cohen, & Kitai, 2000), "a hemorrhaging of the self" (Skovholt, 2001), and even "true cases of burnout" (Fischer, 1983). Elevated degrees of this negative state are so pervasive in our modern work culture that burnout has been described as a global pandemic (Aiken et al., 2001; Boudreau, 2000; Golembiewski, Boudreau, Sun, & Luo, 1998).

The term "burnout" was originally used by Bradley in 1969. Following its application by Freudenberger in the mid 1970s, interest in this subject matter has continued to flourish. The relevance of burnout and its consequences to individuals and to industry is attested to by the growing number of reports and articles produced yearly. In a bibliographic compilation of burnout documents, Boudreau and his colleague found that from 1990 to

2002, over 2000 new sources had been added to the literature base (Boudreau & Nakashima, 2002).

Initially, burnout research described a phenomenon in helping professions such as nursing, social work, education, and law enforcement (Maslach, Schaufeli, & Leiter, 2001). Numerous empirical studies have depicted the emotional exhaustion suffered by professionals who have over-extended themselves in an effort to help others (Cordes & Dougherty, 1993). Yet, given the abundance of research on burnout related specifically to helping professions (Maslach & Leiter, 1997; Pines & Aronson, 1988) and the amount of practitioner evidence describing the debilitating effects of burnout on physicians, physician burnout remains empirically under-represented in the literature (Williams et al., 2001).

Burnout can be defined as the negative emotional/psychological state of an individual functioning in a workplace, induced as a result of prolonged emotional and interpersonal work-related stressors and mediated by individual characteristics (Golembiewski et al., 1998; Golembiewski et al., 1986; Maslach & Leiter, 1997). However, the "clinical" face of burnout presented in this definition takes on an emotional contortion when viewed through the lived expressions of burned out physicians:

> One oncologist speaks of being 'plucked bare', with nothing more to give….A medical resident, exhausted and angry at the health system [American], confesses to praying that the ambulance brings only DOAs to the hospital" (Adams*, AMNews*, April 22/29, 2002)

> I was tired of being faced with pain to relieve and of causing pain in the process. I had enough blood, trauma, crying, and dying. The cured all went away and took the happiness with them (Bohmfalk, 1999)

In the *Texas Medicine* article, "Stress, Burnout, and Addiction," Dr. Herbert Munden describes the situation like this: "I think there are thousands and thousands of doctors out there who just don't give a rat's ass whether they live or die because they are so unhappy" (as cited in Franke, 1999, p. 48). He also believes that "stress and burnout are the major

sicknesses of society, but everybody's in denial" (as cited in Franke, 1999, p. 48). Accounts such as that of Dr. Stephen Kaladeen, in "A Doctor's Angry Diary" (Macleans, Aug. 2002) vehemently describe the constraints and disillusionment facing Canadian physicians and the feeling that physicians and other health providers "are now only committed to their own preservation." At the extreme, suicide, alcohol abuse, drug abuse, and marital problems can be the consequences of burnout (CMA, 1998a; Williams et al., 2001).

Linda Gunderson in her article, "Physician Burnout" (2001) points out, "[f]or the most part, burnout in physicians does not differ from that of other professions, but physicians' reactions may be unique in some respects, in part because burnout in physicians can have devastating consequences for patients" (p.145). As such, the importance of recognizing and responding to burnout becomes all the more urgent when experienced by individuals whose work directly impacts the health and well being of others.

As key agents in providing quality health care, physicians, especially those on the frontlines, need the necessary resources to build patient-physician relationships toward holistic, prevention-focused health care and to maintain working relationships with co-workers and colleagues (Skinner, 2001). These resources include positive mental health and an outlook that supplies meaning to balance the strains and stresses that come with providing support for the suffering (Neuwirth, 2002).

On February 5, 2003 the First Ministers of Canada met to create the 2003 First Ministers' Accord on Health Care Renewal in answer to the recommendations outlined in the Romanow Report (2002). After years of debate on the plight of our publicly funded healthcare system, and trial-and-error activity by stakeholder groups and governments trying to temper the fallout of a system in flux, the time for positive, sustainable action is at hand (CMA, 2003b). Key issues revolve around the quality of patient care and safety, and finding

the resources to meet the growing need. It is in the light of these tangible steps to manage the future of our Health Care system that measures must be taken to ensuring an adequate supply of health human resources.

As outlined in the February 6, 2003 *Canadian Medical Association* news release, the major downfall of the Accord was its lack of attention to the "number one crisis in our health system - the shortage of health care providers." It goes on to say "[f]urthermore, …[it] is an abject failure by the First Ministers to recognize the real world in which our members struggle to work every day. This includes hazards physicians face daily, such as growing stress and burnout" (CMA, 2003a, Feb 6). The health of physicians, particularly those at the frontlines, is simply deteriorating at an alarming rate.

As the Canadian First Ministers are poised to implement lasting health care policy changes and health care providers are more than ready to a see a progressive, stable atmosphere infuse their work situations, the implications of this current study are both significant and timely. Actively and positively approaching the issue of physician stress and burnout on an interpersonal level and on a systemic, policy level, will only assist in creating a sustainable, quality driven, health care system in Canada. This study hopes to offer an empirical view of the burnout states of Canadian physicians that can inform future actions.

Research Objectives

The Research Opportunity

The opportunity to compare the burnout statistics of Canada's physicians came about through the efforts of Robert Boudreau, Ph.D., University of Lethbridge, AB. Working previously with the Alberta Medical Association, Boudreau and colleagues recommended that a valid and reliable burnout measure be used to document burnout states among Alberta physicians (Goodfellow, 2003). The value of a validated burnout instrument

to measure burnout levels of Canadian physicians was recognized by the CMA Research, Policy and Planning Directorate and led to the incorporation of the Boudreau Burnout Questionnaire (BBQ) into the 2003 version of the Canadian Medical Association's (CMA) Physician Resources Questionnaire (PRQ). Thus, an opportunity was created for an inferential and comparative study of burnout among Canadian physicians and the future possibility of longitudinal examinations of physician burnout levels. Previous data gathered using the BBQ on samples both inside and outside of the health care field are also available for comparison: a study of Alberta physicians (Goodfellow, 2003), a study of New Zealand workers (Boudreau, 1998a) and a study of Aboriginal people in Canada (Crow, Boudreau, Amelinckx, & Scott, 2002).

Research Questions

This current research concentrates on determining the burnout component scores of Canadian physicians and their placement on the Phase Model (Golembiewski et al., 1986). When an individual's emotional/psychological state of being deteriorates to a level where she/he is overwhelmed by stressors, regardless of the number or severity of the stressors, and becomes incapable of responding effectively, some degree of burnout ensues (Golembiewski et al., 1998). Based on the self-report data compiled using the BBQ and the demographic information and workload perceptions obtained through the CMA PRQ 2003 (Appendix A), the following questions were examined:

1. What are the levels of burnout among Canadian physicians?
2. How do these levels of burnout compare in relation to demographic variables such as gender, age, specialty, and locale of practice?
3. How do these levels relate to workload perceptions?

4. How do these levels compare with other populations, both inside and outside of the health care field?

These resulting burnout measurements offer a vantage point from which one can look for common antecedents and outcomes in relation to differing levels or phases of burnout (Golembiewski et al., 1998). The assessment of burnout levels by demographic variation should provide a foundation for future research and lead to a better understanding of the stress situations faced by Canadian physicians and their methods of coping with these situations.

CHAPTER TWO:
Literature Review

This chapter provides an exploration of the concept of burnout, how it has been defined, measured, and reported. Through an analysis of the burnout literature the main constructs, antecedents, and outcomes, framed in a changing social context, are examined. This conceptual foundation is then used to address the notion of burnout as it applies to physicians, their unique occupational circumstances, motivations, and institutional situations. Building on prior empirical research, a number of hypotheses are formed with respect to the research questions guiding this study.

Evolution of the Burnout Concept

Through his own lived experience Herbert Freudenberger, a highly motivated and dedicated practicing psychoanalyst, met with the symptoms and signs of an occupational phenomenon that reduced him to an exhausted, emotionally distressed, and frustrated individual; to a negative state of being that was becoming increasingly visible in his patients, colleagues of his profession, and in other human service professions. This phenomenon he labelled "Burn Out" (Freudenberger, 1980). The metaphor described the depleted psychological and physiological states of helping professionals so aptly that it was readily adopted by practitioners and academics. Subsequently, burnout research quickly developed into a distinct field of study with multidisciplinary contributions (Cooper, Dewe, & O'Driscoll, 2001; Maslach et al., 2001)

The evolution of this term from a metaphor to an empirical construct did not, however, occur without growing pains (Maslach, 1982). Definitional ambiguity emerged from an extensive list of interconnected symptoms and signs (Boudreau, 2000); from the

statistical employment of varying antecedents, indicators, and effects as the study of burnout evolved and expanded the professional boundaries of those experiencing the condition (Cooper et al., 2001; Fischer, 1983; Sullivan, 1989); from discontinuity between descriptions of burnout as both a process and an outcome (Hammer, Jones, Lyons, Sixsmith, & Afficiando, 1985; Sullivan, 1989); from a colloquial embracing of the term by the general public (Pines & Aronson, 1988); and from a reconsideration of descriptions of the burnout phenomenon as a "problem" or a "pathology" (Meyerson, 1994; Meyerson, 1998).

In their assessment of burnout research, Maslach, Schaufeli, and Leiter (2001) suggest that initial studies of burnout grew from the reality of lived experience in the workplace and the ever increasing incidents of social problems emerging from this work-related phenomenon. Anecdotal prompting from helping professions of health, social services, and teaching, followed by "grass-roots" (qualitative) research methods produced "conceptualizations of job burnout as a psychological syndrome in response to chronic interpersonal stressors on the job" (2001, p. 399). The applied nature of the initial stage of burnout research called for rapid solutions to problems of emotional exhaustion, possibly prompted by case-overload and scarcity of resources and signalled a continued exploration of the indicators of this work-related phenomenon.

Signs and Symptoms of Burnout

Cordes and Dougherty (1993) in their review of the job burnout literature, describe the individual and organizational consequences of burnout. They present the individual consequences as signs and symptoms which fall into five categories: physical, emotional, interpersonal, attitudinal, and behavioural (p. 637). Organizational consequences shall be referred to as outcomes and are subsequently discussed in this chapter. The importance of the distinction between individual and organizational consequences arises from the fact that

the burnout construct is measured in nearly all cases by one or more classes of these individual signs or symptoms and often by the relations between them (Boudreau, 2000; Cooper et al., 2001). As such, defining these indicators clearly and accurately becomes paramount to each empirical study, and foundational in providing consensus to the field.

In an effort to establish a clear definition of burnout for this study and to determine what other researchers define as essential to the concept, a componential analysis of the literature (Tanaka, 1976) was conducted. In this analysis key words were extracted from selected influential and cross disciplinary works focused on the concept of burnout, ranging from 1980 to 2002 (references marked with an asterisk (*) in the Reference list were used in the componential analysis). The essence of Cordes and Dougherty's original individual consequences is consistent with the componential analysis, however, key 'symptoms' and 'signs' were placed into the emergent descriptive units of feelings/attitudes, behaviours, and conditions.

Feelings/attitudes. Under the 'symptoms' heading of feelings/attitudes both positive and negative descriptors emerged (see Table 1). Positive feelings include confidence, empathy, energy, enjoyment, and purpose. Negative feelings, which created a much longer list, include cynical, disheartened, exhausted, inadequate, isolated, nothing, and rage.

To aid in the analysis of these descriptive units a distinction was made between symptoms and signs. Symptoms were taken to be internal experiences, very much perceived and interpreted at an individual level while signs were classify as observable expressions of conditions, outward appearances of experience. To use a physiological example, a headache is a symptom and is described as experienced by an individual. The presence of tense muscles in the neck and back of the head, observable by feel, may be a sign or an indicator of the headache. These muscles, however, may be tense without the individual experiencing

a headache. The feelings and attitudes of burnout (the symptoms) can be manifest in the signs of behaviours or in the observable conditions. The faded appearance of a person who is emotionally drained is a noticeable sign.

Behaviours. Behavioural signs that emerged from the analysis also fell into positive and negative categories (Table 2). Individual Coping behaviours were difficult to classify and suggest behavioural complexes. Relational Engagement words and phrases tend toward those found in the helping professions, although they also can be associated with positive relationships in any realm. The negative categories, Internal Avoidance, Interpersonal Avoidance, Overextension, Relational Damage, Responses, and Rigid, once again make up the majority of the behavioural category. The descriptive unit, Responses, contains behaviours of a negative nature that could not be placed into the other units. Overall, these behavioural signs may be seen as outward expressions or reactions to experiences met in the workplace.

Conditions. The descriptive unit, Conditions, applies to states of being. The emerging categories (Table 3) do not fall into positive and negative realms, as nearly all words and phrases bear negative connotations, but are separated into Individual Conditions and "Conditions of the Discourse." The latter term refers to patterns of language or labels that have evolved from the literature. As these labels are highly associated with the condition of the individual, their socially constructed connotations become embodied in those bearing the Cognitive, Emotional, Physical, and Spiritual Individual Condition. The distinction between signs and symptoms becomes rather tenuous when looking at conditions for they appear to be the manifestations of experience, yet in some cases not entirely observable. For example, slurring speech is notable but having difficulty thinking or being disoriented is less so.

Table 1. Componential Analysis of Burnout Feelings and Attitudes – Symptoms

Positive Feelings and Attitudes	
Confidence	competence, competence motivation, confidence, efficacy, self-esteem
Empathy	altruism, caring, compassion, compassionate, concerned, empathy
Energy	energetic, engaged, enthusiasm, feeling alive, feelings, passion, vitality
Enjoyment	affection, appreciated, comfort, communion, fairness, fulfillment, gratification, internal satisfaction, job satisfaction, recognition, respect, satisfaction with life, satisfied with others
Purpose	commitment, hope, optimism, purpose
Negative Feelings and Attitudes	
Cynical	aloofness, callous, callous disregard, cold indifference, condescending attitude, cynical, cynical detachment, feeling disillusioned about others, feeling resentful about others, jadedness, negative cynical attitudes, negative cynical feelings, pervasive cynicism, pessimism, resentment, standoffish attitude, suspicion
Disheartened	bleak attitude toward future, depreciation, depression, despair, disappointed, disappointment over realities, discomfort, disillusion, dissatisfaction, feeling sad and blue, job dissatisfaction, sadness
Exhausted	attitudinal exhaustion, become exhausted, devoid of compassion, emotional drain, emotional ocean, escape mentality, loss of enthusiasm, uncomfortable emotional
Inadequate	failure, self-imposed failure, failure to cope, falling apart inside out, feeling of inadequacy, guilt, helplessness, low self-esteem, lowered creativity, professional failings, self-blame, self-dissatisfaction, self-doubt, shame, the guilt trip, unappreciated
Isolated	afraid, alienation, anomie, detached, fear of rejection, isolation, loneliness, lonely, paranoia, work alienation
Nothing	ambiguity, ambivalence, anesthetized feeling, apathy, barren feeling, bored, boredom, dead-end, deadness, devoid of respect, disappearing, dulling, emptiness, ennui, gift of meaning gone, going through the motions, hopelessness, indifference to life, lack of meaning, loss of dreams, loss of motive, loss of soul, lost of interest, lost of meaning, morale low, no hope for change, no longer care, paralysis of the soul, passivity, spiritual collapse, spiritually exhausted, vague feeling of loss, void in life, ambiguous professional loss
Rage	aggression, anger, annoyed, chronic anger, envy, feeling oneself wronged, frustrated, impatient, impulsive, internal combustion, irritability, restlessness, suicidal, trapped

Table 2. Componential Analysis of Burnout Behaviours – Signs

Positive Behaviours	
Individual Coping	balance, bodily control, emotional self-protection, multitasking, pain avoidance, protection
Relational Engagement	active engagement, curing, curing and helping, emotional sharing, empathetic attachment, eye contact, humanistic caring, involvement, nurturance
Negative Behaviours	
Internal Avoidance	avoid decisions, denial, merely coping, putting up with breakdown, self-denial, self-neglect, silencing emotions, suppression, withdrawal
Interpersonal Avoidance	depersonalization, detached stance, detachment, emotional detachment, estrangement, eye contact avoided, hiding feelings, masking weakness, opting out of patient contact, unreachable at work, withdrawal
Relational Damage	blames others, blame, blaming the person, blaming the victim, burdening others, complaining, complaints, complaints - no voice, dehumanizing response, denouncing others, shortcomings, depersonalization, family - illness minimization, family – illness over-treatment, gossip, hostile, labelling, mistreated patients, patients - less human, ridiculing clients, scapegoat reactions, sick jokes
Over-extension	compulsiveness, difficulty saying no, emotional overextension, overinvestment of energy, patterns of extremes, plunging into overwork, sacrifice personal needs, self-sacrifice
Rigid	by the book dealings, fixing, petty bureaucrat, rigidity, ritualistic, technical treatment, use of restrictions, resistant to suggestion
Responses	crying, defensive coping, physical responses, questioning of rewards, reduced commitment, symptom treatment, tearfulness

Table 3. Componential Analysis of Burnout Conditions – Signs and Symptoms

Individual Conditions	
Cognitive Condition	confusion, difficult to concentrate, difficulty making decisions, difficulty thinking, disorientation, disoriented, forgetfulness, inability to concentrate, psychological condition, slurred speech
Emotional Condition	caring burnout, chronic exhaustion, conscious anger, dehumanized, distress, debilitating, emotional exhaustion, emotionally drained, emotional plummet, energy, exhausted, exhaustion, fatigue, loss of positive energy, mental exhaustion, nothing left to give, profound weariness, stable, up tight, wear out, weariness, zombie-like
Physical Condition	cardiovascular problems, chronic fatigue, depletion, deterioration in physical condition, difficulty relaxing, energetic, exhaustion, fatigue, heart disease, hypersomnia, Insomnia, lingering cold, low sex drive, lower resistance to illness, muscle tension, energy level, physical exhaustion, physical illness, physically exhausted, physiological symptoms, psychosomatic complaints, sleep disturbance, sleeplessness, somatic complaints, tension, tired
Spiritual Condition	compassion fatigue, disengagement, erosion of soul, hemorrhaging of self, personal devaluation, meaning burnout, reality shock
Conditions of the Discourse	
Process	burnout syndrome, burnout work cycle, chronic condition, chronic symptoms, complex of burnout, critical symptoms, gradations of burnout, manifestations, no longer effective, professional burnout, psychological burnout, stress related problems, syndrome, turnout/burnout, wipe-out
Medicalized	abnormal, complex, contagious, control burnout, critical, derogatory, disease, dysfunction, ecological dysfunction, infectious, mental illness, pathology, psychiatric disorder, problem

The value in this componential analysis of the literature comes from the creation of a restructured lens through which the recognized dominant dimensions of burnout can be viewed. These categories bear no allegiance to any particular model or author as they are a compilation of many. This analysis illustrates the complexity in identifying the developing concept of burnout. At the same time, it reveals the individual's perceptions and interpretations of experience, whether focused inwardly or interpersonally, as being central to the concept. The distinction between signs and symptoms illustrates how difficult it may be to capture the reality of a unique dimension as it may cross the boundaries of experience and behaviour. Notwithstanding the disproportionate number of negative versus positive words, the emergence of positive and negative descriptors suggests that burnout may also be described as the absence of some positive signs and symptoms.

Dominant Indicators

Although the field continues to adjust and focus the characteristics associated with burnout, dominant features have become established. The work of Christina Maslach and her colleagues has been highly influential in directing the course of burnout research, as the dimensions of emotional exhaustion, depersonalization, and personal accomplishment and the Maslach Burnout Inventory (MBI) in its various forms (the instrument used to measure these dimensions) are pervasive in the literature (Cooper et al., 2001; Cordes & Dougherty, 1993). Emotional exhaustion emerged from early research as an expression of the feelings and conditions of individuals who, while working in fields with emotionally-engaging interpersonal contact, overextend their energies (Maslach & Leiter, 1997; Pines & Aronson, 1988). As this component became empirically established as "the central quality of burnout and the most obvious manifestation of this complex syndrome" (Bakker, Schaufeli, Sixma, Bosveld, & Van Dierendonck, 2000; Maslach et al., 2001, p. 400), it created a basis to look at

the other emerging characteristics of depersonalization and reduced personal accomplishment (Cooper et al., 2001).

In limited application, depersonalization is a coping mechanism which creates a compassionate emotional distance or "detached concern." In excess, however, it creates emotionless receptions—ambivalence and disregard, even callousness and cynicism—for the objectified individual on the receiving end of the relationship. Both components—emotional exhaustion and depersonalization—in this understanding of burnout are derived from the interpersonal client-based interactions inherent in human service professions (Maslach et al., 2001).

The concept of reduced personal accomplishment, relates the feelings of inadequacy, incompetence, and a lack of achievement and productivity. However, the relationship of this concept to emotional exhaustion and depersonalization is complex, and shifts from one occupational segment to another (Maslach, et al., 2001).

Early established definitions of these main constructs are as follows (from Maslach & Jackson, in Boudreau, 1998a, pp. 6-7):

> *Emotional Exhaustion* (EE) – the feelings of being emotionally overrun and exhausted by one's work; *Depersonalization* (DP) – the tendency to view others as object rather than as feeling, valuing persons; and *Personal Accomplishment* – the degree to which a person perceives doing well on worthwhile tasks. (Note: the Personal Accomplishment construct is presented in a positive form).

As these components were employed in numerous studies the definitions shifted slightly to enrich the burnout concept. One example comes from Boles and colleagues in their article, The Dimensionality of the Maslach Burnout Inventory across Small Business Owners and Educators, as they defined the dimensions as such:

> Emotional exhaustion (EE) involves feelings of being depleted of energy and drained of sensation due to excessive psychological demands. Depersonalization (DP) denotes the tendency to deindividuate and dehumanize others through cynical, callous, and uncaring attitudes and behaviours. Reduced personal accomplishment (PA) involves repeated efforts that fail to produce results, leading to an attitude of inefficacy and reduced motivation (Boles, Dean, Ricks, Short, & Wang, 2000).

Emotional exhaustion, in this definition, goes beyond the feeling of being emotionally fatigued to include the idea of emotional numbness. To return to the earlier componential analysis, this alludes to the notion of feeling nothing. The interpretation of the depersonalization dimension incorporates the notion of dehumanizing behaviour, which suggests a movement beyond "interpersonal avoidance" behaviour to that of "relational damage"; a movement from subdued or contained internal feelings to potential harmful or costly actions. The definition of reduced personal accomplishment incorporates the notion of falling motivation. And although, the phrase "worthwhile tasks" from the previous definition of personal accomplishment (Maslach & Jackson, in Boudreau, 1998a) shares semantic space with "motivation," the latter also connotes a personal sense of meaning which goes beyond "task" accomplishment.

Setting the Stage for Burnout

Given that the concept of burnout emerged from the study of human service professionals, it seems natural that the initial dominant antecedents to burnout would revolve around the helping relationship. In an effort to assist people in finding resolution to their problems providers immerse themselves to some degree in the issues their clients face; they share the emotional burden. The frequency of involvement, the depth of engagement and the nature of these interactions defines the client-centred demands required of the helping professional (Maslach, 1982). The nature of interactions has also been referred to as qualitative dimensions including the clients' characteristics (Cordes & Dougherty, 1993).

Beyond these demands are the administrative responsibilities associated with each recipient or case. Together they are referred to as "workload" or negatively phrased, work "overload" (Maslach et al., 2001).

With an expansion of burnout research beyond the boundaries of human service professions, other antecedents began to be empirically evaluated (Maslach et al., 2001). Cordes and Dougherty place these antecedents into three categories: job and role characteristics, organizational characteristics, and personal characteristics (1993, p. 628). Workload falls into the first, along with job conflict and job ambiguity (Cordes & Dougherty, 1993; Schaufeli & Van Dierendonck, 1993). Organizational characteristics involve concepts such as organizational commitment (Maslach et al., 2001), contingency of organizational outcomes (how rewards and punishments are linked to performance) (Cordes & Dougherty, 1993), organizational change, employee ownership (Kahn, 1981), and distributions of power (Maslach & Leiter, 1997). Personal characteristics include such variables as demographic characteristics, personality characteristics, career and life stage, and ideals and expectations (Cordes & Dougherty, 1993).

The involvement of organizational and situational antecedents in burnout research broadened the view of the concept to include a social/environmental context and offered possibilities of managing burnout at organizational or policy levels. However, the issue of accurate measurement of burnout levels remains fundamental in evaluating intervention practices (Golembiewski, Boudreau, Munzenrider, & Luo, 1996).

Outcome Correlates of Burnout

It is the dire consequences of burnout on a personal level which initially drew the attention of researchers, but the organizational and financial ramifications continue to promote the search for answers to the burnout issue (Maslach et al., 2001). When the

experiences of the individual negatively impact the operations of the organization, whether it is a private practice or a multinational corporation, attention is aroused (Maslach & Leiter, 1997).

The individual burnout experience translates into psychological and physiological problems, loss of self-esteem, lowered motivation, and loss of idealism (Miller, McGowen, & Quillen, 2000). As these feelings and conditions of the individual mediate behaviours in the interpersonal realm—such as avoidance or relational damaging behaviours—they may perpetuate a downward spiral (Golembiewski et al., 1986). It is not surprising that burnout is related to a plethora of organizational variables such as absenteeism, increases in turnover, reduced productivity and performance, job dissatisfaction, and substance abuse (Maslach & Leiter, 1997; Sparks, Cooper, Fried, & Shirom, 1997). In fact, burnout has been found to be related to over 300 organizational covariants (Golembiewski et al., 1996).

This myriad of organizational consequences has also moved the field to expand its view of the burnout experience. As Golembiewski and colleagues contends, burnout is "everywhere" (1986, p. 3). Service and management sectors use the term "high touch" to describe a level of interpersonal interaction that take place in the modern work culture (Skovholt, 2001). Within this high touch environment of customer expectations and organizational demands of quality and productivity, workers in any field are susceptible to burnout and its consequences.

The evolving burnout construct, although defined by enhanced individual indicators and related to growing variety of stressors and outcomes, still faces issues regarding its pathway of development. An understanding of what burnout means to the individuals experiencing it and how it was to be resolved also remains a subject for discussion for burnout theorists and the public.

Burnout: An Event or a Process?

Questions have arisen during the course of this research as to whether the results will signify the risk of burnout *or* the level of burnout for Canadian physicians. The first implies that burnout is an event. And that given the continual alignment of certain conditions such as an excessive workload, idealistic expectations, limited rewards, or lack of control, an individual will eventually acquiesce to demands of the job (Cooper et al., 2001, p. 80; Harrison, 1983), and become, as Freudenberger characterized, a "Burn Out" (1980). The manifestations of this occurrence are seen in the extreme 'when': when "you will hit the wall" (Veninga & Spradley, 1981, p. 6); "when the meaning of the work has been lost" (Skovholt 2001, p. 112); "when the good, generous, and often very successful women and men (in most aspects of their life) begin to fall apart from the *inside out*" (Walker, 1997, p. 12); "when you are no longer effective and you no longer care" (Wessels et al., 1989, p. 73), and when you have "nothing left to give" (Meyerson, 1998, p. 107).

The risk of becoming burned out falls on the predictive value of the antecedents and the factors which mediate their effects, and the identifiable point at which one crosses the *burnout line*. The ambiguity inherent in this view, however, comes in trying to define, then measure the burnout line, especially with the variation in individual responses. And once the line is established, problems arise in how to define the percentages of risk, that is, what the possibilities are that the individual will cross the burnout line. If you take the theoretical stance that burnout is a "manifestation of strain, …a product of the interaction between environmental factors (demands) and individual perceptions and behaviours (such as coping)" (Cooper et al., 2001, p. 80), the task is to assess the "dynamic transactions that occur between these elements" (Cooper et al., 2001, p. 80) and ascertain the probability of certain elements coming together in such a way as to produce burnout. The logic that

follows suggests that an intervention can take place at any time before burnout, with the urgency dependent upon the risk or burnout probability. It is akin to accident prevention.

To view burnout as a process is to see a person moving gradually away from an asymptomatic state into a progressively increasing psychological malaise. Farber (1983) indicates that "burnout does not seem to lend itself to such clear dichotomies [determination of whether a worker is or is not burned out]—in part, because burnout is a *process*, not an *event*. Nor is the process identical for each person" (p. 3, original emphasis). Lynn (1989) describes the process as, "variations and gradations of burnout, its signs and symptoms are seen in everyone around us and are never considered anything unusual until we notice a pattern of extremes or exaggerations" (p. 23). Burnout is presented as an array of conditions along a continuum, with each burnout level having its own set of negative characteristics. And although the process is not identical for everyone, a consensus of signs and symptoms common to each level may be ascertained. These characteristics become easier to identify as one proceeds to the extreme end of the continuum.

An expanded view of this process is offered by Maslach and Leiter (1997), who reinterpret burnout "as an erosion of engagement with the job" (Maslach et al., 2001, p. 416). This view bears complement to the positive/negative nature of the earlier Symptoms componential analysis (Tables 1 & 2).

At first glance, the notion of burnout as a process measured by gradual changes in individual symptoms and signs, appears empirically simpler to access than does the risk/event view but concerns arise as to whether the slope of the gradient down the burnout path gets steeper as one moves closer to the negative extreme. Or whether it follows a linear progression at all. Perhaps a helical structure may better describe the process. Or a spiral

(downward). As negative experience creates negative behaviour and a feedback process takes over, is there an acceleration toward an irreversible burnout state?

For the purposes of this study burnout will be understood to be a process but the levels and patterns of burnout will be deferred to a later discussion of a sequential model of the symptoms and signs. It should also be noted that the measurement of burnout in most cases is but a snapshot in time, as is this study, and an richer view of a dynamic phenomenon would be better seen with a panoramic or longitudinal lens (Boudreau, 2000). Antecedents could then be assessed in their relationship to changes in burnout levels.

Colloquial Burnout

Perhaps a richer view of the burnout process may offer the media and the public a more solid foundation on which to debate the issues of burnout. Given the resonance of the term burnout with the general public and the increasing pronouncement that burnout is becoming a social epidemic (Golembiewski et al., 1996; Meyerson, 1998), questions have arisen as to whether the meaning of burnout is being diluted to the point of becoming a non-issue. These recent newspaper and magazine articles attest to growing debate: "Is workplace stress a new 'Black Death' or is it the phoniest disease of our time?" *1997*; "Canadian stress levels increasing" *1997*; and 'Working Wounded" *2000* (as cited in Boudreau, 2003).

Fischer (1983), in an attempt to distinguish being 'burned out' from being 'worn out,' states that people may be employing "the colloquial use of the term 'burnout' as an excuse for poor performance and as justification for both easier obdurate perseverance (as does the true case of burnout) but, instead, are grudging, complaining, and seeking to reduce or avoid responsibility" (p. 41). As stated by Pines and Aronson (1988), "…the term 'burnout' has become extremely popular—perhaps too popular; it has been so loosely used that is has

become almost meaningless…. To use the term loosely is to diminish its usefulness" (p. xi). Burnout, when viewed from this perspective, becomes a non-issue. Anyone who claims that they are burned out may not be taken seriously, and may even appear to be complaining. In this light, a stigma of weakness pervades the term. In a profession such as medicine, where staunch traditions of stamina are valued, burnout may be an un-welcomed label.

The Social Construction of Burnout

Researchers studying the burnout concept have recently started to incorporate the effects of these professional pressures. The influence of institutional norms and social constructions of the concept of burnout is illustrated by Debra Meyerson in her ethnographic account of the perceptions of burnout as experienced by social workers in two different ideological settings. She found that social workers employed in an acute-care hospital reflected and reinforced the dominant medical ideology and "tended to interpret burnout as a disease of the individual. They blamed the individual for not properly coping with this fate, or they described burnout as a personal character flaw" (Meyerson, 1994, p. 643). When defined and perceived as a syndrome or a pathological condition, as it is in the acute-care settings, burnout produced denial reactions with the attached stigma of non-professionalism. This view of burnout differed substantially from that found in the chronic care hospital, where the social work ideology prevailed. According to Meyerson, social work ideology is rooted in the concept of self-determination and seeks to legitimate multiple notions of normal. The rigid application of disease control gives way to a responsive flexibility acknowledgment of social circumstance. Social workers in this setting described burnout as a normal part of the job, as an unavoidable but healthy response which recognizes and honours the intensity of setting in which they work.

Through her research Meyerson illustrates that "the ways we conceptualize and experience stress and burnout are not inherently neutral, but are shaped by culture and a particular set of dominant themes prevalent in organizational and professional discourse" (Meyerson, 1998, p. 103). Pertinent to this study is the recognition of the medicalization of the term burnout. The perceptions of burnout held by the acute-care hospital social workers are likely even more deeply engrained in physicians. And to speak of burnout in physicians using the discourse of the medical ideology is to perpetuate a view of burnout as a pathology bound to the individual and to move away from an understanding of burnout as a social and professional experience faced by physicians.

As the definition of burnout continues to evolve and expand, the organizational and occupational areas in which it is studied continues to broaden. With this expansion of concept and area of study comes an increase in complexity. The study of burnout may move from situational or socially specific contexts to general applications. Dominant indicators may change in relation to the selected antecedents or outcomes under study. Different industry or professions may perceive indicators as being more or less detrimental. For example, depersonalization in professions where face-to-face communication is not an integral part of organizational functioning would not have the same impact on individuals as in professions where this type of communication affects performance and outcomes. The profession of medicine would seem to fall into the latter category. Against this backdrop, a definition of burnout for this study was created.

Working Definition of Burnout

As indicated earlier, definitions of burnout are bound to the signs and symptoms associated with this negative state of being. In an effort to speak of burnout as a "social experience" (Meyerson, 1998)—as a psychological/social phenomenon derived from the

dynamic interchange between individual and interpersonal experience, and a stress inducing environmental context—*burnout* is defined as:

> a phenomenon experienced at an individual level as a result of chronic emotional, interpersonal and situational stressors, measured by perceived degrees of emotional exhaustion/energy, depersonalization/personalization in attitude and behaviour, and lack of personal accomplishment/personal accomplishment.

Emotional exhaustion/energy (EEE) is the feeling/condition of being emotionally and cognitively depleted of energy, motivation, and internal resources. Depersonalization/ personalization (DPP) is the attitude and behaviours of disengagement, avoidance, and devaluation of others. Lack of/personal accomplishment (LPA) is the feeling/condition of self-doubt, loss of meaning, and loss of quality and productivity in relation to one's ability to accomplish the responsibilities of their job.

This definition moves away from the idea that burnout is an end-point of a progressive disease or a degradation of the individual.

The Phase Model Approach and the BBQ

The Phase Model Approach

In an effort to categorize and prioritize the dimensions of burnout as outlined by the Maslach Burnout Inventory (MBI), the progressive Phase Model of Burnout, was created by Golembiewski, Munzrider, and Stevenson (1986). According to the creators, through the use of this model, accurate, manageable, burnout information could be made available to policy makers and organizations, to assist them in reducing the effects of job burnout. The MBI subscales (Depersonalization, Personal Accomplishment-reversed, & Emotional Exhaustion) were ordered by importance and divided into high (HI) and low (LO) categories. The progressive phases of burnout (levels of burnout) are seen next:

Table 4. Phase Model of Burnout

Subscales	Progressive Phases of Burnout							
	I	II	III	IV	V	VI	VII	VIII
Depersonalization	LO	HI	LO	HI	LO	HI	LO	HI
Personal Accomplishment (-)	LO	LO	HI	HI	LO	LO	HI	HI
Emotional Exhaustion	LO	LO	LO	LO	HI	HI	HI	HI

The underlying theoretical premise of this model is the progressive virulence of burnout, with emotional exhaustion being the greatest contributor to burnout, then personal accomplishment (-), and depersonalization. Individuals are ranked according to the placement of their scores for each component in relation to the established medians (Golembiewski et al., 1986, p.23). In an effort to avoid creating an artifact from the data by selecting a median split for the LO/HI categories, the Phase Model was compared with numerous relevant measures, such as work site descriptors, job satisfaction descriptors, health indicators, and performance indicators (Golembiewski et al., 1986). Boudreau points out that as of 1998 "over 300 variables have been tested for association with the phases, and in almost all cases, covariants worsen as the phases progress" (Boudreau, 1998a, p. 9).

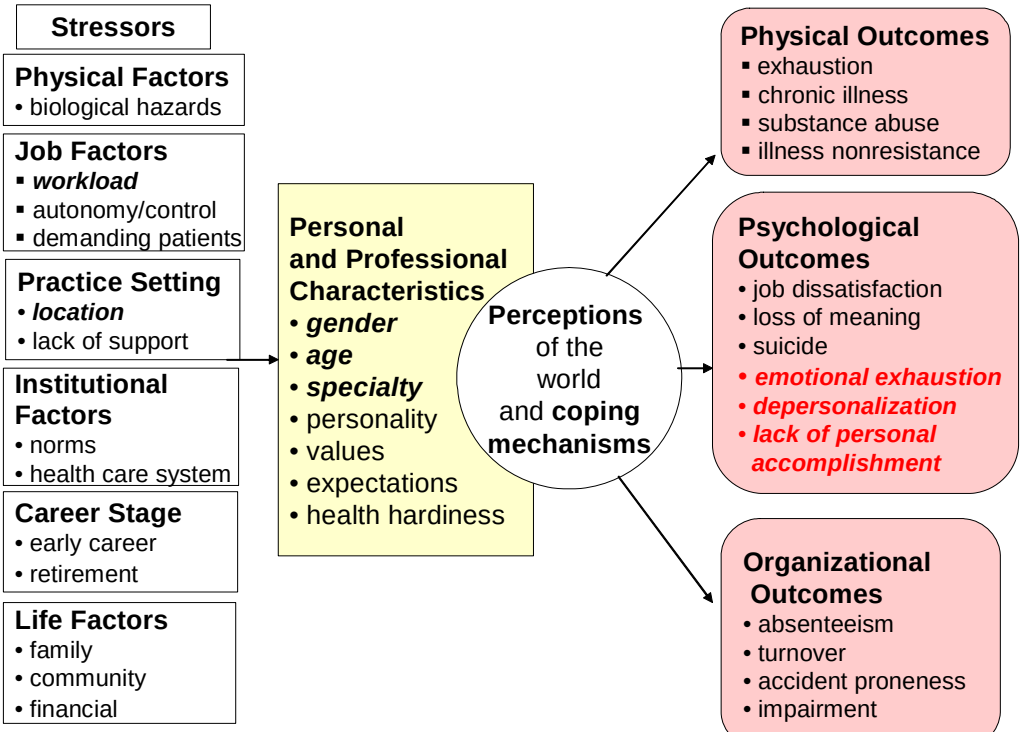
The Boudreau Burnout Questionnaire

The research model for this study engages the components of emotional exhaustion/energy (EEE), depersonalization/personalization (DPP) and lack of/personal accomplishment (LPA) through the Boudreau Burnout Questionnaire (BBQ). This instrument was created as a practical response to some of the discrepancies and measurement ambiguities currently existing in the field of burnout research and in particular, with the MBI (Boudreau, 2000). As indicated by Boudreau, there is a need for more

questions and more general questions; a need for an adequate measure of chronic character of burnout; a need for terms that are easily translated, not colloquial expressions, and a need for positive and negative questions (Boudreau, 2000). This study of Canadian physician burnout continues to test the psychometric properties of the measure which have shown favourable results to date. In a recent study of Alberta physicians, the instrument demonstrated properties comparable to those of the Modified Maslach Burnout Inventory (MMBI) (Boudreau, 2002a). It follows that burnout results acquired through the use of the BBQ can be used in Phase Model applications and can be compared with other burnout studies which have employed the MBI in its various forms.

Physicians and Burnout

This review of the literature and methods of measuring burnout have outlined the context in which physician burnout can be viewed. Physicians have a unique situation in that they may experience the stressors of the helping professions at the same time as they may face the stressors accompanying management and entrepreneurial roles (Gautam, 2000). Their actions and experiences are also deeply bound to the norms and the scrutiny of the profession of medicine and are changing with the demand level of an informed public (Gautam, 2000). The following diagram is a brief outline of the physician burnout experience and context (Figure 1). The italicized words indicate the variables of interest for this study.



(Adapted from Matteson & Ivancevich, 1982)

Figure 1. Diagram of Physician Burnout Experience and Context

The severity of outcomes is also unique to the profession. Although accidents and impairments occur in other helping professions, the responsibility, public accountability, and potential magnitude of their errors, raises the performance bar very high for physicians (Vickman, 2000; Williams et al., 2001). Growing apprehension over malpractice litigation is a negative reflection of these issues (Pearson, 2000; Welch, Medeiros, & Tate, 1982). Also, the cost of replacing a physician is immense. One study of primary care physician turnover estimated in 1994 that the range is $236,000 (US) plus for a family practitioner to over $264,000 (US) for a general pediatrician (Buchbinder et al., 1994 as cited in Williams et al., 2001).

Within this context of increasing pressures and human and financial costs, it is not surprising to see the reports of physician burnout at rates of 25% to 40% and higher (Grunfeld et al., 2000; Gundersen, 2001; Velamoor, Kazarian, Persad, & Silcox, 2000).

Physician Burnout in a Canadian Context

The restructuring of the Canadian health care system has produced many repercussions in physician work environments. The Royal College of Physicians and Surgeons recognizes the strained atmosphere created by the health care restructuring process by stating:

> The major cause of delays is under supply of physicians, nurses, and other health care workers. In addition to long waiting times for patients these shortages of health care workers also result in overwork, stress, and decreased morale among the health care professionals as well as increased susceptibility to error in the system and adverse events (RCPSC, 2002, p. 1).

In 1997, Rockman and Kaufmann, from the OMA Physicians Health Program, described "the stresses of transition" associated with the new models of health-care delivery:

> hospital closures, increased patient demands with limited resources, job insecurity, technological change, mounting difficulty balancing personal and professional lives, financial stress, role of fiscal gate keeper of the health-care system, decreases in professional autonomy (1997, p. 40).

Although the National Steering Committee on Patient Safety (2002) acknowledges that health care personnel who are subject to excessive workloads and burnout may be prone to affecting adverse events, there remains a "paucity of studies on physician stress in Canada" (Velamoor et al., 2000, p. 141).

Results of the studies that have been completed confirm anecdotal reports of falling morale and rising workloads within the profession of medicine in Canada. The 1998 CMA PRQ revealed "that almost two-thirds of Canada's physicians (62%) have a workload they consider too heavy and more than half (55%) say their family and personal life has suffered because they chose medicine as a profession" (Sullivan & Buske, 1998, p. 525). The 2001

CMA PRQ results indicate that physicians are pressed by the "unrelenting demand of medical practice" (Martin, 2001, p. 521), with 63.7% agreeing or strongly agreeing to the statement "my workload is heavier than I would like" and 54.6% reporting an increase in workload (CMA, 2001).

In a recent report by Dr. Dana Hanson, President of the CMA, the issues of physician health and well-being were again addressed. He stated that "the critical shortage of physicians in many areas of this country continues to have a profound impact on the health system, not to mention those working harder and harder to fill the gaps." (CMA, 2003c, August 19). Given the continuing restructuring of the Canadian health care system, practitioner reports and previous empirical research on professional stress and burnout, and its correlates, the following hypothesis was formed:

Hypothesis A: Canadian physicians will report a high prevalence of advanced burnout.

Within the broad context of the restructured Canadian health care system, differing stressors arise for physicians depending on gender, age, speciality, and practice locale.

Gender

Both the Canadian Medical Association and the American Medical Association list issues of common concern for female physicians. As women are a minority in medicine, although their numbers are increasing, they continue to face intimidation (CMA, 1998a; Gautam, 2000). Their academic contributions may be devalued due to the patriarchal nature of the discipline and access to mentors and role models is limited (CMA, 1998a; Gautam, 2000). Many women physicians experience the added load of the "second shift," as they bear primary responsibility of home and child care duties along with their professional

workloads (CMA, 1998a; McMurray et al., 2000; Miller et al., 2000). Financial concerns may also have a greater impact on women physicians as reports indicate the many female graduates have greater debt loads than men (Notman, 2000) and mean incomes are lower (McMurray et al., 2000). One study of US physicians has shown that women physicians are 1.6 times more likely to report burnout compared with men (McMurray et al., 2000). In a study comparing burnout levels by gender between US physicians and Dutch physicians, US women showed significantly higher burnout levels that men (28% to 21%) while Dutch physicians showed no gender difference in burnout levels (Linzer et al., 2002). This information leads to the following hypothesis:

Hypothesis B: Female physicians will report higher levels of advanced burnout than male physicians.

Age

In a review of the literature on mid-career burnout in physicians, Spickard and colleagues note that reported burnout levels in physicians tend to decrease with age (Spickard, Gabbe, & Christensen, 2002, p. 1448). This trend is consistent with the findings of Schaufeli and Buunk (1996) which report that "younger human service professionals may be more prone to burnout than older ones" (as cited in Cooper et al., 2001, p. 100). Mashlach, Schaufeli, and Leiter (2001) support this view by stating that burnout levels are consistently higher in younger employees as opposed to those over 30 or 40 years old (p. 409). The results of the 1998 CMA PRQ show that 70% of physicians in the 45–54 range agreed or strongly agreed with the statement "my workload is heavier than I would like" (CMA, 1998b). Physicians in the youngest and the oldest categories reported percentages of

52% and 33%, respectively, to the same statement. Formally stated, these findings suggest that:

Hypothesis C: Advanced burnout among physicians will decrease with age.

Specialty

The issues and stressors facing physicians differ from specialty to specialty, and hence, one can expect that resulting burnout level may also be different. One US study of physicians in a health managed organization (HMO) reports that "burnout is more likely among emergency care physicians, internists, and ob-gyn physicians and less likely among general surgeons and pediatricians" (Schmoldt, Freeborn, & Klevit, 1994, p. 59). Another study shows the general internal medicine category as having the highest mean burnout score over other specialty categories (Gundersen, 2001). Velamoor and colleagues note studies that report infectious disease physicians and critical care physicians as having high rates of burnout (2000, p. 140). In a study of Ontario cancer care workers, Grunfeld and her colleagues found high rates of emotional exhaustion (53.3%), depersonalization (22.1%) and reduced personal accomplishment (48.4%) in medical and clinical oncologists (2000). For this study on Canadian physician burnout the specialties are separated into the broad categories of general practitioner/family physicians (GP/FP), medical specialists (Med Spec) and surgical specialists (Surg Spec). Emergency physicians and pediatricians are classified as medical specialists and general surgeons and obstetrics/gynecologists (ob-gyn) are classified as surgical specialists. From these results, it is hypothesized that:

Hypothesis D: Medical Specialists will report higher levels of advanced burnout than either GP/FPs or Surgical Specialists.

Practice Locale

The pressures of work life for a physician in Canada, as noted earlier, have increased with the restructuring of the health care system. These stresses are intensified by practicing medicine in a rural community. But to speak about this population of physicians one must understand the definition of rural. A number of possible approaches to this definition are offered by Statistics Canada (du Plessis, Beshiri, Bollman, & Clemenson, 2001). (A segment of the publicly available document "Rural and Small Town Canada Bulletin" is presented in Appendix B).

The diversity of definitions of rural adds a complicating dimension to the study of these physicians, yet common concerns have presented themselves. Rural physicians face unique challenges such as these outlined by the CMA:

> lack of professional backup, support and locum relief; little opportunity for family and leisure activities; inadequate facilities; limited access to specialist services and continuing medical education; isolation from extended family and friends; and the social difficulties frequently associated with small communities (CMA, 1998c).

The Saskatchewan Medical Association (SMA) conducted a survey of rural physicians, showing that "almost one-quarter of rural doctors were on call 24 hours per day, 7 days per week" (Florizone, 1997, p. 3). This is not surprising considering that "while 23% of Canada's population lives in rural areas (communities of less than 10,000 people), only 17% of the country's family physicians and 3% of the specialists practice in these areas" (Shack & Baker, 1999, p. 174). The drastic results of a study of rural physicians in British Columbia extends the concern that physicians in rural communities are exhausted and

experience burnout: 55% self reported burnout, with 80% of physicians reported moderate-to-severe emotional exhaustion (Thommasen, Lavanchy, Connelly, Berkowitz, & Grzybowski, 2001). In the context of the additional stress faced by rural physicians, it can be hypothesized that:

Hypothesis E: Rural physicians will report higher levels of advanced burnout than urban physicians.

Workload

In the previous discussion of physician burnout and gender, age, specialty and especially practice locale variations, the issue of workload or overload has been mentioned numerous times. In fact, the literature overwhelmingly points to heavy workload and lack of personal time as key stressors for physicians (Edwards, Kornacki, & Silversin, 2002; Huby et al., 2002; Vickman, 2000). Consistent with these views, it is hypothesized that:

Hypothesis F: Select workload measures will be positively correlated with burnout components and the overall phases of burnout.

Comparative Research

In an effort to relate the findings from the above hypotheses to a broader context, the results of the CMA data will be compared to previous studies which have used the BBQ: an Alberta physician study, a New Zealand workers study, and a study of Aboriginal peoples in Southern Alberta.

Alberta Physician Burnout

Recently the BBQ has been used to assess the risk of burnout for Alberta physicians and cross-occupation samples of New Zealand workers (Boudreau, 1998a; Goodfellow, 2003). The study of Alberta physicians demonstrated "that Alberta physicians evidence the highest rates of burnout" when compared to American physicians, Alberta healthcare workers, Canadian workers (Goodfellow, 2003, pp. 26-27). Goodfellow also asserts that triangulated data "including practitioners' and physicians' anecdotal experiences, and qualitative findings from this study, suggests that Alberta physicians circa 2002 evidence some of the highest levels of burnout ever recorded" (2003, p.43).

The New Zealand Study

The 1998 study of a variety of New Zealand occupational groups, carried out by Boudreau, sampled workers from a large manufacturing organization, a hospital, a small restaurant, emergency services, and a large contracting organization. Using the BBQ and the MMBI as part of a larger Occupational Health Profile, burnout scores were ranked according to the Phase Model. The resulting advanced levels of burnout ranged from 17.5% to 45.5%, producing an average of 38%, based on the MMBI data. According to Boudreau these figures are comparable to other cross-national samples (1998a).

Aboriginal Peoples of Southern Alberta

The BBQ has also been used to measure the burnout levels of Aboriginal peoples in southern Alberta (Crow et al., 2002). In 2002, as part of an "ongoing study of Aboriginal burnout and occupational health" a survey was conducted on "Aboriginal peoples working for predominantly Native-run or native-focused organizations, both on and off-reserve" (Crow et al., 2002, pg. 1). It is noted by the authors that these Aboriginal peoples face similar stressors as those Aboriginal peoples working in non-Native environments, yet questions

remain as to whether the experiences of burnout for the Aboriginal peoples are shared with the Canadian physicians in this current research. The reliability and validity results obtained from the research will be compared with the current study.

Summary

In this chapter, the evolution and the definition of burnout have been discussed. Burnout, described by the components of depersonalization, lack of personal accomplishment, and emotional exhaustion, was defined as a phenomenon experienced at an individual level as a result of chronic emotional, interpersonal, and situational stressors. The processes and the experiences of burnout were found to be linked to individual perceptions and social constructions. From this theoretical foundation, six hypotheses were formed to assist in creating an empirical view of the state of physician burnout in Canada. Alternate burnout studies using the BBQ to be compared with the burnout results from Canadian physicians were also presented.

The complexity of the burnout concept continues to create conceptual and empirical challenges, some of which are addressed in the next chapter.

CHAPTER THREE:
Research Approach

This chapter discusses the methodological approach taken in discovering the prevalence of burnout among Canadian physicians. The data collected through the Canadian Medical Association (CMA) Physicians Resource Questionnaire (PRQ) 2003 from a sample of registered Canadian physicians was quantitatively assessed. Sample definition, instrument characteristics, phase allocation procedures, and collection procedures are discussed. Methods of evaluating the psychometric properties of the Boudreau Burnout Questionnaire (BBQ) are also explained.

Research Design

Sample

The representative sample of 8172 was randomly selected from the CMA Masterfile 2003 database of 60,859 physicians licensed to practice medicine in Canada, including both CMA members and non-members (see Appendix C for Masterfile information). CMA members comprised 63% of the database and 64% of the representative sample. Respondents included in the sampling frame are those who are currently "in active practice *and/or*, employed in any medical or medically related field, *or* on a leave of absence" (PRQ2003, p. 2); those excluded from the sampling frame are medical students, residents, or retired.

The demographic and professional characteristics selected for this study are defined by the CMA using the Masterfile 2003 database. Age categories were defined as <35, 35 – 44, 45 – 54, 55 – 65, and 65+. Physicians who are 80 and over were excluded from the

Masterfile. Practice locale was defined by the physician's work address postal code. For this study postal codes with a zero in the second half were considered to be rural.[1] Physicians are categorized into the broad specialities of General Practice/Family Physicians (GP/FP), Medical Specialists (Med Spec) and Surgical Specialists (Surg Spec). The Medical Specialists category includes the majority of the specialties (detailed breakdown available in Appendix D).

Questionnaire Design and Measures

The CMA PRQ 2003 is an eight page survey document containing questions or statements in the areas of 'Information Technology', 'Monthly On-Call Activities', 'Professional Stress and Burnout', 'Professional Activities', 'Pharmaceuticals', 'Demographics', and 'Comments' (Appendix A). The option to complete the survey online is indicated on the cover page. Demographic statements followed by the 'Comments' section are found on the last page.

The PRQ format, available in English and French versions, was initially developed by the CMA in 1990 as national census mail survey. The objective of this census, which had a 74.2% response rate, was to determine "the supply, mix, and distribution of physicians in Canada and to compare data with those of the 1982 and 1986 physician surveys" (Sanmartin & Snidal, 1993). Yearly from 1997 onwards, the PRQ data format has been used to gather

[1] A special note on the definition of rural as created by the CMA Research, Policy and Planning Directorate: Alterations in postal code definitions have created some methodological concerns as described: "The "0" as the second character of a 6-character postal code has traditionally been used to define "rural." That is not adequate for a national survey now because ALL of New Brunswick's and some of Quebec's "0"s have been removed/replaced with 'urban-like' postal codes…In other provinces, including AB, the "0" will continue to do a fair job for a survey. BUT, you would likely miss many small towns that would be included in the 'rural and small town Canada' areas, i.e. outside of census metropolitan areas /census agglomerations. Physicians in 'rural and small town Canada' are more likely to live/work in the 'small town' part of these areas rather than the 'rural'... that is of 'rural and small town' part of the country. Therefore, selecting "0" postal codes may miss quite a number of the targeted physicians." (R. Pitblado, personal communication, Sept 2, 2003).

random sample data which assesses the activity status, workload, income change, internet use, practice locale, and demographic profiles of Canadian physicians (CMA, n.d.)

The 1998 and 2001 versions of the PRQ include a section entitled "Professional Stress" containing the following statements:

1. Workload is heavier than I would like
2. Family/personal life has suffered from choosing medicine as a profession
3. Patient expectations are unreasonably high
4. Lack of locums has affected ability to take vacation
5. On-call responsibilities too onerous
6. Professional income has been discounted in last year (1998 only)
7. It is difficult to get appropriate resources on behalf of my patients (2001 only)
8. Opportunities are limited to change specialty or career path

These professional stress surveys indicate that physician stress and burnout was and is a growing concern to the CMA. The evidence of escalating stress levels gained from these surveys and the growing amount of practitioner or anecdotal evidence led to the recognition by CMA Research, Policy and Planning Directorate that a comprehensive measurement of burnout should be undertaken. To assist in this endeavour, the Boudreau Burnout Questionnaire (BBQ) was selected for use in place of the above statements for the 2003 PRQ. This validated instrument provided a measure of the state of stress and levels of burnout faced by Canadian physicians (Boudreau, 2000; Goodfellow, 2003).

The Boudreau Burnout Questionnaire

Presented on the fifth page of the 2003 PRQ, under the heading "Professional Stress and Burnout," the 30 items of the BBQ[2] are presented on a 7 point Likert-type scale, anchored with "False" at 1 and "True" at 7. Each of the three components, emotional exhaustion/energy (EEE), lack/personal accomplishment (LPA), and depersonalization/personalization (DPP), consists of five negative and five positive statements. The 30 statements were randomly ordered. Given the sensitive nature of the statements, the instructions for this section restated the anonymity of the responses to the survey.

The degree of the emotional exhaustion/energy—that is the feeling/condition of being emotionally and cognitively discharged of energy, motivation, and internal resources—was tapped through statements such as: "I feel refreshed and alert," "I wish I could relax more," "I really enjoy the prospect of getting up and going to work." Depersonalization/ personalization—the attitude and behaviours of disengagement, avoidance, and devaluation of others—is measured by statements such as: "I really do care about my co-workers" and "I have acted in an unprofessional manner towards others in the workplace." Lack of/personal accomplishment—the feeling/condition of self-doubt, loss of meaning, and loss of quality and productivity in relation to one's ability to accomplish the responsibilities of their job—is captured by statement like: "I believe I am building a better life for others through the work I do" and "I lack the desire and creativity to complete many tasks." The positive statements are reverse coded for analysis so that higher scores indicate greater burnout. (See Appendix E for a complete list of the positive and negative statements by component).

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[2] The original version of the BBQ included an additional 10 statements (5 positive and 5 negative) pertained to the construct of Fatality/Resilience. It was felt that the 30 item instrument measuring the dominant indictors would better fit the format of the PRQ.

Workload Measure

To measure workload three CMA variables from the section "Professional Activities" were used: Question 23J – This question is the total hours worked in an average week, excluding on-call activities; Question 24 – "Including time spent on continuing medical education, how many **weeks** do you usually **work** in a 12-month period?"; Question 25 – "During the last twelve months, has your professional workload: increased, stayed the same, decreased" (CMA PRQ 2003, p. 6).

The Phase Model

Phase definition relies on the selection of median splits to separate the burnout components into HI and LO categories. Since the Phase Model was originally organized on the Modified Maslach Burnout Inventory (MMBI), the median split scores outlined by Golembiewski and his colleagues (1986) were redefined for the new BBQ instrument. Data from previous research using the BBQ, that is the New Zealand study of employees from hospitals, manufacturing organizations, police and fire services (n = 1066), and the study of Aboriginal Canadians (n = 194). The resulting median splits of DPP – 22, LPA – 29, EEE – 32 were applied to the data to allocate individuals into phase categories.

Collection method

The data was collected and coded by the CMA Research, Policy and Planning Directorate, a separate research body of the CMA, to ensure anonymity of the respondents. Initial contact with the sample physicians was accomplished through one of two avenues: Either the self-administered questionnaire with the cover letter offering the option for participants to complete an electronic survey was mailed *or* an electronic invitation directing participants to the survey website was sent. Both methods supplied an identification number to begin the electronic survey. A postcard or email reminder, depending on mode of initial

contact, was sent two weeks later. Nonrespondents were sent a paper copy of the survey four weeks following the reminder.

Using this collection protocol, previous response rates to the CMA PRQ surveys have ranged from 35 to 45% but "have been dropping steadily with each successive year" (S. Martin, personal communication, March 14, 2003).

To maintain confidentiality and anonymity, the data for this study were acquired from the CMA Research, Policy and Planning Directorate only in an aggregate form. Direct access to the data was not an option for this study, instead the required results were requested and returned in output tables. Reverse coding, component coding and output syntax was emailed to the CMA Directorate to obtain this data output. Qualitative comments were received without any identifying individual or categorical associations attached.

SPSS (Version 10.0) was used to obtain additive scores from each of the components, on the sample as a whole and on each demographic variation: gender, age, specialty, and practice location. Pearson correlations define the relations between workload variables, age, burnout components, and phase allocations (Hair, Anderson, Tatham, & Black, 1998).

Psychometric Analysis of the BBQ

Validity and Reliability

As it is a priority to determine and attain validity of the instrument measures before reliability statistics can be of value, a factor analysis was used to test the validity and dimensionality of the BBQ (Hair et al., 1998). Numerous studies on burnout also reveal the popularity of factor analysis techniques (Boles et al., 2000; Densten, 2001; Enzmann, Schaufeli, Janssen, & Rozenman, 1998). Factor loading scores were interpreted using three

general criterion: 1) smaller factor loading scores are identified as significant with larger sample sizes, 2) "the larger the number of variables being analyzed, the smaller the loading to be considered significant," and 3) "the larger the number of factors the larger the size of the loading on later factors to be considered significant" (Hair et al., 1998, p. 112). With the size of this sample, factor loading scores of .40 are considered to be conservative and significant (Hair et al., 1998). To attain content validity, however, the summated scales must correspond with the definitional concepts (Hair et al., 1998).

Reliability or more correctly, internal consistency, was measured using covariance matrix testing, separately on each component of the BBQ: DPP, LPA and EEE. The inter-item correlation scores, item-total correlation scores and the Cronbach's Alpha scores are of particular importance. According to Hair et al. (1998) the convention for acceptable item-total correlation is .50 or greater and .30 or greater for inter-item correlation. The Alpha scores are deemed acceptable at a level of .70 or higher but are known to increase with the number of items in the scale or component (Hair, et al., p. 118). It should be noted, however, that acceptable Alpha scores do not define uni-dimensionality (Hair et al., 1998).

Summary

The chapter outlines the approach taken in collecting, measuring, and analysing the data from Canadian physicians. The incorporation of the BBQ into the 2003 PRQ promises an intriguing look at physician burnout. These results are offered in the next chapter.

CHAPTER FOUR:

Results

This chapter presents the demographics of CMA respondents in relation to the population, the descriptive statistics of their responses, and the frequencies for individual questions and for the subscales of depersonalization/personalization (DPP), lack of/and personal accomplishment (LPA), and emotional exhaustion/energy (EEE). The BBQ was analyzed for validity and reliability using factor analysis techniques and internal consistency measures. Selected comparisons were made with AMA data, New Zealand data and Aboriginal peoples data that have also used the BBQ to measure burnout. Descriptive statistics and phase model results of the sample as whole and of the gender, age, specialty and practice locale are reported, along with workload correlations with the BBQ components and the phase categories. Phase model results of the Canadian physician sample are compared with the AMA physicians burnout patterns.

Demographics

Of the 7762 questionnaires e-mailed or mailed to the sample group starting February 6, 2003, 2251 were returned with some level of completion by the cut-off date (June 18, 2003), registering a response rate of 29%. The respondent sample was 74% CMA members (n = 1666) and 26% non-members (n = 585). Fifty-two of the surveys returned included comments pertaining to this study. The demographics and professional characteristics of the respondent sample with respect to the representative sample and the population distribution are reported in Table 5. Each respondents' demographic characteristics were categorized by association to their information in the CMA Masterfile (January 2003) and not by self-reported response. Age, specialty, and practice locale categories are defined by the CMA

Research Directorate. In the case of practice locale, postal codes from the CMA Masterfile 2003 were used to categorize responses (refer to Footnote 1, page 37).

Table 5. Demographics and Professional Characteristics of CMA PRQ 2003 Respondents

Sample Characteristics	% of *n*	% of sample	% of pop.	Sample Characteristics	% of *n*	% of sample	% of pop.
Totals	2251	8172	60859	Totals	2251	8172	60859
Age				Province			
< 35	9.5	9.1	8.9	NL	1.6	1.7	1.7
35-44	27.4	27.2	27.7	PE	3.6	2.4	0.3
45-54	32.8	31.1	30.8	NS	3.1	3.2	3.4
55-64	20.3	19.5	19.7	NB	2.7	1.9	2.1
65 +	10.0	11.1	10.7	PQ	22.3	26.2	26.8
Unknown		2.0	2.1	ON	36.2	35.1	35.9
				MB	3.4	3.6	3.6
Gender				SK	2.8	2.7	2.7
Male	66.0	70.0	69.6	AB	8.4	8.9	9.3
Female	34.0	30.0	30.4	BC	15.6	14.1	13.9
				NT	0.1	0.1	0.1
Practice Locale				YT	0.2	0.1	0.1
Rural	9.0	8.3	7.9	NU	0.0*	0.0*	0.0*
Urban	91.0	91.7	92.1				
Specialty				CMA Membership			
GP/FP	54.9	52.1	51.8	Member	74.5	64.4	62.9
Med Spec	32.8	34.8	35.2	Non-Member	25.5	35.6	37.1
Surg Spec	12.3	13.1	13.0				

Note: The totals for the specialty categories are slightly lower (*n* = 2250, sample = 8163, population = 60809) due to the exclusion of a small number of medical researchers from this study. *The population of physicians in Nunavut was 12 and 4 were selected in the representative sample. Rounding to one decimal place resulted in 0.0% for both columns. Zero surveys were returned.

These demographic figures indicate that the representative sample drawn from the CMA Masterfile 2003 database represents the population and hence, inferential generalization about the population can confidently be expressed. Slight differences are

noted, however, in the respondents versus the representative sample for the categories of gender and specialty. Also, PEI physicians registered higher response rates because all physicians in that province were selected in the representative sample. This was due to a research enquiry beyond the scope of this study.

Descriptive Statistics

The mean response rate for the thirty BBQ statements is 2162 out of the 2251 total respondents, with a listwise valid $n = 1870$. Descriptive statistics for the three BBQ components are displayed in Table 6. These results reflect the reverse coding of the positive BBQ statements. Frequency of response for each component is represented in Figure 2.

Table 6. Boudreau Burnout Questionnaire: Descriptive Statistics

Component	*n*	Mean	Median	Std.	Min.	Max.
DPP	2048	23.5	23	7.1	10	67
LPA	2008	29.8	30	7.7	10	64
EEE	2064	34.7	34	11.0	10	69

The additive scores of the components range from 10 to 69, spanning the range of possible scores (10 – 70). Given that the number of responses per component are very close (DPP, $n = 2048$, LPA, $n = 2008$, EEE, $n = 2064$), this Figure 2 offers an accurate representation of the normal trends of response. The DPP component tends to be skewed toward the lower end of the range. The LPA component shows a peaked distribution, with some symmetry around the 30 score. The EEE component tends toward a broad distribution with respect to the range.

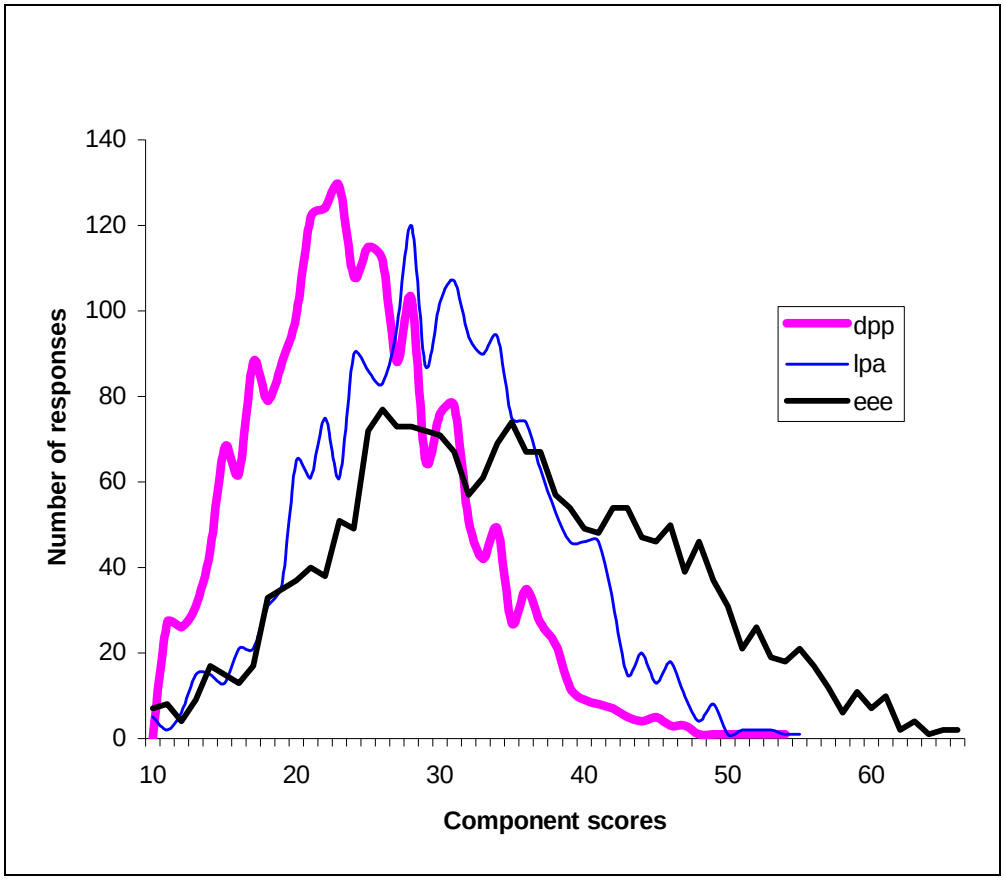


Figure 2. Response Levels by Burnout Component

As these components are summated scores, the frequency distribution of each statement contributes equally to the score. It is important to note, however, the distribution characteristics of each statement and assess whether they contain equal interpretive contributions to the component scores. The frequency graphs for each of the statements are presented in Appendix F. These graphs offer a visual representation of the distribution of responses in association with the statement wording, distributions that may not be apparent from an appraisal of mean scores and standard deviations.

Instrument Results

Factor Analysis

A three-solution principle component factor analysis of the CMA data was run using SPSS. These factor loadings are compared with the factor analysis of Alberta physician data from a previous study (Goodfellow, 2003) in Table 7. The AMA data produced very similar results suggesting a high degree of reliability in the instrument. A further comparison of the factor loading scores of the CMA data, the AMA data, the New Zealand workers data (Boudreau, 1998a) and the Aboriginal peoples data (Crow et al., 2002) can be seen in Appendix G. These results indicate strong similarities between CMA data, AMA data and the New Zealand data. The Aboriginal data showed some factor loading scores that deviated from the other three sample groups.

The three-solution factor analysis of the CMA data explained 42.0% of the variance. Assessing the CMA factor loadings of .40 or greater, twenty eight of the thirty items registered valid factor loading scores, however, ten of the items also appeared in factors not originally assigned by the model. Two items (Q22A and Q22W) did not register valid loading scores and three items show cross-loadings (Q22E, Q22U and Q22DD). Given that, with this sample of Canadian physicians, one third of the items in the instrument registered in alternate components and three items registered cross-loading tendencies, factor description tables were created (Appendix H).

Table 7. Component Loadings and Item-Total Correlations of BBQ Items: Comparison between CMA and AMA

		CMA/AMA			
BBQ Items		Factor 1 EEE	Factor 2 DPP	Factor 3 LPA	Item-Total Correlations
Q22A	EEE+	---/---			.39/.39
Q22B	EEE+	.67/.68			.60/.64
Q22C	LPA-	.51a/.60a			.41/.49
Q22D	LPA+		.62a/.69a		.30/.38
Q22E	DPP+		.49/.43	.48a/.56a	.53/.56
Q22F	EEE-	.72/.70			.64/.62
Q22G	EEE-	.73/.78			.64/.70
Q22H	EEE-			.55a/.60a	.39/.30
Q22I	LPA+		.53a/.58a		.42/.38
Q22J	DPP-			.50a/---	.32/.33
Q22K	DPP-	---/.44a		.42a/---	.37/.43
Q22L	EEE-	.65/.59			.57/.50
Q22M	LPA+		.55a/.55a		.20/.27
Q22N	LPA+		.67a/.69a		.38/.38
Q22O	DPP-			.70a/.67a	.39/.36
Q22P	DPP+		.60/.57		.39/.46
Q22Q	LPA+		.56a/---		.39/.41
Q22R	DPP-			.67a/.63a	.44/.39
Q22S	DPP+		.58/.66		.39/.48
Q22T	LPA-	.50a/.56a			.43/.41
Q22U	LPA-	.48a/.52a		.42/---	.51/.50
Q22V	DPP+		.62/.73		.44/.53
Q22W	LPA-	---/.41a			.30/.29
Q22X	EEE-	.72/.75			.67/.71
Q22Y	EEE+	.80/.79			.76/.75
Q22Z	EEE+	.72/.70			.65/.66
Q22AA	DPP+		.64/.65		.42/.49
Q22BB	EEE+	.61/.55			.59/.51
Q22CC	DPP-			.54a/.49a	.46/.43
Q22DD	LPA-	.41a/.55a		.43/---	.41/.47

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax (6 iterations) rotation with Kaiser Normalization, Orthogonal rotation.

Note: Only factor loadings of .40 or greater have been included.

a. indicates loadings in category alternate to assigned component.

Note: AMA – Alberta Medical Association scores are derived from the data gathered in 2002 (Boudreau, 2002a).

Reliability

Reliability testing was run separately on each of the components (CMA, *n* = 1870; AMA, *n* = 1073), DPP, LPA and EEE. Item-total correlations are seen in Table 7 along with the factor loadings. The accepted item-total correlation score is .50 or greater (Hair et al., p. 118). Building on Table 7, the inter-item correlation scores, along with the commonly used measure of internal consistency, the Cronbach's Alpha scores, for each component are displayed in Table 8. The alpha scores are deemed acceptable at a level of .70 or higher (Hair, et al., p. 118). All three components evidence Cronbach's Alpha scores of greater than .70, with the EEE component reaching .87 for both data sets. Of the thirty items, the same ten items from the CMA data and the AMA data obtained this item-total correlation level, with eight of those from the EEE component.

Table 8. Reliability scores for BBQ Components: Comparison - CMA & AMA

	CMA/AMA			
BBQ Components	Inter-Item Correlations	Chronbach's Alpha	Standardized item alpha	Item-Total Correlations Ranges
DPP	.24/.27	.74/.77	.76/.78	.32 - .53/.33 - .56
LPA	.20/.22	.71/.73	.72/.74	.20 - 51/.27 - .50
EEE	.40/.38	.87/.87	.87/.86	.39 - .76/.30 – 71

CMA (*n* = 1870); AMA (*n* = 1073).
Note: AMA – Alberta Medical Association scores are derived from the data gathered in 2002 (Boudreau, 2002a).

Physician Burnout Results

The sample of Canadian physicians shows a bimodal distribution when categorized according to the Phase Model (Figure 3), using the median splits of DPP – 22, LPA – 29, and EEE – 32. (These median splits were based on the norms from previous studies using the BBQ, the New Zealand data [Boudreau, 1998b] and Aboriginal peoples data [Boudreau, 2002b], the physicians scores on the 3 components were split into high and low using the Phase Model approach.) Recalling that Phase I allocation is produced by LO scores in each of the burnout components and Phase VIII allocation by HI scores in each of the burnout components, 26.9% of the sample respondents registered scores in Phase I and 31.1% into Phase VIII. When collapsing the phases into three categories, Initial (Phases I, II, & III), Moderate (Phases IV & V), or Advanced (Phases VI, VII, & VIII), physicians score as follows: Initial – 37.6%, Moderate – 16.7%, and Advanced – 45.7%.

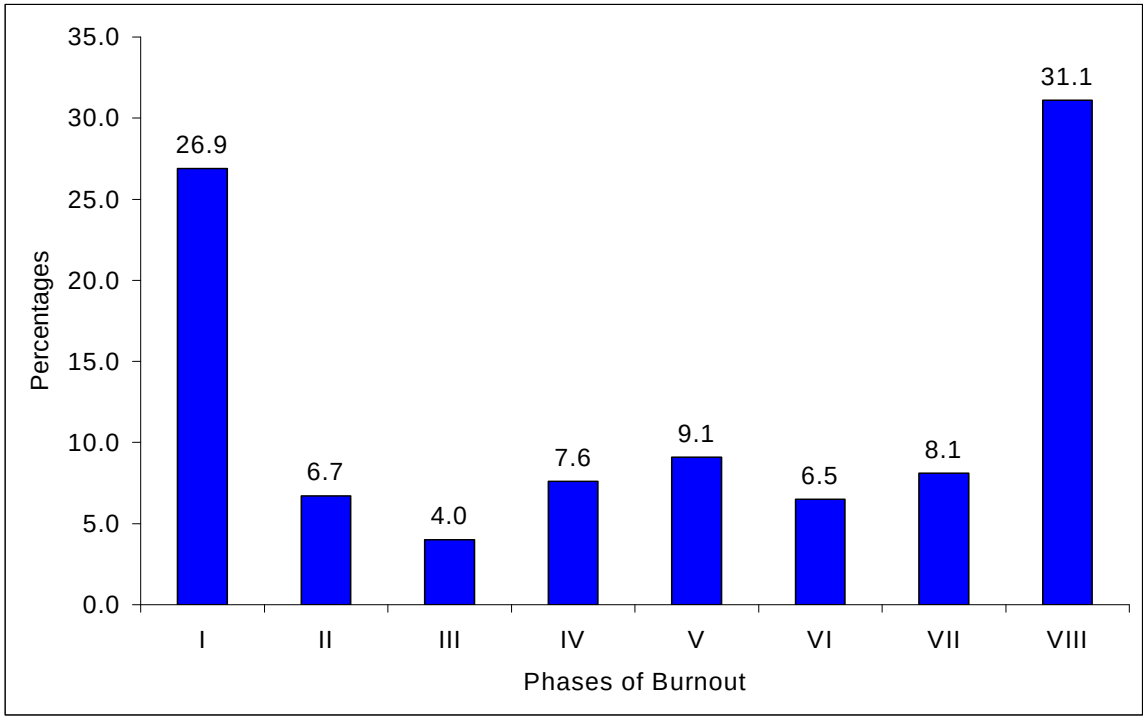


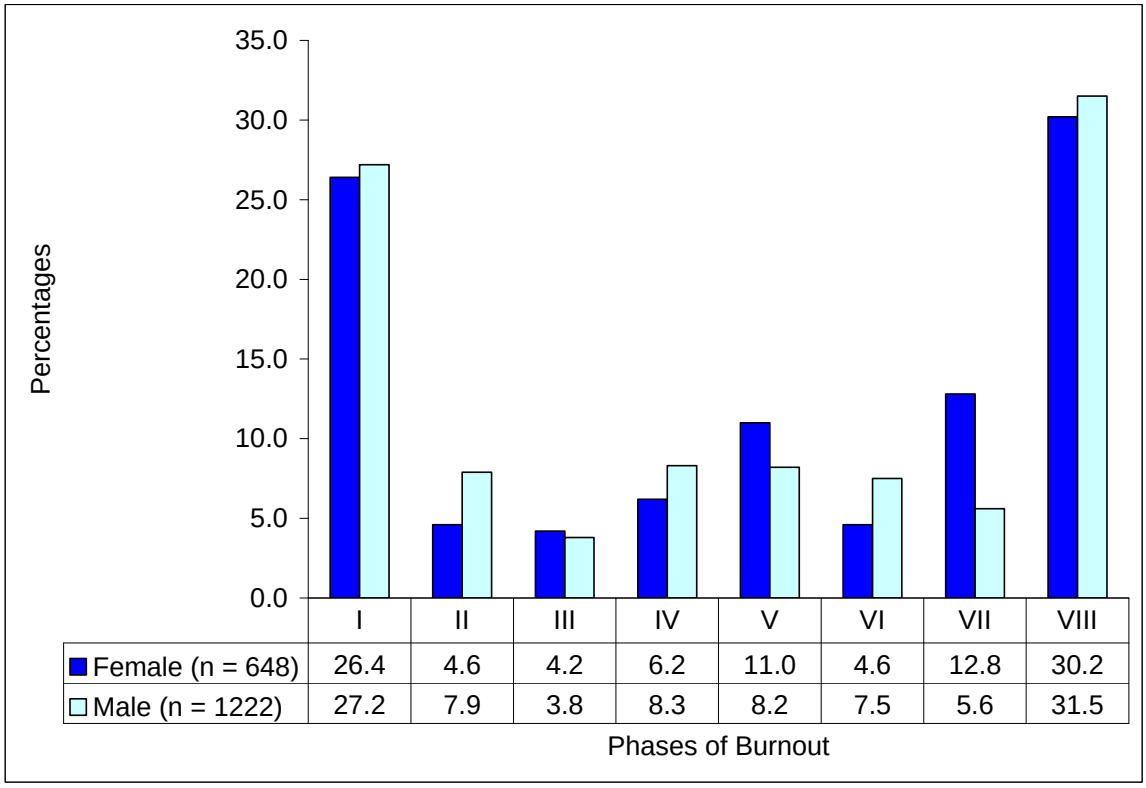
Figure 3. Burnout Phases of Canadian Physicians (*n* = 1870)

Gender

Descriptive statistics of the respondents showed slight differences between females and males (Table 9). For each of the three burnout components, the number of male respondents was nearly double that of female respondents. The mean scores in the EEE component did register higher for women, 36.0 with a slightly lower standard deviation of 10.9, than that of men, 34.0 with a standard deviation of 11.1. The Phase Model categorization for gender (Figure 4) showed large variations between the percentages of female and male physicians in some of the phases. It is interesting to note that males have higher scores than females in Phases II, IV and VI. These are phases in which the component DPP is HI. In Phase VII where females score over twice the level of males (12.8/5.6), DPP is LO and LPA (& EEE) are HI. The summated phases of Initial, Moderate, and Advanced Burnout show the respective percentages for females and males of Initial – 35.2%, 38.9%; Moderate – 17.2%, 16.5; and Advanced – 47.6%, 44..6%.

Table 9. Descriptive statistics: Gender

Gender F/M	*n*	Mean	Std. Dev.	Median
DPP	697/1351	22.9/23.8	7.0/7.1	22/23
LPA	687/1321	30.6/29.4	7.6/7.7	30/29
EEE	703/1361	36.1/34.0	10.9/11.1	35/34



	I	II	III	IV	V	VI	VII	VIII
Female (n = 648)	26.4	4.6	4.2	6.2	11.0	4.6	12.8	30.2
Male (n = 1222)	27.2	7.9	3.8	8.3	8.2	7.5	5.6	31.5

Figure 4. Phases of Burnout: Gender

Age

Although age shows a significant negative correlation with the burnout components and the Phase Model assignments (Table 10), the correlations do not reveal the differences shown in Figure 5. The age groups, 35 – 44 and 45 – 54 both register advanced burnout levels of over 50% with the younger group, <35, and the 55 – 64 age group, registering advanced burnout levels of at least 10% lower than the latter middle groups. The over 65 indicates the lowest level of advance burnout, at 22%. The bimodal tendencies of the tri-phase distribution remain in all age groups, although much less pronounced in the 65+ group.

Table 10. Correlations between Age and Burnout Components

		DPP	LPA	EEE	BO
Age	Correlation	-.082*	-.097*	-.174*	-.116*
	Sig. (2-tailed)	.000	.000	.000	.000
	n	2048	2008	2064	1870

*p< .01.

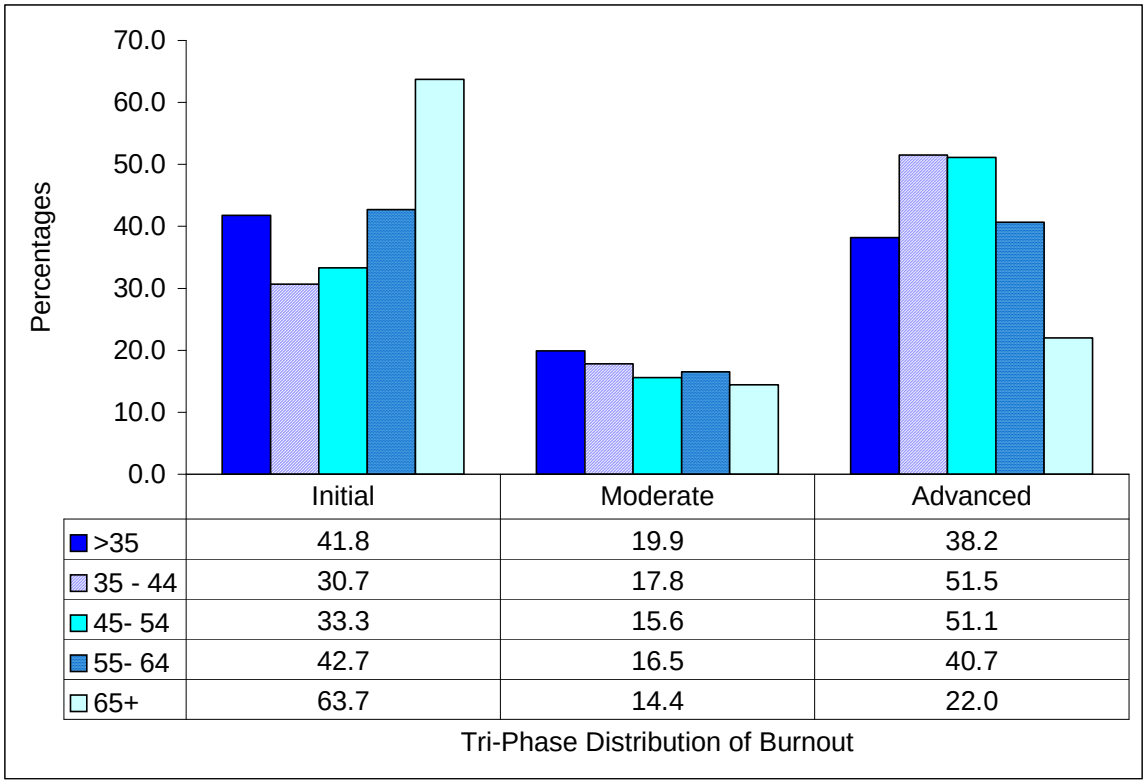


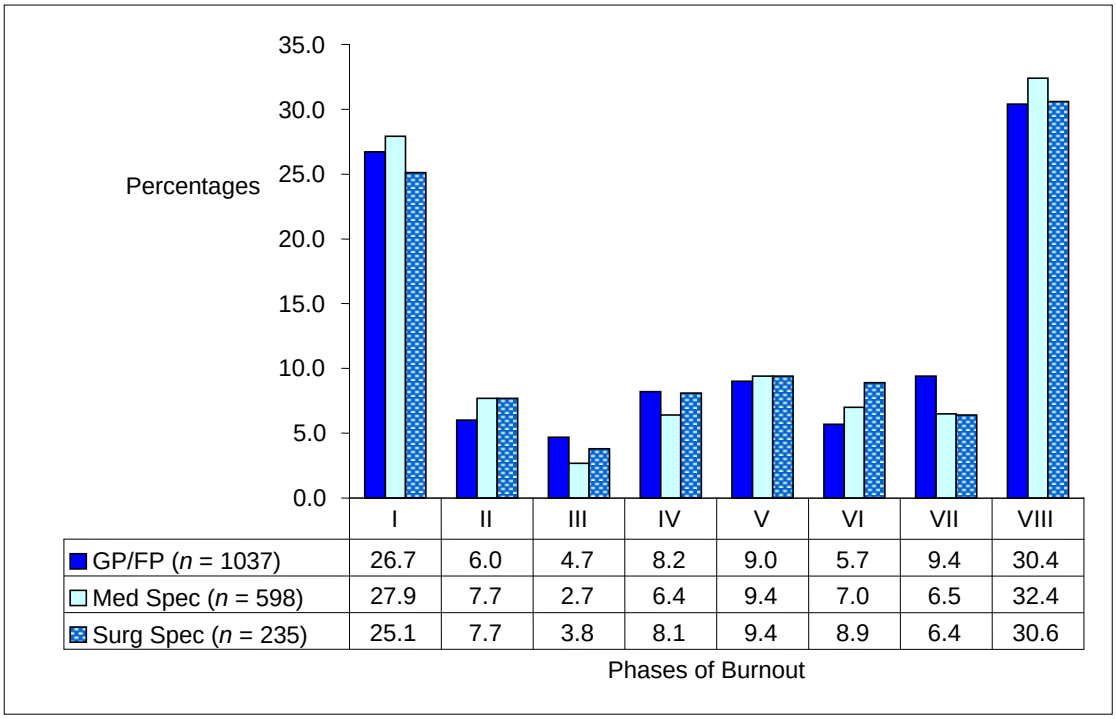
Figure 5. Tri–Phase Distribution of Burnout: Age

Specialty

The descriptive statistics for the broad specialties, General Practice/Family Physicians (GP/FP), Medical Specialties (Med Spec) and Surgical Specialists (Surg Spec), show a large difference between the number of respondents (Table 11). However, the mean scores, standard deviations, and medians are very close within each component. Phase Model percentages also indicate a narrow discrepancy between scores in each phase (Figure 6). Medical specialists scored the highest in Phase VIII with 32.4% over surgical specialists with 30.6% and GP/FPs with 30.4%. Advanced burnout scores were very close: 45.9% for Med Spec, 45.9% for Surg Spec, and 45.5% for GP/FPs (Figure 7).

Table 11. Descriptive statistics: Specialty

Broad Specialty		*n*	Mean	Std. Dev.	Median
GP/FP	DPP	1130	23.2	6.85	23
	LPA	1112	30.2	7.70	30
	EEE	1135	34.9	11.07	34
Med Spec	DPP	661	23.5	7.17	23
	LPA	646	29.3	7.76	29
	EEE	675	34.6	10.92	34
Surg Spec	DPP	257	24.6	7.84	24
	LPA	250	29.1	7.26	29
	EEE	254	34.4	11.26	35



	I	II	III	IV	V	VI	VII	VIII
GP/FP (*n* = 1037)	26.7	6.0	4.7	8.2	9.0	5.7	9.4	30.4
Med Spec (*n* = 598)	27.9	7.7	2.7	6.4	9.4	7.0	6.5	32.4
Surg Spec (*n* = 235)	25.1	7.7	3.8	8.1	9.4	8.9	6.4	30.6

Figure 6. Phases of Burnout: Specialties

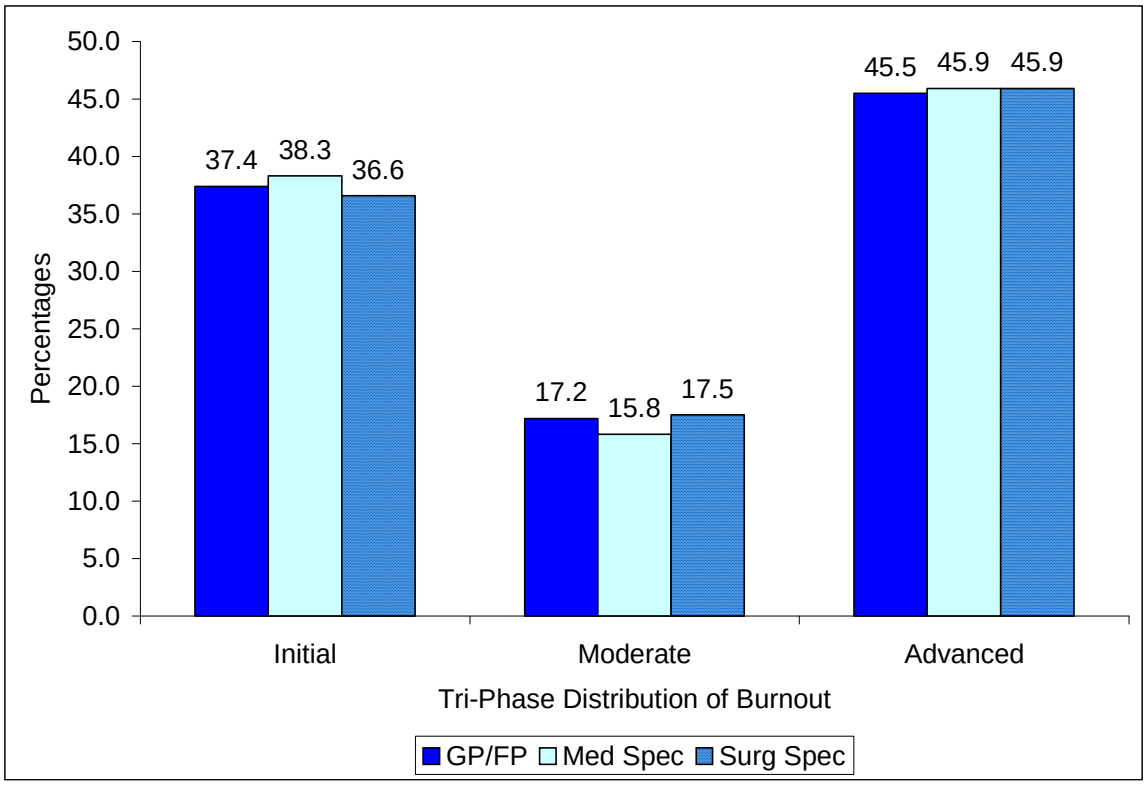


Figure 7. Tri-Phase Distribution of Burnout: Specialties

Practice Locale

The descriptive statistics between urban and rural locations appear almost identical regardless of the nearly ten-fold difference in the number of respondents. This tendency is also reflected in the Phase Model scores. In Phase VIII, both groups register scores of near 31%. Tri-phase distribution scores are Initial – 36.7%, Moderate – 16.4% and Advanced – 46.9% for urban physicians and Initial – 37.7%, Moderate – 16.8% and Advanced – 45.5% for rural physicians.

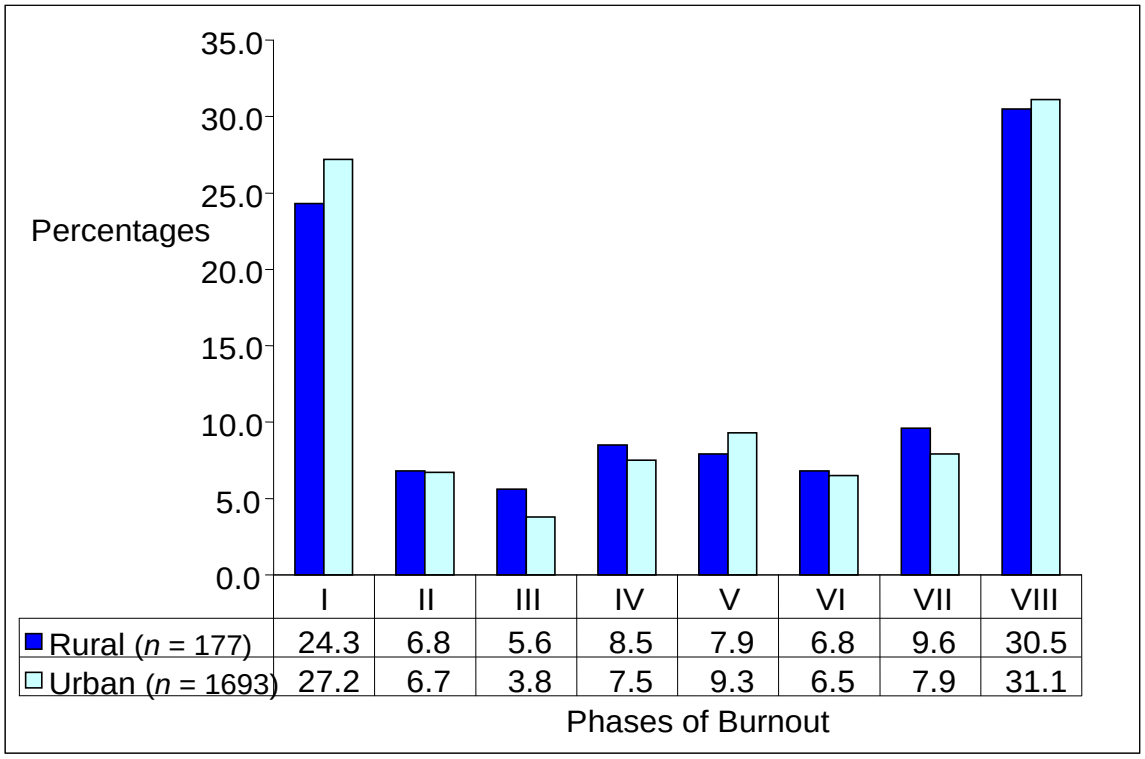


Figure 8: Phases of Burnout - Practice Locale

Workload correlations

Workload, as a dominant stressor in the burnout experience, was correlated with the burnout components to obtain the results shown in Table 12. Each of the workload measures (Q23J, Q24, & Q25) registered significant correlations with the others. The negative correlation values associated with Q25 (During the last 12 months, has your professional workload:) are produced by the format of the question, which places the responses in this order: increased, stayed about the same, decreased. The burnout component DPP does not show a significant correlation with Q25, but does so with the other workload measures. The component LPA is significantly correlated with all listed measures except for Q23J. The component EEE is significantly correlated with all listed measures.

Table 12. Correlations between Workload Variable and Burnout Components

		DPP	LPA	EEE	Burnout
Q23J – total hours worked/ week	Correlation Sig. (2-tailed) *n*	.07 .00 2010	.01 .67 1977	.16 .00 2026	.09 .00 1841
Q24 – weeks worked/year	Correlation Sig. (2-tailed) *n*	.06 .00 2007	.05 .05 1970	.12 .00 2020	.09 .00 1835
Q25 - professional Workload	Correlation Sig. (2-tailed) *n*	-.04 .09 2028	-.08 .00 1992	-.20 .00 2046	-.13 .00 1856

Note: Correlations are significant at the 0.05 level (2 tailed). Q25 is reversed in format when compared to the other workload measures

CMA and AMA Burnout

The results from the 2002 Alberta Medical Association data using the BBQ are compared with this year's CMA burnout results. It is noted that approximately 10% of the AMA sample included residents, medical students, and retired physicians, and those physicians were not included in the CMA sample. The number of respondents by gender is similar between the two samples, however, the percentage of specialists is higher in the AMA sample than in the CMA data. A comparison of the descriptive statistics (Table 13) indicates that the mean score for the EEE component for the Alberta physicians (37.3) is higher than the CMA physicians (34.7). The maximum for the DPP component is much lower for the Alberta physicians (56) than the Canadian physicians (67).

In an effort to ensure the comparability of the two samples the data from the AMA was run using the same median splits used in the CMA sample (DPP 22, LPA 29, EEE 32)[3]. Given these narrow differences in the samples the results indicate that Alberta physicians have higher rates of Phase VIII burnout than the CMA sample, with 36.8% compared with 31.1%, respectively (Figure 9). When viewing the levels of advanced burnout presented in Figure 10, the rates of burnout for Alberta physician appear even more pronounced (55.5% - AMA compared to 45.7% - CMA).

[3] Note: The CMA sample contains 188 Alberta physicians.

Table 13. Descriptive Statistics: CMA vs. AMA

Component CMA/AMA	n	Mean	Std.	Min.	Max.
DPP	2048/1083	23.5/23.6	7.1/7.6	10/10	67/56
LPA	2008/1073	29.8/30.5	7.7/8.6	10/10	64/61
EEE	2064/1084	34.7/37.3	11.0/11.9	10/11	69/70

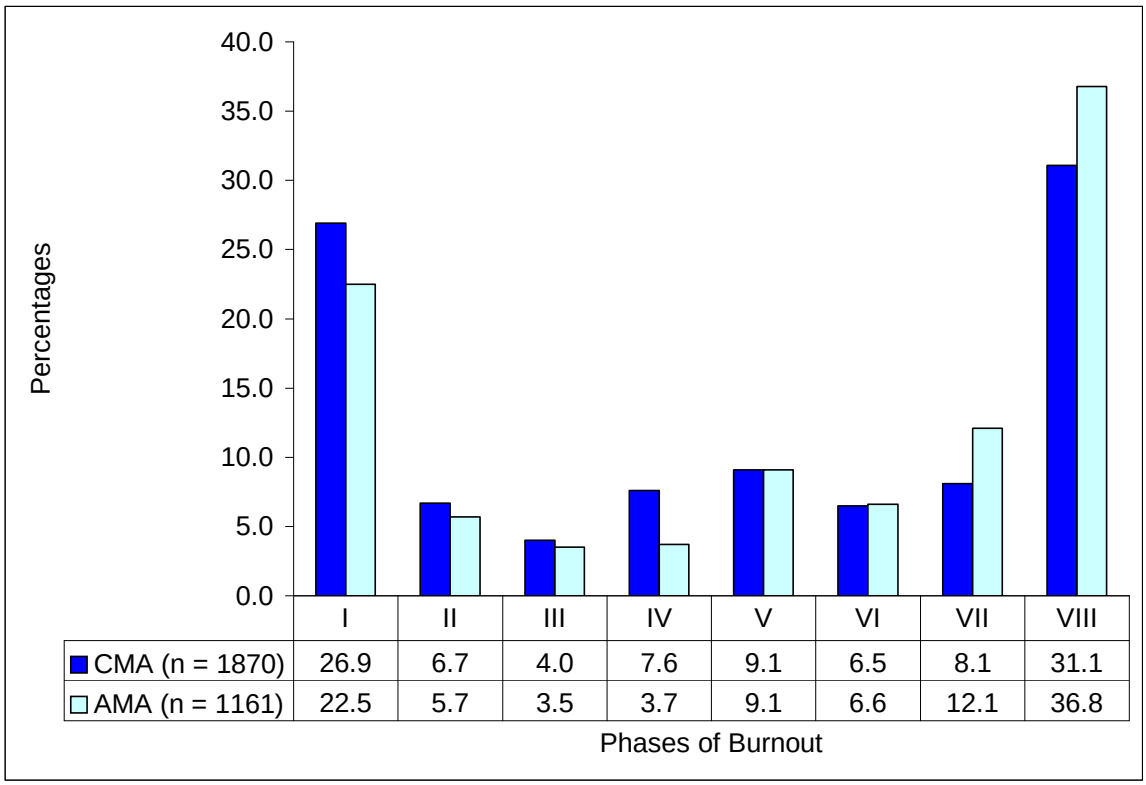


Figure 9. Phases of Burnout CMA & AMA (DPP 22, LPA 29, EEE 32)

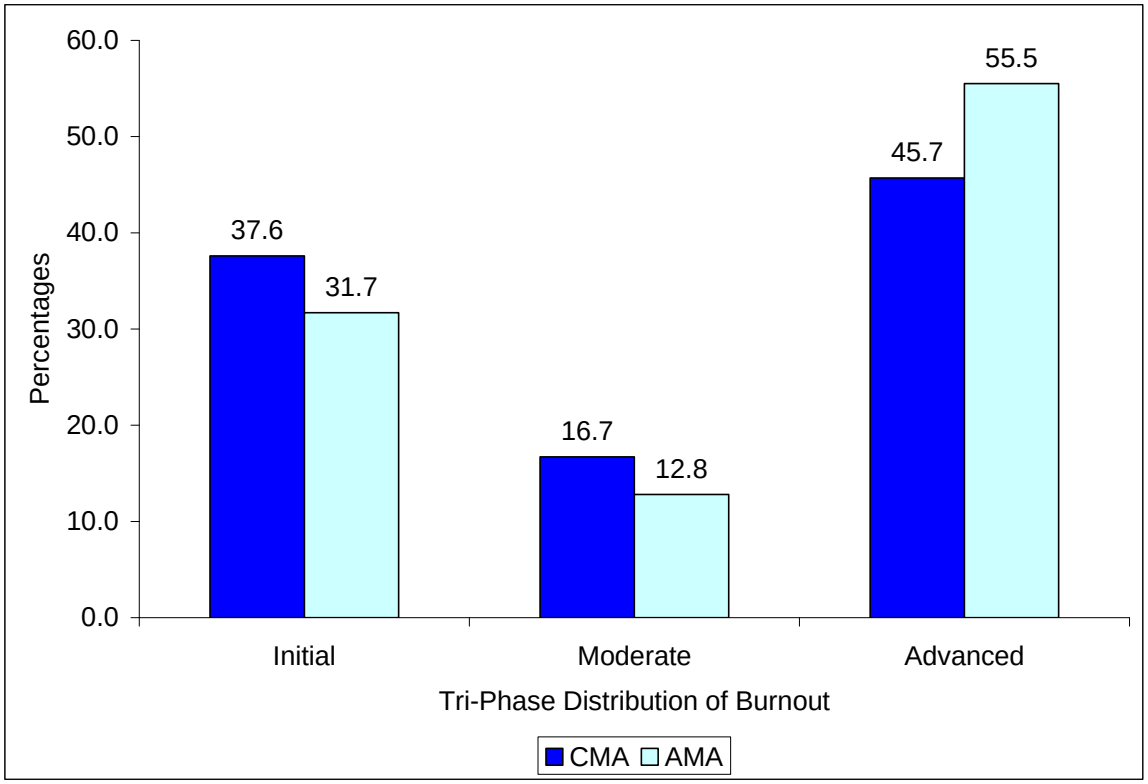


Figure 10. Tri-Phase Distribution of Burnout: CMA vs. AMA

Summary

The chapter offered a view of the demographic relationship between the respondent sample, the representative sample and the population of Canadian physicians, and an analysis of the psychometric properties of the BBQ as derived from the sample of Canadian physicians, compared with those from the Alberta physician data. Empirical results of each of the demographic variables and the workload measures were also presented. The interpretations of these results in the next chapter will incorporate the views and experiences of those physicians who supplied stress and burnout comments along with their aggregate survey responses.

CHAPTER FIVE:
Discussion and Conclusion

This chapter provides an interpretation of the Phase Model Approach and the BBQ in relation to the findings and the comment data. Possible explanations, supported by the physicians comments, for the empirical results are discussed. To conclude, some final thoughts on the state and the implications of Canadian physician burnout, the limitations of this study, and future research possibilities are presented.

Discussion of the BBQ and the Phase Model Approach

The major motivator for this research was the opportunity to provide a view of the current state of Canadian physician burnout and in doing so, to support the process of burnout recognition beyond the individual level. As the BBQ and the Phase Model Approach were the research lenses through which this state of physician burnout was viewed, an analysis of the accuracy and the relevance of the BBQ and the Phase Model Approach, and their relations to the comment information, only adds credibility to the findings.

The discussion of the Phase Model Approach and the BBQ instrument proceeds through three steps: first, an assessment of the validity of the statements in relation to the respondents' comments; second, an interpretation of the relations of the statements to their respective components, including validity and reliability; and third, an assessment of the components in relation to the larger whole.

The BBQ

Validity of the statements. An analysis of the validity of the BBQ in relation to the comments shows that a number of the statements from the instrument are echoed by the

received comments: Q22W – I have trouble living up to others' expectations, "Sometimes living up to others' expectations is the problem!"; Q22X – Work has become a real struggle for me, "…I was running on empty. I see many of my colleagues burnt out and themselves struggling"; Q22V—I really do care about my coworkers, "I do care deeply about the morale of my colleagues and they often seek my advice or ask me to mediate in various minor (and major) disputes"; Q22B – I am living a rich full life and just surviving in my work, "I feel my life is full, rich…but stressed and not particularly balanced."

Other statements from the BBQ or their inverse can be inferred from the comments: Q22J – I routinely compromise the quality of my work, "I see many of my colleagues stressed and partly because of … shortage of physicians and health care dollars frustrate us all in our ability to give top quality care"; Q22M – I can sense when other workers are having difficulties, "This problem has occurred in many of my female colleagues at age 40 especially with children at home"; Q22Z – I really enjoy the prospect of getting up and going to work every day, (inverse) "At times, these times becoming more frequent, I wish I'd never entered into medicine"; Q22C I lack the desire and creativeness to complete many tasks, (inverse) "I think I am doing a better job"; Q22Y – I feel refreshed and alert, (inverse) "By Friday evening each week, I am exhausted mentally and physically."

The matching of these statements affirms the BBQ's ability to identify different aspects of the burnout experience faced by physicians, as statements from each of the components (DPP, LPA & EEE) were represented in the comments. However, many of the statements, especially those pertaining to behaviours in the workplace, remain unexpressed in the comments. This could be because the comments focus more on the stressors and their remedies and less on the relational dynamics and every day experiences faced by physicians. In fact, aspects of the burnout experience may not be recognized by individuals as they are

overwhelmed by workload and demands. This comment suggests such: "I feel worse after completing question 22."

Interpretation of components. Given that the instrument demonstrates face validity with regard to the comments, the next step is to examine the relations of the statements to their components. The results of the factor analysis in the previous chapter (Table 6) indicate that, with both the CMA and the AMA sample of physicians, one third of the items in the instrument registered in alternate components and three items registered cross-loading tendencies. An assessment of the factor loading scores in Appendix G which include the New Zealand data and the Aboriginal data along with CMA and the AMA data suggests that an oblique rotation might be considered (Hair et al., 1998). The Aboriginal data also shows factor loading in components alternate to the other three samples. These findings could be the result of cultural influences but that is a study for the future. However, with common factor loadings occurring between the CMA data, the AMA data and the New Zealand data, description tables were created to assist in the interpretation of the current results (see Appendix H).

The first component was dominated as expected by emotional exhaustion/energy items, describing both positive and negative states of being. The second factor incorporates only positive statement from DPP and LPA, describing pleasant social feelings. The final component contains mostly negative DPP items, items describing strong reactive reactions or behaviours. One interpretation may be that the component DPP is bi-dimensional due to the differences in measuring behaviours versus feelings or attitudes. The reliability testing on the components suggests that this may be the case, as the Cronbach's Alpha scores fall into acceptable ranges for all components yet the inter-item and item-total correlations for DPP and LPA fall under conventionally accepted levels (Hair et al, 1998).

It is worth noting, as Kalliath and colleagues (2000) point out on their examination of the MBI, that "summative measures obscure the performance of individual items. Reliability is a function of the number of items and the magnitude of correlations among those items" (p. 47). The domination of some of the components by highly skewed statements, as viewed in the frequency graphs of each of the BBQ statements (Appendix F), suggests that nature of the statements should be taken into consideration when creating the summated scales. For example, the statement "I have acted in an unprofessional manner towards others in the workplace" would have different implications for physicians working in an institutionally- and publicly-scrutinized occupation as opposed to someone working in a less political and public domain. Given the interpretation of the factor analysis scores, the reliability scores and the tendency of some of the statements to produce highly skewed results, it may be worth considering adjustment of the instrument to include only the more robust items or alternately to create different component classifications. This may increase the strength of the instrument and take advantage of the many statements with high factor loading scores.

The Phase Model Approach

Component relation to phases. The third step in the model/instrument analysis is to look at the relations between the summated components and the phase model definitions. The interpretation of the component scores in relation to the overall picture of physician burnout and the Phase Model is bound to the conventions found in the burnout literature (Deckard et al, 1994, p. 749). And hence, relies on previous researchers' findings as standards for comparison in defining what is 'normal' and what is 'advanced burnout'.

By using the median splits of the phase model to assign individuals to one of the eight phases and to further categorize them using the tri-phase distribution, the definition of

advanced burnout becomes contingent on the theoretical strength of the model. The assessment of burnout in relation to 'global norms' then defines the level of the burnout. The definition of burnout using this technique appears to move away from the contextual expression of burnout associated with a 7 point scale of the interval data. For example, the meaning of depersonalization to physicians may be entirely different from that of an occupational group outside of health care, and hence the selection of scores on the 7 point scale may be different.

The use of a 1-7 Likert-type scale for the each of the statements may imply that 4 is the midpoint. It follows that an additive component score of 40 should be the midpoint for the components and the frequency graph of the components from the previous chapter (Figure 2) clearly indicates that sizable majority of the respondents have scores below the midpoint. An alternate perspective may be to view the score of 40 as a percentage of the burnout components. For example, an individual rated at 40 for EEE could be 50% emotionally exhausted. Employing the latter scenario suggests that physicians who scores in the 10 – 20 range will be displaying some signs of burnout, that is low or initial burnout. In their study of burnout among Dutch medical specialists, Visser and his colleagues (2003) employed a technique in which the continuous variables were categorized into quartiles. Using the MBI to measure burnout, "the highest quartile score for emotional exhaustion and depersonalization, and the lowest quartile score for personal accomplishment" were used as cutoffs (p. 272).

An intriguing attribute of this model is the presence of comparatively high percentages of individuals falling into both Phase I and Phase VIII as opposed to all the other phases (Mirvis, Graney, & Kilpatrick, 1999). In the initial 1986 study by Golembiewski and colleagues, the number of individuals from site B who were assigned to Phase I (n=352)

and Phase VIII (n=367) were two to three times that of the other phases which ranged from n = 107 to n = 193. (p. 34). This tendency is repeated in all of the phase assignment figures in this study. It seems reasonable to hypothesize that the essentially dichotomous categorization method may be diminishing the sensitivity of the summated components. Those individuals with mid-range scores in all three components which fall near the median split, on one side or the other, would be slotted into the extreme categories. The further study of the sensitivity of the model may be an avenue for future study.

It is recognized that arguments can be made for and against the Phase Model Approach. To balance the previous discussion, it should be noted that the Phase Model Approach offers structure to the field of burnout where ambiguity of interpretation may have existed previously. It provides functional expressions of the very complex concept of burnout which can then be compared and operationalized by practitioners. The differing phases of this model suggest that differing organizational strategies may be employed to ameliorate burnout. With these thoughts in mind, this study proceeded with the understanding that "although many technical and theoretical features remain untested with this approach, the Phase Model stands as the most comprehensive and systematic study of burnout severity and incidents to date" (Boudreau, 1998a, p. 8).

With the strengths of the BBQ and the Phase Model Approach providing a foundation for the results, an interpretation of the Canadian physician burnout levels follows.

Canadian Physician Burnout

In this study of 2251 practicing physicians, there is compelling evidence to suggest that the percentage of individuals experiencing elevated levels of burnout is beyond

acceptable limits. With the restructuring of the health care system in Canada these findings were expected (Hypothesis A). These comments reflect this situation:

> I have an increasing feeling that there is not future in the medical profession. Government, policies, medical-legal system and economics are major stresses in my professional life.
>
> We or rather you (CMA) have devalued us when compared to the other professionals so no one respects us any more. I believe dentists give themselves a 2% raise every year. Compare how much vets receive per patient visit. We need to be brought back to par with other professionals and PDQ.
>
> I find it very hard to provide the kind of care my patients deserve in the current healthcare system. If the standard returned to what is best for the patient many of our problems would disappear.
>
> In general, although I only work part-time, I am feeling an increasing "discontentment" over the last few years regarding the public's and government's appreciation for the work and service that physicians provide. … By the time I pay for my association fees, CPSO, CMPA etc. I am making almost nothing. I am also frustrated by the public's naïve embrace of alternative therapies when they return to traditional medicine when they are "really" sick. [Some physicians I know] have left for the U.S.A. and have no plans to return. Maybe I'll go too. Politicians don't have a clue; we have 10 years before the system completely falls apart; "Discontentment" = ANGER

Gender

The feeling of general malaise with regard to the health care system seems to be adding to the unique stressors faced by women physicians, as in accordance to Hypothesis B, female physicians reported higher levels of advanced burnout than male physicians. The mean score for emotional exhaustion—the dominant indicator of burnout as per the phase model and the burnout literature—was 2 points higher for female physicians (36.0 females versus 34.0 males). With the median split for the EEE component at 34, these findings indicate that comparatively more women are experiencing HI levels of the emotional exhaustion condition of burnout construct. Although the overall gender results support this hypothesis, a few interesting trends in the findings do appear with respect to the individual

phases. Men registered higher scores than women in Phase II, Phase IV, and Phase VIII, phases where either DPP is HI (refer to Figure 4). In Phase VII, where DPP is LO and EEE and LPA are both HI, females score over twice the percentage of males (13.3 female versus 6.3 males). This tendency may suggest that female physicians experience burnout in a different manner than males or that they may interpret the statements differently. Although there was no direct indication of gender in most of the comments, these comments allude to the mentioned interpretations:

> La situation actuelle est de plus en plus démotivante et les conditions de travail sont de pères empires. J'y note de plus un démotivation et des frustrations importantes de la part de mes collègues, en particulaier les femmes. [The actual situation is becoming more and more demotivating and the working conditions are getting worse. I'm noticing more demotivation and important frustrations from my colleagues, females in particular]

> Une bonne partie du stress et de la charge de travail pour mois vient du fait que je dois consilies vie de famille avec enfants et vie professionnelle. Votre sondage n'en tient pas compte. [A good portion of the stress and the workload for me comes from the fact that I must balance a family with kids and my professional life. Your survey does not take this into account.]

> I work part time (i.e. 2 full day equivalents) because I have a young family…. Perhaps the CMA should explore the stresses experienced by physicians (often female) who are trying to balance work and raising children. I've found this more stressful than full-time work.

Age

The interpretation of burnout among the age groups is less complex. As expected the age group data produced significant negative correlations with the burnout components and the phase model assignments (Hypothesis C). It is interesting to note that both the < 35 group (38.2%) and the 55 – 64 group (40.7%) registered advanced burnout scores lower than the middle groups, with 35 – 44 and 45 - 55 both over 51%. The over 64 group, as expected had substantially lower rate of advanced burnout at 22%. These figures suggest that

considerable attention should be directed towards the issues, stressors and experiences of the middle group as they make up 58.5% of the total physician population. The following comment echoes this concern:

> My practice was too stressful …. It took a major depression to make me realize that I was trying to do too much. This problem has occurred in many of my female colleagues at age 40 especially with children at home.

Although the literature suggests that the increases in experience and the ability to deal with stressful situations may come with age (Maslach et al., 2001; Skovholt, 2001), the < 35 age group showed lower levels of advanced burnout than all age groups except the over 65 group. These results may be due to attempts by medical schools to enlighten their novice medical professionals about the practical realities of medicine and the issues of burnout. This statement by a young P.E.I. physicians from a *PEI Medical Society* article supports the interpretation: " ' They are pretty good now in medical school. They teach us about burnout and how to avoid it. They tell us about the importance of looking after yourself…' " (Walker, 2002). These lower advanced burnout results for the <35 group may also be a function of the novelty of working in the profession, as Berglas so aptly phrases it: "*Striving* for success captures the essence of play, whereas *sustaining* success is work, pure and simple" (2001, p. 22, original emphasis). And as burnout is seen to be the result of chronic exposure to stress, this statement appears to be valid.

Specialty

It was expected that Medical Specialists would have higher levels of advanced burnout but the findings indicate similar results for all three specialty groups (Hypothesis D). The comments, however, suggest a different scenario. Some general practitioners or family physicians seem to be experiencing intolerable levels of burnout which in some cases forces them to resign:

> I resigned from family practice … as a direct result of unhappiness, lack of self satisfaction, reward, increasing demands out of proportion to my own sense: self worth. My life now gets all of this as a priority, my work is a far second, and I am a happier person for it, as are my loved ones.
>
> I became a full time hospitalist … and have found my stress level and work load at about 30% with a rise in net income. Approx. 30% due to lack of overhead expenses. My responses [while I was] in full-time family practice would have been much different.
>
> My stress level since I left family practice has decreased dramatically. I especially enjoy the huge decrease in paperwork. I also enjoy having time for my family and energy left over for other interests. Before this I was running on empty. I see many of my colleagues burnt out and their families and themselves struggling.
>
> I gave up my family practice at __ years. If something is not done about the walk-in clinic problem and the decline of the quality of life of the honest G.P., family practice is going to end!

Surgical specialists also revealed unacceptable stress and burnout levels:

> I feel as if at __ [age] I now have my medical practice as I wanted. But when I was doing OB and raising children it was very hard to and I'm sure my answers to your stress questions would have been very different.
>
> I generally like my job. My big stress is obstetrics, which consumes countless hours, is extremely disruptive to the rest of my life and is poorly remunerated. I plan to give it up in the not-too-distant future.
>
> Was totally burned out __ years ago …; dropped most of my obs practice and am feeling much better about things now.

One comment referred to palliative care (which falls into the medical specialist category) as being stressful:

> If you sent this [a while] ago my answers would have been very different. Since then I have quit palliative care; numerous committee meetings for which I received no remuneration, many hours with patient families, …, etc. and am much more relaxed and actually have a social life once more.

In a study of palliative physicians from the UK it was found that "burnout was more prevalent among consultants who felt insufficiently trained in communication and management skills than among those who felt sufficiently trained" (Graham et al., 1996, p.

185). The lack of communication and management skills in conjunction with changes in professional and public expectation may also be contributing to burnout among more than just palliative care physicians but evidence to that end calls for further investigation.

Consideration of both the quantitative data and the comments suggest that each specialty category has its own stressors combined with the overall stress of health care system in flux. And although the experience of burnout may differ between specialty groups, the consequences and/or remedies appear to be the same: resigning from practicing the specialty.

Practice Locale

Given that empirical and practitioner evidence suggested that rural physicians would register higher percentages of advanced burnout than urban physicians (Hypothesis E), the findings that both the descriptive statistics and the phase model percentages varied only a small degree with practice locale were unexpected. One explanation of these results could be that the restructuring of the health care system is creating changes that reduce some of the stressors of rural physicians. Examples of such could be employing nurse practitioners, implementing weekend relief programs for rural emergency rooms (Florizone, 1997) or creating programs to increase CME assess (Sempowski, Godwin & Sequin, 2002). Another and more likely explanation is that, even though some of the stressors and subsequently, the burnout experiences may be different, the dominant antecedents of burnout remain the same (e.g. workload levels).

> I was a G.P. in small town for __ years and became very burnt out (116 hours/week) …. I now do OR assisting 78 hour/week but even this is far too many hours of work, but monetary issues force the hours.

Workload

It was no surprise that overall the workload measures positively correlated with burnout measures (Hypothesis F). Many of the comments received made mention of workload as a major stressor leading to burnout:

> Because of my concerns about burnout, I have totally changed my practice and cut back my hours.

> The elements contributing to burnout for me are … very poor moral at the … clinic due to governmental funding policies and uncertainties[and]… increased demand for services (i.e. increase workload but long waiting lists and having to refuse service because of no time)

> Each year I feel I am being asked to work longer hours, take on more responsibility (sicker patients, increase laison with a multitude of community health care workers, mountains of paper work) and yet my remuneration for this increase work load and responsibility has been rewarded with clawbacks, decreased net income, increased frustration and fear of government tactics i.e. MRC, CPSO and the usual possibility of a patient induced litigation

> I find that within last few years my income has dropped and time spent working has increased…. As a result my work satisfaction has plummeted and I will probably retire earlier than I planned.

The lack of a significant correlation between professional workload (Q25) and the DPP component appears anomalous in the rest of the output and may possibly be explained by non-linear relationship. In his book, *Reclaiming the Fire: How Successful People Overcome Burnout*, Berglas describes such a situation:

> …increasing the extrinsic motivation to succeed—through incentives, pressure, demands, and the like—will improve performance up to a point commonly called an optimum level of arousal. Beyond that point, however, increasing the motivation or incentive to perform will interfere with skilled task execution and result in deteriorating levels of accomplishment. …When performance is demanded as opposed to being elicited by the prospect of feeling good about oneself, psychological satisfaction falls in direct proportion to the level of perceived extortion. (2001, p. 140)

The non-significant correlation between total hour worked/week (Q23J) and the LPA component may be produced by physicians who work part-time and still meet all the stressors they would if they were working fulltime, as this comment implies:

> In general, although I only work part-time, I am feeling an increasing "discontentment" over the last few years regarding the public's and government's appreciation for the work and service that physicians provide.

These interpretations suggest that much research still needs to be done if the stress and burnout conditions of physicians from all demographics and professional areas are to ease. Stressors contributing to increased levels of burnout that seem to be shared across these physician groups such as workload levels may be perceived differently by alternate groups. It would be interesting to analyze the burnout results from combinations of groups, for example female physicians working in the GP/FP specialty compared to those working in other broad specialties. Systemic stressors related to differences in health system policy areas and burnout levels may led to intriguing findings.

Comparison of CMA with AMA

The comparison between the results of this study and the 2002 Alberta physician data indicates approximately a 10 point difference in advanced burnout rates (CMA at 45.7% and AMA at 55.5%). Although the provincial burnout results of the CMA survey were not available for publication in this study, an initial analysis of the burnout levels of the 188 Alberta physicians showed that these results virtually mirrored those of the 2002 Alberta physicians study.

Beyond these findings, the descriptive statistics showed a substantial difference (2.6 points) between the mean scores for the EEE component. As this component is the main contributor to advanced burnout in the phase model, it is not surprising to see the variation. What is interesting, however, is the similarity in mean scores for the DPP component given

12 point difference in the maximum. In this case a graphical comparison of response frequencies may assist in explaining this phenomenon.

The question remains as to what has produced the differences in EEE scores. In the 2001 *Medical Post* article, On the Physician Burnout Road, Muriel Solomon describes the health care situation in Alberta. She points out that the health system cutbacks implemented by the Klein government created rising overhead expenses and falling incomes. She describes the endless paperwork along with the weekly surveys to be completed. She has come to the conclusion that:

> Enough is enough. Wise physicians are recognizing their limits and making health lifestyle changes. Six female physicians stopped practising in the last year. Half of them admitted to being burnout. (2001, p. 2 of 2)

This kind of anecdotal evidence along with the empirical evidence from the AMA data supports the call for further study into the status of physician burnout across provinces.

Summary

Some of the realities of life as a physician in Canada are reflected in the previous results and supporting comments. The experiences they encounter, which they enjoy or endure, underscore their perceptions of burnout. The social context in which they work contributes to their perceptions of burnout. These perceptions are reflected in the results. The following table (Table 14) offers a summary of the results of each of the hypotheses presented in this study.

Table 14. Summary of Hypotheses and Results

Hypotheses	Results
A : This sample of Canadian physicians will report a high prevalence of advanced burnout	With 45.7% of physicians reporting advanced burnout this hypothesis was supported.
B: Female physicians will report higher levels of advanced burnout than male physicians	With 47.6% of female physicians and 44.6% of male physicians reporting advanced burnout, the hypothesis was supported.
C: Advanced burnout among physicians will decrease with age	Significant negative correlations supported this hypothesis. Phase model scores indicated some discrepancy with these findings.
D: Medical Specialists will report higher levels of advanced burnout than either GP/FPs or Surgical Specialists	With 42.0% of Medical Specialists, 38.8% of GP/FPs, and 41.3% of Surgical Specialists reporting advanced burnout, this hypothesis was not adequately supported
E: Rural physicians will report higher levels of advanced burnout than urban physicians	With 46.9% of rural physicians and 45.5% of urban physicians reporting advanced burnout, the hypothesis was supported. (*Note:* definitional concerns suggest that these figures have limited validity).
F: Workload measures will be positively correlated with burnout measures	Of the 12 possible correlations between the 3 workload measures and burnout measures, 10 register significant correlations. For the most part, this hypothesis was supported.

These results provide a foundation for continued research and a platform for action with regard to physician health and well-being. The following conclusion section outlines some implications of physician burnout and some possible methods of understanding and interpreting burnout in the future.

Conclusion

Physician Burnout – Implications for Health

With advanced burnout levels for Canadian physicians at 45.7%, one cannot help but wonder how burnout is affecting, not only the quality of life for physicians and the morale of the profession, but also the quality of care for patients relying on their judgments and advice. The corollary question is: At what stage in the burnout process do physician become impaired? According to Mawardi (1983),

> impairment and burnout are not identical concepts, although they are closely related. Physical impairment occurs when medical, physical, or psychological conditions impinging upon the physician cause a deviation from the delivery of optimum medical care. The impairment may be temporary or chronic. Burnout is a more pervasive phenomenon that affects both personal and professional aspects of a physician's life; it results in a state of emotional, physical, and attitudinal depletion. Burned out physicians are less satisfied with their work. Ultimately, this may take a toll on the physician and can be a significant precursor to physician impairment (p. 121).

Mawardi's definition of burnout is complementary to the definition used in this study. The measure of "deviation from the delivery of optimal medical care," however, can be a more contentious issue when viewed from many stakeholder perspectives. Although this study did not focus on levels of impairment or of optimal care, some of the statements in the BBQ did allow physicians the opportunity to report on the quality of their work: Q22J – I routinely compromise the quality of my work; Q22DD – At times, I question my own competence and wonder about my ability to do the job. Further study of the relations between these statements and other components of the BBQ may reveal interesting results.

Another aspect of physician burnout relates to the ability to understand and cope with burnout experiences. Studies have shown that "physicians' personal health habits may strongly affect their clinical practice" and for patients, this means physicians may take a more active role in counselling stress and burnout prevention (Frank, 2002, p.15; Skinner, 2001).

With 75 – 90 percent of "visits to primary care physicians…for stress related problems" (Arden, 2002, p. 22), promoting healthy work- and life-styles for physicians may produce positive health outcome for patients and relieve some of the burden on the health care system.

Promoting healthy work- and life-styles for physicians requires attention at multiple levels: the person, the work itself, organizational contexts, and the "extraorganizational environment" (Williams et al., 2001, p. 8). It also requires changing the way burnout is viewed, to "move away from a disease model and [to] focus on positive functioning" (Yamey, Wilkes, Wells, & Marshall, 2001, p. 253). It requires changing the medical perception of burnout as a "stigma of vulnerability" (Berglas, 2001, p. 105). As Gagnon (2001) states: "The culture has to change from one of being tough to one where it's OK to take care of yourself." (p. 1)

Limitations of the Study

As with most studies employing self-report, self-administered surveys, this research met with some limitations. One of the key concerns was response rates. Although a response rate of 29% for the PRQ is acceptable (Baruch, 1999), it was lower than previous years. With the unfortunate SARS outbreak in Ontario during the time period when the data was being collected, it was thought that this may cause lower than normal response rates from Ontario. The demographic results from Table 3 (page 45) suggest that this was not the case. In fact, the response rates for Ontario were up slightly. It is possible that the added burden on the medical profession in Ontario due to the SARS outbreak may have increased burnout results of the overall physicians sample and possibly inflated the urban burnout scores in the areas hardest hit by the outbreak. The impact of this extraneous independent variable may be revealed through close scrutiny of burnout results from the SARS affected

areas in comparison with other areas of Ontario. It is also possible that physicians who are experiencing extreme levels of burnout may not have filled out the survey. This implies that the reported advanced burnout levels are greater than those reported.

A serious limitation of this study arose due to problems in defining practice locale, rural/urban. Statistics Canada has outlined the methodology for categorizing rural areas by specific postal codes for each province (du Plessis, Beshiri, Bollman, & Clemenson, 2001). Given the difference in the allocation of postal codes in some provinces, the rural/urban designation produced by the CMA did not coincide with those defined by Statistics Canada. Because of this discrepancy in methodologies, the burnout results for practice locale in this study are presented with some consternation. It is felt, however, that the study of rural physician burnout is an important area to pursue and the removal of this hypothesis from the study would be far more limiting. The pronouncement that the results are questionable due to methodological concerns may initiate action toward finding a consensual definition of rural for future research.

Another limiting feature of this study is the categorization of the broad specialties. The large number of specialities in the broad category of Medical Specialists make it difficult to glean any difference between the professional specialties such as oncology, emergency medicine or paediatrics. Perhaps dividing the Medical Specialists category into smaller units for comparison would offer new insight into burnout levels.

These limitations, although restricting for this study, do provide suggestions and opportunities for future research into the experience of burnout and it surrounding context and consequences.

Directions for Future Research

The national base of this study creates a broad lens to view recent, more specific burnout research on physicians in Canada, such as "Cancer care workers in Ontario" (Grunfeld et al., 2000); burnout of physicians working in remote and isolated Canadian communities (Thommasen et al., 2001); problems facing rural physicians in Saskatchewan (Florizone, 1997). In turn these studies aid in establishing context and providing explanations for comparison with international studies investigating specialty and gender distinctions associated with stress and burnout (McManus, Winder, & Gordon, 2002; McMurray et al., 2000).

Beyond these possible comparisons between differing physician populations, opportunities exist to delve further into the measurement, evaluation and impact of physician burnout. Some future research opportunities have been mentioned in the previous chapters. These are recapped in the following list, along with new possibilities:

- A study of physician burnout rates by province
- A study of the relation between impairment and burnout
- Both quantitative and qualitative investigations of the differences between demographic groups.
- An investigation of median splits and hypothetical or empirical norms for the profession in question.
- Continued research to explore and verify the strengths of the BBQ and possible reformulation of burnout components.
- A study of alternate indicators of burnout revealed by the componential analysis.

Another area of research not reviewed in this study or attended to with the CMA PRQ, although mentioned numerous times in the respondents comments, is influence of family demands and supports on physician burnout levels.

> I work part time (i.e. 2 full day equivalents) because I have a young family and was unable (financially) to take more than 3 months' maternity leave. Perhaps the CMA should explore the stresses experienced by physicians (often female) who are trying to balance work and raising children. I've found this more stressful than full-time work.

This quotation reveals some of the difficulties in containing the study of burnout to work related stressors and outcomes. Burnout, as it progresses, pervades the lives of individuals and can affect the quality of home life as well as the quality of work life.

Final Thoughts

The main purpose of this study was to produce a view of the state of physician burnout in Canada. The picture was not a pleasant one. Many physicians across Canada, regardless of their gender, age, specialty or practice locale, are experiencing advanced levels of burnout. The repercussions of this state of physician burnout may be hardest felt in the time to come. Individual physicians may continue to choose to cope with their burnout situations by reducing hours, limiting their specializations, relocating or by leaving medicine altogether. The impact these decisions will have on the future of health care in Canada needs to be addressed.

It is my hope that this study will, in some way, draw attention to the issues of burnout faced by Canadian physicians, and promote positive changes in the health care system to reduce burnout levels. Changes in the system, however, will require active commitment on the part of individuals, organizations, and governments alike.

Afterward

During the writing of this project, the advanced burnout levels of Canadian physicians were released to the public. In this news release, the president of the CMA, Dr. Dana Hanson announced the launch of the Centre for Physician Health and Well-Being (CMA, 2003c). Through these actions, the CMA is responding to the issue of burnout and recognizing it as a real and devastating hazard for Canadian physicians and others serving in the health care sector. The August 19, 2003 New Release can be seen in Appendix I.

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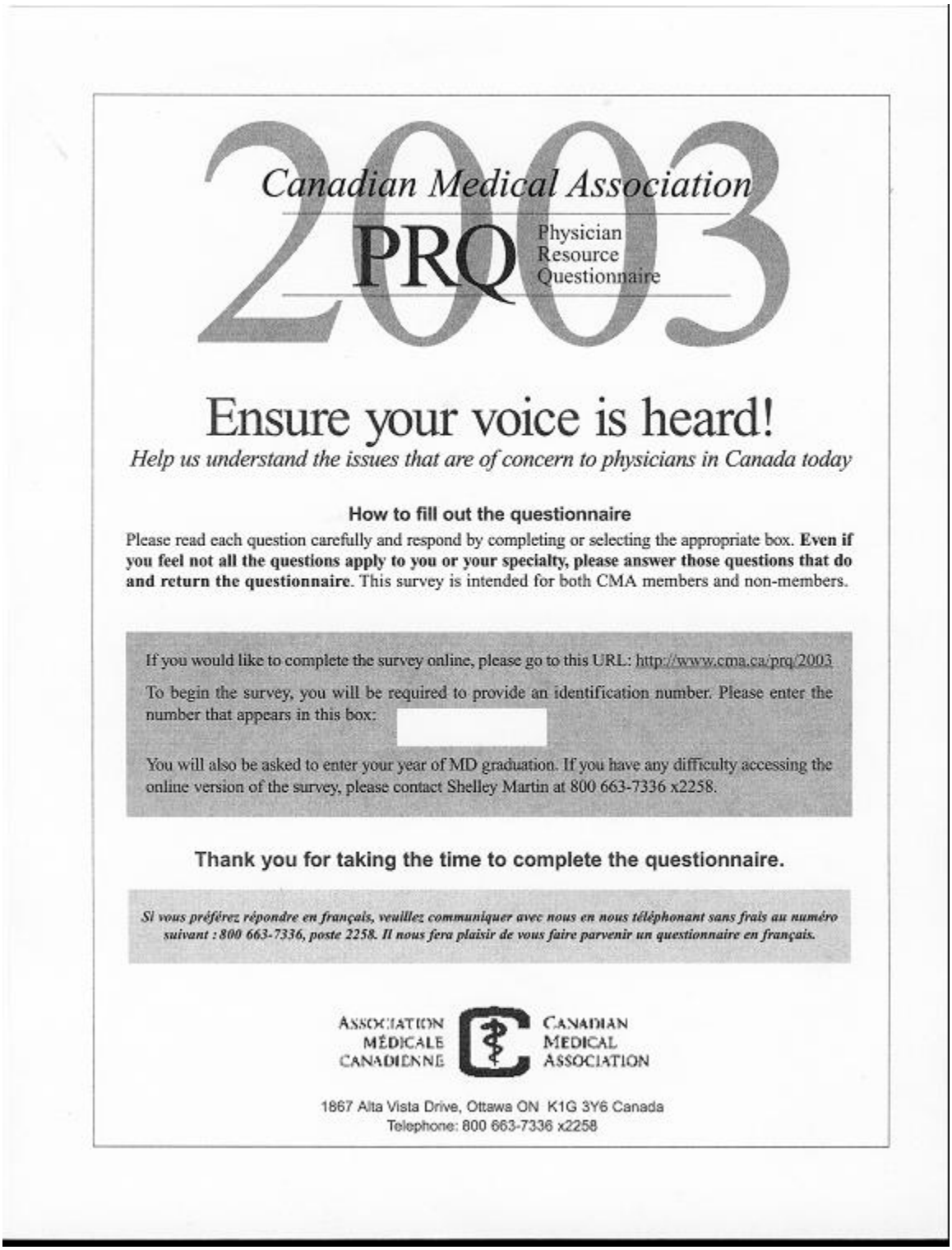
APPENDICES

Appendix A: CMA PRQ 2003



2003

Canadian Medical Association

PRQ Physician Resource Questionnaire

Ensure your voice is heard!

Help us understand the issues that are of concern to physicians in Canada today

How to fill out the questionnaire

Please read each question carefully and respond by completing or selecting the appropriate box. **Even if you feel not all the questions apply to you or your specialty, please answer those questions that do and return the questionnaire**. This survey is intended for both CMA members and non-members.

If you would like to complete the survey online, please go to this URL: http://www.cma.ca/prq/2003

To begin the survey, you will be required to provide an identification number. Please enter the number that appears in this box:

You will also be asked to enter your year of MD graduation. If you have any difficulty accessing the online version of the survey, please contact Shelley Martin at 800 663-7336 x2258.

Thank you for taking the time to complete the questionnaire.

Si vous préférez répondre en français, veuillez communiquer avec nous en nous téléphonant sans frais au numéro suivant : 800 663-7336, poste 2258. Il nous fera plaisir de vous faire parvenir un questionnaire en français.

ASSOCIATION MÉDICALE CANADIENNE

CANADIAN MEDICAL ASSOCIATION

1867 Alta Vista Drive, Ottawa ON K1G 3Y6 Canada
Telephone: 800 663-7336 x2258

Association Médicale Canadienne / Canadian Medical Association

This questionnaire is to be filled out **ONLY** by physicians who have completed their formal medical education and who are **currently**:

- ☐ in active practice *and/or*
- ☐ employed in any medical or medically related field *or*
- ☐ on a leave of absence

If you **DO NOT** fall into any of these categories, please indicate your status below and **return uncompleted** questionnaire. *Thank you.*

☐ Medical student ☐ Resident ☐ Retired
☐ Other *(please specify)*

Information Technology

1. Do you use a personal digital assistant or wireless device *(e.g. Palm Pilot)* in clinical practice?
☐ Yes ☐ No ☐ Don't know ☐ Not applicable

2. How often do you refer your patients to Web sites containing medical information?
☐ Daily ☐ Weekly ☐ Monthly ☐ Occasionally ☐ Never ☐ Not applicable

3. How often do your patients present to you medical information obtained on the Internet?
☐ Daily ☐ Weekly ☐ Monthly ☐ Occasionally ☐ Never ☐ Not applicable

4. Does your practice currently have a Web site?
☐ Yes ☐ No ☐ Don't know ☐ Not applicable

5. Do you **personally** use the Internet?
☐ Yes ☐ No *(please skip to question 7)*

6. Considering all activities on the Internet, where do you spend the most time online?
☐ Home ☐ Office/clinical practice ☐ Hospital ☐ Other *(please specify)*

7. Do you currently have Internet access at your office or clinical practice?
☐ Yes ☐ No ☐ Don't know

8. Do you use the Internet as a tool or source of information **in clinical practice** (i.e. to support treatment or in direct patient care)?
☐ Yes *(please answer question 9)* ☐ No *(please skip to question 10)*
☐ I am not in clinical practice *(please skip to question 12)*

9. How do you use the Internet as a tool or source of information in clinical practice? *Please select all that apply.*

- ☐ Refer to online clinical practice guidelines
- ☐ Search medical literature databases (e.g. MEDLINE)
- ☐ Refer to online drug databases
- ☐ Download patient handouts
- ☐ Visit other physicians' Web sites
- ☐ Read online medical journals
- ☐ Read online medical textbooks
- ☐ Receive secure patient-specific information
- ☐ Other *(please specify)*

Please proceed to question 12

10. If you do not currently use the Internet in your clinical practice, please tell us why you do not do so. *Please select all that apply.*

- ☐ Novice or inexperienced user
- ☐ Not aware of any good sites
- ☐ No valuable content available on the Web
- ☐ Too slow/disruptive to practice
- ☐ No computers in examining rooms
- ☐ Costs outweigh benefits
- ☐ No access to Internet service at clinical practice
- ☐ Other *(please specify)* _____

11. If you do not currently use the Internet as a tool or source of information in your clinical practice, what would encourage you to start doing so? *Please select all that apply.*

- ☐ Financial incentives
- ☐ Remuneration for Web-based clinical activities
- ☐ Information relevant to my practice
- ☐ Access to tools that help me in my practice
- ☐ Ability to evaluate the effectiveness of using the tool
- ☐ Recommendations from credible source(s)
- ☐ Links to CME
- ☐ Training
- ☐ Technical support
- ☐ Help Desk services to facilitate online searches
- ☐ Other *(please specify)* _____
- ☐ Nothing will encourage me to use the Internet in clinical practice

Monthly On-Call Activities

12. Do you take **call** and/or **shared call**?

*By **call** we mean being on standby (either on-site, e.g. emergency room, or by phone/pager) for your own patients/consultations and by **shared call** we mean being on standby for patients/consultations other than your own.*

☐ Yes ☐ No *(please skip to question 22)*

13. Estimate total hours of **shared call** only (i.e. being on call for a group or for a facility) in an average month (assuming 720 hours/month).

_____ hours/month

14. Thinking of your total hours of **shared call**, what proportion of your time do you spend on-call on behalf of the following:

	% of total on-call time per month
A defined group of physicians .....%	
A hospital or other health care facility.....%	
Simultaneous call for a group *and* a facility.... %	
Other *(please specify)*_____%	
Total on-call time (%100)	

15. In **addition** to the time spent in q13, **or** if q13 is not applicable, how many **extra** hours per month are you on call for your own patients **only**? **Q13 + Q15 should not exceed 720 hours.**

_____ hours/month

16. Considering all your call responsibilities, please indicate the situations where you provide call services.

	Provide call services on behalf of:		
	Your own patients	A group of physicians	A facility or community
Being available by phone or pager	☐	☐	☐
Being available on-site (including emergency)	☐	☐	☐
Checking with answering service or voice mail	☐	☐	☐
Other *(please specify)*_____	☐	☐	☐

17. Are you **ever** compensated for the service of being on call? (i.e. for being available by phone or pager, being available on-site, or being available in some other manner)

☐ Yes ☐ No *(please skip to question 19)*

18. If yes, please indicate the situations where you are **paid** for the service of being on call.

	Paid for being on call on behalf of:		
	Your own patients	A group of physicians	A facility or community
Being available by phone or pager	☐	☐	☐
Being available on-site (including emergency)	☐	☐	☐
Checking with answering service or voice mail	☐	☐	☐
Other *(please specify)*_____	☐	☐	☐

19. How are you compensated for the **provision of medical services** while on call? *(Please check all that apply.)*

☐ Regular fee-for-service rate
☐ Separate on-call fee-for-service rate
☐ Regular sessional/hourly rate
☐ Separate on-call sessional/hourly rate
☐ Included in salary
☐ Other *(please specify)*

20. Thinking of the services you provide **while on-call**, how many **patients** do you attend on an **on-call basis** in an average month? Do **NOT** include regularly scheduled patients on weekdays or weekends.

_____ on-call patients/month

21. Thinking of the services you provide **while on-call**, how many **hours** in an average month do you spend attending to the needs of the **on-call patients** you specified in q20?

_____ hours/month

Professional Stress and Burnout

This question will allow us to measure the degree of job stress and burnout among physicians, and with the collaboration of an outside researcher, to compare aggregate results to other professions and occupations. Please be assured that your responses to these questions (as well as to the entire questionnaire) are anonymous, and that results will be published only at an aggregate level. If you prefer not to answer the stress and burnout questions, please proceed to question 23.

22. The following 30 statements* refer to experience in your work and in your job. Using the 1-7 rating scale, circle the most appropriate number based on the degree to which that statement is currently FALSE or TRUE for you. A "1" indicates that the item is completely FALSE and untrue about you. A "7" indicates that the statement is absolutely TRUE about you.

	False						True
I handle work pressures better than most	1	2	3	4	5	6	7
I am living a rich, full life and not just surviving in my work	1	2	3	4	5	6	7
I lack the desire and creativeness to complete many tasks	1	2	3	4	5	6	7
I try to encourage and support a collaborative work culture	1	2	3	4	5	6	7
I feel comfortable with the way I treat others in the workplace	1	2	3	4	5	6	7
At the end of the workday I simply have nothing left to give	1	2	3	4	5	6	7
I am still tired, even after a vacation or break away from work	1	2	3	4	5	6	7
I regularly have emotional outbursts at work	1	2	3	4	5	6	7
I believe I am helping build a better life for others through the work I do	1	2	3	4	5	6	7
I routinely compromise the quality of my work	1	2	3	4	5	6	7
I feel alienated and detached from my co-workers	1	2	3	4	5	6	7
I wish I could relax more	1	2	3	4	5	6	7
I can sense when other workers are having difficulties	1	2	3	4	5	6	7
I empower others to succeed	1	2	3	4	5	6	7
I have acted in an unprofessional manner towards others in the workplace	1	2	3	4	5	6	7
Working with people is exhilarating for me	1	2	3	4	5	6	7
All who work with me appreciate the consistent effort I bring to the job	1	2	3	4	5	6	7
I wish I was more tolerant of others in my job	1	2	3	4	5	6	7
I enjoy working on a team	1	2	3	4	5	6	7
I am tired of having to solve other people's problems	1	2	3	4	5	6	7
I have trouble living up to others' expectations	1	2	3	4	5	6	7
I really do care about my co-workers	1	2	3	4	5	6	7
At times, the constant change in available information and technologies interferes with my ability to get my job done	1	2	3	4	5	6	7
Work has become a real struggle for me	1	2	3	4	5	6	7
I feel refreshed and alert	1	2	3	4	5	6	7
I really enjoy the prospect of getting up and going to work every day	1	2	3	4	5	6	7
I readily acknowledge the contributions of my co-workers	1	2	3	4	5	6	7
I maintain a consistently high energy flow throughout the workday	1	2	3	4	5	6	7
I treat people as objects or things to be manipulated in the workplace	1	2	3	4	5	6	7
At times, I question my own competence and wonder about my ability to continue to do the job	1	2	3	4	5	6	7

* ©Bob Boudreau

Professional Activities

23. **Excluding on-call activities**, how many **hours in an average week** do you usually spend on the following activities? *Assume each activity is mutually exclusive for reporting purposes, i.e. if an activity spans two categories, please report hours in only one category.*

a) **direct patient care** regardless of setting (in-patient, ambulatory and day care, non-hospital practice) _____ hours/week

b) **health facility committees** _____ hours/week

c) **managing your practice** (staff, facility, equipment, etc.) _____ hours/week

d) **other indirect patient care** (charting, reports, phone calls, meeting family, etc.) _____ hours/week

e) **research** (including management of research and publications) _____ hours/week

f) **administration** (management of university program, preceptorships, chief of staff, department head, Ministry of Health, etc.) _____ hours/week

g) **teaching** (contact with students/residents, preparation, marking, reports, etc.)

Note: if time spent performing rounds is reported in a) above, do not include here _____ hours/week

h) **continuing medical education** (courses, reading, videos, tapes, seminars, etc.) _____ hours/week

i) **other** (participation in professional or specialty organizations, medico-legal activities, etc.) _____ hours/week

SUM of 23a through 23i **TOTAL HOURS WORKED PER WEEK** _____ hours/week

24. Including time spent on continuing medical education, how many **weeks** do you usually **work** in a 12-month period? [ ] weeks/year

25. During the last 12 months, has your professional workload:

☐ Increased ☐ Stayed about the same ☐ Decreased

26. Do you participate in health care decision-making activities (e.g. hospital or regional medical advisory committee) outside of your immediate practice environment?

☐ Yes ☐ No *(please proceed to question 28)*

27. If yes, how many hours **per month** do you usually spend at activities at the following organizational levels?

a) community hospital / local organization _____ hours/month

b) regional health authority _____ hours/month

c) provincial/territorial organization / government _____ hours/month

d) national organization / federal government _____ hours/month

e) other *(please specify)*_____ _____ hours/month

Practice Setting and Remuneration

28. Which of the following best describes your practice setting?

☐ Non-clinical practice *(e.g. administration)*

☐ Solo clinical practice (no shared expenses)

☐ Hospital-based clinical practice *(e.g. emergency room physician)*

☐ Group clinical practice

☐ Locum

☐ Other *(please specify)*_____

If you are not in group practice, please skip to question 31.

29. In your group clinical practice, do you

☐ Share expenses only ☐ Share patients only ☐ Share patients AND expenses

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Professional Activities

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a) **direct patient care** regardless of setting (in-patient, ambulatory and day care, non-hospital practice) _____ hours/week

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d) **other indirect patient care** (charting, reports, phone calls, meeting family, etc.) _____ hours/week

e) **research** (including management of research and publications) _____ hours/week

f) **administration** (management of university program, preceptorships, chief of staff, department head, Ministry of Health, etc.) _____ hours/week

g) **teaching** (contact with students/residents, preparation, marking, reports, etc.)

Note: if time spent performing rounds is reported in a) above, do not include here _____ hours/week

h) **continuing medical education** (courses, reading, videos, tapes, seminars, etc.) _____ hours/week

i) **other** (participation in professional or specialty organizations, medico-legal activities, etc.) _____ hours/week

SUM of 23a through 23i **TOTAL HOURS WORKED PER WEEK** _____ hours/week

24. Including time spent on continuing medical education, how many **weeks** do you usually **work** in a 12-month period? ☐ weeks/year

25. During the last 12 months, has your professional workload:

☐ Increased ☐ Stayed about the same ☐ Decreased

26. Do you participate in health care decision-making activities (e.g. hospital or regional medical advisory committee) outside of your immediate practice environment?

☐ Yes ☐ No *(please proceed to question 28)*

27. If yes, how many hours **per month** do you usually spend at activities at the following organizational levels?

a) community hospital / local organization _____ hours/month

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Practice Setting and Remuneration

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☐ Group clinical practice

☐ Locum

☐ Other *(please specify)*_____

If you are not in group practice, please skip to question 31.

29. In your group clinical practice, do you

☐ Share expenses only ☐ Share patients only ☐ Share patients AND expenses

30. Number of physicians in your group clinical practice:

☐ 2 ☐ 3 to 5 ☐ 6 to 15 ☐ more than 15

31. In the last 12 months, approximately what proportion of earned professional income did you receive from each of the following **methods**? *Total should equal 100%.*

Fee-for-service (insured and uninsured services) . . . . . _____%
Salary . . . . . _____%
Capitated rate per patient . . . . . _____%
Sessional/hourly . . . . . _____%
Other *(e.g. contract, honoraria) please specify* _____ _____%
Total 100 %

32. If you had a choice, how would you prefer to be paid for your services as a physician? *(please check one only)*

☐ Fee-for-service
☐ Salary (including pension, benefits)
☐ Capitated rate per patient
☐ Blended *(e.g. fee-for-service + salary) please explain:*_____
☐ Sessional/hourly
☐ Other *(please specify)*_____

33. During the last 12 months, have your overhead expenses:

☐ increased
☐ stayed about the same
☐ decreased
☐ not applicable

34. During the last 12 months, has your net professional income *(i.e. after overhead, before taxes)*:

☐ increased
☐ stayed about the same
☐ decreased

Pharmaceuticals

35. In the past year, how often have your patients asked you to prescribe specific drugs that they have seen advertised on television or in print media?

☐ Daily
☐ Weekly
☐ Monthly
☐ Occasionally
☐ Never *(skip to question 37)*
☐ Not applicable *(skip to question 37)*

36. In general, how would you describe the impact that these requests have had on the doctor–patient relationship?

☐ Very positive
☐ Somewhat positive
☐ Neither positive nor negative
☐ Somewhat negative
☐ Very negative

Comments_____

37. There are two approaches to the mass media dissemination of pharmaceutical information to consumers:
(1) direct-to-consumer advertising (DTCA) is advocated by some pharmaceutical companies and would profile a single drug.

(2) direct-to-consumer information (DTCI) would profile a number of alternatives for treatment, potentially including more than one pharmaceutical product as well as lifestyle considerations.

Thinking about mass media dissemination of pharmaceutical information to consumers, which of the above approaches do you favour?

☐ I prefer the direct-to-consumer advertising approach
☐ I prefer the direct-to-consumer information approach
☐ I have no preference for one approach over the other
☐ I do not like either approach
☐ No opinion

Comments_____

38. During the past 12 months, how often have drug formularies led you to prescribe a particular drug when you would have preferred to prescribe a different one?

☐ Daily ☐ Weekly ☐ Monthly ☐ Occasionally ☐ Never ☐ Not applicable

Demographics

39. Year of MD graduation _____

40. Year of birth _____

41. ☐ Male ☐ Female

42. Marital Status

- ☐ single, separated, divorced or widowed *(please skip to question 44)*
- ☐ married, common-law, living with partner

43. Is your spouse/partner a physician?

☐ Yes ☐ No

44. Specialty

- ☐ General practice/family medicine
- ☐ Other specialty *(please specify)*

_____

45. In what setting is the majority of your practice conducted? *Please check one only.*

☐ Urban ☐ Rural ☐ Remote

46. In which province do you practice? _____

Comments

Please be assured that your response to this survey is anonymous, and that all individual information will be held in the strictest confidence. Analysis and publication of results will be at the aggregate level only.

The identification number on the cover page is for mailing purposes only and has no correlation to any existing CMA ID. Our long-standing printing and processing agent assigns the PRQID numbers as part of a double blind-type method for ensuring the anonymity of responses. There is no mechanism for matching the data files generated from completed questionnaires to individual names or addresses, and our agent is contractually bound to adhere to the highest privacy standards. Should you wish additional information about the PRQ anonymization technique, please contact Shelley Martin at 800 663-7336 x2258.

Thank you for your time and cooperation.

Appendix B: Definition of Rural

http://www.statcan.ca/english/freepub/21-006-XIE/21-006-XIE01003.pdf

Rural and Small Town Canada Analysis Bulletin Catalogue no. 21-006-XIE
Vol. 3, No. 3 (November 2001)

DEFINITIONS OF RURAL

Valerie du Plessis, Roland Beshiri and Ray D. Bollman, Statistics Canada and Heather Clemenson, Rural Secretariat, Agriculture and Agri-Food Canada

HIGHLIGHTS

♦ Several alternative definitions of "rural" are available for national level policy analysis in Canada.

♦ For each rural issue, analysts should consider whether it is a local, community or regional issue. This will influence the type of territorial unit upon which to focus the analysis and the appropriate definition to use.

♦ Different definitions generate a different number of "rural" people.

♦ Even if the number of "rural" people is the same, different people will be classified as "rural" within each definition.

♦ Though the characteristics of "rural" people are different for each definition of "rural", in general, each definition provides a similar analytical conclusion.

Our recommendation

We strongly suggest that the appropriate definition should be determined by the question being addressed; however, if we were to recommend one definition as a starting point or benchmark for understanding Canada's rural population, it would be the **"rural and small town"** definition. This is the population living in towns and municipalities outside the commuting zone of larger urban centres (i.e. outside the commuting zone of centres with population of 10,000 or more).

Box B: Alternative Definitions of Rural

Sources: Ehrensaft, Philip (1990); Ehrensaft, Philip and Jennifer Beeman (1992); McNiven, Chuck, Henry Puderer and Darryl Janes (2000); Mendelson, Robert and Bollman, Ray D. (1998); OECD (1994); Statistics Canada (1999a); and Statistics Canada (1999b).

Definition Main Criteria, Thresholds and Building Blocks

Census "Rural Area" • **Population Size**: Population living *outside* places of 1,000 people or more; *OR*

• **Population Density:** Population living *outside* places with densities of 400 or more people per square kilometre.

• **Building Blocks:** EAs

"Rural and Small Town" (RST) Census Metropolitan Area and Census Agglomeration Influenced Zones (MIZ)

• **Labour Market Context**: Population living *outside* the main commuting zone of larger urban centres (of 10,000 or more).

[Specifically, RST refers to the **non-CMA/CA population**, where a CMA is a census metropolitan area and a CA is a census agglomeration. A CMA has an urban core population of 100,000 and over (and a CA has an urban core population of 10,000 to 99,999) and CMAs and CAs include all neighbouring

municipalities where 50 percent or more of the workforce commutes to the urban core (see Statistics Canada (1999a) for details)].

- **Labour Market Context:** MIZ disaggregates the RST population into four sub-groups based on the size of commuting flows to any larger urban centre (of 10,000 or more)
- **Building Blocks**: CSDs (for RST and MIZ)

OECD "Rural Communities"

- **Population Density**: Population in communities with densities less than 150 people per square kilometre.
- **Building Blocks**: CCSs

OECD "Predominantly Rural Regions"

- **Settlement Context**: Population in regions where more than 50 percent of the people live in an OECD "rural community."
- **Building Blocks**: CDs

"Non-Metropolitan Regions" (Beale Code Approach)

- **Settlement Context**: Population living outside of regions with major urban settlements of 50,000 or more people. Non-metropolitan regions are subdivided into three groups based on settlement type and a fourth based on location in the North. The groups based on settlement type are further divided into "metropolitan adjacent" and "not adjacent" categories.
- **Population Size:** Non-metropolitan regions include urban settlements with populations of less than 50,000 people and regions with no urban settlements (where "urban settlements" are defined as places with populations of 2,500 or more)
- **Building Blocks**: CDs

"Rural" Postal Codes

- **Rural Route Delivery Area**: Areas serviced by rural route delivery from a post office or postal station. "0" in second position of a postal code denotes a "rural" postal code (also referred to as "rural" forward sortation area ("rural" FSA)). In 1996, there were 1,467 FSAs in Canada of which 192 were rural FSAs.
- **Building Blocks**: Canada Post Geography.

Percent distribution of physicians by age, sex and province/territory, Canada 2003

Age	Sex	CANADA	NL	PE	NS	NB	QC	ON	MB	SK	AB	BC	YT	NT	NU
< 35	Female	50.9%	51.8%	47.4%	45.3%	57.6%	61.7%	44.8%	36.9%	45.5%	46.0%	50.1%	40.0%	0.0%	50.0%
	Male	49.1%	48.2%	52.6%	54.7%	42.4%	38.3%	55.2%	63.1%	54.5%	54.0%	49.9%	60.0%	0.0%	50.0%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%
35 - 44	Female	40.5%	31.2%	29.6%	41.4%	36.4%	49.8%	37.5%	33.3%	28.6%	37.0%	38.5%	39.1%	64.7%	75.0%
	Male	59.5%	68.8%	70.4%	58.6%	63.6%	50.2%	62.5%	66.7%	71.4%	63.0%	61.5%	60.9%	35.3%	25.0%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
45 - 54	Female	34.5%	28.7%	21.9%	31.8%	25.4%	33.5%	31.5%	29.6%	28.6%	29.5%	28.5%	31.3%	38.1%	50.0%
	Male	69.0%	71.3%	78.1%	68.2%	74.6%	66.5%	68.5%	70.4%	71.4%	70.5%	71.5%	68.8%	61.9%	50.0%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
55 - 64	Female	17.2%	14.9%	14.6%	17.9%	12.3%	14.5%	19.4%	17.9%	15.0%	16.4%	17.7%	0.0%	20.0%	50.0%
	Male	82.8%	85.1%	85.4%	82.1%	87.7%	85.5%	80.6%	82.1%	85.0%	83.6%	82.3%	85.7%	80.0%	50.0%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
65 +	Female	9.8%	2.7%	5.3%	11.3%	9.6%	8.6%	11.9%	9.7%	7.1%	8.6%	7.0%	0.0%	0.0%	100.0%
	Male	90.2%	97.3%	94.7%	88.7%	90.4%	91.4%	88.1%	90.3%	92.9%	91.4%	93.0%	100.0%	100.0%	0.0%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Unknown Age	Female	27.9%	22.2%	50.0%	15.4%	25.0%	30.9%	26.4%	28.4%	18.6%	17.6%	29.9%	0.0%	0.0%	0.0%
	Male	72.1%	77.8%	50.0%	84.6%	75.0%	69.1%	73.6%	71.6%	81.4%	82.4%	70.1%	100.0%	100.0%	100.0%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
TOTAL	Female	30.4%	27.7%	23.6%	30.7%	28.7%	34.6%	29.1%	27.5%	25.0%	29.7%	28.1%	32.2%	41.5%	58.3%
	Male	69.6%	72.3%	76.4%	69.3%	71.3%	65.4%	70.9%	72.5%	75.0%	70.3%	71.9%	67.8%	58.5%	41.7%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Excludes residents and physicians over age 80; includes non-clinicians

Source: CMA Masterfile, January 2003, Canadian Medical Association

Number of general practitioners/family physicians by age, sex and province/territory, Canada, 2003

AGE	SEX	CANADA	NL	PE	NS	NB	PQ	ON	MB	SK	AB	BC	NT	YT	NU
< 35	Female	1,838	42	8	45	68	657	514	60	62	193	183	4	1	1
	Male	1,474	44	9	48	40	311	487	99	73	206	151	5	0	1
	Total	3,312	86	17	93	108	968	1,001	159	135	399	334	9	1	2
35 - 44	Female	4,123	67	12	151	104	1,332	1,243	121	82	386	605	8	10	2
	Male	5,105	155	25	175	144	1,026	1,794	240	223	510	797	9	6	1
	Total	9,228	222	37	326	248	2,358	3,037	361	305	896	1,402	17	16	3
45 - 54	Female	3,438	52	9	128	68	1,015	1,146	103	88	335	482	3	8	1
	Male	6,419	149	28	208	154	1,736	2,032	222	181	670	1,020	6	12	1
	Total	9,857	201	37	336	222	2,751	3,178	325	269	1,005	1,502	9	20	2
55 - 64	Female	1,104	18	5	43	19	214	450	33	28	104	186	1	2	1
	Male	4,594	98	19	156	115	1,029	1,726	130	166	382	761	5	6	1
	Total	5,698	116	24	199	134	1,243	2,176	163	194	486	947	6	8	2
65+	Female	325	1	1	14	8	64	166	10	9	27	24	0	0	1
	Male	2,230	29	10	67	50	472	897	87	100	183	331	1	3	0
	Total	2,555	30	11	81	58	536	1,063	97	109	210	355	1	3	1
Unknown	Female	229	2	1	6	1	102	31	26	8	6	46	0	0	0
Age	Male	624	6	1	35	3	254	111	61	34	18	98	1	1	1
	Total	853	8	2	41	4	356	142	87	42	24	144	1	1	1
TOTAL	Female	11,057	182	36	387	268	3,384	3,550	353	277	1,051	1,526	16	21	6
	Male	20,446	481	92	689	506	4,828	7,047	839	777	1,969	3,158	27	28	5
	Total	31,503	663	128	1,076	774	8,212	10,597	1,192	1,054	3,020	4,684	43	49	11

Note: Excludes residents and physicians over age 80; includes non-clinicians

Source: CMA Masterfile, January 2003, Canadian Medical Association

Number of specialists by age, sex and province/territory, Canada, 2003

AGE	SEX	CANADA	NL	PE	NS	NB	PQ	ON	MB	SK	AB	BC	NT	YT	NU
< 35	Female	924	16	1	22	19	368	271	22	18	109	78	0	0	0
	Male	1,195	10	1	33	24	326	479	41	23	148	109	1	0	0
	Total	2,119	26	2	55	43	694	750	63	41	257	187	1	0	0
35 - 44	Female	2,711	39	4	101	45	944	924	98	52	223	278	1	1	1
	Male	4,939	79	13	182	116	1,272	1,820	198	111	528	615	5	0	0
	Total	7,650	118	17	283	161	2,216	2,744	296	163	751	893	6	1	1
45 - 54	Female	2,380	39	5	82	20	575	991	89	41	236	300	2	0	0
	Male	6,507	77	22	242	105	1,417	2,624	234	141	695	944	5	1	0
	Total	8,887	116	27	324	125	1,992	3,615	323	182	931	1,244	7	1	0
55 - 64	Female	961	9	1	30	12	222	431	35	22	50	149	0	0	0
	Male	5,340	56	16	178	106	1,551	1,932	181	117	402	798	1	2	0
	Total	6,301	65	17	208	118	1,773	2,363	216	139	452	947	1	2	0
65+	Female	312	1	0	6	3	90	153	11	4	11	33	0	0	0
	Male	3,647	42	8	90	53	1,161	1,468	109	71	222	422	1	0	0
	Total	3,959	43	8	96	56	1,251	1,621	120	75	233	455	1	0	0
Unknown Age	Female	132	0	0	2	0	64	55	1	0	0	10	0	0	0
	Male	308	1	0	9	0	118	129	7	1	10	33	0	0	0
	Total	440	1	0	11	0	182	184	8	1	10	43	0	0	0
TOTAL	Female	7,420	104	11	243	99	2,263	2,825	256	137	629	848	3	1	1
	Male	21,936	265	60	734	404	5,845	8,452	770	464	2,005	2,921	13	3	0
	Total	29,356	369	71	977	503	8,108	11,277	1,026	601	2,634	3,769	16	4	1

Note: Excludes residents and physicians over age 80; includes non-clinicians

Source: CMA Masterfile, January 2003, Canadian Medical Association

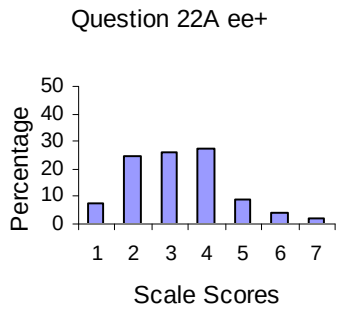
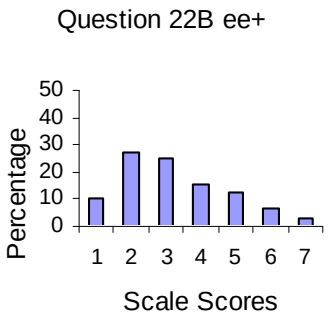
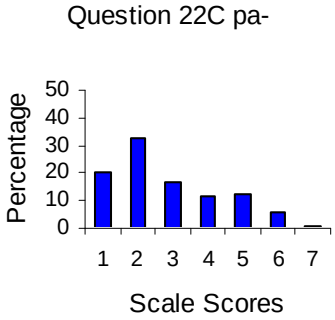
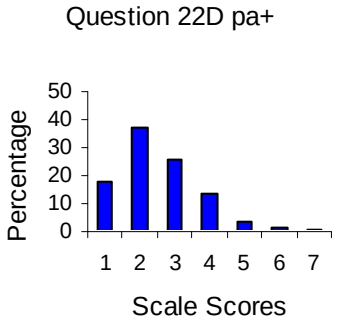
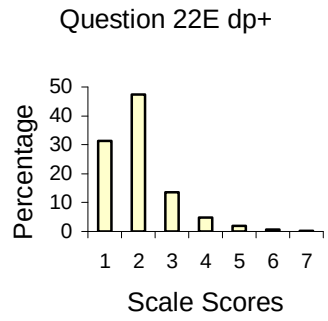
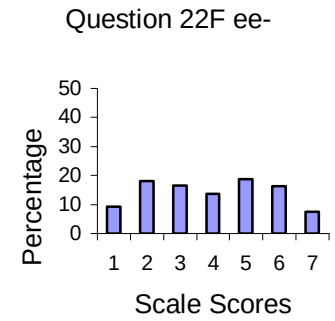
Appendix D: CMA Specialty Classification Categories

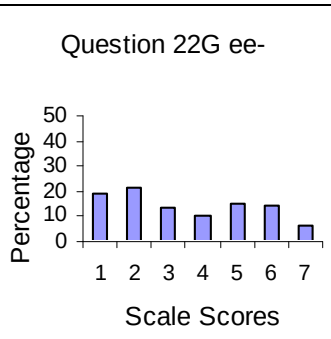
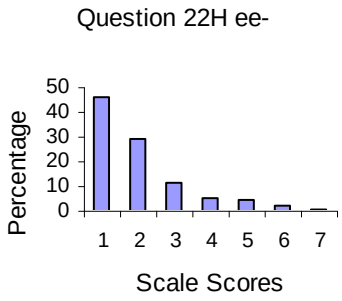
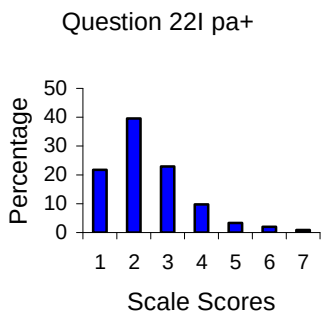
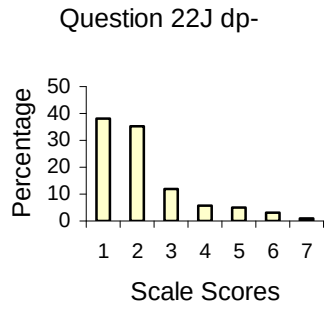
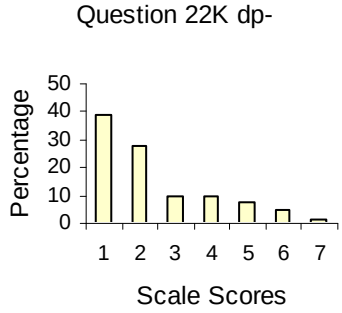
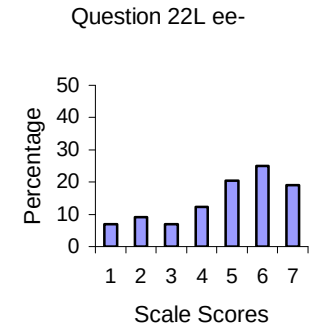
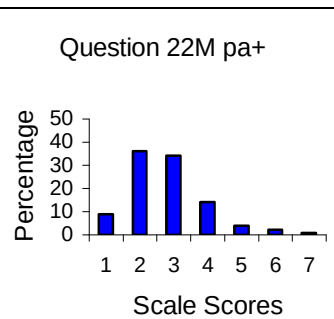
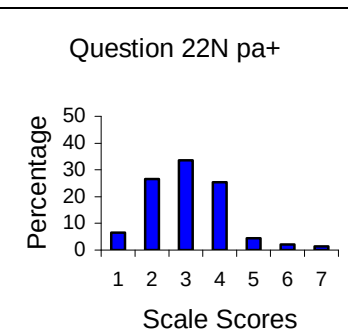
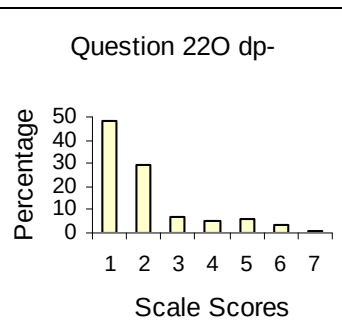
Specialty	
MEDICAL SPECIALISTS – MED SPEC	**GENERAL PRACTICE – GP/FP**
Clinical Specialists	General Practice
Anaesthesia	Family Practice
Community Medicine	
Dermatology	**SURGICAL SPECIALISTS – SURG**
Diagnostic Radiation	**SPEC**
Emergency Medicine	Cardiovascular/Thoracic Surgery
Internal Medicine	General Surgery
General Internal Medicine	Neurosurgery
Cardiology	Obstetrics/Gynecology
Clinical Immunology/Allergy	Ophthalmology
Endocrinology/Metabolism	Otolaryngology
Gastroenterology	Orthopaedic Surgery
Geriatric Medicine	Plastic Surgery
Haematology	Urology
Infectious Diseases	
Medical Oncology	
Nephrology	
Respiratory Medicine	
Rheumatology	
Medical Genetics	
Neurology	
Nuclear Medicine	
Occupational Medicine	
Paediatrics	
Physical Medicine/Rehabilitation	
Psychiatry	
Radiation Oncology	
Laboratory Specialists	
Anatomical Pathology	
General/Clinical Pathology	
Haematologic Pathology	
Medical Microbiology	
Neuropathology	

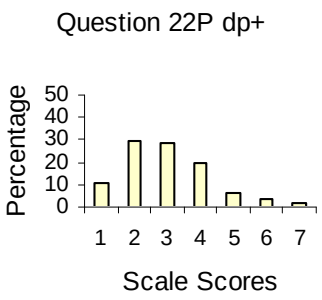
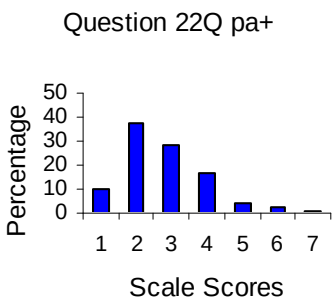
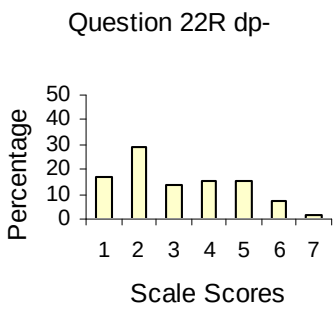
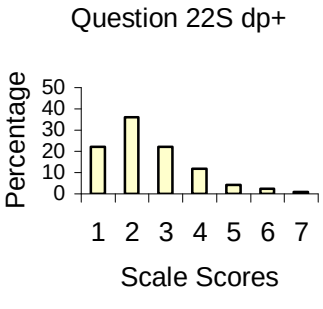
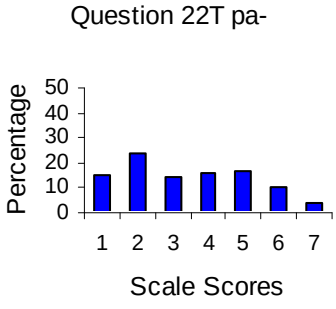
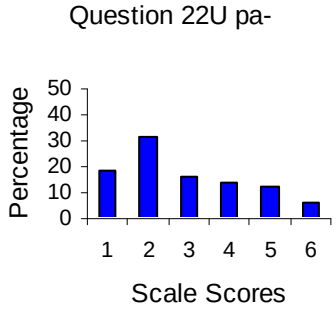
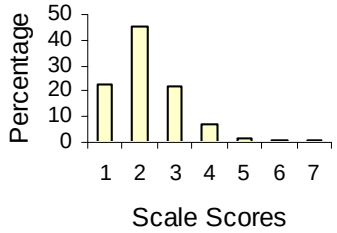
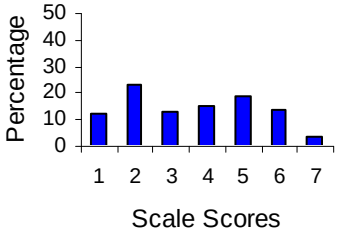
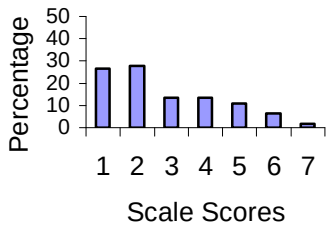
Appendix E: BBQ Statements by Components with Directional Signs

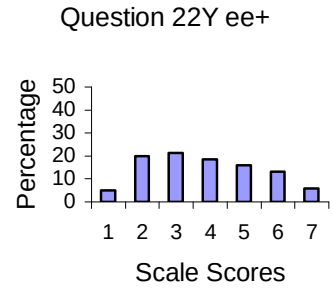
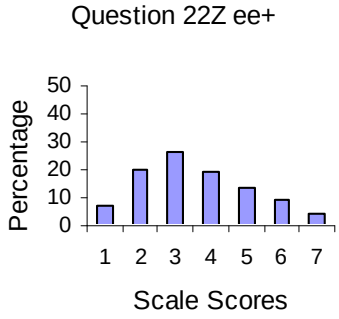
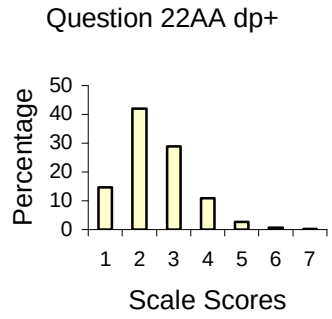
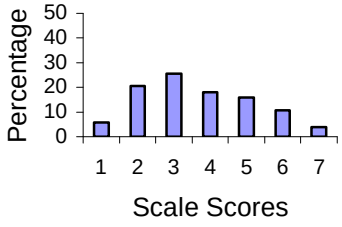
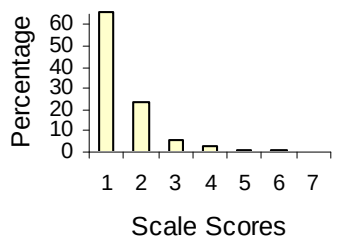
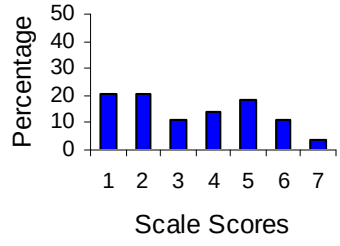
CMA PRQ	Components and sign	BBQ Statements
Q22J	DPP-	I routinely compromise the quality of my work
Q22K	DPP-	I feel alienated and detached from my coworkers
Q22O	DPP-	I have acted in an unprofessional manner towards others in the workplace
Q22R	DPP-	I wish I was more tolerant of others in my job
Q22CC	DPP-	I treat people as object or things to be manipulated in the workplace
Q22E	DPP+	I feel comfortable with the way I treat other in the workplace
Q22P	DPP+	Working with people is exhilarating for me
Q22S	DPP+	I enjoy working on a team
Q22V	DPP+	I really do care about my co-workers
Q22AA	DPP+	I readily acknowledge the contributions of my co-workers
Q22C	LPA-	I lack the desire and creativeness to complete man tasks
Q22T	LPA-	I am tired of having to solve other people's problems
Q22U	LPA-	I have trouble living up to others' expectations
Q22W	LPA-	At times, the constant change in available information and technologies interferes with my ability to get the job done
Q22DD	LPA-	At times, I question my own competence and wonder about my ability to continue to do the job
Q22D	LPA+	I try to encourage and support a collaborative work culture
Q22I	LPA+	I believe I am helping build a better life for other through the work I do
Q22M	LPA+	I can sense when other worker are having difficulties
Q22N	LPA+	I empower others to succeed
Q22Q	LPA+	All who work with me appreciate the consistent effort I bring to the job
Q22F	EEE-	At the end of the workday I simply have nothing left to give
Q22G	EEE-	I am still tired, even after a vacation or break away from work
Q22H	EEE-	I regularly have emotional outbursts at work
Q22L	EEE-	I wish I could relax more
Q22X	EEE-	Work has become a real struggle for me
Q22A	EEE+	I handle work pressure better than most
Q22B	EEE+	I am living a rich, full life and not just surviving in my work
Q22Y	EEE+	I feel refreshed and alert
Q22Z	EEE+	I really enjoy the prospect of getting up and going to work every day
Q22BB	EEE+	I maintain a consistently high energy flow throughout the workday

Appendix F: Frequency Graphs of BBQ Statement

Q22A ee+	Q22B ee+	Q22C pa-
I handle work pressure better than most	I am living a rich, full life and not just surviving in my work	I lack the desire and creativeness to complete many tasks
		
Q22D pa+	Q22E dp+	Q22F ee-
I try to encourage and support a collaborative work culture	I feel comfortable with the way I treat others in the workplace	At the end of the workday I simply have nothing left to give
		

Q22G ee-	Q22H ee-	Q22I pa+
I am still tired, even after a vacation or break away from work	I regularly have emotional outbursts at work	I believe I am helping build a better life for others through the work I do
		
Q22J dp-	Q22K dp-	Q22L ee-
I routinely compromise the quality of my work	I feel alienated and detached from my co-worker	I wish I could relax more
		
Q22M pa+	Q22N pa+	Q22O dp-
I can sense when other workers are having difficulties	I empower others to succeed	I have acted in an unprofessional manner toward others in the workplace
		

Q22P dp+	Q22Q pa+	Q22R dp-
Working with people is exhilarating for me	All who work with me appreciate the consistent effort I bring to the job	I wish I was more tolerant of others in my job
		
Q22S dp+	Q22T pa-	Q22U pa-
I enjoy working on a team	I am tired of having to solve other people's problems	I have trouble living up to others' expectations
		
Q22V dp+	Q22W pa-	Q22X ee-
I really do care about my co-workers	At times, the constant change in available information and technologies interfere with my ability to get my job done	Work has become a real struggle for me
		

Q22Y ee+	Q22Z ee+	Q22AA dp+
I feel refreshed and alert	I really enjoy the prospect of getting up and going to work every day	I readily acknowledge the contributions of my co-workers
		
Q22BB ee+	Q22CC dp-	Q22DD pa-
I maintain a consistently high energy flow throughout the workday	I treat people as objects or things to be manipulated in the workplace	At times, I question my own competence and wonder about my ability to continue to do the job
		

Appendix G: Factor Loading of BBQ for CMA, AMA, NZ Workers and Aboriginal Peoples

	Q22A: EEE+ I handle work pressure better than most			Q22B: EEE+ I am living a rich, full life and not just surviving in my work			Q22C: LPA- I lack the desire and creativeness to complete many tasks		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA	---			.67			.51[a]		
AMA	---			.68			.60[a]		
NZ	---			.61			.58[a]		
Abor.	---			---					.50

	Q22D: LPA+ I try to encourage and support a collaborative work culture			Q22E: DPP+ I feel comfortable with the way I treat others in the workplace			Q22F: EEE- At the end of the workday I simply have nothing left to give		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA		.62[a]			.49	.48[a]	.72		
AMA		.69[a]			.43	.56[a]	.70		
NZ		.66[a]				.49[a]	.60		
Abor.	.70[a]			.48[a]				.57[a]	

	Q22G: EEE- I am still tired, even after a vacation or break away from work			Q22H: EEE- I regularly have emotional outbursts at work			Q22I: LPA+ I believe I am helping build a better life for others through the work I do		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA	.73					.55[a]		.53[a]	
AMA	.78					.60[a]		.85[a]	
NZ	.75					---		.53[a]	
Abor.		.76[a]				.60[a]	.52[a]		

	Q22J: DPP- I routinely compromise the quality of my work			Q22K: DPP- I feel alienated and detached from my coworkers			Q22L: EEE- I wish I could relax more		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA			.50[a]			.42[a]	.65		
AMA			---	.44[a]			.59		
NZ			---			.43[a]	.59		
Abor.			.50[a]		.41			.52[a]	

	Q22M: LPA+ I can sense when other workers are having difficulties			Q22N: LPA+ I empower others to succeed			Q22O: DPP- I have acted in an unprofessional manner towards others in the workplace		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA		.55[a]			.67[a]				.70[a]
AMA		.55[a]			.69[a]				.67[a]
NZ		.51[a]			.65[a]				.62[a]
Abor.	.54[a]			.53[a]					.62[a]

	Q22P: DPP+ Working with people is exhilarating for me			Q22Q: LPA+ All who work with me appreciate the consistent effort I bring to the job			Q22R: DPP- I wish I was more tolerant of others in my job		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA		.60			.56[a]				.67[a]
AMA		.57			---				.63[a]
NZ		.62			.53[a]				.52[a]
Abor.			.47[a]	.53[a]				.51	

	Q22S: DPP+ I enjoy working on a team			Q22T: LPA- I am tired of having to solve other people's problems			Q22U: LPA- I have trouble living up to others' expectations		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA		.58		.50[a]			.48[a]		.42
AMA		.66		.56[a]			.52[a]		
NZ		.60		.43[a]			.41[a]		
Abor.	.61[a]				.55[a]			.55[a]	

	Q22V: DPP+ I really do care about my co-workers			Q22W: LPA- At times, the constant change in available information and technologies interferes with my ability to get my job done			Q22X: EEE- Work has become a real struggle for me		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA		.62				---	.72		
AMA		.73		.41[a]			.75		
NZ		.64				---	.73		
Abor.	.64[a]				.43[a]	.42			.63[a]

	Q22Y: EEE+ I feel refreshed and alert			Q22Z: EEE+ I really enjoy the prospect of getting up and going to work every day			Q22AA: DPP+ I readily acknowledge the contributions of my co-workers		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA	.80			.72				.64	
AMA	.79			.70				.65	
NZ	.73			.60	.43[a]			.65	
Abor.	.44	.60[a]		---	.51[a]		.57[a]		

	Q22BB: EEE+ I maintain a consistently high energy flow throughout the workday			Q22CC: DPP- I treat people as objects or things to be manipulated in the workplace			Q22DD: LPA- At times, I question my own competence and wonder about my ability to continue to do the job		
	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA	1 EEE	2 DPP	3 LPA
CMA	.61					.54[a]	.41[a]		
AMA	.55					.49[a]	.55[a]		
NZ	.47					.46[a]	.49[a]		
Abor.	.53	.42[a]				.73[a]	---		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax (6 or 7 iterations) rotations with Kaiser Normalization, Orthogonal rotation.
Note: Only factor loadings of .40 or greater have been included.
[a] indicates loadings in category alternate to assigned component.
Note: CMA – Canadian Medical Associations scores were acquired from CMA PRQ data gathered in 2003 (This study) 42% of variance explained.
AMA – Alberta Medical Association scores are derived from the data gathered in 2002, (Boudreau, 2002a).
NZ – New Zealand workers scores were acquired from data gathered in 1998 (Boudreau, 1998b). 36% of variance explained.
Aboriginal – Aboriginal scores were acquired from data gathered on a southern Alberta area aboriginal peoples in 2002 (Boudreau, 2002b). 37% of variance explained.

Appendix H: Factor Descriptions

Component 1: Emotional Exhaustion and Energy

BBQ Item	Model Component	Factor loadings	Statement
Q22Y	ee+	.80	I feel refreshed and alert
Q22G	ee-	.73	I am still tired, even after a vacation or break away from work
Q22X	ee-	.72	Work has become a real struggle for me
Q22F	ee-	.72	At the end of the workday I simply have nothing left to give
Q22Z	ee+	.71	I really enjoy the prospect of getting up and going to work every day
Q22B	ee+	.67	I am living a rich, full life and not just surviving in my work
Q22L	ee-	.65	I wish I could relax more
Q22BB	ee+	.61	I maintain a consistently high energy flow throughout the workday
Q22C	pa-	.51	I lack the desire and creativeness to complete many tasks
Q22T	pa-	.50	I am tired of having to solve other people's problems

Characteristics: energy, fatigue, struggle, motivated, up tight, desire (commitment), burdened; both positive and negative statements; **states of being**.

Component 2: Sense of accomplishment and engagement

BBQ Item	Model Component	Factor loadings	Statement
Q22N	pa+	.67	I empower others to succeed
Q22AA	dp+	.64	I readily acknowledge the contributions of my co-workers
Q22D	pa+	.62	I try to encourage and support a collaborative work culture
Q22V	dp+	.62	I really do care about my co-workers
Q22P	dp+	.60	Working with people is exhilarating for me
Q22S	dp+	.58	I enjoy working on a team
Q22Q	pa+	.56	All who work with me appreciate the consistent effort I bring to the job
Q22M	pa+	.55	I can sense when other workers are having difficulties
Q22I	pa+	.53	I believe I am helping build a better life for others through the work I do

Characteristics: encouragement, caring, recognition, empathy, outward focus, social, intrinsic reward; only positive statements; **pleasant feelings**.

Component 3: Reactive and Not Coping

BBQ Item	Model Component	Factor loadings	Statement
Q22R	dp-	.67	I wish I was more tolerant of others in my job
Q22O	dp-	.70	I have acted in an unprofessional manner toward others in the workplace
Q22CC	dp-	.54	I treat people as objects or things to be manipulated in the workplace
Q22H	ee-	.55	I regularly have emotional outbursts at work
Q22J	dp-	.50	I routinely compromise the quality of my work

Characteristics: intolerant, unprofessional, out of control, rage, manipulative, compromising; only negative statements, strong reactions, **behaviours**.

Appendix I: CMA News Release – August 19, 2003

NEWS RELEASE COMMUNIQUÉ

CMA PRESIDENT LAUNCHES CENTRE FOR PHYSICIAN HEALTH AND WELL-BEING

Winnipeg, August 19, 2003 — Canadian Medical Association (CMA) President Dr. Dana Hanson launched today the CMA Centre for Physician Health and Well-Being. The Centre will serve as a national resource for promoting and protecting the health and well-being of physicians, physicians in training and their families.

"Physicians are facing increasingly harsh realities in their daily lives, including worsening work conditions, regressive government legislation, and being shut out of government decision-making processes," said Dr. Hanson, who announced the launch of the Centre during his valedictory address to the 136th Annual Meeting of the CMA in Winnipeg, Manitoba. "The result is clear: more and more, physicians are becoming disenfranchised from key decisions, with their locus of control is reduced, and suffering from burnout."

In a representative survey of 2251 physicians conducted on behalf of the CMA between February 6 and June 3, 2003, 45.7 per cent of Canadian physicians were found to be in an advanced phase of burnout, that is feeling that they are ineffective, emotionally overrun and exhausted by their work, and showing clear signs of depersonalization in relationships. In an earlier survey of CMA member physicians, 48 per cent of participants expressed dissatisfaction with their chosen profession.

Most troubling, physicians also have over twice the suicide rate of the general Canadian population. Women physicians are especially at risk.

"More and more we hear physicians saying "I wish I'd never entered into medicine," or "I would quit practicing medicine but I'm trapped," added Dr. Hanson. "We know physicians are striving to put their patients needs first, which is why it is so important that we act collectively for each other."

The CMA Centre for Physician Health and Well-Being will function as a clearinghouse and coordinating body to provide a trusted information resource to physicians, residents, medical students, and to their families. While it will not provide individual assessment, or treatment advice, a function carried out by provincial and territorial physician health programs, the Centre will help support and compliment their work. The Centre will focus initially on four key areas:

- Health promotion and disease prevention;
- Awareness and education;
- Advocacy and leadership; and
- Research and data collection.

One of the Centre's first priorities will be in the field of research. The recent research into physician burnout is only a starting point and will serve as a benchmark going forward, much more needs to be done. To that end, the CMA is announcing a request for proposals that will provide up to $50,000 for original research in areas related to the current status of physician health or current factors affecting it. The CMA challenge to government-funded research agencies is to at least match this commitment.

"The collective wellbeing of Canada's health system is inexorably linked to the individual wellbeing of physicians," concluded Dr. Hanson. "Encouraging doctors to make their wellbeing a priority is a leading objective for the CMA, one that will take on new visibility through the leadership and advocacy activities of the Centre and the research it sponsors."

The resources of the Centre will be accessible through the CMA's website, cma.ca, and by calling 1-877 CMA 4 YOU. In order to raise awareness of the Centre, the CMA will be launching an advertising campaign in medical journals and magazines, starting in early fall 2003. The CMA has also recently published the *CMA Guide to Physician Health and Well-Being* containing facts, advice and resources for Canadian doctors as well as a directory of physician support programs across Canada.

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Notes: Onsite Press Briefing at 10:30 a.m. Central Time