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Voices From The Frontier: Stories Of Nurse Practitioners Working In Remote Areas

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VOICES FROM THE FRONTIER: STORIES OF NURSE PRACTITIONERS
WORKING IN REMOTE SETTINGS

By

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A Dissertation

Submitted to the Graduate Faculty

of the

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in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

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2015

This dissertation, submitted by Lynn Jakobs in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.

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Title   Voices From the Frontier: Stories of Nurse Practitioners Working in
      Remote Settings

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ACKNOWLEDGEMENTS

To Frank
You exemplify the role of an effective frontier Nurse Practitioner!

ABSTRACT

Frontier communities are the most sparsely populated and geographically remote areas in the United States. Residents of these communities often lack access to healthcare resources of any kind. Nurse Practitioners (NPs) are more likely than physicians to practice in these areas and provide a vital link in the frontier healthcare safety net.

This narrative inquiry into the practice experiences of frontier NPs informs the discipline of nursing regarding the significant contribution frontier NP practice makes to the delivery of frontier healthcare. This inquiry creates a repository of stories upon which nurse leaders, health care policy makers, and nurse educators interested in frontier healthcare can theorize and plan.

Themes specific to frontier NP practice emerged from participant stories. These themes were used to develop a conceptual framework for effective frontier NP practice. The framework consists of four types of frontier NP knowledge: contextual knowledge, frontier competency, the art of frontier practice, and political knowledge.

Several theoretical constructs emerged from the findings which support the following relational statements: (a) The more independent the practice, the more likely frontier NPs will be presented with patient situations in which they feel out-on-a-limb or *scared*, (b) the intimate bond frontier NPs experience with their patients may be partially

rooted in geographic isolation, and (c) frontier NPs are both influenced by government policy and frontier NPs use political influence to change policy.

Results of this inquiry have implications for nursing education, workforce recruitment and retention, and the provision of emergency medical services in frontier areas.

CHAPTER I

INTRODUCTION

This study, Voices from the Frontier, is a narrative inquiry into the practice

experiences of frontier nurse practitioners (NPs) told through self-related stories of their

practice. Frontier areas are the most rural, remote areas in the United States (US). It is

the premise of this inquiry that frontier nursing is a *specialty* practice. This notion is

supported by Jane Ellis Scharff (2010) who stated:

> Rural nursing practice, be it hospital practice, private practice, or community
>
> health practice, is distinctive in its nature and scope from the practice of nursing
>
> in urban settings. It is distinctive in its boundaries, intersection, dimension, and
>
> even in its core. (p. 249)

If rural nursing is distinctive, then certainly frontier nursing is distinctive as well.

Background

Rural Definition

The term rural has been used in the literature to describe areas that are generally

less populated than metropolitan or urban areas and have more open land. The

government defines rural in several ways, each with different criteria depending on its

purpose. According to the rural-urban continuum codes, completely rural areas have

population clusters of less than 2,500 people and are not adjacent to a metropolitan area

(Hart, 2012). Prior to 1988, the government had considered very remote or sparsely

populated areas to be on the opposite end of a rural continuum. Therefore, the distinction between rural and frontier is a fairly new phenomena and the majority of extant nursing literature does not make this distinction.

Frontier Definition

In 1988, Congress decided that for the purposes of healthcare policy, frontier is a geographic area with less than seven persons per square mile (Ricketts, Johnson-Webb, & Taylor, 1998). Although widely utilized, this definition does not take into account the effect urban areas, which may be located in frontier counties, have on aggregate county health data. Over the ensuing years agencies have utilized multiple methods for determining the criteria for a frontier designation (Hart, 2012). Details of these designation methodologies will be provided in the literature review section.

The goal of this research was to elicit stories from NPs who practice in areas that are remote, where the next level of care may be one hour away. To this end, participant recruitment will be guided by the US Office of Rural Health Policy's newly developed method for determining frontier and remote designations (FAR). The aim of this new method is to provide a geographically detailed, multi-level delineation of frontier areas for use in policy and research. Participants for this study will be recruited from the most remote areas, those which carry a FAR level 4 designation.

Demographics

According to figures from state offices of rural health, compiled by the National Center for Frontier Communities, in 2010 there were approximately 55 million people, nearly two percent of the population, living in frontier counties. This number is declining as census data indicate that people are migrating from rural areas to more urban areas,

thereby increasing the number of frontier counties. In 2000 there were 436 frontier

counties listed in the US census data, however by 2010 this had increased to 486

(Appendix A). Most of the frontier counties are in the western states, from Montana

south to Texas, and make up 45 % of the U.S. land mass (Nayar, Yu, & Apenteng, 2013).

Table 1 lists the percentage of frontier land in the top-ranking states.

People living in frontier areas are more likely to be poor (National Center for

Frontier Communities, 2007). Regional differences in ethnicity can be found with more

Hispanics in the southern part of the US and more Native Americans in states with higher

percentages of tribal lands (National Center for Frontier Communities).

Health Status

Health status information is usually reported as either rural or non-rural. The

numbers of frontier residents are small and their health status is rarely, if ever reported.

Therefore, the health status of rural populations will be included in this section with the

notion that frontier residents are included in the rural data. Health status includes data

regarding disease prevalence, pathophysiologic process, and morbidity and mortality

rates. Premature mortality, defined as death before 75 years of age, is greater among

rural dwellers than their urban counterparts. Specific causes that lead to this difference

include higher death rates from unintentional injuries, suicide, chronic obstructive

pulmonary disease, and diabetes. Specifically, the death rate for persons aged one to 24

years was 31% higher in rural versus urban counties (Eberhardt & Pamuk, 2004).

In rural agricultural areas farm workers also have a greater exposure to cancer-

causing agents resulting in higher than average rates of brain, stomach, lymphatic, and

Table 1. Frontier States.

State	Area in Frontier (sq. miles)	% of Frontier Lands
Alaska	661,306	31.11
Texas	157,786	7.42
Montana	133,133	6.26
New Mexico	108,395	5.10
Arizona	99,399	4.68
Nevada	95,025	4.47
Wyoming	89,750	4.22
Utah	77,053	3.63
Colorado	74,101	3.49
South Dakota	66,233	3.12
Idaho	64,573	3.04
North Dakota	62,427	2.94
Nebraska	57,438	2.70
Minnesota	53,700	2.53
California	52,371	2.46
Oregon	48,089	2.26
Kansas	46,786	2.20
Oklahoma	36,889	1.74
Washington	33,832	1.59

Source: Frontier Counties. Org. *2000 Update, Frontier Counties in the United States*

hemopoietic cancers. Children raised in rural agricultural areas are also at higher risk of exposure to pesticides and have higher rates of related illnesses (Ricketts, 2000). Rural counties also report higher rates of childhood obesity, ranging from 17% to 25.9% compared to the national average of 15.8%. One study, which investigated the prevalence and correlates of high body mass index in rural Appalachian children aged 6-11 years, found childhood obesity rates of up to 38%, with boys 23% more likely to be overweight (Montgomery-Reagan, Bianco, Heh, Rettos, & Huston, 2009).

Rural areas have proportionately higher injury mortality rates, with decreasing population density as the strongest predictor of county-specific trauma death rates in the United States (CDC, 2001; Rutledge et al., 1994). Type and severity of injury are among the multiple factors contributing to these high mortality rates, however, problems accessing appropriate emergency care is one of the most important factors contributing to increased injury death rates among rural populations (Peek-Asa, Zwerling, & Stallones, 2004). Studies indicate that the availability of advanced life support pre-hospital care increases survival rates (Gabella, Hoffman, Marine, & Stallones, 1997; Kearney, L., Swartz, Barker, & Johnson, 1990; Svenson, Spurlock, & Nypaver, 1996; Zwerling et al., 2005). In a single-state study researchers in Colorado demonstrated that rural children have a significantly higher risk of death from motor vehicle crashes and unintentional firearm injuries than urban children (Hwang, Stallones., & Keefe, 1997).

Insurance

In 1997 and 1998, the proportion of the uninsured population was higher among residents of the most rural and the most urban counties than elsewhere in the US. Nearly 21% of residents aged 65 and younger who lived in the most rural counties reported

being uninsured compared with 12% of suburban residents (Eberhardt & Pamuk, 2004).

Ricketts (2000) noted that rural residents are more often uninsured compared to urban

residents, 18.7% versus 16.3%. In a study on social capital in Utah's rural areas,

respondents stated that lack of access to health care or medical insurance was a common

experience for low wage workers. One half of the families interviewed stated they were

uninsured and the majority of these had accrued debts related to health conditions. Debts

accrued because families earned too much money to qualify for Medicaid, but were

unable to afford or had no access to health insurance (Gringeri, 2008). The effects of the

Affordable Care Act on this population are as yet unknown but may have a positive

impact on the number of insured people in rural and frontier areas.

Access to Healthcare Services

The Rural Healthy People 2010 report, a companion to Rural Healthy People

2010, cites access to health care as the top rural priority (Gamm, Hutchison, Dabney &

Dorsey, 2003, p. 5). The geographic isolation that characterizes frontier areas poses

unique challenges relating to the access to and delivery of health care services (Rickets,

Johnson-Webb, & Taylor, 1998). Rural America has 20% of the nation's population but

less than 11% of its physicians and less than 16% of its registered nurses (HRSA, 2013).

Over the past 20 years, the numbers of rural physicians and hospitals have

declined due to changes in reimbursement and rural health policy. Between 1980 and

1998, the total number of community general hospitals decreased by 11.8% due to

closures, mergers and conversions, which in turn forced more physicians out of the rural

areas (Ricketts, 2000). In response to rural hospital closures the Medicare Critical

Access Hospital program, part of the Balanced Budget Act of 1997, was developed to

financially shore-up rural hospitals through the provision of cost-based reimbursement for outpatient, emergency and limited inpatient services (Reif & Ricketts, 1999). Access to rural home care and hospice services have also declined due to difficulties remaining financially viable in the changing regulatory environment (Nelson & Gingerich, 2010).

State and local rural health leaders identify mental health and mental disorders to be the fourth most often identified rural health priority (Gamm et al., 2003, p 165). The prevalence and incidence of most types of behavioral health disorders are similar for urban, rural and frontier residents. Rural and frontier dwellers are, however, much less likely to receive treatment due to the low availability, accessibility and acceptability of rural behavioral health services (Van Hecke, 2012).

In recognition of these disparities the federal government funded programs to recruit healthcare workers to rural and remote areas. The National Health Service Corps offers a student loan repayment program for healthcare workers who choose to work in specific underserved sites. This program was originally designed for physicians, however, in 1991 the program was expanded to include physician assistants (PAs) and NPs (Richardson, 1998).

The Rural Health Clinic Act of 1977 was passed by Congress to ensure the availability of, and access to primary health care services to rural underserved areas. The law authorized Medicare and Medicaid payments to qualified rural clinics for services provided by NPs and PAs regardless of physician presence (Wasem, 1990). The Rural Health Clinic Act not only provided for federal and state reimbursement to nurse practitioners, it was specifically designed to promote the use of nurse practitioners or

physician assistants mandating that 50% of the services in rural health clinics be provided by NPs, PAs, or certified nurse midwives.

Despite federal incentives to encourage rural NP practice, studies have shown that only a fraction of NPs are practicing in rural or other underserved areas (Osterweis & Garfinkel, 1993). In 1980, more than half of the 15,400 nurse practitioners in the US practiced in communities with less than 2,500 residents. In 2000, the last year that a national survey of nurse practitioners was conducted, data indicated that approximately 15.2% were practicing in rural areas with only 1.5% in frontier communities (Goolsby, 2011).

Both nursing and medical schools have implemented strategies to encourage rural practice for their graduates. One strategy is to place students in rural rotations with the expectation that some may find they fit this type of practice and choose rural practice sites after graduation (MacRae, van Diepen, & Paterson, 2007). Another strategy is to recruit students from rural areas, and, through distance learning programs, allow those students to advance their education while working with a local preceptor (Meyer et al., 2005; Zukowsky et al., 2011). This strategy may ultimately yield the highest results as nurses tend to cite closeness to family as the main reason to stay in rural areas (Lindsay, 2007; Smith, Edwards, Courtney, & Finlayson, 2001).

Extant Knowledge of Frontier Nurse Practitioner Practice

There is a paucity of literature regarding frontier healthcare in general and frontier nurse practitioner practice more specifically. Most of the literature refers to the broader category of *rural* nursing with readers left to determine what, if any, data were collected from frontier nurses. Most studies of rural NP practice can be categorized into the

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following areas: (a) the safety of using NPs in rural areas (Chang et al., 1999; Chen, Barkauskas, & Chen, 1984; Everett, Schumacher, Wright, & Smith, 2009); (b) patient satisfaction with rural NPs (Baldwin et al., 1998; Knudtson, 2000; Murphy & Ericson, 1995; Ramsey, Edwards, Lenz, Odom, & Brown, 1993); (c) nurse-managed rural clinics (Edwards, Kaplan, Barnett, & Logan, 1998; Edwards, Lenz, & East-Odom, 1993); (d) skills utilized by rural NPs (Lausten, 2013), and (e) characteristics of rural NPs (Colledge, 2000).

A systemic review of 13 studies published prior to 2004, demonstrated the safety, effectiveness, and patient satisfaction with rural NPs who provide a wide range of services (Jakobs, 2005). More recent studies have focused on rural NP practice and the health outcomes of rural populations (Macnee et al., 2006; Sears, Wickizer, Franklin, Cheadle, & Berkowitz, 2008), and found positive outcomes. A secondary analysis of the "Nurses and the Population's Health Study" (Bigbee et al., 2013) was conducted by this researcher. Results indicate a significantly lower premature death rate in frontier counties where at least one advanced practice registered nurse (APRN) is located, versus frontier counties where there are no APRNs (Jakobs, 2014).

Most of the information published about frontier NP practice is descriptive and anecdotal. The literature consistently indicates that a distinguishing factor between rural and frontier NP practice is the extent to which frontier NPs provide emergency medical and trauma care. These articles will be discussed in the literature review section of this manuscript. Despite an exhaustive and all-inclusive literature search, this researcher has been able to find only one published study on the *practice* experiences of frontier NPs in the US (Lythgoe, 1999).

Purpose of Study

The purpose of this narrative inquiry study is to explore, document, and analyze frontier NP experiences with an overall goal of developing a conceptual framework for frontier NP practice that will inform health care policy and educational programs. As previously stated, frontier areas are the most remote and geographically isolated areas in the United States. They are sparsely populated and, in addition to harsh weather, they often face extreme distances and travel time to services of any kind. Although approximately 1.5 % of NPs practice in frontier settings (Goolsby, 2005), relatively little data has been published regarding the experiences of NPs working in these areas. This researcher adds her narrative to the voices of participants in this inquiry and those heard in the descriptive literature. This chorus of voices encompasses the experiences of frontier NPs spanning nearly 40 years.

Specific Aims

1. Contribute to the creation of a new sense of meaning and significance with respect to the practice of frontier nurse practitioners.

2. Inform the discipline of nursing by bringing to light the ethics of frontier NP practice.

3. Create a repository of stories upon which nurse leaders, health care policy makers, and nurse educators interested in frontier healthcare can theorize and plan.

These aims provide the framework for the interview guide used to elicit stories from the participants (Appendix B). This is an exploratory study; therefore, the researcher could not have predicted the content of the stories told by the participants.

Through the methodology of narrative inquiry and utilizing the method of story-telling, these aims were realized, while bringing the contextual nuances of frontier NP practice to light.

Significance

This study will significantly contribute to knowledge regarding frontier NP practice through exploration of their experiences. The knowledge gained from this research has the potential to extend concepts that have been identified in rural nursing theory to another geographic population, identify new concepts related to frontier healthcare, and lead to a conceptual framework for frontier nursing practice. A review of the literature will demonstrate that emergency care is one of the most significant differences between the skillset needed for frontier NP practice versus practice in other settings. This study will provide additional knowledge regarding the emergency care experiences of frontier NPs as well as demographic information regarding their preparation to provide those services.

Innovation

With healthcare reform now a reality, nursing is positioned to take a major leadership role in the transformation. It has been suggested that an increase in the numbers of advanced practice nurses will be needed to provide primary care to persons who will now have the means to seek it (Halloran, 2012; Sroczynski & Dunphy, 2012). Information regarding advanced nursing practice, particularly in underserved areas, is crucial to this process. The experiences of frontier NPs have, for the most part, only been illustrated in descriptive articles highlighting the practice of individual NPs. This will be the first nursing study to utilize narrative inquiry to explore and analyze NP experience.

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These stories of nursing situations will give readers a sense of the ethics, values, and contributions of these advanced practice nurses and inform educators and policy makers who have an interest in frontier healthcare.

Impact

Implications for Nursing Education

Education has long been a recognized determinant of the availability of the nursing workforce and its distribution. Stories of frontier NP practice will provide valuable information for nurse educators. Students must be properly prepared for their role in a frontier setting. This not only includes emergency and complex patient management skills but information regarding coping mechanisms for situations unique to the setting (Bigbee & Mixon, 2013). These include: (a) role stress related to long call hours, (b) confidentiality in small towns, (c) best use of available resources, and (d) self-learning techniques. Information regarding role strain related to treating family and neighbors as patients and dealing with professional isolation should also be provided.

Mental health services are severely lacking in frontier areas (Gamm et al., 2003). Supplemental coursework, particularly regarding therapy and pharmacological management of mental health patients would be particularly useful. Dental services are also severely lacking in frontier areas (Knapp & Hardwick, 2000). Even when available, dentists do not normally take call and the frontier NP may need to manage dental emergencies in the off-hours. Providing course content on these problems could be very helpful. The experiences of the participants in this study may shed light on some or all issues of access to health care.

Workforce Implications

Strategic workforce planning is hampered by the lack of reliable data on the numbers and types of health professionals currently employed. The practice settings of nurses, their roles, and the types of activities they perform are required to determine regional nursing workforce needs (Institute of Medicine, 2011). This study has implications for workforce policy as it will provide de-identified demographic information about the participants as well as information regarding their practice experiences and motivation for working in the frontier.

One of the biggest challenge frontier areas face is lack of access to healthcare resources. Recruitment and retention of both rural and frontier providers is problematic (Sharp, 2010). Regulations that define scope-of-practice limitations vary widely by state (Institute of Medicine, 2011). Studies have shown that states with the least restrictive scope of NP practice attract the highest number of NPs (Odell, Kippenbrock, Buron, & Narcisse, 2013; Reagan & Salsberry, 2013). As physician collaboration is not available in most frontier settings, regulatory agencies can influence recruitment into frontier areas. Therefore, this study will include stories from NPs who practice in multiple states to ensure that state regulatory factors do not limit the findings.

Workforce data on potential NP recruitment is also valuable. This researcher's study, APRNs (Advanced Practice Registered Nurses) and the Population Health in Frontier Counties, has Registered Nurse (RN) and APRN data on 308 frontier counties in the contiguous United States. This data indicates that while 215 of these counties reported at least one APRN, all 308 reported at least one RN. These RNs represent a

potentially untapped source of future NPs who would likely practice in their communities

after graduation.

Implications for Emergency Medical Services

Frontier areas represent a small but significant subset of rural locations,

significant due to the lack of an emergency care safety net. Rural Healthy People 2010

identified access to health care as the top rural priority. Of the five healthcare access

areas mentioned, access to EMS services was listed as the highest priority (Gamm et al.,

2003, p. 5).

Emergency medical services (EMS) may be sporadically available due to the

voluntary nature of frontier EMS personnel. Studies have shown that rural areas have

proportionately higher injury mortality rates, with decreasing population density as the

strongest predictor of county-specific trauma death rates in the United States (CDC,

2001; Rutledge et al., 1994). Type and severity of injury are among the multiple factors

contributing to these high mortality rates, as well as problems accessing appropriate

emergency care. This is one of the most important factors contributing to increased

injury death rates among rural populations (Peek-Asa et al., 2004). In 1986, the Frontier

Health Care Task Force recommended that frontier areas with populations between 500

and 900 be staffed with a full-time non-physician provider, or part-time physician, with

arrangements for emergency coverage and Emergency Medical Technician supervision

(Bigbee, 1992).

In this researcher's experience, the use of volunteer ambulance crews with

sporadic availability and limited training, distance to the nearest rural emergency

department, availability of air transport, and general lack of medical manpower makes

providing pre-hospital care in frontier settings challenging. This task often falls on

frontier NPs who have varying levels of emergency training. Therefore, this study will

explore experiences of frontier NPs with emergent patient care situations. NP experience

with the local EMS system will also be explored. This information has implications for

education and policy regarding advanced emergency care training for NPs who plan to

practice in frontier areas.

Chapter I Summary

This researcher's experiences support the notion that there is a knowledge gap

related to frontier NP practice. This belief is supported by the dearth of published articles

or studies on the phenomena. There is a shortage of healthcare providers in frontier areas

and NPs are more likely than physicians to practice in remote areas. This has led the

Institute of Medicine and the Medicare Payment Advisory Commission to recommend

expanding the supply and role of NPs (DesRoches et al., 2013). The National Rural

Health Association (1997) has called for a greater integration of primary care

practitioners into the EMS systems in frontier areas. Therefore, this role expansion will

likely include integration into the EMS system in frontier communities. For educational

institutions to prepare these NP graduates they must know for what they are preparing

them. More importantly, NPs who would potentially practice in frontier settings need a

clear understanding of the role and its impact on their personal and professional life.

This may impact the prerequisite professional experiences and educational preparation of

future NPs who plan to work in frontier settings. This study will shed light on existing

frontier NP practice and provide insight into the unique challenges that face those nurses

who heed the call to provide what may be the only source of healthcare for frontier communities.

The next chapter will include a broad review of the literature and issues related to frontier NP practice. Chapter III will provide an overview of the methodology for this dissertation, narrative inquiry, including the philosophical basis for this study. Chapter IV will include participant narratives and findings of the study, while development of the conceptual framework, study implications and recommendations for further research will be discussed in chapter five.

CHAPTER II

LITERATURE REVIEW

Introduction

There are challenges to conducting a literature review of frontier NP practice. As noted in chapter one, the frontier designation is fairly new. Frontier had previously been included under the designation of rural. To complicate matters further, there have also been definitional inconsistencies of the term rural (Bigbee & Lind, 2007). Therefore, a wide definitional net was cast to capture any and all information regarding frontier NP practice. This review expands and builds upon work previously completed for this researcher's master's thesis entitled, *Practice Patterns of Rural Nurse Practitioners*.

After reviewing literature included in the thesis, a literature search was conducted utilizing the databases of CINAHL, PUB MED, GOOGLE SCHOLAR, and PRO-QUEST dissertations using the following search terms: Frontier Nurse Practitioner, Frontier Nursing, Frontier Healthcare, Frontier Medicine, Rural Nurse Practitioner, Rural Nursing, Rural Nursing Research, and Nurse Practitioner Studies. The search included articles published in English with no time restriction on the dates published. The articles were limited to those published in the United States as the role and scope of NPs in other counties is different than the role and scope in the US.

As noted in Chapter I, the acceptance of, satisfaction with, and safety of NPs' practice has been well established (Edmunds, 2000). It has also been established that

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recruitment and retention of NPs in both rural and frontier areas is problematic and several strategies have been suggested to remedy the situation. From a research standpoint, the lack of knowledge regarding frontier NP practice is understandable. Research involving frontier or rural nursing is challenging due to the socio-geographic diversity of these areas and small sample sizes, which make it difficult to generalize (Bigbee & Lind, 2007).

This chapter will be divided into sections based upon the primary topic of the literature. Section one will include a timeline of the frontier designation. Long and Weinert's (1989) theory of rural nursing provides a benchmark for understanding of the phenomena, therefore, the second section contains a review of this theory. The third section will present a review of nursing studies pertinent to frontier NP practice, while the fourth section brings together the disparate pieces of descriptive evidence regarding rural/frontier NP practice. This evidence will be presented according to the overall themes that emerged during the literature review.

<p align="center">**Frontier Designation**</p>

Defining the terms *rural* and *frontier* for the purposes of healthcare provision and research is an important consideration. A single, all-purpose definition of rurality is neither feasible nor desirable and the definition should be tailored to the task at hand (Halfacree, 1993). In 1986, the Department of Health and Human Services (DHHS) sponsored the formation of the Frontier Healthcare Task Force. This group identified specific criteria that defined the differences between frontier and rural health-service areas. The resulting matrix illustrated in Table 2, included driving time to next level of care, population density, and level of care at local hospitals.

<p align="center">18</p>

Table 2. 1986 Rural/Frontier Matrix.

Parameter	Rural	Frontier
Driving time to next level of care	30 minutes	60 minutes or severe geographic and climatic conditions
Population density	Greater than six but less than one hundred	Less than six per square mile
Hospital	Small, 25-100 beds, may have swing beds	25 beds or less, or no hospital

Source: Elison, G. (1986, p.3).

Despite the 1986 matrix, definitional inconsistencies persisted. In 1997, the

Frontier Education Center convened a group of experts to develop a consensus definition.

Key components of the frontier designation were identified. These components are

population density, distance, and travel time. The new matrix, Table 3, rates each key

component and bases the frontier definition on the total score. Based on this matrix,

states with the highest number of frontier counties are Colorado, Idaho, Kansas

Minnesota, Montana, Nebraska, North Dakota, New Mexico, Oklahoma, South Dakota,

and Texas.

Proponents of rural nursing theory at Montana State University have forwarded an

alternative rurality index (Racher, et al., 2004). This index employs a continuum of

"rurality" based on access and population variables and uses only two variables, county

population and distance to emergency care. Utilization of county population statistics

may be problematic, however, in that a very large county may have one metropolitan area

Table 3. 1997 Frontier Matrix.

DENSITY – PERSONS PER SQUARE MILE	POINTS
0-12	45
12.1-16	30
16.1-20	20

NOTE: PER COUNTY OR PER DEFINED SERVICE AREA WITH
JUSTIFICATION
TOTAL POINTS DENSITY

DISTANCE – IN MILES TO SERVICE/MARKET	
>90 Miles	30
60-90	20
30-60	10

NOTE: STARTING POINT MUST BE RATIONAL, EITHER A
SERVICE SITE OR PROPOSED SITE
TOTAL POINTS DISTANCE IN MILES

TRAVEL TIME – IN MINUTES TO SERVICE/MARKET	
>90 Minutes	30
60-90	20
30-60	10

NOTE: USUAL TRAVEL TIME; EXCEPTIONS MUST BE
DOCUMENTED (i.e. WEATHER, GEOGRAPHY, SEASONAL)
TOTAL POINTS TRAVEL TIME IN MINUTES

TOTAL POINTS ALL CATEGORIES

Total Possible Points 105; Minimum Points Necessary for Frontier Designation = 55
"Extremes" = 55-105
Source: National Center for Frontier Communities

that skews the data. In this circumstance, one solution is to designate frontier areas by zip code as it provides more precise differentiation of rural areas in counties with a mixture of rural and frontier areas (Bigbee, 2007).

In 2012, the Health Resources and Services Administration began accepting comments on a proposed zip code-based methodology for designating US frontier areas that may be more appropriate for current rural health programs and other purposes (HRSA, 2012). The resultant frontier and remote (FAR) methodology, summarized in Table 4, takes into account both population density and travel time to population centers using a four-level approach. As noted in Chapter I, participants in this study will be recruited from zip code locations that carry a FAR level 4 designation (Appendix C).

Rural Nursing Theory

This inquiry will extend rural nursing theory into a specific subset of rural nursing, frontier nurse practitioner practice. Therefore, a review of the theory is pertinent. In 1989, Kathleen Ann Long and Clarann Weinert published results from their ethnographic study of rural residents in Montana (Long & Weinert, 1989). The study was based on the assumption that healthcare needs are different in rural areas from that of urban areas. They also made the assumption that all rural areas are viewed as having some common health needs. In addition, the assumption was made that urban models were not appropriate to, or adequate for, meeting healthcare needs in rural areas (Winters & Lee, 2010).

The authors interviewed rural nurses in Montana and identified concepts such as, insider-outsider, role diffusion, and a lack of anonymity as characteristics of rural nursing

Table 4. FAR Criteria.

FAR Level One	Zip code areas with majority populations living 60 minutes or more from urban areas of 50,00 or more people
FAR Level Two	Zip code areas with majority populations living 60 minutes or more from urban areas of 50,000 or more people *and* 45 minutes or more from urban areas of 25,000-49,999 people
FAR Level Three	Zip code areas with majority populations living 60 minutes or more from urban areas of 50,000 or more people; 45 minutes or more from urban areas of 25,000-49,999 people *and* 30 minutes or more from urban areas of 10,000-24,999 people
FAR Level Four	Zip code areas with majority populations living 60 minutes or more from urban areas of 50,00 or more people; 45 minutes or more from urban areas of 25,000-49,999 people; 30 minutes or more from urban areas of 10,000-24,999 people *and* 15 minutes or more from urban areas of 2,500- 9,999 people

Source: HRSA Methodology for Designation of Frontier and Remote Areas

practice. In addition, they also sampled rural residents in Montana regarding their health

beliefs and practices. Although their study participants represented a relatively narrow

sample of rural dwellers and nurses, their research continues to be cited in the literature

(Colledge, 2000; Guadron, 2008; Lauder, Reel, Farmer, & Griggs, 2006; Senn, 2013;

Sharp, 2010) and represents the only widely accepted conceptual framework for rural

nursing practice. Long and Weinert also suggested that acceptance as a healthcare

professional is often tied to personal acceptance by the community. Results of their study

indicate that community involvement is utilized as a method to overcome this barrier (which may add to the social capital of remote communities).

Based on their findings, Long and Weinert developed relational statements regarding healthcare characteristics of rural residents (Winters & Lee, 2010, p. 10). These statements can be summarized as:

1. Rural residents define health primarily as the ability to work or be productive.

2. Rural residents are self-reliant and resist accepting help or services from *outsiders.*

3. Healthcare providers in rural areas must deal with a lack of anonymity and much greater role diffusion than providers in urban or suburban settings. In addition, they also reported a greater sense of isolation from professional peers.

Other researchers have replicated Long and Weinert's findings and have also identified concepts related to role stress and being *on call* as well as issues with confidentiality in small towns (Schmidt, Brandt, & Norris, 1995). Although some researchers have questioned the generalizability of the first relational two statements (Nichols, 1999), the third statement has found support in the literature and will be discussed in the last section of this review.

In an effort to replicate a portion of Long and Weinert's study and to increase the understanding of frontier residents' perceptions of access to healthcare, a descriptive study was conducted in a frontier town in southern Montana (Smith, 2008). Specific aims of the study were: (a) to explore frontier residents' healthcare access to resources; (b) to investigate frontier residents' utilization of healthcare services; (c) to ascertain

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reasons frontier residents seek healthcare; and (d) to explore the resident's overall

satisfaction regarding their healthcare options. Smith interviewed eleven participants

who lived in the same frontier town. Ten of the participants described themselves as

being *healthy*, four of these participants further stated that their lifestyle (frontier living

and ranching) kept them physically active and led to their feelings of being healthy. All

residents interviewed felt they had some form of access to healthcare resources even if

this meant driving 70 miles to the nearest provider. One participant stated, "You know,

we're used to distance, we live with it, it's just a known factor" (p. 44). Three of the

participants mentioned informal healthcare resources, such as soliciting healthcare advice

from a former nurse who worked as an emergency medical technician on the volunteer

ambulance or trying to take care of their own ailments using folk remedies. One elder

resident stated, "essential oils, things like peppermint; you know if you get a stomach

ache. It's like the cold, it's the flu, you know, it's a virus. You're going to get over it.

You don't do antibiotics unless you have to" (p. 46). Several participants mentioned the

need for local emergency services because, "We're so darn far from help" (p. 40). Four

of the participants felt an NP would be a benefit to the community but wondered if there

would be enough patients to maintain a practice.

All participants had seen some type of healthcare provider in the recent past,

average length of time from last visit was one year. The cost of care was frequently cited

as a negative component of accessing care. Patient satisfaction with their healthcare

provider was high even though they travelled many miles to see them and sought care

infrequently.

Smith's study provided valuable insights into the healthcare perceptions of a small number of frontier residents in a very limited geographic area. Despite this limitation, it did validate some of the concepts identified in rural nursing theory such as, placing a high priority on work, self-reliance, and the use of informal healthcare resources. Both Smith and Long and Weinert (1989) conducted their study in Montana, which may explain the congruence of their results. Data from this study would be beneficial to an NP who may want to start a practice in this community.

Studies Pertaining to Frontier NP Practice

Rural Skillset

Rural NPs have been described as *expert generalists* (Rozier, 2000). In an effort to document the psychomotor clinical skills and procedures (CSPs) utilized by NPs in practice an NP educator from rural Oregon conducted a survey of NPs practicing in that state (Lausten, 2013). A survey instrument was developed, which included 90 CSPs (Appendix D). Among other items, respondents were asked how often each procedure was performed and if they had received training on those procedures during their NP preparation. The survey was vetted through a review process by a panel of expert NPs who were guided by Colyar and Ehrhardt's ambulatory care procedures for the practitioner (2004). The panel members had a breadth of exposures working in urban, suburban, and rural settings. Results indicate 23 of the CSPs were used by more than 50% of respondents. The survey also found significant dichotomies between urban and rural practice. Rural NPs reported the use of a greater number of CSPs and a majority reported learning most of the CSPs outside of their NP educational programs.

The CSP used by the largest number of respondents (76.1%, *n*=436) was cerumen

impaction removal. Vasectomy was used by the fewest respondents (3%, *n*=13). In all,

23 of the CSPs on the survey were rated by 50% or more of the respondents to be either

very important or important to their practice. Results of this survey suggest that NPs

planning to practice in rural or frontier areas may need broader exposure and training in

CSPs. This study was limited to the state of Oregon and, while the author listed the

practice settings (urban, *n*= 200; suburban, *n*=102; rural, *n*=133; frontier, *n*=3) in the

respondent demographics, the percentage or number of times the CSPs were utilized

according to those practice designations was not reported.

Community Needs Assessment

A thesis entitled, "Wanted Dead or Alive: Healthcare Provider for Rural Idaho

Community" (Crouch, 1995), analyzed the healthcare needs and desires of the

community of Elk River, Idaho to see if an NP could meet these needs. The distance to

the nearest pharmacy, bank, or dental care is 40 miles via a paved route and the nearest

hospital is 50 miles away via a winding road. The resident population of Elk River

consists of full and part-time residents as well as a significant tourist base. The resident

sample was an aging population with specific age-related priorities, while the tourists

tended to be younger and engaged in a preponderance of outdoor interests. A

geographical environment full of natural hazards increases the likelihood of orthopedic

and soft tissue injuries. The need for emergency healthcare services was a recurrent

common theme among the responses of resident participants throughout the survey and

interview processes. The triad of common resident concerns: (a) lack of emergency

healthcare; (b) the condition of the elderly, and (c) long travel distances to the hospital and providers defined the most pressing community health needs. After reviewing the Idaho State Nursing Board's scope of practice for NPs and interviewing the community on their level of acceptance of an NP, the author concluded that the community would be well-served by an NP provided one could be recruited.

Recruitment and Retention

Recruitment and retention of health care professionals is problematic in rural areas and even more so in frontier areas. Professional isolation and lack of anonymity have been cited as causational factors. The outsider status of the professional is also a factor. These issues all lead to difficulties in attracting and retaining healthcare professionals to rural areas (Conger & Plager, 2008). Conger & Plager conducted a study in Arizona and found that rural advanced practice nurses (APRNs) who felt connected to a supportive network of peers were more likely to continue practicing in rural settings.

Factors related to the recruitment and retention of NPs in rural areas was the subject of a doctoral dissertation (Sharp, 2010). Sharp utilized a focused ethnographic approach to explore the cultural constructions of rural NP roles. One of Sharp's assumptions was that NPs experience transition to their role as rural NPs and as a result of that transition, develop a culture different from NPs who practice in urban settings. Sharp determined that only NPs who had been practicing for a minimum of eighteen months would be interviewed. Twenty four rural NPs from across the country agreed to participate.

In Sharp's study, transcribed data was first analyzed using directed content analysis focused on concepts from the theory of cultural marginality. The succeeding content analysis focused on the four concepts identified in rural nursing theory: lack of anonymity, outsider versus insider status, self-reliance, and isolation and distance. As a result of the analysis, patterns emerged revealing that NPs who had transitioned to rural practice experienced personal, social, and professional adaptation, leading to role success and gratification. Three of the four concepts from rural nursing theory were also identified during the analysis, lack of anonymity, outsider versus insider status and self-reliance. The participants spoke about social adaptation in rural communities and were impacted in one of three ways. They either adapted to or accepted a connection to the community, they separated themselves from social situations, or they became part of the community. Those NPs who separated themselves did so due to the perception of potential difficulties with dual roles, i.e. having patients as friends. Rural NPs in Sharp's study cited professional gratification along with being close to family as their reasons for staying in a rural setting.

Sharp's study provided further evidence regarding rural nursing theory. The fourth concept of the theory, isolation and distance, appeared to be perceived differently depending on the experiences and family connections the NPs had in their rural community. This gives further evidence that educators and policy makers should focus rural NP recruitment efforts to RNs who live in rural areas and are connected to the community.

One of the exemplar's in Sharp's study is of particular interest to this study. Limitations on available emergency medical services caused many of the NPs to practice

to their full scope of practice. One participant stated, "We are usually the first stopping place for people that are experiencing emergencies, so you are kind of thrown into probably a larger scope from what we originally thought we would have just because we don't have the resources" (pp. 51-52). A statement such as this makes one believe that their NP education hadn't fully prepared them for this aspect of their practice. Sharp's study is valuable for the resulting insights into rural practice and for the diverse geographic nature of the participants.

In an attempt to identify personality characteristics that lead to retention of NPs in rural practice, Colledge (2000) conducted a study that evaluated hardiness as a possible predictor of rural NP success. A causal-comparative research design was used to explore the relationship between the location of NP's practice sites and their measured index of hardiness. Colledge defined rural as counties with a population of 20,000 or less. Hardiness was measured using the Personal Views Survey, which consists of fifty questions used to measure the traits of control, commitment and challenge, which have been reliably associated with hardiness. Participants were recruited from Alaska, Washington, Oregon, Idaho, and Montana. Of the 1148 respondents, 28% practiced in rural locations with 2.3% listing practice sites in a county that was considered completely rural. Additionally, 39% of respondents had experience in a rural practice.

A thematic analysis was conducted to evaluate responses to open-ended questions listed on the demographic questionnaire. Nineteen percent of respondents listed proximity to their home or scenic setting as a reason for the location of their practice site. The least cited reason for location of present employment was economic; however, nineteen respondents were practicing in underserved areas as a condition for educational

loan repayment. Reasons for leaving rural practice were described by 28% of

respondents and included: (a) family issues; (b) location of practice; (c) to pursue

advanced education and (d) issues related to a rural lifestyle, such as limited cultural

opportunities and lack of anonymity. Reasons for considering practice in a rural area

were also elicited. Responses included: (a) lifestyle issues such as tranquility; (b) less

stress and a perception of fewer societal problems; (c) clinical considerations such as

diversity and autonomy; (d) personal reasons such as significant other's occupation and

children's educational and social opportunities and (e) aesthetics of a rural setting, such

as the beauty of a pristine mountain community or a small agrarian town. Contrary to

results of other studies, only 25 of the 1148 respondents listed being raised in a rural

community as a reason they would consider practice in a rural community (Colledge,

2000).

     Colledge (2000) utilized scores on the Personal Views Survey to compute a

hardiness index value. Colledge then analyzed the values utilizing analysis of variance

(ANOVA) and student T tests. The combined hardiness scores had a range of 66 points

with the scores falling between the minimum of 60 and the maximum of 126

(mean=103.42). Results of the analysis revealed no statistically significant relationship

between location of practice and hardiness. There was also no statistically significant

difference when each of traits (challenge, control and commitment) was analyzed.

     Practice locations were then grouped to facilitate the focus of the study and to

address the issue of limited respondents in rural locations. These locations were

categorized as metropolitan, adjacent to metropolitan and non-adjacent to metropolitan.

This last category represented populations less than 2,500 up to more than 20,000. This

category was developed to separate those NPs who live in a metropolitan area but commute to a rural area from NPs who are more likely to live in, and are therefore immersed in, the rural area. The additional analysis revealed a statistically significant difference between the location of practice and a higher score on the challenge subscale of the hardiness index, with the most rural respondents scoring higher (Colledge, 2000).

Although Colledge (2000) conducted an extensive analysis of both their qualitative and quantitative data, they did not find a correlation between hardiness and rural practice for NPs. While this study may not have achieved the aim of identifying personality traits that predict rural NP practice, it did provide insightful evidence related to rural NP practice demographics. The respondents were recruited from states that have some of the highest numbers of rural and frontier counties, however, only 28% of NPs in the sample practiced in rural areas (frontier counties were not specifically mentioned).

Challenge was the only component of the hardiness index that was statistically significant in the analysis and may suggest that this may be an important trait for rural NPs. Demographic information from this study demonstrated that NPs not educated at the graduate level were more likely to practice in rural areas. This may be indicative of RNs who pursue NP licensure, but are unable to obtain advanced degrees due to distance constraints. The responses provided information regarding the motivation to consider rural practice, such as tranquility and reduced stress. This may represent an idealized vision of rural practice and cause disillusionment and *culture shock* to those NPs who choose rural practice based on preconceived notions. This may be pertinent information for education programs that prepare NPs for rural practice (Colledge, 2000).

Barriers to Rural NP Practice

In 2001 nurse researchers in Minnesota replicated a 1996 statewide survey of NPs which examined NP perceptions of barriers to practice in rural areas of that state (Lindeke, Jukkala, & Tanner, 2005). Although frontier demographics were not included, Minnesota has a large number of frontier counties (see Table 1). The barriers to practice checklist, previously established as having content and face validity, included 28 practice barriers in five topic groups, inter-professional, intra-professional, public support for NPs, reimbursement, and work-site support for NPs.

Study participants (n=191) cited: (a) lack of public knowledge of NP role (41%), (b) lack of understanding of NP role by other health professionals (40%), (c) salary lower than other nursing professionals (40%), (d) limited space and/or facilities (36%) and (e) lack of peer network (31%), as rural practice barriers. The public's lack of knowledge regarding NP practice was ranked as the number one barrier to practice, up from number two in the 1996 study. Noticeably absent from this study's finding was resistance from physicians and problems with insurance reimbursement, which had been ranked among the top 5 barriers on the 1996 survey. This may indicate physician acceptance of the rural NP role and reduced reimbursement barriers.

Barriers to rural NP practice were also identified in a nursing thesis (Tews, 2003). Tews conducted semi-structured interviews with nine rural NPs; one from Texas, two from Colorado, and six from Wyoming, with the aim of identifying commonalities and variances in the barriers and challenges experienced by the participants. A further aim was to elicit strategies that are proven effective in dealing with the participants' particular barriers.

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Results of Tews (2003) study indicated that practice challenges and barriers to effective practice resulted from a central core of misconception regarding the role and scope of NP practice. These results are congruent with Lindeke's (2005) and indicate that NPs who wish to enter rural or frontier practice should work with community leaders to educate their members on the role and scope of NPs. This is validated by Tews, who identified several universal strategies that were used by participants to overcome rural practice challenges. These included making connections and building rapport with professional colleagues, educating others on the NP role and scope of practice, and demonstrating expertise in caring for patients.

Descriptive Evidence

As noted in chapter one, stories of NP practice, particularly those stories told by NPs themselves represent significant descriptive evidence regarding frontier NP practice. This evidence will be presented according to the major themes found in the literature. Some themes are grouped together as the concepts and exemplars are inter-related. As most individual articles include more than one theme, articles may be cited under one or more thematic categories.

The Early Years: A New Role for Nurses

Loretta Ford, RN, and Henry Silver, MD, started the first practitioner program at the University of Colorado in 1965 (Edmunds, 2000). Less than ten years later, Lynne Vigesaa found herself working in the newly developed role of NP at a rural clinic in Washington state (Vigesaa, 1974). Vigesaa was a school nurse who moved to a rural area to receive on-the-job training as an NP at a small community clinic. She completed

an intense nine week training program before she and a fellow trainee opened the Darrington Nurse Clinic on April 10, 1972.

The new NPs met with their physician mentor periodically for review of difficult problems or consulted with him by phone. It was necessary to collaborate with a physician as the NPs found their position with regard to prescription medicines and procedures (suturing, joint injections, and incision and drainage) somewhat tenuous under Washington's new nurse practice act (Vigesaa, 1974).

Vigesaa (1974), states that the NPs did everything from attending the delivery of a premature infant to digitalizing an 84-year-old woman. The clinic had regular hours however Vigesaa describes her practice as a 24-hour job. The nurses' commitment to providing holistic care to their community is evident in the article. They started parenting classes, a free venereal disease screening clinic, a sex education program, first aid classes, and group discussions on nutrition, dental care and alcoholism.

The rural family nurse practitioner's quest for a role identity was the topic of a dissertation (Bennett, 1981), written during a time when NPs were still looking to find their place in the healthcare arena. Eight rural NPs were either observed or extensively interviewed regarding their practice. Of interest in this paper is a quote from one of the NPs who stated:

> There have been many practitioners that have come out to an isolated area and months and months go by and they never see their physician. You should search within yourself to see if you really think you feel qualified to be by yourself. If you are going into solo practice, people are going to come to see you, sometimes with acute situations. Your decision is it. Does the person need to go on to the

hospital and be admitted to the coronary care unit or can I safely send him home?

(p. 120)

Bennett (1981) also described the practice setting of another participant and noted there was an emergency room in his rural clinic. The clinic NP stated he was seeing more accidents all the time. Another of Bennett's participants described a situation where a patient showed up at her home in active labor. A fourth participant summed up his response to emergency situations like this, "I felt that there have been some situations that I have been in where I didn't have the knowledge needed to try to make that decision, but on the other hand, I didn't let that patient go anywhere until I had consulted someone" (p. 120). Despite the challenges, independence and autonomy were the most often cited reasons for the respondents to choose rural practice.

Expert Generalist/Multitasking

The frontier NP has also been described as an *expert generalist*, a provider who has training in all aspects of care for all age groups (Rozier, 2000). Roberts, Battaglia, Smithpeter, and Epstein (1999) support this concept and also note that rural and frontier providers often function alone, with few resources and little support. An example of this concept is provided by Burnett (1999) who describes a scene in rural Iowa where she, a nurse practitioner, is interrupted while in the middle of an incision and drainage procedure, to evaluate, stabilize, and prepare for transfer a man who walked into the clinic with chest pain.

Burnett saw patients of all ages. Children were most commonly seen for upper respiratory complaints or general injuries, with teenagers and middle-aged adults being seen most often for routine physical exams. Elders were often seen for medication

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management. Burnett cited the organizational skills, solid background in patient assessment, and decision-making abilities developed in the registered nurse role as of paramount importance for preparation of the rural nurse practitioner.

In rural Idaho, Marie Osborne (Hardesty, 1995) also noted the expert-generalist nature of her practice. She described her practice as diverse: (a) the usual cold, earaches, and pneumonias; (b) the poison ivy and fish-hook injuries in the summer; (c) skiing and snowmobiling accidents in the winter; and (d) automobile accidents and falls year round. She also found it helpful to be comfortable with dermatological conditions as a number of skin problems were seen in her practice.

Rozier (2000) also provides a description which illustrates both the "expert generalist" characteristic and the multi-tasking skills required of the rural nurse practitioner. Rozier describes a situation when the nurse practitioner, who is infusing IV fluids into a dehydrated six month old, is called upon to X-ray and treat an 11 year old with a fracture/dislocation. The child's family had no insurance, so while monitoring the six month old and the 11 year old, the nurse practitioner made phone calls to secure emergency funding to allow the child and his mother to fly to the mainland for surgical care. Just as the nurse practitioner was accomplishing this task, a resident walked in holding an injured cat, which radiographs confirmed, had a fractured pelvis. After giving care instructions for the pet, a call came in, a fisherman had amputated 4 fingers, and estimated time of arrival to the clinic was two hours.

These varied challenges may be the spice that attracts Canadian nurses to rural practice (Mahaffy, 2004). One nurse describes the following scene: The opening ceremony of a new health clinic that community members had struggled to open

coincided with both a motor vehicle accident and a bee sting reaction. With competing

requirements of stabilizing the trauma victim for ambulance transfer and the need to

respond to anaphylactic shock, "we were asking people attending the clinic opening to sit

with one patient while we were working on somebody else."

Besides emergency, urgent, well, and chronic illness visits, home visits are a

routine part of this practice. One nurse noted that during a community outbreak of strep

throat, families were sharing personal items and dishes; she educated them and gave each

a personal water bottle.

Personal Challenges

In an article entitled, "The advanced registered nurse practitioner in rural

practice", (Schmidt, Brandt, & Norris, 1995) describe factors that make practicing with

rural populations unique. These factors include, creatively addressing the common rural

problems directly related to healthcare, such as limited resources and equipment, and

establishing a high degree of positive visibility in the community. They also noted that

the ease of accessibility of the rural nurse practitioner creates a feeling of always being

on-call. The authors also found that a high level of job stress is produced by treating

family and friends as patients. This highlights the need for strict confidentiality.

Other researchers suggest that NPs experience significant difficulties as they care

for patients whose illnesses may be beyond their training and expertise and whose

suffering is severe. They also suggest that cynicism, isolation, and impairment are

potential consequences of rural and frontier practice (Roberts et al., 1999).

Rozier (2000) illustrates the concept of *always on call* in some rural practices.

Whenever she took time off to leave the island, the islanders worried about their health

and safety until she returned. This scenario also illustrates the reality of 24 hour call. Even though the employment package may call for Monday through Friday, 8AM to 5PM clinical hours, local residents know how to find the only healthcare provider. Morally and ethically, she could not deny care to her neighbors.

Personal challenges were discussed by other NPs as well and include: (a) long hours; (b) frequent calls; (c) issues with confidentiality; (d) provision of services that may conflict with personal beliefs such as abortion and domestic violence; (e)alternative forms of medical treatment; and (f) maintaining one's professional skills (Burnett, 1999; Dean, 2012; Rozier, 2000).

Seasonal variations in community population can be both a personal and a professional challenge. A seasonal increase of one or 1000 people does not bring with it an increase in medical providers, just an increase on the workload of the provider on-call. Fluctuations in patient population and urgent care issues were just a few of the issues described by Marie Osborne in an article spotlighting her frontier practice in Stanley Idaho, resident population one hundred (Hardesty, 1995). During the winter months this increased to three hundred due to winter recreational activities and dramatically increased in the summer due to its close proximity to a national recreation area. Osborne was the sole healthcare provider for a clinic that provided both primary care and emergency care for patients, seven days a week, twenty four hours a day.

Johnson (1996) also discussed these issues. Her clinic's volume and patient population varied seasonally. During the summer 50-60 patients were seen a day. Many of these were cannery workers who sustained trauma as a result of their high-risk work environment. In addition to trauma care this NP's practice included adult primary care,

well-child examinations and prenatal care. She covered the clinic and emergency department every day and was on call every other night including weekends.

Long work hours are a personal challenge cited by Rozier (2000). In a series of vignettes she describes challenges particular to her setting. For example, after putting in a 15- hour day, a boating accident victim, a fisherman with a ruptured diaphragm, broken ribs, collapsed lung, and pelvic fractures, was brought to the clinic. It took eighteen hours for a storm to quiet long enough to get a helicopter off for the 800 mile journey to the hospital. During the wait, fighting exhaustion, Rozier monitored and stabilized the patient.

The solo NP in a very rural self-managed clinic described challenges that were unique to her setting (Gorek, 2001). Her practice consisted of patients in all age groups. Consistent with other rural and frontier practices, Gorek provided preventative, acute, chronic care and minor emergency care. She described issues that were unique to her practice setting. These included lack of transportation, lack of specialists, and injured or ill tourists on a seasonal basis. She noted that not having immediate diagnostic services such as labs and x-ray was a challenge in her setting. Mahaffy (2004) also described practice challenges related to the lack of laboratory services. Through community fundraising efforts Mahaffy's clinic had purchased the CoaguCheck system for monitoring anticoagulant dosing to therapeutic levels and a hemaglobinometer for monitoring patients with anemia.

Role diffusion is another professional challenge. Evidence of role diffusion, a blurred boundary between the role of an NP and the roles of other healthcare

professionals, is present within the descriptive evidence. Less than ten years after Ford and Silver developed the NP role, Vigesaa (1974) discussed how the geographic isolation and lack of comprehensive health services, such as psychiatry and social work, affected the community. "We sometimes must try to fill in for those who otherwise would receive no services at all" (p. 2027). This statement provides evidence of the role diffusion rural NPs face and also provides anecdotal evidence that rural NPs' practice may overlap into mental health.

The boundary lines of rural NP practice may also cross over into veterinary medicine. In addition to Burnett's (1999) description of caring for an injured cat, and Rosenthal's (1996) x-raying a horse, Johnson (1996) described herself as a "de facto veterinarian" since the veterinarian only came to their isolated Alaskan bush town every two or three months. In light of this descriptive evidence, frontier NPs should not be surprised to find themselves caring for pets as well as patients.

Rural Competencies

Given these personal and professional challenges, some NPs may be better suited for frontier and rural practice. Mary Ellen Connor (2002) drew upon her twenty year career as an NP to provide insight about the skills and personality traits beneficial for providing rural primary care. This insight came as a result of her transitions from frontier to rural to urban practice. She listed the skills and experience she thought were essential to successful rural practice. Foremost is the possession of a sufficient amount of urgent care experience to handle a wide variety of patient problems. Knowledge of referral specialists is very helpful, particularly when urgent telephone consultations are needed.

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This highlights another skill, being verbally succinct in outlining a patient assessment to another provider. Delegation skills and familiarity with the scope-of-practice of those people with whom the NP interfaces is important. Competence in basic laboratory skills such as vaginal wet mounts, urinalysis, hematocrit and hemoglobin, rapid Strep screens, urine pregnancy testing, and stool testing for white blood cells is necessary. Cardiopulmonary resuscitation skills and advanced cardiac life support for both children and adults must be kept up to date. Good x-ray interpretation skills and familiarity with the radiology group that formally reads films is needed. The NP should know where lab tests are referred and when to expect the results. Lastly, Connor noted that becoming web savvy in a rural area can be the best way to keep current on research findings and medication updates.

A recommendation of the additional competencies needed to work in frontier settings came as a result of a phenomenological study conducted by Anna Lythgoe (1999). Lythgoe interviewed six nurse practitioners providing primary care in frontier settings (operational definition was counties with less than 7 persons per square mile), in an undisclosed state in the US. The purpose of Lythgoe's inquiry was to explore the transition of frontier NPs from pre-practice expectations to current practice realities. Participant criteria included at least three years of practice as an advanced practice nurse and current practice in a frontier setting. The sample consisted of six family nurse practitioners, five female and one male. Four of the six were masters prepared, one completed a diploma program, and one was a baccalaureate program graduate. Their ages ranged from 39-65 with five stating they had moved to the frontier area for personal and family reasons.

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Lythgoe's (1999) interview guide consisted of four main questions: (a) how do perceptions of the advanced practice role held by NPs in the frontier setting vary from their individual perceptions while aspiring to their current role; (b) what are the successes and the failures that have helped to shape NP's current perceptions and practices; (c) how adequately do NPs believe they were prepared educationally and experientially to provide primary care in the frontier setting; and (d) how would NPs providing primary care in the frontier setting address the limitations they have experienced if given the opportunity to adjust the preparatory phase of practice? Reporting all responses is beyond the scope of this literature review, however, selected responses may provide insight into some of the research questions posed in this study.

Regarding the issue of dealing with unexpected complexity of patient problems one respondent stated, "The role is more complex than I thought it would be… there is a lot more to know and there is more responsibility than I really anticipated" (p. 40). Lythgoe (1999) noted a strong thread of independence among the respondents exemplified by these statements, "The degree of autonomy and the level of responsibility are higher than I had anticipated" and "it has increased my responsibility but my freedom has been allowed to blossom" (p. 40).

Working with frontier populations may require knowledge of policy considerations and definitions such as *medically underserved* or *healthcare professional shortage area* (Hart, 2012*).* Regarding policy one respondent stated, "I think the politics are so burdensome, it makes you question what you are doing…everything is very complicated and if I could do what I do in a simple way, I would like it…but the politics keep it from being simple" (p. 41).

Most of the respondents felt successful if their patients had positive outcomes (Lythgoe, 1999). One respondent felt very successful when patients told him that he had made a positive difference in their lives. Frontier NPs may practice as solo providers who find the boundaries between nursing and medicine blurred. One respondent thought too much time is spent trying to differentiate the boundaries and spending time trying to set and defend them was a waste of time. The majority of respondents felt their preparation was adequate but suggestions for improvement were to include more six week specialty rotations in NP programs and provide more time to practice clinical skills. From an experiential perspective, most felt critical care and emergency room care were the most advantageous prerequisites. Specifically one respondent stated, "I think we lack emergency care and trauma care in our education. I think we need to be hit hard in the head with emergency. What's the worst case scenario here?" (p. 51).

All respondents in Lythgoe's (1999) study felt successful. They had replaced professional anxiety with knowledge of their resources and how to access answers to their questions. Lythgoe concluded that the successful transition into frontier practice required the development of professional relationships among physicians, other NPs, and other care providers. Four major nursing competencies emerged as Lythgoe analyzed her data, intellectual, technical, interpersonal, and moral.

The strengths of Lythgoe's (1999) study include the rich narrative data gathered. It is also the only study found in the literature search that specifically sought respondents from the frontier. Lythgoe's findings have implications for NP programs as well as policy-makers. A limitation of this study is that all respondents practiced in the same

state. While this makes the findings less generalizable the descriptive evidence described in this section supports its transferability.

Isolation/Emergency Medical Care

Frontier practice can be a lonely, isolated practice. Jane Scharff (2010) states,

Being rural means turning inward for answers, because there may be nobody to

turn to outward. Being a rural nurse means being able to deal with what she or he

has got, where she or he is, and being able to live with the consequences. Being a

rural nurse means that when a nurse saves a life, everyone in town recognizes that

she or he was there; and when a nurse loses a life, everyone in town recognizes

that she or he was there. (p. 251)

As noted in the prior section, not every NP may be suited for frontier NP practice. The stories told in this section are from NPs who appear to thrive on it.

The Alaskan bush conjures up pictures of an isolated wilderness. Johnson (1996) described her preparation for her NP role in this setting as a combination of her experiences as an emergency room staff nurse, a paramedic, and a per diem flight nurse on a fixed-wing air ambulance. The medical center in which she and her partner practiced consisted of a two-bed emergency department plus a clinic. An x-ray room, laboratory, and pharmacy were also on site. The nearest hospital was 50 miles away but provided care only to Alaskan Natives. Major trauma patients and all patients requiring hospitalization were treated until their condition stabilized and then were flown to Anchorage, a distance of 290 air miles.

In rural Idaho Marie Osborne (Hardesty, 1995) provided care for victims of heart attack and stroke, as well as a few emergency labors and deliveries. For the nurse

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practitioner interested in rural care, she encouraged experience in emergency medicine because, "trauma care is inevitable" (p. 132). Osborne believed that continuing education programs need to be focused towards rural healthcare practitioners.

Advanced practice nurses working on small, remote Scottish isles describe themselves as being in splendid isolation (Dean, 2012). Dean provides care 24 hours a day for the 150 residents on Eday Island. Prior to accepting a post on the island she had worked in an intensive care setting and felt prepared to handle trauma and medical emergencies, but required extra training in primary care skills such as chronic disease management. Since accepting the position she has managed a number of emergency incidents, a fall from a roof, strokes, a suspected heart attack, and a woman who went into early labor. She is primarily responsible for the initial treatment and stabilization of the trauma patients. When the weather is good the helicopter can respond in about 60-90 minutes, at other times it can take six to seven hours. The NP works on-call 24/7 for two weeks then has five or six days off. She describes the practice as invigorating because you never know what is going to walk through the door.

Dean (2012) also describes the practice of another NP who works on the remote and rugged western coast of Lewis in the Outer Hebrides along with a general practitioner. Their practice consists of 600 patients and offers emergency visits, childhood and travel vaccines, chronic disease management, cervical cytology, IV antibiotics and alcohol detox support. Due to a long travel time to the nearest hospital and declining beds in that hospital, she tries to keep patients at home if possible. This includes giving IV antibiotics to patients with cellulitis at home to avoid admitting them to the hospital.

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Many rural areas have a single economic base such as farming. In these areas NP practice can cross-over into a type of industrial practice and providers need to be familiar with the common types of industrial injuries that they may encounter. At Burnett's clinic in rural Iowa, the local economy is based on Agra-business; therefore, the clinic saw many farm related injuries. Emergency care was provided for the injuries seen at the clinic, which may be complicated by concomitant conditions such as diabetes. Eyes were a common location for foreign bodies to embed and required prompt intervention no matter what time of day the injury occurred (Burnett, 1999).

Ethics of Frontier Practice

There are ethical issues confronting frontier NPs, almost daily. Many are issues that NPs working in urban or metropolitan areas may never face. Given the nature of small towns, Long and Weinert (1989) discuss issues with confidentiality, Rozier (2000) speaks to the ethics and morals of being on-call, and Lythgoe (1999) includes morality as one of the competencies rural nurses should have. Jane Scharff (2010) adds to the ethical discussion when she states,

> Being rural means that when a nurse walks into the emergency room, it may be
> her or his spouse or child who needs a nurse, and at that moment, being a nurse
> takes priority over being anyone else. Since you are the highest trained and
> educated healthcare personnel available, you must maintain an objective stance, if
> you are to manage the situation. (p. 251)

Discussion

Rural nursing theory (Long & Weinert, 1989) continues to be the framework for studies of rural nurses and several concepts from the theory have been supported in the descriptive literature. Barriers to rural NP practice endure but have changed over time (Lindeke, 2001). These include: (a) isolation; (b) lack of peer support; (c) lack of ancillary support; and (d) misconception of the rural NP role (Tews, 2003; Linkeke, 2005). Some of these barriers were supported in the descriptive evidence as well.

Studies regarding recruitment and retention of rural NPs provide valuable insight into challenges cited by study participants. Findings also support the notion that family ties are an important consideration when NPs choose a practice setting. The grow-your-own concept should be a consideration for educators and recruiters.

While there is descriptive evidence regarding the type of procedures used in rural/frontier practice, Lausten (2013) provides the only quantitative study of procedures performed by NPs in a rural state. Owing to the small number of frontier NPs, both in Lausten's study and nationwide, a survey of this type would likely involve a sample size too small for generalizability. However, both qualitative and quantitative frontier evidence can inform NP educators.

The majority of information regarding frontier NP practice is obtained through individual NP stories. Recurring themes identified in the literature are summarized in Table 5. These descriptions of frontier NP practice illustrate the expert-generalist

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Table 5. Summary of Literature.

Theme	Author
Expert generalist & multitasking	Hardesty (1995), Rosenthal (1996), Burnett (1999), Roberts et. al (1999), Rozier (2000), Mahaffy (2004), Sharp (2010)
Personal challenges	Vigesaa (1974), Hardesty (1995), Schmidt (1995), Johnson (1996), Burnett (1999), Roberts et. al (1999), Rozier (2000), Gorek (2001), Mahaffy (2004), Dean (2012)
Rural competencies	Lythgoe (1999), Connor (2002)
Isolation/Emergency care	Hardesty (1995), Johnson (1996), Burnett (1999), Mahaffy (2004), Dean (2012)
Ethics	Long & Weinert (1989), Rozier (2000)

qualifications necessary to effectively work in these remote settings, i.e. skills in

preventative, acute, chronic, and emergency care with all age groups. Competencies in

radiology, prenatal care, and emergency care were frequently mentioned as necessary for

frontier practice. Challenges in this practice setting included isolation, frequent call, and

limited resources. As sole providers, frontier NPs must possess the ability to triage,

multi-task, and use resources effectively. Many authors also noted fluctuations in the

patient population from seasonal tourists, which may increase the number of urgent or

emergency patients and add to the on-call stress of frontier NPs. Positive attributes of

frontier practice included the wide variety of patient problems encountered (Dean, 2012;

Mahaffy, 2004; Rosenthal, 1996), which invigorated NP's practice, as well as autonomy and increased responsibility (Burnett, 1999).

While studies have shown that NPs are more likely than physicians to practice in frontier areas (DesRoches et al., 2013; Goolsby, 2011), evidence regarding NP practice that is specifically identified as *frontier* practice is lacking in the literature. The evidence found in the literature review provides powerful, although scant, information regarding ethical considerations of frontier practice and evidence regarding the social capital that frontier NPs may bring to their communities.

The literature supports the notion that emergency care competencies are part of the frontier NP skillset. While it may not be within the educational scope of NP programs to prepare NPs to provide emergency care, evidence suggests that NPs are providing emergency care. Jane Scharff (2010) makes this pragmatic statement:

> The intersections of rural nursing are distinctively marked and fluid …. The
> intersection between nursing and medicine has the most extensive implications.
> It is a gray area that hinges on circumstances and relationships, and the most
> complex intersections occur during emergent situations (p. 265).

Implications for Research

People living in or visiting frontier areas are a vulnerable population owing partially to limited resources and limited access to primary and emergency healthcare. The dearth of information regarding frontier NP practice supports the development of an exploratory study to research this topic. A qualitative design utilizing the interview process provides rich, thick data that may otherwise be lost. Additional research

regarding coping mechanisms and educational preparation for frontier practice, as well as required specialty certifications and integration patterns with local emergency services is also informative.

Summary

Studies regarding frontier NP practice are scarce and evidence has been generally garnered through interviews, which spotlight individual NP practices. Many of the NPs, whose practice experiences are included in this literature review, had some emergency care experience prior to venturing into the frontier. In addition to emergency care competencies, several other themes have emerged.

- The frontier NP must be an expert-generalist capable of multi-tasking and effectively utilizing available resources.

- The frontier NP must be comfortable with dermatology, have x-ray skills, and may be called upon to treat animals.

- The frontier NP must be comfortable with behavioral health and medications for treatment of depression and substance abuse.

- The frontier NP struggles with ethical considerations when caring for family and friends.

- The frontier NP assumes a heavy on-call schedule and most often works in isolation from other providers.

- NPs who wish to venture into the frontier must value a challenge, thrive on diversity, and use available resources wisely and creatively.

Some of the themes directly support concepts found in rural nursing theory. These involve the expert-generalist nature of rural NP practice, the ethics of rural NP practice, the isolation of rural NP practice, and the challenge of rural NP practice. These thematic concepts will be expanded and extended into the specialty area of frontier NP practice through analysis of the narratives presented in this study. There are gaps in the literature regarding frontier NP practice. These include:

- Educational preparation for frontier NP practice

- Frontier NPs integration with local emergency services

- The effects of policy on frontier NP practice

- Models for frontier NP practice

As a result of this study, evidence and recommendations regarding these issues will be addressed.

CHAPTER III

METHODOLOGY

Introduction

Narrative inquiry (NI), the study of experience as story, lies within the paradigm of interpretive research (Wolf, 2008). Researchers who utilize this methodology share the following beliefs: (a) complex phenomena can have multiple realities, (b) an in-depth understanding of the phenomena is required, (c) researchers must be committed to participants' viewpoints, (d) naturalistic research approaches are desirable, and (e) findings should be supported by rich, contextual and nuanced exemplars (Vaismoradi, Turunen, & Bondas, 2013). NI has been utilized in various disciplines including the social sciences, medicine, education (Riessman, 1993), and more recently, in nursing (Lindsay, 2006). Educational researchers Connelly and Clandinin have advanced the methodology through the promotion of NI as a means of studying professional experience. According to their view of NI, nursing practice encompasses a nurse's entire life experience, which is lived, told, reconstructed, and relived by narrating their experiences in story form (Connelly & Clandinin, 1988).

Within the framework of NI there are different approaches, strategies, and methods. Despite these differences there are several common themes: (a) place is central to the methodology, it specifies the concrete, physical and topological boundaries where the inquiry and events take place (Clandinin, 2007); (b) the researcher is an active

participant in the process (Riessman, 2008); and (c) the stories of the participants merge

with the researcher's to become collaborative narratives (Clandinin & Connelly, 2000).

The following sections of this chapter describe: (a) the theoretical framework for

this inquiry, (b) the philosophical standpoint that forms the basis for the methodology,

(c) the relevance of NI to nursing research, (d) the concept of rural/frontier authenticity,

and (e) an in-depth description of the research design.

<div align="center">**Theoretical Framework**</div>

Dewey's Pragmatic Theory of Experience

As the research focus of this study is the experience of frontier nurse practitioners,

John Dewey's *pragmatic theory of experience* will provide the overall theoretical

framework for this dissertation. John Dewey's philosophical ideas have the constituents

that make for an explanatory theory, a theory that explains the relationship of experience

to ontology and epistemology (Barnum, 1994). According to Barnum there are four

comprehensive theory elements: content, context, process, and goal. The content of

Dewey's theory is *experience*, the context is the *situation*, the process is *reflection*

(reflection is applied to the content of the theory), and the goal is *growth*. There are two

sources of Dewey's original writings that will be referenced: a two-volume collection of

his works (McDermott, 1981), and a 37 volume collection of his writings divided into

early, middle, and late works (Dewey, 1969-1991), which will be referred to by the

abbreviations EW, MW, & LW followed by the volume and page number.

Dewey's concept of experience is that of a *living being* interacting with its

environment with the assumption that the *being* is both *acting* on and is *acted* on by the

environment at the same time. Dewey also thought that there is no "existence of

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propositions*"*, which can be justified without reference to experience (McDermott, p. 67). He thought that there is no realm that can be reasonably or *profitably* understood as *outside of* or *prior to* experience, because it is only through, in, and by the active medium of experience that humans come to develop the capacity for critical reflection and intelligent action (MW6: 4).

The situation (i.e., scene, setting, context, transaction) refers to the *mutual formation of humans interacting with their surroundings* (LW12: 72). The *situation* is not a single object or event or set of events, as we never experience or form judgments about objects and events in isolation, but only in connection with a contextual whole. Dewey thought that the growth of human beings takes place in the transaction (he later termed this *interaction*) between the individual and the situations that he/she is part of and it is through this interaction that experiences are created.

Reflection is the "manipulation of things experienced" in light of one another (McDermott, p. 177), it is relational. Reflection is a "genuine factor within experience" (McDermott, p. 71), "reflection is native and constant" (McDermott, p. 61). Dewey made the assumption that humans experience things *in relation to* other things and that they infer certain things by way of these relationships. When humans retrospectively attribute "intellectual force and function to the things", there is cognition (McDermott, p. 180). One becomes aware of something in relation to something else that one has previously experienced and reflected on.

Dewey wrote that lived experience is both the source and the product of reflective reason (LW1: 27-28). Therefore, the reflected experience cannot be identical to the experience itself. It occurs only in retrospect when the worth of the meanings, or

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cognitive ideas, is critically inspected in view of the results of the experience. Cognition

(situational awareness) is a process required for reflection. Dewey thought that every

experience was a "cognitive noting" (McDermott, p. 85). He stated that, "one employs

experience as a basis for inferring what is likely to happen at a later time" (McDermott,

p. 69). According to Dewey, experience exhibits "every kind of connection (dynamic

and functional interaction) from the most intimate to mere external juxtaposition"

(McDermott, p. 66). Therefore, for Dewey, there is no conscious experience without

inference.

Growth is the result or "fruit of", experience and refers to our ability to

continually develop as living-beings (McDermott, p. 484). Growth also describes the

acquisitions of *habits*, or skills required by the average person to negotiate their daily

lives. For Dewey, *to grow* is both to increase an individual's capacity for social

intelligence and to translate that capacity into the *generation of concrete goods* (results of

inquiries) (MW12:150). Dewey was a moral relativist and identified the only moral end

or outcome stemming from a moral question, to be growth (MW12: 181). For Dewey, it

is the processes of inquiry regarding an indeterminate situation that lead to growth, not

whether the situation is morally right or wrong.

To summarize, Dewey thought that knowledge is inferential and is always a

matter of the use that is made of experienced natural events (McDermott, p. 84). In other

words, when one experiences something that is new or that they are unsure of, they use

the knowledge processes of controlled observation, inference, reasoning, and testing to

infer what the future experience with the subject would be. This specific knowledge is

then grounded with future experience. Dewey stated that," knowledge *gives,* but is not

assurance, only experience *assures*" (McDermott, p.180). According to Dewey, "the self

becomes a knower when anticipation of future consequences operates as its stimulus"

(McDermott, p. 91). Dewey believed that to learn from experience is to make a

backward and forward connection between what we "do to things" and what we "enjoy or

suffer from things" in consequence and to use those beliefs to anticipate consequences

(Dewey, 1916). Dewey thought that, "truth is what awaits us at the end of inquiry"

(McDermott, p. 90) and that truth, like knowledge," is an experienced relation of things,

and has no meaning outside of such relation" (McDermott, p. 185). Although Dewey

spoke of truth as the result of inquiry, he also added that inquiry can never cover all the

possibilities inherent in our world, instead he spoke of the "warranted assertibility" that

given the particular circumstances, through inquiry, we can be reasonably certain of a

particular outcome or result (McDermott, p. 53). Dewey thought that we can never know

the *entire* truth of a situation because the world is always becoming or changing into

something else (LW2: 13). A diagrammatic representation of Dewey's theory can be

found in Appendix E.

There is no definitive list of Dewey's underlying assumptions. However, after a

thorough review of his writings, this researcher believes the following assumptions form

the foundation of his theory and will be the framework for this study:

1. There is no reality that exists without experience

2. A situation exists when human beings interact with the natural or social
    environment

3. An indeterminate situation exists when we experience something new or
    problematic

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4. Inquiry is the method we use to find the best possible truth, or solution, to an indeterminate situation

5. Inquiry leads to knowledge; if we don't ask, we won't get an answer

6. Knowledge is inferential and relational; we hypothesize something in relation to something else

7. Reflection is the process by which we interpret, learn from, and internalize our experiences

8. Human intellectual growth, as evidenced by reflective intelligence, is the goal of inquiry

9. Although inquiry yields knowledge, knowledge must return to experience (be grounded in), if it is to be relied upon as a belief

Researcher's Assumptions Related to the Theory of Experience

The underlying assumptions found in John Dewey's philosophy of experience lay the foundation for the researcher's assumptions related to this study:

1. The reality of frontier NP practice is the experience of that practice

2. A situation occurs when the NP interacts with the natural or social environment; this can be an individual patient (patient-situation) or cultural or natural environment (nursing-situation)

3. Every situation is unique, the frontier NP experiences indeterminate situations on a continuum from simple to complex

4. Inquiry is a constant source of knowledge and validation for frontier NPs

5. Education is itself an experience; therefore education and practical experience, combined with knowledge, enhance future experiences and lead to professional growth

6. Reflective inquiry (if this situation occurs again, I could…) leads to personal and professional growth and enhances future experiences

7. A narrated experience is not the same as the experience itself, it has changed through the mechanism of reflection

8. Communication of frontier NP experiences inform the nursing profession

Philosophical Standpoint

Philosophy

The philosophical assumptions and the purpose underlying NI situate it in the qualitative realm of inquiry. According to Clandinin (2007), to use NI as a methodology is to "adopt a particular view of experience as the phenomenon under study" (pg. 38) and this *particular* view has its foundation in John Dewey's pragmatic philosophy of knowing. This philosophy stresses the relationship of theory to practice (experience informs practice and practice should inform theory) and views the outcome of our experiences as the starting point for reflection (Audi, 1999). Dewey theorized that our representations of reality arise from experience and must return to that experience for validation. He also proposed that the mind experiences life in narrative form, therefore narratives are the form of representation that describes human experience as it unfolds through time (Dewey, 1938). Themes in Dewey's philosophy, such as holism and contextualism, as well as his thoughts regarding the blurred lines between the theoretical

and the practical, between science and philosophy, make it a useful standpoint for NI (Audi, 1999).

This form of inquiry also falls under the constructivist paradigm as it assumes that knowledge is co-constructed in specific social interactions (Clandinin, 2007) and stories do not happen in the real world, they are constructed in people's minds (Bruner, 1987). According to Clandinin (2007), through NI individuals construct who they are and how they want to be known by others. These philosophical frameworks have also positioned NI to be particularly useful for feminist and critical social research as this methodology gives voice to those excluded by mainstream research methods (Clandinin, 2007).

Epistemology

The study of nursing experience, as told through narrative, enables nursing knowledge to be grounded in concrete situations (Frid, Öhlen, & Bergbom, 2000); in other words, stories of nursing situations ground the epistemological basis of nursing to its ontology (Boykin & Schoenhofer, 1991). Stories illuminate the practical use of empirical knowledge and highlight competent practice and affirm nursing standards (Wolf, 2008). Stories also help nurses recognize their expertise, know each other through shared stories of experience, transform thinking, and create knowledge communities (Diekelmann, 1991; Olson & Craig, 2001).

Clandinin and Connelly (2000) have stated that narrative inquiry is an approach to the study of human lives as it recognizes lived experience as a source of important knowledge and understanding. This view of the epistemology of narrative is based on Jerome Bruner's theory of cognition (Bruner, 1986). Bruner posited that there are two essential modes of knowing the world, paradigmatic and narrative and that each mode

provides a distinctive *way* of knowing or constructing reality and each has "its own

operating principles and its own criteria of well-formedness" (p. 11). Bruner delineates

the two modes by defining *paradigmatic cognition* as the traditional logical-scientific

type of knowing and *narrative cognition* as storied knowing (Bruner, 1986).

Paradigmatic knowing brings order to experience by seeing individual things as

belonging to a category, while narrative knowing allows us to see the unique aspects of

situations, particularly situations involving the diversity of people's behavior

(Polkinghorne, 1995). According to Polkinghorne, "narrative knowledge is maintained in

emplotted stories, which retain the complexity of the situation in which an action was

undertaken, and the emotional and motivational meaning connected with it" (p. 11).

Bruner (1986) contends this occurs because narratives, or stories, construct two

landscapes simultaneously, one of action and one of consciousness. In this manner,

stories generate knowledge and explain actions. They also evoke emotions, which draw

listeners into the plot. Narrative cognition provides explanatory knowledge of nursing

practice and brings to light the ethical and emotional constituents of the nursing situation.

Bruner's theory of cognition supports Carper's (1978) fundamental patterns of

knowing in nursing. The first pattern, empirics, falls into the category of paradigmatic

knowing, while the remaining three patterns, esthetics, personal knowledge in nursing,

and ethics could be considered narrative knowledge. Therefore, narrative cognition plays

a large role in the patterns of knowledge acquisition in nursing.

Ontology

John Dewey's view on the ontological nature of reality, i.e. that experience is the

fundamental ontological category from which all inquiry proceeds, is the cornerstone of

NI (Clandinin, 2007). Dewey's stance supports the *perceived view* of nursing, which focuses on explanations of nursing reality as it *is* (as experienced between nurses and patients), rather than how it is contrived (Retsas, 1994). These viewpoints are fundamental to the assumption that the ontology of nursing is discovered through the study of nursing situations as told through stories of nursing experience (Boykin & Schoenhofer, 1991).

Nursing experience also takes a central role in the theory of humanistic nursing, where it is believed to be the foundation for understanding the nature of nursing and what it means to be a nurse (Paterson & Zderad, 1988). The notion that the ontology of nursing can be discovered in nursing situations was further posited by Sally Gadow (1995) who stated, "Nursing situations are existential places to be explored and the only vantage points for exploration are the perspectives of people living there" (p.214). Andrew Retsas (1995) added his voice to the dialogue by proposing that the ontological dimensions of nursing (ethical, aesthetic, and spiritual aspects) have not yet been fully explored and that doing so will require nurses to describe their experiences in ways that allow nurses to speak for themselves.

Relevance of Narrative Inquiry in Nursing Research

There are several aspects of NI which make it particularly useful to nursing. First, nursing is based on the nurse-patient relationship and NI is a relational form of inquiry (Clandinin, 2007). Second, NI places emphasis on the particular versus the general (Clandinin & Connelly, 2000), and each nursing situation is unique and particular to the people and context in which it takes place. Third, this form of inquiry can be used to explore the social, cultural, and institutional narratives within which nurses' experiences

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were constituted, shaped, expressed, and enacted (Clandinin, 2007). Lastly, when we listen to nurses' stories we collaboratively enhance their continuing experience, as well as our own through reflection on nursing situations. This aspect has been termed *reflecting on action* and means that as we reflect on past actions or experiences we inform future learning and in turn, future actions (Clandinin & Connelly, 2000). To illustrate how NI has been utilized by nurse researchers, several NI studies will be presented.

Narrative Nursing Studies

An exploratory narrative description of rural nursing was completed in 1996 in partial fulfillment of the requirements for a PhD in nursing (Rosenthal, 1996). Rosenthal chose a narrative design to provide rich text for her interpretive phenomenological research study and provided this quote in support of her methodology (Boykin & Schoenhofer, 1991):

> Nurses sharing their stories experience acceptance and a sense of support both in the telling and in the listening. Nursing stories are rich data sources for research that is truly nursing inquiry. (p. 248)

The purpose of Rosenthal's (1996) study was to explicate how urban nurses become rural nurses, and through her research provide an educational model to prepare nurse generalists to excel in the rural setting. The specific research aim was to describe the lived experience of rural nurses through their stories. The researcher asked eight generalist nurses who worked in a rural acute care hospital (less than twenty five beds located in a mountain setting) to tell the story of how they adapted and excelled in a rural setting after practicing in an urban setting. The author found four themes emerged from the data:

1. Going With the Flow: Fluid Role

2. Fish Out of Water: Expert to Novice

3. Still Waters Run Deep: Self Reliance

4. Life in a Fish Bowl: Contextual Knowledge of Patients

The first theme contained subthemes related to role diffusion as also found in rural nursing theory. These subthemes involved the amount of flexibility required by a rural nurse, the lack of ancillary support (leading the nurse to wear many "hats"), and the shifting priorities that faced nurses on a daily basis. The sub theme, fluid role, speaks to the diversity of rural practice and the broad generalist scope of the role in which the rural nurse is expected to function. One participant even relayed a story of helping to x-ray a horse (Rosenthal, 1996).

The second theme contained subthemes related to dualism within the nurse's knowledge base. The participant may have been a surgical nurse, an ICU nurse, or a hospice nurse working at an expert level in the urban setting, but now in the rural setting she becomes a novice when working out of her *comfort zone* as a rural generalist must do. Nurses may be called from the delivery room to the emergency room within the same shift or even within the same hour. The researcher states that when urban nurses come to the rural nursing setting feeling confident of their previous knowledge base, their confidence is challenged almost immediately due to the breadth of knowledge needed in the rural setting.

The third theme emerged from subthemes related to the rural nurse's ability to thrive on variety and the ability to stay calm in the middle of chaotic situations. The

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subtheme self-reliance represents the rural nurses' realization that you are alone in situations, when you would like to have had another professional's guidance or support.

The final theme, life in a fish bowl, illustrates the unique position of the rural nurse where the majority of the patients she cares for will be personally connected to herself, her family or her friends in the context of the community. Subthemes were identified as: caring for a known person, the discomfort of caring for a friend, the positive aspects of knowing the patient, and how knowing the patient touches your heart and soul. This theme highlights the distinct possibility that the rural nurse may need to care for her own husband, child, mother, or brother in an emergency situation.

This narrative study reinforces concepts that have been previously identified however, it does so with rich, contextual data that allows the reader to become absorbed in the story and wonder how they would respond in similar situations. This function of NI is similar to the concept of *rehearsing for practice* that Benner (2010) describes to promote the use of case studies in the classroom.

In a very different type of narrative nursing inquiry, registered nurses' experience in healthcare reform was studied (Lindsay, 2001). The researcher wove her autobiographical narrative with those of her co-participants to illustrate their experiences with Canadian healthcare reform. In this study the author's first-person narrative is foremost throughout the dissertation. The author chose a narrative methodology because it offers nurses a way to think about their experiences, to reflect in relationship with another, and to discern future possibilities for reform that is inside-out and grounded in daily life. The researcher presented biographical stories of each participant and wove two years of conversational segments throughout the stories. This method provides

background and rationale for the experiences that participants have in relation to healthcare reform and paints a clear picture of how they came to feel as they do. As each participant comes from a different background and philosophically, *from a different place*, many views are heard. Rather than conducting a cross-case analysis, this author composed a different story for each participant based on recurring threads of their individual narratives. While this is not a study of rural or frontier nurses, it provides clear evidence of the power of NI.

Stories of exemplary nurses were the subject matter of a narrative analysis study (Snelson, 2010). The author described herself as dismayed by negative nursing stories, which she felt kept young people from entering the profession. She used NI and personal narratives to document the stories of six exemplary hospital nurses who not only stayed and survived in the so-called hostile and challenging environment of hospital nursing, but continued to grow professionally and provide exceptional nursing care. Snelson co-constructed stories using data obtained through interactive narrative sessions, then completed an in depth three dimensional analysis of both the individual and collective narratives. Results of the narrative analysis indicated that the concept of *caring* permeated all aspects of the participants' personal and professional lives. They also valued life-long learning and unanimously believed the greatest educational emphasis in nursing should be on experiential learning. The methodology of NI allowed this researcher to paint a picture of the participants, to allow the reader to essentially *see for themselves* the actions and attitudes that made these nurses exemplary.

Nursing can also gain knowledge from patients' narratives. Narrative studies have been conducted with cancer patients (Gates, 2006; Overcash, 2001) and grief-

stricken parents (Deitch, 2005). NI is especially useful when studying chronic, complex

conditions such as anorexia nervosa (Elliott, 2005). What NI does in the case of all these

studies, is to bring the reader into the story, enhancing narrative knowing.

Rural Authenticity

Studies have demonstrated that rural dwellers have common characteristics that

can be considered integral to a *rural culture*. These characteristics include a distrust of

outsiders, a strong sense of independence and self-reliance, and a preference for

interacting with other local residents as opposed to someone from outside the

community (Bushy, 2008). These cultural characteristics have implications for

researchers who want to study healthcare issues in rural/frontier areas. Researchers,

who have a rural background and understand both the cultural and healthcare nuances of

rural and remote areas, find it easier to build trust and gain entrance into these areas

(Farmer, Munoz, & Daly, 2012).

This concept of a rural culture was also identified by Sharp (2010), when

conducting his research with rural NPs. Sharp stated, "Truth, value or credibility was

achieved because of the time he spent practicing as an NP in a rural area" (p. 41).

Sharp's practice experience allowed for an understanding of both rural culture and

experiences of rural NPs.

Research Design

Method

The aims of this study: (a) contribute to the creation of a new sense of meaning

and significance with respect to the practice of frontier NPs, (b) inform the discipline of

nursing by bringing to light the ethics of frontier NP practice, and (c) create a repository

of stories upon which nurse leaders, health care policy makers and nurse educators can theorize and plan, were met through the method of story-telling, a descriptive, narrative form of inquiry. Data was collected through the use of semi-structured interviews with a shared task and purpose of discovery through stories of experience (Mishler, 1990). To elicit stories that reflect the specific aims of this study an interview guide was utilized (Appendix B). The guide is based on practice experiences or problems encountered by the investigator, problems or experiences identified in the extant literature of advanced frontier nursing practice, and those issues or concepts proposed by theory (Carper, 1978; Jacobs-Kramer & Chinn, 1988; Long & Weinert, 1989). Interviews were audio recorded and transcribed by the investigator using traditional transcription conventions (Bailey & Tilley, 2002).

Sampling and Setting

The criterion sampling method was utilized for this study (Polit & Beck, 2012). The criterion is experience with the phenomena, frontier NP practice. Additional inclusion criteria were: (a) must have lived and practiced a minimum of two years in a FAR level 4 setting (to allow for sufficient experiences), (b) must speak English, and (c) must be willing to spend at least sixty minutes per interview (maximum two interviews) with the investigator at a time and place of their choosing. Retired NPs who have worked extensively in frontier areas were not excluded as their reflective experiences brought additional depth to the study.

A purposeful sample of NPs was solicited from personal contacts of the investigator and colleagues. In addition, a list of National Health Corp rural clinics was used to identify clinics with zip codes that met the FAR level 4 criteria. If a clinic met

the criteria, the investigator accessed the clinic's web page for information regarding its practitioners. When an NP was identified, an attempt to contact them was made by phone.

In addition to recruitment of participants who met the criterion, an exploration of the geographical diversity of individual experiences was sought. Therefore, participants were recruited from multiple states; those with high numbers of frontier counties (see Table 1). This recruitment strategy resulted in six participants representing five states.

The interviews were held in the communities where the NPs practice. This was done both for the convenience of the participants and to allow thick descriptions of the frontier settings to be captured in field notes. To ensure anonymity, participant practice locations will not be disclosed. However, general information regarding the frontier settings will be provided.

Human Subjects

The University of North Dakota's Institutional Review Board approved this study prior to data collection. Multiple measures to protect participants' anonymity have been instituted. To maintain the confidentiality of study participants, a first name pseudonym was chosen that reflects the participants gender.

The original audio digital recordings along with the participants' identifying information are kept in separate, secure locations. The consent forms and list of participants are kept in a safe deposit box while the digital recordings are kept in a lock-box in the researcher's office. The name of the participant's clinic is not disclosed and the location will be referred to only in general geographic terms as several participants requested that their state not be mentioned. This is a reasonable request as some

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participants may be located in states with few frontier counties making their identification more likely. The consent forms, list of participants, and audio digital recordings will be destroyed three years after study completion.

Potential participants were initially contacted by phone. NPs who indicated a desire to participate in the study received a copy of the abstract and informed consent form (Appendix F). This was followed by a phone call from the researcher to explain the informed consent process and answer any questions regarding the study or interview process. Participants volunteered their time freely. Participants were given the right to refuse to answer any of the questions. Participants also have the right to withdraw from this study at any time.

Potential minimal risks for the participants were psychological distress and inadvertent disclosure of private information. Relaying past experiences may bring to light hidden, strong emotions. Had any of the participants experienced emotional distress, the interview would have been paused (for minor emotional stress) or gently terminated (for severe emotional distress) and counseling would have been advised. None of the participants in this study indicated any level of emotional distress. Participants were given the opportunity to review their narratives and make any needed corrections.

Data Analysis

The goal of NI analysis techniques is not to generalize the findings, but to call attention to the nuances of frontier NP practice through interpretation of the meanings in individual experiences (Koch, 1998). Therefore, the purpose of this study is not to create

a meta-story that describes frontier NP practice in general, but to create a *chorus of voices* that will add to current nursing knowledge regarding this type of practice (Hunter, 2008).

Analyzing experience. In analyzing narrative data there are levels of *representation of experience* of which researchers must be aware (Riessman, 1993, p. 10). The first is attending to experience. When an individual has an experience they become aware of the features of that experience, i.e. what they felt, saw, heard, touched, etc. To some extent the individual chooses what they notice about the experience and, by attending, makes certain phenomena more meaningful than others.

The second level is telling the personal narrative. Individuals re-present the experience-events in an ordered fashion when relaying the experience to others. In-other-words, individuals recreate the story that makes their interpretation of the experience clear to listeners. This is one reason for the gap between the experience-as-lived and the experience-as-told (Riessman, 1993).

The third level is transcribing experience. It is similar to the first two levels as it is incomplete and selective. Transcribing the spoken story brings to light issues regarding how to document nonverbal communication. This is an important decision as nonverbal data may change the meaning of a story. Researchers make decisions regarding when and how much nonverbal data to include based on their interpretation of the stories (Riessman, 1993).

The fourth level, analyzing the experience, requires the researcher to identify similarities or themes within the participant's story; to create a *core narrative* that summarizes the experience. At this level of analysis the oral stories get cut and pasted into something that is quite different than the original experience (Riessman, 1993).

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The fifth level of representation occurs when the findings are read by others. The particulars of the *others* include their background, knowledge, and experience with the phenomena under study. Therefore, the meaning of the core narrative will differ depending on who's reading it (Riessman, 1993).

Theme. In this study *theme* is defined as an abstract concept that confers meaning and identity to a recurrent experience and its variant manifestations (DeSantis & Ugarriza, 2000). A theme captures the essence of an experience. Aspects of a theme are: (a) themes emerge from the data, (b) a theme is abstract in nature, and (c) a theme is an iteration or recurrence of a variety of experiences that is manifested in patterns or configurations of behavior which make the theme identifiable. In this study some themes emerged directly from the text as a result of words or phrases that were used repeatedly by the participant.

Thematic analysis. A thematic analysis was conducted on the evidence collected during this study. This type of analysis evaluates the coherent integration of disparate pieces of data that constitute the findings from listening to stories and reading the transcribed texts (Sandelowski & Leeman, 2012). The many options for analyzing stories include narrative, sociolinguistic, and thematic techniques. Each of these schemes presents the text in a different manner; therefore, this researcher chose the type of analysis that is congruent with the research aims. Thematic analysis is congruent with the broad research aims of this exploratory study and with the existential paradigm underlying this study. There are additional advantages to conducting a thematic analysis that are specific to this study (Braun & Clarke, 2006):

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1. It is accessible to novice researchers making it appropriate for dissertation level research

2. It allows for a thick description of the data

3. It is useful for exploratory studies as it can generate unanticipated insights

4. It can be useful for producing qualitative analyses suited to informing policy development

While many data analysis schemes reduce text into codes, representing them as mere parts of a whole excludes their structural and sequential features stripping them of the features that give them *narrative* identity (Mishler, 1990). In thematic analysis the text is kept whole. The focus of analysis is on what is said rather than how, to whom, or for what purposes it is said (Riessman, 2008). Thematic analysis is similar to grounded theory analysis with a key difference, narrators keep a story intact by theorizing from the case rather than from component themes or categories across cases (Riessman, 1993).

An inductive analytic approach was utilized which allowed the identified themes to be strongly linked to the data (Braun & Clarke, 2006). While inductive analysis is a process of identifying segments of text without trying to fit them into a pre-existing coding frame or a theoretical framework, thematic analysis is flexible enough for use in cases where prior theory serves as a resource for interpretation of experience stories. For example, if a participant relates a story of his/her experience with being an outsider, Long and Weinert's (1989) concept of insider-outsider may serve as a theoretical basis for the interpretation of this particular segment of narrative. Linda Hunter (2008) conducted an NI study with nurse participants and used this method to identify segments in her data, which she then combined to create an exemplar for each of Carper's ways of knowing.

As Riessman (1993) indicated in her levels of interpretation, inclusion of nonverbal data augments the thematic analysis; therefore, careful attention was paid to transcription conventions that convey nonverbal data (p.10). For example, the use of italics to indicate words that were drawn out by the participant, spaces to indicate pauses or silences in the text, or capital letters to indicate words that are spoken louder.

Process. Immersion in the data enhances analytic induction. This was accomplished by listening to the full recorded interviews multiple times during the analysis phase and repeatedly reading the text. First, the researcher listened to the recordings to get an overall sense of the interview content. Second, the researcher listened to recordings while transcribing a rough draft of the interviews. Notes were made regarding the verbal and nonverbal use of language such as: (a) emphasizing phrases or words, (b) patterns of speech, (c) choice of words, and (d) pauses in the conversation. Third, the researcher listened to the recordings again to produce a more detailed rendering of key moments in the story as subthemes emerged.

Parts of the text were read and re-read until a focus, or subtheme, for analysis emerged. This is a recursive process whereby the researcher moves back and forth through the phases of analysis. Subthemes may be developed from repetitions of key words in the stories, the use of nonverbal data that indicate emotional responses, or by the researchers prior theoretical interests (Riessman, 1993). During this process the subthemes were be placed on a thematic map, returning to the text multiple times for validation. A thematic map is the visual presentation of themes and their relationships. This involves a detailed account and description of each theme, its criteria, and exemplars (Vaismoradi et al., 2013). Thematic maps aid researchers in identifying coherent but

distinctive themes (Braun & Clarke, 2006). This researcher used a white erase board to map the themes for individual stories. Use of an erase board made it easy to move themes around and introduce new themes as they were discovered. After themes were discovered for each individual story all themes were placed on a white erase board and analyzed for recurring themes across stories.

Finally, near the completion of the analysis, the researcher listened to the full interviews to validate the identified themes. Exemplars for each theme were chosen. The exemplars contain transcribed texts that create core stories thus enabling the reader to see the raw data which led the investigator to a specific thematic interpretation. The last step in the overall process of analysis was member-checking, or requesting participants to review general themes identified from their individual transcripts for validation.

Limitations

This inquiry evaluated practice experiences of six frontier NPs in five US states. Stories from NPs in other states, particularly Alaska, may have additional themes that did not emerge in this inquiry. The sample was homogenous in both ethnicity and age. Study participants were white, middle-aged NPs and their life-world view reflects this homogenous perspective. It is possible that if this study were conducted with a more ethnically diverse sample, additional themes may have emerged.

The ability of the participants to articulate their experiences may be a partial limitation; therefore, it is the responsibility of the researcher to probe for in-depth stories. The inclusion criteria for this study is a minimum of two years living and practicing in a frontier setting with the rationale that it would take this length of time for an NP to gain

the experiences required for reflection. It is possible that one or more of the NPs who participated met the criteria but lacked rich experiences.

The experiences narrated in this inquiry do not represent the entirety of frontier NP practice either in the US or other countries. Eliciting stories from another group of frontier NPs, even utilizing the same interview guide, may reveal additional themes. The stories told by frontier NPs in this inquiry represent a snap-shot in time. The current status of frontier healthcare has affected the perspectives of the participants. If conducted ten years from now, a similar study may reveal different implications for both frontier NP practice and frontier healthcare delivery.

Rigor

Rigor in research is commonly evaluated through validity and reliability assessment strategies (Hinds, Scandrett-Hibden, & McAulay, 1990). While rigor in research is a common goal, quantitative and qualitative researchers disagree on the methods to demonstrate rigor. This disagreement may reflect different paradigms, with qualitative researchers attempting theory generation and quantitative researchers seeking theory confirmation (Haase & Myers, 1988). The criteria for evaluating rigor must be appropriate to the research and the type of research method used (Davies & Dodd, 2002).

Qualitative researchers believe that imposing criteria for validity on narrative research presupposes a focus on empirical standards of truth and ignores narrative standards of truth (Sandelowski, 1991). Mishler (1990) believes that validity and reliability in NI are much less structured, because narrative analyses differ in theoretical orientation. He proposes the concept of validity be replaced with the notion of trustworthiness and has put forth several questions that assist the reader in determining if

the research meets this standard: (a) what are the warrants for the researcher's claims; (b) could other investigators make a reasonable judgment of their adequacy; (c) would readers be able to determine how the findings and interpretations were produced and on that basis, decide whether they are trustworthy enough to be relied upon for their own work (pg. 429).

These questions address five criteria for determining trustworthiness: (a) credibility, which refers to the believability of the data and confidence in the findings; (b) dependability, which focuses on the stability of the data over time in different contexts and conditions; (c) confirmability deals with objectivity, which is an agreement between two or more people reviewing the findings for accuracy and meaning; (d) transferability, which refers to the ability of the findings to be transferred to other contexts or groups; and (e) authenticity, which refers to the extent to which the researcher faithfully and fairly described participants' experiences (Beck, 2009). Researchers can employ multiple research strategies to demonstrate validity or trustworthiness in all four stages of the research process: (a) design consideration, (b) data generation, (c) analysis, and (d) presentation (Whittenmore, Chase, & Mandle, 2001).

Reliability, dependability, or auditability is achieved when the reader can follow the decision trail used by the researcher (Guba & Lincoln, 1981). This component of rigor is enhanced through the provision of an audit trail. To provide a complete audit trail the researcher must: (a) describe the specific purpose of the study, (b) provide rationale for the participant inclusion criteria, (c) describe how the data were collected, (d) explain data analysis procedures, (e) discuss interpretation of the research findings, and (f) communicate the specific techniques used to determine the credibility of the data

(Thomas & Magilvy, 2011). Reliability is also enhanced when the researcher's perspective is acknowledged. This is accomplished by providing a subsection regarding the researcher's reflexivity. Table 6 illustrates the strategies utilized by this researcher to enhance both the trustworthiness and dependability of this study.

Table 6. Strategies Utilized to Enhance Rigor.

Design Consideration	Purpose of the study was articulated
	Self-conscious research design with adequate sampling
	Design was chosen to give participants a *voice*
Data Generation	Data collection decisions were articulated
	Researcher demonstrated prolonged engagement with topic & participants
	Participants were interviewed in their natural setting
Analysis	An extensive literature review was conducted without date limits
	Researcher articulated data analysis decisions
	Portions of text were *member-checked* with participants
Presentation	An audit trail is provided
	Exemplars support interpretations
	Researcher's perspective acknowledged

Reliability is also enhanced by determining whether the findings of an inquiry would be repeated with participants in the same or similar context (Chen, 2010; Lincoln & Guba, 1985). NI emphasizes the uniqueness of individual experiences, therefore, variations in experience rather than repetitions are sought (Sandelowski, 1986). While this researcher has elicited individual participant stories, there may be common threads,

or themes, that bind them together. Therefore, although findings from NI studies are not meant to be generalizable the concept of transferability may be applied to some of the themes discovered in this study (Lincoln & Guba, 1985). In conducting purposive sampling and providing thick descriptions of the participants' settings, rural and frontier NPs who read this study may feel as if they're hearing their collective voices.

Ethical Considerations

Participants in this study were recruited from five diverse states. Some of these states may have only five or six counties that are designated as frontier. As such, both researcher and participants were concerned about the protection of their anonymity. Some participants held their stories very close for fear that someone would recognize either themselves or their patients. Other participants had negative feelings about the changes occurring in both their workplaces and in the arena of frontier healthcare financing and were worried about job security. These are all valid concerns which require careful attention.

Beneficence, or the obligation to do no harm, was foremost in the researcher's mind when making decisions involving the reporting of findings from this inquiry. As stories were written, every effort was made to depict the settings in vague terms and provide only general information about the participants' background. Fidelity, or the promise to keep information confidential, was achieved during the member-check process. After each story was written, the participants reviewed their narratives for three purposes: (a) to ensure accuracy of their stories, (b) to ensure that no information was provided which could compromise their anonymity, and (c) to make sure the themes

accurately represented their views. After the review, three participants requested

additional revisions to protect their anonymity, thereby enhancing patient confidentiality.

Researcher's Reflexivity

Relevance of the Methodology

This researcher believes NI is relevant to nursing. To illustrate this belief, I will

share a personal narrative. Prior to practice as a frontier NP I worked on the medical

floor of a small (112 bed) rural hospital. Questions regarding nursing problems, or

debriefings after a stressful situations, were always handled collaboratively among the

close-knit group of nurses who worked on my unit. Even as Charge Nurse, I knew the

buck didn't really stop with me as there was always a physician on-call. Working in a

small rural hospital also includes occasionally caring for family members or neighbors,

however, unless you work in the emergency department or intensive care unit, this does

not usually involve life-saving treatment. These notions of having other nurses to

collaborate with or having nurses or physicians to *back you up*, or providing life-saving

treatment to friends or loved ones, all changed when I entered frontier NP practice

eighteen years ago. Fortunately, I trained with an experienced mentor who led me down

some of the more rough roads of practice, but for the majority of time I was the lone

provider for approximately one thousand people with physician back-up by telephone

only.

As I navigate this practice, many times I wonder if other NPs are facing the same

challenges. I search the journals each month for articles relating to my type of practice

but over the years have found only a few. On the rare times when I've met NPs who

work in other frontier areas I find we can't stop talking about our experiences. It's as

though we're validating our knowledge, practice, and experiences by sharing and learning from them. One aim of this research, to share the knowledge embedded in frontier NP practice can best be accomplished through NI. This methodology encourages researchers to bring autobiographical practice issues to their research and to use their extensive practice experience to glean a higher level of understanding of their participants' stories (Sullivan, 2002).

The literature review has revealed a knowledge gap related to frontier NP practice. This researcher will add her personal story to the both the background and rationale for the choice of methodology for this study.

Researcher's Narrative

My exposure to frontier nursing practice began in my nurse practitioner (NP) program. I wanted to work in a very rural setting and found a preceptor at a rural clinic (I later discovered that the clinic met the criteria for a frontier designation). Frontier practice has long been included with rural practice, however, during classroom discussions with my rural classmates and through meetings with my advisor, I began to realize that my frontier practice experiences were uniquely different. I generally saw fewer patients per day and had to manage a wider variety of patient problems with fewer resources. My advisor was continually impressed at the complexity of patient problems that were seen at the clinic. Even though the NP program had a rural focus, my advisor stated how surprised he was at the differences between my clinical site and those of his *rural* students. One particular difference was that my fellow students were not seeing trauma or emergency patients in their family practice clinics. If a patient presented with an unsuspected urgent cardiac issue an ambulance would be dispatched to handle the

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problem. When a trauma or emergent cardiac patient presented to my clinic, we would call the volunteer ambulance, while continuing to manage the patient during transport. Patients were transported to the nearest hospital, one hour away, or to the helicopter landing zone twenty minutes from the clinic. During a site visit, my advisor commented that he was impressed by how well the clinic staff handled an emergency situation with so few resources.

My preceptor and I made house calls, provided hospice care, managed inmate health problems at the county jail, and provided oversight for the local ambulance service. When a flood damaged the highway between two communities on our side of the county my preceptor and I travelled off-road in a four wheel drive vehicle to provide healthcare to an isolated town twenty miles away. We did this weekly until the road was repaired.

I enjoyed the autonomy and variety the clinic provided, therefore, after graduation I accepted a full-time position. Transitioning from student to the sole healthcare provider for an entire community was more difficult than I had imagined. This was surprising as I had spent so much clinical time there. We each took call approximately sixty-four hours per week plus every other weekend and worked three regular clinic days per week. Three weeks after graduation my preceptor, now clinic partner, left for a month-long trip at the height of the tourist season. I found myself wakened during the nights to manage urgent and emergent problems, and then up in the morning to start a full day at the clinic. I was relieved when the clinic hired a locum tenens physician to cover the weekends, while my clinic partner was gone.

In my state, emergency medical service (EMS) personnel cannot take orders from NPs and cannot divert patients from the *scene* to a clinic before transport to the appropriate hospital emergency department (ED). This was not a practical situation in our county, and for many years our local EMS worked under-the-radar and transported patients to the clinic. In other cases, the provider-on-call responded to the scene and managed the incident. Eventually our regional EMS office put a stop to this practice, which obstructed EMS services in our county. This caused quite uproar in our community as patients wanted to be transported to the clinic for treatment or stabilization before transfer to an ED. Community members wrote angry letters to the state EMS office and eventually a meeting of involved agencies was scheduled at our local Sheriff's office. After several meetings the state EMS committee agreed with local residents. To meet the criteria for state EMS protocols, my partner and I were grandfathered-in as mobile intensive care nurses (MICNs), which allowed us to provide oversight and give radio orders to the local EMS personnel. To avoid accusations of diverting patients unnecessarily to the clinic, the clinic received an alternative-base-hospital designation from a tertiary care hospital ninety miles away. The hospital also agreed to provide continuing MICN training for myself and my partner. Our local EMS problematic situation and the eventual solution now have implications for the entire state.

In the literature review, I have discussed the issues with treating family members as patients, particularly in emergency situations. I have experienced this myself. One afternoon we received a radio call regarding a vehicle that had swerved off the road and rolled down a cliff repeatedly until stopped by a tree. When the radio call came in I noticed the tone of the dialogue seemed more reserved than usual, but was too busy to

think much of it. I was the sole NP at the clinic that day, but the next thing I knew my partner arrived. He told me that my son was one of the victims and asked if I would like to be relieved from duty. There were two victims in the accident, and I decided to work on the second victim, and let my partner work on my son. It was emotionally trying and difficult to concentrate, knowing that your loved one is in the next emergency room bay, but your skills are required and may save a life; therefore, you *buck up* and continue on.

The concept of role diffusion was descriptively narrated in several of the practice vignettes included in the literature review. A few of the authors mentioned the need to treat animals as well as humans. My clinic is located in a mountainous area historically known for gold mining. Many of the mining claims are inaccessible during the winter months and property owners leave rat bait around the mines to keep out vermin. In the spring they return and many bring their dogs along to keep bears away or warn them of approaching wildlife such as rattlesnakes. Invariably these pets would get into the rat bait and the owners would bring them to the clinic for treatment. I would initially treat the animal with a vitamin K injection and refer them to the closest veterinarian hospital, which was almost two hours away. I've also x-rayed a dog and found bladder stones, and treated pets for rattlesnake bites with steroids and anti-histamines.

One of the more unusual aspects of my role was to provide initial identification (human vs. animal) of skeletal remains for the sheriff's department. Hikers, bikers, or residents would find these remains. The remains were then taken to the Sheriff, who would then bring them to the clinic for identification. One evening a deputy brought a small skull to my house and asked if it could have belonged to an infant. After careful

inspection, I determined that the foramen magnum indicated a four-legged animal like a cat or fox.

The *insider-outsider* concept was a reality when I began my practice. To gain acceptance, I joined the Saturday night bingo group, was active in the local school, served on community boards, and became a frequent participant in community events. Results of my efforts came slowly. My colleague had been the clinic's sole full-time provider for 25 years and it took several years for patients to become comfortable seeing me instead of him. Once you are accepted it is easy to get *swallowed up* by the community. In Sharp's rural study (2010), some participants used social isolation as a coping mechanism however, in a frontier area this really isn't an option. I found that once I gained acceptance my patients would go out of their way to help me. Whether this was help during emergency situations, such as the one described by Mahaffy (2004), when community members were called upon to help with multiple trauma victims, or when my house caught fire and several community members risked their safety to make sure everyone, including my dog, got out of the house in time.

Despite the challenges, I truly love working in a frontier setting. I learned more than I could have imagined from caring for this unique population and many of my patients are now my life-long friends. I left full-time practice in 2010 to begin my PhD journey, but still work there on a per diem basis. Eighteen years of experience working in this remote clinic has given me a unique perspective into the rewards and challenges of frontier NP practice. The past experiences with fellow students, my advisor, reading the literature, and, presently, my colleagues have led me to believe that little is still known about the role and experiences of frontier NPs. Through the sharing of even small bits of

my personal narrative, problematic situations unique to the frontier setting are brought to light. Solutions to problematic situations can be considered not only through the eye of the narrator but through the lens of the researcher and participants, as they co-narrate reflected practice experiences.

Frontier Authenticity

This researcher has lived and worked extensively in both rural and frontier areas and possesses an insider's view of frontier life and frontier healthcare issues. This *frontier authenticity* leads to a more informed or advanced study as a rural/frontier identity allows the researcher to *tune in* to the participants' expressed perspectives and experiences (Farmer et al., 2012). However, this researcher acknowledges a potential bias given her extensive frontier NP experience. This bias may cause the researcher to *read meanings* into the narratives and misinterpret the themes. To mediate this potential bias the researcher will provide a clear audit trail of the decisions made during this inquiry.

<div align="center">

Conclusion

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NI is particularly suited for this study as it places importance on the unique, contextual aspects of nursing situations likely to be found in frontier practice. By limiting the NP experiences to those found in remote areas, this researcher has placed particular importance on the aspect of *place* which is central to the methodology of NI. As the researcher has extensive experience working as an NP in a frontier setting, this methodology acknowledges that the researcher may have unique insights into the participants' experiences. This insight will add depth to the study by bringing to light nuances of the nursing situations that may be overlooked by other researchers. Finally,

the focus on the *particulars* of the nursing situation makes NI appropriate for this study

as the common bond between the researcher and the participants may lead to enhanced

reflection of frontier NP experience.

CHAPTER IV

FINDINGS

Introduction

The narratives captured in this inquiry depict frontier NP practice at a certain moment in time, an audio snapshot. While some of the NPs may reflect on their experiences *over time*, their perspective, or viewing lens, is influenced by recent and current events. Over time, governments shift funding priorities. This is certainly evident with the passage of the Affordable Care Act. The effects of federal and state policy in the arena of frontier healthcare become visible as the participants tell their stories.

This is a narrative inquiry study; therefore, the participants' narratives take *center stage*. For the most part, participants are quoted directly with very little editing or paraphrasing by the researcher. This method of reporting findings allows the participants' voices to be heard. It also comprises an important step in the audit trail as the reader is provided with ample evidence to *see* how the researcher derived specific themes from the narratives.

The organization of this chapter is as follows: (a) an overview of the participants, (b) stories, (c) discussion of findings, and (d) a concluding section that reviews the findings in light of the research aims.

Participants

Four female NPs and two male NPs participated in this study. All participants were white and with the exception of Bob, who is in his late sixties all participants are in their mid-fifties. Bob has 38 years of experience as a frontier NP, Ann has over 20 years of frontier nursing experience, Jim has three years of frontier NP experience, Pam 15 years of frontier nursing experience, Sue has over 20 years of frontier nursing experience, and Amy has nearly 10 years of frontier NP experience. All participants were initially master's prepared, Ann has also completed a doctorate of nursing practice, and Bob has earned a doctorate degree in a related discipline. All participants are married and four have adult children who were raised in their frontier community.

Of the six participants, Bob and Amy practiced at the same community clinic. However, Bob had recently retired leaving Amy as the sole provider. Ann practices in a community-owned clinic, Jim practices in a small community clinic associated with a critical access hospital (CAH), Pam practices in a private clinic owned by a physician, and Sue practices in a private clinic that had been recently purchased by a large healthcare organization. All participants are family nurse practitioners who provide primary care services to patients of all ages.

Prior to entering frontier NP practice Jim and Bob had worked as flight nurses and had extensive trauma and emergency medical experience. Amy had worked as a nurse anesthetist and had intensive care experience. Sue and Pam had worked in acute emergency departments. Ann began her career as a public health nurse who saw a need for emergency medical technicians (EMTs) in the community and started a certification

program. Ann is also a member of the local volunteer fire department and utilized her

EMT skills in this manner.

The six participants in this study represent frontier communities in five US states.

Their practice settings reflect the geographic and economic diversity of frontier

communities. Of the five practice settings, two are in mountainous regions accessible by

winding canyon roads. The local economies of these two communities are currently

driven by tourism. This was not always the case. Historically they were driven by

extractive industries, such as logging and mining, which were eventually closed-down as

the result of environmental concerns and economic downturns. Two other communities

are surrounded by high-elevation plains and grass-lands that support an agriculture-based

economy. The fifth community is located in a high-elevation valley and is supported by

an agricultural and ranching based economy. Although these communities are diverse,

they also share common features such as sparse populations, extreme weather, a lack of

general services, and long driving distances to urban areas.

In the next section each participant's story is heard. The stories are structured in

the following manner:

1. Overview of each participant's practice

2. Concepts previously identified in the literature will be identified, followed by

   participant exemplars

3. Within-case themes, supported by exemplars, will be discussed

As noted in Chapter III, a cross-case analysis is outside the boundaries of NI.

Themes that are woven throughout some or all of the stories will be included in the

discussion section of this chapter.

Bob: An Early Pioneer

Overview. Bob is interviewed in his home and reflects on a long and satisfying career as a frontier NP. He is considered a frontier pioneer as he created a clinic and a practice nearly from scratch at a time in our recent history when many people, "did not know what an NP was". Bob was drawn to the frontier because of the independence it offered:

> I had been a medic in the Air Force and a lot of that training is focused on independence. I would work in clinics in remote areas, for example, Thailand, I would function on airplanes independently, in Turkey independently, and in Alaska independently. This independence meant that you would have medical support but it was not direct, and so you were making some fairly heavy decisions, some fairly complex medical decision-making, without the usual kind of institutional setting. And so that kind of prepared me for wanting to function in a more independent way.

Bob's story is given particular attention as it represents an oral history of the development of frontier NP practice. Bob's story also provides an example of how federal policy influences frontier healthcare.

Bob, recently semi-retired, began his frontier NP practice 38 years ago as a member of the National Health Service Corps when he accepted an assignment at a newly formed community clinic. Prior to his arrival the community had been served by rotating physicians who visited once or twice a week. The county owned a small house and allocated the main floor for use as a medical clinic. The rental fee was one dollar per

year. The visiting physicians had created charts for the patients who were seen at the clinic but other than a few charts, a small microscope, a donated X-ray machine, and some floor space, there was little infrastructure in place.

The lack of a fully equipped medical clinic wasn't the only issue. "The Corps wasn't real clear on what NPs could do independently in a community", and Bob's new state didn't know what to do with him either as there was no reciprocity for NPs. He was the first NP educated in another state to apply for licensure. The Corps had a contract with an NP program in Bob's new state and after passing an oral/written/practical test; Bob was granted an interim permit, which eventually led to licensure. In 1976, the state required NPs to have physician oversight, "it wasn't a formal licensing kind of thing, you just had to say that you were working with a physician", so the doctors who had previously been practicing in the community on a part-time basis agreed to "provide that coverage".

Although Bob's salary was paid by the Corps, the clinic needed revenue to pay for overhead and purchase equipment and supplies:

> In 1976, Medicare did not pay for NP services. That was not approved. But, there was a program called the Physician Extender Project which was administered through the university system and you could enroll in that program.

The purpose of the Project was to gather data for the federal government to determine if paying for services provided by NPs was a useful and cost-effective way of providing care:

> When the Project ended the federal government approved the Rural Health Clinic Act which then set up rural health clinics RHC), for which we applied. By virtue

of that designation, Medicare was required to pay you (an NP). Next came

Federally Qualified Health Centers (FQHC) which gave you access to a higher

reimbursement rate that was cost-based. They would pay you $100 a visit no

matter whether it was a blood pressure check or you did a major laceration. Then

at the end of that year there was reconciliation of what the cost of the care was to

provide it and the revenue that you generated.

As clinic administrator, funding healthcare for the community clinic meant

bridging the gap between insurance revenue and clinic costs. Over the years, Bob found

that revenue from grant funding and federal programs change in response to changes in

federal policies and priorities. Bob states:

There was a shift in funding priorities between passages of the Rural Health

Clinic Act in 1977, which allocated federal subsidies bases on geographic criteria,

and the development of the FQHC program started in early 1990s, which

allocated federal subsidies on geographic and/or medically underserved criteria.

FQHCs located in populated areas that were considered medically underserved

would compete directly with rural clinics for funding. This was the beginning of

the movement to shift funding priorities away from geographically isolated clinics

to population based healthcare organizations.

Eight years ago grant funding dwindled and in 2007 the clinic was designated a

Health Resources and Services Administration (HRSA) 330 clinic:

For many years about 70% of our revenue was from the patients' medical

insurance and only about 30% of our funding was grant revenue. Our grant

revenue sustained our 24/7 coverage to which I was committed to and so I went

after money to try and support that, whether it was from foundations to buy Xray

equipment or whatever, all of those were pieces of an overall administration of

frontier practice, to try and sustain it. Finally they pulled these revenue streams

and we were desperate and literally we were down to our last dollar when I wrote

that grant for the 330.

While Bob states that the 330 designation was a "god-send", it has also been

somewhat of a curse. To maintain the 330 designation a clinic must increase new patient

visits by approximately one thousand over the three year funding period. This is not

possible in a frontier area where there may not be one thousand people in the entire

county. Therefore, Bob's clinic merged with a large rural clinic in order to meet the

requirement for new patient visits (the merged clinics were able to combine patient

numbers). Bob relinquished the administrator role in an effort to sustain healthcare in his

frontier community and within a year he retired. Due to cost containment efforts the new

administration has cut the clinic down to four days a week and also ceased 24/7 medical

coverage for the community.

Concepts. Bob's story provides descriptive evidence that support thematic

concepts summarized in the literature review. He also provides evidence that relate to

concepts embedded in the aims of this study. Stories, or story segments, may contain one

or more concepts. In this first story the concepts of insider-outsider, emergency care

provider and personal challenges become evident.

Bob narrates this story regarding his first day of frontier practice in a new

community. He feels this experience helped his outsider image with the townspeople:

We got in late in the evening and there was a cable in the motel room. It looked like it was a TV cable and we had a little portable TV so I wanted to hook it up for the kids. I connected it and over the TV came a radio transmission from the Sheriff's office, which I didn't know was right next door. I didn't know where *anything* was at that point so I went to the manager and said, I think there's an emergency call and they're getting the ambulance. He told me to go next door and find out what's going on, so I did. The sheriff deputy promptly threw me into his vehicle and we raced 80 mph down the road about 15 miles. When we arrived at the scene, the tow truck had a cable going down the side of the mountain. In those days there weren't any guard rails and a car had gone off and was on its roof with a victim inside. The car was unstable and the next ledge went all the way down, about a thousand feet, into the gorge. While they were trying to stabilize the car, I went down that cable, about 100-150 feet, with a couple of the fire department guys, hanging onto this cable. I didn't even know if they had supplies but they had IV supplies and some other equipment. When I reached the victim he was unconscious but breathing and vital signs were OK. After stabilizing the car, a Stokes litter was sent down and we got that victim out of there, on a backboard, and put him on that Stokes. We then had to get another cable to take us up the side of the mountain because there was no way to do that without some help. I started an IV on the patient while I was down there and brought him up to the ambulance, there was no helicopter in those days. I went to the nearest hospital with him (55 miles away) where he ultimately died. The next day was Sunday and I was walking up to church with the kids. On the way, I saw all these

people sitting on the bench and they're kind of pointing and talking about me,

about the fact that this guy went up and over the bank, which was not something

the visiting physicians had ever done. What happened after that was people were

able to see that I had some credibility, clinically, because they did not know what

an NP was. Before this happened a lot of them wouldn't have come to see an NP,

they would go somewhere else to see a physician. So that was a big event that

really established my credibility as a provider in the community, and by

happenstance it was my first day.

In addition to this description of a trauma situation, Bob narrates a story involving critical medical care:

I remember I had a patient with an MI (myocardial infarction) that I couldn't

move anywhere due to a snow storm, so I sat up all night in the clinic ER taking

care of that patient and trying to keep her alive and finally got her out.

In another segment of his story Bob describes an urgent obstetrical situation:

We delivered a double footling breech here with the help of a doctor 55 miles

away. He was on the phone and the cord could barely reach to the room and he

was telling me what to do and that turned out OK, but it's a pretty scary, not ideal,

situation to be in.

Regarding the concept of expert generalist and a rural skillset Bob had this to say:

We were doing casts, we were doing Xrays, we were doing orthopedics of all

kind, minor surgery, a broad scope of skills that are still required, OB (obstetrics)

included. We took care of cardiac issues, a lot of mental health issues……

Long and Weinert (1989) identified the concept of having friends and neighbors as patients. This was illustrated in another story Bob narrated:

You get to know these people on a very intimate level. Some of them have relationship problems, some of them have severe medical problems, some of them die. So it never really bothered me to have friends, close friends, be patients but I think it does limit your social interaction with them because sometimes people don't want those boundaries crossed, and so they're perfectly fine that you know their intimate secrets but they don't want to be at a reception with you and know that you did their pelvic exam, you see, that sort of thing. If they were alcoholic or if they were somehow impaired or whatever, those elements kept you somewhat aloof from the social aspect of it.

One aim of this study was to bring to light the particular ethics of frontier NP practice. Bob makes several statements which illustrate this concept and tie it to the ethic of stewardship:

I think you're always trying to build in support systems to make sure that you're dealing with the appropriate standard of care for the patients.

Also when discussing the loss of 24/7 medical coverage for the community:

…I do understand that it needs to change and the question is, how can it change and not lose that 24/7 care to a population that otherwise would have no access to advanced cardiac life support systems or would have limited access to urgent care. The kind of problems that could be dealt with in a clinic setting and now their needs will either not be met or they'll be met at an emergency room at four times the cost and PEOPLE WILL DIE.

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During the interview Bob states that nowadays there are a lot more non-clinical administrators in charge of frontier clinics and that, "this makes a *difference* in terms of how it gets done". In light of the professional challenges he faced as both clinic administrator and healthcare provider, Bob was asked if he felt it would be *done* better or worse:

> I think it's worse that they're not a clinician because a clinician at least knows that the primary purpose of the institution is to provide care, TO THE PATIENT. And sometimes administration systems exist to support the systems of administration and revenue.

Another concept identified in the literature review is the social capital that frontier NPs bring to their communities. Bob gives some examples of this:

> During a lot of my early days I was intervening in that trauma area because we didn't have any other system to support that…we did a lot of training on extrication, we helped get the tools we needed to help get these patients out of those vehicles. We trained a lot of the EMTs….

Social capital is also measured by the number of employed people in a community. As a result of Bob's efforts to improve healthcare services in the community (mental health, dental, physical therapy), and the infrastructure of the clinic, it became a major employer in the community. At its height, in the early 2000's, the clinic employed 17 people. Since merging with a larger clinic, the number of employees has decreased to less than half that amount. This is due in part to the decrease in clinic hours and through transfer of support staff, such as medical billers and administrative support, to the larger facility.

Themes. Several overall themes emerged from Bob's stories: (a) Charting your own course, (b) Flying solo, and (c) Flying by the seat of your pants. The theme of Bob's personal journey is, *charting your own course*. This theme is comprised of two subthemes, *taking the road less travelled* and *carving out your own niche*, which are taken directly from the interview text. Bob quoted Robert Frost and stated, "I took the road less travelled, and I did, and I'm all the better for it". When discussing the decision to continue working in an institutional setting or venture into the frontier Bob stated, "it's hard to carve out your own niche in that environment".

The second theme, *Flying solo,* is also comprised of two subthemes, *many hats* and *isolation*. The term, flying solo, is often used to describe a situation where you're on your own and you have multiple tasks that need to be done, such as flying a plane and navigating at the same time.

The first subtheme, *many hats*, connoting multiple roles, is similar to Rosenthal's study theme, fluid *role* (1996). However, there are contextual differences between the meaning of *many hats* in Rosenthal's study and this study. In Rosenthal's study, she referred to rural acute care nurses who worked in several departments during a single shift or to the wide range of tasks they completed during their shift. In this inquiry participants used the term to describe the many roles they filled within their local health care delivery model. This concept is supported by the following exemplars:

- I did all the administration, and that was a CHALLENGE in terms of being in a frontier role because you had to administer the clinic, staff it, and provide the care.

- I was also the school nurse…the health department really wasn't as integrated then, so we had to deal with immunizations and screenings….

- We taught EMT classes…I did house calls…covered the jail…covered the ambulance...

The second subtheme, *isolation,* is supported by this statement:

You realize working in a frontier area is like being a night nurse and in the middle of the night, when you have something go bad, you have to think, can I deal with this or do I have to call somebody…only the difference here is that you couldn't even call anybody…it ain't happening here. So you had to deal with it alone and make a decision about what to do.

The third theme, *Flying by the seat of your pants,* connotes entering into a situation that you know little about, but you enter into it anyway, doing the best you can with what you have. It is support by the following exemplars:

- I really didn't know what was going on …I tried to sort it out and let people know what the issues were.

- I had no idea at that time what would be the preponderance of the care that I would have to give, would it be trauma, medicine, peds, I really didn't know.

- I worked that out in the early days because it wasn't clear how to do it, so we created our own system basically.

- So a lot of that early time, as a provider here, was trying to adapt to these kinds of different needs and developing the skillset you need to do it with…because even in the program they really didn't address those kinds of issues, certainly not EMS issues.

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Conclusion. Bob's narrative provides an oral history of the development of a

frontier NP practice in one specific state. His story allows NPs to *see* the professional

development of NPs over time and within the frontier context. The thick descriptions of

his practice experiences allow NPs to reflect on similar experiences they may have had.

Bob's narrative also provides an administrative viewpoint and illustrates the power of

policy as it relates to access to healthcare in frontier communities.

Ann: A Grow-Your-Own Story

Overview. Ann also wears the *hats* of clinic administrator and healthcare

provider. She is an example of the *grow-your-own* concept:

> I grew up out here and my father was ill so I decided I wanted to become a nurse
>
> and had no idea that was going to be a challenge at all. I became a BSN (bachelor
>
> of nursing science) and I had grand ideas that I was going to become an ICU
>
> (intensive care unit) nurse and travel the world. I came home for Thanksgiving
>
> and met a man who I later married…so guess where I started my first practice?

There were no physician offices, clinics, or hospitals to work at; therefore, Ann

had to find creative ways to use her new nursing skills:

> I became an EMT, I taught childbirth classes, and did anything I thought was
>
> related to nursing. I did it, promoted it and used those hours to renew my RN
>
> license.

It was the late 1970's and people were beginning to hear about the NP role. Ann

and a group of community members tried to recruit an NP to their community, but found

a PA (physician assistant) to take the job instead:

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He practiced for two years to meet the requirements of the National Health

Service Corp loan repayment program, then he left. We then tried to merge with

other agencies (100-150 miles in any direction) and one of them sent a visiting

doctor …We'd have someone here for a while, then the politics would change and

they would leave.

As a result of unreliable and interrupted access to healthcare in her community,

Ann went back to school and got her NP license. She started a community clinic on a

shoestring budget, which left little or no money for equipment:

We didn't have personal protective equipment that looked like what they

had in the hospital, but we had farm safety goggles, and we had raingear.

Ann had been one of the few nurses in her community. There had never been an

established medical office, therefore, no one in the community had ever been trained to

work in one:

You have no staff to recruit, if there are RNs out here, they're out here for some

purpose other than healthcare or they want a wage which is something TO THIS

DAY that I can't offer. So we hire bar maids and grocery clerks and train them to

our needs.

Additionally, there were no funds to hire ancillary staff even if there were qualified

people available:

…so you have to wear many hats. You're the housekeeper, carpenter, the

plumber, the repairman, because there's nobody to call in. We're getting more

and more people and now I actually have people I can call to work on the

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plumbing, it's a wonderfully federal-funded thing, but I still do a lot of things here.

Eventually, the community became a taxing district which provided tax revenue to help fund access to stable healthcare. Through community efforts and grant funds, a medical clinic came into being.

Concepts. A review of literature indicates that one of main differences between rural nursing and frontier nursing is the number and acuity level of emergency patients that are seen. When asked to relate a story that paints a picture of what it's like to be a frontier NP, Ann thought this over for a while then responded with a story involving emergency care:

This guy came in, he had been out … and he came in with part of his face peeled off, literally peeled from mid-eye to ear. He came to the clinic and refused to go on, didn't have money, didn't have transportation, didn't have a good car, maybe didn't have a license, I didn't know. So I made him sign his life away (consent to treatment, and refusal to seek a higher level of care), and I said, OK, I'll try to put you back together but you have to know, this is beyond anything that I think I'm capable of doing. So six hours, several bathroom breaks, Vicodin for him and Advil for me (due to bending over for so long), I had him back together. He looks pretty good, he has function, he talks, and he's satisfied.

When asked if her NP program provided education on emergency care skills Ann relays a story that also includes the concept of the aesthetics of frontier NP practice:

No. No, it's all learned on-the-job. And trauma is so different for each person. For example, the other day we had a child that had been cut by….it was a deep

cut, it had probably nicked an artery, and there was lots of blood involved. We probably could have sewed him up but he was so shocky, so traumatized, and the adults were so traumatized by the whole affair that it was not in our best interest or the client's best interest to sew him up. So, when do you sew up a face and when do you refer a little cut? It's an art.

Working with trauma victims often involves working with local EMS systems. When asked about managing trauma victims Ann explained some of the inner workings of the EMS system in her community:

I depend on the EMS, I wouldn't live here, and I couldn't survive, if I didn't have EMS because I *cannot* sustain a life here. My IV bags outdate, I'm lucky to have two IV bags and once I'm done with those two then there's hell to pay, so if I really need lots of volume I'm not going to last very long. I can't carry ACLS (advanced cardiac life support) drugs because they're too expensive, they out-date too fast. So I rely on EMS for drugs.

When asked about the availability of an all-volunteer EMS system Ann provides this example:

It's all-volunteer and so much of the time there is no response. It's summer they're gone, they're vacationing, they're harvesting, they're just not available, so we go the next community, 30 miles away and they're also harvesting and farming. That community has two EMT 2s (their scope is higher than EMTs), one worked for the government, but the government office closed so we don't even have that personnel resource. So then we can call on the next community down (70 miles away) or we can call in an air ambulance if they're available,

which has a 20-30 minute estimated time of arrival, but you need fire department and other personnel to land them. Last weekend, someone, who has renal failure and congestive heart failure, he's very ill, he called 911 because he was vomiting after his last chemo therapy and "he's going downhill rapidly" according to the call. It happened to be on my day off but somehow I got involved anyway. There were no EMTs to respond so after about an hour a couple of first-responders got to the scene, assessed the patient, decided he didn't need an air ambulance and he came to the clinic.

In Bob's state, the clinic had to have an alternative-base-station designation to allow EMS personnel to transport patients to Bob's clinic. I asked Ann if the EMS regional oversight committee took issue with the transport of some emergency patients to her clinic:

> They are the one who tells them to bring the patients here. If you take that client who had the nausea from his chemotherapy, to the hospital (approximately 100 miles away), you take my EMTs out of the community for six hours, that's a staff of two in the back, one in the front, probably a few first responders, so that's four EMS personnel, and that's the ambulance. I have six responders and that leaves me one and one backup ambulance for six hours because the round trip takes four to five hours plus another two hours to transfer the client, paperwork, clean the rig and get it ready for the next run. Six hours is the minimum that an ambulance run can happen. You leave my community open for a gun-shot wound with no response.

Frontier communities lack access to mental health services. Ann talked about the impact this lack of services has on her frontier community:

I have a bipolar patient, who is identified by the insurance company as one of their top spenders, but I can't justify the cost of tele-medicine to show people how psychotic the patient is, so I just have to handle the psychotic episodes, and they're very expensive to the community, not just the healthcare system. Everybody gets involved, the Sheriff, the people in the community, EVERYBODY was in my office saying you gotta do something about this, but what am *I* going to do? …I finally get her sent for an evaluation but it happens there's no pharmacy open at the moment, so they send her back with three days' worth of medicine. Well she gets back and she doesn't have meds and I don't have the meds, so I have to order the meds, so yeh. That's when I really wanted, NEEDED, tele-medicine, I can't tell you how come I can't have it, it hasn't worked, and I did my entire thesis on it.

This researcher had just come from the International Rural Nursing Conference, where the key note speaker, Dr. Mary Wakefield, stated that tele-health was the future of healthcare in rural areas of the country. In light of Wakefield's speech, Ann was questioned further:

I wrote a grant to get broadband, the only reason I can justify keeping it, is that I have EMR (electronic medical records), it's in the *cloud* and so I can justify keeping it for an outrageous amount of money, for my community. But I can't hook up with anybody. Who practices tele-health in this state, no one. I can hook up with next state over, but who's going pay for it? And you gotta have

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somebody TO call in, they are basically on-call waiting for us to have a case, well

I can't afford to have anyone on-call for my tele-health. I wanted to do tele-health

with just mental health, they don't have a psychiatric mental health nurse

practitioner. I did find someone, but they could only Skype in and that's illegal,

that's not even HIPPA compliant, but it's tele-health. But I can't get it to happen

in MY clinic. We were part of a year-long study with one of the universities,

because that made sense, they do tele-health. And it's another one of those…I

can't tell you all of details of why it was that it couldn't work here. We didn't

have the $50,000 for the transmission equipment, so we could write a grant

for the equipment but then we need multi-specialty care, we don't need just one

kind of care, but I don't have the patient numbers to make it worthwhile for them.

Ann goes on to discuss personal challenges related to frontier NP practice. Two

concepts identified by Long and Weinert (1989) were evident in Ann's narrative. The

first involves having family and friends as patients:

 That's why I wear scrubs, it's putting on my different hat. Everybody's your

family and friend. You know intimate details about people that you shouldn't

know…They see you in the grocery store and start right in with their medical

problems and I have to remind them that I'm not wearing my scrubs and, would

you take that (whatever the problem or issue was) to the clinic. It's always your

family and friends, so…you care for them and then you deal with the rest of the

junk.

Long and Weinert (1989) also identified characteristics of rural dwellers. They

found that rural dwellers tend to identify the ability to work with being healthy. They

also tend to put-off seeking care until their work is done. This segment of Ann's narrative exemplifies this concept:

> This guy came in with a tib/fib fracture and he'd been on a horse. The horse ran
> his foot into the fence and it just twisted it backward but the stirrup brought it
> back into alignment. So I said, why didn't you come in earlier and he said, well,
> they were still working… and there was nobody to drive me and if I got off the
> horse it would have hurt. So he just stayed on the horse until they were through
> … and five hours later he came into the clinic and wanted me to fix his fracture.
> You know, that's frontier life.

The concept of seasonal variations in patient numbers has been identified as a personal challenge to NPs practicing in some frontier settings:

> Rural used to be all about industry, we're not about industry anymore, we're
> about tourism. So we have, on major holiday weekends, an influx of about three
> to five thousand people.

Ann spoke about the rural skillset and competencies required to work in this type of setting:

> Nursing school doesn't teach you how to run a business. We don't have a
> hierarchy, we have a lateral system because none of us work full-time, we're all
> here part-time, so everybody needs to know how to turn the water off when it
> floods, everybody needs to know the management system, EVERYBODY. I have
> a limited X-ray permit, but we're afraid the regulations are going to change and
> we won't even have that. How do you get lab techs? You can't ask somebody

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else to do it. If it needs to be done you'd better learn how to do it because there's

nobody else.

The concept of solo practice was also evident in the literature review and Ann

discusses why it is usually the case:

We had a second provider, through the NHSC loan repayment program, but when

that ended he left. The population numbers haven't changed so paying two

provider salaries was not possible. So then we had to recruit AGAIN, which

always takes about a year at the bare minimum because people just don't have the

skillset, or they come here and they're frightened immediately because you tell

them what they're going to be doing.

Currently, in order to achieve 24 hour staffing, Ann and her relief provider each

work in the clinic during office hours and on-call after office hours, for five to fourteen

days straight. Due to the challenges in just finding a relief provider, she worries what

will happen to clinic as she nears retirement age.

The concept of social capital was discussed in the literature review. Ann was

asked about the social capital she may bring to her community:

There's only so many people who are doers and if you're a doer you do

everything to point that you burn out. I used to be involved everywhere, but I'm

currently withdrawn from everything as a self-protection mode... I think we bring

a lot of social capital because we bring our educational background to the entire

community.

As we heard from Bob, federal policy has a profound effect on frontier healthcare.

Ann is also the clinic administrator and has this to say:

Government policies are another thing, they write all these policies. I am such an idealist, I got started on this whole trip (NP career) because the government said that NPs were going to fill-in in rural areas. Well, I happen to be vested in a very rural area, but then there wasn't funding for it. Then they say you know, put in a rural health clinic, but now they're not funding it, but we have more and more requirements like EMR and electronic billing that require software agreements, licenses and network maintenance, which aren't necessarily covered in start-up grants.

Despite her frustration regarding governmental policy shifts, the last concept comes from Ann herself, when she discusses the political nature of her frontier role and the importance of networking with political allies:

You have to get politicians involved. I have politicians tour my clinic yearly, I personally know them, I go talk to them, I've been to DC, I've stood on the capitol steps because that's what you need to do to get your voice heard. If you don't make your voice heard nothing ever happens, and that's why I have a clinic that's beautiful now, because they said yes to the grant, they were willing to co-fund it, they knew us personally. People don't understand those personal connections, like attending rural health clinic meetings and knowing who is in your political set, that is extremely important, that's how we got our taxing district, that's how we got our supervising physician, and how we got laws changed, EXTREMELY important.

Themes. Four overall themes emerged from Ann's narrative: (a) *it doesn't work here,* (b) *out-on-a-limb*, (c) *there's an art to it,* and (d) *reciprocity of care*. Embedded in

the first theme is the idea that outsiders, or people who live in larger population centers,

think that it *does* work here. This is akin to taking-for-granted that systems developed for

use in non-frontier settings will work in frontier communities. In addition to the inability

to access tele-health, other communication systems may be inaccessible at times:

> Cell phones, yes everyone has them but they don't always work, there are pockets
>
> where they don't work. If the power goes down, your communications go down,
>
> people can't communicate when its down. The fire department has radios, but it's
>
> all communicated through one town, over 70 miles away, through one 911 system
>
> that we have. There's no local control so if anything affects those towers, like an
>
> earthquake, we're in deep trouble.

While telling another story she interjects:

> Just the distance makes things so difficult, things that people just don't think of.
>
> And when discussing why normal procedures and protocols don't work in her
>
> setting: I GET TIRED OF EXPLAINING TO PEOPLE WHY IT JUST
>
> DOESN'T WORK HERE

> The second theme, *out-on-a-limb*, refers to how NPs may need to manage

situations they are not necessarily prepared for:

> Someone came in with a head wound that looked great when I opened it up, it was
>
> only six to eight inches long. And then I started washing it. He had, what turned
>
> out to be, three severed arteries, so I could not clear the field to tie one off. As
>
> soon as I started to say oh no, in my own mind, *I* felt like I was going to pass out
>
> so it was *ME* walking around with ice packs in my arm pits and sticking my head
>
> under the faucet, telling his friend, HOLD PRESSURE, HOLD PRESSURE, oh

no, what am I going to do! So I just sutured the wound together, whipped it

together, to try to get a tapenade, put an ice pack and a diaper on his wound to

vasoconstricted it, I put all the epi I had in it, that didn't completely vasoconstrict

it but I got enough ice on it that he quit *squirting*, he started *oozing,* so I put a

diaper and a few more ice packs on his wound. Because it was the middle of the

night and there were no EMTs, he decided to drive to the ER and he survived

and he did just fine.

The third theme, *there's an art to it,* refers not only explicitly to the phrase Ann

used when discussing whether you stitch up a face or sew a finger, but implicitly when

she talks about redirecting patients who would discuss their medical problems in public.

Embedded in this theme is the notion that there is an *art* to maintaining not only patient

confidentiality in small communities, but your own as well.

The fourth theme, *reciprocity of care,* refers to the back and forth nature of caring

in a frontier community. It is embedded in the concept of having friends and neighbors

as patients. While you care for or *treat* them, they also care about you. This is

exemplified in one of Ann's stories:

One day I had a bladder infection and my gossiping relative found out that I had

home visits to do that day. So everywhere I went they all said, "would you like to

use the bathroom", the first thing when I got there, because my relative had told

them about my problem. So, it's interesting, you're isolated but you're not.

Conclusion. Ann used the term *many* hats in her narrative. This is one of the

subthemes in Bob's story. Ann uses this phrase to connote and delineate the different

roles she has in the community. This is exemplified when she discusses wearing scrubs to delineate her role as NP to her patients.

Ann's commitment to both her patients and community is evident. Through Ann's narrative the reader can also see the strong commitment she has to the nursing profession. She demonstrates nursing leadership and has taken her voice to Capitol Hill for the benefit of her community and her profession.

Jim: A Mid-life Transition

Overview. In his late forties Jim enrolled in an FNP (family nurse practitioner) program. He was chief flight nurse at a prestigious medical center and enjoyed the work but felt he needed to widen his career choices, "even though I'm in relatively good health you're only going to be able to get in and out of a helicopter for a certain amount of time". The FNP program had a rural focus, but Jim had not given any thought to rural or frontier practice:

> I never really thought about that, I knew at some point I would probably transition into an NP practice, whether that would be emergency medicine, urgent care, or family practice. I never really had a thought that this is what I was going to do when I started the program.

After graduation, Jim worked part-time at an urgent care clinic. During a trip to…on a ski vacation, Jim and his wife started thinking that they might like to buy a vacation home in … because they really liked the area. On the way home they discussed it further:

> We are both in our 50's so we kind of started thinking about making the move sooner rather than later. So I went home and kind of just did an online search, just

out of curiosity, and *this* particular job was posted two hours prior to me looking. I
was working here less than two months later. But I never had a vision of, OK, I'm
going to go out and practice in a rural setting, in the middle of nowhere, and be the
provider that people looked to.

Here is a family practice clinic attached to a ten-bed critical access hospital
(CAH), which includes two emergency department beds. Jim works with two physicians
and two physician assistants. Until recently, he had been the only NP but now there is a
pediatric NP in the clinic one day per week. This now makes a total of six providers
(a mix of full and part time) to care for 2,500 residents of this vast community. Jim is
unaware of any specific grant funding that supports the hospital:

> The hospital is a not-for-profit, I don't believe they have grant funding, but we
> have a very high Medicare population, and this is something I learned about here,
> with CAHs, Medicare is actually a better payer source than private insurance.

Jim has practiced in the frontier setting for over two years now. When asked if he
was surprised by any facet of his new role, he had this to say:

> I didn't really think about how closely or how intimate you get into somebody's
> life with their healthcare. It's more than just seeing patients every day, it's that
> we see people continually, we get to know them a little bit more. It's a little more
> personal than it would be if you were working in a larger place.

The challenges of providing 24/7 healthcare coverage to a community was
illustrated by Bob and Ann's stories. Jim's situation is different; he is not the sole
provider for an entire community. Call duties are shared within the group:

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That was one of things I started looking at because in my prior job I was chief

flight nurse for five years and part of that job was call every fourth week. I was

on-call 24/7 for seven days and got minimal pay, something like $2 per hour.

Even though 99% of the time it was just phone stuff, it still limited what you

could do. I didn't want to ever be on-call again but the system here makes it

much more palatable. I take call one night per week and one weekend per month.

And, the reimbursement structure here is much more appealing.

There can be a fairly high turn-over rate of providers in frontier settings, but both

Jim and his wife have integrated into the community and seem happy with their decision

to move here. I asked Jim if he was planning to stay:

The transition to frontier life has been easy, I mean quite easy. At this point, I

don't see us doing anything different. As long as things stay the way they are

now, *here,* you know the working relationship that we all have, and if this hospital

stays solvent, yeah, There's always things that can change , but yeah.

Concepts. When asked what it's like to be a frontier NP, Jim narrates a story that

illustrates both the need for mental health services in frontier settings and the intimate

nature of frontier NP practice:

There is an adolescent girl in our community who had recently undergone a lot of

family trauma and grief. About three months later I started seeing her for

depression. So, I went through the whole process, started her on anti-depressants,

started having her in frequently, had her see a psychiatrist through tele-health,

who kind of helped me manage the medications for her. I saw her again four to

five months ago in the clinic and could tell she was really depressed. I told her, if

you ever decide to hurt yourself or do anything, you need to call me. I gave her

my cell phone number along with my home number. I also gave her the number

of the crisis counselor and suicide prevention hotline. I said, I don't do this often

for people but I want you to call me. I was on-call one weekend, I was driving

from my house to the clinic, and I get this phone call and it's an 800 number I've

never seen. This lady gets on the phone and says, are you …and I said yes, and

she said I'm…from the suicide hotline and I've got…on the line. I was like,

wow, OK. So she puts …on the phone and I convinced her to come into the

hospital. She was at home, in her room, by herself, and said that she was thinking

about killing herself. I said, please tell me you'll come in to see me and she said,

yes I will. She came in and I talked with her. She had made a plan to take every

pill in the house, and to kill herself. She had made a *definitive* plan, not only had

she thought about it, but she decided, this is what I am going to do. So, I got her

admitted to a pediatric mental health facility. She spent four weeks in-patient and

then out-patient for four weeks. I sent her a card saying, hang in there, and she

replied with a letter essentially telling me that if it weren't for me she wouldn't be

alive. You know that's kind of the unique position that you're in, working in a

frontier community, it's not real often that you get to be that directly involved

with, especially someone her age, who probably would have taken all those

pills and killed herself.

This brought up another ethical concept regarding the on-call responsibilities of a

frontier NP. In Jim's case, the ethics of availability:

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You know, it's one of those things, the self-responsibility. I don't want to be

somewhere without cell service for an hour and someone's here in critical

condition, *that's just wrong.* It's wrong for the patient, it's wrong for the

community.

Having friends and neighbors as patients is another recurring concept in the

literature. Jim has not lived in his community as long as Bob and Ann have; however, he

still has experience with this aspect of frontier NP practice:

I lived in one particular town for 16 years and worked in the EMS there for six

years, so I knew a lot of people and had to take care of friends and family. So it's

one of those things that you kind of keep in the back of your mind but till you're

faced with it, it's not that big of a deal, you just don't think about it. It's not

something I dwell on, it's one of those things coming from my background and

what I've done, it doesn't matter who it is, you just get in there and do the best

you can and take care of it.

The fire station and ambulance bay are in close proximity to the clinic. The EMS

services are provided through volunteers and the ambulance offers only basic life support

(BLS) services. Jim was asked if the EMS services were integrated with the clinic or the

CAH:

Technically there's really no integration, but we have a working relationship. We

have no oversight of them, they have a separate medical director that is not from

the community. The board of medicine has regulations that do not technically

allow me to give orders over the radio and I cannot be a medical director for the

EMS program because I am not a physician or a PA. Now there's really not a lot I

could order them to do anyway because they're a BLS system and they really

can't do a whole lot to begin with. They can't start IVs in the field so when the

patient comes in here, to the emergency department it's like you're getting them

from a first responder situation…As far as I know, there is no formal way to

integrate RNs or NPs into the EMS system in this state. The ambulance delivers

the patients to the emergency department and we take over from there.

Jim has brought the skills derived from his previous trauma experience to his new

position:

I am now the trauma director for the hospital. I have also taught classes for the

EMS folks. Since I've been here, I've intubated six people in the emergency

department. Prior to me coming here, the director of nursing told me nobody had

been intubated by a provider in this hospital in over ten hears. Before I came here

they had no ventilator. I convinced them to purchase not only a ventilator that we

can use temporarily in the hospital, but one that we can use for transport as well.

So for all intents and purposes, I can confidently say that I have at least elevated

the level of critical care that people get in this community.

Jim has added to the social capital in his new community in other ways as well:

By way of my position as trauma director, I am involved in a community outreach

program. Next spring I am planning to do a *ghost op*. Right before prom or

graduation you do a *mock* crash and then you bring in a helicopter and you do the

whole thing to let people know, this is what it's like when you get in a bad car

accident. The other thing I've done is written several articles in the paper on

health topics like sinusitis and things like that. I've also been approached about

joining a mental health committee, for lack of a better phrase. They're going to

look at the mental health capabilities of the valley and see if there are ways to

improve it…I'm not a mental health professional, it's probably one of my weakest

areas.

Themes. The theme of Jim's personal journey is *transition*. He uses this term

several times throughout his narrative. Jim transitioned into a new career as a family

nurse practitioner, a new job, and into a new community and a new lifestyle, one that is in

the *frontier*.

The second theme in Jim's story, *a different mindset,* is taken directly from the

interview text. This theme indicates that Jim has come to discover that there *is* a

difference between frontier NP practice and practice in a more urban area. One of the *first*

stories Jim is asked to relate is, what it is like to be a frontier NP:

I come from a background of critical care. I quite honestly have probably seen

the worst that you can see happen to the human body. A LOT, I mean I've seen a

lot of it. Out here you kind of have to have *a different mindset* dealing with one,

the population, and two, your lack of resources.

Near the *end* of the interview Jim was asked if he wanted to add anything else as

far as frontier NP practice was concerned:

Yes, I think one of the things that is really key in frontier practice for ANY

provider regardless whether it's a physician, NP, PA, it doesn't really matter,

anybody who's overseeing somebody's care, *you really have to have a different*

mindset on how you do things in a setting like this. For example, someone may

come in with knee pain and you can look at their knee, you can assess their knee

and say, OK, maybe they're going to need an MRI. In most places you automatically refer them to an orthopedist, they're going to go right to an orthopedist, you're not going to do anything else. Out here you have to have a *different mindset* because, number one, everything's not close, and two, you can't readily have specialty physicians to take care of patients. So you really have to concentrate more on a good physical exam, a good history, and then think. OK, is this test that I'm thinking about doing appropriate, is it cost effective, and how is it going to affect the person.

Conclusion. Jim's story is quite different from Bob and Ann's. Jim's extensive trauma experience in addition to support staff, and more sophisticated equipment, give him the confidence to handle emergent situations. When asked what being a frontier NP is like, Ann and Bob both responded with stories of emergency situations.   Jim, answered with a story of human struggle and the intimate bond between frontier practitioner and patient.

Jim's story also gives us a different perspective of frontier NP practice. Rather than a solo practitioner working in geographic and professional isolation, Jim's experience of practicing in a medical clinic attached to a CAH, may prove to be the frontier healthcare system of the future. This model may ameliorate some of the personal challenges of working in the frontier such as: (a) professional isolation, (b) scare resources, and (c) heavy on-call commitments.

Jim's community is fortunate to have a person with his experience and professionalism. Both Jim and his wife have added to the social capital in their community and have been rewarded with a sense of belonging and being *home*.

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Pam: The Traveler

Overview. Pam lives in a community that is 80% Native American. There is a reservation 14 miles from her community with a small hospital and ambulance service. However, if you are not Native American it is difficult to avail yourself of their services. Pam came to the frontier by way of marriage. She grew up in a metropolitan area but always wanted to live in a rural setting:

> I love looking at the wildlife, I love watching the seasons change, I love waving
>
> to the farmers when they're planting or harvesting their crops, I don't know, I just
>
> love it. I also love rural health. People in rural America will help you. I have
>
> lived in other places and it's not the same as when you live in rural areas, it's just,
>
> people trust each other…

For the past year Pam has worked as an NP in a physician-owned clinic in her frontier community. Prior to this, Pam had travelled out of her community to work in other frontier settings. She's had a lot of inter-professional conflicts with the physician and is not happy with the situation; however, she's trying to work it out because she does not want to travel again. Travel means being on-call, which usually entails being away from home for several days at a time:

> You can't sleep because you're not in your own bed. So you're lying there and
>
> you think, I've got to get to sleep! Finally, you fall asleep around two-thirty in
>
> the morning and at three o'clock somebody calls, it's the ER, you've got 20
>
> minutes to get there, maximum. So you try to look like a person when you roll
>
> out of your motel room. Of course, it's totally cold out so your car's half frozen.
>
> I tell you, I finally got a car starter. Before that I would have to go out there and

crank it over and hope it would start. So then you'd make it to the hospital or the

clinic, you'd get out of your car, and you're frozen.

Pam's sense of humor is evident as she continues:

And then, you get there and this little boy had an EARACHE. You examine the

child and tell the parent what to do and you smile (laughter) and that's all that you

can do, then you start the whole cycle over again. OK, now the car's kind of

warmed up, you go back to the hotel room, after you dictate, of course. You go

back to the hotel and you can't sleep and when you do get sleep, it's time to go to

work, and you realize you forgot to eat the day before so you're really hungry!

For a while Pam had worked in a frontier community approximately 110 miles

west of her home. She worked for a clinic that was attached to a CAH and a skilled

nursing facility. This required an extended daily commute (along with some weekend

call) which could be dangerous in harsh weather, "you have to be prepared, but I loved it,

absolutely loved it".

Concepts. The concept of limited resources and support in frontier settings is

evident in the literature. The CAH was a satellite facility of a larger healthcare

organization. One aspect of working within that system was the amount of support Pam

had. For example, if Pam were called to the ER for a medical emergency she had

physician back up by telephone, "they'd talk you right through it. They were just there

for you, all the time".

Even with telephone support there are issues when dealing with trauma patients,

particularly managing multiple trauma patients when you're alone:

It's a nightmare. The patient's family doesn't understand why the other patient

might be more important than their family member, or whatever. And it's hard to

have enough supplies on-hand because they cost so much. People don't

understand things like that.

Pam also received support in other areas as well:

I'm not comfortable with X-rays and so, they sent me down to…and I spent some

time with the radiologist. Out here the X-ray can be a very valuable tool but they

have actually cut X-ray services in most of the clinics where I used to work. The

hospitals make more money if you have to send the patients all the way over

there.

The lack of mental health services in frontier communities is evident both in the

literature and in the previous stories. This concept is woven throughout Pam's narrative:

I see a lot of depression, a lot of anxiety. It's just, there is no mental health

providers here. I wish I had gotten a psych NP license because it's so

overwhelming. I've taken a lot of CEU (continuing education unit) courses and I

read a lot about it. We have an addiction/recovery worker here and he's been

helpful as well.

Pam alludes to the stigma that mental health patients may face in frontier communities:

When I worked in … I talked them into getting a counselor in there, it worked so

well. His office was next to mine but when you went down the hall you couldn't

tell if the person was going to my office or his office, which was excellent, it

worked so well. But then the grant manager switched administrators and she

didn't think it was necessary to provide the service. WHY IS A HUMAN MIND

NOT PART OF THE BODY, where do people get that, I don't understand it.

Pam then relates a story which exemplifies the need for mental health services in

the frontier:

I was called to the ER for a nine year old girl who had been raped. It was a

tragedy, just horrible. She was sitting there with her little bunny socks on and I

thought, dear God, how am I going to help this girl. It was just, that was the worst

case I've even seen. It's a shame, just a shame. The poor little girl didn't know

what was going on so I sent her to the psychiatric unit for observation. I thought,

she's going to need help and I thought, where are your parents? You know,

they're young people, it's just so sad. They need mental health; mental health

would be a good thing.

This brought up the concepts of confidentiality in a frontier community and

having family and friends as patients:

Privacy rights (HIPPA), are not realistic at all (laughter). All people have to do is

look at whose house you're parked in front of, or, was that so-and-so's car at the

clinic, then the rumors start. I've had people pull their shirts up to show me this

bump they've got and I'm like, in the drugstore. It's like REALLY, why don't

you come and see me later, OK (laughter). As far as having family and friends as

patients, most of the time it's very rewarding.

The theme, *reciprocity of care*, emerged from Ann's story when she discusses her

home care patients offering the use of their bathrooms, is. This concept is evident is

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Pam's narrative as well. She was on-call, in a motel room over the Thanksgiving holiday. This is what she found when she returned to her room after an ER call-out:

> There was food on every open space, on the nightstand, everywhere in the motel room. Somebody brought me buffalo steak (laughter), you know, to me, that was just the nicest thing.

She goes on to say:

> I would get stuck and they would come right over and pull me out… You tend to make friends, so you always have a place to stay if something goes wrong. I have a patient who used to bring me cardboard to put in front of my radiator so my motor wouldn't freeze. It's just a nice feeling that even though I don't live here but I work here, the people would be so nice to me, you know, it fills your heart with good and it makes you want to pass it around.

The frontier skillset was another concept discussed in the literature review. An additional skill may be the ability to look beyond the obvious for answers to patient problems, particularly when resources are limited and the population is vulnerable:

> I had a guy come in who stunk! I thought I was going to die. It was his foot, it stunk and it hurt. He had a cast on his left foot and it had been on for a long time. What happened, why are you wearing a cast? "Oh, I fell I think, and they put it on, its been a couple of months". I said well, its got to come off. "Oh my, you can't take it off". I said, I think we can, we'll try the best we can. "No, they took my boot when they put the cast on". So, that was the reason he wouldn't have it removed, he didn't have a boot. And he was a railroad bum, I think. So we went to the rummage box and found the man a pair of boots which resolved the

situation. But when he came in I just had thought, what is wrong with this man, he stunk. He hadn't thought about how they helped his foot, he just thought that they stole his boot!

Themes. Two overall themes emerge from Pam's narrative, *shifting sands* and *a barren healthcare landscape.* The first theme, *shifting sands,* refers not only to the fact that Pam has had to shift jobs, but the fact that this occurred, was partly in response to shifting government priorities. *A barren healthcare landscape*, refers to the lack of healthcare providers/facilities in frontier communities.

Shifting federal priorities and funding schemes have been a concept evident in the previous stories. When asked if she would recommend frontier practice, Pam had this to say:

I would say be very careful. There are a limited number of jobs. It's like a politician who gets a term in office, the jobs that are available, last for only a short time because the politics change.

Pam explains why she lost one of her frontier NP positions:

They took the funding from my clinic in…and gave it to…where they felt it would do more good. But they already had a hospital down there, but all the people in…had was the clinic, that's it. Those people now have nothing, absolutely nothing. To me that's backwards. The larger cities like…they have a community health center that was just built. They already had a hospital and numerous clinics and now they have a health center. They have NOTHING out here, NOTHING. We don't even have 911, I mean we have it, but it has not been certified by the state, so we're all alone.

The term *barren* may be used to indicate that something is lacking. Pam's last statement supports the fact that health care is lacking in the communities she has served. In fact, Pam's motivation to enter an NP program was the lack of healthcare in her community:

I just thought it would be good for the community and myself because, like I said, we have NO ONE here… when you live it, it's different, people die and that's not good. And when the lights go off at the clinic (i.e., if the clinic closes), I'm here, that's it. When asked if there was anything more she wanted to say, Pam's humor was again evident, "not right at this time, but thank you for the offer".

Conclusion. Although Bob and Ann's stories allude to the concept of rotating physicians and visiting healthcare providers in frontier communities, Pam's story provides insight from a traveler's perspective. Her story provides a narrative of experiences spanning a frontier region rather than a single community. Pam states that despite the need for frontier NPs, at this point in time, she regrets her decision to become an NP and cannot look back on a satisfying career. "You know, I could have been director of the nursing home, stayed home and made more money, but this type of work *is* more rewarding.

Sue's Story

Overview. Sue grew up in mostly small towns and hails from a family of physicians. After receiving her RN license, Sue practiced in several locations that included a large metropolitan hospital and a small-town community hospital. She worked primarily intensive care and ER. One of her moves was to a community in a neighboring state:

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I heard about a program in…They were using RNs on their ambulance, as a

paramedic basically. So we moved there and stayed for almost two years in

which I gained a lot of experience in the ER and did a few ambulance runs. The

nurses were a union organization and would not allow the 24 hour shifts with 12

hour regular pay and 12 hour standby pay, similar to the ambulance crew

schedule. As this had not been negotiated before RNs were hired, along with a

substantial outlay of money, the program never flew, because the hospital was not

going to pay RNs overtime on a 24 hour work day.

While working there, Sue was diagnosed with a chronic medical condition that

greatly affected her ability to work. To be closer to family for support, she, her husband

and small children moved to their current community.

Sue's medical condition stabilized and she started working at the local clinic one

day per week to get her "feet in the door". Ten years later she decided to enroll in an NP

program where she received a master's degree.

The part-time community clinic was owned by a group of physicians who staffed

the clinic part-time. Once Sue had her NP license she was hired to provide service as an

NP and has worked several days per week in that role. A few years ago the physician

group made the decision to sell the clinic to a corporate healthcare organization which is

located in one of the state's largest cities, 150 miles away.

As noted in the chapter introduction, narratives are a snapshot in time. The clinic

has undergone significant change as a result of the change in ownership. At times,

change brings conflict. Depending upon one's perspective, change can also have both

favorable and unfavorable consequences. These changes and their impact on her practice are the focus of Sue's narrative.

Concepts. The concept of a rural culture was examined in the literature review. Sue feels that corporate America does not have a basic understanding of the culture of frontier communities:

> My biggest struggle right now is that there doesn't seem to be anyone in this whole, huge corporate thought process who is willing to look at what it means to a small community, when even little changes are made to the delivery of health care. For example, we've been told that we can't put any local communication on our clinic communication board. The corporation does not seem to care what the communication board means to a small community and that it is an important way we communicate with each other. No one took the time to see how this might impact our clinic or that it might produce significant ill will. No person came and asked us, they just said, this is our policy and only what we OK can go on the board. It seems like a small thing, but it's one of those types of things that undermine trust in a small town setting. There doesn't seem to be an effort to understand the small town culture and that's more frustrating to me than anything.

Prior to the change in clinic ownership Sue would overlap a day a week with one of the physicians. This enhanced collaborative practice and gave her a sounding-board that decreased her sense of professional isolation. Due to physician turnover, Sue now works days where there is no overlap of provider services. As a result of the change in ownership the clinic now has an EMR system that allows for integration with the larger facility in…The clinic is small and only has room for one provider computer and

dictation center and Sue states that it is not feasible for more than one provider to work at the same time. Therefore, to enhance professional collaboration, Sue now precepts NP students for various programs around the country. So far she has precepted four students:

Although I'm a very independent person, I miss the camaraderie of having other people to interact with. You learn so much. Currently my student is an ER nurse and she is a *delight*. It's great to have someone to talk things over with. While you're explaining why you do certain things, you're validating what you're thinking and clarifying your own thought processes.

While the EMR has decreased the availability of local professional collaboration it has enhanced distance collaboration:

I can message a cardiologist, tell them briefly what's going on, I can run an EKG on our old machine and scan it in, have it in media on the computer, and say, can you look at this and tell me what's going on. They'll get back to me, often in the same day. That did not usually happen prior to the EMR. That piece of being able to actually communicate with specialty providers, that I have a collaborative relationship with, is awesome.

Sue gives another example of how integration has enhanced her ability to coordinate care:

There was a young female patient who wanted to see me but she lives in…(over 100 miles away). She was having a lot of medical problems, migraine headaches, fatigue and generally not feeling well. She has a history of some liver problems so I decided to order a complete abdominal ultrasound. She had the ultrasound and some lab work done in…. I got all those results back an hour later. It was

BOOM, right here. I was able to call her and say, everything looks OK, and I'm

over 100 miles away. So that is one of the good things.

Integration has not helped in the area of mental health. Sue states that there is no

real mental health support system in her community. Many of the patients have Medicaid

and many of the mental health providers won't take Medicaid, "so we're kind of stuck

out in the middle of no-man's land without it". She hopes that this will change as there is

talk of tele-health coming to the community. Although tele-health is something she feels

the community could benefit from, she's not sure if people would use it for mental health:

> You're not person-to-person, you're having an office visit that takes place over
>
> video. The personal becomes more impersonal. When you're right there, face-to-
>
> face, you can touch them and just let them know you care, that's a much better
>
> practice especially in a frontier community.

Sue said they are not integrated with the local EMS system either. The EMS

utilize a local ambulance or an air ambulance to transport patients 55 miles to the nearest

rural hospital, or 150 miles to the nearest trauma center. Sue keeps current her advanced

cardiac life support (ACLS) certification just in case, but states that the clinic does not

keep ACLS medications on hand:

> We have an AED (automated external defibrillator), some medications and
>
> oxygen. In the past, have had a full emergency kit of medications, supplies and
>
> equipment, but to keep all those medicines is very expensive and have been rarely
>
> used in 30 years.

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This brought up the issue of being on-call. Sue states that since the sale of the clinic she does not have official call-time but since she's the only local healthcare provider, she receives calls at home:

It's interesting because before we became a corporate entity, still small-town culture oriented. I had much more to say about coming in during the middle of the night or other after hours times. For example, I could decide to meet and treat someone who was having a COPD (chronic obstructive pulmonary disease) exacerbation or whatever might be an urgent situation and save them the 90 mile round-trip to the nearest ER. Occasionally, I might have the person come to my home and say, "I cut myself, can you sew me up?" and I would meet them at the clinic. Now, it's a much more complicated process as the patient has to be registered into the EMR system so that you can bill for the service, but I have not been trained to register patients (and don't have the time) to do that. So now it's a matter of OK, if somebody calls me, yes I'll take care of them, but how do you get around this whole electronic way of dealing with billing without causing a lot of extra work for the other office staff. They (corporate) don't want me to have to deal with things from home and I'm not sure what underlies that. Do they not want to pay for the time I spend doing that, or does it not fit into their model? This personal, availability of care is integral within the culture of frontier, which is another piece of what is not being considered in decision-making, from a corporate based model.

The on-call discussion brought up the issue of providing care to family and friends. Sue needs to keep her provider role separate from her friend or family role:

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I do have a couple of very close, close friends and I've asked them not to   see me

as a regular provider. I'll take care of any urgent problems, but I'm too close to

them and they've been very respectful of that.

Sue does feel that knowing all your patients on multiple levels and in different

roles can be very advantageous;

I've had many patients who I've had to give really bad news to, but it's interesting

because I feel like, I'm glad it's me. I can cry with them, I can see them through

it.

Sue also says that her relationship with community members changed when her

role changed from clinic RN to clinic NP:

As I went into the NP role, it's isolated me more. A very interesting thing, I don't

feel the same camaraderie I did as when I was the RN. It's really changed the

dynamics of relationships and I'm not sure it's all related to becoming the NP.

I'm not as active in the community now as when my kids were in school.

As her kids graduated, move away, and started having families of their own, Sue's

involvement in the community has lessened. In earlier days she added to the social

capital in her community primarily through her professional role. She coordinated a

health fair, lectured in the local high school science class, and was instrumental in

bringing mobile mammography to this community. They now come four times a year.

The issue of confidentiality is an aspect of frontier NP practice that is discussed in

the literature:

People will stop me in the store, in front of other people and they start asking me

questions. I've developed a really nice way of saying, "I want the best care for

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you and trying to take care of this here in the grocery store isn't going to give you

the benefit of my attention and my best. So I need you to make an appointment.

Once, I was checking out at the store and the cashier says, "You know, you know

more about me than my husband", and I'm thinking, please don't tell me that in

front of the ten people in line. But it was funny and you know that's just part of

it.

When asked what she thought would happen to the clinic, she had this to say:

I think that as long as there is some value here, financially as a rural clinic, and I

don't know how to exactly quantify that, the clinic will survive. We don't

provide ancillary services locally and send many people out of this community to

get these services. So, even if it is not highly profitable in numbers of patients

who walk through the door, there is profit from what is gained through federally

funded rural programs or services, but I have a real question about that, because

there isn't a lot of concern about finding out what the frontier culture consists of

and how the optimal delivery of healthcare is different from the metropolitan

areas.

And when asked about her plans, Sue said, "I hope to practice another five or ten years,

maybe more as I could see practicing until I'm 70, I still love it".

Themes. Themes that emerged from Sue's story are: *go with the flow or swim*

against the current, *frontier culture,* and *distance quarterbacking.* A subtheme of the

first theme, *go with the flow or swim against the current*, is *change*. In this analysis the

term, *swim with the flow*, represents acceptance of, or adaptation to, *change*.

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Sue uses the word *change* repeatedly throughout the interview. This begins when she talks about how her illness changed her career plans and her location. She had never planned to live in her current community, and in fact she had explicitly told her husband, she wouldn't. Now she says that even if they move to be closer to their aging parents, they hope to always keep their current home. Change came again as the children entered school and she started to work one day a week at the clinic. This led to another change ten years later when she entered an NP program. She then changed roles and when she had become comfortable in that position, the clinic changed ownership. The new corporate entity almost immediately began changing routines, providers, and technology at the clinic. It is evident in her story that Sue has adapted to change throughout her adult life and she has adapted to some of the clinic changes. She is able to see both the good and the bad that technological change has brought. She also sees the positive and negative impacts that an integrated system have brought to her patients, the community, and the clinic.

Sue's resistance to change is represented by the term, *swim against the current.* This resistance to change was evident in Bob and Pam's narratives while Ann used political power to resist change. Their motivation to *swim against the current,* against the current of new healthcare policy, is to prevent the disintegration of the health care safety net in frontier America.

Sue also uses the term *frontier culture* throughout her narrative. She uses this term to denote a difference between the priorities of corporate America and those of frontier communities. Sue talks about the difference between the thought processes of corporate America and those of rural/frontier America. This concept is related to Jim's

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explanation of the *different mindset,* which one needs to practice in these settings. It also relates to the insider-outsider concept but on a larger scale.

The theme, *distance quarterbacking,* emerged as Sue told the story of caring for the young female patient with several medical problems. It also emerges in another patient-situation when Sue was trying to sort out a patient's multi-system complaint. She was not able to use her electronic system as she had with the first patient. This patient wanted his diagnostic tests done at a hospital over a hundred miles to the north:

> So we coordinated care via telephone rather than electronically and we set all of these appointments up for him. He was able to travel on one specific date because his wife can only take him on one day of the week. So, he ended up seeing the neurologist who wants to get an MRI of the brain because we've been thinking his problems may stem from his spine. So he wants that done, and a spinal tap. He's having this continual lower leg swelling so we're thinking we'd better check for a DVT (deep vein thrombosis) and he wants it all done in one day. This is on a Friday, my day off, no one's in the clinic and they're trying to find me and tell me that he does have a DVT. He had left the ultrasound department and went to have the spinal tap. I'm trying to track him down because I'm in…on my day off, talking to the radiologist who's trying to let me know what's going on. I said you're going to have to try and find this guy (chuckling) he's up there somewhere in your hospital. By the time they track him down he's already had his last test and left. He doesn't have his cell phone turned on so we're trying to track him down through either a daughter or someone that might know here he's going next. Since this is a little town you know where everyone is going and when. So, we

know the pharmacy he uses and we try to leave a message there to have him call us so we can get him started on Lovenox. He gets all the way home, he has been gone all day, gets back to our community and we don't have Lovenox here, in fact we don't have a pharmacy. So we sent him 55 miles south of here, to a rural ER so he could get the medication he needed. And this is all extra, this is all in an extra day of trying to coordinate care for a patient from a distance.

After listening to Sue's story one must ask themself, if this were a rotating provider who got the call from the radiologist, would they have done as much to find this man, would they even know where to start looking. The second question one has to ask themself is, would the corporate entity even recognize and pay Sue for the amount of time and effort put into *distance quarterbacking* this one patient situation.

Conclusion. Sue's story gives us a glimpse into healthcare changes that are occurring across frontier America. The question is, can the healthcare delivery model change without compromising care in these communities? Sue's story also illustrates the outsider concept in regard to corporate America and a frontier culture. Lastly, Sue's story illustrates the continuity-of-care concept in frontier NP practice. The quarterbacking*,* or care coordination, provided by Sue without compensation, on her day off, from over a hundred miles away, exemplifies the professionalism, and ethics of frontier NP practice.

Amy: A Mobile Experience

Overview. Amy's interview takes place in a community clinic, after a long work day and long after the clinic staff had gone home. As is typical, she was alone in the

clinic trying to finish up her work, returning patient phone calls, checking lab results, and charting.

Amy is now the sole provider at the clinic, but this was not always the case. Amy had originally been hired to work on the mobile van. A few years earlier the clinic merged with a larger healthcare organization. Prior to the merge, the clinic had employed a part time NP to work on their mobile van. The mobile clinic had provided healthcare to a small community (basically a gas station/mini mart and a post office) 20 miles away, but this service was terminated after the merge.

An opportunity to work on the mobile van came at a time when Amy and her husband were considering purchasing a home in the community. They had been vacationing in the area for over ten years and felt it was time to buy a second home. The part-time employment income would offset the cost of a second home and also allow her to spend more time in a community that she loved:

> I liked the idea of going out on the mobile clinic and taking care of the rural poor because that was the way I perceived the NP role. It was to take care of ALL people of all ages and financial statuses, and to take care of the rural poor.

Prior to enrolling in an NP program, Amy had been a surgical clinical nurse specialist (CNS) and assisted surgeons in the operating room:

> I built up the Medicare program for surgical assisting and because of the crossover with medical practice, the hospital wouldn't allow me to do it while I was on duty as an RN. I had to take the extra step of clocking out and being *independent* when I was in that role. Some of the surgeons also wanted me to work in their offices but as a CNS I couldn't get prescriptive authority, so I

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needed to get an NP license. The *carrot* for the NP role was the independent piece that the NP role was supposed to be an autonomous and independent role for nurses. Prior to entering into frontier practice, Amy's emergency care experiences were limited.

Besides her CNS experience in the operating room, she had telemetry and cardiac catheter lab experience. She honed her suturing skills by assisting with surgical cases and eventually taught a suturing class for NP students.

Concepts. The concept of the frontier NP as an expert-generalist and multitasker was discussed in the literature review. Amy's prior experiences proved helpful when faced with situations that involved this concept:

I was on the mobile clinic and a man came in who was having an MI (myocardial infarction). When he walked onto the van he had no blood pressure, he had no chest pain. So you do the EKG and you see that he's having an MI and you call for a helicopter. The problem with the little town we were parked in was they didn't have an ambulance, they had a rescue truck. So it's either put him on the back of a flat-bed rescue truck, or drive him to the landing zone in the mobile van. So, I've got a patient in the back of the van, I'm holding onto him while the driver is driving. I had the IV in him, I had him all packaged and ready to go. So, you have to be able to multi-task. You have to start an IV, put him on oxygen, and give medications without the help of back-up, you're doing it all yourself.

Sometimes, a receiving trauma center can make assumptions about the level of care that can reasonably be provided in a frontier setting without delaying transport of a critically injured patient:

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The river was extraordinarily high one year and a tourist jumped into the river for

a swim, hit his head on a rock and nearly de-scalped himself. He was

hemorrhaging, by the time the volunteers were called and the ambulance got him

to the clinic, he was losing his blood pressure. I didn't even have time to give

him local anesthesia, I had to say, "I'm sorry sir, but if I don't do this you may

die". I managed to slow down the bleeding by rapidly closing the wound with

staples before he was flown to the trauma center (120 miles away). I called the

trauma center a couple hours later to see how he was doing, "Oh, that guy's doing

great. We're getting ready to send him home". I asked if they had explored his

wound and they replied no. So I said, I think you better because there could be

pebbles in his head, all I did was close his wound because he was bleeding to

death!

Another concept identified in the literature review is the need to handle multiple

trauma or emergent patient situations with few resources:

That's hard. I had a situation like that last summer. There was a lady at one of

the local businesses and she looked like she was coding. We get her to the clinic,

do an EKG and she's got ischemic changes. Miraculously she woke up, but

before we could provide further treatment, there's another call. There's been a

head-on collision down the road. The gurney that the MI patient was on was the

only gurney that the fire department had because the other ambulance was out-of-

service. So I have potentially three victims with one ambulance, one gurney, and

one provider!

Besides a lack of EMS services and mental health services, frontier communities often lack hospice services. Amy and the clinic provide much of this service by prescribing medications and making frequent home visits to monitor the patient and support the families. Even with this support sometimes families bring their loved ones to the clinic near the end:

> The clinic is a place to come for urgent care, emergencies, and routine care. It is also a place for somebody to come when they're in pain and when they're dying. With one particular terminal patient, her daughter called me at a quarter to six in the morning and said something's going on with mom… and so basically we bring mom to the clinic where she dies. So that's all part of the frontier practice. I'm sure babies are born in the frontier too. But people also come to clinic because they're in severe pain, they come here to die or the family chooses their loved one to stay at home and we support them. It's good up until the end but then sometimes they need the comfort and support of the clinic.

The concept of a rural skillset was discussed in the literature review. Some participants in this inquiry have added additional skills or capabilities that are necessary for frontier NP practice. When asked about the concept of a rural skillset, Amy had this to say:

> If you can make decisions and if you can make the right decisions, you'll be successful. A lot of nurses in my NP program were smart, but if you're not able to make a decision on your own, you're not going to be successful. I think that's the hardest part of being an NP in a frontier area, you might find some back-up but you might NOT find back-up, you're pretty much on your own.

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Near the end of the interview I asked Amy if she had anything more she wanted to say. Her answer highlights the holistic nature of frontier NP practice:

I'm not sure where the role is going at this point in time. I think frontier medicine is the way medicine used to be practiced in this country, taking care of the person from birth through the life cycle until death. The old-time doctor used to do home visits, would be called out at all hours of the night to see his patients, but that type of medicine has changed. I mean you can't afford to have a doctor in a frontier area and that's truly the role of the NP. Besides the medical piece of frontier NP practice there's also the nursing piece of being able to start IVs, do wound care, dressing changes, all the things that nurses do. Like, put a Foley catheter in for someone who can't urinate. I think doctors are better at giving directions or orders where I think the frontier NP role is more of a hands-on role, it's a combination of medicine and nursing.

As a result of a corporate decision, Amy's clinic recently stopped providing 24/7 care. Now after-hours calls are answered by a service located in a larger community. The clinic NP no longer has the ability to triage the calls and there is no advanced cardiac life support available on evenings or weekends when the clinic is closed:

I'm kind of concerned about the future of healthcare in frontier areas because healthcare is changing, it's more automated. We have the electronic record, we're going more to free-standing clinics that are open nine to five, there's nobody available in the evening to talk to. Patients are directed by someone on the answering service who directs them to go to the emergency room. Then we have the problem with the overflow of the emergency room.

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Amy continues with at statement that illustrates frontier NP ethics, "we're always going to have rural and frontier areas in America, and we're always going to have the rural poor, and we have an obligation to make sure everyone gets care".

Themes. Two themes emerge from Amy's narrative that relate to frontier NP practice, *independence,* and *cradle to grave.* The theme *independence* was evident from the first story segment, when she states than it was independent and autonomous role of the NP that motivated her to enroll in an NP program. She provides examples of *doing it yourself* or *you're on your own*, and *making your own decisions*, throughout her story segments. She also states, "I don't think in urban America the NP role is such an independent and autonomous role, you have to look at rural and frontier areas to see the practice in the way that the NP role was intended".

The theme, *cradle to grave care,* is a concept alluded to when Amy describes the range of care provided by frontier NPs (from birth to death). This phrase can also connote holistic care, the type of care that Amy described when asked what she wanted readers to know about frontier practice. Amy also states that people of all *ages* and financial statuses should have access to healthcare.

All participants in this study were family nurse practitioners. This indicates that they have been educated to provide care to patients across the life cycle. This is also representative of *cradle to grave care*, which is what NPs who practice in a community setting must provide.

Conclusion. Amy started her NP career in the back of a mobile van. When a corporate merge threatened to leave the clinic with only rotating physicians, unfamiliar with the clinic and the townspeople, Amy stepped in and agreed to be the solo NP. She

said the town deserved to have a medical clinic and she would do the best she could to help keep it open. Amy's ethics and dedication to her community are evident in both her words and her actions.

Discussion

Participants in this inquiry have provided readers with an emic perspective of NP practice in frontier communities in the US. Their practice situations represent a range of frontier healthcare models. Despite these differences, there are common themes woven throughout the narratives that will be discussed in this section. As the stories have been gathered from NPs practicing in the same type of setting, the researcher found some commonalities and recurring themes to be evident in the transcripts. This is the *warranted assertibility* (Dewey, 1938) that through the ongoing self-correcting processes of inquiry certain commonalities of frontier NP experience emerge. As an across-case analysis falls outside the boundaries of NI, the across-case themes are reported in this discussion section.

Four concepts will guide this cross-case analysis. First, themes will be conceptualized as theoretical constructs existing on a continuum. For example, the construct, *independence*, exists on a continuum from slightly independent to highly independent. Second, individual thematic constructs may be related to other constructs. For purposes of this analysis this relationship will be expressed by a forward slash, /. Third, stories in this inquiry were not relayed randomly they were elicited through the use of an interview guide. This process inherently increases the likelihood of common findings. Lastly, the within-case, or individual story themes, will be considered sub-themes.

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While listening to the stories recursively, the following themes emerged:

- Independence/Fear

- Intimacy/Isolation

- Political Influence

Independence/Fear

Independence is a word used repeatedly throughout the stories. The need for independence was the motivating factor that sent both Bob and Amy into the frontier. An independent practice was implied in all the participant stories. Even Jim, who worked in a group practice, worked alone when he was on-call. He described patient situations when he was handling ER emergencies independently.

Fear was explicitly implied by Bob when he used the word "scary" to describe an obstetrical emergency (p. 89); whereas, fear was implicitly implied by Ann and Amy when relating stories involving emergency patient situations. Ann also stated that potential NP candidates were, "frightened immediately", when they learned what the job expectations were (p. 101). In most of the narratives, fear can be attributed to the lack of professional support during emergent patient situations.

The participants' experiences indicate a relationship between the constructs of independence and fear. The more independent the practice, the more likely you will be presented with situations that are *scary*. Embedded in the construct of fear is the feeling of being out-on-a-limb, a theme that emerged from Ann's story. It is the ability to overcome fear and act, or as Amy states, "to make a decision" (p. 133) that leads to an effective frontier practice.

Intimacy/Isolation

Intimacy and isolation may be considered constructs on opposite poles of the same continuum. Intimacy implies closeness or connectedness while isolation implies aloneness, separateness, or nothingness. Isolation may be explicit, such as when used in the geographic sense or implicit, when used in the psychosocial sense.

Intimacy is a theme woven through many of the stories. Bob states, "You get to know these people on a very intimate level" (p. 90), and Jim was surprised at how intimate you get into somebody's life. Sue discusses the closeness that is a part of rural culture, the closeness which allows her to, "cry with her patients" (p. 125). Pam talks about how nice and helpful rural folks are to strangers. A sense of closeness or connectedness is implied in the subtheme, reciprocity of care, when Pam finds a Thanksgiving feast in her motel room or when Ann is offered the use of restrooms during home visits.

Isolation is also a theme woven through many of the stories. One subtheme, flying solo, from Bob's story, speaks directly to being on-your-own or alone. Bob also talks about being kept socially aloof at community events. Ann talks about the lack of other healthcare professionals in her community, Sue talks about combatting professional isolation by precepting NP students, and Amy discusses handling emergency situations alone with no back-up. Pam talks about the need for preparation to drive through isolated areas, when she travelled to and from frontier clinics. A long transport distance to reach a higher level of medical care was mentioned by all participants, supporting the concept of the geographic isolation of frontier communities.

Intimacy and isolation are related concepts embedded in the narratives. Participant stories indicate that the intimacy they experience with their patients may be partially rooted in geographic isolation. Therefore, intimacy may be the trade-off or benefit derived from isolation.

Political Influence

Political influence has a dual meaning within the participant narratives. It can affect access to healthcare in frontier communities, or indicate the effort to change or influence policy. Bob provided both a history of how policy supported healthcare in his frontier community through programs such as the Physician Extender Act and the Rural Health Clinic Act. He also gives an example of how it has dismantled it by shifting the focus away from geographic areas to population centers. The effect of both political and corporate policy decisions is evident in Amy, Pam, Sue, and Ann's stories as well. Ann's story was also an example of how nurses can educate themselves on policy and use forms of political influence to improve healthcare access in frontier communities.

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Summary

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The narratives support concepts, or ideas, about frontier NP practice previously identified in the literature. New concepts were brought to light as well. These include: (a) the aesthetics, or art, of frontier NP practice; (b) technology, which has the potential to both help or hinder frontier NP practice; (c) frontier NPs deal with business issues particularly those that involve funding and reimbursement of services; and (d) frontier NPs are both influenced by government policy and must use their own political influence to shape policy.

This analysis does not exhaust all the thematic possibilities woven across the participants' stories. These themes were developed through the iterative and immersive interaction between this researcher and the narratives. In presenting the findings, the narratives have taken center-stage. In this manner readers can determine the trustworthiness of the findings.

Conclusion

In this section the findings will be evaluated in relation to the specific aims of this inquiry. These aims are:

1. Contribute to the creation of a new sense of meaning and significance with respect to the practice of frontier nurse practitioners

2. Inform the discipline of nursing by bringing to light the ethics of frontier NP practice

3. Create a repository of stories upon which nurse leaders, healthcare policy makers, and nurse educators interested in frontier healthcare can theorize and plan.

First Aim

A review of the literature indicates that one of the practice characteristics that set frontier NPs apart from NPs working in other settings is their contribution to the provision of EMS services in their communities. Stories told by the participants in this inquiry support the notion that frontier NPs are likely to be the only provider on-duty when trauma and medical emergencies occur. Given that trauma patients are more likely to die in rural areas secondary to a lack of emergency services, these findings are particularly significant.

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Second Aim

Ethics can be conceived of as a personal/professional concept or more globally in terms of social justice. Both concepts are brought to light within this inquiry. The interview guide was not designed to overtly elicit information involving ethical situations. However, based on the researcher's experience, it was assumed that ethical considerations would be brought to light in the narratives.

Professional ethical choices are involved in protecting confidentiality in frontier communities. The first awareness of this comes when one realizes the effort participants made to protect the identity of their communities and hence, the privacy of their patients. This was evident during the member-check process when participants asked that revisions be made to further enhance the anonymity of themselves, their clinics, and their communities.

Throughout the stories are examples of patient-centered, ethical situations. Some of the participants told stories about emergency situations; situations where they may have felt out-on-a-limb or over-their-head. These NPs had to make split decisions about the ethics of providing care. One might say that certain situations, such as delivering a double footling breech, in a remote area was beyond the scope and comfort of the NP involved. One option might have been to put the patient in an ambulance and hope she made it to the nearest obstetrician, 55 miles away. To quickly review your options and decide to *buck-up* and do the best you can, is an ethical one.

The same situation applies in Amy's case when she had to staple a patient's scalp without anesthesia. Before proceeding, she quickly explained the situation and gave him the option to say no. Not exploring the wound first was an understandable breech in care;

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therefore, in the patient's interests, she called the trauma center to make sure this had been done prior to his discharge.

In Jim's story he alludes to the ethics of availability when the NP is on-call. Pam also said that she had a response time of 20 minutes so she made she stayed in a location that made this timeframe possible. Bob talked about staying up all night (being available) with an MI patient at his clinic.

The ethics of availability extends to the concept of distributive justice. Bob implies that the discontinuation of 24/7 medical service in his community was an unethical decision, based on finances and not service. Pam clearly felt it was unethical to close clinics in communities who had no other access to healthcare services and shunt the money to larger communities who had many healthcare options. Pam also thought it was unethical not to have local mental health services available for the little girl who had been raped.

Participants also provided evidence to support the ethics of stewardship. NPs were cognizant of the strain some patient situations placed on resources in their community. They were also aware of this concept in an economic context when discussing the expense of treating cases in an emergency room that could have been managed in their clinics for significantly less money. While all nurses and nurse practitioners are faced with ethical situations, this inquiry brings the contextual ethical nuances of frontier NP practice to light.

Third Aim

In conducting a thorough literature review, one with no limit on publication dates, this researcher has brought the disparate stories of rural/frontier NP practice together in

one manuscript. This evidence, in conjunction with participant stories, represents a repository of stories spanning nearly 40 years of NP practice. Nurse leaders and those interested in frontier healthcare can use these stories as evidence to theorize and plan. Evidence from this inquiry has broad implications for nursing education, workforce planning, and the provision of mental health and EMS services in frontier communities. These implications will be discussed in the next chapter.

Summary

Findings from this inquiry provide evidence toward each of its aims. A sufficient amount of narrative content was presented to allow the reader to reflect on similar situations or reflect about what they might do if presented with the same circumstances. Each reader may take something a little different from the stories. By allowing the narratives to take center-stage readers are given enough of the story to either agree with the researcher's findings or come to their own conclusions.

CHAPTER V

DISCUSSION

Introduction

Participants in this inquiry define their practice *experience* by *place.* The study of experience, with emphasis on place, makes NI the best method for this study. John Dewey's pragmatic theory of experience is an appropriate theoretical framework for this study, as participants relayed stories of *practice* problems that required *pragmatic,* or practical solutions. Pragmatic solutions will also be required to solve *systems* problems that exist in frontier healthcare.

Participants relayed rich, contextual patient-care experiences within several different frontier healthcare delivery models. The narratives were relayed at a particular time, a time when traditional means of financing frontier healthcare are changing. These changes have profound implications for frontier healthcare access and will be discussed in the implications section of this chapter. This is also an area ripe with research possibilities. This chapter will also include implications for future research.

The overall goal of this inquiry was to develop a conceptual framework for frontier NP practice. The concepts identified in chapter four will provide support for such a framework. Another goal of this inquiry is to extend concepts identified in rural nursing theory to a new, but related, geographic area, frontier nursing.

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Rural Nursing Theory

Frontier nursing is a unique subset of rural nursing. Concepts identified by Long and Weinert (1989) were supported in this inquiry and will each be reviewed and discussed. In addition to supporting Long and Weinert's work, findings from this study shed new light on some of the concepts identified in their study.

Health

In the theory of rural nursing health is primarily defined as the ability to work, or be productive. Ann's narrative, which includes the story about the man who broke his leg but did not come into the clinic until the work was done, exemplifies this concept of rural nursing theory.

When taken into the frontier context, this definition of health has *systems* implications. The notion that rural dwellers *don't stop working until the job is done* impacts volunteer EMS services in frontier areas. Ann's narrative provides an example of this situation when she discusses the lack of volunteer EMS personnel during haying or harvesting season.

Self-Reliance

The notion that rural residents are self-reliant is evident throughout all the narratives. In the frontier setting the adage, *necessity is the mother of invention*, is applicable. This self-reliance is partly due to the lack of resources available. Ann's narrative exemplifies this notion when she discusses using farm gear in lieu of personal protective equipment.

As federal subsidies in frontier areas dwindle, frontier communities have turned inward for solutions to finance healthcare clinics in these areas. Ann's narrative is also an example of this concept as her community developed their own local tax base to fund their healthcare needs.

Insider/Outsider

In rural nursing theory, the concept of insider/outsider is related to both the skepticism that rural dwellers have about accepting help or services from outsiders, and the notion that healthcare providers who are new to the community are outsiders.

Bob describes his first day of frontier NP practice, when he went above and beyond the community's expectations of a healthcare provider, as giving him credibility with the community members. This implies that as a newcomer, he needed to gain acceptance. Long and Weinert also stated that some nurses use community involvement to gain acceptance. Community involvement is related to the idea of social capital, which was a concept woven through the narratives.

Skepticism about accepting help or services from outsiders was supported by the narrative as well. Bob states that receiving the 330 grant was both a *godsend and a curse*. Most participants relied on grant funding and federal programs to prop up frontier healthcare systems; however, they are worried about changes in federal priorities, which could dry-up these funding sources.

In this inquiry the concept of outsider applies to a broader context, the perspective that federal or corporate agencies have regarding healthcare in the frontier. Outsiders try to *put a round peg in a square hole* when it comes to policies regarding the provision of

healthcare and related services in frontier areas. This concept was exemplified by one of the themes that emerged from Ann's story, *it doesn't work here.*

Role Diffusion/Lack of Anonymity

In rural nursing theory, role diffusion was described as the need to function in multiple roles not only in their professional life but in family and community life as well (Long & Weinert, 1989). For a rural nurse this might mean working across several hospital departments in one shift. The examples by provided by Long and Weinert were: (a) doing an EKG, (b) drawing labs, (c) delivering babies, or (d) cooking meals if the hospital was snowed-in. Embedded in the examples is the notion of expert-generalist. The concept of expert-generalist was supported throughout the narratives in this inquiry as well. This concept is broadened in frontier NP practice related to the multiple roles NPs assume. In the review of frontier NP literature, this concept is taken even further when examples of caring for pets and animals were provided.

Role diffusion is involved when discussing the need to treat family and friends, particularly in urgent or emergent situations. Frontier NPs are usually solo providers and may not have a *choice* whether or not to treat their loved ones or friends during emotionally-charged emergency situations.

Role diffusion was also apparent when frontier NPs discuss the need to act as both the clinic administrator and the clinic provider. The skillset needed for the role of clinic administrator may be very different from the one of provider. Bob exemplifies this when discusses the need to build reimbursement systems for his clinic and the need to write grants to maintain services. Implied in Bob's narrative is the requirement for an

administrator to have strong business acumen. Bob and Ann also provide evidence for the strong leadership and advocacy roles that frontier NPs have in frontier communities.

The lack of anonymity is widely supported in the narratives. This is exemplified with the concepts of *reciprocity of care*, and *there's an art to it,* both themes that emerged from this inquiry. This concept was illustrated in both Ann and Pam's narratives.

Conceptual Framework for Frontier NP Practice

Themes from the individual narratives provide support for a conceptual framework for frontier NP practice. The themes that emerged from participant narratives were arranged by knowledge area. This exercise led to the development of four types of knowledge that specifically support frontier NP practice. These areas may overlap and feed into one another. These are: (a) contextual knowledge, (b) frontier competency, (c) the art of frontier practice, and (d) political knowledge. A diagrammatic representation of the model is presented in Appendix G.

Contextual Knowledge

The themes *frontier culture, a different mindset, a barren healthcare landscape*, *it doesn't work here,* and, *flying by the seat of your pants,* all support the concept of contextual knowledge related to frontier NP practice. To practice effectively, frontier NPs must have knowledge regarding *frontier culture*. This includes specific knowledge related to local industries and economies. This may also include knowledge about seasonal practices such as harvesting and haying, which may affect local resources. This is knowledge very similar to that which is required for industrial nursing, where the NPs must familiarize themselves with treatment for common injuries. For example, injuries

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related to farm equipment, logging, or mining. In recreational areas, this may extend to knowledge regarding bicycle, motorcycle, snowmobile, or skiing injuries.

Inherent in knowledge of frontier culture is the knowledge of how and where the healthcare system fits within the community structure. To practice effectively in frontier settings NPs must have *a different mindset.* NPs must have knowledge of local resources, including informal resources. They must keep in *mind* that frontier dwellers live in a *barren healthcare landscape* and have limited healthcare resources; therefore, referrals for specialty care or sophisticated diagnostics may need to be reserved for complex or unusual cases. *It doesn't work here* means that to practice effectively frontier NPs need to know what *does* work in their clinic or their community. It may require adaptation of practices either learned in their NP programs, or from prior work experiences. It may also involve using knowledge and skill to bring new systems, systems that *do* work into the frontier setting. This implies knowledge of what is needed and how to get it accomplished, such as grant writing.

Flying by the seat of your pants, implies being in a situation where either there are no protocols to follow, or little is known about the situation. Either situation requires the acquisition of specific knowledge before you can proceed. This supports the concept of life-long learning which has been identified as a nursing competency (Institute of Medicine, 2011).

Frontier Competency

The concept of the frontier NP as an expert-generalist is well documented. However, competency involves not only the ability to perform procedures, but the ability

to practice in isolated settings with limited resources. To practice effectively in frontier settings NPs must be capable of *flying solo* or to practice *independently.*

As solo providers, frontier NPs must be capable of providing comprehensive primary care, including managing emergency/trauma situations and mental health concerns. At times these situations may involve more than one patient. This requires strong organizational skills and the ability to make quick decisions in emergent situations.

Resources and sophisticated equipment may be severely lacking. To accurately diagnose patient problems, frontier NPs primarily rely on their history taking and clinical exam skills. Frontier NPs must also be capable of caring from patients *from cradle to grave.* This requires licensure and expertise as a family nurse practitioner.

The ability to take and read X-rays has been identified as an important frontier skill. Sending patients to the nearest hospital to have a chest or extremity X-ray may not be a reasonable choice as patients may lack private transportation. Removing an EMS ambulance from the community for up to six hours could prove fatal to the next emergency patient.

Mental health resources are severely lacking in frontier communities. Frontier NPs must be comfortable prescribing medications used to treat common mental health conditions. They must also have a working knowledge of the regional referral system for acute cases. In situations when a patient must be sent to a larger service area for diagnostics or referrals, the NP may have to act as a *distance quarterback*, to provide patient-centered coordination of care. Additionally, NPs use their social capital to promote informal mental health services such as support groups and crisis interventions.

The Art of Frontier Practice

The theme, *there's an art to it,* refers to both the art and ethics of frontier NP practice. In many situations these are related. When faced with patients who would discuss private matters in public places, confidentiality may be breeched. Preventing this breech of ethics without offending people is both an ethical skill and an art developed by frontier NPs.

Out-on-a-limb describes how frontier NPs can feel when faced with difficult situations. Deciding when to stitch a face, or sew up a finger is an art which is developed by getting a feel for both the situation and the people involved. Deciding when and where to tell a patient they have a terminal diagnosis involves the art of nursing. Both of these situations are unlikely to be faced by NPs who do not practice in frontier settings.

Political Knowledge

To practice effectively the frontier NP must not only be cognizant of the impacts federal and state policy have on their practice but also policies and programs that affect the overall delivery of frontier healthcare services in this country. The theme, *shifting sands,* reflects changes in federal programs and policies regarding frontier healthcare. Soon after the first NPs graduated, federally subsidized physician extender programs were developed to assess the effectiveness of putting NPs and PAs in rural areas. Partnering NPs with physician collaborators also provided a mechanism that allowed Medicare for pay for NP services. In 1977, enactment of the Rural Health Clinic Act further bolstered NP practice in rural and frontier areas. These programs were developed to ensure a Medicare safety net for the rural elderly, and to support existing rural and frontier healthcare systems, such as National Health Service Corps clinics. However, a

shift occurred in the early 1990s, starting with the Federally Qualified Health Clinic

(FQHC) program and culminating with the Affordable Care Act (ACA). These programs

have shifted federal funding from to programs that are geographically-based to those that

are population-based thereby leaving the future of frontier healthcare undecided.

To maintain services some frontier clinics have merged with larger healthcare

organizations. These changes present both personal and professional challenges to NPs

who provide care in these settings. NPs will need to decide when it is best to *go with the*

flow, and work within new programs, or *swim against the current,* and muster both

personal and political power to advocate for their communities through policy change.

Summary

The four types of frontier NP knowledge emerged specifically from the narratives

in this inquiry. This researcher does not discount the probability that some of these

knowledge areas may apply to all NPs in practice. However, the NPs who participated in

this inquiry practice in the frontier. Therefore, this researcher can only posit that the

framework apply to a very specific and very small number of practicing NPs. While the

number of frontier NPs may be small, this inquiry indicates their contribution to the

healthcare in frontier communities is significant.

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Implications

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Findings from this inquiry have potential implications for several systems. This

section will be organized into three areas: (a) nursing education, (b) workforce issues

related to recruitment and retention, and (c) EMS systems.

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Nursing Education

There are two recommendations from the Institute of Medicine's report on the future of nursing that have implications for frontier NP education (Institute of Medicine, 2011). First, identify the features of online, simulation, and tele-health nursing education that most cost-effectively expand nursing education capacity. Second, identify and test new and existing models of education to support nurses' engagement in team-based, patient-centered care to diverse populations, across the lifespan, in a range of settings.

Participants in this inquiry live in communities that are barren in terms of health care and higher education. Several participants in this inquiry graduated from NP programs that were a hybrid of distance and classroom education. The two NPs who pursued terminal degrees did so through on-line programs. Technological advances can bring nursing education to frontier communities. Findings from this inquiry support the following recommendations:

- Frontier NPs provide primacy and emergency care to patients of all ages. Therefore, to practice in frontier communities, where NPs are often solo providers, they must be prepared as family nurse practitioners. This licensure allows for the broadest scope of practice.

- Mental health services are severely lacking in frontier communities. Frontier NPs need the knowledge required to treat mental health patients safely and effectively.

- Trauma care is inevitable in the frontier. NP programs may not be accredited to provide training in this area. Therefore, NP programs should educate

students regarding this aspect of frontier practice and provide suggestions on where NPs can receive this preparation.

- Professional isolation is common in the frontier. Preparing students to use both formal and informal resources is paramount to reduce the effects of this isolation.

- Most frontier NPs have on-call obligations, which can be both professionally and personally challenging. NPs who wish to practice in the frontier require strong mentorship from a provider who has developed the means to cope with these challenges.

- NPs who wish to practice in the frontier should be educated on the various federal and state programs that have impact on frontier NP practice and the delivery of frontier healthcare.

- Ethical content should include the ethics of availability and ethical comportment when dealing with life and death situations in the frontier. Leadership and advocacy in frontier settings are issues that can be discussed and promoted within an ethical framework.

Some participants were prepared in NP programs whose mission was to educate NPs for rural practice. None of the participants received *any* specialized education regarding rural or frontier issues. Some colleges offer a rural track for doctorate of nursing practice students. This researcher suggests that this type of track be offered to entry-level NP students across the country. In addition to content that supports an expert-generalist skillset, courses in this track could offer content regarding several issues related to rural/frontier healthcare:

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- Demographics

- Rural Culture

- Health Status/Disparities

- Rural economies

- Rural health issues, specifically related to extractive industries and agriculture

- Adequacy of rural public health

- Rural healthcare delivery models

- Effect of the ACA, specifically regarding rural accountable care organizations and value based payment systems

- Research on rural and frontier nursing

While this is not an exhaustive list, it is a comprehensive starting point. Depending upon the local industries, programs could provide intensive experiences, where students receive content and training to prepare for the most common industrial-related injuries in their area (Lausten, 2014).

Workforce Implications

The literature review cited recruitment strategies such as loan repayment models. The literature is also rife with information regarding rural rotations and emersion experiences for nursing and medical students. However, participants in this study came to the frontier for the following reasons:

- a desire for autonomy and independence

- to provide a service in communities where they were raised (grown your own)

- to be near family

- for the lifestyle

Due to personal experience and the narratives in this inquiry, this researcher posits that NPs who venture into or stay in the frontier for reasons related to family issues are more vested in the experience and are more likely to be retained in the communities. This view is supported by Sharp (2010) who listed proximity to family as a likely reason for nurses to stay in rural/frontier areas.

In Colledge's study of hardiness as a predictor of NPs in rural practice she found that hardiness did not predict success in rural areas (2000). However, Colledge did find that nurses who scored higher on the challenge subscale were more likely to practice effectively in rural/frontier areas. Challenge may be related to the constructs of autonomy and independence, reasons cited by participants as a motivation to enter frontier NP practice.

Loan repayment commitments are offered for two-year terms of service. While this commitment exposes NPs to the frontier/rural practice environment, it does little to encourage retention. This researcher and the participants have a combined experience with four such National Health Service Corp loan repayment recipients. None of the four stayed past their two year commitment. Family reasons were cited most commonly for leaving. However, this does not indicate that the program has no merit. While the NHSC loan repayment program did not provide long-term coverage for the frontier clinics involved in this study, it did provide short-term coverage solutions and respite for the NPs who worked with them. It also provided recipients experiences in patient situations not likely to found elsewhere.

An evidence-based solution to this problem would seem to be the grow-your-own model. A recent study demonstrated that all frontier counties in the study's data set had

at least one RN (Jakobs, 2014). RNs living in all frontier communities who desire to further their education should be encouraged and supported to do so. These RNs could be supported by educational grants and loan repayment programs such as the National Health Service Corp. Educational opportunities that combine distance education with local preceptorships would support the model. Programs such as the RN to DNP could fast-track these students.

Emergency Services

The evidence from this inquiry paints the picture of a very fragile and fragmented frontier EMS system. The National Research Council (2005) would concur with evidence presented in the literature review. This evidence indicates that increased response times and transport times have been shown to have an impact on overall morbidity and mortality for trauma patients. The council further states that pre-hospital systems are often fragmented and associated more with public safety departments than with local healthcare systems.

NPs and their respective frontier clinics should be considered part of the pre-hospital system in their local communities or regions. The experiences of participants in this study indicate poor integration with local EMS systems. This is unfortunate for a variety of reasons. First, in communities where only BLS services are available the local NP is most likely the highest trained healthcare provider available and may represent the only advanced care life support within a 50-150 mile radius. Second, it has been the experiences of several participants in this inquiry that trauma and cardiac patients present themselves directly to clinics, clinics that do not carry life-saving medications. Lastly, in frontier areas the *golden hour* can be lost through the amount of time it takes to get

volunteer EMS personnel to the scene. NPs can mitigate at least part of this loss-of-time by stabilizing trauma and cardiac patients prior to transport to a higher level of care.

On the basis of participant narratives and personal experience this researcher proposes the following model for integration of life-saving EMS services in frontier communities:

- NPs should be recognized and integrated into the EMS system

- 24/7 on-call coverage by a provider who holds ACLS certification

- ACLS medications on the ambulance and in the clinic

- an alternative base station status for the frontier clinic that allows patients to be transported to the clinic, if necessary, and stabilized prior to further transport

- reliable communication systems between volunteers, clinic, and tertiary hospital

- available X-ray services at the clinic

- volunteer EMS personnel should be given an alternative scope of practice that allows for insertion of IVs and the provision of IV fluids, epinephrine, and albuterol under specific standardized protocols or while under personal or radio supervision by the NP

Evidence from this inquiry illustrates that NPs are providing trauma and emergency medical care in frontier clinics across the country. Evidence in the literature review also illustrates that trauma and cardiac patients are dying in frontier areas due to a lack of timely, integrated care.

As noted in Chapter I, most frontier communities are surrounded by public lands. This has a negative effect on the tax base of these frontier areas. The federal government has recognized this, and in years past has provided frontier counties with PILT funds (payment in lieu of taxes) to support services in these counties. These PILT funds are primarily utilized to fund firefighting, police protection, construction of public schools and roads, and search-and-rescue operations (U.S. Department of the Interior). With the government funding priorities for health care shifting to population centers and no specific designation of PILT funds for health care, the federal government is abandoning frontier counties in this country, counties where most of the land is held in public trust. Funding for an integrated model, such as the one proposed, takes creativity, tenacity, and federal support. This is the current reality of the frontier EMS system, you may dial 911 and no one comes to help you.

Recommendations for Further Research

There is a paucity of research regarding frontier NP practice and frontier healthcare in general. NPs are the heart and soul of the clinics highlighted in this inquiry. Embedded in the recommendations for further research is the notion, supported by this inquiry, that NPs are inexplicitly involved with frontier healthcare. All participants were over 50 years old and worried about who will replace them. This is a valid concern and one that is worth further exploration.

Further research into the distribution of both rural and frontier NPs is warranted. The last survey of NPs was conducted in 2000. To adequately conduct frontier nursing research an updated survey of rural NP distribution should be conducted using established rural and frontier criteria. Some state boards of nursing report the distribution

of APRNs within their state but do not list the specific category of APRN, such as NP. The same situation exists when conducting a zip-code search using national provider identifier numbers (NPI). The NPI does not distinguish an NP from an APRN. With the expansion of electronic billing and electronic medical records, researchers may have the opportunity to develop an accurate method to determine rural NP distribution.

Further exploration into the economic impact that frontier clinics have on their community is need particularly since funding priorities are changing and the government is supporting evidence-based models. Further studies to determine the amount of money and valuable ER resources saved when frontier patients are treated locally would support subsidizing 24/7 medical coverage in frontier communities.

The diversity of clinics and settings in this inquiry illustrate the point that *it is not* feasible to have a one-size-fits-all model for the delivery of frontier healthcare. Further research to determine which model fits with the needs of specific communities would be beneficial. The next two sections will discuss research recommendations for healthcare delivery models and the conceptual framework for frontier NP practice.

Healthcare Delivery Models

There are currently several different types of delivery models that have been utilized in frontier settings including, the medical home, the frontier extended stay clinic (FESC), Federally Qualified Health Clinics, 330 clinics and the critical access hospital (CAH) system. Participants in this inquiry represent all but the FESC.

The *medical home* model pays for case management services, such as *distance quarterbacking,* for patients with chronic conditions (Rosenthal, 2008). Two of the

clinics highlighted in this inquiry operated under the medical home model, which

provides a modest reimbursement subsidy.

The *frontier extended stay clinic* began as a pilot program that pays for stand-by

ER care in remote locations (Frazier & Doucette, 2013). The frontier extended stay clinic

designation requires more resources than are available at any of the clinics highlighted in

this inquiry. This designation is more suited to areas like Alaska, where they have been

somewhat successful.

As noted in Chapter IV, one of the clinics highlighted in this inquiry is a Health

Resources Service Agency 330 clinic. These clinics are typically FQHCs that have been

awarded additional funding. The purpose of the Section 330 grant is to provide higher

reimbursement rates to clinics that provide a broader range of *primary care* services to

the populations they serve (Ku, 2012). As noted in chapter four, to maintain grant

funding frontier clinics must meet criteria for new patient visits, a criterion that frontier

clinics often cannot meet.

Of all the models presented in this inquiry, the model used in Jim's community

(CAH associated with a medical clinic) provided the most expansive range of services. It

also provided more professional support than all other clinics highlighted in this inquiry.

However, this model is not suited for all settings. Jim's community was located in an

expansive valley with a population of 2,500.

Other participants practice in communities with populations less than 500 and are

separated from surrounding areas by mountain ranges. Bob's clinic had operated under

the FQHC designation. This system provides incentives such as fee for service

reimbursement mechanisms and reduced share-of-costs expenses for Medicare patients.

Bob had developed a medical model that combined the FQHC with EMS in his community. To provide for 24/7 coverage, the clinic paid the NP salaries for an average work week. Grant programs and a contracted service agreement to the county jail covered the cost of after-hours care. This is a fairly efficient model. The same county lost a rural clinic on its eastern side and hired two paramedics to provide 24/7 advanced life support services. Within a year their budget was depleted and the paramedics had a very low number of calls. A paramedic's job is to stabilize and transport. An NP at the clinic can manage most urgent cases locally and stabilize the severe cases for transport. The revenue generated from treating urgent cases during the after-hours was fed back into the budget to continue to provide 24/7 coverage. This after-hours revenue fluctuated with the seasons and was not enough to subsidize 24/7 coverage entirely. Grants and federal programs bridged the revenue gap. When these dried up the community lost advanced life support coverage and urgent care services.

None of the models described in this section currently provide integration with EMS systems in their communities. Under the federal models such as RHC, FQHC, 330 section grantees, and patient centered medical homes, after hours care and emergency care are not considerations. In populated areas these services are provided by hospital emergency rooms, stand-alone urgent care centers and ambulance companies. Resources such as these are not available in frontier communities. Innovative solutions to these problems will take research, research that will provide government agencies with evidence to support funding initiatives to support access to primary *and* emergency healthcare in frontier areas.

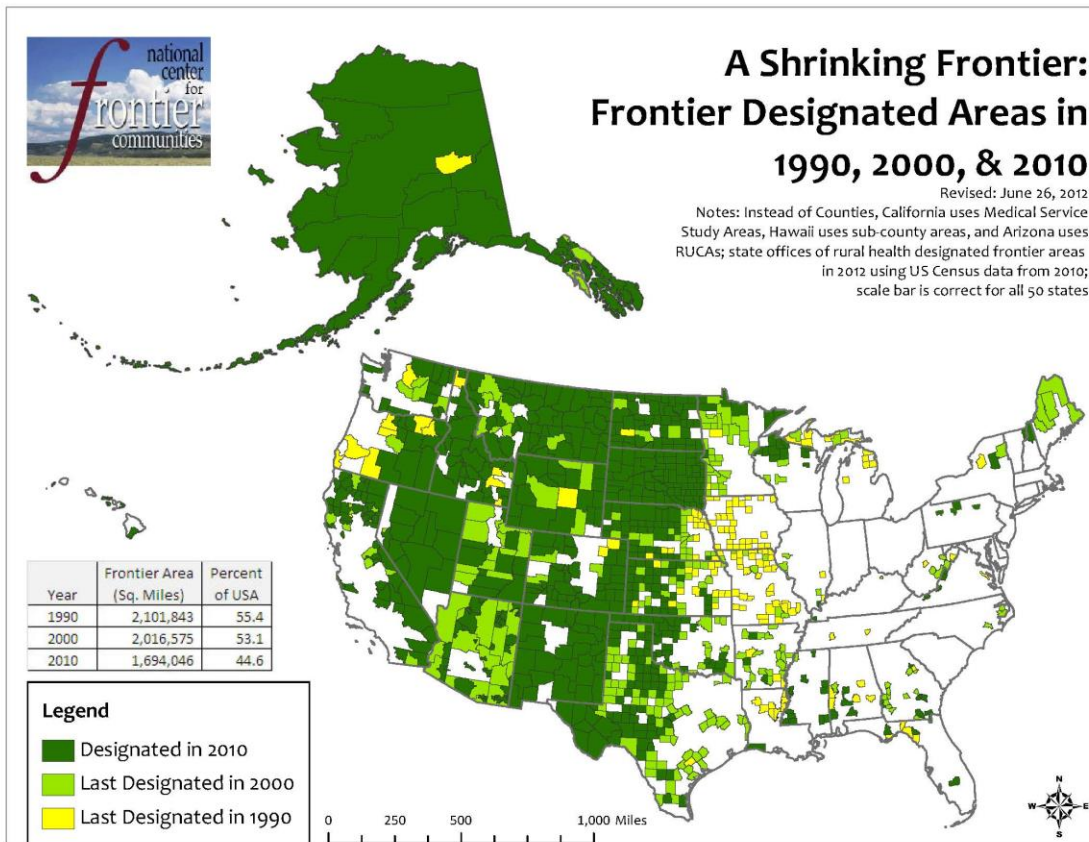**Conceptual Framework for Frontier NP Practice**

The four areas of frontier NP knowledge were developed as a result of themes that emerged from six frontier NP narratives. These areas are: (a) contextual knowledge, (b) the art of frontier practice, (c) frontier competencies, and (d) political knowledge. The framework was developed from a small sample of NPs. Replication studies may provide support for the framework, while research into the experiences of other frontier NPs may provide additional themes to inform or expand the framework.

Conclusion

Frontier NPs provide a vital link in the overall scheme of frontier healthcare in the US. NPs must have specific knowledge to practice effectively in frontier settings. To withstand the shifting sands of federal and state policy, frontier NPs must be informed and united in their cause, the cause of providing access to primary and emergency healthcare in frontier settings. The goal of this inquiry is to give *voice* to NPs who are working in remote, isolated areas of the country. It is vital to the future of frontier healthcare that this *chorus of voices* be heard.

APPENDICES

A Shrinking Frontier: Frontier Designated Areas in 1990, 2000, & 2010

Revised: June 26, 2012
Notes: Instead of Counties, California uses Medical Service Study Areas, Hawaii uses sub-county areas, and Arizona uses RUCAs; state offices of rural health designated frontier areas in 2012 using US Census data from 2010; scale bar is correct for all 50 states

Year	Frontier Area (Sq. Miles)	Percent of USA
1990	2,101,843	55.4
2000	2,016,575	53.1
2010	1,694,046	44.6

Legend
- Designated in 2010
- Last Designated in 2000
- Last Designated in 1990

Appendix B
Interview Guide Grid

Research Aim	Interview Question/s
Contribute to the creation of a new sense of meaning and significance with respect to the practice of Frontier Nurse Practitioners	Tell me a story about a what it is like to work as a frontier nurse practitioner
Inform the discipline of nursing by bringing to light the ethics of frontier NP practice	Tell me a story about having friends and neighbors as patients
Create a repository of stories upon which nurse leaders, health care policy makers, and educators interested in frontier healthcare can theorize and plan	Tell me the story of how you came to work in this setting Tell me a story about what it's like to work with trauma victims

FAR Level Four

Remote from urban areas of 2,500 or more people
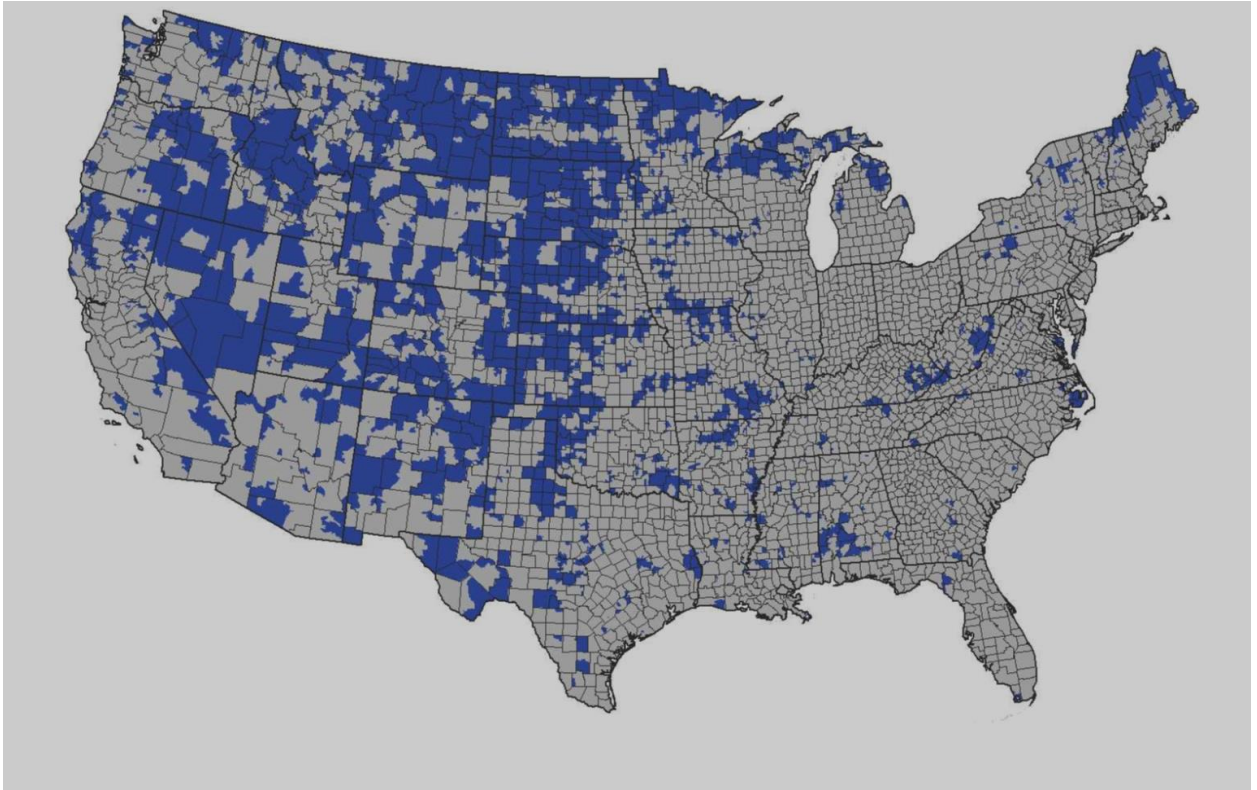
Source: Economic Research Service, U.S. Department of Agriculture, using data from the U.S. Census Bureau, the Center for International Earth Science Information Network, and ESRI.

Appendix D
List of Clinical Skills

Complete list of clinical skills and procedures included in survey (Colyar & Ehrhardt, 2004).

Dermatologic

1. Abscess-Incision and Drainage
2. Bites (Cats, Dogs, Insects, etc.)
3. Burns-Debridement
4. Digital Nerve Block
5. Fishhook Removal
6. Microscopy (e.g. wet mount)
7. Nail Removal
8. Punch Biopsy
9. Ring Removal
10. Sebaceous Cyst Removal
11. Skin Biopsy/Lesion Removal
12. Skin Closure-Derma bond
13. Skin Closure-Staples
14. Skin Closure-Sutures
15. Skin Tag Removal
16. Soft Tissue Aspiration
17. Subungual Hematoma Excision
18. Tick Removal
19. Topical Hemostasis or Electrocautery
20. Wood's Light Examination

Musculoskeletal

21. Arthrocentesis
22. Bone Marrow Aspiration/Biopsy
23. Clavicle Immobilization
24. Dislocation Reduction
25. Extremity casting
26. Ganglion Cyst

Aspiration/Injection

27. Joint Corticosteroid Injection
28. Lumbar Puncture
29. Splinting (Fiberglass)
30. Trigger Point Injection
31. X-ray Interpretation-Bones

Genitourinary and Breast

32. Bartholin Cyst Abscess: I & D
33. Breast Biopsy: Fine Needle Aspiration
34. Cervical Cap

Fitting/Insertion/Removal

35. Cervical Lesions: Cryotherapy
36. Circumcision & Dorsal Penile Nerve Block
37. Colposcopy/Cervical biopsy
38. Condyloma Acuminatum Removal
39. Diaphragm Fitting & Insertion
40. Endometrial Biopsy
41. Intrauterine Device (IUD)

Genitourinary

42. Papanicolaou (Pap) Smear
43. Paracervical Nerve Block
44. Pessary Insertion
45. Subdermal Contraceptive Implant
46. Ultrasonagraphy
47. Vasectomy

**Head: Eyes, Ears, Nose, and
Mouth**

48. Audiometry
49. Auricular Hematoma Evacuation
50. Cerumen Impaction Removal
51. Corneal Abrasion
52. Epistaxis Control
53. Eye Irrigation
54. Eyebrow Laceration Repair
55. Eyelid Eversion
56. Foreign Body Removal : Ear or Nose
57. Foreign Body Removal: Eye
58. Frenotomy for Ankyloglossia
59. Lip Laceration Repair
60. Occipital Nerve Block
61. Tongue Laceration Repair
62. Tooth Avulsion and Fracture
63. Tympanometry

Cardiovascular

64. Arterial Puncture (ABG)
65. Blood Culture Specimen Collection
66. Capillary Blood Collection (Finger Stick)
67. Doppler Technique
68. Electrocardiogram (ECG) Interpretation
69. Holter Monitor Application
70. Implantable Venous Catheter Access
71. Intravenous line insertion
72. PICC line insertion
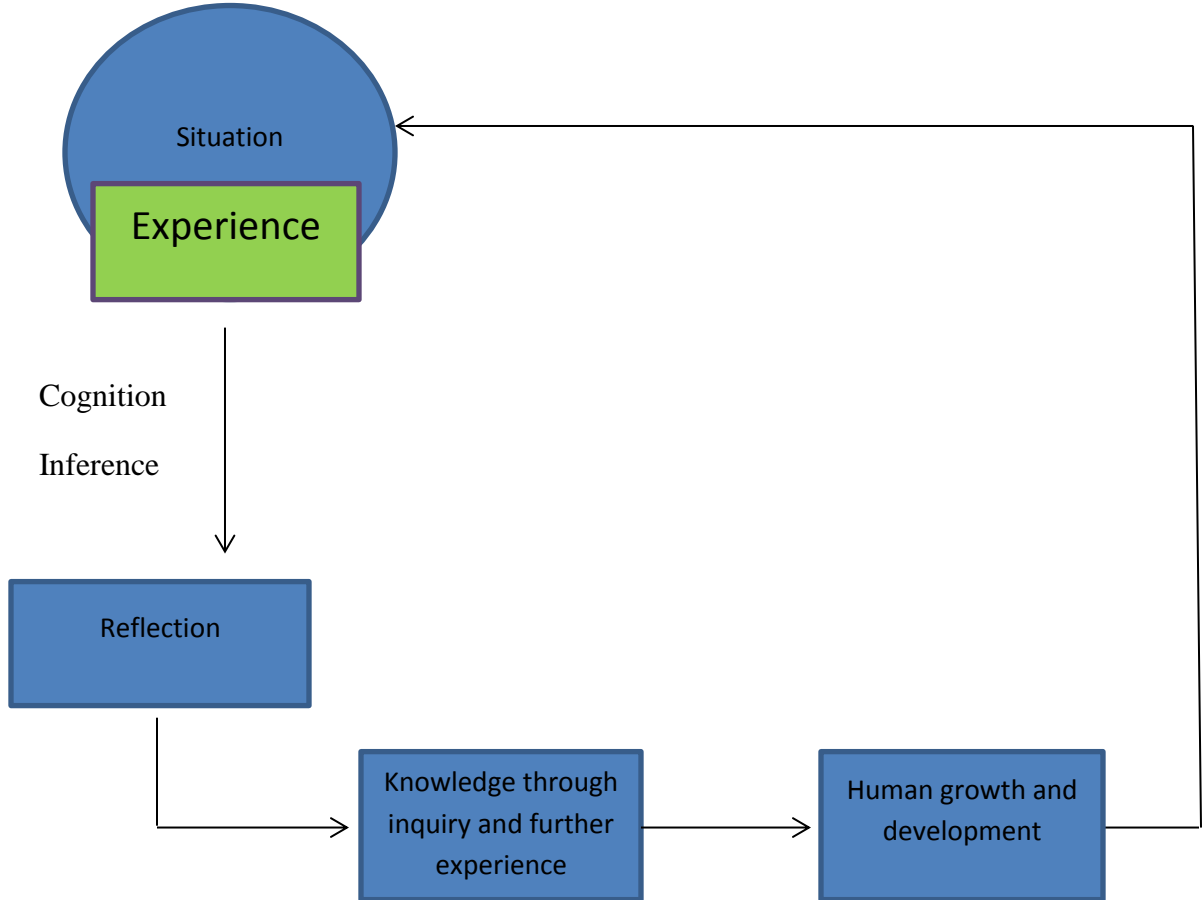73. Unna's Boot Application
74. Venipuncture

Respiratory

75. Chest Tubes for Emergency Transport
76. Intubation
77. Nebulizer Administration
78. Peak Flowmeter
79. Pulmonary Function Testing
80. Stab/Penetrating Wound Stabilization
81. X-Ray Interpretation-Chest

Gastrointestinal

82. Abdominal Paracentesis
83. Anoscopy
84. Flexible Sigmoidoscopy
85. Gastric Lavage
86. Inguinal Hernia Reduction
87. Nasogastric Tube (NGT) Insertion
88. PEG Tube Reinsertion
89. Thrombosed Hemorrhoid Removal
90. X-Ray Interpretation-Abdominal

A Diagrammatic Representation of Dewey's Theory

Situation

Experience

Cognition

Inference

Reflection

Knowledge through inquiry and further experience

Human growth and development

Experience occurs within the context of a situation. Through the process of cognition we intelligently reflect on the experience which leads to the grounding of knowledge in inquiry and further experience which, if accomplished successfully, leads to human growth and development. This is a continuous process throughout our lifetime.

**THE UNIVERSITY OF NORTH DAKOTA
CONSENT TO PARTICIPATE IN RESEARCH**

TITLE: VOICES FROM THE FRONTIER: STORIES FROM NURSE
PRACTITIONERS
            WORKING IN REMOTE SETTINGS

PROJECT DIRECTOR: Lynn Jakobs

PHONE #   530-273-2717

DEPARTMENT: College of Nursing and Professional Disciplines

STATEMENT OF RESEARCH

A person who is to participate in the research must give his or her informed consent to
such participation. This consent must be based on an understanding of the nature and
risks of the research. This document provides information that is important for this
understanding. Research projects include only subjects who choose to take part. Please
take your time in making your decision as to whether to participate. If you have questions
at any time, please ask.

WHAT IS THE PURPOSE OF THIS STUDY?

You are invited to be in a research study about the experiences of nurse practitioners
working in frontier settings because you are listed as a staff member of a frontier clinic or
you have been referred to the researcher by a colleague.

The purposes of this research study are:

1. Contribute to the creation of a new sense of meaning and significance with respect to
the practice of Frontier Nurse Practitioners

2. Inform the discipline of nursing by bringing to light the ethics of frontier NP (Nurse
Practitioner) practice

3. Create a repository of stories upon which nurse leaders, health care policy makers, and
nurse educators interested in frontier healthcare can theorize and plan.

 With the aid of an interview guide, participants will relate stories of frontier NP practice
which highlight the unique characteristics, challenges, and rewards of their work.
Interview texts will be thematically analyzed using Long & Weinert's theory of rural

nursing as a conceptual framework. As frontier NPs are uniquely embedded in their communities, the concept of the social capital which NPs bring to their communities will also be explored. Emergency care experiences and NP training will also be explored. Results of the study have the potential to influence educational and workforce policy.

HOW MANY PEOPLE WILL PARTICIPATE?

Approximately 5 people will take part in this study through the University of North Dakota. Interviews will be conducted at a site chosen by the participant, preferably at or near their location of practice.

HOW LONG WILL I BE IN THIS STUDY?

Your participation in the study will last approximately one year. The researcher will need to meet with you at your designated interview site one or two times. Each visit will take about 60 minutes.

WHAT WILL HAPPEN DURING THIS STUDY?

Each participant will be interviewed at least once using a digital recorder. NP stories will be elicited through use of an interview guide. Participants are free to skip any question that he/she would prefer not to answer. The researcher will transcribe the interview recordings and send the transcribed text to the participant for review. The participant will have the opportunity to suggest changes or clarify the content of their stories. The researcher will then analyze the interview text searching for recurring themes. Relevant story exemplars (parts of the text which illustrate certain themes) will be published as part of a PhD dissertation.

WHAT ARE THE RISKS OF THE STUDY?

There may be some minimal risk from being in this study. Some individuals may have emotional reactions to the interview questions; should any participant experience emotional distress, the interview will be paused until the participant indicates they wish to continue. Participants may have concern regarding the possibility of relaying private, patient information. The researcher is sensitive to this issue and will remind participants not to use identifying information when relaying their stories.

WHAT ARE THE BENEFITS OF THIS STUDY?

You may benefit personally from being in this study as it can be very satisfying to share experience stories with another nurse practitioner. Others will benefit from this study as well, as this is the first published study to focus on the experiences of frontier nurse practitioners and will highlight the contextual nursing situations that help define the role.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY?

You will not have any costs for being in this research study aside from the time you give for the interview.

WILL I BE PAID FOR PARTICIPATING?

You will not be paid for being in this research study.
WHO IS FUNDING THE STUDY?

The University of North Dakota and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research study.

CONFIDENTIALITY

The records of this study will be kept private to the extent permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by Government agencies, the UND Research Development and Compliance office, and the University of North Dakota Institutional Review Board. Any information that is obtained in this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of: consent forms and the list of participants will be kept in a safety-deposit box; participants will be asked to choose a pseudonym for the transcribed text; the digital recordings will be kept in a lockbox in the researcher's office. With the possible exception of reviewing organizations, only the researcher will have access to identifiable participant data. If we write a report or article about this study, we will describe the study results in a summarized manner so that you cannot be identified. Records will kept for three years after study completion at which time the consents and list of participants will be shredded and the digital recordings will be destroyed.

IS THIS STUDY VOLUNTARY?

Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota. If you decide to leave the study early, we ask that you notify the researcher as soon as possible. There are no consequences for withdrawal from the study

CONTACTS AND QUESTIONS?

The researcher conducting this study is Lynn Jakobs. You may ask any questions you have now. If you later have questions, concerns, or complaints about the research please contact Lynn Jakobs at 530-273-2717 or Lynn.Jakobs@my.und.edu. The researcher is a

student; her advisor Elizabeth Tyree, PhD., can be contacted at 701-777-4522, during working hours or by email at liz.tyree@email.und.edu.

If you have questions regarding your rights as a research subject, you may contact The University of North Dakota Institutional Review Board at **(701) 777-4279**.

- You may also call this number about any problems, complaints, or concerns you have about this research study.
- You may also call this number if you cannot reach research staff, or you wish to talk with someone who is independent of the research team.
- General information about being a research subject can be found by clicking "Information for Research Participants" on the web site: http://und.edu/research/resources/human-subjects/research-participants.cfm

[*If applicable]* I give consent to be audiotaped during this study.

Please initial: ____ Yes   ____ No

 [*If applicable]* I give consent for my quotes to be used in the research; however I will not be identified.

Please initial: ____ Yes   ____ No

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

Subjects Name: _____
_____   _____
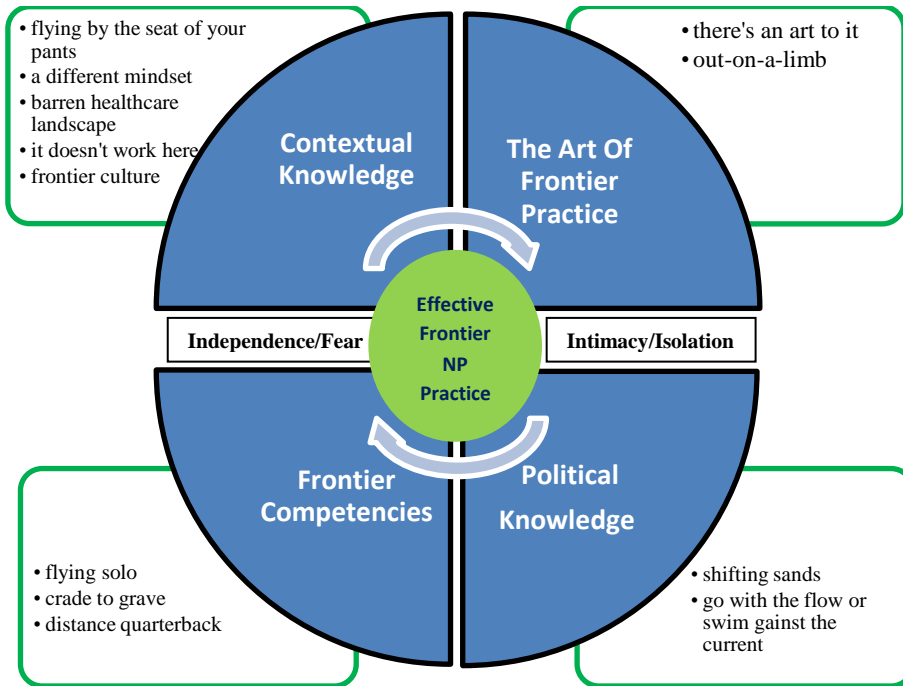Signature of Subject   Date

I have discussed the above points with the subject or, where appropriate, with the subject's legally authorized representative.

_____   _____
Signature of Person Who Obtained Consent   Date

Appendix G
Diagrammatic Representation of the Four Types of Frontier NP Knowledge

- flying by the seat of your pants
- a different mindset
- barren healthcare landscape
- it doesn't work here
- frontier culture

Contextual Knowledge

- there's an art to it
- out-on-a-limb

The Art Of Frontier Practice

Independence/Fear

Effective Frontier NP Practice

Intimacy/Isolation

Frontier Competencies

Political Knowledge

- flying solo
- crade to grave
- distance quarterback

- shifting sands
- go with the flow or swim gainst the current

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