Perceptions of Mid-Level Roles in North Central Montana

by

Jason Matthew Bischoff

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APPROVAL

of a professional paper submitted by

Jason Matthew Bischoff

This paper has been read by each member of the project committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

Catherine Caniparoli, MSN, ANP
Committee Chair

(Signature)  4/25/02

Approval for the College of Nursing

Lea Acord, PhD, RN
Dean

(Signature)  5/3/02

Approval for the College of Graduate Studies

Bruce McLeod, PhD
Graduate Dean

(Signature)  5-3-02
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ABSTRACT

The emergence of the nurse practitioner and the physician assistant occurred during a time of acute medical personnel shortages, especially in inner city and rural areas. To address the issue the two professions of nurse practitioner and physician assistants were developed in the mid sixties. The distinction between the two professions was vague from early on in their history. The nurse practitioner is required to have a Masters level education, and in Montana, is able to practice independently in the promotion of health and prevention and treatment of disease. The physician assistant is required to graduate from an accredited program and practice under the supervision of a physician who identifies the scope and focus of their duties. Multiple terms used in the professional literature and the superficially similar functions nurse practitioners and physician assistants perform in rural Montana settings make distinguishing between the roles or education required for practice difficult for the health care consumer.

The goals for this project were to discover the extent of the public awareness of nurse practitioners and physician assistants, and to determine what, if any, distinction are made between the two professions by health care consumers. A convenience sample survey of 35 health care consumers in primary care clinics located in the tri-county area of Chouteau, Hill, and Blaine counties Montana was used.

In this frontier sample, respondents showed a strong recognition of the NP and PA titles, but little distinction between the professions in practice capabilities, legal authority, or educational preparation. The findings imply the utilization of nurse practitioners and physician assistants in rural settings will be essentially the same. The findings also demonstrated a need for increased public education about nurse practitioners and their unique attributes.
CHAPTER 1

INTRODUCTION

Over three and a half decades have passed since the introduction of nurse practitioners (NP) and physician assistants (PA) to the traditionally physician dominated area of health care. The emergence of the nurse practitioner and the physician assistant occurred during a time of acute medical personnel shortages, especially physicians, in inner city and rural areas (Lee, 1966). Physicians were electing to participate in specialized practices instead of primary care roles. This, coupled with the military needs during the Vietnam conflict depleted the available pool of providers to the urban and rural under served areas.

In the early 1960's two separate concepts evolved to address the need for primary care practitioners. The result was formation of nurse practitioner and physician assistant programs at nearly the same time in 1965 (Ford & Silver, 1967; Stead, 1966). Both of these providers are providing health care to North Central Montanans in function and practice settings that appear identical to the uninformed consumer. The functional lack of role differences in rural settings and the language used to describe each profession as a single group has blurred the line between each profession. This blurring of the professional boundaries needs to be investigated as it relates to the health care consumers who utilize these professionals for health care.
Purpose

The purpose of this project is to describe health care consumer perceptions of the roles of nurse practitioners and physician assistants in North Central Montana. Anecdotal comments encountered while practicing as a professional registered nurse stimulated the nurse practitioner student's interest in the public's perception of mid-level health professionals. Patients and local residents made little distinction between the two professions and typically described their health provider as "not the doctor...but kind of the same....". Further interest in the public's mid-level role perception evolved after entry into the Family Nurse Practitioner program at Montana State University-Bozeman, College of Nursing. Again, a lack of role distinction was raised by social and professional contacts when questions regarding the "PA-like" program, or "Why not be a PA, it's easier and the same thing..." were asked. The importance of identifying the image of nurse practitioners and physician assistants and the knowledge of the local health care consumer about their role is vital since these factors will have a direct bearing on how consumers utilize them.

Background and Significance

Each profession is distinct in its origin, history and professional identity. The growth in total numbers of nurse practitioners and physician assistants,
especially in rural under-served areas such as North Central Montana, dictates a closer look at these professions.

Nurse Practitioner

The first nurse practitioner program was developed at the University of Colorado in 1965 by Loretta Ford, RN, and Henry Silver, MD. Their intent was to reduce the gap between children's health care needs and families' ability to access and afford primary health care in under-served areas. Pediatric nurse practitioners (PNP) were trained to provide comprehensive well-child care, health promotion, and management of common childhood illnesses (Ford & Silver, 1967; Silver, Ford, & Steary, 1967). The success of the early PNP's in expanding health care access and providing care comparable to physicians in their areas of training (Ford & Silver, 1967) provided impetus for the development of other NP roles. Not all physicians were enthusiastic about the entrance of nursing into the medical realm but as long as physician dominance was maintained little opposition was encountered in the early years (DeAngelis, 1994). Martha Rogers, a prominent nurse theorist, feared nursing was leaving nursing to practice medicine in the new role (Rogers, 1972).

The skepticism of some physicians and nursing leaders did not stop the rapid increase in NP programs and expanding of nursing's scope of practice in the late 1960's and early 1970's. The NP role experienced a similar growth in education programs and role expansion during the 1990's. In a study by
Cooper, Laud, and Dietrich (1998) investigating the non-physician workforce, the number of Masters-level NP programs grew from less than one hundred prior to 1992 to greater than two hundred and fifty by 1997. In the early years training ranged from several weeks of continuing education to masters preparation. The 1990's were marked by a standardization of NP practice through masters preparation (Mirr & Snyder, 1995). The role of the nurse practitioner encompasses many subspecialities such as family, pediatrics, women's health, adult, and gerontological focuses (Gibson, pp. 27, 2001). The specific focus does not change the practice emphasis aimed at health and wellness along with the diagnosis and treatment of illness from physiological, psychological, and sociological angles (Beschle, 1994).

Currently, NP's provide health services that include history and physical exams, ordering of diagnostic tests, diagnosis, patient management, education, and health maintenance and disease prevention (American Academy of Nurse Practitioners, 1998). The prescription of pharmacologic and nonpharmacologic therapies is provided by nurse practitioners to varying degrees depending on individual state laws and practice acts. Montana, as well as eight other states and the District of Columbia, allow plenary authority (AANP, 2001). Montana law also recognizes independent licensure for the practice of nursing and advanced certification through the American Nurse's Credentialing Center, Nurse Practice Act (2001), or other national certifying bodies. This independence holds the NP ultimately responsible and accountable for his or her practice.
Physician Assistant

Duke University was the first formal training location for PA students. The program was established by Eugene Stead, MD, in 1965 as a pilot project to train veterans of the military medical corps (Carter & Strand, 2000; Stead, 1966). The PA concept soon developed into a primary care role that was aimed at supplementing the shortage of physicians in that area of practice (Carter & Strand, 2000). The early acceptance of the PA by both patients and physicians led to a proliferation of training programs similar to the growth of NP programs. The early programs ranged in length and degree conferred. The majority granted an associate degree, some were certificate of completion while others were bachelor’s programs (Oliver, 1993). Over time the majority of programs offered bachelor’s degrees with some master’s level degrees (Oliver, 1993). The focus of PA education has not changed dramatically over the 35 years of existence. PAs practice medicine using the disease model found in medical practice. They are directly supervised by a physician who establishes the scope of practice based on an official agreement that varies with the state of practice. This dependent role means the PA practices under the physician's license (American Academy of Physician Assistants, 2001; Carter & Strand, 2000). PAs are required to graduate from an accredited program and pass a national certification exam with recertification every six years to qualify for practice in most states, including Montana (AAPA, 2001; Carter & Strand, 2000). In Montana, the patient care tasks and prescribing of medications are delegated by
the physician but the supervision is very liberal and may be done by telephone, radio, or variable in-person visits as mandated by the Board of Medical Examiners (AAPA, 2001).

Significance

The delivery of health care, especially primary care, has evolved from a one provider dependent system to a system of multiple provider possibilities. The growth of the nurse practitioner and physician assistant numbers increases the chance that a health care consumer will encounter one or both types of providers. The number of practicing NP’s and PA’s in 1999 according to data reported by Roderick Hooker (2001) was 60,905 and 38,112 respectively. In Montana, the number of certified PA’s was one hundred and ninety (Montana Board of Medical Examiners, March 2001) and licensed advanced practice nurse practitioners was three hundred and four (Montana Board of Nursing, March 2001). Nurse practitioners and physician assistants are more likely to practice in states that legislate more independent task and prescriptive laws (Pan, Geller, Gullicks, Muus, & Larson, 1997). Both of these criteria are present in Montana.

The three counties of North Central Montana utilized in the project fit the working definition of frontier (less than six persons per square mile) as described by Buehler and Lee (1998). Blaine, Chouteau, and Hill counties have population densities of one point seven, one point five, and five point eight people per square mile respectively (U.S. Census, 2001). These counties often recruit NP’s
and PA’s to provide primary care. Stimulus for recruitment of NP’s and PA’s is the Rural Health Services Act. This act provides a reimbursement mechanism for mid-level provider services in rural health care shortage areas. A stipulation for reimbursement is designation as a rural health clinic. To attain designation, the clinic must be in a health professional shortage area (HPSA) or a medically under-served area (MUA) and employ a NP or PA to be on duty at least fifty percent of the time the clinic is open (Rural Health America, 2000). Currently, Blaine County is designated both a HPSA and a MUA, Hill County is a HPSA, and Chouteau County is a MUA according to Health Resources and Services Administration (2001) data.

Although the role of NP’s and PA’s is well defined by each profession and state law, the public often has difficulty differentiating between the two. Many jobs advertise for either a nurse practitioner or physician’s assistant to fill the same position. The professional literature adds to the confusion through the use of generic terms in an attempt to discuss NP’s and PA’s in a single group. This homogenizing of heterogeneous professions began early on. Terms used were “primary-care assistants” (Bricknell, Walsh, & Tanner, 1974), “non-physicians” (Breslau & Novack, 1979), “new health professionals” (Fox & Storms, 1979), “limited license practitioners” (Rogers, 1994), and “physician extenders” (Drozda, 1992). The predominant term now used when describing both professions as a single group is “mid-level providers or practitioners” (Shapiro, 1993; Lowes, 2000).
Objectives

The multiple terms the professional literature uses and the superficially similar roles nurse practitioners and physician assistants perform in frontier settings such as the three Montana counties discussed facilitates the following objectives for this project.

The goals for this project are to:

1. Discover the extent of the public awareness of nurse practitioners and physician assistants, and
2. Determine what, if any, distinction are made between the two professions by health care consumers.
CHAPTER 2

LITERATURE REVIEW

Introduction

Over thirty five years have passed since the advent of the nurse practitioner and physician assistant professions. During this time, many studies have been conducted related to role and acceptance issues, and comparison to physicians in various ways. Little research has been produced that compares the NP and PA to each other in reference to health care consumer knowledge about the roles or differences.

Brief Historical Overview

Nurse Practitioners

The first nurse practitioner program was described by Ford and Silver (1967) and elaborated on by Silver, Ford, and Stearly (1967) and Silver, Ford, and Day (1968). Each article described a twenty four month training program that consisted of four months intensive didactic and twenty months precepted clinical learning. The object was to produce a nurse who could furnish comprehensive well child care, critically evaluate acute and chronic conditions, and triage emergent pediatric conditions. The initial ideal candidates preferably held masters degrees and were experienced in public health, but
postbaccalureate nurses became eligible soon after the program inception (Silver, Ford, & Steary, 1967). The Silver, Ford, and Day (1968) article noted seventy five percent of pediatric patients seen could receive total care from the NP without physician consultation. All three study articles emphasized collaborative practice and graduate education as imperatives for the new role's success.

The graduate model of NP education did not endure as the only path. Ford (1979) laments about how the initial goal of producing experts in practice, teaching, and clinical research gave way to society’s need to fill the health care shortage. She commented... “an explosion of quickly generated, short term, continuing education programs (some of which were devoid of academic standards) and products of variable quality” (Ford, 1979) were the result of short sighted funding of these programs versus graduate programs. An example of the continuing education style was PRIMEX, started in 1969 at the University of Washington. A four month program aimed at preparation of family nurse practitioners, the program emphasized independent practice which some felt nursing was already doing without societal recognition (Leininger, Little, & Carnevali, 1972). The PRIMEX program stressed the importance of bringing the medical service to society not society to the medical service. By doing so it encouraged community consumers involvement and the family nurse practitioner to be both accountable for health care services desired and received (Leininger, Little, & Carnevali, 1972).
The variability in entrance requirements, educational sites, and preparation found in NP programs in the early years caused some credibility problems for recognition as a separate profession (Marchione & Garland, 1980). An extended longitudinal study of certificate versus masters programs conducted during the 1970's demonstrated the preparation variance. The study was commissioned by the Division of Nursing, Department of Health and Human Services (Sultz, Henry, Kinyon, Buck, & Bullough, 1983) to provide data describing education and resulting employment of NPs. The overall study was actually a composite of three studies done in 1973, 1977, and 1980 surveying program directors and students. The students were re-queried as graduates for the employment data of the study. The study noted an initial spike in the number of certificate programs giving way to a dominance of graduate preparation by 1980. In 1973 there were eighty three certificate and forty five masters programs and by 1975 approximately one hundred and seventeen certificate and sixty one master programs existed. The balance shifted by 1980 with eighty three certificate and one hundred and twelve master programs educating nurses (Sultz, Henry, Kinyon, Buck, & Bullough, 1983). The trend toward masters would continue with total numbers climbing to greater than two hundred and fifty by 1997 (Cooper, Laud, & Dietrich, 1998).

The educational preparation and discipline of educators evolved as the nurse practitioner role did. Originally education was located at the university level with a nurse-physician teaching team model (Silver, Ford, & Stearly, 1967),
but physician-only faculty and preceptors were not uncommon (Marchione & Garland, 1980 and Gurvis, Ouimette, & Friedman, 1996). The majority of nurse practitioner programs (all masters programs) are now principally directed by nurse practitioner faculty with physicians still providing precepted sites (Gurvis, Ouimette, & Friedman, 1996).

Montana's sole graduate nursing program houses the only in-state nurse practitioner education. The Montana State University-Bozeman College of Nursing incorporates a long tradition of rural theory into a family nurse practitioner curriculum. The graduate level course work takes five semesters and confers a Masters of Nursing degree along with qualification to test for board certification (Montana State University-Bozeman College of Nursing website, 2002).

Physician Assistants

The original physician assistant program was developed at Duke University by Eugene Stead, MD. Initially Dr. Stead used nurses for the program but conflicts with nursing educators and administrators resulted in a switch to corpsman. The focus on military corpsman was explained by Dr. Stead as necessary "since the long range goals of most females remove them from continued and full time employment in the health field..." (Stead, 1966). The male emphasis was described as resulting from Dr. Stead's failure to integrate nursing into the role during early projects of the late 1950's and early 1960's.
His goal was to use nurses in expanded semi-independent roles. These projects involved formation of special hospital wards where the nursing staff was given extra didactic and clinical training and then operated the unit with broad latitude with medical staff oversite (Holt, 1998). The way these units were described bore a distinct similarity to the soon to be developed ICU's.

The same projects caused friction with Duke University and Medical Center nursing hierarchies in respects to role and control of nursing. This friction would be repeated on the national level between the American Nursing Association and American Medical Association resulting in mistrust and distancing of the PA role from professional nursing (Holt, 1998). There is a slight discrepancy in the literature about the length of training in each module of the Duke program. The original Stead (1966) article describes a program of study encompassing sixty hours of various basic science courses, forty eight hours of surgical training and unspecified lengths of time devoted to clinical, lab, and even nursing skills for a total two years of study toward a certificate of "Physician Assistant". Two other articles with discussions about the Duke program vary on the length of basic science instruction (seven months in the Oliver (1993) article and nine months in the Holt (1998) article) but this could be related to the respective authors definitions of basic science classes.

In a fashion similar to the first NP program being followed by an alternate education design, the Duke program was followed by MEDEX ("medical extension") programs at the University of Washington (PRIMEX's location) and a
program at the University of Utah in 1969. The MEDEX program used three months of intensive basic and clinical science instruction followed by twelve to fifteen months of community based preceptor instruction (Oliver, 1993). The length and types of programs as described in Chapter one eventually evolved to culminate in a bachelors degree with some masters programs. Some certificate programs may still exist but the type of degree or certificate conferred does not change the basic program design based on the Duke program. The design is made up of three instruction phases: basic sciences, then clinical sciences, followed by supervised clinical instruction (Stead, 1966; Oliver, 1993).

In Montana, there is only one school with a PA curriculum. Located in Billings, Rocky Mountain College physician assistant program leads to a bachelors degree in health science along with the qualification to test for certification. The training is based on the medical model and utilizes specialty rotation blocks and emphasizes the collaborative extension of the physician role for the PA graduates. (Rocky Mountain College physician assistant website, 2002).

Law and Role Definition

When assessing nurse practitioners and physician assistants it is necessary to look at the laws that define who they are and what they do. There are many different definitions since all 50 states and the District of Columbia
define the role and responsibility of these providers separately. There are also
the functional definitions provided by the separate professional organizations.

Carolyn Buppert (1999) notes the federal law definition of a nurse
practitioner is an individual "who performs such services as such individual is
legally authorized to perform (in the state in which the individual performs such
services) in accordance with state laws and who meets such training, education,
and experience required as the Secretary has prescribed in regulations". From
this definition the role of state law is established. In Montana the title of nurse
practitioner falls under a larger Montana code for advanced practice registered
nurses (APRN's), Nurse Practice Act, (2001). This code states:

"Advanced practice registered nurses are nurses who must have
additional professional education beyond the basic nursing degree
required of a registered nurse. Additional education must be obtained in
courses offered in a university setting or it's equivalent. The applicant
must be certified or in the process of being certified by a certifying body
for advanced practice registered nurses. Advanced practice registered
nurses include nurse practitioners, nurse midwives, nurse-anesthetists,
and clinical nurse specialists."

The Montana code is fairly broad which allows for flexibility as the role and
definition evolve through time. For example, APRN recognition in Montana has
required a Masters degree since 1995 while continuing education type programs
may have qualified prior to 1995 (Board of Nursing license summary for APRN, online, 2002).

The American Academy of Nurse Practitioners, one of the professional organizations representing nurse practitioners, defines a NP as

"a registered nurse (RN) who has advanced education and clinical training in a health care specialty area. Nurse practitioners work with people of all ages and their families, providing information people need to make informed decisions about their health care and lifestyle choices...Nurse practitioners serve as the regular health care provider for children and adults during health and illness. In order to provide complete health care, nurse practitioners: obtain medical histories and perform physical examinations; diagnosis and treat acute health problems such as infections and injuries; diagnosis, treat, and monitor chronic diseases such as diabetes and high blood pressure; order, perform, and interpret diagnostic studies such as lab work and x-rays; prescribe medications and other treatments; provide prenatal care and family planning services; provide well-child care, including screening and immunizations; provide health maintenance care for adults, including annual physicals; promote positive health behaviors and self-care skills through education and counseling; and collaborate with physicians and other health professionals as needed. Nurse practitioners do more than direct patient care. Many nurse practitioners are also actively involved in
education, research, and legislative activities to promote quality health care for all people in the United States” (AANP, 1998).

This lengthy definition denotes specific aspects of the NP role which are echoed by others (Buppert, 1999; Safriet, 1992). The popular press also gives basic brief overviews of NP’s. Two recent articles used actual “case studies” to illustrate how the NP functions and very general explanations of the “medicine-nursing” mix (Guglielmo, 2001; Ecke, 2001). I interestingly noted that Montana and Oregon were the first two states to give nurse practitioners complete independent practice from physician supervision (Ecke, 2001).

No specific United States federal government law or definition was found for physician assistants. According to the Montana Code, “Physician Assistant-certified means a member of a health care team, approved by the [medical] board, who provides medical services that may include examination, diagnosis, prescription of medications, and treatment, as approved by the board, under the supervision of a physician licensed by the board” (General Provisions for Health Care Practitioners, 2002). In order to gain licensing as physician assistant-certified (PA-C), the person must be of “good moral character," graduate from a training program approved by the American Medical Association’s (AMA) Committee on Allied Health Education and Accreditation, pass examination and is certified by the National Commission on the certification of physician assistants, and submit detailed history, education, and experience information to the [medical] board; General Provisions for Health Care Practitioners, (2002).
The definitions often referred to in the literature are variances on the American Academy of Physician Assistants definition, which states "Physician assistants are health care professionals licensed to practice medicine with physician supervision...As part of their comprehensive responsibilities, PA's conduct physical exams, diagnosis and treat illnesses, order and interpret tests, counsel on preventive health care, assist in surgery, and in most states can write prescriptions" (AAPA, 2001). This supervised role definition is also reinforced by Slomski and Guglielmo (2000). Their article, titled "Our role is to help out physicians" repeatedly details the close subordinate working relationship with physicians that PA's desire versus the independence NP's strive for. Buppert's (1999) summary of the AMA's 1995 guidelines for physician and PA practice also emphasizes the physician is responsible for PA supervision in all settings and the PA's delivery of health care will be dictated and adjudged by the physician (pp. 12).

Acceptance

Webster's Dictionary (1979) defines "accept" as understanding or having a particular sense of. Acceptance is then defined as receiving with approval or satisfaction (Webster's, 1979). With these definitions in mind, few studies were found that studied the public's acceptance. One of the earliest studies was done by Fox and Storms (1979) in which they conducted a random sample telephone survey of 2,582 urban Baltimore homes in 1975. The investigators noted some
difficulty by established health care professionals in differentiating between NP’s and PA’s, thus they were interested to see if the public had a similar problem. The medical task orientation of the study covered six areas: provide follow up care, take history and perform exam, see pregnant women and well babies, care for patients with high blood pressure, provide emergency care, refer the patient to a physician. They found fifty two percent of the respondents had heard of PA’s while forty two percent were familiar with NP’s. Interestingly, only four point one percent of the public sampled had received care from either NP’s or PA’s. Public acceptance of the tasks was significantly higher in the groups who had heard of NP’s and PA’s showing the positive effect of knowledge about the professions.

A second study published in 1979 by Breslau and Novack also studied the public’s acceptance of medical tasks delegated to “nonphysicians”. This study did not differentiate between the two professions of NP’s and PA’s in the urban Ohio home survey of eight hundred and eight adults. They found general acceptance of the eighteen tasks surveyed with less approval of nonphysicians doing maternal and childcare. This was an interesting result since pediatric nurse practitioners had been in existence for over ten years. Drawbacks of the study were the homogenizing of the NP and PA into the single entity “nonphysicians” and not enquiring about respondent knowledge of separate aspects of NPs and PAs on their survey. This limited the study in regard to generalizing to NPs or PAs separately.
No further literature that included inquiry about both NP’s and PA’s was found until 1998. Baldwin, Sisk, Watts, McCubbin, Brockschmidt, and Marion (1998) conducted a qualitative focus group study of five rural communities. The groups were asked about community acceptance of NP’s and PA’s along with other general categories of interest to the study. The results of the study demonstrated a lack of exposure to the NP and PA professions was significant. The need for public education on the roles and qualifications of these providers especially in rural fashions (pulpit, town meetings, informal discussion) was expressed by participants (Baldwin, et al., 1998). A strength of this study was the utilization of comprehensive and uniform definitions by all moderators in the study. This reduced the chance of biasing the groups toward one profession or the other.

Knowledge of the Professions

Knowledge was identified as one of the four dimensions of acceptance (Baer, Baldwin, Sisk, Watts, Grinslade, Brockschmidt, Dinger, Marion, McCubbin, 1999). "Knowledge" the understanding of the NP and PA through contact or learning (Webster, 1979) is fundamental to the public expressing a difference in the roles. The study by Fox and Storms did a simple word recognition assessment for the terms nurse practitioner and physician assistant and then described briefly each before continuing the survey. The necessity to define each profession to the public (Baldwin, et al., 1998; Fox & Storms, 1979)
noting confusion of, or general public misconceptions about the roles (Bergeron, Neuman, Kinsey, 1999), have shown how a possible knowledge gap still exists concerning these two professions.

**Differentiation**

The potential for the public to be confused about the different roles should not be surprising considering the variable terminology utilized. The physician generated literature were noted as a primary source for the generalizing terms (Bricknell, Walsh, & Tanner, 1974; Rogers, 1994; Shapiro, 1993; and American College of Physicians, 1995). An early analytic essay done by Bricknell, Walsh, and Tanner looked at the role of NP’s and PA’s in the United States health care system of the time. It was determined by the authors that there was “little or no difference” in the clinical setting between NP’s and PA’s. From this they designated the term primary-care assistant to apply to both. The fact that the essay was published in the Lancet, a prominent physician publication, should be noted.

A second example is a study done by investigators from the University of Kentucky Medical School. The probability phone survey assessed the proportion of adults who had received care from “physician extenders”. The definition of “physician extenders” included the roles of NP and PA (Mainous, Bertolino, & Harrell, 1992). Buppert (1999) contends use of this term to show any health care professional who is not a physician as “in orbit” around
physicians is done deliberately. She also notes the term "mid-level provider" as being used at the federal level by the Drug Enforcement Agency (DEA) and including NP’s and PA’s within the common definition. The studies of Breslau and Novack (1979) and Fox and Storms (1979) discussed earlier also utilized general terms such as “non-physicians” and “new health professionals” respectively.

Sultz et al (1983) noted an evolution in the use of “Nurse Practitioner” by nursing education through the 1970’s. The longitudinal study of nurse practitioner education noted the shift of graduate programs over the decade to adopt the term. In 1973 only thirteen percent of graduate programs called their graduates nurse practitioners while almost half of the programs employed the title clinical nurse specialist to graduates, yet these programs still fit the NP study criteria. By 1980 the balance had shifted and just over fifty percent of masters programs termed their graduates nurse practitioners. The usage is still not universal. Marchinone and Garland (1980) discussed the issue of the nurse practitioner as a profession. Within this discussion, they contended the title of nurse practitioner was confusing since the term can be applied to any nurse who engages in the practice of nursing. A similar application of the term nurse practitioner to general practice nursing was found in the Louisiana State Medical Society Journal. To describe the role of advanced practice, Louisiana in 1992 recognized by regulation the old term of “nurse associate” and this role was
physician linked at that time (Hoffman & Redman, 1995). This comparison of NP’s and PA’s was an informational essay for the sponsoring society.

Two studies and one letter to the editor of the Journal of the American Medical Association (JAMA) denotes another area where the public may be confused about NP and PA role differentiation. Many settings employ a single job description and institutional requirements for physician oversite. This results in the fundamental practice of NP’s and PA’s in a common site or organization being very similar, from Fowke’s study (as cited in Clawson & Osterweis (eds), 1993). It was found rural hospitals who utilized NP’s and PA’s were not making distinctions based on scope of practice or education when hiring either group (Krein, 1997) and in Montana work site imposed physician supervision blunted over half of NP’s from practicing to their full scope (Larsson & Zulkowski, 1999). The single term and single job title are both demonstrated in the editorial letter by physician H.H. Handsfield (1994) to JAMA. He described the University of Washington hospitals grouping of NP’s and PA’s under the single job title “health care specialist”. Both NP’s and PA’s function and are paid the same, “there is no difference in quality of care or the clinical judgement they exercise” (Handsfield, 1994).

Summary

The literature is replete with studies documenting the positive utilization, and public acceptance of each role individually. The obvious gap in the existing
knowledge base regarding direct comparison of the NPs and PAs needs to be addressed. The recurring finding is a lack of differentiation except at the level of law and education. This difference does not appear translated to the public nor physicians. Furthermore, in work settings that NPs and PAs may routinely practice together they are considered to be equal which defeats the scope of education and practice the NP encompasses.
Chapter 3

METHODS

Utilizing a descriptive research design, the researcher piloted a structured questionnaire intended to discover the public's awareness of nurse practitioners and physician assistants. The survey also examined if distinctions were made between the two professions.

Project Design

The research was conducted using a questionnaire provided to clinic consumers by the receptionist when they checked in for their appointment. The questionnaire method was easy to use and inexpensive for collecting data. Consisting of scaled, ranking and checklist types of questions, the survey construction style allowed for less ambiguity and misinterpretation of the questions. The estimated time to read and sign the cover letter/consent form and complete the sixteen item self-administered questionnaire was twenty minutes.

The geographic location of the clinics were in the counties of Hill, Blaine, and Chouteau. These clinics were chosen because of geographic proximity and provider make-up. The counties of Blaine and Chouteau both share borders with Hill County but not each other. The Hill County clinic is a moderately sized multi-speciality practice that employs one full time PA and two part time NP's.
The Blaine County clinic is a small two provider office consisting of a MD and a PA. The Chouteau County clinic is also a two provider practice, but in this case they are a MD and a NP. The three clinic provider structures will balance exposures to both PA's and NP's. The balance will be achieved by sampling populations in equal numbers that have access to a specific type of provider, as in Blaine and Chouteau Counties, and access to both as in Hill County.

Using the clinic waiting rooms for the survey provided a setting that was relatively anonymous for the participants. The time period between reception and provider access permits an opening for the participant to complete the survey without inconvenience to their daily schedule. In addition, the subject of health and health care providers was an inquiry in tune with the environment the participants were in. Finally, the surveyed population had a high probability of being health care consumers residing in the study area.

The population studied consisted of thirty adult (age > 18 years old) health care consumers who were literate in English and using one of the Hill, Chouteau, or Blaine County clinics for health care on the study day. Parents of children brought to the clinic for care were also eligible since they are responsible for the minor’s health care expenses and decisions. The participants were chosen from the convenience sample on a “first come, first served” basis at each clinic until a total of ten participants from each clinic was obtained. The total number of participants and the break down were determined
as the most feasible to obtain considering time and patient flow in these rural clinics.

Participation in the study was voluntary. A consent form (Appendix A) with study explanation was provided with the questionnaire. Also included was a signature consent form granting intent to participate. The surveys (Appendix B) were assigned identifying color codes for each site by a third party who did not have access to the consent forms and retained the color code key. The consent forms were kept separate from the questionnaire at all times following survey completion. A copy was provided to each subject so they could contact the researcher, committee chair, or human subjects chair if desired.

The questionnaire was modeled on a survey used by Fox and Storms (1979) in their urban Baltimore study of 2,582 homes. These investigators were looking at the urban public's knowledge of the existence and roles of NPs and PAs. The questions were extrapolated from the published article and e-mail correspondence (Appendix C) with Dr. Fox. Psychometric data for the original survey tool, proven through repeated test-retest pilots by Drs. Fox and Storms was no longer available since it was developed twenty years ago.

The questionnaire (Appendix A) consisted of six basic non-identifying demographic questions relating to gender, age, income, general location of residence, work status, and highest educational degree obtained. The remaining ten questions were data-eliciting. The first three addressed basic perceptions and contact for care from NP's and PA's. The next questions were
1-10 Likert scale, grading satisfaction with care received. The last six questions sought specific information about the practice setting, physician relationship, education requirement, and tasks performed by each professional. These last questions used a single answer format for the physician relationship while the other areas were addressed through multi-answer checklist formats.

**Data Collection and Analysis**

In February 2002, the researcher surveyed a convenience sample of thirty health care consumers over eighteen years old at three small rural clinics in North Central Montana. Data were collected by the researcher, soliciting participants who were obtaining services at the respective clinic. Each clinic participant group was surveyed on separate days within a two week period. Selection of participants was based solely on sequence of clinic appointment and willingness to participate that day. Each clinic sample consisted of ten participants who were approached individually when they presented to the receptionist. They were given the consent form and survey by the researcher to fill out in the waiting area. Upon completion, the survey was placed in a manila envelope marked "survey" and sealed. The consent form was placed in a second manila envelope marked "consent form" and sealed. Both envelopes were returned to the reception desk so the answers were private and personal identity kept separate from the data. The researcher then retrieved the envelopes from the reception desk. During the entire survey process, the
researcher was on site to address any problems or questions that may have
arisen and a personal thank you was given to each participant after completion
of survey.

After all thirty questionnaires were completed, the answers were scored
and entered into SPSS a statistical package for data analysis. The color codes
were the only identifying information and the data were reported in aggregate
only.

Rights of Human Subjects and Consent/Review Process

Prior to initiating this project, approval from the Montana State University
College of Nursing Human Subjects Review Committee was obtained. All
volunteers were required to sign the consent form (Appendix B) and asked if
they had any questions before receiving the survey to complete. The consent
form informed the participants of the risk/benefits and their freedom to withdraw
at anytime without repercussions. It was determined that there were minimal
risks to the participants. The respondent burden was only twenty minutes, no
personal topics were covered, and the entire process was conducted on a
voluntary basis. The signed consent forms were then placed in a separate
manilla folder, locked in a file cabinet that only the researcher had access to.
When all thirty consent forms were secured, they were forwarded to the Human
Subject committee for long term protection and storage.
disbursed through all the age ranges with the mean age group being 40-50 year olds. It was interesting to note the distribution of ages showed three peaks at 18-30 year olds (22.9%), 40-50 year olds (20.0%), and > 70 year olds (25.7%). The younger and older age spikes may be related to the tendency of childbearing/rearing families and the elderly to seek health care for children or themselves more frequently. The explanation for the spike around the 40-50 year old age bracket is not readily apparent.

The average income was between $20,001 and $40,000 per year (40.6%) but 25% of respondents reported their income $0-10,000, which is below the federal poverty level. The overwhelming majority of respondents (80.0%) listed their home as being in the same town as the clinic they were surveyed in. The respondents were 54.3% employed and only 2 (5.7%) answered unemployed. The remainder were evenly split between homemaker (17.1%) and retired (22.9%). 62.9% earned a high school diploma, but 14.3% of respondents either left the answer blank or marked not applicable in some way.

**Awareness**

Immediately following the demographic questions were items designed to investigate the level of awareness about NPs and PAs (see appendix A). The Fox and Storms (1979) study preceded this area of their study with a brief explanation of the two professions and their roles. In this study this was omitted.
The rational was any explanation would skew possible answers and not yield a true sample of the respondents perceptions about NPs and PAs.

**Heard of nurse practitioners or physician assistants?** This was the hallmark question related to the public's awareness of NP and PA's. Recall the study done by Fox and Storms (1979) where they found 52% of their sample had heard of PA's and 42% of NP's. In contrast, this sample yielded 88.2% and 94.3% of respondents had heard of PA's and NP's respectively.

**Received care from a nurse practitioner or physician assistant?** The percentage of respondents who had received care from an NP (76.5%), a PA (67.6%), or both (60.0%) is over a fifteen fold increase from the Fox and Storms (1979) study. In their sample only 4.1% of the sample had received care from either a NP or a PA. The follow-up question of "from neither" had a large percentage (42.9%) of missing data. This may be due to poor wording or question layout on the survey. It may also be attributed to respondents having answered in the affirmative to any of the prior three parts to the question would have skipped the question due to its negative slant. The third part of this survey item was about how long ago the respondents had been seen by a NP and/or a PA. The spacing for the NP was fairly even over time. The PA showed a bimodal curve of contact with peaks at less than 6 months and again at 1 to 5 years.
Satisfaction with care. These were Likert Scale questions that rated satisfaction with NP and PA care on a 1 to 10 scale. The range of answers for NP's was from 4 (slightly below average) to 10 (excellent). The mean was 8.89, but 54.3% of respondents rated their care at 9 or 10. This shows an overall good impression by the respondents regarding the care they received from NP's. The range of answers for PA's was from 5 (average) to 10 (excellent). Here the mean was 9.04 with almost half (48.6%) rating their care as a 9 or 10. Again, the satisfaction with care from respondents who saw a PA was high. These results are echoed in studies that specifically looked at satisfaction with care as a single issue in both NP and PA professional literature (Knudtson, 2000; Nelson, Jacobs, & Johnson, 1974).

Work settings, NP. This question investigated the perceived settings where an NP would see patients. While the list was not all inclusive, it was intended to cover the major possibilities as they existed at the time of the survey. The respondents gave a strong affirmative (91.4%) to the item "private clinic with other providers like MD's", while the other settings presented were viewed as unlikely. The item asking about the NP seeing patients in their own private practice was strong to the "no" side (84.8%). A possible explanation may be what the respondents have been exposed to in the clinical settings surveyed. Each of the clinics with a NP were in practice with physicians and currently no
independent NP practices exist in the three counties surveyed and historically only physicians have had any private practices in the three county area.

**Work settings, PA.** The same work settings were presented as in the NP question. Again, the respondents were strongly affirmative (85.3%) for a collaborative setting with another provider and 78.8% said "no" to the PA having a private practice. The 64.7% of "no" responses to PA's seeing patients in government clinics was exactly the same as the NP response. The PA settings did differ from the NP in the higher percentages that thought PA's may see people in inpatient (52.9%) and emergency department (44.1%) settings.

**Relationship to physician.** This question addressed the respondents' perception of physician control over NP's and PA's in actual practice. The results were surprisingly similar for NP and PA parts of the item. The percentage of respondents who answered independence for NP's was 51.6% and 54.8% for PA's. There were exactly 11.4% of those surveyed who didn't know or left the answer blank for both the NP and PA parts of the question. The statistics showed the respondents attributed independent practice to the two professions in roughly equal proportions. This is an interesting finding. One of the primary differences between the two professions is the provision of independence provided to nurse practitioners in Montana state law (MCA 37-8-2, 2001). Physician assistants have a dependant practice model which is openly promoted and subscribed to by practitioners in their profession(AAPA, 2001;
Slomski & Guglielmo, 2000). The respondents did not demonstrate any overall realization of the difference in practice regulations which is significant since NPs have had independent practice since 1993.

**Level of education required to be a NP or PA.** The potential levels of education required to be a NP or PA were presented in increments of education from training programs or 2 year degree up to a Masters degree. The NP results showed a slight dominance of Bachelors degree plus training (44.8%) for those who answered. A significant percentage (17.1%) of respondents did not answer the question. The PA responses showed the practice training program/2 year degree (32.1%) and the Bachelors degree plus training (35.7%) being the predominant answers. Again, a significant percentage (20.0%) of respondents did not know or left the answer blank.

**Tasks the NP can perform.** The ten items in this question were designed to be representative of the most common general task areas a mid-level practitioner would perform. A majority of respondents felt physical exams (90.3%), health history (96.8%), well child (93.1%), women's health (92.6%), manage chronic illnesses (85.7%), and treat acute illnesses (70.4%) were tasks the NP could perform. The affirmative percentages then dropped for the items of prescription writing without a physician's co-signature (57.7%), minor surgery (59.3%), admit to a hospital (50.0%), and manage emergency patients (59.3%). The percentage of respondents who did not know the answer or left an item
blank ranged from 11.4% to 25.7%. The missing responses showed a general pattern of rise as the affirmative percentages fell.

Tasks the PA can perform. This addressed the same areas as the NP question. The responses were all a majority of affirmative answers ranging from a high of 96.9% for health history to a low of 60.7% for admitting patients to the hospital and caring for them. One item of particular note is the 79.3% of respondents who answered felt the PA could write prescriptions without a physician’s co-signature. This is interesting because under Montana state law the PA works under the physicians licence. Inherent in this dependant partnership is the requirement of physician supervision and approval of all pharmaceuticals the PA may prescribe, General Provisions Related to Health Care Practitioners, (2002). The percentage of respondents who didn't answer for the PA items ranged from a low of 8.6% (physical exam and health history) to a high of 20.0% on admission to a hospital.

Impressions

The results of this survey show a dramatic increase in the general awareness of both the nurse practitioner and physician assistant as compared to 1979. This is probably due to the increased proportion of respondents who have also received care from a mid-level provider and on the whole rated this care as above average. It is interesting to note the dependent status in which the health
care consumers still placed the nurse practitioner. A small minority thought NP’s might see patients in his/her own private practice while almost half placed the NP under the direction of a physician. This was further reinforced by the number of respondents who believed the NP was obligated to get a co-signature by a physician for prescription medications.

The physician assistant was afforded a degree of independence by those surveyed. A slightly higher percentage of responders thought the PA may see patients in their own private practice along with more traditional acute care areas such as the hospital or ER. The PA was considered independent from the physician by a higher percentage of the participants in comparison to the NP.

The dependence of the NP and the independence of the PA point to a public perception of equality between the two professions. The similarity between required education perceptions may show the patients surveyed think NP’s and PA’s are equally educated and prepared for their respective roles. The answers regarding task ability also shows a relative lack of distinction between the two professions. Both were thought to perform all tasks by some percentage of the respondents, including the independent writing of prescriptions.

Despite existing laws and practice acts in Montana, the health care consumers surveyed demonstrated little role differentiation between NP’s and PA’s. This is interesting since the respondents overwhelming expressed a knowledge of and utilization of NP’s and PA’s for their health care needs.
Limitations

The primary limitation of this project is the very nature of its design. The number of health care consumers was very small which decreases the statistical strength of the findings. A second limitation is the small geographic area of the study. The findings may apply to north central Montana but should not be generally applied to Montana or rural areas as a whole. The survey data may have been skewed in favor of the PAs' abilities by the two extra respondents received from the PA only clinic versus the NP only clinic.

The survey tool itself had some limitations that would have to be addressed prior to its use again. The items asking about having received care were confusing to respondents as evidenced by a significant missing data percentage. The part about "from neither" should be removed and the answer assumed if the prior items are both answered "no". The demographic question about education should have included an item that addressed the participant not completing high school. The missing data answers may be eliminated in this question by including this option.

Implications and Recommendations for Further Study

A study that encompasses a larger survey population and geographic area in Montana could yield data valuable to marketing and public relations efforts regarding nurse practitioners in the state. The same study could also be
given to physicians, nurses, and allied health professionals in the state of Montana. The aim would be to see if the public's perceptions of the NP and PA roles are being influenced by the medical establishment as a whole and what the medical establishments knowledge of these roles are.
REFERENCES CITED


Breslau, N., Novack, A.H., (1979). Public attitudes toward some changes in the division of labor in medicine. Medical Care, 17 (8), 859-867.


Lee, P.R., (1966). New demands for medical manpower. JAMA, 198 (10), 1091-1093


Montana Board of Medical Examiners (personal communication, April 5, 2001).


Nurse Practice Act, 37 MCA § 8-202, 2001

Nurse Practice Act, 37 MCA § 8-409, 2001


Rogers, M.E. (1972). Nursing: To be or not to be? Nursing Outlook, 20, 42-46.


Appendix A
Survey
Role Perception Survey

Directions: Please circle your response.

1. Gender: M F

2. Age: 18-30 30-40 40-50 50-60 60-70 > 70

3. Income: $0-10,000 $10,001-20,000 $20,001-40,000 $40,001-80,000 > $80,001

4. Home location: Same town as clinic; Rural (non-town) home

5. Work status (mark the activity that requires most of your time):
   Student; Employed (include self-employed); Homemaker; Retired

6. Number of years of education (highest degree attained):
   HS diploma; Associate; Bachelors; Masters; Doctorate

7. Have you ever heard of “Nurse Practitioners”? Yes No

8. Have you ever heard of “Physician Assistants”? Yes No

9. Have you received care from a Nurse Practitioner? Yes No

   Have you received care from a Physician Assistant? Yes No

   From both? Yes No

   From neither? Yes No

*if yes, how long ago? Nurse Practitioner Physician Assistant
   (Circle most recent) < 6 months < 6 months
   6 mo–1 yr 6 mo–1 yr
   1yr–5 yrs 1yr–5 yrs
   > 5 yrs ago > 5 yrs ago
10. Please rate your satisfaction with the care you received on a scale of 1 (poor) to 10 (excellent). Circle your answer:

Nurse Practitioner 1 2 3 4 5 6 7 8 9 10
Poor Excellent

Physician Assistant 1 2 3 4 5 6 7 8 9 10
Never seen by one

11. In what setting do you think Nurse Practitioners see patients? Circle all that apply:

1. Their own private practice.
2. In a private clinic with other providers like MD’s.
3. Hospital inpatient floors.
4. Emergency departments/rooms.
5. Government clinics (local, state, federal, military).

12. In what setting do you think Physician Assistants see patients? Circle all that apply:

1. Their own private practice.
2. In a private clinic with other providers like MD’s.
3. Hospital inpatient floors.
4. Emergency departments/rooms.
5. Government clinics (local, state, federal, military).

13. What relationship to the physician does (Circle your answers to the following)

a. the Nurse Practitioner have:
   1. independent and communicates with physicians and refers patients to them as needed.
   2. under the direction of physicians.

b. the Physician Assistant have:
   1. independent and communicates with physicians and refers patients to them as needed.
   2. under the direction of physicians.
14. What is the level of education required to be (Circle your answers to the following)

a. Nurse Practitioner:
   - Practice training program/2 year degree
   - Bachelors Degree
   - Bachelors Degree plus additional training
   - Masters Degree

b. Physician's Assistant:
   - Practice training program/2 year degree
   - Bachelors Degree
   - Bachelors Degree plus additional training
   - Masters Degree

15. What tasks can the Nurse Practitioner do?

   a. Physical exam YesNo
   b. Health history YesNo
   c. Well child exam YesNo
   d. Women's health exam YesNo
   e. Manage chronic illness like diabetes, high blood pressure, asthma, or ulcers (not a complete list) YesNo
   f. Treat acute illness like infections, pneumonia, rashes. YesNo
   g. Write prescriptions without a physician's co-signature. YesNo
   h. Minor surgery like stitches, skin biopsies, or wart removal. YesNo
   i. Admit patients to the hospital and care for them. YesNo
   j. Manage emergency patients. YesNo

16. What tasks can the Physician Assistant do?

   a. Physical exam YesNo
   b. Health history YesNo
   c. Well child exam YesNo
   d. Women's health exam YesNo
   e. Manage chronic illness like diabetes, high blood pressure, asthma, or ulcers (not a complete list) YesNo
   f. Treat acute illness like infections, pneumonia, rashes. YesNo
   g. Write prescriptions without a physician's co-signature. YesNo
   h. Minor surgery like stitches, skin biopsies, or wart removal. YesNo
   i. Admit patients to the hospital and care for them. YesNo
   j. Manage emergency patients. YesNo
Appendix B
Consent Form
Subject Consent Form For Participation
In
Human Research At Montana State University

Perceptions Of Mid-level Roles In North Central Montana

You are being asked to participate in a study aimed at identifying the knowledge and understanding health care consumers, like yourself, have regarding nurse practitioners and physician assistant's roles in providing health care. The study is being conducted by Jason Bischoff, RN. He is a graduate nursing student at Montana State University-Bozeman. The information obtained will help identify public education needs related to nurse practitioners job roles and abilities.

You were chosen from clients seeking health care at this location today. No special consideration was given to the selection other than being over 18 so legal consent can be given. This clinic was selected because it employs either a nurse practitioner, a physician assistant, or both.

If you agree to participate in this research, you will be given a questionnaire to fill out. The questions focus on general demographic attributes of yourself and role related questions about nurse practitioners and physician assistants. The questionnaire should not take more than 20 minutes to complete.

The general demographic attributes will be grouped at the end of the study. No names or identifying codes will be used in the final analysis or subsequent publication of results. The only person with access to the completed questionnaire is the researcher and his graduate committee members.

There is no direct benefit to you for participating.

The only risk may be your discomfort at revealing your knowledge of health care provider roles.

The funding of all aspects of this study are entirely by the researcher. The results of this study may be shared for the purpose of student education, possible publication, and presentation. It may also be available to you upon request.

If you do not wish to participate please feel free to decline. There will not be any further discussion or repercussions.

If you have any questions with regards to this study please direct them to the researcher or his committee chair at:
This form will be placed in a locked file supervised by the human subjects committee for a period of 5 years and then destroyed. If you have questions about human subjects protection please contact:

Dr. Charlene Winters
Montana State University–Bozeman
Chairperson, CON Human Subjects Review Committee
406-243-6515

"AUTHORIZATION: I have read and understand the discomforts, inconvenience, and risk of this study. I ____________________________ (name of subject), agree to participate in this research. I understand that I may later refuse to participate, and that I may withdraw from the study at any time. I have received a copy of this consent form for my own records.

Signed____________________________________
Witness____________________________________
Investigator______________________________
Date__________________________"
Appendix C
Correspondence with Dr. Fox
Subject: RE: FW: Research assistance
Date: Fri, 3 Aug 2001 09:34:28 -0700
From: "Fox, John G" <John.G.Fox@kp.org>
To: "Jason & Heidi Bischoff" <bisch@mcn.net>

I no longer retain the original questionnaire. All I have are a selection of tables that could be used to infer many of the questions asked, but the wording of the questions is long gone. The wording makes all the difference, so even asking about the same item with slightly different phrasing will give percent differences in the answers (which is why politicians love to quote polls their campaign took). There was another article created from that data base that will also give some insight into the questions: Fox & Storms, "A Different Approach to Sociodemographic Predictors of Satisfaction with Health Care," Social Science and Medicine, Vol 15A, pp 557-564, 1981.

Things I know we asked about:
- sex
- ethnicity (I remember this one was poorly worded)
- age
- income
- education satisfaction with quality of care received, by type of health care worker who provided the care
- heard of NP/PA's?
- missed one day or more of regular work or activities within past 60 days?
- time it takes you to get to normal place of care
- education level
- have a regular place of care?
- seen MD last 12 months? last 60 days?
- what is function of NP/PA: fill in for shortage of MDs vs work with MDs and help them be more efficient?
- What is normal place of care (MD office, hosp oPD, hosp ER, neighborhood clinic, other)
- preventive care visits
- cost of visit at normal place of care
- number visits last 60 days
- disability days last 60 days
- have chronic condition?
- work status (empl, school, retired, homemaker, nonemployed)
- you work in health?
- satisfaction with Baltimore community
- years in Baltimore community
- if received care from PA/NP, quality of care
Appendix D
Human Subjects Approval
Date: February 11, 2002

To: Jason Bischoff, RN, BSN

Re: Health care consumer perceptions of mid-level roles in north central Montana

Your revised application for human subject approval has been reviewed and approved. The revisions you made addressed each of the concerns the committee members had regarding informed consent and the protection of human subjects.

A copy of this message has been forwarded to the office of the Associate Dean, your committee Chairperson, and members of the College of Nursing Human Subject Review Committee. A copy of form A.2 was put in the mail to you today.

The members of the Human Subjects Review Committee wish you continued success.

Regards,

Charlene A. Winters
Charlene A. Winters, DNSc, RN, CS
Chairperson Human Subject Review Committee
Montana State University-Bozeman
College of Nursing Missoula Campus
32 Campus Drive
Missoula, MT 59812
406/2434608
winters@montana.edu

cc: Human Subject Review Committee
    Cathy Caniparoli, Committee Chairperson
    Lynn Taylor