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A Sample of Rural and Global Health Issues

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Authors
Carol J. Bett, Barbara Cechanowicz, Demetrius Chapman, Stephen Hernandez, Hannelore Kriegor, Melanie Mayo, Loyce Phoenix, Conrad Rios, Teresa Sellstrom, and Max Veltman

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For the fourth time since our PhD program in nursing began, it is time for another volume of manuscripts arising from our N 611 class, *Rural and Cultural Health*. Previous groups of excellent students/scholars have written about particular issues, questions, or problems they considered important in New Mexico, elsewhere in the United States, and even internationally. The outstanding students who compiled the present book enrich the previous editions and represent diverse backgrounds, geographic settings, cultural perspectives, and professional experiences.

At a time when significant health care disparities, crises, and inequities make regular daily appearances in our general media, health sciences curricula, political campaigns, and personal lives, it seems imperative that we address the situation from as many angles as we can. We are in need of clear thinking, action from the heart as well as the mind, a turn to social justice in terms of basic access to care, population dynamics as well as individual responsibilities, upstream thinking over downstream activities, commitment to lasting change, openness to new technology, and dedication to a set of values honoring all people, regardless of their heritage, socioeconomic classification, gender, or way of living. Resisting the urge to turn a deaf ear, become cynical and jaded, throw up our hands in surrender and frustration, or simply adopt the “me-first” approach to everything, we believe that we can make a difference. Much of the progress that has happened in health care through time has come in the commonplace ways by which we engage each day, answer each challenge, encounter each patient/client, and try to make a difference, wherever we may find ourselves. In this book, we address these complicated contexts across an array of specific questions, problem areas, settings, population groups, and needs. We bring fresh enthusiasm and attention to the topics in these chapters, and we welcome your input, analysis, and critique in the shared effort to make a difference in the health and well-being of all citizens. Please join us in this call to action!

Jennifer B. Averill, PhD, RN
Acknowledgment

On behalf of the N 611 students and myself, I want to especially acknowledge and honor the outstanding editing and preparation of the final version of the book. All of that work was done by our talented and generous colleague, Anne Mattarella, the UNM College of Nursing Technical Editor. Her unwavering commitment to excellence, professionalism, and simply beautiful layout and presentation made this document something to treasure. Thank you, Anne!

Jennifer B. Averill, PhD, RN
Introduction

As with past editions, the students of Dr. Averill’s Rural and Cultural Health course would like to welcome the reader to this fourth volume of *Dimensions in Health*. Each chapter in this book is an original work by a student and represents the integration of knowledge gained in the course with our own personal expertise, interests, and passions.

The challenges faced by local, national, and global communities in an ever-changing world have continued to grow as we complete the first decade of the 21st century. The doctoral students writing this book undertook the effort with advocacy for disenfranchised populations in mind. This compilation illuminates the challenges and gaps in access to health care confronted by a wide range of people, from overweight children, lesbians, and Native Americans to individuals in rural communities in Papua New Guinea. As the reader can readily see, we are a group of students with wide-ranging experiences and interests.

Carol Bett is a faculty member at Wichita State University in Wichita, Kansas, where she teaches in the undergraduate nursing program. She writes about health challenges in rural Papua New Guinea and the efficacy of community health projects in developing countries. Carol has taught nursing students and worked in rural clinics in the highlands of Papua New Guinea.

Demetrius Chapman is a public health clinical nurse specialist who has worked in urban and rural public health care settings and has served in various community health areas, including lead poisoning, adolescent parenting, and HIV/AIDS, as well as a satellite public health nursing office. His work with Native Americans living with HIV/AIDS exposed him to the difficulties they endure in trying to receive optimal care and prompted him to write the chapter about community-based health care for Diné people with HIV/AIDS.

Barbara Cechanowicz has practiced in a variety of surgical settings as a mid-level provider. She has done medical mission work in Uganda and Zambia, has worked in a community health empowerment program in the inner city of Detroit with the Robert Wood Johnson Partnership for Training, and presently works in an Indian Health Service hospital. Barbara has a passion for delivering quality care to vulnerable populations and for translating today’s world of health care into the deeper dialogue of theory and philosophy. She writes about Navajo spiritual traditions and complex cultural phenomena.

Stephen Hernandez is Assistant Professor at Northwestern State University, College of Nursing, in Shreveport, Louisiana, where he teaches undergraduate nursing students. His research interests include the factors that influence the decision of deployed armed
service members to seek needed mental health services. In his chapter, Stephen provides an exploration of the alarming prevalence of overweight and obese children in rural Louisiana.

Hanna Krieger has been working in various capacities and in different specialty areas within nursing, nursing education, and advanced practice. Hanna does not subscribe to a specialty area in nursing; rather, she is particularly interested in the discipline of nursing itself. She is currently enrolled in the PhD program at the University of New Mexico and is writing her dissertation on clinically inflicted pain. In her chapter, Hanna discusses lesbian health and sexual orientation as a social determinant of health.

Melanie Mayo was Director of Primary Care and Prevention Services at an urban Native American health clinic, worked in men’s and women’s prisons, was Associate Clinical Director at an inpatient hospice, and currently is a clinical practitioner in a long-term care setting. She writes about the economic and political dynamics associated with occupational and environmental exposure to uranium mining on New Mexico’s Colorado Plateau.

Loyce Phoenix is a Commissioned Officer in the U.S. Public Health Service Corps and has worked most of her career in the Indian Health Service in a variety of administrative and clinical positions. Her most recent position is in public health nursing, and she is a Robert Wood Johnson Fellow with a study interest in Native American disparities. Loyce writes about violence against women on the Navajo reservation.

Conrad Rios writes about nurse practitioners and physician assistants who provide health care in California's Rural Central Valley. Conrad is a family nurse practitioner and physician assistant whose area of interest is the care of the elderly. He wears multiple hats, including student, clinical faculty, and health care provider. He resides in Fresno, California.

Teresa Sellstrom is Assistant Professor of Nursing at King College, Bristol, Tennessee, and teaches all levels of nursing students, including Master of Science in Nursing clinical nurse specialist students. Her background is in community health and maternal and acute adult health nursing. In her chapter, Teresa explores the use of telemedicine to improve rural health care.

Max Veltman is Assistant Professor at Boise State University in the Department of Nursing. In addition to teaching, he works with the Idaho Health & Welfare Department on various projects dealing with the health care needs of children and adolescents in the foster care system. In his chapter, Max provides insight into the challenges of combating methamphetamine use and providing quality mental health services to improve the welfare of rural children.
# Table of Contents

Foreword.................................................................................................................. i

Introduction............................................................................................................. ii

1 Health Disparities in Rural Papua New Guinea................................. 1
   *Carol Bett, MN, MA, RN*
   - Background.................................................................................................. 2
   - Historical Perspectives.............................................................................. 3
   - Health Disparities in Papua New Guinea........................................... 5
   - Papua New Guinean Health Care System............................................. 9
   - Implications for Nursing and Practice............................................... 12

2 Community-Based HIV Care for HIV-Infected Diné Rural Dwellers.... 16
   *Demetrius Chapman, MPH, MSN(R), RN, PHCNS-BC*
   - Gallup Indian Medical Center................................................................. 16
   - Demographics.......................................................................................... 17
   - HIV Risk Factors.................................................................................. 17
   - Screening.................................................................................................. 19
   - Motivation Barriers to HIV Care.......................................................... 20
   - Nursing Case Management.................................................................. 21
   - Medication Adherence and Treatment Seeking................................... 22
   - Language................................................................................................... 23
   - Rurality..................................................................................................... 24
   - Privacy and Disclosure.......................................................................... 25
   - Suggestions for Practice........................................................................ 26
   - Summary.................................................................................................... 28

3 Navajo Spiritual Traditions: Complex Cultural Phenomena............ 31
   *Barbara Cechanowicz, MS, RN, PA-C*
   - Background and Significance................................................................. 32
   - Proposition: Complex Cultural Phenomena....................................... 38
   - Conclusion............................................................................................... 42

4 Addressing the Challenge of Reducing the Prevalence of
   Overweight and Obese Children in Rural Louisiana.................... 45
   *Stephen Hernandez, MSN, RN*
   - Background and Significance................................................................. 46
   - Addressing the Epidemic of Overweight and
     Obese Children in Rural Louisiana..................................................... 52
   - Conclusion............................................................................................... 56
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Lesbian Health: Sexual Orientation as a Social Determinant of Health</td>
<td>Hanna Krieger, MS, APRN-FNP</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Background and Significance</td>
<td></td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Literature Review</td>
<td></td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Social Determinants of Health</td>
<td></td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Rural Lesbians</td>
<td></td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>Lesbian Health</td>
<td></td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>Barriers to Health Care</td>
<td></td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Proposal of Goals for Action</td>
<td></td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
<td></td>
<td>67</td>
</tr>
<tr>
<td>6</td>
<td>David and the Uranium Goliath on New Mexico’s Colorado Plateau</td>
<td>Melanie Mayo, MSN, FNP-BC, AHPN</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>The Setting</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Uranium</td>
<td></td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Proliferation of Mines and Geopolitical Influence</td>
<td></td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Health Effects of Uranium Exposure</td>
<td></td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Environmental Contamination</td>
<td></td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Community Response</td>
<td></td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>Aftermath</td>
<td></td>
<td>81</td>
</tr>
<tr>
<td>7</td>
<td>Criminal Justice Falls Short: Violence Against Women on the Navajo Reservation</td>
<td>Loyce Phoenix, MPH, MM, RN</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Background</td>
<td></td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Sexual Assaults and Rape in America</td>
<td></td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Policy Recommendations</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>N-Nurse Addresses Sexual Assault</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
<td></td>
<td>93</td>
</tr>
<tr>
<td>8</td>
<td>Nurse Practitioners and Physician Assistants Providing Health Care</td>
<td>Conrad Rios, MS, FNP, PA</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>in California’s Rural Central Valley</td>
<td></td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>The Primary Care Provider Shortage in the Central Valley</td>
<td></td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>California’s Solution to Alleviate the Medical Shortage Areas</td>
<td></td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>NPs and PAs</td>
<td></td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>Central Valley Demographics</td>
<td></td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>Central Valley Seniors</td>
<td></td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>Goal for Action</td>
<td></td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>Research Recommendations</td>
<td></td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Policy Recommendations</td>
<td></td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
<td></td>
<td>109</td>
</tr>
</tbody>
</table>
9 Rural Health Care and Telemedicine ......................................................... 112
   Teresa Sellstrom, MSN, RN, ACNS-BC, APN
   Background ........................................................................................... 112
   In-Home Telemedicine Examples .......................................................... 113
   Hospital Telemedicine Examples ........................................................... 114
   Issues and Implications ....................................................................... 115
   Summary ................................................................................................ 118

10 Myth, Meth, and Mental Health Services: The Unique Culture of Contemporary Rural Child Welfare ......................................................... 122
   Max Veltman, MSN, RN, CPNP
   Background............................................................................................ 122
   Goals for Action .................................................................................... 128
   Conclusion .............................................................................................. 132

Cover: Singoropa village market in the Jimi Valley of Papua New Guinea. Photo by Carol Bett.
1 Health Disparities in Rural Papua New Guinea

Carol Bett, MN, MA, RN

Rural communities in both industrialized and developing countries face similar issues leading to health inequities. The impact of rurality on human health is multifactorial, consisting of social, economic, and environmental components (Israel, Schulz, Parker, & Becker, 2001). People living in rural areas or remote locations have higher morbidity and mortality rates than those living in urban settings (Allan, Ball, & Alston, 2007; Eberhardt & Pamuk, 2004). Geographic issues such as remote locations and low population density alone do not provide a complete explanation for the preponderance of health disparities that occur in rural locations globally. The combination of low population, isolation from metropolitan-based services, poverty, cultural belief systems, and risk factors related to rural occupations (farming, mining, fishing, and forestry) combine to create an environment that is resistant to many interventions developed for comparatively resource-rich urban settings (Schulman & Slesinger, 2004). Health policies are commonly developed to address national health concerns without incorporating an understanding of community context or a holistic approach to the provision of health care services. “Efforts to improve rural health status have largely been reactive, time limited, poorly coordinated and focused on particular professional groups or type of disease” (Allan et al. 2007, p. 2).

This chapter will explore the significance of rural culture from a global perspective and its impact on health determinants in Papua New Guinea (PNG). Global health issues require the effective delivery of culturally appropriate, evidence-based, holistic care. Nurses are a central component of all health care systems worldwide and are uniquely positioned to create an environment of positive change. Nurses act to create partnerships with individuals and communities that will provide an effective and efficient means of promoting health (Dickenson-Hazard, 2004). Having worked in PNG for nearly 2 decades, I observed a continuing struggle between a predominantly medical model focusing on curative care and the need to partner with communities to develop successful and sustainable interventions that address the health inequalities prevalent in rural areas. An analysis of health disparities in rural PNG will be used as an exemplar of the challenges associated with rural health issues and the potential for improved health by facilitating community involvement in the identification of health priorities and the development of culturally appropriate interventions. The topic of health disparities in developing countries and their connection to globalization will be presented followed by a historical overview of PNG’s government, people, culture, national health system, and health disparities. The concept of primary health care (PHC) as operationalized by community-based health care projects and implications to nursing research and practice will be discussed.
Health disparities are common in rural settings because of geographic isolation, difficulty accessing health care, lack of health care resources in rural areas, low socioeconomic status, and individual/community risk factors (Gatz, Rowles, & Tyas, 2004). Rural is defined by the U.S. Census Bureau as open country or places of fewer than 2,500 population (Bigbee & Lind, 2007; Glasgow, Johnson, & Morton, 2004). The Office of Management and Budget uses the designations of either metropolitan or non-metropolitan (rural) to classify counties according to their population size (more than 50,000) and integration with large cities (Collins, 2002). Rural settings tend to have unique cultural and social circumstances that require interventions designed to integrate community resources with community perceptions of priority needs.

Health disparities in rural settings in developing nations are a matter of global concern, but international health promotion projects have been focused predominantly on selected diseases or conditions felt to be a threat to industrialized nations (Ollila, 2005). Despite the diversity of situations, similar issues face most individuals living in rural areas. Access to resources is limited including the availability of health care services, education, jobs, and political power. Many rural areas have a high risk of disease due to exposure to infectious diseases and to chemicals commonly used in agriculture, mining, and unregulated industries. People living in rural areas are also often involved in occupations that tend to have high levels of physical and psychological stressors (Schulman & Slesinger, 2004).

Health disparities in developing countries, especially in rural areas, have been a matter of increasing concern to the international community because of globalization. Globalization can be characterized as an interconnectivity between nations, including economic interdependence and the increasing tendency of health policies to be influenced by global conditions (Falk-Rafael, 2006; Labonte & Schrecker, 2007). As the world becomes increasingly interdependent, economic and social inequalities have the potential to develop into urgent global health issues. Globalization has contributed to the permeability of national boundaries, facilitating the spread of infectious disease (Jairath, 2007; Messias, 2001; Minami, 2006). Berlinguer (1999) refers to the historical impact of the “microbial unification of the world” (p. 582), which began in 1492 with Columbus’ arrival in the West Indies. Health problems that plague one country can no longer be ignored as being the sole responsibility of one sovereign nation as epidemics cross country boundaries with ease. New challenges to health equity have emerged with the increased global connectivity engendered by the increasing ease of international communication and travel (Chen & Berlinguer, 2001). Health interventions on a community level and policy changes on a national and international level can help decrease the global burden of disease by addressing economic and social problems (Messias, 2001; Minami, 2006). Health determinants in developing countries such as PNG reflect a growing trend of health inequities and a deterioration of health services caused by an inadequate infrastructure, poorly functioning public service, and limited attention to rural health issues.
Historical Perspectives

According to archeological evidence, the island of New Guinea has been inhabited by humans for approximately the past 60,000 years, possibly settled by people who migrated from Southeast Asia (U.S. Department of State, 2009). When Portuguese explorers arrived in the mid-16th century, they called the principal island “Papua,” referring to the inhabitants’ fuzzy hair; later, Spanish explorers applied the name “New Guinea” to the island because of a perceived similarity to Guinea in Africa. Prior to World War I, the island of New Guinea was divided into territories by Dutch, German, and British governments in response to the development of coconut oil plantations to supply European markets. The influence of colonial powers was limited to coastal areas because of the rugged terrain, and it was not until the 1930s that a large population of people living in the highlands was discovered by gold explorers. Tribal people in the highlands had only limited trade with nearby tribes and because of the geographic and cultural isolation were largely unaware of the world outside their tribal boundaries. After World War I, the portion administered by Germany was removed from their control, and the eastern half of the principal island and surrounding smaller islands became the Australian Territories of Papua and New Guinea (Sinclair, 1985). During World War II, invading Japanese forces occupied a number of coastal cities and islands but was ultimately defeated by allied Australian and American forces. The Papua and New Guinea Act of 1949 placed the territories under international trusteeship, leading to independence in 1975 (U.S. Department of State, 2009).

Located directly north of Australia, PNG is the largest developing nation in Oceania (World Health Organization, 2007; Figures 1 and 2). Approximately the size of California, PNG occupies the eastern half of the island of New Guinea and nearby islands in the Coral Sea and the South Pacific Ocean. The western half of the island of New Guinea (Papua, formerly Irian Jaya) is a province of Indonesia. The Independent State of Papua New Guinea is currently a member of the British Commonwealth, with Queen Elizabeth II as the titular head. PNG has a parliamentary form of government headed by a governor-general who represents the queen. The parliament is headed by a prime minister (Michael Somare) and is made up of 109 representatives who are elected every 5 years (U.S. Department of State, 2009). Currently, there is only one female member of parliament, Lady Carol Kidu.

PNG has a population of 6.4 million, and more than 80% of the country is considered rural. Most people living in rural areas are subsistence farmers who have a strong attachment to their communally held lands (Worth & Henderson, 2006). Three quarters of PNG is mountainous rain forests and the remainder is swamplands predominantly located near the Sepik River. The mountainous interior of the country is comparatively more densely populated than the coastal lowlands. Travel is problematic in large areas of the country because of limited road access (only 3% of roads are paved) and local criminal activity. Because a number of villages are completely inaccessible by road, small unpaved airstrips dot the isolated rural regions and provide access to the urban centers by small single-engine aircraft. There are 19 provinces and the National Capital
District (Port Moresby); the capital city of Port Moresby is not connected by road to the rest of the country and is only accessible by air.

The population of PNG is considered one of the most heterogeneous in the world, with thousands of tribal groups divided by culture, language, and tradition (U.S. Department of State, 2009). Ethnic groups include Melanesian, Papuan, Negrito, Polynesian, and Micronesian, with foreign residents (predominately Australian) making up 1% of the population (U.S. Department of State, 2009). Approximately 96% of the population is Christian; the remainder follows traditional animistic beliefs. There are three official languages: English, Hiri Motu, and Tok Pisin (Neo-Melanesian Pidgin), a creole language that serves as the lingua franca for most of the country (U.S. Department of State, 2009). One of the most linguistically diverse nations in the world, PNG has more than 800 tribal languages and the accompanying sociocultural diversity that each language group represents. This diversity has proved to be problematic in the policy development arena, as most Papua New Guineans do not have a strong sense of national identity but only tend to have close relational ties with their extended family and others in their linguistic group. Many of these tribal groups have engaged in low-level conflict for millennia, which is becoming an increasing problem with the advent of modern weaponry. Traditional social structures and customs remain predominantly intact; bonds of kinship and obligations regulate interpersonal relationships (Worth & Henderson, 2006). The concept of social capital is called the wantok system in Melanesian Pidgin (wantok, or one language, reflects the close relationship that exists between people who speak the same language); it refers to the obligation that people have to their extended tribal family, which acts to offset the negative impact of poverty in rural areas of PNG. Except in urban areas, most Papua New Guineans are able to obtain food, shelter, and minimal amounts of goods and clothing from relatives because of a social framework that relies on reciprocal exchange.
Since independence in 1975, PNG has had mixed success in improving its health status (WHO, 2007). The national currency (the Kina) underwent a 75% drop in value compared with the U.S. dollar, which had a disastrous effect on the ability to purchase imported medical supplies for use by health facilities throughout the country. In the 1990s, a separatist movement on the island of Bougainville initiated a civil war leading to the closure of the Panguna Copper Mine, a major source of revenue. A treaty was signed in 1997, ending the conflict and leading to the organization of the Autonomous Bougainville Government. After a decade of unrest and the loss of 20,000 lives, the mine remains closed, which has had a detrimental impact on available resources for national and local economic development. PNG is prone to natural disasters such as landslides, earthquakes, flooding, volcanic eruptions, tsunamis, rising sea levels, and sporadic famines in the highlands from frosts and droughts (WHO, 2009).

![Figure 2. Papua New Guinea Flag](image)

Education is critical to the maintenance of social capital and economic well-being. PNG has a net primary school level enrollment ratio of 66%, making its education status lower than most other low-income developing countries (Worth & Henderson, 2006). Although PNG has made some progress in social development, such as a literacy rate, which increased from 32% to 56% in the past 30 years, only half of the women ever attend school. The customary practice of bride wealth exchange continues to reinforce the status of women as a disempowered commodity (WHO, 2009). As a result of traditional gender bias in most areas of PNG, women suffer from high maternal mortality rates and malnutrition, and are often victims of domestic violence (Worth & Henderson, 2006).

**Health Disparities in Papua New Guinea**

PNG has the lowest health status in the Pacific, with communicable diseases remaining the most common causes of morbidity and mortality. The most common diseases are malaria, tuberculosis, pneumonia, diarrheal disease, meningitis, and AIDS, which combined account for 50% of all deaths (WHO, 2007). Poliomyelitis was declared to be
eradicated from PNG in 2000, and the leprosy elimination target of less than one case per 10,000 was reached recently (WHO, 2009). Table 1 shows the population and health statistics for Papua New Guinea, and Table 2 shows the incidence of communicable diseases.

Table 1. *Papua New Guinea Population and Health Statistics*

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<th>Description</th>
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</tr>
</thead>
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<td>Total population (2008)</td>
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<td>Increase in population annually, %</td>
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<td>Population distribution (rural), %</td>
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<tr>
<td>Life expectancy at birth, years</td>
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<td>Total expenditure on health (2007), % GDP</td>
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<td>Adult literacy rate, %</td>
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<td>Gross national income per capita (2004), US$</td>
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<td>Population with access to improved drinking water source, %</td>
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<td>Population with access to improved sanitation, %</td>
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<td>Maternal mortality per 100,000 live births (2006), n</td>
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<td>Mortality per 1,000 children under age 5, n</td>
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<td>Fertility rate, no. of births per woman</td>
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<td>No. of physicians (2008)</td>
<td>333</td>
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<tr>
<td>No. of dentists (2008)</td>
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</tbody>
</table>


### Malaria

Malaria is one of the most common causes of morbidity and mortality worldwide. In PNG, malaria is transmitted by the Anopheles mosquito infected by one of the *Plasmodium malariae* vector species. Prevalent in tropical and subtropical countries, malaria is the leading cause of outpatient visits in all provinces of PNG and is the third leading cause of death. Until the early 1980s, dichlorodiphenyltrichloroethane (DDT) was sprayed in village housing and on sources of standing water to reduce the mosquito population. Since DDT spraying was discontinued, the number of malarial cases and deaths from complications of malaria have increased dramatically. A number of non-governmental organizations have developed projects to distribute treated mosquito nets to malarial areas. These projects have had a positive impact on reducing the high incidence of malaria in PNG (Bockarie & Dagoro, 2006).

### Diarrheal Diseases

Diarrheal diseases, such as dysentery, typhoid fever, and worm infestations, are common problems due to contaminated water sources and poor hand hygiene practices. Only 40% of the population has safe drinking water, and the use of improved toilet facilities is limited in rural areas (WHO, 2009). Roundworm and hookworm infestations are
common, especially among children causing increased incidence of malnutrition and anemia. Approximately 30% of children are considered to be malnourished (WHO, 2009). Malnutrition is commonly caused by cultural practices, such as food taboos, lack of protein sources, and the tradition of the adult men in a family eating first and women and children eating the remainder of the available food. Mortality rates from dehydration are high in rural areas due to the traditional practice of limiting fluid intake in children with diarrhea in order to stop the output. Maternal/child health clinics and inpatient health education has worked to limit mortality from dehydration by teaching parents to administer oral rehydration solution, which is easily made at home. Feeding infants with artificial formula is strongly discouraged, and the purchase of bottles requires a prescription to ensure that mothers are educated about the importance of using clean water, good hygienic practices, and the proper reconstitution of the milk.

**Tuberculosis**

Tuberculosis (TB) is a major health problem in PNG, with an estimated prevalence of 430 per 100,000. The incidence of TB has increased since the 1990s and is thought to be related to the presence of the HIV/AIDS virus making the population more susceptible to infection. The current short-course treatment regimen requires that sputum-positive cases be hospitalized for 1 to 2 months to receive daily injections of streptomycin and receive multidose oral medications. Although this practice has been beneficial in reducing the communicability of TB in the community, most hospital facilities do not have respiratory isolation capacity, and TB patients sleep in open wards with other patients. Lengthy hospitalizations are also a hardship for women caring for children or who are needed to provide agricultural labor. A number of active cases of TB go unreported, and treatment adherence is often sporadic. The DOTS (directly observed TB short-course) program has been gradually expanded, but funding has limited its effectiveness (WHO, 2009). The program requires TB patients to take their oral medication under the supervision of a health care worker, relative, or other dependable individual.

**HIV/AIDS**

HIV/AIDS reached epidemic proportions in 2003, with AIDS-related complications now the number one cause of death at Port Moresby General Hospital (Cullen, 2006). WHO estimates that more than 2% of the population is now infected with the virus, and that the number of people living with AIDS could reach 1 million in the next decade (WHO, 2007). Widespread promiscuous heterosexual behavioral practices have led to the current prevalence of HIV and other sexually transmitted diseases (Cullen, 2006). The adoption of romantic ideals of Western society has changed the traditional gender-avoidance practices that have had a detrimental effect on women’s health and social status. In the highlands, men were traditionally homosocial, having close social ties with male relatives, as contact with women too frequently was considered to diminish masculine power. An increase in bride wealth exchange has led to a sense of economic entitlement of the men over their wives, making women subject to gender discrimination (Worth & Henderson, 2006; Wardlow, 2007). Women have become items of exchange, and with limited social support, women are frequently trapped in violent relationships. Polygamy
is also a common practice, as having multiple wives is traditionally associated with masculine privilege, status, and wealth. Women are especially vulnerable to HIV infections contracted from their husbands due to the common practice of men working away from home on plantations or in mines. Long absences from home predispose the men toward marital infidelity with sex workers, who are disproportionately infected by HIV. Even if the woman suspects that her husband had extramarital relationships or is infected with a sexually transmitted disease, she is unlikely to refuse sexual relations or suggest that condoms be used. Condoms are seldom used consistently because they are difficult to obtain in rural areas; men feel uncomfortable purchasing them where someone may see, and the belief that the use of condoms should be reserved for sexual encounters outside of marriage with “passenger women” (pasinda meri or pamuk meri) who either professionally or casually engage in transactional sex is common (Wardlow, 2007). The term passenger woman is probably derived from the practice of women trading sex for transportation on public motor vehicles.

The increasing incidence of HIV transmission is related to widespread heterosexual premarital and extramarital sexual encounters combined with cultural constraints against discussing sexual practices; male dominance also limits the ability of women to refuse sexual encounters (Benton, 2008). HIV/AIDS testing is not commonly performed due to the lack of testing and counseling facilities in rural areas, fear of stigma, and the potential danger that a positive test would bring on the individual and their family. There have been numerous instances of individuals with HIV being killed in rural villages. Traditional belief about illness also create a problematic situation in developing a comprehensive AIDS response due to the cultural belief that illnesses are caused by supernatural factors; either from being cursed by another individual, violating dietary or sexual taboos, or social disharmony angering ancestral spirits (Byford & Veenstra, 2004).

### Table 2. Incidence of Communicable Diseases

<table>
<thead>
<tr>
<th>Condition</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria, suspected cases annually, $n$</td>
<td>1,800,000</td>
</tr>
<tr>
<td>Malaria, mortality per 100,000, $n$</td>
<td>480</td>
</tr>
<tr>
<td>Tuberculosis, estimated prevalence rate per 100,000, $n$</td>
<td>430</td>
</tr>
<tr>
<td>Tuberculosis, mortality per 100,000, $n$</td>
<td>60</td>
</tr>
<tr>
<td>Meningitis, mortality per 100,000, $n$</td>
<td>5</td>
</tr>
<tr>
<td>Diarrheal diseases, mortality per 100,000, $n$</td>
<td>3.2</td>
</tr>
<tr>
<td>HIV prevalence, antenatal women (Port Moresby Hospital - 2005),%</td>
<td>0.6-3.7</td>
</tr>
<tr>
<td>Estimated HIV rate (2006)</td>
<td>11,000-45,000</td>
</tr>
</tbody>
</table>

*Source: WHO (2009).*

**Noninfectious Diseases**

Noninfectious diseases such as cancer are prevalent with limited options available for treatment. The three leading forms of cancer are oral, hepatic, and cervical neoplasms. Oral cancer is caused by the practice of chewing betel nut (buai), a mild narcotic which is commonly chewed with powdered lime; hepatic cancer is associated with liver
inflammation due to chronic hepatitis and malaria; and cervical cancer is associated with human papillomavirus infections (WHO, 2009). Problems such as hypertension, cardiovascular diseases, and diabetes are also becoming more common, especially in urban areas due to the adoption of a higher-fat Western diet and a decrease in physical activity. Mental health services are virtually nonexistent in PNG; most mental illness is considered to result from displeasing the spirits or from the overuse of cannabis. Women frequently have limited access to health care services, and maternal deaths are high due to untreated anemia, pre- and post-partum hemorrhage, sepsis, and eclampsia. Despite improved immunization programs, infant and child mortality is high due to pneumonia, meningitis, dehydration, and episodic outbreaks of measles. Between 1960 and 1980, there was an average annual 3% decrease in the mortality rate for children under age 5, but there has been no improvement in child mortality rates in the past decade (Naraqi, Feling & Leeder, 2003).

**Papua New Guinean Health Care System**

The National Department of Health (NDoH) provides oversight for all health care in PNG. Management for health services is divided between the NDoH, which oversees provincial (base) hospitals, and the local and provincial health departments, which manage rural health services. This division of health services has proved problematic because of budgetary and personnel issues. Rural health services, primarily provided by church organizations include health centers, health subcenters, rural hospitals, and village-based aid posts. Health expenditures have remained steady over the past few years, but health indicators have remained stagnant. Almost all government health services are in a state of slow deterioration because of underfunding and a lack of supervision. A 2001 internal review determined that the rural health system was in a state of gradual collapse and was only saved by donor funding (WHO, 2009). Approximately 600 rural health facilities that were functioning in 1975 are now closed or functioning on minimal staff and resources (Pincock, 2006). The capacity for handling disease outbreaks has been judged to be limited because of a nationwide shortage of staff, inadequate laboratory capacity, and limited pharmaceutical supplies. Both medical supplies and drugs are in short supply because of corrupt fiscal practices in the approving and procurement process.

Health indicators identified by Health-Related Millennium Development Goals had shown gradual improvement until the 1990s, when resource limitations, flawed policies, and ongoing political and cultural situations caused a decline (WHO, 2007). Major sources of donor funding for health have commonly been allocated to either specific disease interventions or infrastructure development, which limits the funding available for provincial health budgets. The NDoH is focusing its efforts on developing specific programs to improve maternal/child health and reduce malaria, tuberculosis, and HIV/AIDS (WHO, 2009). Specific disease interventions and donor-directed projects have been successful in some areas but have not addressed the overall problems that need to be rectified before an improvement in health indicators will occur.
Rural Health Services

To develop appropriate interventions to handle decreasing health indices, it is important to determine the causes of poor health outcomes in rural areas. A number of factors have a causative relationship with health disparities present in PNG. By identifying factors related to health disparities, culturally appropriate interventions that are economically feasible can be developed and initiated. Worsening poverty has caused an additional decline in health conditions. An increase in the incidence of financial mismanagement and corruption on national and local levels has continued to diminish the capacity to handle health-related issues. Since independence, approximately 50% of rural village health facilities (aid posts) have closed because of budgetary problems, limited staff, and a diminishing focus on rural health requirements. It is reported by Transparency International that many villagers must travel up to 4 days to obtain health services (Pincock, 2006). The decentralization of the NDoH supervision of provincial health facilities and budgetary role had a negative impact on the equitable functioning of rural health services. Rural health services are coordinated on the provincial level, with provincial base hospitals continuing to be financed and managed by a different branch of the NDoH. Local and provincial governments provide basic health services and coordinate rural health projects but struggle with the ability to coordinate province-wide health policies and limited budgetary allocations. Over the past decade, the population of PNG has more than doubled without a corresponding increase in finances or human resources.

Both government and church health services are largely funded by public sector and donor funding, with churches providing approximately 80% of rural health services. Churches run five of the seven colleges of nursing and all of the community health worker schools. Nurses and community health workers provide the majority of rural health care. There is approximately 1 nurse per 2,227 people and 1 physician per 19,399 people; the majority of physicians work in Port Moresby (WHO, 2009). Some rural health clinics continue to provide health services to rural areas by patrols; nursing personnel walk to remote villages to provide maternal/child health services and intermittent health care. Because these patrols are infrequent, those with chronic conditions or maternal emergencies often go untreated. A referral system developed in the 1980s to transport emergency cases to provincial hospitals is no longer functioning as a result of economic constraints requiring individuals to find their own transportation to health centers.

Community/Primary Health Care

The delivery of health care in developing countries with minimal resources has proved to be challenging, especially in rural areas that have historically been underserved, disempowered, and disenfranchised from the decision-making process. Integrating the community’s perception of health care needs into a community empowerment process has the potential to reverse the trend of declining health indicators. In 1978, the Declaration of Alma-Ata presented a goal of providing acceptable levels of health for people in developing countries through the development and implementation of PHC.
The PHC movement emphasized the values of social justice, participation, solidarity and the right for all people to have better health (WHO, 2008). The concept of PHC is based on methods of health care provision that are practical, affordable, culturally acceptable, and accessible. “PHC stresses the provision of basic health care that includes, but is not limited to, the following eight essential elements: nutrition, sanitation and safe water, maternal-child care and family planning, immunizations, prevention and control of locally endemic diseases, health education, treatment of common diseases and injuries, and provision of essential services” (Running, Martin, & Tolle, 2007, pp. 203-204). Unfortunately, the attainment of these goals has been uneven and health inequalities continue to be a common global problem. After 30 years, a renewed interest in PHC has been proposed by the WHO because of the inability of health care programs in developing countries to achieve an equitable level of improved health (WHO, 2008).

The principles of PHC emphasize sustainable practices that include equity, empowerment, and the integration of preventative, curative, and developmental interventions. Community health projects have been ineffective in the past because they have been imposed on the community rather than emphasizing involvement and determining if the intervention was culturally acceptable or economically sustainable. Although there is no universal model of rural health services, each community should consider its own situation, assess available resources, and implement a health care program that is most appropriate to their needs (Litsios, 2004). An example of a successful PHC project is the comprehensive rural health project in Jamkhed, India, which used the PHC approach through the understanding that health services alone are inadequate to change health disparities experienced by marginalized people unless underlying problems are addressed, self-reliance is promoted, and the people themselves are involved in the process (Arole & Arole, 2003). The Jamkhed project identified the importance of finding a balance between curative, promotion, and preventative health services.

As a developing nation with a large rural population, PNG has continued the process of identifying factors that cause health disparities. Over the past decade the success of health promotion strategies has been mixed because of resource limitations, lack of adequate health surveillance processes, infrastructure deterioration, and an inadequate number of health care professionals (WHO, 2009). The PHC approach integrates a community participation process and an empowerment paradigm to act as a change catalyst in rural health care. Designing of community health projects requires a full partnership with the community to achieve appropriate and sustainable health improvement. The strategies require a “bottom-up” approach that emphasizes self-reliance and the development of local capacity to support the development of sustainable health initiatives (Ashwell & Barclay, 2009).

In PNG, the community-based health care (CBHC) model has been developed to focus on community empowerment by integrating community accountability and participation from the initial stages. A community that agrees to begin a CBHC project must first complete certain basic tasks, such as building toilet facilities for each household and fencing off the communal water source from animal contamination. The participation
process assists the community to develop a sense of competence and empowerment (Anderson, Guthrie & Schirle, 2002). After a needs and resource assessment is completed by community representatives, a process of identifying priorities and interventions are developed. An integral part of the process is the selection and training of village health volunteers or village midwives who are trained to provide basic health services for the community. A community may identify economic development as a high priority and require assistance to establish projects to grow cash crops or raise animals for protein sources.

**Implications for Nursing Research and Practice**

Health inequities continue to have a detrimental social and economic impact on the people of PNG and other global developing nations. Socioeconomic determinants of health in rural settings have a dual tendency to predispose people to certain risk factors and reduce access to health care resources (Beard, Tomaska, Earnest, Summerhayes & Morgan, 2007). To successfully address the problems facing developing countries such as PNG, it is important to make use of the social resources that are an inherent part of the cultural and contextual make-up of a community.

An integral concept in the CBHC approach toward the elimination of health disparities is an “up-stream” interventional approach that facilitates a proactive rather than a reactive tactic in addressing health disparities (Barten, Mitlin, Mulholland, Hadoy, & Stern, 2007; Paille & Pilkington, 2002).

The Commission on Social Determinants of Health identified three principles for action that have the potential to improve health equity: improve daily living conditions; address the unequal distribution of power, money, and resources; and identify the existence and degree of health inequity and measure the results of any action taken in response to the problem (Marmot, Friel, Bell, Houweling & Taylor, 2008). These principles express a holistic view of health intervention that is congruent with nursing values of advocacy and social justice.

Access to shelter, clean water, and basic sanitation is needed to decrease the incidence of infectious disease. It is important for rural communities to address issues such as housing, water, and protection of vulnerable members. This may require the development of affordable housing or ways to obtain clean drinking water. In PNG, a CBHC project developed a low-cost, easily transportable design for a water tank that would provide drinking water for communities who could not afford to have a pump for a well. The inequitable distribution of resources is a more difficult problem. Changes in power relationships may initially occur when community groups are empowered to work together to change the distribution of resources within a society (Marmot, Friel, Bell, & Houweling, 2008). Unequal distribution of power and resources has a negative effect on health equities among minority groups and women. In PNG, local groups successfully petitioned the government when they were unfairly deprived of fishing rights and financial compensation from mining or logging companies. Gender equality continues to be a serious problem in various parts of the world. The unequal position of women has a
detrimental influence on health determinants resulting from inadequate nutrition, overwork, absence of decision-making authority, lack of educational opportunities and socially sanctioned violence. Nurses can take an essential role in the collection of evidence on social determinants and work with communities to develop effective measures to reduce health disparities. Although community participation alone is an essential part of the empowerment process, it is also important to change discriminatory policies, which is needed for equitable distribution of resources.

The establishment of healthy communities requires a change in the status quo as exemplified by the traditional focus on curative services provided by health care professionals. Interventions that are initiated without the input or support of communities have been shown to be ineffective and usually fail to create sustainable improvements in health determinants. A holistic, community-based approach to health care designed to reduce health inequities has the potential to improve health determinants on local, national, and international levels.

References


Community-Based Care for HIV-Infected Diné Rural Dwellers

Demetrius Chapman, MPH, MSN(R), RN, PHCNS-BC

The Centers for Disease Control and Prevention (CDC, 2009) estimates that 1.1 million Americans had been diagnosed with AIDS by the end of 2007, with a prevalence rate of 339 per 100,000 Americans. For Native Americans, the prevalence rate of HIV/AIDS was estimated at 12.8 per 100,000. From the onset of the epidemic through 2005, more than 3,200 Native Americans had been diagnosed with AIDS (CDC, 2007). HIV/AIDS is a complicated disease that requires complex individualized care for successful management. For rural dwellers, the complexity of this care is compounded by poor infrastructure, the inability to access specialized care, and competing priorities. For Diné (Navajo) people infected with HIV, adequate care is further hindered by the barriers of culture, language, privacy, and mistrust of the federal government and the Indian Health Service (IHS). The CDC (2007) reported that in 2005, Native Americans ranked third in the rate of HIV/AIDS, after Blacks (including African Americans) and Hispanics; therefore, despite the fact that the number of infected Native Americans is small compared with the total infected population, the problem is large for this population.

Gallup Indian Medical Center

Gallup Indian Medical Center (GIMC) in Gallup, New Mexico, is an IHS hospital that is part of the Navajo Area IHS and serves the region around Gallup. The service provides care to residents on the reservation and on private land, and serves just under 50,000 Native Americans, most of whom are Diné, but Hopi, Zuni, Acoma, Ute, Apache, Laguna, and Taos are significantly represented along with many other tribes. GIMC hosts a number of specialty services and serves as a referral site for the rest of the Navajo Area IHS service units. There is one Navajo Area infectious disease physician, who also has certification in AIDS care, and one Navajo Area public health clinical nurse specialist (PHCNS) devoted to program and case management of the HIV program. Many HIV-positive patients receive the majority of their primary care at their home service unit and have specialized HIV care provided through the HIV physician/PHCNS team at GIMC. As the current PHCNS, I have a vested interest in the quality of care provided through this HIV program and advocate strongly for the community-based case management being done to meet the needs of these patients.

Of the 86 patients currently being seen at GIMC for HIV care, 47 (55%) have an AIDS-defining condition. Moreover, of the 18 people diagnosed in the last year (October 1, 2008 to September 30, 2009), seven (39%) had AIDS at the time of diagnosis. The year prior to this, there were no new diagnoses of HIV or AIDS, and only 65 patients
presented for care. These data demonstrate that Native Americans who seek care from the Navajo Area service units are being diagnosed with HIV late in the disease, after they have developed an AIDS-defining condition. The data also demonstrate that they are being infected at an increasing rate. This chapter describes the problem of HIV for Native Americans living on or near the Navajo Nation and argues that HIV/AIDS is a growing problem that desperately needs more culturally appropriate efforts employed to address the issues leading to increasing infection rates and late diagnosis. The actions proposed are to universalize HIV screening, to identify cases earlier before people have an AIDS-defining condition, and to increase the capacity of community-based care for people living with HIV/AIDS.

Demographics

The U.S. Census (2009) reports that there were nearly 270,000 Diné people in the last census, and their median age was 11 years younger than that of the total population: 24 versus 35 years. Diné people also have large households and families; the average family and household size was 4, compared with 3 for the total population. Diné people are much more likely to be poor than other Americans. The median household income was $23,799 versus $41,994 for the total population; Diné people make just 57% of what other Americans do per household and have more household members among which to share those funds. The per capita income is $8,536 versus $21,587—just 39% of other Americans. Diné individuals are nearly three times more likely to live below the federal poverty level than other Americans: 37% versus 12.4%, respectively. This poverty is the cause of complex issues that can be partly explained by larger family and household sizes and low employment rates. Of those not in the workforce, there are 11% more Diné than the general population; and of those in the workforce, 10% of Diné were unemployed, compared with only 3.7% of all Americans. The demographic differences of Diné reflect the state of many tribal communities and have been well documented as contributing factors to many health disparities. The economic disadvantage, young age of the population, and large families all contribute independently and significantly to the barriers of HIV/AIDS care and prevention for Diné people.

HIV Risk Factors

The complex and varied factors that contribute to HIV infections in all people are frequently found among Native populations, as noted by Vernon and Jumper-Thurman (2005). The high rate of gonorrhea infection among Native communities is a reflection of biological HIV risk because the two diseases are transmitted in a similar fashion. The social factors noted to contribute to risk include homophobia in tribal communities and distrust of health care systems that stems from the legacies of colonization. The socioeconomic factors associated with HIV risk for Native Americans stems from both widespread poverty and the increase in violence associated with it. Lastly, Vernon and Jumper-Thurman noted that substance abuse, specifically alcohol abuse, may contribute to risk because the rates of abuse remain very high in some tribal communities.
The risk factors identified in Diné people with HIV changed notably within the last year among patients presenting for care at GIMC. Since HIV has been tracked in the Navajo Area, the most common high-risk group has been men who have sex with men (MSM). MSM is currently the identified risk factor for 44% of the GIMC patients with HIV; however, this year, the identifiable risk factor for 47% of patients was men who have sex with women (MSW). The other risk factors include MSM who are also intravenous drug users, bisexuals, and “unknown.” This trend of increased MSW transition is in line with a national trend but is significantly more pronounced in this population. Over time, it is likely to continue to surpass MSM transmission. In Africa, HIV is most commonly spread through MSW sex. The change here will eventually serve to break a common misconception that HIV risk is strictly assigned to MSM and intravenous-drug-using patients.

**Men Who Have Sex With Men**

Census data (U.S. Census Bureau, 2009) indicate that Diné people were less likely than other Americans to reside in same-sex-partner households. This was especially true for men. Male/male households accounted for 6.4% of American unmarried partner households, whereas female/female households accounted for 6.2% of that same group. Diné unmarried-partner households looked very different. The female/female households accounted for 4.8% of the unmarried partner households, and the male/male households accounted for only 1.9% of them. For reasons not yet clear, Diné men are much less likely to share a household with another man. Vernon and Jumper-Thurman (2005) noted that homophobia was common in tribal communities. Although I have witnessed homophobia in Diné communities, it has not been to an extent that could be differentiated from that observed in other communities and cultures. Thus, there is not yet an explanation for this difference among Diné gay men. If Diné men engage in MSM behavior at the same rate as other American populations, then this lack of cohabitation may also be a reflection of relationship commitment and may indicate an increase in MSM risk because of fewer monogamous relationships.

Of the HIV-positive patients at GIMC, only two of the MSM are in a long-term monogamous relationship and cohabitate; they are a couple. The remaining MSM patients who are willing to discuss their risk factors report either complete sexual abstinence or multiple partners. None of the patients who have discussed their sexual practices with the PHCNS have indicated that they use condoms 100% of the time during sex, and none of the them indicated that they practice serosorting, that is, the practice of choosing to have unprotected sex with a partner of the same HIV status as oneself. The evidence suggests that the current Diné HIV population is likely spreading HIV through sex. Three patients diagnosed in the last year were identified through their sexual partners. Many more sexual partners were not identified because of a reluctance of patients to identify them. Intimate partner abuse may also be a contributing risk factor for HIV risk. Houston and McKirnan (2007) found that men who reported abuse by a male partner were much more likely to report unprotected anal sex in the previous 6 months. Hellerstedt, Peterson-Hickey, Rhodes, and Garwick (2006) found that among Native American youths, the strongest risk factors correlated to sexual experience were exposure
to violence and high-risk behaviors, such as illicit drug or alcohol use or abuse. Intimate partner abuse has commonly been reported in the HIV program at GIMC, but rarely in the first few months of care. Patients who identified abuse when screened often wanted the information to be kept off their charts and usually did not want any intervention or referral. Women reported abuse more than men, but many of the men who acknowledged abuse did not identify it as such. Responses that indicated some physical or verbal abuse was a normal part of being in a relationship with a man.

**Alcohol**

Alcohol abuse is strongly believed to be a risk factor in the spread of HIV among the Diné. Kunitz (2006) noted that the characteristics of Diné alcohol abuse have been changing over the past few decades. What was once a social initiation of youth by older kinsman on the reservation has shifted, and now alcohol use is introduced to teenagers by other teenagers, influenced in part by the availability of alcohol in border towns and cities, which have become the new home for young Diné whose families have left the elders home on the reservation in search of educational and employment opportunities. A study by Hall, Li, and McKenna (2005) showed that 18% of those with HIV lived in rural areas, whereas 10% lived in suburban areas and 71.6% lived in urban areas. This shift in drinking culture to youth and urban areas undoubtedly contributes to HIV risk for Diné people. Thirty-six (41%) of the current GIMC patients with HIV have a documented history of alcohol abuse. Five of those are regularly unable to maintain employment or housing and are mostly homeless. Diné people are reluctant to talk about sexual practices or partners, and little information regarding the sexual practices of HIV-positive patients has been collected in the course of care for those receiving HIV care from Navajo Area IHS facilities. Gerbi, Havtemariam, Tameru, Nganwa, and Robnett, (2009) found that the amount of alcohol consumed by people with AIDS correlated with two indicators of risky sex: having multiple sexual partners ($p < .0001$) and having sex without a condom ($p < .001$). Similar findings were discovered by Cook et al. (2006), who noted that veterans who were HIV-positive and intoxicated prior to sex were significantly more likely to have multiple sexual partners and to inconsistently use condoms. No research has yet been done to determine how much alcohol abuse contributes to HIV risk among the Diné, but it is clear that alcohol abuse is a problem in the population and that alcohol abuse results in risky sexual behaviors that lead to the spread of HIV.

**Screening**

The fact that 39% of the Diné people currently being treated for HIV at GIMC had AIDS at the time of diagnosis is strong support for enhancing screening. Symptoms often do not appear for several years, during which time the disease can be spread and simultaneously make the host more ill, devastating both the community and the individual. Those living in rural areas are less likely to encounter testing opportunities and thus are more likely not to know their HIV status. The CDC noted in 2003 that half of Native Americans had not been tested for HIV as of 2000. This percentage was higher in the Southwest, with 58% reporting that they had never had an HIV test (CDC, 2003). In 2006, the CDC revised its recommended screening guidelines. The IHS has implemented a program at
selected IHS facilities, including GIMC, to increase screening to meet the standards laid out by the CDC. The new recommendations include testing all people between the ages of 13 and 64 at least once in their lives and annually for those with identifiable risks. The CDC also recommends eliminating prevention counseling at the time of testing and a separate written consent for HIV testing. Both of those measures were labor intensive, which hindered adequate population screening rates; furthermore, the separate consent served to further stigmatize the test and created a barrier for screening. GIMC implemented a policy change in 2008 that reflected the CDC guidelines and eliminated the separate written consent for HIV testing. The result was a 23% increase in HIV screening. In the first 9 months of 2008, 2,277 HIV tests were performed; for the same time frame in 2009, 2,799 tests were performed. The total user population of GIMC is 46,758 people, and in the 12 preceding months (October 2008 to October 2009), 8.9% of the service unit user population had an HIV screening. There are a number of irresponsible and dangerous assumptions regarding who is at risk for HIV that contribute to provider reluctance to screen: that HIV is an urban problem and not a reservation problem and that it is only a risk factor for MSMs or drug abusers. By continuing to increase screening efforts, the true Diné HIV/AIDS population will be revealed, and focused efforts can be implement to prevent further spread of the disease.

Motivation Barriers to HIV Care

Maslow’s (1943) classic work of human motivation is a well-suited framework when discussing the barriers of client/care connection for Diné with HIV/AIDS. The struggles of living on a very rural reservation with the realities of poverty and limited resources are fundamental to a discussion of improving the health care of Diné living with HIV/AIDS. The starting point of Maslow’s theory is the drive to fulfill physiological needs. “The organism is dominated by the physiological needs, all other needs may become simply non-existent or be pushed into the background” (p. 373). Many Diné people with HIV are unable to adequately sustain consistent access to nutritious food. In the 6 months from April 1, 2009, to September 30, 2009; I made 29 referrals to the local food pantry out of the 89 patients presenting for care. More patients simply declined to go there despite admitting to insufficient food. Many Diné who live on the reservation also lack running water and must haul fresh water to their home site. This can be a labor intensive and costly process using manpower, gas money, and likely limited access to a truck that can haul a sufficient amount of water for drinking, bathing, cleaning, cooking, and livestock. According to the U.S. Census Bureau (2009), 98.8% of Americans have complete plumbing facilities in their homes compared with only 69% of Diné people. The numbers are similar for having full kitchen facilities (99.7% of Americans vs. 72.9%, respectively). The burden of low income interferes with food access, which is compounded by limited access to fresh water and the means to prepare food. Often, Diné people with HIV cannot effectively address their HIV until it has made them sick enough for a ranking among the more basic physiological needs, that is, they do not seek care until they are too sick to get water or prepare food.

At a higher level of Maslow’s hierarchy, HIV stigma damages the cohesion between HIV-infected Diné and their families, so to protect their relationships, many HIV-infected
Diné go to great lengths to keep their diagnosis secret from their family. This is difficult because Diné people often live in camps or homes with multiple extended relatives, and decisions regarding treatment are often made collectively by the closest family members.

**Nursing Case Management**

Through a Minority AIDS Initiative Grant, GIMC was able to create a nurse specialist position to focus specifically on the HIV population at GIMC and at other Navajo Area service units. One year prior to the initiation of the program, four patients with HIV died of alcohol-related causes. The substance abuse for some HIV-positive patients was so severe that it took their lives before they succumbed to untreated AIDS. The goal of the new HIV program was to increase the quality of life for all patients with HIV, especially those who were also burdened with alcohol addiction. The patients with HIV seen at GIMC come from the entire region, mostly from the other service units in the Navajo Area IHS. Nursing case management at GIMC for people with HIV/AIDS has demonstrated both quantitative and qualitative successes. The measureable successes are increased values for HIV treatment standards, such as immunization rates, tuberculosis screening rates, standard lab testing rates (HIV viral load, CD4 cell count, and hepatitis A, B, and C screenings). Provider estimates of medication adherence have also increased.

The first notable qualitative measures of success include increased client contact. Many patients rarely came to clinic and had little to no contact with the HIV provider. Through outreach efforts, including letters, phone calls, home visits, and community visits at other sites, patients began to have much more contact with the HIV team. The requests for assistance from patients increased substantially in the first few months of the program as well. Requests included facilitating family meetings to foster disclosure, education of the loved ones of patients, letters for housing and disability assistance, personal education and counseling, and most commonly, assistance getting connected to other community resources. As the PHCNS, I saw patients when they were admitted to any regional hospital to assist with discharge planning and usually to provide some crisis counseling. There was often a need to work with families when a patient was admitted because if they did not know their loved one’s HIV status, they might begin to suspect or the patient would choose this time to disclose his status; additionally, families would request assistance and education to continue to care for their loved one at home. Patients were also seen by me in the clinical nurse specialist (CNS) clinic, the provider clinic, and at various community locations. I saw some patients at their homes or at agreed-on public locations, and a few patients who were mostly homeless were regularly found either on the street at regular spots or in the local alcohol confinement center, Na’Nizhoozhi Center Inc. (NCI). Intoxicated people on the streets of Gallup, New Mexico, are brought to NCI and held until they are sober.

Home visits and community visit time were rationed to patients who had both a great need and were receptive to visits, thus ensuring the greatest impact of services. Some of the common needs of patients were based on biologic markers, such a CD4 count, HIV viral load, or the presence of an opportunistic infection or malignancy. Other times, the need was based on a change in therapy, such as new medications or to evaluate the side
effects of medications. One of the most common needs for home or community visits was counseling to assist with problem solving, organization, or coping. Other than counseling and case management, the community-based care also included phlebotomy, immunizations, assessment, education, and recommendations for coping with side effects.

Finding the patient in the community was usually the most effective means of contact. Basic communication with patients could be difficult because of slow mail service, a lack of home mail delivery on the reservation, and a lack of phone service. Many areas on the reservation lack sufficient mobile phone infrastructure for an adequate signal and also lack land-line capabilities. According to the U.S. Census Bureau (2009) more than half (53.9%) of Diné do not have telephone service in their homes, whereas only 1.2% of other Americans lack this service.

**Medication Adherence and Treatment Seeking**

Health care for the treatment of HIV has made great technological leaps forward in the past two decades, specifically in the development of effective medications that inhibit the reproduction of the HIV virus, thereby drastically improving the health and extending the life of those who suffer as host to the virus. Unfortunately, strict adherence to the prescribed protocols is required for the medications to be effective without viral mutation and resistance, and there is less evidence that consistently demonstrates how to effectively support patients on these complex medication protocols. Gorgos, Avery, Bletzer, and Wilson (2006) found that the use of antiretroviral therapies by Native American adults significantly increased survival time after a diagnosis of AIDS.

Adherence for Diné people can be especially challenging because of cultural factors that contribute to mistrust of Western medicine and historical factors that contribute to mistrust of health care delivered by state or federal agencies. Providers must facilitate buy-in for patients that is congruent and agreeable to their culture—it is unrealistic to expect patients to change to accommodate the health care culture. A review of studies that looked at antiretroviral adherence in youth by Reisner et al. (2009) found that individual demographic factors and characteristics that are readily observable fail to distinguish the adherent from the nonadherent. They did however note that some psychological factors, such as depression and anxiety, were consistently associated with nonadherence. The most effective interventions noted to date involve patient and caregiver education, self-monitoring, peer support, and telephone follow-up. The literature has ample examples of programs that did and did not work for the studied populations. Smith-Rohrberg et al. (2007) found that directly observed antiretroviral therapy (DART) for drug users was effective, but that it was not sustainable because patients preferred to take their own medication and because so many of the patients were hospitalized, incarcerated, or enrolled in drug rehabilitation. Another DART study by Macalino et al. (2007) found similar results in that the program was effective, but again, the sustainability of a program that required a paid employee to administer or oversee every pill is questionable. Research conducted in Lima, Peru, showed that the DART program was effective, while simultaneously having a positive effect on community
members’ attitudes toward HIV. The researchers paid the community workers in sustainable and affordable food baskets (Munoz et al., 2009).

It frequently has been suggested that DART programs assist with medication adherence of Diné people, but they are not a practical solution because of the amount of manpower required to travel the long rural distances between patients. Adherence has to be addressed on an individual patient basis by professional staff with the ability to empower patients toward adherence using the strengths they already have. The same is also true for treatment seeking. Patients need to be empowered to manage their own appointment schedules. Far too often IHS assigns appointments to patients with no input from patients. In many Native cultures, the self is a secondary priority to the needs of other family members; this is true for Diné people as well. I frequently have patients tell me they missed their appointment or ran out of medications because they had to help with a cousin’s ceremony, take their mother to the store or babysit their niece. This is often regarded as poor prioritization skills by non-Native health care providers. However, it should be regarded as an important part of culture and should be respected. Contingency plans can be implemented when these situations arise and are often easily accommodated when there is a community-based case manager and the patient is empowered to make decisions about appointment times, including last minute changes.

Language

With regard to Native American patients, there is often an assumption at IHS and private health care facilities that if the patient speaks English, an interpreter is not needed. Although the majority of HIV-infected Diné are fluent English speakers, their first language is Diné Bizaad (Navajo Language). All of the HIV patients at GIMC speak some English. Functioning in a particular language and understanding complex concepts in that language are vastly different language skill levels, and many of the concepts surrounding the process, treatment, and issues of HIV/AIDS would be more easily and thoroughly understood in the first language of Diné people. Unlike the many indigenous cultures of the Americas, the majority of Diné people (68%) still speak Diné Bizaad at home (U.S. Census Bureau, 2009). Of the HIV providers in the Navajo Area, none can converse in Diné Bizaad. The language barrier for the adequate provision of care is frequently overlooked for people who can function in English; however, it must be addressed and overcome to the extent possible for Diné people with HIV to receive optimal care. More efforts need to be made by the providers of care to ensure that patients understand their disease and its treatment.

In the summer of 2009, I tested a woman for HIV after learning she was a sexual partner of another patient of mine who has AIDS. I explained what the test was for and later returned to give her the unfortunate results that she, too, was infected with HIV. I gave her the diagnosis and a lengthy explanation about the infection. She gave me several verbal and nonverbal assurances that she understood. When I asked her to explain it back to me, she asked if having HIV was good with big smile on her face. Despite several conversations on the matter and a clear explanation in English, this English-speaking woman did not understand what I was trying to explain. The issue was resolved when I
employed the assistance of a Diné Bizaad-speaking HIV-prevention worker who was fluent in all three languages—English, Diné Bizaad, and HIV/AIDS. Even providers with the best of intentions may need assistance at times if they lack the fundamental language skills to effectively communicate to the people they serve.

Rurality

The Navajo Nation is the largest of the U.S. Indian reservations, covering approximately 26,000 square miles in northeastern Arizona, southeastern Utah, and northwestern New Mexico with an overall population density of 7 people per square mile. The U.S. Census Bureau (2009) reported a population of 180,462 living on the reservation at the 2000 Census. There are vast expanses on the reservation with no inhabitants, allowing the wild things to remain undisturbed by humankind. One can drive for many miles between family camps of 5 or 10 homes clustered together with only coyotes and blackbirds as a witness to the journey. These camps reflect a component of Diné society that is more collective than individual.

By having one’s family close, resources and work can be more easily shared and support for one another more easily lent. Grandchildren can help corral the sheep at night; sons-in-law can cut wood for grandparents. This collective society in a remote area that can be inhospitable because of scarce water and food usually serves as an important source of support for Diné individuals. However, for some, the fear of damaging that support system by disclosing their HIV status prevents adequate care. Some patients will avoid going the clinic or taking medication for fear someone in their support system will discover their HIV status and the group will react negatively. Another aspect of rural Diné culture to consider is livestock. Diné people are sheep herders, and sheep hold an important place in the lives of many Diné as a source of food, income, and wool for weaving. Many people will not forgo tending to the needs of their livestock to go to the physician.

There are logistical problems to overcome for rural dwellers as well. There is a lack of specialty care; only one HIV specialist primary care provider offers care for all of the Navajo Area, which is the size of West Virginia. Only seven other providers offer any HIV care. One IHS CNS provides case management for all of the Navajo Area, and one New Mexico State infectious disease nurse specialist provides care for all patients with infectious diseases, including HIV, in northwest New Mexico. She sees people on and off the reservation and manages infectious disease programs, such as hepatitis C, influenza enteric outbreaks, and the like. These nine people cannot effectively meet all the medical needs of current patients and certainly cannot meet the case management needs that arise from widespread socioeconomic depression. Another logistical problem with HIV care delivery to the Navajo Nation is the poor road infrastructure. The majority of reservation roads are unmaintained dirt roads that easily become impassable with snow or rain; those conditions, combined with very long distances between patients, can yield very unproductive field time when client needs are not being met.
Privacy and Disclosure

According to the U.S. Census Bureau (2009), Diné people work for the government at twice the rate of the general population (30.8% vs. 14.6% of workers), due in large part to the federally managed hospitals on the reservation. This also compounds the issue of privacy because many patients or potential patients fear being seen at the hospital by a relative who works at the facility. The homes of Diné people are also more crowded. There is a broad definition of close relatives in Diné culture. The siblings of a grandparent are also considered grandparents, not great uncles or great aunts. First cousins are often regarded as siblings, sometimes called cousin brothers or cousin sisters for distinction. Because of the larger family size, the broader immediate family definitions, and poverty, there are more people in Diné homes than in other American homes. The mean number of home occupants per room for owner- and renter-occupied American homes is 0.43 and 0.59, respectively; but for Diné homes it is nearly double, at 0.97 and 0.92 (U.S. Census Bureau, 2009). Finding privacy to take medication, get to the clinic, or meet with the CNS can be very difficult for patients with large families who live in close proximity.

When Diné persons first encounter someone, the custom is to introduce themselves by identifying their clans. The clan system is matriarchal, so each clan will have been passed from the female relatives. Individuals will begin with their mother’s two clans, which will have been inherited from the maternal grandmother and maternal grandfather; then, they will identify the clans they inherited from their father. Incorporating clans into the introduction of oneself exemplifies the important role the clans and family relationships play in the self-identity of Diné people. This is of crucial importance to the matter of privacy regarding HIV/AIDS disclosure. Although the stigma of HIV/AIDS can contribute to problems with family and community connectedness for all people living with the disease, those dilemmas create a greater problem for family and community connectedness. A loss of family connectedness is also a loss of personal identity for people whose identity begins with their family relationships. The fear of being outed as HIV positive to one’s family or having family members react negatively creates a barrier of motivation for regular HIV care. The needs described by Maslow (1943) that involve the giving and receiving of love cannot be met if individuals have been ostracized or rejected by their family. Not seeking HIV care thus protects the secret and subsequently the cohesion of family and source of love needs of the patient.

Disclosure of HIV status to one’s family is often a difficult decision filled with emotional pain, practical concerns for family connectedness and support, and the burden of educating the loved ones about HIV/AIDS. The stigma associated with HIV on the Navajo reservation is a powerful negative force for those infected and for those who work with HIV patients. Holzemer et al. (2009) found that stigma explained some variance in quality-of-life measures, even when HIV symptoms and severity of illness were removed. My experiences with HIV-positive Diné have led me to the conclusion that the stigma causes as much pain and heartache as the disease itself. Although the Holzemer et al. study did not find the same level of suffering, it is often the primary concern of Diné patients, even in light of severe illness and worsening health indicators. One patient
admitted to the hospital for pneumonia twice last summer was more concerned about his employer finding out that he was admitted for an AIDS-related illness, than he was about having advanced AIDS at only 33 years of age. The rejection, social isolation, and shame projected on Diné people living with HIV represent social abuse and prejudice that often surpass that which they have endured for their sexuality, race, or substance abuse history.

Suggestions for Practice

The first step in improving HIV care for Diné patients is to increase HIV prevention efforts in a culturally sensitive manner. Several years ago, a local nonprofit organization used a two-spirit campaign targeted at harm reduction for gay Native men. The campaign was based on one used successfully with some plains tribes who believe that gay men and women have the spirits of both men and women, hence, the two-spirit name. Stella Martin, an HIV-prevention worker with the Navajo AIDS Network, stated, “It didn’t work; the Navajos thought having two spirits was the same as saying that they were crazy” (S. Martin, personal communication, September 3, 2009). Native Americans have a commonality of being indigenous, but they comprise hundreds of different cultures. For a program to be successful, it must be contoured to fit the members of the culture and subculture it is intended to influence. Taking a program from one tribe and applying it to another is no more effective than applying a program to a Native culture intended for African Americans or Hmong. HIV prevention involves behavior change, and behavior change is complex and difficult. Any hope of success of a prevention campaign should, at the very least, fit the target culture.

A second component is to include prevention efforts that focus on people who are already HIV positive. Bradley-Springer and Cook (2006) recommended a change in practice and research that deals directly with those who spread the disease and those at greatest risk for contracting it. Many factors contribute to HIV transmission, including the amount of time one is exposed to HIV-infected fluids. During sexual transmission, the person who receives infected semen is at greater risk than the person who deposited the semen because the receiver will have longer contact with the infected fluid than the donor. During male/female sex, the woman is always the receiver; for male/male sex, one man is the receiver (bottom). The other male/male partner (top) or the male in male/female sex is at less risk for contracting HIV. Most prevention programs focus on either sexual abstinence or the use of condoms, but a female or a bottom does not need to be retold how to apply a condom; rather, they need the skills to negotiate condom use with their partners. When working with those who are HIV positive, behavior change is only effective when accomplished in increments. There is often a moral obligation on behalf of providers to insist that their HIV-positive patients either use condoms 100% of the time or completely abstain from sex. However, the sounding drum of this message is not practically applicable for people being told to make such drastic changes in their behavior. Bradley-Springer and Cook (2006) suggest tailoring messages using the stages of change model, allowing the patient to recognize risk, to indentify acceptable solutions that reduce at least some of the risk, and then to continue along that path, building healthier sex behaviors over time. Most providers in IHS are non-Native, and a great deal of what they suggest can be interpreted as paternalistic by their Native patients, especially
if those patients have a mistrust of federally delivered health care or Western medicine. This approach is difficult to embrace for some providers because they feel that its small steps result in further spread of HIV; but it is arguable that a small effective step is far more valuable in preventing the spread of HIV than an ignored leap of drastic behavior change.

Another step in improving the state of HIV care for the Diné is to identify HIV at an earlier stage of the disease. The most logical course of action is to increase the capacity of the health care providers already in the rural communities to identify HIV/AIDS. Lifson et al. (2009) described a training program that focused on HIV and sexually transmitted infection (STI) screening to be conducted by rural-based nurses and other health care professionals. They found that the training was greatly needed and that it required multiple days and follow-up sessions. They did not, however, determine if the training resulted in a change of practice, in which more people were identified at risk or screened for HIV and STIs. When GIMC changed its HIV screening policy, there was an increase in screening by 23%, with no other intervention than to change the policy and eliminate the separate written consent. A program focused on increasing the capacity of rural health care providers at Navajo Area service units should yield improved screening rates.

Nurse community-based case management has been successful in improving measurable outcomes for Diné people living with HIV/AIDS and has increased the utilization of care services. Moreover, the patients have expressed that having a single health care liaison—the PHCNS—makes them feel more comfortable and better meets their needs. The capacity of the HIV community-based nursing care and case management should be expanded to ensure that all Diné people living with HIV/AIDS can benefit from the service and not just those geographically close to GIMC, where the current PHCNS is housed. Husband et al. (2007) found that case management community care for people living with HIV/AIDS markedly improved the physical, social, and mental health function of very depressed people living with HIV/AIDS and reduced their risk behaviors. The evidence from the GIMC HIV program supports the expansion of the community-based nursing care either through additional nurse case managers or through nurse extenders, such as community health workers.

Lastly, an effective HIV clinic in the Navajo Area needs to ensure that the medical home is a comfortable fit for the patients. Like the prevention program, a treatment and management program needs to be molded around the recipient of care. The patient should not have to extend the effort of changing to fit the system. At the core of this is bringing care to people where they are; care should be delivered in the community, and the medical home should feel like a part of the patient’s community. Research conducted by Holzemer et al. (2006) found that even tailoring HIV medication adherence interventions to patients was not sufficient to effect change in their adherence. The interventions were selected by the nurse, not the patient, and the program was completely clinic based; no effort was made to meet clients on their terms or turf. Conversely, efforts by another clinic to enhance their HIV clinic care and to make the clinic more patient friendly yielded positive results for the quality of care received by their patients. Providers at the
clinic talked to their patients and changed the procedures accordingly so that the clinic became a valued part of the patients’ community (Wright and Knopf, 2009).

**Summary**

HIV/AIDS is a growing problem for Diné people. The number of infected people is increasing. Those who are infected face cultural, socioeconomic, language, and motivational barriers that are all compounded by the barriers of rurality. The small HIV program at GIMC has demonstrated some small successes and has been of great value for the people being served but needs to expand to fully meet the needs of Diné people with HIV. Vernon and Jumper-Thurman (2005) noted in their work on HIV/AIDS that efforts to prevent the spread in Native communities must be provided in a context that honors the diversity among the people targeted. They also noted that an empowering paradigm will facilitate collaboration and allow the work to flow from the strength and resiliency that come from Native traditions, languages, and models of health and healing that already exist and serve Native people well. This is additionally true for the care provided to Native people with HIV/AIDS. In the past, non-Natives providing services to Natives have had a paternalistic attitude, giving the impression that the giver knew what was best for the recipient, which often resulted in the breakdown of strengths already present and the insistence on conformity. How can an expert in any subject be an authority on another person’s life? We as health care providers cannot know the best plan of care, program design, or medical home services without first consulting the recipients of that care and partnering with them to elicit their expertise on their lives. More can be done to reduce HIV infection and to improve care for Diné people with HIV; their role in determining what should be done is crucially important in the success of future expansions and programs.

**References**


Navajo Spiritual Traditions: Complex Cultural Phenomena

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Health disparities found in Native American populations include health service delivery deficiencies, health care access limitations, language barriers, providers who are not culturally prepared, limited services, and limited inclusion in health-related research (U. S. Commission on Civil Rights, 2004). The phenomenon of interest addressed in this chapter is the cultural preparation of health care providers serving the Navajo people. This chapter will serve as a primer on Navajo culture and is based on background literature and observations of the author, with an emphasis on theoretical foundations. Questions will be posed and answers will be sought regarding the interface of Western medicine and traditional Navajo medicine.

The background and significance of cultural competence are explored in the context of the unique features of Navajo spirituality, which are embedded in geography and rural living, culture, history, philosophy, and health. Classic ethnographies (Deloria, 2003; Kluckhohn & Leighton, 1982; Locke, 2005; Waters, 1984) are synthesized to establish the background and significance of spiritual life and ways. A call to action for nurses who are sensitive to land, culture, and people is issued. The reader is advised to remember that the past is similar to a tapestry that drapes the land and is made up of countless stories (Evers, 1986). Complexity, interrelationships, nonlinearity, creative adaptation, transformation, and connection are threads that emerge.

The author proposes that spirituality is pivotal in developing an understanding of complex cultural phenomena. Cultural awareness in nursing research and practice can be expanded through the understanding of spiritual streams underlying the material substance of culture. Excavating and exploring for truths of Navajo spiritual thought and tradition will be a focus, especially with regard to the impact of culture and rural life on health and illness. A historical approach to the discovery of truths will help to explain relationships and answer questions about how, when, and why human phenomena occur within the internal and external environments. Concepts are relevant in context (Hupcey, Morse, Lenz, & Tason, 1996). Thus, the meaning of the nursing meta-paradigms of person, environment, and health in the context of Navajo culture and rurality is elucidated.
Background and Significance

Geography and Rurality

Geographically, the Navajo Nation is the largest tribe recognized by the U.S. government and includes portions of the states of Arizona, New Mexico, and Utah (Figure 1). The Navajo Nation has significant natural resources, including water, forests, rangeland, irrigated farmland, lakes, fish and wildlife, and significant reserves of natural gas, oil, and coal. The land is characterized by desert, alpine forest, and high plateaus and mesas, with altitudes up to 10,500 feet. Volcanic activity and erosion by wind and water have carved magnificent canyons, mountains, and mesas.

![Figure 1. Map of the Navajo Reservation.](image)

Much of the area is isolated and remote. The land base covers over 27,000 square miles, and the population includes more than 300,000 tribal members. Because of its low density of population, the Navajo Nation meets U.S. Department of Health and Human Services (2004) criteria for a rural area. According to the 2000 Census, approximately 32% of tribal housing lacks complete plumbing, 28% lacks complete kitchen facilities, and 60% lacks telephone service (Shirley, 2009). The impact of low population density is compounded by large numbers of households with no electricity or running water. The Navajo Nation has 6,184 miles of roads, of which 77% are dirt or gravel. The beauty,
culture, and ancient history of the Navajo Nation attract several million tourists per year (Ostrander Consulting, 2009).

The Navajo ceremonial *Where the Two Came to Their Father* opens with the statement: “When they put the extra mountains around, they took Mountain Around Which Moving Was Done out of First Woman’s belt.” The striking concept is of Earth Mother as the goddess-mother of creation located just below the navel. Translated to the conception of the four-cornered world as in the Four Corners region, the central section of the Colorado plateau region is still the sacred middle. Navajo conceptions of duality with respect for Mother Earth and her creation have provided a powerful influence in the realms of health and medicine.

One of our elderly patients at an Indian Health Service hospital had a deep wound requiring weekly dressing changes and treatment. He hitchhiked to his appointments. He lives in a home with no utilities or running water. Word travels in the surrounding communities, and the wound care nurse has a reputation as a good Medicine Woman who heals. Therefore, patients will keep their appointments when possible, even at great hardship. Likewise, some will travel long distances to see a traditional Medicine Man, also known as The Singer, for healing ceremonies.

**Navajo Culture**

*Nih zhonigo* is a Navajo phrase meaning “walk in beauty.” The walk includes an understanding of the power and proximity of the still and timeless Navajo Nation, which is full of the beauty of dynamic color and light. “Navajo” is actually a Spanish word and is not the people’s word for themselves (Kluckhorn & Leighton, 1982); in their language, they are dineh, meaning “The People.” In the plural, it refers to “people, tribe, or nation.” Dineh (also Diné, with an accent on the “e”) is a reminder that the Navajo are a society with a strong sense of community and belonging with others who speak the same language. Concurrently, there is a sense of isolation from the rest of humanity that is tied to the people’s rural existence.

Navajo people originally migrated from Northwest Canada about 5 centuries ago. The migration is part of the people’s oral tradition. Linguistic analysis reveals northern influence from the Athabascan languages and tongues spoken by a group of tribes in Canada. Some ethnologists believe that the Canadian tribes originally migrated from Mongolia across the Bering Straits (Waters, 1984). The Navajo tribe is one of the younger Native American Indian tribes. Navajo culture and art, including weaving, ceremonial dancing, sand painting, and silverwork, were adapted from Pueblo culture, most notably Hopi culture (Kluckhohn & Leighton, 1982).

The origin of the term *Navajo* is uncertain. It may have originally been the name of a place used by Pueblo Indians of the Tewa-speaking group, with a translation of “large area of uncultivated lands.” The historical basis for this translation is substantiated by the fact that the 17th-century Franciscan Friar Benevidas spoke of the Navajo as “the Apache of the great planted fields.” The Apache are known to be cultural and Athabascan
linguistic cousins of the Navajo and to have also migrated from northwestern Canada (Waters, 1984).

“Navajo nomadism” is considered by some scholars to be a myth (Kluckhohn & Leighton, 1974) and is thought by others to be self-evident (Waters, 1984). Navajo names were primarily place names. Dwellings were built within a prescribed range, but were not built of stone and therefore are not preserved as were the stone Pueblo dwellings. Navajos usually had summer and winter hogans, which were a distance apart. Livestock eventually formed the basis for their economy, social stratification, and values, particularly horse and sheep.

Sheep have been an important commodity in Navajo culture and history. Navajo wool blankets are prized and provide a source of income; mutton is a favorite food. Weaving of the wool is traditional and has provided a focus of family and tribal life (Evers, 1982). Social and economic factors have historically been subordinate to vast, open rural spaces in the Navajo Nation. Thus, the introduction of horses constituted a major shift, allowing for increased trade and progress. It has been observed by the author that jewelry making and silversmith work continue to provide a source of income and pride of creation. Tribal ceremonies are celebrated and shared with friends outside the tribe. Meals are the centerpiece of gatherings, with oven bread, Navajo tacos, and corn mush as staples.

The complex origins of Navajo culture make it difficult to be definite on specific traits. The origin of an agricultural life may have been learned from the Plains Indians. There was unquestionably an influence from the town-dwelling Pueblo tribes who had the reputation for being sophisticated and wealthy, with powerful religious ceremonies (Kluckhohn & Leighton, 1974). Major changes occurred between 1626 and 1846 because of intense contact with Pueblo Indians, including Indians from the Jemez and Hopi tribes, who took refuge with the Navajo after the Pueblo rebellion of 1680. Weaving, painting of pottery, and communication of European technology were shared with the Navajos during this time.

Navajo theory on the cause of disease, injury to the body, or property damage is traced back to a violation of taboos, contact with a ghost, or witch activity (Kluckhorn & Leighton, 1982). Ailments are of a supernatural origin, and fears are concentrated on illness and death. When an illness is persistent and usual Navajo treatment is not efficacious, or if the illness is mysterious from the Navajo perspective; witchcraft is likely to be cited as the cause of the illness. Therefore, treatment deals with the cause, appeasing supernatural forces in order to return to normalcy. The aim of curing ceremonies is restoration to a normal condition; with a body that is natural, good, safe, well, and able to enjoy and produce wealth.
Historical Perspectives: The American Nation and the Navajo Nation

The American period of Navajo history is blighted with tragedy and exploitation by the “white man” and his government. The United States took possession of New Mexico in August, 1846. At that time General Kearny promised protections against Indian tribes. In 1862, Navajo and Apache tribes increased raids on Rio Grande settlements. Colonel Kit Carson was sent to Navajo country in June 1863, with instructions to destroy all livestock and crops. The land was pillaged, and Navajo Indians were killed and taken prisoner. Many groups began to surrender at Fort Defiance in 1864. The 300-mile “Long Walk” of 2,400 people, 30 wagons, 400 horses, and 3,000 sheep and goats from Fort Defiance to Fort Sumner (180 miles southeast of Santa Fe) began on March 6, 1864 (Locke, 2005).

Eventually, 8,000 Navajos were held captive at Fort Sumner in a flat colorless landscape devoid of their homes, economy, and established culture. They became ill from eating strange food and drinking the alkaline and bitter water. They were homesick, hungry for food, and longed for their land. Finally, they returned “home” in 1868 to destroyed buildings and no livestock to support an economy. Fort Sumner and the Long Walk represented a devastating upheaval to the people and were followed by several years of severe drought. Afterward, a period of stability and relative prosperity ensued. The Long Walk was a painful passage that persists in Navajo collective consciousness, causing a longing to return to tradition.

Exploitation by the railroads, uranium mining interests, and oil and gas companies are the heartbreaks of modern times in the Navajo Nation. A slow pestilence of poverty, suicide, alcoholism, substance abuse, domestic violence, and disruption of social systems is widespread. Corrupt politicians allowed forced surrender of some of the best land to the railroads. Indian schools were first established in 1870, forcing the children to be raised in boarding schools far from their homes, only to return without a strong sense of self and culture. Today, young people are encouraged by parents and the tribe to get a college education; however, the author has observed that many are caught in cycles of substance abuse and domestic violence.

On the drive into Shiprock from the north, one ascends to see Shiprock Mountain to the west, shrouded in pollution from two huge coal-burning power plants in Farmington, New Mexico. Lead, mercury, dioxides, and sulphuric acid are the pollutants infused into a mist that residents must breathe daily. The mountain is a spiritual center of the Navajo Nation and is part of the story of creation in Navajo traditional belief. It is jagged, shaped like a ship or a jet with wings of lava spread out to each side. Looking to the east, high-tension power lines convey power from the coal-burning plants to other regions. The sun catches on hundreds of discarded alcoholic beverage bottles immediately on passing two signs. The first sign announces “Boundary Navajo Reservation United States Department of the Interior.” The second sign reads “Welcome to the Navajo Nation.” It is a telling juxtaposition; a tragic story unfolds like a blanket over the land.

In 1948, Kerr-McGee became the first company to mine uranium on Indian lands. Indian workers were given no protective equipment and drank from puddles of water on the
mine floor that were contaminated with uranium. Within a few years of the closing of the mines in 1969, about one miner in five, including young men, had died of anaplastic cancer of the lungs, and the same number died of pulmonary fibrosis (Matthiessen, 1984). Historically, cancer among the Navajo people had been rare cases. Now, there is evidence of a high prevalence of reproductive organ cancer in teenage girls, averaging 17 times higher than the average of girls in the United States (Raloff, 2004).

Kerr-McGee and the Atomic Energy Commission left behind a poisoned community, a radioactive mill, and 71 acres of spent uranium ore that retains up to 85% of the original radiation. The “tailings” were dumped 20 yards from the banks of the San Juan River, a crucial source of water for the area. Fourteen thousand tons of spent uranium tailings were washed into the Green River in Utah by floods. Miners on the Colorado Plateau were exposed to some of the highest doses of the radioactive gas radon ever recorded. There is documented complicity of the Atomic Energy Commission in allowing miners to work in the radon filled environment causing lung cancer in many of the mine workers. However, the Atomic Energy Commission successfully defended against several court cases brought against it. Finally, in October 2007, the Environmental Protection Agency (2008) developed a collaborative and coordinated five year plan to address uranium contamination and clean up the hundreds of abandoned mines in existence.

**Spiritual Traditions: Integrity and Integration, Relationship and Adaptation**

There is no word for “religion” in the Navajo language. Spirituality is inseparable from everyday life functions, including social networks and individual character. The ceremonial aspect of Navajo spirituality is somewhat congruent with Western religious traditions (Waters, 1984). However, the mystical and intuitive foundation common to most religious faiths is not easily translated. The same is true of Navajo thought and tradition. The deepest longings and belongings of the heart, vibrant relationship with a higher being, and awareness of the spiritual dimension of life are universal. Navajo thought and spirituality are historically rooted in Tibetan Buddhism and have been influenced by Spanish Catholicism and Anglo Protestantism (Waters, 1984).

Navajos and Pueblos have consistently regarded life in duality: material and spiritual. The four-cornered truncated pyramids as a representation of a four-cornered world can also be seen the creation myth of the Maya and the temples of the Toltecs, Zapotecs, and Aztecs. Thus, Navajo and Pueblo mythology is a vast cosmology that is abstract and has common threads with other ancient civilizations (Waters, 1984). The people’s rural existence in the Navajo Nation Four Corners region has provided relative isolation, allowing for continued practice of ceremony and relative integrity of belief systems.

**Christian Influence**

The intersection of Christianity, particularly Catholicism, and Navajo ceremonialism illustrates a blending of traditions. Christianity was readily accepted by Navajo people in the Four Corners regions, partly because of familiarity. For example, Mother Mary and Jesus are echoed in Navajo Changing Woman and Monster Slayer. At the same time, the
ideas of damnation for personal sin and self-abnegation are not comprehensible to the Indian.

In the 300 years of conflict with Spanish colonialists, Navajos were influenced by Catholicism and at the same time maintained their own ceremonies and spiritual traditions. Efforts made to forbid participation in Indian ceremonies and dance by the Catholic Church were met with resistance. Although Navajo people may attend Mass on their Saint’s Day, they continue to perform their ancient dances and ceremonies. Behind a patina of Catholicism lies the “intense living and wordless awareness, that mystical component of his character, which alone distinguishes him as an Indian” (Waters, 1984, p. 383).

Protestantism came to the Navajo Nation subsequent to Catholicism. The first mission was established in 1891 by the Methodist Church at Hogback, between Farmington and Shiprock on the San Juan River (Waters, 1984). At the time, the Indian Bureau declared that all churches had equal rights in the area, and the missions were subsidized by the Bureau. Proselytizing was encouraged. In the 1920s, there was an unsuccessful effort by Protestants to abolish Indian ceremonialism. The Protestant missionary stage of Navajo history is still evident today. Driving along the major highways in the Four Corners region, one sees many small churches, including Nazarene, Methodist, Reformed, Full Gospel, Church of Christ, and Baptist denominations, among others. The churches form a focal point of community life and often have a small enclave of homes surrounding them. A Navajo coworker relayed to the author that the main religions practiced in the Navajo Nation today are Christianity and Peyote, and that most Navajos celebrate Christmas.

**Tibetan Buddhist Influence**

Conceptualization of the world is the genesis of Navajo doctrine and ceremony. Understanding of the land is crucial to grasping Navajo spirituality. George Blueeyes (as cited by Evers, 1982, p. 2) wrote: “When the mountains were replaced, Earth was made. Sky was made. Dawn was made. Earth is our Mother. Sky is our Father. Sun gives us light. Moon does the same. All of these were made for us to live by.” According to varied accounts, the four sacred mountains that form boundaries of the Navajo Nation are: Mount Blanca in Colorado, Wheeler Peak above Taos, or Pelado Peak near Jemez Pueblo as the Mountain of the East; Mount Taylor in the San Mateo range as the Mountain of the South; one of the San Francisco peaks in Arizona as the Mountain of the West; and a peak in the La Plata or San Juan range as the Mountain of the North.

The Encircled Mountain of Huerfano Peak above Chaco Canyon is said to be the core of the whole universe, existing when the First People were still in the lower worlds. This mountain spans time and space dimensions that are beyond our earthly comprehension. The visible mountain El Huerfano is merely the physical counterpart of its metaphysical reality. It is too great and too powerful to be visible. The meaning of this is in remarkable parallel to the cosmography of Tibetan Buddhism.
Parallels with Buddhism do not end with the Encircled Mountain. According to Navajo tradition, the core of the cosmos is Mount Meru, which is shaped like a condensed pyramid. Three of its four sides are in the same bidirectional colors of the Navajo world axis, and it is 80 thousand miles high and deep. White is on the east, blue on the south, red on the west, and yellow on the north. Within it are several underworlds and several heavens.

Below the mighty Mount Meru, the cosmos spreads out like a giant lotus with four petals. In Buddhist teaching, each of the worlds is analogous to the petals and is protected by a World Guardian known as a Lokapala. Similarly, each of the four Holy Mountains of the Navajos is guarded by its Talking God. The Buddhist cosmos is represented by a lotus, just as the Navajo world and Encircled Mountain are represented by a four-petaled flower. Thus, there are striking mythological and illustrative parallels between Buddhism and Navajo thought.

Metaphysical meaning is inherent in the myth and illustration (Waters, 1984; Deloria, 2003). An example of the full significance of meaning can be drawn from the illustration of the lotus, or four-petaled flower, which represents the whole cosmos. Each living being is created in the image of the Goddess Mother of creation, who is called “The Lotus,” and duplicates within his or her own personhood the complete creation. Our earthly universe is believed to be located at about the level of the Goddess Mother’s waist. There is duality of the created and the creator in traditional Navajo thought.

**Proposition: Complex Cultural Phenomena**

After exploring and discovering that Navajo spirituality permeates all realms of life, with interconnectedness of land, culture, and people, the author proposes that spirituality is pivotal in developing an understanding of complex cultural phenomena. Cultural awareness in nursing research and practice can be expanded through the understanding of spiritual streams underlying the material substance of culture. Nursing meta-paradigms of person, health, and environment will be explored to illustrate and expound on the author’s proposal.

Truth is both rooted in human experience and connected to evidence. A pragmatic approach to truth involves examination of evidence in the context of the real world as experienced by human beings. An essential tenet is that truth must be in agreement with reality. There are two ways of knowing and truth (James, 1907).

The first method of knowing is by intuitive direct experience, visualizing a phenomenon with one’s own eyes. Truth, therefore, becomes "a matter of direct consciousness in the flow of experience" (Weed, 2008). Intuitive truth that comes from the heart is characteristic of Navajo ways of knowing and is integral to the culture and oral history. The role of the stories is described by a Navajo parent, Ray Yazzie (Evers, 1982, p. ix): “A long time ago people used to say if you remembered the stories that were passed down, they would make you strong . . . so you could face whatever is in the future.” However, a clan brother of George Blueeyes explains (Evers, 1982, p. 89): “You cannot
tell everything. You MUST not tell everything. This protects you and shields you. You walk behind this shield.” Another interesting wrinkle in the story emerges.

Alternatively, one may attain knowledge through conceptual or representative processes "connecting thought with a thing," and a belief is held to be true "in the context supplied by the world" (Weed, 2008). An example of this form of truth is that which can be derived by the knowledge gleaned from the reading of a book or article by one who has not directly and personally experienced the situation. For example, researched historical accounts and descriptions contribute to the development of knowledge and sensitivity to the truth of Navajo history and experience.

Truth and history are intertwined. Navajo history is not based on a rigid chronology. Time to the Native American is nonlinear, and spirituality is not based on certain past occurrences that require uncritical belief (Deloria, 2003). Creation stories, traumatic events such as the Long Walk, gifts and powers of medicines and medicine men, and lives of tribal heroes are regarded as either distant events of the past or memories that serve to increase understanding of present situations. History thus comes back around to instruct The People. One simply believes the stories of the elders. The stories define the people’s identity. Thus, as in James’ (1907) pragmatic paradigm, knowing and perceiving truth may be derived either by immediate experience or by intellectual processes.

Conversations between a Navajo Medicine Man and the author illustrate the distinction between intuitive and representational truth. As a curious newcomer to the Navajo nation, traditions and practices are of interest to the author, whose path crossed with a highly regarded Medicine Man. His reputation was so strong that doctors at the local private regional hospital were reluctant to treat him. “So does the healing proceed from your mind and out through to your hands?” I asked inquisitively. “No,” he replied, “It comes from the heart through to my hands. I learned medicine from my grandfather and performed my first ceremony at the age of three.” The Medicine Man had grasped intuitive and learned truth. His story is woven in complementary colored threads in the blanket of history and time.

Connectedness is evident in energy exchange of all kinds. Michael Agar (2002, p. 28) proposed that “language fills the spaces between us with sound; culture forges the human connection through them.” After close scrutiny of Navajo spirituality, the author would add that culture forges a human and spiritual connection. A shared perception of the world allows for the perpetuation and thriving of human groups. People reach out to comprehend their universe, adapting to change for survival. Comprehension and appreciation of the interconnectedness of people within their environments are pivotal to the study of anthropology, which is aptly defined as the “study of man,” and to the study culture, which can be defined as the “bridge of human connection” (p. 28).

Probing deeper into the meaning of culture, American anthropologist Edward T. Hall (Hall, as cited by Helman, 2007) proposed that in each human group there are three levels of culture. Tertiary-level culture is explicitly manifested and superficial. Secondary-level culture includes the grammar of a group with implicit assumptions, beliefs, and rules.
Primary culture is the deepest level in which rules are so ingrained that they are generally out of awareness. The levels of culture proposed by Hall give life and form to human connectedness, the intricacy of “humans living in a multitude of relationships with each other and managing jointly to understand and manipulate the physical world, through what French sociologists have labeled ‘collective representations’” (Carrithers, 1992). Primary and secondary culture is where spirituality lies, and as such, can be visualized as the foundation of a pyramid without which the construct of culture would not stand.

**Nursing Meta-Paradigm: Person**

There is a progression in nursing theory with regard to person, from an individual person to the person as a complex adaptive system in the context of social systems, the immediate environment, and the world. Roy’s Adaptation Model (Whittemore & Roy, 2002) is holistic, viewing the person as an adaptive system composed of physical, emotional, intellectual, and spiritual elements with internal and external stimuli as inputs. The stimuli are processed, and the person adapts continually and creatively. Outputs may be adaptive or may constitute an ineffective response.

The nurse’s role is to promote adaptive responses, directing energy toward health and wellness. Human beings integrate with the environment, resulting in adaptation (Whittemore and Roy, 2002). Cultures and people are inculcated with patterns. When the patterns are disrupted, as occurs in traumatic personal and historical events, chaos can be transformed to order through adaptation. Creative adaptation results in self-organization. Navajo ceremonies, traditional healers, and spiritual life have evolved through centuries to their present form, adapting to the winds of change while retaining the quintessence. Shiprock Mountain stands as a spiritual center of the Navajo Nation, a ship that is grounded on the earth with wings of lava rock stretched out to the sides ready to transform and launch into modern times.

Spirituality has emerged as a vibrant research topic in nursing because of its increasingly recognized influence on health and its importance in the lives of patients (Smith, 2006; Post, Puchalski & Larson, 2000). Navajo healing practices are based in a spiritual consciousness and emphasize intuition and heart, reflecting a holistic conception of personhood. Inputs are primarily internal stimuli. It is a revealing fact that there is no word for religion in the Navajo language. Navajo spirituality is a complex cultural phenomenon that is adaptive to reality and history in a circular pattern, repeatedly returning to the land and stories of The People.

**Nursing Meta-Paradigm: Health**

Individual relationship to the Great Spirit in Navajo culture is prescribed by ceremony, songs, taboos, and Medicine Men. Relationship is approached with an awareness of the equality of good and evil in one’s personal life and in the environment. Toxic exposures insidiously manifest as cancers, which Navajo spiritual tradition ascribes to lightening strikes on or near the person with a malignancy (Kluckhohn & Leighton, 1982). It is also believed that one can be “witchcrafted,” causing a malady such as cancer, and that it is
best not to talk about the cancer. Thus, efforts at starting a cancer support group have
progressed very slowly in the Navajo hospital in which the author works. Personal beliefs
impact health and community profoundly.

It is imperative to recognize that although health is biological, it is not a solely
descriptive value-free concept. Value-laden judgments are necessary to distinguish
between abnormal and normal, pathological and healthy, and disease and aberration from
social norms (Peter & Evans, 2001). Austin’s (2001) work emphasizes the history of
philosophy and public policy in her discussion of the human rights paradigm. The
polarities revealed are germane to understanding culture and rural life in the Navajo
Nation. Relevant examples include: medicine versus public health; ethics versus human
rights; health as an entitlement versus a commodity; Western democratic ideals versus
Buddhism; and the individual versus community.

The Indian Health Service has made substantial progress toward an empowerment model
through individualized health care planning and delivery, and public health initiatives.
Increasingly, Native American communities are becoming participants in community
based participatory research efforts (Wallerstein & Duran, 2003). Uranium exposure has
resulted in the creation of a radioactive exposure office and study at the Navajo hospital
in which the author works. However, there remain glaring gaps in care, such as in the
prevention and treatment of diabetes, hypertension, alcoholism, obesity, domestic
violence, suicide, and depression. Complex cultural phenomena may provide clues to
unravel the heartbreaking realities presented by domestic violence and suicide in the
Navajo Nation.

**Nursing Meta-Paradigm: Environment**

Environment may be defined as the elements and conditions that make up the external
and internal surroundings influencing the growth, health, and development of persons
(Meleis, 2007). The external environment encompasses social, physical, cultural,
economic, political, and geographic factors. The internal environment encompasses the
cognitive, emotional, and spiritual components of a person, which change and develop
across the lifespan. Individuals, society, and the environment are connected with each
other through energy exchange, and they exhibit interdependence (Holden, 2005). In the
Navajo Nation, energy exchange has taken the form of economic trade, shared spiritual
beliefs, communication with the supernatural world, creative endeavors, and work.

Rights are relative to culture. Yet, human rights charters all include the protection of life
and liberty, the protection from torture and inhuman treatment, and the right to a fair trial.
The concept of health is inextricably interwoven with the concept of health equity.
Individuals have only partial control over their health through the course of their lives.
Genetics, environment, sociopolitical influences, toxic substances, access to clean water
and food, and adequate medical care are some of the environmental variables that have
had a profound impact on health in the Navajo Nation.
The thread of diversity emerges as a germane concept in tertiary culture. Differences across cultures may take in language, work patterns, political organizations, religion, family and marriage arrangements, popular psychology, and views of the universe. Diversity leads to Carrithers’ (1992, p. 4) incisive question, “Given the diversity of human forms of life, what must be true of humans in general?” To figure out what unites diversity, we are compelled to contemplate the differences.

What is the bridge between diversity and unity? Carrithers (1992) asserts that it is plasticity, the ability to be formed by one’s society of birth, and involves the comprehension of culture. Plasticity presupposes the ability to learn in depth and the capacity for speech, which are uniquely human. Indeed, he sees plasticity as the “single most important human universal” (p. 6). Plasticity enables adaptation and transformation. The author would add that without comprehension of spirituality within a culture, one cannot reach the deepest levels of personhood, health, and environment. Hall’s (Hall as cited by Helman, 2007) secondary and primary levels of culture exist in a vacuum without perfusion of spirituality.

**Conclusion**

Spirituality allows for integration of a person’s energy throughout death and life. In his search for meaning, Viktor Frankl (2006) discovered that “it is this spiritual freedom—which cannot be taken away—that makes life meaningful and purposeful” (p. 67). In the broadest sense, “spirituality is an aspect of any attempt to approach or attend to the invisible factors in life and to transcend the personal, concrete, finite particulars of this world” (Moore, 1992, p. 232). Health activism is embodied in research as praxis, thoughtful reflection that transforms the world through its action (Finch, Schoenhofer, & Green, 2006). Careful observation of cultural phenomena, with description of lived experiences and appreciation of spiritual traditions and life, advances a cultural understanding of health and illness, enabling dialogue, collaboration, and sharing of ideas on multiple levels. Spirituality is pivotal in developing an understanding of complex cultural phenomena. A call to action for nurses who are sensitive to Navajo land, culture, and people is hereby issued with the purpose of ameliorating health disparities attributable to providers who are not culturally prepared.

Conceptual models for nursing practice emphasize provision of care that is based on nursing knowledge. Nursing practice is defined by Chinn and Kramer (2004, p. 264) as “Experiences a nurse encounters in the process of caring for people. Experiences include those of the person receiving care, the nurse, others in the environment, and their interactions.” Concepts explored in this chapter include energy, adaptation, connection, interdependence, transformation, and complexity. Each of these concepts is integral to the person and spirituality. Language takes on meaning in the context of human connection and interaction. Spirituality gives meaning and purpose to life and death, is relevant clinically, and is foundational to developing an understanding of complex cultural phenomena. A Navajo woven blanket covers the land. The colors spring from nature and the spirit. The many stories arise from the heart and weave a tale of culture.
References


4 The Challenge of Reducing the Prevalence of Overweight and Obese Children in Rural Louisiana

Stephen Hernandez, MSN, RN

If we don’t act to reverse the childhood obesity epidemic, we’re in danger of raising the first generation of American children who may live sicker and die younger than the generation before them.

—Robert Wood Johnson Foundation (2009a, p. 1)

In the past decade, Americans have grown heavier (Figure 1), and the incidence of chronic disease has increased. Many factors have contributed to the growth of our waist size, and the process to reverse this trend will take many years. Health care providers, communities, and foundations such as the Robert Wood Johnson Foundation (RWJF) have recognized the dangers that being overweight and/or obese represent to the health of Americans, and these groups have actively worked to change this trend. Despite the increased awareness of the effects of obesity, Americans continue to “super-size” their meals and fail to take necessary measures to maintain a healthy lifestyle.

Childhood obesity has become an epidemic problem within the United States, as well as, in the state of Louisiana. Louisiana is located in the southern region of the United States and has a large rural population. According to the National Survey of Children’s Health (2007), 35.7% of children aged 10 to 17 in the state of Louisiana are overweight or obese, compared with 31.7% nationally. These obese children are more likely to become obese adults who will be at an increased risk for asthma, cancer, heart disease, hypertension, and stroke (RWJF, 2009b).

As the parent of two children, I am particularly concerned about the prevalence of overweight and obese children in our home state of Louisiana. Our children represent the most cherished resource for the future, and aggressive steps must be undertaken to assure their future health. In this chapter, I discuss the significance of the epidemic of overweight and obese children in rural Louisiana, suggest goals for action to address this epidemic, and discuss key implications for future community interventions and public policy to combat obesity in these settings.
In this section, I begin with a brief discussion of the state’s history as it influences the wide array of cultures that may be seen within the state and then discuss the key indicators of health in Louisiana’s rural areas. Although the unique cultures in the state are a strength, the effects of cultural practices and other social conditions present in Louisiana will potentially have a negative effect on the health of residents, including the state’s rural population, and predispose the population to being overweight or obese. I also provide a review of literature to illustrate the impact of being overweight or obese on the health of children in Louisiana and their future well-being.

Cultures and Ethnicity in Louisiana

The description of Louisiana’s culture and ethnicity offered in this section is brief because a full discussion of the diversity of people living in the state would require a lengthy undertaking. As with other localities, the story of Louisiana is extremely complex and rich, yet this richness may be missed by an outsider. According to the U.S. Census Bureau (2006), the racial composition of Louisiana is 63.9% Caucasian, 32.5% African American, 2.4% Hispanic or Latino, 1.2% Asian, and 0.6% American Indian. At first glimpse, Louisiana’s racial composition appears to be unremarkable compared with other southern states. After the veil of the obvious is lifted, a very complex story unfolds.
Louisiana’s culture is rich, in part, because of its unique history. Prior to European colonization, the area that is now Louisiana was the home of a large Native American population. When European settlers arrived, these Native Americans shared their knowledge to help the Europeans settlers, but, as with other Native American tribes in the United States, their populations decreased as colonization ensued. Despite a decreasing presence, the practices of Native Americans, such as components of gumbo, and the fishing and hunting practices of European settlers influenced the foods consumed (Owens, 1997). Additionally, the Native American’s names for landmarks in the state were widely retained by settlers and integrated into the languages of these settlers (Owens, 1997). Members of four of these original Louisianan tribes, the Chitimacha, Houma, Tunica-Biloxi, and Caddo, as well as other Native Americans that relocated to the area, remain in the state today. Together, these tribes represent the largest Native American population located in the eastern United States, and they have largely been able to retain their cultural beliefs while making economic progress in recent years (Owens, 1997).

The descendents of European Americans now dominate Louisiana’s demographics. Prior to the Louisiana Purchase in 1803, the state was governed by Spain and France. Both of these countries influenced the culture of Louisiana through religious and secular practices. Settlers from Spain and France predominantly practiced the Roman Catholic faith. One enduring influence of this religion is the evolution of the elaborate tradition of Mardi Gras, a community event and celebration that occurs before the beginning of Lent. During Mardi Gras, social organizations and clubs called Krewes celebrate by donning elaborate costumes and decorating floats for parades to entertain local communities (Owens, 1997). Although Mardi Gras was largely practiced in New Orleans, located in southern Louisiana, the tradition spread throughout the state in the past decade. The festival of Mardi Gras also brings social gatherings, including Ball Masque for Krewe members and guests, as well as unique music and foods, such as the king cake.

As opposed to English settlers in other southern states, Spanish and French settlers in Louisiana embraced integration. One example of this integration is the Creoles that live in the southern portion of the state. Creoles are a diverse people that are the result of intermarriage between Spanish and French settlers with Native Americans and free, French-speaking Africans, who were predominantly from the Caribbean Islands (Owens, 1997). Also in contrast to other southern states that practiced slavery, the French-speaking Africans or “free-people-of-color” (Owens, 1997, ¶12) were educated tradesmen that frequently worked as builders and chefs. In these trades, these Louisianans influenced architecture and Creole foods that are commonly consumed in the state today, such as gumbo and jambalaya (Owens, 1997).

After the Louisiana Purchase, the state of Louisiana fell under the governance of the United States of America. With this change, a new wave of immigration occurred. Immigrants in this new group of settlers included Americans of English descent, English-speaking slaves, and Germans (Owens, 1997). This group largely practiced Protestantism and brought the practice of slavery, especially to the rich farming plantations located in central Louisiana. After the Civil War, the English-speaking African Americans were freed, and some eventually intermarried with Acadians living in the southern region of
the state. The fusion of these cultures is partially responsible for the creation of the musical style of Jazz in the early 20th century (Owens, 1997).

Other former slaves remained in the Lower Mississippi Delta, located in the northeast corner of the state, where their descendents largely remain. This persistently poor region is the home of a large population of African Americans and Hispanics (Beaulieu & Littles, 2009). During the Reconstruction Era, a caste system known as Southern Progressivism came into being (Hyland, 2008). In this system, wealthy White landowners continued to exert a great deal of economic and political power that is paternalistic to poor Whites and African Americans alike (Hyland, 2008). Although efforts have been made to empower the residents of the delta, this region’s culture and history continue to influence, and potentially hamper progress (Hyland, 2008). The history of Louisiana has helped to shape its current culture, including social practices and common foods.

**Culture and Health in Louisiana**

Cultural practices, while based in tradition, may be responsible for influencing the current health of the state’s population. A common French saying in Louisiana is *laissez les bon temps roulez*, or let the good times roll! Although this mindset is not exclusive to Louisianans, it can lead to choosing good times and good food over a healthy lifestyle. When this mindset is combined with tradition, the consequences have been shown to adversely affect health. One exemplar of the power and influence of culture on health is the health problems faced by many Acadians.

The Acadian lifestyle has been examined because of this group’s high prevalence of health problems. The residents of south Louisiana, which includes a large number of Acadians, have been identified as having the second largest prevalence per capita of coronary artery disease in the world (Couvillon, 1996). In addition, approximately 25% of the adults in this cultural group have developed type 2 diabetes mellitus (Lipstate, 1996). The prevalence of these diseases has been linked to a traditional high-fat, high-sodium, and high-cholesterol diet (Couvillon, 1996; Lipstate, 1996). Examples of these foods include fried fish; roux in gumbo, which is high in fat; a *boucherie*, or butchered hog shared by a community; and a *conchon-de-lait* or suckling pig cooked in a pit (Lipstate, 1996). Guidance from health practitioners to change these food choices is generally met with fierce resistance. This reluctance is generally because the feeling that these types of food represent a shared heritage with other Acadians (Lipstate, 1996).

Although their dietary practices lead to disease, the Acadian culture does have positive health practices. Despite being very traditional, Acadians are open to medical providers and new medical technologies (Lipstate, 1996). Acadian health needs are also augmented by faith healers, or *traiteuse*, which are similar to Native American shaman (Lipstate, 1996). Acadians use *traiteuse* to supplement the medicine offered by providers, and the positive benefits of the *traiteuses*’ have been documented in narrative accounts.
Louisiana’s Rural Population

The term “rural” has many meanings; however, for the purpose of this chapter, the Office of Management and Budget (OMB) definitions are useful. The OMB (2000) defines a Metropolitan Statistical Area (MSA) as a county with a minimum of one urban area with a population more than 50,000. In this chapter, an MSA is considered to be an urban area. In contrast, rural areas consist of Micropolitan Statistical Areas that are counties with at least one urban center with a population between 10,000 and less than 50,000, and noncore counties, which have no urban cluster within their borders (OMB, 2000). Because of Louisiana’s Spanish and French influence, counties, or subdivisions of states, are referred to as parishes. Figure 2 shows the urban and rural parishes in the state of Louisiana. As is illustrated, rural parishes predominate in Louisiana.

Based on the OMB definitions, 35 of the 64 parishes in Louisiana would be considered rural (Rural Policy Research Institute, 2009). These rural parishes are the home to many Louisianans. According to the AARP Public Policy Institute (2005), 25% of Louisiana’s population, compared with a mean of 16.9% nationwide, lives in a rural parish. Individuals living in these rural parishes have been shown to demonstrate disparities in key health indicators compared with those individuals living in metropolitan areas.

Rural Health and Socioeconomic Indicators in Louisiana

The population of Louisiana faces many health challenges that must be addressed. The United Health Foundation (2008) ranked Louisiana as the poorest in health of all 50 states. Their report states that Louisiana’s ranking is so low because of high rates of uninsured residents, children living in poverty, cancer, obesity, and cardiovascular disease (United Health Foundation, 2008). Because poverty and health status have been correlated in past studies, Figure 3 is offered to demonstrate areas of poverty in Louisiana. As can be seen by comparing Figures 2 and 3, many parishes that are rural also have a higher rate of poverty.

*Figure 2. Geomapping of rural and metropolitan parishes in Louisiana. (Adapted from the Center for Applied Research and Environmental Systems, n.d.)*
Table 1 provides data for rural parishes in Louisiana that have marked disparities in health compared with urban areas. Almost without exception, each of these rural parishes demonstrates a higher percentage of mothers receiving inadequate prenatal care, low birth weight babies, cardiovascular diseases, and death from cancer (Louisiana Office of Public Health, 2005). Many of these diseases may be directly linked to the alarming prevalence of overweight and obese individuals in the state.

**Overweight and Obesity in Louisiana**

**Defining obesity.** Varying methods are available to determine if an individual is overweight or obese. One frequently used method is body mass index (BMI). BMI is calculated by dividing an individual’s weight in kilograms by his or her height in meters squared (Krebs, Himes, Jacobson, Nicklas, & Styne, 2007). The calculated BMI is compared with tables showing normalized percentiles of weight for age and gender (Krebs et al., 2007). Based on these measurements, a child is overweight if his or her BMI is greater than or equal to the 85th percentile, but less than the 95th percentile, or 30 kilograms per meter squared (Krebs et al., 2007). A child is considered obese if his or her BMI is greater than 30 kilograms per meter squared or is greater than or equal to the 95% percentile (Krebs et al.). In the past decade, an unacceptable number of Louisiana residents have become either overweight or obese.

**Overweight and obesity in Louisiana.** Louisiana has the eighth highest percentage of adults and the seventh highest percentage of children in the United States who are overweight (Trust for America’s Health, 2009). The overall prevalence of obesity in Louisiana is 30.7% compared with 26.6% nationwide (United Health Foundation, 2008). The National Survey of Children’s Health (2007) reported that 35.7%
of children aged 10 to 17 in Louisiana are overweight or obese, compared with 31.7% nationally. These children are more likely to become obese adults who will be at increased risk for “heart disease, stroke, hypertension, asthma, and certain types of cancer” (RWJF, 2009b, p. 8).

Table 1. Louisiana Population, Income, and Health Statistics in Rural Parishes

<table>
<thead>
<tr>
<th>Parish/Area</th>
<th>Estimated Population, n</th>
<th>Median Household Income, $</th>
<th>Mothers Receiving Adequate Prenatal Care, %</th>
<th>Low Birth-Weight, %</th>
<th>Diseases of the Heart, No. of Deaths/Rate</th>
<th>Malignant Neoplasm: No. of Deaths/Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>295,900,000</td>
<td>46,242</td>
<td>83.9</td>
<td>8.2</td>
<td>652,991/220</td>
<td>559,312/199.7</td>
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<tr>
<td>Louisiana</td>
<td>4,500,000</td>
<td>36,547</td>
<td>81.5</td>
<td>11.5</td>
<td>10,930/241.6</td>
<td>9,187/203.1</td>
</tr>
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Note. Rate for Diseases of the Heart and Malignant Neoplasm are per 100,000. (Adapted from “Louisiana Health at a Glance,” Louisiana Office of Public Health, 2005.)
The high rate of obesity will have a serious, negative impact on these children’s health in the future. The negative effects associated with childhood obesity dramatically increase the likelihood that these adults will develop chronic illness, such as coronary heart disease, type 2 diabetes mellitus, hypertension, asthma, and arthritis (Durand, Logan, & Carruth, 2007; Ebbeling, Pawlak, & Ludwig, 2002; RWJF, 2009b). Chronic illnesses are difficult and costly to treat. These chronic illnesses result in the impairment of activities of daily living for 25% of these individuals, and the treatment of these illnesses currently accounts for 75% of American health care expenditures (CDC, 2009).

**Overweight and obesity in rural Louisiana.** When *Rural Healthy People 2010* was published, the staff at the U.S. Department of Health and Human Services (USDHHS) recognized that a growing number of Americans in rural areas are overweight or obese (Tai-Seale & Chandler, 2003). This concern continues to be justified. In 2005, the USDHHS found that approximately 17% of children residing in a rural area are overweight. This finding is also valid for rural children residing in Louisiana.

A recent study shows that children living in rural Louisiana demonstrate a significantly higher prevalence of being overweight or obese. In a sample of 4th- to 6th-grade children living in rural communities (n=2,709), the researchers found that 17.7% were overweight and 27.4% were obese (Williamson et al., 2009). When race was examined, White children were more likely to be overweight or obese compared with African American children (Williamson et al., 2009). These findings provide further evidence that the prevalence of children living in a rural community who are overweight or obese is unacceptably high and must be addressed without hesitation or delay.

**Causes of Childhood Overweight and Obesity**

Many factors contribute to a child becoming overweight or obese. Simply stated, weight gain occurs when energy consumption through food intake exceeds the amount of energy expended by an individual (Krebs et al., 2007). Although this is a simple formula, more complex factors interact to cause a child to be overweight or obese, including the consumption of fast foods; the availability of beverages with a high-sugar content, including fruit juice and colas; an increase in portion sizes; the availability of high-energy, low-nutritional-value foods; an inadequate consumption of fruits, vegetables, and fiber; and the failure to regularly eat a balanced breakfast (Krebs et al., 2007). Also, because Louisiana cultural practices and dietary choices may be unhealthy, Louisiana residents are more likely to eat unhealthy foods. Any program aimed at decreasing the prevalence of overweight or obese children living in rural settings must focus on as many of these factors as possible.

**Addressing the Epidemic of Overweight and Obese Children in Rural Louisiana**

The literature demonstrates that the prevalence of children who are overweight or obese in rural Louisiana must be aggressively addressed. An abundant number of causes of excessive weight gain in children have been identified, and a holistic approach is necessary to address as many as possible. In this section, I offer a guiding conceptual
theory to explain the moderating factors for becoming overweight or obese and present suggestions to address these factors. A second theory, the Community Health Improvement Plan (CHIP) model, describes how nurses and other health care providers may engage residents in rural communities to actively partner in planning and participating in community-based initiatives.

A Model for Childhood Obesity

A model that conceptualizes the causes of childhood obesity is the theoretical model of childhood obesity (Figure 4). This model identifies intermediate, proximal, and individual health factors that interact to cause childhood obesity (Franzini et al., 2009). Each of these factors must be addressed to combat the epidemic of overweight and obese children in rural communities.

![Theoretical model of childhood obesity](image)

*Note. BMI = body mass index. Arrows indicate direction of influence.*

*Data obtained from Systemic Social Observations.*

*Data obtained from questionnaire.*

*Data obtained from measurements.*

Figure 4. Theoretical model of childhood obesity. (Adapted from “Influences of Physical and Social Neighborhood Environments on Children’s Physical Activity and Obesity,” by Franzini et al., 2009, American Journal of Public Health, 99[2], p. 272. Reprinted with Permission.)
Interventions to Decrease the Prevalence of Overweight and Obese Children

Community action and public policy must be enacted that will help to decrease the incidence of children who are overweight or obese in rural Louisiana. Because children are generally in school during much of the year, programs may be implemented that target health behaviors and knowledge in this setting. These interventions target proximate and individual health factors that are known to contribute to childhood obesity.

**Increased physical activity.** The first focus for community action is to increase the physical activity of all children attending a public school in rural communities. Children who live in poverty have fewer opportunities to engage in physical activity (Ebbeling et al., 2002). Additionally, children who do not participate in vigorous physical activity are more likely to be overweight or obese (Ebbeling et al., 2002). Figure 3 and Table 1 demonstrate that many residents living in rural Louisiana parishes live at or below the poverty level. To help these children increase their levels of physical activity and fitness, public policy must be implemented to require a minimum level of fitness activities schools within rural communities. This policy should assure that all children participate in a minimum of 30 minutes of vigorous physical activity during each school day (RWJF, 2009b).

**A balanced diet.** All meals served in rural schools should meet minimum dietary standards, and student access to minimally nutritious foods must be eliminated. To decrease childhood obesity, policy must be enacted to assure that school-aged children are provided a balanced meal in schools (RWJF, 2009b). All meals served must have a maximum fat content of 30%, reduced-fat options should be offered, and nonstarch fruits and vegetables should be included (Ebbeling et al., 2002; Philippas & Lo, 2005; Physician’s Committee for Responsible Medicine [PCRM], 2008). In addition to offering a balanced diet, the availability of high-energy, low-nutrition snacks to students must be eliminated. These types of snacks are frequently marketed by schools as a fund-raising measure (Molnar, Garcia, Boninger, & Merrill, 2008); however, these snacks, which include soft drinks, increase the risk of obesity by up to 60% in children, and their consumption has the potential to cause a weight gain of 1.1 pounds every 20 days (Ebbeling et al., 2002; Molnar, et al., 2008; Philippas & Lo, 2005).

**Awareness of BMI.** A final suggestion is to enact a policy that will increase parents’ awareness of their children’s BMI. Durand et al. (2007) found that only 20% of parents correctly recognize when their child is overweight. The regular reporting of each student’s BMI will help increase parental awareness of childhood obesity. In 2003, the state of Arkansas enacted Act 1220, which required schools to measure each student’s BMI and to provide a report his or her parents (Ryan, Card-Higgins, McCarthy, Justus, & Thompson, 2006). This policy proved to be successful in raising parental awareness of their child’s weight status. Two years after the implementation of Act 1220, 92.5% of parents reported reading these reports and being aware of their child’s BMI (Raczynski, Thompson, Phillips, Ryan, & Cleveland, 2009). Enacting a similar policy in rural communities is essential to combating childhood obesity.
A Model for Community Action

The CHIP may be used to guide the implementation of policy change. CHIP is a two phase process that guides problem identification, prioritization, and program implementation (Issel, 2009).

CHIP Phase 1: Problem identification and prioritization. In the first phase of the CHIP, coalitions are formed, a profile of the community is obtained, and critical health issues are identified (Alberta Gaming Research Institute, n.d.). Nurses and other health care providers must work to actively recruit partners into a sustainable community coalition. Potential community partners include community leaders, gatekeepers, health care providers, and citizens. These coalition partners will be able to make a wide range of contributions, including the identification of potential policy changes and health improvement strategies targeted toward children.

CHIP Phase 2: Implementation. In phase 2 of the CHIP, nurses and community coalition members should analyze community health issues and establish potential resources, strategies, accountability measures, indicators, and outcomes (Alberta Gaming Research Institute, n.d.). Multiple factors are known to contribute to the high rate of childhood obesity. Three possible factors are the failure to provide nutritious meals in schools, inadequate physical activity of low-income rural residents, and lack of awareness of a child’s weight status. Prior to implementing a program in rural schools, parents’ awareness of their child’s weight status should be assessed. This assessment can be performed during the planning stage and would be a beneficial pretest for any future program evaluation.

Parental awareness of a child’s weight status can be increased by calculating and reporting an age-adjusted BMI for all students attending rural schools. A BMI can be easily calculated by measuring an individual’s height and weight; however, because of the large number of rural students, it is essential that trained community partners and volunteers assist in these measurements. Next, nutrition in schools must be improved. Nutrition can be improved by ensuring that meals served in rural school lunch rooms meet dietary recommendations of the PCRM (2008). These recommendations include serving meals with less than 30% fat content, less than 10% saturated fat content, fresh steamed or low-fat vegetables, and fresh fruit, and offering low-fat or nondairy beverages (PCRM, 2008). In addition to improving the nutritional content of meals, all vending machines that serve snacks of low nutritional value should be removed from rural schools. These items include, but are not limited to, soda and high-carbohydrate, , or high-fat snacks.

A final focus for a community-based program to decrease childhood obesity is to increase vigorous physical activity of children attending rural schools. All children who are physically able should participate in a minimum of 30 minutes of vigorous activity per school day that is designed to increase cardiorespiratory fitness. This fitness activity must be provided by competent health and physical education (H/PE) teachers. To assure the competency of these teachers, all H/PE instructors should be required to have either
undergraduate or graduate training in physical education or a related field. Interventions and public policy that focus on increased parental awareness of their child’s weight status, improved nutrition, and increased physical activity have the potential to decrease the prevalence of overweight and obese children in rural communities.

Conclusion

The state of Louisiana has a large rural population, and many children in rural Louisiana parishes are likely to be overweight or obese. Children who are overweight and obese are at risk for impaired future health. These threats to health may manifest in the form of acute or chronic diseases that may restrict the length and quality of life of these children. Public policy must be enacted to help facilitate measures that decrease the likelihood that children are overweight or obese and suffer from comorbid conditions. Failure to take action could result in the unacceptable outcome that our children are unable to reach their full potential. As a registered nurse and a parent, I believe it is essential for all members of society to assure that present and future generations attain the best health and future possible.

To meet the challenge of reversing this epidemic, I have presented a conceptual model of obesity, suggestions for community-level interventions, and a model for community action. Registered nurses are ideal and essential partners for this endeavor, and we must actively engage and lead rural communities through the process of policy change and intervention. Potential weight-loss interventions in rural schools include increasing student physical activity, balancing the nutritional content of meals, and raising parental awareness of their child’s BMI. Nurses must actively engage members of rural communities to participate in making these and other changes identified by community members. One model that may be used to facilitate community engagement is the CHIP model for community planning, implementation, and evaluation. Once planned interventions are implemented, nurse researchers must play a role in assessing program success or the need for program modification. A sustained effort of community coalition building, planning, intervention, and evaluation is necessary to reverse the prevalence of overweight and obese children in the rural regions of Louisiana.

References


Lesbian Health: Sexual Orientation as a Social Determinant of Health

Hanna Krieger, MSN, APRN-FNP

Lesbian health is an emerging field of study. Lesbian women face unique health issues, including health disparities. The term lesbian encompasses vastly different subgroups, bound together by stigma and prejudice (Gay and Lesbian Medical Association [GLMA], 2001). The research on lesbian health is hampered by unique challenges, particularly in identifying the population of interest. This chapter will explore lesbian health from the standpoint of social determinants of health. Social determinants of health is not a new concept. Patterns of health disparities emerge that cannot be explained within the biomedical model. The concept of social determinants of health has gained widespread acceptance (World Health Organization [WHO], 2008). McNair (2003), among others, framed the issue of lesbian health within the context of “health inequalities” and “cultural minority” (p. 643). Within this framework, specific health issues of lesbian women and barriers to health will be explored. Although not comprehensive, this chapter will list some of the unique health care issues (disparities) pertaining to lesbians.

Background and Significance

Lesbian women and lesbian health were recognized as an important subgroup within the context of women’s health by the Institute of Medicine (IOM) in 1997 by convening a Committee on Lesbian Health Research Priorities, leading to the publication of Lesbian Health: Current Assessment and Directions for the Future (Solarz, 1999). Solarz identified the following reasons to study lesbian health:

- To gain knowledge to improve the health status and health care of lesbians
- To confirm beliefs and to counter misconceptions about the health risks of lesbians
- To identify health conditions for which lesbians are at risk or tend to be at greater risk than heterosexual women or women in general. (p. 2-3)

In 2000, the GLMA published Lesbian, Gay, Bisexual, and Transgender Health: Findings and Concerns (Dean et al., 2000). Sexual orientation was recognized as a social determinant of health in the U.S. 10-year public health plan Healthy People 2010. Lesbian health has since developed into a separate field of study. Lesbian studies emerged, challenged by building an “infrastructure” (Bradford, Ryan, Honnold, & Rothblum, 2001). Lesbian health researchers are in a unique position to conduct lesbian health research, yet a “substantial proportion [of lesbian researchers] encountered barriers” (Bradford et al. 2001, p. 1029).


**Literature Review**

A search was conducted in PubMed using the term “lesbian health,” which yielded 2,710 publications. Publications specifically pertaining to adolescents, mental health, drug use (including alcohol and cigarette smoking), obesity, reproductive health, sexually transmitted diseases (STDs), pregnancy, and parenting were excluded, given the broader scope of the inquiry. The author concurs with Meads, Buckley, and Sanderson’s (2007) assertion that a majority of research conducted pertains to sexual and mental health; therefore, the above exclusions may have eliminated many significant (sub)groups. In addition, publications that did not specifically refer to women, women who have sex with women (WSW), or lesbians were excluded.

Publications that pertained to health care access and utilization, health surveys, and health inequalities or disparities were included. An attempt was made to broaden the scope beyond the U.S. borders, given that lesbianism is a universal phenomenon, but the number of studies meeting the above criteria was limited. Studies from Canada, Britain, Australia, and other countries (as available) were included, although an emphasis was placed on lesbians within the United States.

Other sources of literature included links provided in PubMed Plus and Web sites of advocacy groups, particularly the Lesbian Health Research Center (LHRC) and the GLMA; references of published papers were reviewed for additional publications. No time limit for publication dates was imposed, and publications within the last 10 years were given preference. In addition, a literature search for rural lesbians and rural lesbian health was conducted, but the search was characterized by a paucity of research. The literature is summarized below.

Lesbians represent a diverse group of (typically) female-born women of highly variable backgrounds; ethnic, racial, and sexual identity; age; education; income; place of residence; and so forth. A commonly accepted definition for lesbians is women who have sex with women (WSW). Yet, various components need to be further differentiated: interpersonal chemistry or attraction, (sexual) behavior and identity, and gender of sex partners in the past year and/or over the lifetime, as well as different definitions of sex. Bauer & Jairam (2008) note that “these dimensions do not necessarily coincide” (p. 385), and that behavior is subject to change over time. In their review of methodological concerns in measuring sexual orientation in health research, Bauer & Jairam identified 201 papers and found that orientation was measured in more than 100 different ways. The broad scope of definitions poses a significant limitation in lesbian research. Bauer and Jairam conclude: “(1) it is unclear whether the use of different measures will produce largely comparable results” and (2) “the assumption of interchangeability will obscure etiologic clues” (p. 384). The emergence of lesbian men illustrates the degree of diversity and controversy about what constitutes a lesbian.

In another study, Kerker, Mostashari, & Thorpe (2006) note the following methodological limitations of lesbian research: “(1) Use of convenience samples,
resulting in findings that may not be generalizable. (2) Most compare WSW with general population estimates from other studies . . . determining whether the experiences of WSW differ from those of the general population across studies is difficult. (3) . . . most research identifies WSW by sexual identity and rarely examines stratifications of sexual behavior and identity simultaneously . . . thus we do not have a clear understanding of how women who identify as lesbian exhibit characteristics or health behaviors differently than WSW but do not identify as lesbian” (p. 971).

Meads et al. (2007) note “considerable difficulties in conducting research within the lesbian and female bisexual community. There is no comprehensive list of all lesbians and bisexual women so no adequate sampling frame from which to take a random sample. Therefore, much survey research . . . has relied on some form of non-probability sampling. . . . The difficulty with convenience samples is the impossibility of knowing the generalisability as a whole. [In addition,] high levels of refusers and lesbians . . . can refuse in a very particular way—by not being open about their sexual preference. Therefore a random sample may not be as representative as one might at first assume” (p. 2, para. 2).

McNair (2003) lists the following limitations of lesbian health: “early studies were small, relied heavily on purposive sampling and often involved Anglo-Saxon, well educated women, reflecting the difficulty in accessing marginalized subgroups of lesbians. . . . The last decade has seen both increased population-based studies, enabling comparison of sexuality minorities with heterosexuals, and an increased variety of methods” (pp. 2-3, para. 5 and 1).

For the purposes of this chapter, the terms lesbians, lesbian women, and WSW will be used interchangeably as all-inclusive terms of the various subgroups. This chapter is intended to provide a broad introduction to lesbian health, viewing sexuality as a social determinant of health and pointing to some of the existing health disparities.

**Social Determinants of Health**

The WHO (2003) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Yet, when discussing health indicators, there is a bias toward individual attributes (e.g., age, gender, ethnicity, and smoking) and a focus on epidemiological data without much consideration of social structure or position. When “traditional” health indicator are linked with social position, clusters emerge that depict health disparities that go beyond the biomedical model, with its focus on health of the individual. The WHO explains, “The social determinants of health are the conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels, which are themselves influenced by policy choices. The social determinants of health are mostly responsible for health inequities—the unfair and avoidable differences in health status seen within and between countries.” Social determinants may be viewed as an expansion of the traditional view and focus on individual health to include populations or communities.
Healthy People 2010 takes a similar position: “Over the years, it has become clear that individual health is closely linked to community health—the health of the community and the environment in which individuals live, work, and play. Likewise, community health is profoundly affected by the actions, collective beliefs, attitudes, and behaviors of everyone who lives in the community. . . . Therefore, the underlying premise of Healthy People 2010 is that the health of the individual is almost inseparable from the health of the larger community” (GLMA, 2001, p. 3). Lucey (2007) summarizes, ”Biology is considered to be an individual attribute while social exposure is more of population experience” (p. 103).

Rural Lesbians

Whitlock (2009) notes an omission within queer studies, linking “place” and sexuality. By relating personal memories, she explores rural formations of lesbians. Whitlock has a unique definition of place: “Place is a constructed idea, like race or gender. . . . Place is a social, cultural, geopolitical construction, as well as a geographic location. History contributes to its identity makeup, as do the creation, perpetuation, and claiming of stereotypes steeped in that history. Economic factors and social class are mutual referents with place, as are race, sexuality, and religion . . . the concepts are overlapping and complicated” (p. 2, para. 3). By introducing place as opposed to rural, Whitlock presents a concept that is more comprehensive, containing rural as a geographical location, but expanding the view of populations to be more inclusive by introducing race, sexuality, religion, and history as equally important.

Citing social constructionists, McCarthy (2000) suggests that “gay and lesbian identity is predicated upon the opportunities made available in urban life” (p. 76). Oswald and Culton (2003) note that the “prevailing wisdom appears to be that ‘rural’ and ‘gay’ are incompatible. The notion has been upheld by omission within academia: rurality and sexuality are rarely integrated” (p. 77). Lesbian studies challenge the dichotomy of rural or nonmetropolitan as opposed to metropolitan. Yet, the review of the literature indicates that rural lesbians may face challenges that are unique and different compared with metropolitan issues, particularly invisibility and isolation and the pressures to conform that compound health disparities.

Oswald and Culton studied the “best” and “worst” aspects of being GLBT in nonmetropolitan areas. The researchers found that the GLBT community within the downstate Illinois area were “best characterized as a constellation of interacting networks with no consistent physical space other than one or two gay bars. . . . The lack of formal organization means that GLBT people are likely invisible to those not part of the community. There is no geographical center or umbrella structure to unify GLBT networks and organizations” (p. 74). Invisibility in particular creates challenges unique to GLBT people (McCarthy, 2000). Invisibility and isolation, conformity (“‘the Dance,’ oppression embraced as social ‘necessity,’ a masquerade” [Nichols, 2005, p. 75]), discrimination, and hostility (to the point of physical violence) are unique to GLBT people compared with the general population. Nichols (2005) says, “I’m comfortable
with the immense horizon the prairie provides. The social horizons here are not as broad or encompassing, and limits on what is ‘permissible’ are rigid. . . . We are easy targets. . . . there was a large-scale purge of lesbians and gay men who lived here; they were told to leave because the sheriff’s department could no longer ‘guarantee their safety.’ Many left, but I stayed and, with them, entered my own closet and locked the door behind me” (p. 74).

Rural communities formulate their own unique definition of what constitutes a lesbian, which Whitlock frames as “rural formations of queerness” (p. 3, para. 7). This definition is constituted by visible elements of what is considered nonfeminine. Lesbians are typically referred to in derogative terms. Whitlock says, “my first queer images—a kid walking past a little house where people went about living daily lives – were in direct opposition to the image evoked by my mother. . . . Lesbians were ‘them,’ the unclean, those whose very existence must be spat out if mentioned at all” (p. 4, para. 5). Whitlock cautions not to narrow the focus on “oppressive, graphic violence perpetuated against rural queers” (p. 4, para. 6). In contrast, Oswald and Culton identified “having solid friendships and family relationships, feeling supported within the GLBT community and tolerated (although not supported) by the general public, and having the material resources to sustain an economically comfortable life” (p. 76) as the most positive aspects of nonmetropolitan life; the authors caution that despite those strengths, GLBT individuals face hostile attitudes and a lack of equal rights; in fact, community tolerance is the best thing and hostility the worst thing; these “phenomena coexist” (p. 76). McCarthy studied rural lesbians and captured her findings in the vivid title, “poppies in a wheat field” (p. 75 & 91).

The issues identified above appear not to be restricted to the United States. Similar concerns and observations are articulated by Edwards (2004), who studied invisibility, safety, and psychosocial distress among same-sex attracted women in rural South Australia. The identified issues amount to barriers to health care.

**Lesbian Health**

Lesbian women have unique health care needs. The National Women’s Health Information Center (2005) identifies aspects unique to lesbians in regard to heart disease, exercise, obesity, nutrition, smoking, depression and anxiety, alcohol and drug abuse, cancers, domestic violence, polycystic ovarian syndrome, osteoporosis, and sexual health (with a number of subgroups: bacterial vaginosis, human papillomavirus [HPV], trichomoniasis, herpes, and syphilis). The LHRC (2005) identifies similar issues: breast care, cardiac care, coming out, complementary care, depression, elder care, parenthood, pelvic exams, hormone replacement, sexual health, substance abuse, weight, and body mass index (BMI). A more detailed list of lesbian health care needs is in order, as specific health care needs are generally “unknown” due to common (mis)perceptions of health care providers and lesbians alike. The subsequent list was primarily extracted from Roberts, Patsdaughter, Grindel, and Tarmina (2004), who published the results of the Boston Lesbian Health Project II; Roberts (2006) conducted a literature review pertaining to lesbian health and made health care recommendations for lesbian women. The
The subsequent list was compiled to address common health issues; many pertinent health issues were omitted (adolescent health, aging, domestic violence, polycystic ovarian syndrome, reproductive health [particularly insemination], and parenting. STDs were lumped together despite some important differentiations. The LHRC (2005) compiled a bibliographic reference list pertaining to lesbian, gay, bisexual, transgender, intersex, queer (LGBTIQ) health care issues available online. Although some of the health issues listed in the following sections may very well be explained within the biomedical model, for example, nulliparity as a risk factor for breast cancer, others, particularly the lack of preventative health measures, can only be explained within the framework of social determinants of health.

**Heart Disease and BMI**

Heart disease is the number one killer of women. According to Roberts (2006), some studies indicate that lesbian women have an increased risk of heart disease, given the higher prevalence of increased BMI and smoking. She also notes that current research is inconclusive and contradictory.

The increased BMI among lesbians is common. Roberts (2006) lists the following correlates: age, poorer health status, lower educational attainment, relationship cohabitation, and lower exercise frequency” (p. 585). In an attempt to explain overweight and obesity, she explored the “common assumption . . . that lesbians . . . do not adhere to the societal norm that women must be thin and only have certain body types,” (p. 585) but her research was hampered by a paucity of publications.

**Sexually Transmitted Diseases**

STDs encompass a large array of vastly different diseases. A common (mis)perception by lesbians and health care providers alike is that STDs are not transmitted between WSW. Roberts (2006) notes that gonorrhea, *Chlamydia*, and syphilis are rarely found among lesbians, and if found, are typically associated with a history of current or past male partners. Lesbians are susceptible to all forms of vaginitis, genital herpes, and HPV; bacterial vaginosis appears to be especially common among lesbians.

**Preventive Health Care Measures**

**Physical examinations (routine health care).** Roberts (2006) indicates that changes have occurred in health-care-related behavior from earlier (before 1990) to more recent studies (after 1990). Lesbian women have increasingly taken part in routine visits. Roberts articulates the need to promote decreased weight, decreased alcohol use, and smoking cessation. McNair (2003) echoes some of the findings of Roberts for Australian nonheterosexual women.

**Pap smear.** Roberts (2006) noted that despite increases in screening frequency, the rate of screening remains lower than national guidelines and heterosexual comparison groups. Kerker et al. (2006) came to a similar conclusion. The lower screening rates
might be explained by the (mis)perception among health care providers and lesbians alike that cervical cancer and HPV infection are related to male partners. According to Roberts (2006), however, recent research indicates that HPV infection is found in lesbian women, and screening guidelines should be to the same as those for heterosexual women.

Mammography. According to Roberts (2006) and Kerker et al. (2006), literature on frequency of mammography is contradictory, but indicates that despite a higher risk of breast cancer, WSW have lower screening rates compared with heterosexual women. The contradictory nature of the data may stem from the omission of sexual orientation/identity in national statistics for breast cancer, which creates a significant limitation in prevalence among lesbian women. Research implicates a higher risk of breast cancer secondary to increased BMI, high alcohol intake, and nulliparity. The American Cancer Society (2003) acknowledges the increased risk of lesbian women for cervical, breast, and lung cancer in a published brochure, *Cancer Facts for Lesbian and Bisexual Women*.

Mental Health

Roberts (2006) cites a high prevalence of depression and problems associated with alcohol use among lesbian women. McNair (2003) notes a higher rate than in the heterosexual population. Health “inequalities are thought to relate to stress as a result of homophobia, higher rates of abuse and victimization, lack of social support” (p. 3, para. 4). A vast body of literature pertaining to mental health relating to homosexuality was identified in the literature search. In discussing research in rural mental health services for sexual and gender minorities, Hellman (2006) notes that “the problem is more widespread. There is evidence that the problem is an endemic problem not only a rural issue in psychiatric treatment settings” (p. 1217).

**Barriers to Health Care**

The National Women’s Health Information Center (2005) identified the following “challenges” for lesbians in the health care system:

- Fear of negative reactions from their doctors if they disclose their sexual orientation.
- Doctors’ lack of understanding of lesbians’ disease risks and issues that may be important to lesbians.
- Lack of health insurance because of no domestic partner benefits.
- Low perceived risk of contracting sexually transmitted diseases and some types of cancer.

Joanna Sickler (2005) of the LHRC states that there is not a single difficulty but rather a number of factors that create barriers. She outlines the following “talking points”:

- Lesbians face structural, financial, personal, and cultural barriers when attempting to access health care services, which results in lowering the quality of care that they receive.
• Many health care providers have not been educated about the health issues that face the lesbian community and have not been trained to take personal histories. This lack of knowledge is compounded by lesbians’ fears of experiencing discrimination from the health care system, which prevents them from coming out to and being honest with their physicians.

• The barriers that lesbians face when accessing the health care system act as a deterrent that precludes them from seeking preventative care, care for acute health conditions, or exacerbated chronic conditions.

• There are many structural barriers in place that prevent lesbians from accessing the health care system, including a lack of insurance. Lesbians are less likely than heterosexual women to be insured, which is generally attributed to their inability to access to spousal benefits.

• Additionally, federal health services tend to focus on reproductive care, and as a result, most lesbians are not included. (p. 1)

Oswald and Culton (2003) identified the following barriers:

• Many rural providers acknowledge the existence of GLBT individuals, but do not see them as family members and/or do not see them as potential clients, collaborators, or students.

• Services that are provided may be couched by a “don’t ask/don’t tell” or “sexuality is irrelevant” orientation that further inhibits visibility and connection.

• Before family professionals can be useful . . . they need to have both knowledge of and commitment to rural gay issues.

• Fear and confusion that rural family professionals may feel when asked to consider GLBT people . . . this response may come from deeply held and profoundly important religious beliefs that consider homosexuality to be sinful, deviant, or both.

• Rural community members scrutinize family professionals, and the inclusion of GLBT people . . . may cast doubt on the reputations of providers.

• Family professionals who want to include GLBT people in their practice may feel unsupported or fear losing their job.

• Family professionals may believe that their training did not prepare them to serve GLBT people (p. 77).

Similar themes emerge from these very different sources. For rural lesbians, invisibility and discrimination have a much more immediate (concrete) meaning. According to Edwards (2005), “Rural communities are frequently close-knit environments, where ‘everybody knows everybody’ . . . women initially try to keep their same-sex attraction invisible . . . the threat of [physical] violence . . . fueling the maintenance of their invisibility . . . fear of social violence, in the form of rejection and ostracism . . . psychosocial distress as their awareness of their same-sex attraction becomes increasingly incongruent with the established pattern of their lives” (p. 1-2). It can only be concluded that rural lesbian health care is abysmal.
Social conditions impact the health of lesbian women, “ranging from direct impact or stigmatization and prejudice (e.g., exposure to violence, stress, poor access to care) to failure to address special needs (e.g., STDs, fertility)” (Dean et al., p. 103).

Proposal of Goals for Action

“Both the 1999 Institute of Medicine Report and Healthy People 2010 have identified that as a group, people defined by same sex sexual orientation may experience poor health” (Kerker et al. 2006, p. 970). Barriers to health exist in the form of prejudice and discrimination, community responses, economic barriers (particularly a lack of insurance coverage), and provider ignorance and misconduct. These barriers result in tangible adverse health outcomes for lesbians. These barriers need to be acknowledged. Remedial action may start with personal outrage as expressed by Nichols (2005), “The real problem was that . . . we were unwilling to use our power or exert the power we had” (p. 76). This outrage may lead to initiative and activism. The AIDS epidemic in the 1980s and 1990s is such an example of outrage leading to community-based programs and the creation of gay health-focused organizations. Researchers need to include sexual orientation as an indicator to address the gaps in current knowledge (sexual orientation is included in the Nurses’ Health Study and the Women’s Health Initiative; Valanis et al., 2000). But more so, researchers may need to expand on social determinants of health to extend common paradigms of geographical health.

Conclusion

Sexual orientation is an emerging concept within the framework of social determinants of health. Disparities of health for lesbian women are real and may be explained through the concept of social determinants of health. Rurality may compound the adverse affects of sexual orientation, particularly invisibility and the threat of discrimination and/or violence. Yet, rurality alone cannot account for these health disparities, and further research is indicated to expand concepts such as place and to account for other factors within this concept, such as sexual orientation, religion, and history.

References


6 David and the Uranium Goliath on New Mexico’s Colorado Plateau

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The purpose of this chapter is to integrate many themes in the study of rural and cultural health by embodying them within the context of uranium mining of the Grants mineral belt. The sociocultural, historic, and economic backdrop to the health problems generated by the process of uranium mining is explored. Hegemonic interrelationships between individuals, tribes, organizations, politicians, corporations, and the larger global economy are all involved in the story of uranium mining in New Mexico within the last 60 years.

The Setting

New Mexico is a predominantly rural state that currently ranks 36th in population and 3rd in poverty in the United States (U.S. Census Bureau, 1990). The total population is estimated to be almost 2 million, roughly one third of whom live in rural areas. The most western and northwest counties are Cibola, McKinley, and San Juan. Cibola County has approximately 27,000 people, 42% of whom are Native American, with 5.6 people per square mile. McKinley County has approximately 71,000 people, 74% of whom are Native American, with 13.7 people per square mile. San Juan County has an estimated population of 122,000, 37% of whom are Native American, with 20.6 people per square mile (U.S. Census Bureau, 1990).

The Navajo Nation encompasses approximately 26,000 square miles of New Mexico, Arizona, and Utah. The Navajo population differs from that of the rest of the United States in several ways. The Navajo population is younger (43% are younger than age 20), more people are living below the poverty level (56%), more are unemployed (30%), fewer adults have high school diplomas (40%), and the annual per capita health care expenditures are lower ($1,397 compared with the U.S. average of $3,261; U.S. Census Bureau, 1990). The principal source of health care is the Indian Health Service (IHS).

Laguna Pueblo on the eastern end of the Grants mineral belt currently has a population of about 8,000 on 42 square miles. The Pueblo is 31 miles east of Grants and includes six villages: Encinal, Laguna, Mesita, Paguate, Paraje, and Seama (Indian Pueblo Cultural Center, 2007).

The Colorado Plateau is a specific geological formation in the four corners area that contains sedimentary structures that are the geochemical base for uranium ore contained in sandstone. The Colorado Plateau also has the greatest concentration of National Parks in the country making it an area of beauty and low population. The Four Corners area—where Arizona, New Mexico, Utah, and Colorado come together, has one of the richest
deposits of uranium ore in the world. New Mexico has the second largest uranium reserves in the United States. Almost all of the uranium in New Mexico is located in the Grants mineral belt, a small section of the Colorado Plateau along the south margin of the San Juan Basin in McKinley and Cibola counties in the northwest part of the state. The mineral belt contains the Chuska, Gallup, Ambrosia Lake, and Laguna uranium mining districts and essentially extends from Laguna in the east to Navajo land in the west and northwest (McLemore, 2007).

A broad definition of a rural area is a small population (< 2,500) spread over a large area of land (Glasgow, Morton, & Johnson, 2004; Institute of Medicine, 2005). According to Glasgow et al., most rural communities share the problems of access to health care, insufficient support systems and technology, and exposure to uranium. This comprises a social arena of risk beginning at the individual household, extending to local systems within the community and national institutions, regulatory agencies, and the interplay of the global economy (Glasgow et al., 2004). In general, extractive industries—farming, fishing, logging, and mining—involves nonstandardized products and extremely varied working conditions, are dependent on cost, and necessarily occur in rural areas (Schulman & Slesinger, 2004). Uranium mining in New Mexico demonstrates a unique arena of risk, from the individual miners or residents of contaminated areas, to the social organization of mines and community activism, health and environmental regulatory agencies, historic political forces, and the global economy.

According to Rural Healthy People 2010 (n.d.), although access to health care is the most identified priority, environmental health is considered a priority by 15%, more so by those in the West and Midwest. A national survey of rural health care providers showed that groundwater pollution and surface-water pollution ranked as the top two concerns, followed by pesticide misuse and soil erosion (Robson & Schneider, 2001). Groundwater and surface water are traditionally concerns of rural communities because those communities are almost exclusively served by well water. According to the World Health Organization (WHO, 1986), environmental health is defined as “those aspects of human health, including quality of life, that are determined by interactions with physical, chemical, biological and social factors in the environment.”

Environmental contaminants are increasing (Merchant, Coussens, & Gilbert, 2006). For example, nitrate from the Mississippi River to the Gulf of Mexico has nearly tripled in the past 30 years. This comes from the draining of agricultural watersheds in southern Minnesota, Iowa, Illinois, Indiana, and Ohio (Goolsby & Battaglin, 2000) reflecting fertilizer treatment of farmland. Nitrogen flows down the Mississippi River to the Gulf of Mexico, causing hypoxia, affecting the shrimping industry in Louisiana and the Gulf Coast. Rural residents in general are affected by water quality because they frequently have their own wells, which are not subject to the Safe Drinking Water Act (U.S. Environmental Protection Agency [EPA], 2009). Uranium mining is unique in that it has brought to the rural broad plains and red rock of western New Mexico a legacy of both sickened miners and contaminated earth and water.
Even before the discovery of radium and the fissionable properties of uranium, uranium was mined for the co-occurring vanadium, an element used to harden steel. The element uranium was discovered in 1789 when the German chemist Martin Klaproth precipitated a yellow compound using nitric acid to dissolve pitchblende. In 1896, Henri Becquerel discovered that uranium salts emitted rays that Marie Curie later named radioactivity (Emsley, 2001). After Marie Curie discovered radium in uranium ore in 1898, an industry developed in the four corners area to mine uranium for the extractable radium. Uranium, vanadium, and radium are all found in the compound carnotite. Although the recoverable radium was slight, 1 gram was selling for $70,000 to $120,000 (Amundson, 2002). There was a short radium-mining boom followed by a bust. In the 1930s, the true potential of uranium became known (Amundson, 2002).

Uranium is the heaviest naturally occurring element and has an atomic number of 92; it is more common than silver and twice as dense as lead. It occurs naturally in soil, rock, surface, and groundwater. It can be found in more than 100 different ores combining with other elements in the formation of minerals. Pitchblende, which is the most common, is a combination of oxygen and uranium; carnotite contains vanadium and uranium.

Uranium has 92 protons and 92 electrons, 6 of which are valence electrons, giving rise to 6 isotopes. The most common isotope is uranium-238, estimated to compose 99.284% of naturally occurring uranium. Uranium is radioactive, which means that it is unstable and decays by emitting particles. Naturally occurring uranium atoms exist as uranium-238 (99.284%), uranium-235 (0.711%), and uranium-234 (0.0058%). Uranium-238 can be bombarded to form plutonium. Uranium decays slowly by emitting an alpha particle. This radioactive decay results in a chain of daughter and granddaughter products, until it transforms to lead. Uranium deposits contain traces of uranium’s decay products, including thorium, lead, polonium, radium, and radon (Emsley, 2001). Uranium’s radioactive decay is responsible for much of the heat within the earth. Left undisturbed, radon and the daughters are trapped in rocks (Emsley, 2001).

These unique nuclear properties are the reason uranium is valued today. Historically uranium was seen in yellow-colored glass dating to 79 A.D. and in Fiestaware from the 1920s, as well as for the coloring of glass, ceramics badges, and jewelry into the 21st century (Betti, 2003). It was used for tinting and shading in early photography. Research by Enrico Fermi and others starting in 1934 led to its use as a fuel in the nuclear power industry and in Little Boy, the first nuclear weapon used in war (Caufield, 1989). The value of uranium continues today in its ability to produce energy.

Enriched uranium is uranium that has undergone isotope separation to increase the percentage of uranium-235 for its fissile properties. The remaining uranium is called depleted uranium. Depleted uranium (uranium-238) is used in kinetic energy penetrators and armor plating due to its density (Caufield, 1989).

There are three basic ways of mining uranium: open pit, underground, and in situ. Open
pit mining is done when the ore is close enough to the surface to be exposed once the overburden is removed. If ore deposits are deeper, underground mining is required. Once the ore body has been identified, a shaft is sunk in the vicinity of the ore veins, and crosscuts are built horizontally to the veins at various levels. Tunnels, or drifts, are driven along the ore veins from the crosscut. In situ involves drilling (as with oil). Weak liquids, either weakly acid or alkaline, are injected into the ore, and recovery wells collect fluid and leach out the uranium (Zoellner, 2009).

Open-pit mines involve blasting and drilling, which create dust particles. Underground mines also require blasting, creating dust particles but with the added danger of radon release. In addition, blasting of ore in sandstone also releases silica particles. In situ mining requires a permeable rock, like sandstone, be effective. This results in more contamination of groundwater (Zoellner, 2009). There are no underground or open-pit uranium mines in the United States today.

Once uranium ores are recovered, either by underground or open-pit mining, they are sent to mills. The ore is crushed into a fine powder and then leached with either an acid or alkali. The leachate is precipitated by solvent extraction or ion exchange, leaving a mixture, called yellowcake, which contains more than 70% uranium oxides. Yellowcake is then calcined to remove impurities from the milling process (Amundson, 2002).

**Proliferation of Mines and Geopolitical Influence**

The first mine was opened in Colorado in 1900 to extract carnotite, but it was not until World War II and increased military need for vanadium that mining expanded. The most significant source of vanadium in Europe was in Joachimsthal, Czechoslovakia, which Germany invaded in 1938. That, combined with awareness in the scientific community that German scientists were working on fission to produce an atomic bomb, were factors leading to the Manhattan Project in 1942 (Eichstaedt, 1994). This new focus on uranium rather than on vanadium refocused attention on those mines on the Colorado Plateau that left uranium as waste.

Grants, New Mexico, is the county seat of Cibola, on the old Route 66, between Albuquerque on the east and Gallup on the west, and shares a border with Milan, another small town involved in the mining boom. In 1939, the city was known as the Carrot Capitol; by 1955, it was the uranium capitol. Uranium was discovered there in 1950; the first mill was built in 1953, more uranium was found at Ambrosia Lake in 1955, and by 1958, there were five mills (Amundson, 2002).

The Grants mineral belt produced one third of all uranium produced in the United States between 1948 and 1978. (Brugge & Goble, 2002). Through 2002, more than 178,000 tons of uranium oxide (U₃O₈) was produced from 200 mines and milled at seven locations. Before 1970, the federal government bought most of the uranium for defense. Afterward, it was sold as fuel for nuclear power plants. By the mid-1950s, there were hundreds of mines on the Colorado Plateau. Anaconda, Kerr McGee, Union Carbide, United Nuclear,
and Homestake Mining owned these.

The Atomic Energy Act of 1946 established the Atomic Energy Commission. This was a civilian board charged with overseeing the development of atomic energy as well as controlling the rate of mining, milling, and refining uranium. Finding uranium became a patriotic act. Gordon Dean, Chairman of the Atomic Energy Commission from 1950 to 1953, said, “The security of the free world may depend on such a simple thing as people keeping their eyes open. Every American oil man looking for ‘black gold’ in a foreign jungle is derelict in his duty to his country if he hasn’t at least mastered the basic information on the geology of uranium” (Caufield, 1989, p. 75).

These were Cold War times. Stalin had detonated an atomic bomb in 1949, production of yellowcake was a patriotic duty, and safety concerns were often rationalized as hindering the uranium quest (Eisenstaedt, 2002).

Between 1946 and 1969, there were no exposure regulations enforced in the mines. The Atomic Energy Commission never accepted responsibility for regulating safety in the mines, or for the health of the miners, denying in fact that there were any possible problems, even reporting in a 1951 pamphlet “Radioactivity found in rocks is not dangerous to humans “ (Caufield, 1989, p. 81). Typically, miners used water inside the mine for drinking and breathed unventilated air.

It was suggested that the entity responsible for Indian lands and the mines on them was the Department of the Interior, or the U.S. Department of Labor because of its oversight of working conditions related to the production of goods and services, or the Department of the Interior’s Bureau of Mines. In 1966, authority for mine safety was placed under the Department of the Interior. It was not until January of 1969 that a standard level of exposure was established, largely as a result of the Secretary of Labor, Willard Wirtz, who invoked the Public Contracts Act that previously had been considered not applicable by his agency, and 10 years of perseverance in the face of “literally hundreds of efforts, studies, meetings, conferences and telephone calls . . . adding up over a period of years to [a] totally unjustifiable lack of needed consummative action” (Eichnstaedt, 1994, p. 84).

Efforts for compensation for the uranium miners began in 1973, and the Radiation Exposure Compensation Act (RECA) was passed in 1990. The RECA provides compensation as well as an apology to the known exposure of thousands of workers to radiation hazards during the period that the United States government was the sole buyer of uranium between January of 1942 and December of 1971 (RECA, 2008).

Health Effects of Uranium Exposure

The United States was not radiation naïve. There was a proliferation of radium deaths in the late 1920-1930s. According to Rentetzi (2008), radium mining, extraction, production and marketing was all controlled by factories leading to the production of convenient scientific facts that were then referenced and cited as evidence: what she calls the commercialization of science. The producers of the product were also the arbiters of
safety. This lead to radium use in multiple products including glow-in-the-dark paints for watches and instrument dials; radium water was sold as “liquid sunshine” for youth, health promotion and aphrodisiac. Radium was in fertilizer, toothpaste, hair products and candy, administered intravenously, inhaled, and drank (Renetzi, 2008). Clark, (1997) writes about the Radium Girls, a group of female watch-dial painters bringing suit against U.S. Radium when they developed malignant mouth cancers, disfiguring jaw conditions they claimed were related to the practice of pointing the paint brush tip by putting it in their mouths to make finer lines with the glow-in-the-dark paint on the watch dials. From 1917 to 1926, U.S. Radium was a major supplier of luminescent watches to the military. Chemists at the plant used lead screens, masks, and tongs (Clark, 1997). U.S. Radium and other watch-dial companies rejected claims that the women were suffering from exposure to radium, even suggesting poor hygiene or syphilis (Clark, 1997). The women eventually prevailed in court.

Between 1945 and 1947, secret experiments were conducted in which plutonium was injected into uninformed research subjects, and their biological blood and urine samples were sent to Los Alamos for analysis of the effects of radiation (Welsome, 1999). From the beginning of the uranium boom in northwestern New Mexico, there was evidence of the danger from unprotected uranium exposure. The Joachimsthal miners of Czechoslovakia had a high incidence of “mountain sickness”; 60% to 80% of the miners got sick, and in certain areas of the mine, they all got sick with lung cancer to a point that both Germany in 1926 and Czechoslovakia in 1936 paid compensation to miners (Witschi, 2001).

The Division of Occupational Health, U.S. Public Health Service, along with the Colorado Department of Health, initiated a longitudinal health study of underground miners beginning in 1950, directed by Henry Doyle and Duncan Holaday. Although they had no clear etiologic interim results in 1952 (workers with an average of 3 years in the mines), they noted a “yellow coating” on many of the miners tongues that was the result of free-floating yellowcake in the air (Holladay, David, & Doyle, 2). By 1960, comparisons between miners and the general population showed that for miners with 3 years’ experience working in the mines, death from heart disease was 17.8 times the expected rate, and lung and other respiratory cancers were 5 times the expected rate and growing. In 1957, 1% of miners had sputum evidence of cancer cells; by 1960, the percentage had increased to 3.3% (Eichstaedt, 1994).

In 1966, Doyle testified at a labor subcommittee hearing that the cancer rate among the uranium miners had reached 40 times the non-miner rate. Industry response included claims that installing ventilation would create more problems than it solved because of the high amount of air pumped through tunnels. According to the vice president of Homestake Mining, “Serious eye infections could result from the larger sand particles the air would carry. Bronchitis and pneumonia incidence would increase. Verbal communication would be very difficult . . . leading to accidents” (Eichstaedt, 1994, p. 91).
In addition to health effects related to Uranium’s radioactive properties, uranium is a toxic heavy metal. Exposure through respiration and ingestion can lead to abnormal functioning of the kidney, brain, liver, and heart (Craft, Abu-Qare, Flaherty, Garofolo, Rincavage & Abou-Donia, 2004), developmental, reproductive, diminished bone growth, and DNA damage (Brugge, deLemos, & Oldmixon, 2005), neural tube defects, births with multiple congenital malformations, congenital heart diseases, cleft lip and palate, and the unusual skeletal malformation phocomelia (Hindin, Brugge, & Pannikar, 2005). Uranium mimics estrogen in mice (Raymond-Whish et al. 2007), increasing uterine weight and accelerating vaginal opening, resulting in abnormal offspring. By grazing over waste sites, the level of uranium in the muscles and livers of cattle has increased (Lapham, Millard, & Samet, 1989). This is just several decades from when Salsbury (1956) posited cancer immunity in the Navajo.

**Environmental Contamination**

A leak occurred at the Churchrock mill, where a dam break in July 1969 sent 96 million gallons of contaminated mill effluent into the North Fork of the Rio Puerco, extending 80 miles downstream. This incident occurred four months after the Three Mile Island spill and released three times as much contaminant, with minimal news coverage or apparent public outcry. In fact, the following month, a request by the Navajo Nation to declare their area a disaster area was refused, but after only 1% of the spilled material was cleaned up; the Nuclear Regulatory Commission allowed the mill owners, United Nuclear Corporation, to reopen on November 2, fewer than 4 months after the accident (Brugge, de Lemos, & Bui, 2007).

As of 2002, there were no operating uranium mines in New Mexico; most mines shut down by the early 1980s, and all were closed by 1989 (Amundson, 2002). The uranium legacy persists, however, in what is left, which is hundreds of abandoned mines with exposed ore and tailings leaking uranium and other contaminants into the groundwater. Most mining and milling activity took place before environmental laws and regulations were developed to protect health (Schoepner, 2008). Potential hazards from ore processing and groundwater contamination began to be understood in the 1960s, and certainly the seriousness of the Churchrock was known, but it was not until 1974 that Congress ordered a study and inventory of active mill sites where windblown contamination, seepage from tailings, or leaking from unlined or damaged ponds resulted in contamination of groundwater, with the presence of arsenic, cadmium, chromium, lead, molybdenum, nitrate, selenium, radium isotopes, and uranium (Peterson, Cummins, Miller & Bush, 2008). The New Mexico Water Quality Act was passed in 1974, and additional regulations were added in 1977 to address discharges from uranium mines and mills. One difficulty in assessing responsibility is that contamination is the result of extensive mining that has created regional, not just local, contamination, and geologic structure makes it difficult to separate out the different mines and mills. In addition, many of the mining companies no longer exist, and groundwater data are incomplete (Schoepner, 2008).

The Uranium Mill Tailings Radiation Control Act of 1978 gave the U.S. Department of
Energy (DOE) the responsibility of cleaning up uranium mill tailings and other contaminated material at 24 uranium mill processing sites (Eichstaedt, 1994). That addressed the mills, leaving the mines under the jurisdiction of the EPA and the Department of Interior. None of this effort included Navajo land or the communities surrounding Grants and Milan.

In October 2008, a Navajo Nation delegation testified before Chairman Henry Waxman’s Committee on Oversight and Government Reform about the health and environmental impacts of uranium. Doug Brugge, Associate Professor at Tufts University School of Medicine, told the committee, “There has been too little research on the health impacts of uranium mining in Navajo communities. One study under way, for example, will mostly assess kidney disease, and not birth defects, cancer or neurological problems” (Helms, 2007, p. 21). Others testified about the extent of contaminated water sources, open uranium mines, and health problems, including thyroid disease, cancer, and birth defects (Helms, 2007).

Pasternak (2006) had told similar stories, particularly the saga of residents of a hogan belonging to Mary and Billy Boy Holiday, with a cement floor that had been made with a mixture of uranium tailings in 1967. By 2000, when the radioactivity was discovered, her husband had died of lung cancer, and her grand nephew had died at age 42 of lung cancer. Mary’s niece Elsie lived in the hogan for 3 years; one son died of a brain tumor, and another was diagnosed with lung cancer at age 38.

A result of the Waxman hearings was a 5-year plan, involving federal, state, and tribal agencies, for remediation and closure of abandoned mine sites. Agencies involved included the Navajo Nation, EPA, DOE, IHS, and Nuclear Regulatory Commission (NRC; Peterson et al., 2008).

Community Response

As primary investigator, Johnnye Lewis initiated a community-based participatory research study in 2000. The Dineh Network for Environmental Health (DiNEH) Project is a collaboration brought about by a request of the Eastern Navajo Health Board to investigate the relationship between environmental contaminants and kidney disease among the population. This is the first comprehensive study of the uranium exposure situation on Navajo land. The National Institute of Environmental Health Services funds the DiNEH Project. Two papers have come out of the project to date, one describing the qualitative process analysis of establishing a relationship with the community (deLemos et al., 2007) and one describing the process of arriving at a strategy for communicating exposure risk to Navajo tribal members (deLemos et al., 2009). Collaborators include the Crownpoint Service Unit of the Navajo Area Indian Health Service, the Southwest Research and Information Center, and the Community Environmental Health Program of the University of New Mexico. The Churchrock Uranium Monitoring Project was through the same collaboration focusing on the physical environment. Early indications are that there are higher levels of diabetes, kidney disease, and autoimmune disease in areas with greater exposure to uranium.
Community-based participatory research is necessarily slow because it is cooperatively engaging community members in a co-learning process involving capacity building in an attempt to empower participants (Minkler & Wallerstein, 2008). One of the difficulties encountered in epidemiologic studies of smaller populations is that predictor models of exposure and illness all done on the Navajo may not be applicable in other contaminated regions, for example, the San Mateo Creek area, where Lewis is considering a study funded by the New Mexico Department of Health (J. Lewis, personal communication, November 18, 2009). Lewis points out that Navajo tend to have a different morphology of the lungs that may lead to a different distribution of particulate matter. In addition, the question of genetics versus exposure is difficult when the population is unique and uniquely located. She talks about “interocular” epidemiology—what is right before the eyes—in her experience of the dozens of cancers, autoimmune disease in women, and a “Navajo neuropathy,” which seem worthy of being studied in connection to mine proximity. Lewis says, “There is a need to use other methodologies in the replication of statistical principles when you are dealing with tens of peoples, not thousands.”

Navajo neuropathy was identified by IHS physicians in young children and thought to be a newly discovered phenomenon related to an inborn error of metabolism. Children experienced febrile illness with hepatomegaly and coagulopathy, meningism, clonic jerks, metabolic acidosis, weight loss, failure to thrive, and progressive weakness. Physical findings included bilateral corneal scars, pectus carinatum, hepatomegaly, partial resorption of distal digits, and cryptorchidism (Appenzeller, Kornfeld, & Snyder, 1976; Singleton et al., 1990). There were no environmental factors, which may reflect an incomplete epidemiology possibly associated with not asking the right questions in the right way because although water supplies might not have been shared, many of the water supplies were actually cisterns created by craters left from dynamiting to expose ore; on occasion tailings sludge was found to be a good mix with cement for hogan floors. Rosen and Mushak (2001) reported a similar case of two sisters with progressive deterioration of their hands and arms that they attributed to fetal exposure to uranium waste from abandoned mines.

The Bluewater Downstream Alliance (BVDA) is a group of residents mobilizing in response to contaminated drinking water as a result of uranium mining who is “fighting for environmental justice against the Goliaths of the uranium industry and often against the very U.S. government regulators who should have protected our health and environment in the first place” (BVDA, 2009, para. 4). According to Candace Head Dylla, one of the organization’s founders, in 1958, the Homestake Mine began operation of a uranium mill to process uranium ore that had unlined tailings ponds and uncovered tailings that was spread by the wind (C. H. Dylla, personal communication, November 22, 2009). By 1961, there was evidence of alluvial aquifer pollution; in 1975, the water was found unsafe, and in 1977, the Department of Health declared that the residents should not drink the water. A group of Murray Acre residents, living one-half mile from the site, sued the now-Barrick Gold Corporation, a suit that was settled in 1985 with the requirement that Barrick Gold supply drinking water and clean up the pollution within 10 years. The area became an EPA superfund site. “Not only has the water not been cleaned
up, the surrounding aquifers are contaminated” (C. H. Dylla, personal communication, November 22, 2009). Dylla says that three more aquifers are now contaminated. She is a long-time resident of the rural area outside Milan, with a population of 200 households. Her father was a carrot farmer who later worked as a miner. The family raised and butchered livestock and grew their own food. She says, “In those days the message from everywhere was, ‘You are like soldiers.’ Mining was a patriotic duty; guys felt good; they never would have got such a good paying job if it wasn’t for the mines.”

Dylla says that when the BVDA was first established, some members were in favor of new start-ups of uranium mining; they just wanted their water cleaned. Now the group’s slogan is, “No start-up before clean-up.” Another frustration of the BVDU in its advocacy against new mining and political action to get the mining waste cleaned up is having to deal with multiple agencies: the EPA, NRC, New Mexico Environmental Department (groundwater division, superfund), and the State Engineer. When the EPA assembled agencies that would need to be involved in the clean-up of Ambrosia Lake, there were representatives from 29 different groups. Dylla says, “There are people out there drinking and showering in contaminated water; if we weren’t yelling at this at every meeting, nothing would be done.”

Although the original purpose of the organization is environmental advocacy, Dylla recently sent out an informal survey. She says that so many of the community either worked or had relatives that worked in the mines that it would be difficult to tease out the effect of the tailings. The preliminary results of the surveys showed “a lot more thyroid than I expected, all kinds of cancers.”

Dylla’s anger at injustice becomes palpable in her statement from a community meeting, when she told representatives from mining companies, “I want you to take this message back to your bosses: our community is like a big ball that you keep throwing back and forth to each other. We are powerless, out of control. That's how you make people radical” (Martin, 2007).

Linda Evers is an organizer of the Post ’71 Uranium Exposure group, which is a community-based organization dedicated to bringing public attention to the fate of the post-1971 miners who continue to get sick with the cancers and accompanying illnesses addressed by RECA. In theory, the safety strategies and enforcement of contaminants should have prevented continuing illnesses. Evers lives in Milan across from a tailings pond. Her two children were both born with congenital malformations—one “with his intestines wrapped in muscle” and one “with a pelvis without sockets” (L. Evers, personal communication, November 13, 2009). Her father died of lung cancer, and her grandfather died of lung and pancreatic cancer. An uncle died of lung, brain, and pancreatic cancer. A neighbor had two sons who died of cancer. She says that she is concerned about the second- and third-generation repercussions of uranium mining.

Evers’ frustrations include the fact that no health studies have taken place in the area. She says, “We have always been considered an expendable group of people. This was a beautiful, fertile valley and they [uranium mines] have totally destroyed it” (L. Evers,
personal communication, November 13, 2009). She wants to expand RECA coverage, as well as the compensable diseases. As part of this process, she designed, distributed, and is now collating a health survey. She says, “We are old miners and millers, not scientists or researchers.” Of 537 Hispanics, 195 Whites, and 189 Native Americans reporting medical conditions, she found 61 Hispanics, 20 Whites, and 17 Native Americans who cannot afford treatment. A comparison between pre-1971 and post-1971 workers showed little difference in reported respiratory conditions (71% vs. 68%, respectively) and chronic skin blisters (30% vs. 25%, respectively); Post ’71 Uranium Workers Committee, 2009). Worker medical conditions included disorders of the heart (49%); head, eyes, ears, nose, and throat (47%); lungs (43%); brain (41%); gastrointestinal system (35%); musculoskeletal system (35%); skin (30%); kidneys (30%); immune function (19%); and reproductive system (18%; Post ’71 Uranium Workers Committee, 2009). She admits that she has not established a way to discriminate between occupational exposure and the environmental exposure resulting from living on and around the waste, but she found that 72% of the survey participants reported recognized uranium-related medical conditions.

The RECA (2009) recognizes eight conditions for compensation: lung cancer, pulmonary fibrosis, silicosis, cor pulmonale, pneumoconiosis, renal cancer, nephritis, and kidney tubal damage. The Occupational Safety and Health Administration also recognizes leukemia, lymphoma, multiple myeloma, chronic skin blisters, and hyperpigmentation, and the Centers for Disease Control and Prevention recognizes tuberculosis. The EPA also recognizes asthma; chronic bronchitis; chronic hacking cough; emphysema; shortness of breath; leucopenia; and bone, head, and nasal passage tumors. Evers says, “Who decides what people get thrown away?”

In 2005, the Navajo Nation Council passed a resolution prohibiting uranium mining or processing on any site within Navajo Indian Country (McLemore, 2007). Despite the community action of organizations such as BVDA and Post ’71, both Milan and Grants’ uranium production has increased from 85.38 to 113.87 million pounds since 1995, whereas U.S. production has decreased from 5.82 to 3.74 million pounds of U3O8 (UXC Consulting Company, 2009). Uzbekistan, Ukraine, Russia, and Kazakhstan (Former Soviet Union [FSU]) now produce 39.40 million tons of U3O8 compared with 16.07 million tons in 1995 and are currently the biggest producers in the world. Although most countries’ production has decreased or marginally increased, Australia, Namibia, and the FSU have more than doubled their production (UXC Consulting Company, 2009).

The Mining and Minerals Division of the Energy, Minerals and Natural Resources Department approved nine applications, and the National Regulatory Commission had approved a license for in situ mining near Churchrock as of April 2009 (New Mexico Legislative Council Service, 2009).

Cibola County Manager David Ulibarri, Milan Mayor Tom Ortega, and Grants Mayor Joe Murrieta all support the resumption of uranium mining. Uranium Resources, Inc (URI) Executive Vice President Richard Van Horn promises over 3,000 directly related
jobs, including 200 high-paying jobs in the Grants–Milan area (Tiffin, 2007; Ulibarri, 2008). URI claims that in situ mining “is highly regulated at every phase of operation, and monitor wells surrounding the mine site are required, ensuring protection of the surrounding aquifer. Unlike conventional mining, in ISR [in-situ recovery] the aquifer must be restored to baseline conditions” (URI, 2009). Yet, of the 7 million pounds of uranium produced by in situ recovery in Texas, not one of the mines has restored the sites to pre-recovery condition, and in fact, the company has a pattern of petitioning the state to raise the allowable contaminants, claiming that they made a good faith effort to restore the land to its pre-mined condition (Rice, 2007).

Aftermath

Smokey Rhodes is one of the RECA claimants. He is 67 years old, has been on dialysis for 20 years, sits in a wheelchair with oxygen via nasal canula and a hearing aid in his left ear, and has a left leg amputation. He says, “Too bad those environmentalists are so short sighted. Why can’t they get along with the mining company? We lost 7,500 jobs in the Grants area when the mines closed down” (S. Rhodes, personal communication, November 24, 2009). “The cost of mining is awfully expensive—what the American people and those environmentalists don’t understand is a $25 stake [claim] may take $2 million to develop.” Smokey quit school in the ninth grade and began working in the mines from the time he was 19 until he began dialysis in 1989. He has worked in silver and copper, as well as uranium, mines. In the 1960s, he was making $40,000 to $45,000 a year. He reports he was aware of safety issues in the mine. When he first started, the Atomic Energy Commission brought mice in cages to see how long they would live in an unventilated area in the mine. “They lasted about 2 weeks,” Rhodes said. He reports that all dusty areas had ventilation masks, but it was not mandatory to wear them. All the mines he worked in had shower facilities. He also preferred working on the night shift: “The day shift was bad if you wanted to make money; there was always people telling you about safety, only peoples against it [mining] worry about it. I was pretty proud of what I was doing and I wouldn’t change a day.”

References


7 Criminal Justice Falls Short: Violence Against Women on the Navajo Reservation

Loyce J. Phoenix, MPH, MM, RN

Let us put our heads together and see what kind of life we can make for our children.

—Sitting Bull

This chapter discusses the issues surrounding the lack of criminal justice for women living on the Navajo Reservation and includes a short review of American Indian law as it relates to the Navajo Nation. To shed light on the problems associated with the health and welfare of women living on the Navajo Reservation, there is a discussion of the federal and tribal laws that govern violence against women. To fully elucidate the problems regarding the crimes committed on the Navajo Reservation, there is a discussion on the Major Crimes Act and the Dawes Act, otherwise known as the General Allotment Act.

This chapter also discusses the similarities of vulnerability in sexual assaults against women living in rural American and women living on the Navajo Reservation. The chapter describes the efforts of community members and nurses working in Chinle, Arizona, who hope to address the issues surrounding sexual assault and violence against women. Navajoland Nurses United for Research, Service and Education, Inc. (N-NURSE), a nonprofit nurse organization, applied for and was funded by a Department of Justice grant to increase Sexual Assault Nurse Examiner (SANE)/Sexual Assault Forensic Examiner (SAFE) providers in Indian Country and to assist in the formation of a Regional Alliance Against Sexual Assault. This chapter describes the seriousness of violence against women in rural and frontier areas to show how a group of concerned nurses can make a difference.

Background

Navajo Nation

The Navajo Reservation is geographically located within the states of New Mexico, Arizona, and Utah. Most of the communities located within the Navajo Reservation are rural, with limited police protection for the population of 170,254 (Shirley, 2008, p. 3). According to the Navajo Nation census data, there are 255,543 registered tribal members, who may or may not live on the Navajo Reservation. The Navajo Nation and the United States signed the Treaty of 1868, which established the formal government-to-
The Navajo Nation faces significant challenges in providing for the safety of our Navajo People. The Division of Public Safety has the daunting responsibility to protect the Navajo People and those visiting our land, investigating crimes, and maintaining the Nation’s detention facilities. We lack the resources and the manpower to properly secure and police a territory the size of West Virginia with such a large population. As a result, our Navajo People are faced with increased incidences of criminal activity perpetuated by individuals who know we lack the police officers to track them down, and the facilities to detain them. (Shirley, 2008, p. 10)

In general, Native American reservations were established by the federal government through Executive Orders, as a result of treaties that were signed after the Indian Wars. In the late 1880s, there was a public flight of non-Native Americans moving west for more land; therefore, the federal government passed the General Allotment Act, otherwise known as the Dawes Act of 1887. Allotments of 160 acres were assigned to Indian heads of households to be used as farming plots. The allotted lands were to remain in trust to the United States for 25 years or longer if extended by the President, and then the land would be owned by the Indian Allottee free of all encumbrances. However, after 25 years, the land became subject to state property tax, which resulted in many forced sales of the allotted land. The Allotment Act led to a substantial decrease in the acres of land held by Native Americans. In 1887, Native Americans held 138 million acres; by 1934, the amount of land had decreased to 48 million acres. It should be noted that 20 million acres of the 48 million was desolate, desert land, basically unsuitable for farming. The end result of the Allotment Act was to separate the Indian from his land (Canby, 2009).

A major portion of the Navajo Reservation located in Arizona is part of the original designated reservation held in trust by the federal government. However, a majority of the reservation lands located in New Mexico is called the Checkerboard Area as a result of the Allotment Act, which left large sections of land interspersed between Indian-allotted lands, state lands, and excess lands given to non-Indian settlers.

Native Americans and Rurality

According to the National Rural Health Association (2007), problems experienced by rural communities are very different from those in urban areas. Economic factors, cultural differences, limited social systems, isolation, limited educational opportunities, and lack of recognition of problems by legislators all impede rural Americans from leading normal lives.

Violence and rape in America are significant problems in both urban and rural areas, but especially on Indian reservations, which have very limited police protection and few core
public services. Native Americans throughout America are very similar to other rural populations and have similarly low socioeconomic status, low education levels, and a lack of employment opportunities. Isolation and limited health care facilities for small populations provide multiple barriers to providing assistance to Native American women, and according to Dr. Everett R. Rhoades and Kymberly Cravatt, “Many Indian communities remain frontier in nature” (Glasgow, Morton, & Johnson, 2004, p. 128). Table 1 provides a snapshot comparison of rural and urban health statistics.

Table 1. A National Rural Health Snapshot

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of U.S. population</td>
<td>&lt;25</td>
<td>75</td>
</tr>
<tr>
<td>Percentage of U.S. physicians</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>No. of specialists per 100,000 population</td>
<td>40.1</td>
<td>134.1</td>
</tr>
<tr>
<td>Population aged 65 years and older, %</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Population below the poverty level, %</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Average per capital income</td>
<td>$19,000</td>
<td>$26,000</td>
</tr>
<tr>
<td>Non-Hispanic White population, %</td>
<td>83</td>
<td>69</td>
</tr>
<tr>
<td>Adults who describe health status as fair/poor, %</td>
<td>28</td>
<td>21</td>
</tr>
<tr>
<td>Adolescents (ages 12-17) who smoke, %</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>Male death rate per 100,000 (ages 1-24)</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>Female death rate per 100,000 (ages 1-24)</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Population covered by private insurance, %</td>
<td>64</td>
<td>69</td>
</tr>
<tr>
<td>Population covered by Medicare beneficiaries, %</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Medicare beneficiaries without drug coverage, %</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td>Medicare spending per capita compared with U.S. average, %</td>
<td>85</td>
<td>106</td>
</tr>
<tr>
<td>Medicare hospital payment-to-cost ratio, %</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>Percentage of poor covered by Medicaid, %</td>
<td>45</td>
<td>49</td>
</tr>
</tbody>
</table>


The number of violent acts against women has been increasing in rural areas, and the data spanning from 1980 to 1999 show that the rates of family and intimate partner murders were highest in counties defined as rural (Gallup-Black, as cited in Lanier & Maume, 2009). The percent change for rural counties was a 60% increase. Given the results of Gallup-Black’s analysis, the location does make a difference, especially if it is rural. In a review of interviews of shelter-based women, women living in rural areas reported severe violence leading up to the woman leaving the home and seeking a protection order. Lanier & Maume found that social isolation produced a weakened social support system and lack of social control. Isolation is both geographical and sociocultural, and in most rural areas, the women lacked the structural resources that are available in more affluent communities.
In their discussion regarding the social basis of disparities in health, Diderichsen, Evans, and Whitehead (as cited in Evans, Whitehead, Diderichson, Bhuiya, & Wirth, 2001) stated that “the ubiquity, both over time and space, of the observed pattern of systematically poorer health and a shorter life span is associated with each successively lower position in any given system of social stratification (Macintyre 1998)” (p. 13). In light of the literature that supports the idea that poverty is the major determinant of inequities of health, I would venture to say that it also affects the communities and the individual’s social support system, social isolation, and social disruption. Structural inequities, such as governmental policies or laws, control, and regulation, and the distribution and control over resources are at the center of the issue.

**Government-to-Government Relationship and the Major Crimes Act**

In the early 1830s, the U.S. Supreme Court affirmed the legal status of Indian tribes as political entities with inherent governmental powers that are subordinate only to the federal government. The U.S. Constitution specifically recognized Indian tribes as sovereign bodies with which Congress could exercise its powers under the “Commerce Clause” (Duthu, 2008, p. xxv). The Supreme Court gave rise to the trust obligation in that the federal government is to protect tribal political integrity and recognizes tribes as “self-governing sovereign political communities. Under Justice John Marshall, the Supreme Court described the legal status of Indian tribes as “domestic dependent nations” (Duthu, 2008, p.xxv).

Despite the government-to-government relationship between tribes and the U.S. government, in 1887, Congress passed the Major Crimes Act, which states that if a major crime is committed by an Indian in Indian Country, that individual would have to be tried in federal court. In the Dakota Territory in 1881, a Sioux Indian named Crow Dog committed murder. He was convicted in the U.S. District Court and was sentenced to death. Crow Dog appealed, and the case went to the U.S. Supreme Court, which held that the murder of one Indian by another Indian in Indian Country was within the jurisdiction of the tribe. This also meant that federal territorial courts were powerless in this case. As a result, there was a public chorus of disapproval, and Congress reacted by passing the Major Crimes Act. The conviction was reversed, and Crow Dog was tried and convicted in federal court. The Major Crimes Act removed local tribal dispute resolution and moved it to the federal courts (Canby, 2009).

The crimes subject to federal jurisdiction by the Major Crimes Act (1885) include murder, manslaughter, kidnapping, maiming, aggravated sexual abuse, sexual abuse, incest, sexual abuse of a minor or ward, attempted rape, assault with intent to commit murder, assault with a dangerous weapon, assault resulting in serious bodily injury, assault against an individual under the age of 16, arson, burglary, robbery, and larceny. Because of the complexity of the Major Crimes Act, Table 2 exemplifies criminal jurisdiction for crimes committed on Native American Reservations.
Table 2. Major Crimes Act

<table>
<thead>
<tr>
<th>Identity of Suspect</th>
<th>Identity of Victim</th>
<th>Type of Offense</th>
<th>Criminal Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian</td>
<td>Indian or Non-Indian</td>
<td>Major crimes</td>
<td>Federal</td>
</tr>
<tr>
<td>Indian</td>
<td>Indian or Non-Indian</td>
<td>Non-major crimes</td>
<td>Tribal</td>
</tr>
<tr>
<td>Non-Indian</td>
<td>Indian</td>
<td>Any offense</td>
<td>Federal</td>
</tr>
<tr>
<td>Non-Indian</td>
<td>Non-Indian</td>
<td>Any offense, except federal crimes</td>
<td>State</td>
</tr>
</tbody>
</table>

Source: Shirley, 2008, p. 3.

According to an investigative report by Michael Riley, a “dysfunctional legal system lets serious reservation crimes go unpunished” (Chase, 2009). Sylvia Chase (2009) of the Public Broadcasting Service (PBS) also reported that law enforcement in Indian country has become “dangerously dysfunctional”:

Michael Riley in his interview with PBS, he states that “it became pretty clear, pretty fast that there was a large failure on the part of the federal government to prosecute many, many serious crimes on reservations. Our first task was to try and come up with some statistics about the rate at which they declined cases, because we heard over and over again that U.S. attorneys typically just decline a large percentages of cases. The first thing we were told by the Justice Department is that those statistics aren’t kept; and it turns out, in fact, they are kept, they’re just not published” (Chase, 2009).

In the 1972 study conducted by the National American Indian Court Judges Association, the procedures in a typical criminal case were described as follows:

The initial complaint or call for assistance is made to the reservation police who respond to the scene. Where the offense involves an Indian, either as a subject or victim, and the offense is a felony, reservation police call a criminal investigator from the Bureau of Indian Affairs [BIA] who generally is stationed on the reservation. He initiates the investigation and during this stage notifies the nearest FBI office. Many times, the FBI does not respond for several days. When the FBI arrives, the agent will generally re-interview the subject and any principal witnesses. The agent will then present the case to the U.S. Attorney, generally by telephone. There is a duplication of effort and responsibility between criminal investigators of the BIA and agents of the FBI. The results are that, while felonious offenses on Indian Reservations may be timely investigated by the BIA, the action stops at this point, awaiting the FBI and his telephone report to the U.S. Attorney. Generally, a good deal of time has elapsed since the investigation by the BIA and community feelings rise as to why the serious crimes are not handled in a timely manner. In most situations the offenders are Indians and are arrested initially on tribal charges and sometimes sentenced to tribal jail to remove them from the community while federal government takes considerable time to decide what, if
anything it will do by way of prosecution. (Federal Prosecution of Crimes Committed on Indian Reservations, as cited in Deloria & Lytle, 1983)

Even though this study was conducted in 1972, the process identified by the National American Indian Court Judges Association depicts the procedures that are still being used today by the BIA, FBI, and Tribal Law Enforcement Officials. A former U.S. Attorney, Margaret Chiara, said, “I’ve had [Assistant U.S. Attorneys] look right at me and say, ‘I did not sign up for this,’ they want to do big drug cases, white collar crime and conspiracy” (Chase, 2009).

According Sylvia Chase (PBS), in a recent three year period, U.S. Attorneys declined to prosecute over half of the serious assault cases brought before them, almost half the murder and manslaughter cases, and over 70% of child sexual abuse cases. In fiscal year, 2006, on reservations where the federal government handles felony prosecution, 658 rape cases were reported, and only 7% led to arrest. For aggravated assault, the figure drops to less than 4%. Lesser crimes are virtually ignored altogether. (Chase, 2009)

**Sexual Assaults and Rape in America**

According to the U.S. Department of Justice’s National Crime Victimization Survey (2007), there were 248,300 sexual assaults in the United States in 2007, and rape has increased by 60% since 1993. One of six American women, or approximately 17.7 million women, has been a victim of an attempted or completed rape in her lifetime. The lifetime rate of rape and attempted rape for women according to race is as follows: (1) all women, 17.6%; (2.) White women, 17.6%; (3) Black women, 18.8%; (4) Asian Pacific Islander women, 6.8%; (5) American Indian/Alaskan women, 34%; and (6) mixed race women, 24.4% (U.S. Department of Justice, 2007). Note that the rate for American Indian/Alaskan women was approximately double the rate of all women.

According to Rape, Abuse & Incest National Network (RAINN), sexual assault is one of the most underreported crimes, and if a rape is reported, there is a 50.8% chance of an arrest. If the arrest is made, there is an 80% chance of prosecution, and if there is a prosecution, there is only a 58% chance of a conviction. RAINN also reports that in the limited number of attacks reported, there is only a 16% chance the rapist will end up in prison (RAINN, 2008).

**Navajo Women and Sexual Victimization**

Navajo women and children living on the Navajo Reservation are at risk and are vulnerable population when violent crimes are committed. Crimes committed within the Navajo Nation have numerous jurisdictions, including tribal, federal, and state governments, depending on the identity of the victim and perpetrator, whether the individuals are Indian or non-Indian, and whether the crime is classified as a misdemeanor or a felony. There are other contingencies involved, depending on the state in which the offense was committed, as previously identified in the Major Crimes Act (1885).
Navajo Nation has a police force, courts, and jails but because of complex judicial jurisdictions, Navajo Police Officers have very limited powers. If the crime committed is a serious felony covered by the Major Crimes Act, local tribal police, state police, and even the state district attorneys have virtually no authority to investigate or prosecute. This has led to an environment of aggravation, especially when rape and sexual assaults go unprosecuted.

In her secondary analysis of the National Violence Against Women Survey data, Hamby (2008) stated that American Indian women are sexually victimized more than any other U.S. racial group and have very limited health services. The survey showed that, compared with other groups, American Indian women had suspicion of law enforcement and felt blame for the assault. She asserts that there were numerous barriers to help-seeking behavior, conflict between western and native values, language barriers, and poverty (p. 89).

On the Navajo reservation, most of the sexually assaulted women present to the emergency rooms (ERs) at the Indian Health Service hospitals located in Gallup and Shiprock, NM, and Winslow, Chinle, Tuba City, and Kayenta, AZ. Because of limited resources, most of these assault victims are not given forensic examinations at the time of the ER visit due to the limited number of medical and nurse forensic examiners at each hospital (N-NURSE, 2009). The Navajo Police may or may not be able to undertake an investigation; even if they do conduct an investigation, they must submit their case to federal prosecutors, who may or may not proceed with an investigation and/or prosecution. The limited number of police officers cannot begin to adequately cover the vast distances and number of communities located on the Navajo Reservation. As reported by Navajo President Shirley, “the Navajo Department of Law Enforcement is currently funded at a staggering low ratio of .06 police officers per 1,000 people, compared with the national average of 2.5 per 1,000” (Shirley, 2008, p. 6).

The Navajo Division of Public Safety reported that a total of 51,005 crimes were committed on the Navajo Reservation, with following number of cases from 2000 to 2003: homicide, 25 to 26; sexual offenses, 623 to 728; robbery, 12 to 99; assault, 6,799 to 8,069; burglary, 1,260 to 1,455; larceny, 1,970 to 2,229, and auto theft, 1,091 to 1,352. The Navajo Nation population increased by 21% from 1990 to 2000, with limited increases in funding for additional police officers. The Navajo law enforcement infrastructure, detention centers, jails, and offices have deteriorated with age; with limited funding and the increase of serious crimes; this state of affairs raises grave concerns for the public safety of the Navajo population (Shirley, 2008).

The Navajo Department of Law Enforcement reported that 289,774 responses were made to calls for service in fiscal year 2004, and 56,768 individuals were processed by law enforcement officers, with 39,289 individuals being arrested and booked into Navajo detention facilities. The most alarming statistic is that 3,000 individuals who committed a crime were not processed into the jails following their arrests due to a lack of jail bed spaces. These individuals were usually arrested and released (Shirley, 2008).
The U.S. Department of the Interior (2004) report on Native American detention facilities stated that “tribal jails fall short of basic professional standards due to a shortage of operating funds, training, and technical assistance. . . . operations are substandard in such critical areas as staff and inmate safety, inmate services and programs, fire safety, communicable disease prevention, sanitation, and hazardous substance control” and that tribal detention facilities were a “national disgrace”(U.S. Department of Interior, 2004).

Policy Recommendations

In review of all of the legal, jurisdictional complexities and interagency conflicts, the problem of protecting Native American women from sexual assaults still remains a daunting task.

- Develop a regional alliance between the health care providers, tribal officials, tribal law enforcement, BIA, FBI, U.S. attorneys, and community organizations.

- Develop future legislation to correct the judicial problems related to violence against women. It may take action on the part of the federal government, the federal courts, state governments, state courts, and tribal action. Native American families must pursue their elected officials at the local, regional, state, and federal levels to change the political will to put practical solutions to work.

- Support nurses and other health professionals; increase the number of SANE/SAFE providers who treat the victims of sexual assaults with the resources needed to ensure justice for the victims.

- Community organizations and public officials must also lend their voice to advocate for new federal legislation.

N-NURSE Addresses Sexual Assault

The legal issues surrounding rape and sexual assault of women and children on the Navajo Reservation are monumental and cannot possibly be solved without major changes in the criminal justice system. In 2009, the organization N-NURSE received a grant from the Department of Justice to develop a Regional Alliance to address the problem of sexual assault on the Navajo, Hopi, and Zuni Indian Reservations. With the commitment of the Navajo Nation President and the First Lady, the Regional Alliance will begin to build the capacity of community-based partners, create collaborative efforts, and create a forum for development of policy formulation for tribal and federal courts.

Currently, there are only five SANE/SAFE-trained professionals serving the entire population of the Navajo Nation, but with the additional funding, an additional 16 health professionals will be trained to become SANE/SAFE examiners to perform the forensic exams necessary for felony investigations and prosecution of perpetrators (N-NURSE, 2009).
Interdisciplinary workshops will be conducted to develop the capacity of health care professionals, law enforcement, and judicial personnel within and across the Regional Indian Tribes. The project will focus on increasing the number of collaborating partners in Northern Arizona and New Mexico serving Native American survivors of sexual assault (N-NURSE, 2009). This joint effort of concerned nurses, N-NURSE, Navajo Area Indian Health Service Nurse Consultant, and Chinle Service Unit, with the support of the Navajo Nation President, can be the beginning of a solution to this judicial nightmare.

Despite the enormous need for sexual assault nurse forensic examiners, this project is just the beginning of bringing to light the problems associated with crimes being committed on the Navajo Nation, especially victims of sexual assaults, domestic violence, and stalking. The Regional Alliance and N-NURSE group will develop an analysis of all the gaps in service and policy needs. These results of the project will be used to help in policy formulation at the various levels of governmental control.

**Conclusion**

The ultimate goal for the future is to provide a safe environment for women and children on the Navajo Reservation, which will require a change in an acknowledgment of the ethical, moral, and judicial inequities. Major changes will be required not only in the judicial system but also in the health care system and social support that will address the needs of the victims.

As the population continues to increase, police protection and the ability of victims to obtain justice are imperative. Development of an effective process for arrest, investigation, and prosecution of major crimes will require the federal court system, BIA, FBI, Congress and the Navajo Nation to change the current system that has led to the current multi-agency disaster.

Identifying all of the complexities of the system will only be the beginning of a system development that will support the efforts of the Navajo Nation. The traditional goal of the Navajo People is to live in peace and harmony with family and the land. To provide a peaceful coexistence, there must be justice and equal protection under the law.

**References**


Primary care is considered the foundation of medical care. The primary care physician (or family physician) has long been considered the core deliverer of primary care medicine. The primary care physician is generally the first contact for the patient. The physician maintains the complete medical history of the patient and coordinates the patient’s total health care services. In many ways, the primary care physician is the key to effective medical care. Therefore, each person should have reasonable access to a primary care provider.

The state of California maintains an important database of the location of medical doctors (MDs) within the state. One of the applications of this database is to identify counties that are experiencing a shortage of primary care physicians. The data are also used to identify areas known as medical service shortage areas (MSSAs). Unfortunately, the database includes only MDs; it does not include doctors of osteopathic medicine (DOs), nurse practitioners (NPs), or physician assistants (PAs), who also practice primary care (Grumach, Chattopadhyay, & Bindman, 2009). The absence of data on these primary care providers gives an incomplete picture of who is conducting primary care in California.

It is the purpose of this chapter to (a) demonstrate the shortage of health care providers in the eight counties that comprise the Central San Joaquin Valley (CSJV) area of California, (b) highlight proposed and implemented solutions to alleviate the shortage, (c) examine the demographic characteristics of NPs and PAs, (d) provide a brief overview of the primary health care needs of the population of CSJV by focusing on the elderly, and (e) make recommendations and summarize the implications. This chapter will also address the need for NPs and PAs to be trained in geriatric medicine in order to care for the fastest-growing segment of the population.

In their summary report on the aging residents of CSJV, Miltiades and Flores (2008) predicted a dramatic rise in the number of elders in the area. They highlighted the urgent need for human service planners and providers to ensure adequate health care services for this segment of the population. It is clear that MDs alone will not be able to provide an adequate level of health care service to this group. It will be necessary to include NPs and PAs as primary health care providers. Of course, it is important that NPs and PAs be trained appropriately to meet the health care demand of the geriatric population. Because many of the elderly individuals in CSJV are members of minority groups (Miltiades &
Flores, 2008), it is important that potential students for NP and PA programs be aggressively recruited from those minority groups and be placed in rural primary care clinical settings.

NPs and PAs, who are not considered in census data as providers of primary health care, could be referred to as the *hidden health care providers*. Similar to their MD counterparts, they diagnose and treat a variety of acute and chronic illnesses. However, they are not counted when California counties report their primary health care providers to federal, state, and local agencies to determine the health care provision status of their residents. When these important health care providers are not counted as primary care providers, the ratio of providers to the population is unrealistically low.

Despite incomplete information regarding the number of NPs and PAs in the eight counties of CSJV designated as MSSAs, it is known that many NPs and PAs are serving in areas of unmet needs, in particular, in primary care clinics in rural settings. Also missing are data on how many of those NPs and PAs are caring for residents of skilled nursing facilities (SNFs), where the frailest of the elderly reside. Nationally, 20% of NPs (American Academy of Nurse Practitioners, 2009) and 22% of PAs (American Academy of Physician Assistants, 2002) work in rural settings. Nationally, 10% of NPs and 0.4% of PAs care for elderly residents in SNFs (Intrator et al., 2005).

The California Healthcare Workforce Policy Commission (CHWPC) reported data in November 2009 from 9 of the 22 NP schools and 7 of the 10 PA schools in California showing that an estimated 13.5% of their graduates work in rural settings. It could be argued that if data were collected from the 16 missing NP and PA schools (half of the schools), the percentages of NPs and PAs working in rural primary care clinics would be higher, nearing national figures. Despite the hidden workforce of NPs and PAs serving the CSJV, the area continues to lag behind the rest of the state in most health care indicators. For example, the health of older Californians worsened between 2001 and 2005, with more emergency room visits by percentage because these older adults did not have access to primary care clinicians (Wallace, Lee, & Aydin, 2008).

The frail elderly who are cognitively impaired are especially at risk for hospitalization (Miller, Schneider, & Rosenheck, 2009). The decision to hospitalize an older person from an SNF begins with an evaluation by an emergency room MD, NP, or PA, often with incomplete information from the SNF. This puts patients who are transferred from an SNF at risk, in contrast to the patient who is referred from a doctor’s office or clinic in which the physician, NP, or PA, based on a possible long-term relationship with the patient and family, can call in the medical report to the emergency room, giving a complete history of the patient that includes the psychosocial history and functional condition of the patient. This is often the missing critical piece of information that does not get relayed to the emergency room personnel when the patient is transferred from an SNF (Snow et al., 2009).

Racial and ethnic health disparities in California are striking for some health conditions, such as diabetes, which is almost twice as prevalent among older Latinos and African
Americans than among older non-Latino Whites. The CSJV is notable for having the state’s highest rate of diabetes among the elderly (Wallace et al., 2008). The need for expensive tertiary or emergency room care will continue to worsen because of the lack of primary care clinicians in the CSJV. Given the poor health conditions of CSJV residents, rural CSJV residents’ health would undoubtedly be worse without NPs and PAs working in the primary care rural settings.

The decrease in MDs entering primary care has been documented (Council on Graduate Medical Education [COGME], 2000), and it is posited that NPs and PAs will play an even larger role in the future by being recognized and counted as primary care providers. In February 2008, the Department of Health Resources and Services Administration (HRSA) proposed that NPs and PAs count as one half of a primary care MD in establishing population ratios (Church & Luger, 2008). Many other proposals have been suggested that would impact the financial health of rural clinics. The National Association of Rural Health Clinics (NARHC) opposed all recommendations but made suggestions to improve the way HRSA goes about making the changes (Church & Luger, 2008). The NARHC agreed with the proposal that NP and PA data should be collected and added to the ratio but argued that current data are not collected in all states, which would result in incomplete data. If all states were to have a reliable method of tracking where NPs and PAs work, NARHC would support the change. The potential negative financial impact on rural clinic sites that are designated as federally qualified health clinics is that clinics with this designation receive higher reimbursement rates per patient (Brenda & Lugar, 2008). Ironically, the status was obtained in part because of a shortage of primary care providers (MDs only), and adding NPs and PAs to the count would endanger the clinics’ status and reimbursement rates. NARHC has a valid argument for not wanting the change. For example, in the most populous state in the union, only half of NP and PA schools report their data to the state of California.

The Primary Care Provider Shortage in the Central Valley

Each year, California publishes data regarding the shortage of primary care physicians. Research by COGME in 2000 confirmed that medical students are avoiding the specialty of primary care, in large part because salaries are much lower for primary care physicians than for physicians in other specialties. Long hours, high patient volumes, and comparatively low status also play a role in the lower number of medical students choosing primary care. When asked what specialty they wish to pursue, many medical students use the phrase “hit the ROAD” (radiology, ophthalmology, anesthesics, and dermatology, each of which provides a higher salary, better working conditions, and higher status than primary care). The average debt load on completion of medical school is $155,000. The mean salary for a primary care physician in California is $161,200, whereas the median salary for specialty physicians is $200,000 or more. It is no wonder that physicians are not willing to enter primary care with such a high salary-to-debt load ratio.

It was estimated by the COGME (2000) that an adequate supply of primary care physicians is 60 to 80 per 100,000 population. The eight counties in CSJV are all well
Federal incentives have been designed to attract medical students to primary care medicine, including school loan repayment for specializing in primary care and for serving at a clinical site in a federally qualified Health Professional Shortage Area (HPSA). The national health core service loan repayment program is an example of an attempt to attract students in MD, NP, and PA programs to serve in primary care clinics in rural settings.

Statistics show that, despite the offer of loan repayment, the number of primary care physicians who work in rural CSJV is not adequate to meet the service needs of the area. There are proposals to include DOs in the database, which would improve the ratio of primary care service providers to population. However, this does not address the problem of the “hidden” health care providers: NPs and PAs.

All eight counties that make up the CSJV have Medically Underserved Areas and Populations (MUA/P) designations, with a significant amount in the rural areas, according to the state of California. However, it is currently difficult to obtain an accurate number of NPs and PAs practicing in MUA/P because data are not collected from all California NP and PA schools. The data come only from those schools that apply for state funds to assist in meeting the mission of providing diverse health care providers to work in MUA/Ps or HPSAs. In an attempt to clear up the confusion between whether a clinic site is considered HPSA or MUA/P, or both, HRSA has proposed that the designations be combined.

The current criteria used to designate areas as MUA/P include: (a) the percentage of the population at 100% of poverty levels, (b) the percentage of the population over 65 years of age, (c) the infant mortality rate, and (d) 1 primary care physician per 1,000 population (Miltiades & Flores, 2009). The average poverty rate in CSJV is 30.9%, which is higher than the statewide rate (four of the eight counties of CSJV are higher than the state rate). The federal government uses a different designation, HPSA, which is given to areas that demonstrate a shortage of health care providers on the basis of availability of primary care physicians, mental health providers, or dentists. This designation is based on the MSSA boundary, the population to practitioner ratio (with a threshold of 1 provider to 3,000 population), and available access to health care. All eight CSJV counties are designated HPSAs, which is a tougher designation to obtain compared with the designation of MUA/P. To highlight the difference in designation, 5 million (15%) of California’s population live in primary care HPSAs, whereas 6.3 million (18.5%) reside in MUA/P (Figures 2, 3, and 4). This makes it possible to have a clinic site be designated an MUA/P but not an HPSA site. This is an important difference because designation requirements for selected federal loan repayment programs are available if a medical school graduate serves in an HPSA or a combined HPSA and MUA/P but not in an MUA/P alone. Such confusion clarifies why HRSA has made the attempt to combine the MUA/P and HPSA designations. NARHC did not totally object to combining the two but made a recommendation that if HRSA were to combine the two, the ratio of population to primary care provider for HPSAs should be 2500:1, citing that most managed care plans identify a target ratio of 1500:1. Having the different ratios for each accounts for the difference in the numbers of Californians who live in MUA/P compared with HPSAs.
Currently, 15 programs provide graduate data: 8 NP schools, 6 PA schools, and 1 combined NP/PA program (California Association for Nurse Practitioners, 2001; California HealthCare Foundation, 2006). Unless an NP or PA school is applying for state funds (approximately half of them do), it does not have to track its graduates’ place of employment, where its graduates train, or how many of its students are considered minority by the definition used by the state of California. The California Healthcare Workforce Policy Commission (CHWPC) focuses on these three criteria when ranking schools for funding. This year, 12 NP schools and 3 PA schools did not apply for state funds. As mentioned previously, if a school’s graduates were included, some of them
could be employed in rural communities, providing primary care and thus increasing the number of NPs and PAs who practice in rural areas to equal the national rates. This is why it is recommended that these NPs and PAs provide the necessary employment data when renewing their state licenses (as MDs currently do) so that the ratio of primary care providers to population can be calculated. With the collection of NP and PA work site data, NPs and PAs would no longer carry the label of hidden health care provider.

Figure 2. Designated primary care Health Professional Shortage Areas in the San Joaquin Valley, California. Source: U.S. Department of Health and Human Services, 2009.
California’s Solution to Alleviate the Medical Shortage Areas

The Song-Brown Family Physician Training Act of 1973 resulted in the creation of the CHWPC (also known as the Song-Brown Commission; Office of Statewise Health Planning and Development, 2010). The intent of the mission is to increase the number of health professional training slots in established medical schools, to provide health care in medically underserved areas, and to provide financial support to those family practice residencies that meet this mission. The commission is charged with review of medical, NP, PA, and, most recently, nursing schools that apply for state funds and adhere to the mission of the original intent of the legislation. To achieve a high rank and thus receive full funding for their requests, schools should strive to: (a) have a diverse student body, (b) provide training in underserved areas, and, most importantly, (c) have their graduated students work in medical shortage areas. These schools provide data to the Commission to demonstrate that their graduates are serving in the medical and nursing shortage areas.
of California. These data are discussed in relationship to the counties that make up CSJV, which are some of the poorest counties in California.

Figure 4. Medically underserved areas and medical underserved populations represent 6.3 million Californians (18.5% of California population; Chung, 2009).

Some medical practitioners set up long-term practice in the rural areas of California; however, it is more likely that new medical practitioners serve the time required for having the maximum portion of their loans repaid and then leave the area for an urban practice. Research shows that students who come to school from rural areas are likely to return to their hometowns to practice. Minority primary care practitioners (MDs, DOs, NPs, and PAs) are likely to serve minority populations, as well as the poor and/or uninsured (designations that are likely to overlap). Thus, it is important for schools to admit students that meet these profiles (Robert et al., 2009).

Schools that apply to the Song-Brown Commission for state support present annual data regarding graduates during current year and the previous 3 years. The Commission
members, representing consumers, physicians, NPs, PAs, RNs, and state university administrators, meet three times per year to use these data to rank the applying programs in terms of how they are fulfilling the mission of Song-Brown. Each of the three meetings focuses on a specific group of medical providers: NP, PA, or RN. (Unfortunately, 5 of the 15 seats on the Commission are currently vacant.) Program directors from the applying schools make their case before the Commission to supplement the data, after which the Commission members rank the proposals according diversity of student body and placement of graduates in sites appropriate to fulfill the mission of serving underserved sites. The underserved area that is the focus of this chapter is the CSJV.

**NPs and PAs**

The NP and PA profession developed in approximately the same time frame: the late 1960s and the early 1970s. The first class of PAs graduated in 1967 from Duke University. The first NP program was started in Colorado by Loretta Ford in response to the lack of pediatric clinicians in rural America. Later, the model transformed from a pediatric focus to a family focus; thus, family NP training was added to the curriculum. The first class graduated in 1965. Currently, 80,000 PAs and 140,000 NPs are practicing in the United States, including 10,959 NPs and 7,337 PAs in California (American Academy of Nurse Practitioners, 2009; American Academy of Physician Assistants, 2002).

It is important to recognize that NPs and PAs are valuable members of the health care team, working alongside physician colleagues. HRSA’s recommendation regarding full-time equivalence (FTE) of health care providers was that NPs and PAs be considered one half of FTE to recognize the role of NPs and PAs in health care provision. The recommendation was rejected because of opposition by the NARHC, which pointed out the problem of inaccurate and incomplete data regarding these professional groups, as well as potential negative economic implications.

In some ways as important as FTE considerations is the view that practicing NPs and PAs hold about their professional roles in relation to the role of the physician. Based on legislation, the PA is more closely related to the physician and relatively more subservient to the physician than is the NP in terms of freedom to act independently. NPs see themselves as practicing collaboratively with the physician whereas PAs view themselves as assistants to the supervising physicians, as the name designates. Thus, although NPs individually may be more likely than PAs to object to the designation of one-half FTE, it is not likely that the NP professional group will oppose the designation, regarding it more as a service tracking device than as a denigration of their role in health care provision.

In California, it is legally mandatory for a physician to oversee the medical care provided by NPs and PAs. This state requirement has both negative and positive aspects. One negative aspect is that, as the result of a close relationship between the NP or PA and the physician, when the physician has completed rural area service requirements for loan repayment and leaves the rural area, the NP or PA is likely to leave with the physician (a
scenario more likely for the more physician-dependent PA than for the relatively independent NP). It is not likely that the NP who has been practicing with the physician in the rural area will be tempted to leave with the physician, because the NP’s role is recognized as distinct from and independent of that of the physician. Given this “nursing” versus “medical” model, it is the NP who will likely feel free to establish his or her own practice with a collaborating physician off site (Baldwin et al., 1998).

A positive aspect of the collaborative arrangement between the MD and the NP or PA is that the MD can hire NPs or PAs to cover the rural office, which can receive better reimbursement rates for providing care because the office is in a federally designated shortage area. The lower salary of an NP or PA compared with that of an MD can contribute to continuing services in rural areas. A collaborate arrangement between a physician and the NP or PA need not be geographically limited. Thus, a physician with a practice in a nearby urban area (e.g., Fresno) can be available to the NP or PA by telephone or computer, in effect realizing two practices for a single physician. The physician can visit the rural clinic once a week to sign charts, as required by state regulations. The physician benefits from this arrangement by earning a higher rate of income in the urban area while maintaining a vital rural area practice.

Such an arrangement between the urban-centered physician and the rural-centered NP and/or PA highlights the critical role of the “hidden” health care provider who is most likely to be addressing the primary care needs of CSJV residents. Just how many NPs and PAs are currently practicing in the CSJV rural area is an elusive number. The most accurate (but still limited) data are the reports of graduates from the past 3 years from schools that apply for Song-Brown funds.

**Central Valley Demographics**

In the eight counties that comprise the CSJV, there are an estimated 70 distinct ethnic groups speaking 105 different languages (Riordan & Capitman, 2006). The area constitutes one of the fastest-growing regions in the state. According to the California Department of Finance, the region’s population will grow by 1.5 new residents by 2020, an increase of 50% and almost twice the state average of 28.8%. The sheer numbers of this projected growth will demand a significantly larger NP and PA workforce. The age groups that consume the most health care—those under age 24 and those over age 65—are expected to almost double (Miltiades & Flores, 2008).

The first goal of Healthy People 2010 is to improve access to comprehensive high-quality health care services (Gamm, Hutchison, Dabney, & Dorsey, 2003). This is also the primary goal of Rural Healthy People 2010, the companion document to Healthy People 2010. Rural Healthy People 2010 reports that poor access to health care providers is a concern because of the severity of the shortage of primary health care providers. CSJV poverty rates are higher than those of all other counties in California. Geographical distance contributes to access barriers for rural residents. It is well known that the use of emergency room care by the elderly has increased, even more so among the growing number of frail elderly individuals residing in nursing homes (Miltiades & Flores, 2008).
Table 1 shows the distance between elderly nursing home residents in the five counties of the CSJV (Fresno, Madera, Merced, Kings, and Tulare; Figure 5) and the only Level-1 trauma center in the CSJV, which is in Fresno. A Level-1 designation means that the state

Table 1. Distance Between Nursing Homes and Medical Centers With a Level-1 Trauma Emergency Room Within a 100-mile Radius of Fresno, California, 2009

<table>
<thead>
<tr>
<th>Nursing Home Facility</th>
<th>City</th>
<th>County</th>
<th>Distance, (miles)$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chowchilla Memorial Healthcare District</td>
<td>Chowchilla</td>
<td>Madera</td>
<td>41.3</td>
</tr>
<tr>
<td>Westgate Manor Convalescent Hospital</td>
<td>Madera</td>
<td>Madera</td>
<td>25.3</td>
</tr>
<tr>
<td>Wish-i-ah Care Center, Inc.</td>
<td>Auberry</td>
<td>Fresno</td>
<td>38.0</td>
</tr>
<tr>
<td>Grace Home, Inc.</td>
<td>Livingston</td>
<td>Merced</td>
<td>73.1</td>
</tr>
<tr>
<td>Oakhurst Living Center, Inc.</td>
<td>Oakhurst</td>
<td>Madera</td>
<td>45.8</td>
</tr>
<tr>
<td>Tulare Nursing and Rehabilitation Center</td>
<td>Tulare</td>
<td>Tulare</td>
<td>46.4</td>
</tr>
<tr>
<td>Valley Care Center, Porterville</td>
<td>Porterville</td>
<td>Tulare</td>
<td>73.7</td>
</tr>
<tr>
<td>Browning Manor Convalescent Hospital</td>
<td>Delano</td>
<td>Kern</td>
<td>79.1</td>
</tr>
<tr>
<td>New Covenant Care Center of Dinuba</td>
<td>Dinuba</td>
<td>Tulare</td>
<td>31.6</td>
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<tr>
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$^a$Distance in miles to Community Regional Medical Center, Fresno. Distances measured using Google® maps.
Figure 5. Nursing homes within a 100-mile radius of Fresno, California, 2009.

has certified that the emergency room has basic in-house trauma services. All major motor vehicle accident victims or other major trauma patients would be sent to this center
because a trauma surgeon and team are in the hospital at all times, ready to care for any emergency. The Level-1 designation also includes a certified burn center. Residents of any of these five counties needing a higher level of care than that offered at a smaller community hospital would come to this major medical center, aptly named the Community Regional Medical Center.

Central Valley Seniors

The majority of the CSJV elderly residents live at home. Nationally, only 5% of seniors 65 or older reside in nursing homes or other residential facilities; that figure is 3% in California and 2.8% in the CSJV, accounting for about 10,000 elderly persons (Miltiades & Flores, 2008). NPs and PAs care for the majority of seniors in primary care offices or clinics (Kane, Keckhafer, Flood, Bershadsky, & Siadaty, 2003).

Research by the American Geriatric Society has shown that involvement of an NP or PA in the care of the frail elderly in nursing homes is associated with improved health outcomes and fewer emergency room visits, which translates to less of a communication problem between clinicians in the SNF and the emergency room (Coleman, 2002). The American Geriatric Society produced a position paper on the requirements for effective management of transitions in care (Coleman, 2002). Central to this paper is the communication regarding a common plan of care, a summary of care provided by the sending facility, the patient’s goals and preferences (including advanced directives), an updated list of medical problems, the patient’s cognitive status, and contact information for the family and the primary care provider. Given the nursing culture of the receiving facility (the emergency room) and the sending facility (the SNF), these clinicians often do not communicate well because of a perceived difference in power and status. This puts the frail elderly patient in the emergency room, whether cognitively intact or impaired, at risk (Intrator et al., 2005). This communication problem is less likely to occur when a patient is transferred from or referred by a primary care office.

Goal for Action

Averill (2003) pointed out that, despite the health care disparities of the rural elderly, research can identify strengths and assets in the rural community. An increase in NPs and PAs in rural settings to improve access to care for the elderly residing in rural settings is intuitively a logical solution. An increase in health care providers in rural community clinics to meet the health care needs of the elderly should translate into better outcomes for all residents. It is reasonable to predict that an increase in these health care providers would result in fewer visits to emergency rooms. Specifically, more NPs and PAs in rural clinics could mean that these clinics could accommodate more same-day appointments or walk-ins, or provide after-hours treatment, which would reduce the number of emergency room visits. However, it is difficult to measure the actual or potential impact of NPs and PAs on health care outcomes in rural communities, including CSJV, without complete and accurate data about how many of them are employed, where they are situated, and under what circumstances. For example, would the elderly residents of CSJV have fewer complications from diabetes and fewer emergency room visits if the ratio of health
providers to elderly residents increased from less than 60 to 70 or even 80 per 100,000 population? It is reasonable to assume that the answer to the question would be in the affirmative.

The California HealthCare Foundation reported in 2006 that if primary care offices were not so overwhelmed with patients and could accommodate same-day appointments or even after-hours office visits, visits to emergency rooms could be reduced. It has been estimated in California that about two fifths of all emergency room visits could be handled adequately in a doctor’s office or clinic (Wallace et al., 2008).

Of course, such improved services would also require more specific training and preparation of NPs and PAs for the care and treatment of the elderly patient. Only a few of the NP preparation programs in California provide Geriatric NP (GNP) specialization. This training allows the GNP to care for the elderly adult. However, many NP students choose to take the Family NP (FNP) program in order to have broader knowledge and capacity to treat all age groups, especially for service in rural communities, instead of GNP specialization.

The geriatric clinical training models for PAs are more like those for physicians, in which rotations provide clinical experience in a broad range of medical needs. Currently, the governing body that oversees PA education requires a geriatric rotation of no less than 90 hours. There is no such requirement in FNP education unless the school offers a geriatric track in which didactic hours are coupled with sufficient clinical hours in geriatrics to meet the requirements of the California Board of Registered Nurses (the certifying body for all NP programs) to allow the graduate to sit for national board examinations to become certified as a GNP. Supplementing this traditional training is a program called the Hartford Center for Geriatric Nursing Excellence (sponsored by the Hartford Foundation), which provides financial assistance to PhD students enrolled in a designated program. There are currently nine such programs across the country, all located in major universities. Their goal is to increase the number of geriatric nursing educators/researchers in schools of nursing.

**Research Recommendations**

Additional research is needed to identify the strengths and weaknesses of programs providing medical care to the rural elderly. Semistructured interviews with rural elderly residents could provide such information. Another area to be researched is the use of emergency rooms by SNF residents located in rural communities compared with those in urban settings. For example, would a large urban SNF employing a full-time day shift NP have fewer patient visits to the emergency room than those that do not have an NP in this role? What is the impact of counting NPs and PAs as one half of a primary care provider? Can such an FTE designation lead to improved health outcomes?
Policy Recommendations

This article brings into focus the advantages NPs and PAs currently offer and can offer to improve the health care of rural elderly residents in CSJV. It is critical to document the settings in which NPs and PAs currently practice in California. This will require a collaborative effort by the professional organizations that represent NPs (California Association for Nurse Practitioners) and PAs (California Association of Physician Assistants) to present to the legislature a bill that will require NPs and PAs to list their place of employment on renewal of their license.

This researcher supports the recommendation by NARHC that the target ratio of 1 provider for each 3,000 residents be changed 1:2,500 if the merger of HPSA and MUA occurs. To counter high turnover rates of NPs and PAs in rural clinic sites, it is strongly recommended that efforts be made to make their wages, salaries, and benefits comparable to those of similar practitioners in urban areas.

Reports by Bernard, Blanchette, and Brumme-Smith (2009) have shown the lack of training that physicians receive in geriatrics medicine. There has also been a call for NP and PA educators to improve the hours and didactic time devoted to geriatric medicine (Scherer, Bruce, Montgomery, & Ball, 2008). The shortage of nursing faculty is well documented, and adding extra training in geriatric content to graduate FNP students will be difficult because of an already packed curriculum. PA education will likely remain the same because the model that is currently used meets the standards. Additional geriatric training in all professions is strongly recommended.

Conclusion

Communication among all stakeholders must occur for NPs and PAs to be counted appropriately in the census of health care providers. Turf issues may play an important role in these census/FTE considerations. Physicians usually see themselves as the leaders of the medical care team, supervising NPs and PAs; such physicians may not support any move that would make the NP or PA appear to be more important or self-regulating, including counting each of them as one-half FTE. In fact, the California Medical Board has introduced to its members preliminary position statements that would restrict the scope of practice of NPs and PAs. Although these position statements have not reached the legislature, they send a strong and clear message to NPs and PAs that the MD wants to remain the captain of the health care ship (California Medical Association, 2009).

NPs and PAs have been in the health care arena for 40 years, providing much-needed care to the residents of CSJV. They are offering care to the elderly in the rural primary care office and in the emergency room. It is time that their vital services be recognized by counting them as primary health care providers.
References


Rural health care issues differ from those of urban areas. Compared with their urban neighbors, rural populations are more likely to be older and poorer; to be covered by public health insurance; to suffer from chronic illnesses; to have a higher risk of death from suicide, unintentional injuries, and motor vehicle accidents; and to have a lack of transportation, fewer opportunities for employment, and fewer health care providers (National Organization of State Offices of Rural Health [NOSORH], 2006). Rural health care status is vulnerable to few providers, a lack of specialists, a long distance between consumers and providers, medical errors, low retention rates of health care workers, and higher costs (NOSORH, 2006). Telemedicine has been studied as one solution to these deficiencies. The intended use and issues of telemedicine will be explored. Further implications in research and nursing practice will be discussed.

**Background**

Rural is defined as an area of fewer than 2,500 people () or areas outside of urban areas or clusters (U. S. Census Bureau, 2000). A large number of rural areas are designated as Health Professional Shortage Areas based on a ratio of physicians to population greater than 1 to 3,500 (NOSORH, 2006). As of November 2009, there were 4,217 nonmetropolitan (rural) primary medical designation areas representing 68% of all such designations for that category with a population of 33,314,768 (U.S. Department of Health and Human Services, 2009). There were 2,247 nonmetropolitan (rural) designations for mental health for a population of 60,333,550, representing 66% of all such designations.

Rural populations are more likely to be uninsured and to have public insurance coverage (Medicare and/or Medicaid; Ziller, Andrew, Coburn, Anderson, & Loux, 2008). Working-age rural adults are less likely to have health insurance through their employer, and 60% may be low wage earners (Zhang, Mueller, & Chen, 2008). Uninsured individuals are more prone to be hospitalized with preventable diseases and to experience longer length of hospital stays for substance abuse related to mental disorders, causing higher hospital charges than in urban areas (Zhanget al., 2008). Hospitalized rural patients with no insurance are transferred to another facility more frequently (8.1%) than uninsured urban patients (5.4%; Zhang et al., 2008).

Access to health care in rural areas can prove challenging. Because there are few health care providers in a relatively large geographical area, rural residents usually travel longer distances for care than urban residents. Research taken from five states demonstrated that residents living in isolated rural areas with a diagnosis of malignant neoplasms traveled an average of 32.9 miles in 42 minutes to get to the provider. Those with the same
diagnosis living in urban areas had a mean travel time of 12.6 minutes and a mean
distance of 7.9 miles. These rural residents travel long distances for procedures, such as
spinal, cardiac, and neurologic surgery; cardiac catheterization; radiation treatments; and
dialysis (Chan, Hart, & Goodman, 2006).

Rural residents generally have fewer preventative health care visits than urban residents.
This seems to be related to the distance from the provider, lack of transportation, tobacco
use, low income (Arcury et al., 2005), lack of insurance (Ziller et al., 2008), weather, cost
of care, long waiting times, and requirements of occupation (Morgan & Hart, 2009).
Consequently these residents have more acute care visits (Arcury et al., 2005).

Telemedicine is being actively developed as a mechanism to deliver care, provide health
education, and monitor conditions from a remote location to areas that lack close health
care resources and suffer from a shortage of health professionals. Examples of uses of
telemedicine include consultation with specialists by relaying assessment data and
images; remote patient monitoring of glucose, blood pressure, oxygen saturation, weight,
and electrocardiogram; dissemination of consumer health information; and education of
health professionals (American Telemedicine Association, 2009; Goodwin et al., 2008).
Types of telemedicine include (1) real-time conferencing by telephone or
videoconferencing and (2) storage and forwarding of applications by email, fax, or post
(Smith, Bensink, Armfield, Stillman, & Caffery, 2005).

In-Home Telemedicine Examples

Patients receiving palliative care were given mobile phones to record their daily
symptoms and received programmed self-care advice that corresponded to the severity of
their symptoms. Patients felt positive about their symptoms being screened daily by the
nurses. The nurses felt interventions were instituted earlier to the advantage of the
patients (McCall et al., 2008).

Parents of children with complex feeding disorders were teleconferenced at a site close to
their homes (11 states and 1 foreign country) with a health care team at a children’s
hospital. The health care team followed up with phone calls or letters after the
conference. Families were saved travel time, cost of travel, and time off from work that
averaged a total of $917. Families reported that this method reduced their stress and
prevented the hardship of traveling with a special needs child (Clawson et al., 2008).

Community health nurses in Ontario send digital images of wounds and patient
assessment data to physicians or interstomal therapists, who then return recommendations
for treatment. Patients do not have to travel or wait for answers. The nurses are kept
appraised of current practice interventions related to wound care (Goodwin et al., 2008).

Stay@Home with Von (Goodwin et al., 2008) allows patients with chronic diseases to
input appropriate measures via monitors in their home and answer subjective questions to
assess their status. Measures can include glucose, blood pressure, weight, and oxygen
saturation levels. Nurses review the data and send care instructions to the patient.
First Call (Klenske, 2008) is a service that allows patients to call a specific phone number and immediately speak with a physician. Some patients have monitoring capability to send pictures of an injury or wound and/or send physiological measures. The physician provides education and recommends appropriate intervention.

Connected Care (American Medical News, 2009) is a project that provides a national network of physicians to patients in various outpatient settings and patients’ homes in areas considered as underserved for health care. Pilot testing of the project is being conducted in New Mexico with Project HOPE.

Patients with diabetes using a computer equipped with glucose and blood pressure monitoring devices communicated with providers through an online program. These patients experienced improvement in glycosylated hemoglobin (A1C), systolic blood pressure, high-density lipoprotein, and triglyceride levels (McMahon et al. 2005; Pollard et al. 2009). Use of an Internet glucose monitoring system demonstrated long-term improvement of A1C levels (Cho et al., 2006). Telephone calls to reinforce diabetic teaching resulted in decreasing hemoglobin A1C by 0.76% (Skelly, Carlson, Leeman, Stoward, & Burns, 2009).

The Thin-Link home telemonitoring scale and biweekly telephone counseling were incorporated into a weight-loss study that also used increased physical activity (10,000 steps measured by pedometer), a food and activity logbook, and a manual with lessons regarding weight loss strategies (VanWormer et al., 2009). The participants weighed on the interactive scale and the telemonitoring apparatus provided feedback. The device prompted them to answer specific questions about their diet habits and exercise patterns. A weight gain of 4 pounds or no weight recorded in a 3-day period prompted a response from a counselor. The participants lost approximately 7 ½ pounds during the 6-month program or more weight than groups that received no intervention or intervention without the telemedicine component. In another area, asthmatic children demonstrated improved inhaler scores after 52 weeks as well as more diary submissions of symptoms when they used Internet-based case management and visited the study Web site than children who had traditional office care (Chan et al., 2007).

**Hospital Telemedicine Examples**

The long distance between hospitals in rural settings can lead to the inability to obtain an immediate consultation with a specialist and can be life-threatening. Telemedicine in hospitals is one method of providing the appropriate care when it is needed. Telemedicine directed to the urgent treatment of cerebrovascular accidents has been implemented in several health care systems (Demaerschalk et al., 2009; Hess, 2008; Larkin, 2008). Ideally, the treating physician can access a specialist who can assist with a neurologic examination by videoconference at the patient’s bedside and assist in the neurological exam. The head computed tomography scan can be reviewed off-site through digital technology. After evaluating the data, the specialist can indicate whether thrombolytic treatment is indicated. The Mayo Clinic Hospital has noted an increase of the use of...
tissue plasminogen activator (10- to 20-fold) among participating hospitals using their telestroke system (Demaerschalk et al., 2009). Researchers in the STRokE DOC trial (Meyer et al., 2008) reported 16% more correct treatment decisions from telemedicine than from telephone consultations.

Philips VISICU developed eICU technology that allows a centralized intensivist team to remotely monitor physiological measures of 300,000 intensive care unit (ICU) patients annually, or 10% of all adult ICU patients (Popely, 2009). In this setting, nurses have immediate access to an intensivist at all times. Benefits include a 30% reduction in nurse turnover, decreased patient length of stay, and fewer patient complications. One health care system reported a savings of $3 million resulting from shorter lengths of stay (Popely, 2009).

Pharmacy services can also be delivered to hospitals via telemedicine technology. Aurora Health Care provides pharmacy services 24 hours per day, 7 days per week to 13 acute care hospitals, with an average daily census of 1,000 patients (Meidl, Woller, Iglar, & Brierton, 2008). All medication orders must be entered by pharmacy personnel before nurses can obtain the medication or chart that the medicine was administered. The hospitals have eICU units as previously described that include pharmacy services. The ICU nurses can contact the pharmacy by videoconference. All nurses in these hospitals can interact with pharmacy personnel by telephone, electronic scanning technology, electronic medical records, and a telemedicine note writing system. From April 1 through June 30, 2007, the system was shown to save $121,916 as a result of pharmacist recommendations (Meidl, Woller, Iglar, & Brierton, 2008).

RoboConsultant (RemotePresence-7 by InTouch Health; Agarwal et al., 2007) is a structure that has videoconferencing capability with mobility control by the senior surgeon. The device can zoom in for close examination of the surgical site and internal endoscopic views. The consulting surgeon has a realistic view of the procedure and can provide immediate input. Another source of telemedicine used in hospitals is the outsourcing of interpretation of radiographs (Wachter, R. M., 2006), which decreases response time for radiographic procedures.

**Issues and Implications**

Telemedicine technology has benefits and risks, as do most health care interventions. Improved accessibility of care, or bringing the provider to the patient, prevents the cost of travel and time away from work (Weinert, Whitney, Hill, & Cudney, 2005). In-home monitoring of physiological measures provides a sense of security for patients, families, and caregivers (Liddy et al. 2008). Rural residents knowledgeable about telemedicine opportunities in their community reported higher satisfaction with the quality of their local health care than those who had to travel outside their community for care (Nesbitt, Marcin, Daschbach, & Cole, 2005). Caregivers have the support of health professionals 24 hours per day, patients are less anxious about their condition, and community health nurses can prioritize patient visits (Rollings, 2008).
Professional risk related to telemedicine has been identified by health care providers. The time-sensitive nature of the data received by providers could be an issue if the response time to critical values is not appropriate. Reliability of the monitors recording physiological data has been questioned by providers and patients. Calibration protocols are not always in place (Liddy et al., 2008). The licensure of nurses and physicians can play an important part in determining the coverage area of a telemedicine program (Hannah, 2008; Wachter, G., 2006). Nurses are at an advantage because of the compact state status of their license, which allows them to practice in more than one state. If the compact state agreement does not include states in the system’s service area, the nurse must apply to the appropriate state board of nursing. This can cost about $100 for each nurse in each state. Physicians are more restricted because 24 states do not have any provision for telemedicine licensure between states (Shea et al., 2006).

In some circumstances, nurses have installed the equipment for the telemedicine program in patients’ homes with little training. Sound and picture quality can be lacking and can make communication between patient and provider difficult. Nurses have questioned the ability of patients to perform physiological measures and their own professional liability related to missing assessment information because of the limitations of the technology (Mair, Hiscock, & Beaton, 2008). One nurse stated that if questioned, she might have to tell a judge, “Well she looked fine from the neck up” (Mair et al., 2008, p. 114). Nurses have questioned whether telemedicine will replace the nurse entirely in some situations (Mair et al., 2008).

Even though there has been improvement of patient outcomes through telemedicine programs, this is not always the case. A randomized control trial of a telemonitoring intervention for asthmatic children and adults ($N = 109$) did not demonstrate significant improvement of symptoms or related quality of life (Willems et al., 2008). Although diabetes education by telemedicine has proven to be effective, it is not always more effective than traditional methods and may not result in improvement of depression, distress, and self-efficacy (Izquierdo et al., 2003; Trief et al., 2007).

Lack of privacy has been cited as a concern in intensive care rooms with a video and audio link to an offsite centralized monitoring station by personnel that have access to the entire patient record (Meidl et al., 2008). Psychiatric services through telemedicine present several challenges (Srinivasaraghavan & Felthous, 2008). Some patients have an issue with television and other electronic devices as part of their mental illness and could find that talking to an image on a screen is nontherapeutic or may exacerbate their symptoms. Videoconferencing prevents the paper-and-pencil tests used in some mental health assessments and could endanger the patient’s privacy. Additionally, physicians caring for patients with Parkinson’s disease use passive movement of extremities to assess function, which is not possible with telemedicine (Joseph, 2009). Security of data and data transmission can be compromised, and safeguards should be instituted to promote privacy of patient information (Sarhan, 2009).

Primary care providers who participated in the home diabetes telemedicine care project (IDEATel) noted more paperwork because of duplication of documentation, interventions
given by the response team to the patient conflicted with what the provider would have given, and the provider was not informed of the differing intervention (Tudiver et al., 2007). The IDEATel project did not reduce the amount of Medicare cost for the patient population, but actually increased it by 71% to 110%. The researchers attributed this to more health care needs being identified by the telemedicine project (Moreno, Dale, Chen, & Magee, 2009; Shea et al., 2006).

The lack of reimbursement models for telemedicine (Joseph, 2009; Popely, 2009; Shea et al., 2006) is a major roadblock to the growth of telemedicine in rural underserved areas (Hannah, 2008). Currently, 12 states have some provision for reimbursement for telemedicine, but the specific mechanisms vary (Edwards, 2009). A rural facility may get funding for equipment and initiating a telemedicine program, but without continued reimbursement or financial support, the program may not survive (Hannah, 2008). Federal funding for telemedicine is available in (1) grants and contracts for research from six to eight federal programs, including one third of this from the Department of Defense, (2) direct service funds from the Veterans’ Administration, Department of Defense, Indian Health Service, and Bureau of Prisons in the Department of Justice, (3) Medicare (American Telemedicine Association, 2009), and (4) Medicaid (Home Telemedicine Primer, 2008).

Telemedicine is an appropriate and vital intervention for the suitable patient population. Isolated rural communities are the most likely to benefit from this technology. Families in rural settings dealing with illness have been found to have similar values in relation to health care (Morgan & Hart, 2009). Self-reliance is highly valued and seen as indispensible. Chores must be completed, regardless of how one feels. Access to health care when it is needed is desired in any culture or community. Distance, a lack of transportation, and a lack of insurance make access difficult for some residents of rural communities. Rural residents value understanding their own and their family’s health care needs and knowing when to seek treatment. These residents also value their community and their family as resources for health care advice.

Rural women with chronic illness voiced similar themes or values in relation to health care in an online peer support study (Weinert et al., 2005). They valued self-reliance and being an active participant in their own care. They suggested possible health care measures to each other. The women wanted to be listened to and actually heard and understood by their health care provider and to contribute to the health care plan. Cost of health care was a concern, as was access to care. Family and other priorities and chores were difficult to arrange around appointments with health care providers.

Telemedicine complements the needs of rural culture. Obtaining health care information online and transmitting one’s own physiological measures contributes to a sense of independence. Talking with a specialist from several hundred miles away while in one’s own county provides access to health care that may have been prohibitive otherwise. Sharing experiences and information regarding health care by online chatting contributes to the sense of community that is so important in rural cultural.
The use of telemedicine requires appropriate application, professional education related to potential, technical development, and a funding structure. The use of teleradiology and telepsychiatry has been demonstrated to be economically beneficial to rural communities by (1) reduced salary expenditures from hospitals for specialists, (2) no travel expenses incurred by residents, (3) less or no loss of work days, and (4) increased laboratory and pharmacy expenditures in the community because residents receive care locally (Whitacre, Hartman, Boggs, & Schott, 2009).

**Summary**

Telemedicine has the potential to bring up-to-date, evidenced-based health care to rural communities. Rural residents can access health care providers without traveling outside of their communities. They can have access to nurses 24 hours per day/7 days per week, can input their own physiological data measures, can receive immediate recommendations for appropriate interventions from health professionals, and can receive health care information. Telemedicine blends the needs of rural residents and capabilities of health professionals regardless of distance. Isolated rural communities may not have immediate access to tertiary care centers to treat critical injuries or illnesses. Telemedicine can facilitate treatment and on-site consultation with specialists.

Problems with telemedicine exist. Challenges include a lack of privacy, lack of reimbursement, and lack of physical contact, which can prevent health care providers from accurately assessing patients. Telemedicine may not be appropriate for some types of health care, such as counseling or psychotherapy for patients with certain mental health problems.

Future research should be directed at developing more sophisticated telemedicine technologies to increase its benefits and correct weaknesses. Patient data needs to be protected and transferred securely. More sensitive video and audio technology would enhance therapeutic communication and assessment capabilities. Funding mechanisms should be developed and maintained to provide continued care through telemedicine.

Future nursing practice has the opportunity and challenge to develop interventions and educational programs that are enhanced by telemedicine. Nurses are branching out into technologies, such as informatics and simulation. These types of skills may facilitate nurses in developing technology to meet the needs of patients through telemedicine.

**References**


Relatively little is known about children in foster care because most studies have focused on urban life (McGuinness, 2009). What has been discovered is that there are some significant differences between urban and rural child welfare issues. These differences give the rural child welfare system uniqueness not found in urban settings. So although the numbers of children and adolescents coming into rural foster care continue to increase, their situations and involvement with the system are very unique and are often much different than their urban counterparts. Rural areas of the United States have a long history of having more limited service offerings compared with urban areas (Glasgow, Morton, & Johnson, 2004). The reasons are complex and always changing; therefore, it has been difficult to implement effective interventions to bring about necessary care for the rural population. It has been shown that there is an increasing level of health disparity between rural and urban populations (Glasgow et al., 2004), and this chapter will explore this disparity in one specific area, child welfare, and detail some major factors affecting this gap. The purpose of this chapter will be to present a brief history of rural child welfare and explore some of the myths perpetuated over time, to discuss the rise of methamphetamine and how it has impacted much of the work of the rural child welfare worker, and to explore the negative effects of the mental health service shortage in rural areas as it pertains to child welfare.

Background

The Mythical History of “Clean and Pure” Rural Orphans

America has had a long history of sending children from impoverished families to be reared in the homes of other people. Prior to 1850, the use of orphan asylums was widespread throughout the “settled” areas of the United States (Hacsi, 1995). Since colonial times, there has been a long tradition of poor families placing their children in situations in which the children would work and learn a trade as a part of the indentured servitude that was rampant for poor families living in the United States during these times. It was not until the 1850s that child welfare agencies (rarely the government) began to pay foster parents to board young children (Hacsi, 1995). This was termed “placing out,” and it was an important change because with the payments, these children were not being forced to work. This also made it possible for families to take in children with special needs and behavior problems. But the most important element during this...
time was that the majority of these children were being taken from urban areas and shipped out to rural families (Hacsi, 1995). This change was driven by changing conceptions of the nature of childhood as well as the thought that in order for true childhood to be cultivated, children should be removed from their impoverished urban families and placed in “pure” rural settings.

This type of thinking and action first started with the Children’s Aid Society (CAS) in New York. The founder of this society, Charles Brace, was staunchly anti-urban, anti-immigrant, anti-Catholic (Hacsi, 1995). His fear of urban growth and idealization of rural America led to a common practice of “snatching” children from the urban slums and placing them on the infamous “CAS orphan trains” that would be full of children heading west to live with Protestant farmers (Katz, 1986). Although this was a change in the indentured servitude practice so common in colonial days, the children still ended up providing a large amount of daily labor as they grew up on the farm. These children and adolescents were actually a major source of labor for American farms in the late 1800s (Katz, 1986). Other cities began adopting these methods, including San Francisco. Often, the private agencies of San Francisco and other large cities of the time would seek out poor children, take them off the streets, many times without bothering to gain legal custody, and then ship them to rural farms (Hacsi, 1995). The adult farmers of this time were rarely investigated, and these private agencies rarely visited or stayed in contact with the children after placement (Shackelford, 1991).

For many years, this system remained intact because the public simply accepted the myth that rural farms were a better place for children to grow up and experience childhood than the urban areas of the time. It was only in the early 20th century that these beliefs began to be challenged, mainly by the adamant protests from Catholic groups that Catholic children should not be placed in Protestant homes (Hacsi, 1995). Once the spotlight began to shine on the scrutinizing process of the rural homes, it soon became apparent that not all rural homes were automatically good homes. After investigations of potential homes became more thorough, with interviews of neighbors, influential community members, and ministers, the acceptance rate of rural homes began to decline significantly, thus ending the orphan trains to the Midwest.

Despite the “overuse” of rural areas as the primary destination for children in the foster care system, rural areas had, and still have, a disproportionately smaller share of federal funds targeted for assistance than urban areas. Traditionally, a large proportion of funding for rural health services has come from local financing. Because of demographic issues, such as income level of rural populations, population density, smaller increases in property values, and higher percentages of elderly than in urban areas, there has been a large disparity in funding available for health services in rural versus urban areas (Zimmerman, McAdams, & Halpert, 2004). In 1999, federal spending in rural America was more than $20 billion, which equaled $5,306 per person (Fluharty, 2002). However, it was still lower than the $5,601 spent per person in urban areas during the same period. This puts the gap between the two areas at $46 billion per year.
This decrease in federal spending on rural populations came at a time when rural areas were seeing a huge decline in income and revenue from agriculture. Between 1990 and 1996, rural America gained 2,756,000 jobs, mostly in the service industry (Economic Research Service [ERS], 2006). But the largest decline in jobs came from farming, with 146,000 jobs lost, a decrease of 7.5%. Today, fewer than one in four farm families receive the majority of their income from farming (ERS, 2006). On average, 90% of farm operators’ income came from non-farm sources in 2004. Although there still are active family farms that require labor and a traditional work ethic, the days of utilizing orphans and foster children as “helpers” on the farm in an effort to promote an appreciation of the “clean and pure” rural work ethic and sense of responsibility have drawn to a close.

What is also apparent is that rural areas have some important disadvantages compared with urban areas. For instance, of the 250 poorest counties in the United States, in 1998, 234 were classified as rural (Vanderboom & Madigan, 2007). Rural workers earn minimum wage twice as often as their urban counterparts when adjusting for age, gender, ethnicity, and education level (Schulman & Slesinger, 2004). Six of every 10 people living at or below the poverty level do not own a car if they live in a rural area, yet 80% of rural counties do not have any form of public transportation (Green-Hernandez, 2006). In 1999, rural eighth graders were twice as likely to have used methamphetamine and/or cigarettes as urban eighth graders (Hohman, Oliver, & Wright, 2004). This is a symptom of another growing problem affecting the rural children of the country: methamphetamine.

Methamphetamine and Rural Culture

There is a wide variety of research concerning rural substance abuse, particularly among youth (Hohman et al., 2004). But there is general agreement that rural substance abuse is increasing, especially compared with substance abuse in urban areas (Anglin, Burke, Perrochet, Stamper, & Dawud-Noursi, 2000; Hohman et al., 2004; Freese, Obert, Dickow, Cohen, & Lord, 2000; Haight, Jacobsen, Black, Kingery, Sheridan & Mulder, 2005). Rural law enforcement officers and health, mental health, and child welfare professionals increasingly encounter children living in homes where methamphetamine is produced and abused (Haight et al., 2005). Children whose parents abuse methamphetamine are often exposed to toxic chemicals, violence, criminal behavior, and neglect as well as physical, sexual, and emotional abuse (Anglin et al., 2000). As a result, they are at high risk for mental health disorders.

Methamphetamine production and abuse have become and continue to be major public health and criminal justice problems. From its beginnings in Hawaii and western states, methamphetamine abuse has spread throughout the nation and settled into the rural areas (Cretzmeyer, Sarrazin, Huber, Block & Hall, 2003). It has become particularly problematic in rural areas, where the majority of production labs are located. In 1997, police in Illinois seized only 24 methamphetamine labs statewide; yet, in 2001, there were 666 statewide methamphetamine lab seizures (Haight et al., 2005). From 1991 to 1994, methamphetamine use among short-stay hospital patients more than tripled in primarily rural Midwestern states (Wermuth, 2000). During this same period, there was a
43% increase in treatment-program admissions in which clients identified methamphetamine as the primary drug of abuse (Wermuth, 2000).

Rural areas allow methamphetamine producers to avoid detection because the manufacturing process produces powerful fumes. The raw materials needed for production are usually easier to come by in rural areas, such as regular fertilizer used in agricultural production, which is a primary source needed by methamphetamine producers (Wermuth, 2000). Many rural communities do not have adequate law enforcement personnel to enforce the anti-drug laws of the areas (Wermuth, 2000). Additionally, depressed economic conditions in rural and semi-rural areas have been documented as contributing factors to making methamphetamine a source of income (Anglin et al., 2000). These factors have helped the methamphetamine industry flourish in the rural areas of the United States.

Methamphetamine has many names and is often referred to as “crystal,” “meth,” “ice,” or “speed” (Anglin et al., 2000). It has strong effects on the central nervous system. Users experience many stages of reaction and also multiple side effects, especially if the drug is used chronically. One of the most devastating effects is the neurotoxicity that will often permanently affect the brain and produce structural defects similar to dementia and schizophrenia (Thompson, Hayashi, & Simon, 2004). Abusers also may experience psychiatric disorders such as psychosis, depression, intense paranoia, visual and auditory hallucinations, and suicidal behavior (Anglin et al., 2000). It also has been noted that abusers often exhibit repetitive behavior, rapid mood changes, irritability, out of control rages and violent behavior (Cretzmeyer et al., 2003). Additionally, these effects can be long lasting. Psychotic symptoms may persist for months or years after the use of methamphetamine use is discontinued (Anglin et al., 2000).

This increase in methamphetamine abuse has had a significant effect on the rural child welfare system (Haight et al., 2005). The rate of methamphetamine abuse is consistently highest in the 20- to 29-year-old age group (West, McKenna, Stuntz, & Webber-Brown, 2000). There is also a growing body of literature suggesting a serious effect of methamphetamine exposure on the developing brain, both pre- and postnatally (Hohman et al., 2004; Thompson et al., 2004). The process of producing methamphetamine is volatile and dangerous. “Mom and Pop cooks,” following vague directions from questionable sources, often expose their children to explosions, fire, and deadly fumes during production, and death or serious injury may result (Cretzmeyer et al., 2003). Additional health problems seen among children of methamphetamine users include prematurity, low birth weights, small head circumference, cerebral infarctions, and multiple congenital anomalies (Hohman et al., 2004). The toxic chemicals these children are being exposed to can cause problems as well, although this has not yet been fully studied. Additionally, these children often are living in conditions in which there is no running water, little or no electricity, poor sanitation, and little food (Hohman et al., 2004).

Researchers have only just begun to explore the effects of exposure to methamphetamine on the physical aspects of a developing child. What may be just as, if not more,
disturbing are the effects of parental methamphetamine abuse on children’s psychological development and mental health. After being exposed to the violence associated with methamphetamine abuse, criminal behaviors related to its production, and the neglect of the substance-abusing parent who is too preoccupied to deal with the child, these children potentially suffer great mental damage that cannot be quantified (Cretzmeyer et al., 2003; Hohman et al., 2004; West et al., 2000). It has been established that children whose parents abuse drugs are much more likely to be neglected, physically assaulted, and sexually abused than children whose parents do not abuse drugs (National Center on Addiction and Substance Abuse at Columbia University, 1999). The trauma of this abuse and neglect will have an effect on their mental health. Cicchetti, Toth, & Maughan (2000) found that child maltreatment is associated with conduct problems, disruptive behavior disorders, attention problems, anxiety disorders (including post-traumatic stress disorder), and mood disorders. Ninety percent of maltreated children show at least one diagnosable disorder by age 17 compared with 30% of children who are not abused yet have the same socioeconomic issues (Egeland, 1997; Kroll, 2004). Domestic violence also has a strong correlation with behavioral and emotional problems (Cicchetti et al., 2000). Domestic violence has been shown to be very common in homes where methamphetamine is produced (Wermuth, 2000). Additionally, children raised in drug-using homes are at higher risk for early pregnancy, dropping out of school, and involvement in criminal and other antisocial behavior compared with children raised in non–drug-abusing homes (Millar & Stermac, 2000).

Another major issue involving methamphetamine in rural areas has recently been identified: the development of a unique subculture of rural meth homes characterized by distinct antisocial beliefs and practices (Haight et al., 2005; Hohman et al., 2004). Children living in these environments are often socialized into a unique world of distrust of authority and of constant paranoia about strangers or outsiders. Although these traits are sometimes seen in non–drug-abusing rural households, the fact that there is a major illegal activity occurring within the house, often with the household leaders having severe limitations in judgment because of their own substance abuse issues, can frame a strange perception of how the ‘world’ is for a developing child. Social workers involved in the investigation and removal of children from meth homes describe the living situations as frequently “dangerous, neglectful, isolated, and chaotic” (Haight et al., 2005). Because of the extreme isolation of these remote areas, these children often live in filthy homes with no electricity, running water, or phone service. According to one rural social worker, “The drug is so addictive; parents lose sight of everything else, including their children. On any given day, children may not know when or if they will eat, where they will sleep, or what will happen from one hour to the next” (Haight et al., 2005).

Because parents are likely to spend significant time in prison for methamphetamine-related crimes, many children remain in foster care for prolonged periods. This becomes more challenging for social workers and caseworkers dealing with these children because they spend more time in foster care than the average child (31 months; Zernicke, 2005). Compounded with the fact that these children often have serious emotional and behavioral problems, it can be extremely challenging to keep them in one foster home for the duration of their time in foster care. Often, these children can overwhelm foster
parents and make it impossible for the child to remain at a particular home. Moving a child from one home to another is a less-than-ideal outcome, yet it happens often with children with mental health issues. Kerker and Dore (2006) found that this lack of stability in the environment of children of substance abusers often exacerbates their dissociation and symptoms of post-traumatic stress. Haight, Oster, Black, Sheridan & Kingery (2007) have documented many instances of children of methamphetamine abusers developing antisocial beliefs and practices, such as lying, stealing, drug use, and violence. They also report that children may not be accustomed to parental supervision, rules, and routines, and thus resist efforts to care for them. These issues are usually at the heart of the stability of the foster care placements. Disruptions in these placements and the lack of stability only serve to continue a vicious unending cycle of problems for this group of children.

**Mental Health Service Availability in Rural Areas**

Although most studies of mental health issues and foster care have tended to focus on urban populations or have samples derived primarily from urban areas (McGuinness, 2009), a new ominous trend seems to be on the horizon according to the few studies done with rural populations. There is growing evidence that the lack of mental health services, for both children and adults in rural areas is contributing to an increase in the number of children coming into foster care compared with urban populations. It has been postulated that up to 80% of children entering foster care have a significant mental health problem, yet only 23% of these children receive a mental health service (Kerker & Dore, 2006). Although children in almost every state qualify for Medicaid health insurance when placed in foster care, modest provider reimbursements, bureaucratic inefficiencies, and a shortage of providers are barriers to obtaining necessary mental health services.

From 1995 to 2001, the number of children entering foster care in rural areas increased by 5% (Wulczyn & Brunner, 2002). This compares with an increase of 2% in urban areas over the same period. One important difference between these two populations is that youth entering foster care in rural areas are significantly older at first admission, with children between the ages of 12 and 15 years entering care at much higher levels than urban youth. Barth, Wildfire & Green (2006) used data from the National Survey of Child and Adolescent Well-Being to compare rural and urban foster care mental health needs and determined that children who were in rural foster care had higher rates of significant behavioral disturbances (83%) than urban children (56%). Additionally, of the rural youth with clinically significant behavioral problems, 72% were more likely to have a parent or parents affected by mental illness if they were below the poverty level compared with 57% among those above the poverty level. This is significantly different from urban children entering foster care with significant behavior problems. In these urban children, only 38% of poor and 26% of non-poor (families living above the poverty line) had parents with mental illness (Barth et al., 2006). After analyzing their data, these researchers concluded that for about 20% of the children in rural foster care, the placement in the child welfare system was being used as a way to provide mental health care for older children with serious emotional disturbances. These older children and
adolescents would be much more likely to remain at home with their biological parents had adequate mental health services been available to these families in rural areas.

An additional mental health issue for many of these children is the fact that there is a shortage of substance abuse treatment facilities in rural areas. There are many reasons for this, including lack of service availability, fear of stigma related to seeking services, lack of insurance by residents of rural areas, and a shortage of providers of mental health services (Haumstein, 2008). It has been shown that a very common reason for entry into foster care is parental substance abuse (Hohman et al., 2004), so it would follow that the lack of treatment services for adults with substance abuse issues is affecting the ability of substance-abusing parents to keep their children out of foster care. And with the recent increase in substance use/abuse in rural areas, it follows that this has had a major impact on the rural child welfare system.

**Goals for Action**

The challenges that face rural child welfare systems can seem overwhelming. Most solutions to the problems require major changes in current thought and practice, a difficult process, and almost all solutions to the problems require additional resources, a monumental feat in this day of tight budgets and economic angst.

Current practice for most rural health agencies involves some type of health check or health screening for children entering the foster care system. Although federal guidelines mandate this activity, it does not always occur (Leslie et al., 2003). But more importantly, there is widespread variability on the completeness and quality of these examinations. In one study, it was discovered that although more than 94% of sampled child welfare agencies assessed all children entering foster care for physical health problems, only 47.8% routinely assessed for mental health problems, and just 57.8% screened for developmental delays (Horwitz, Owens & Simms, 2000). A positive aspect of this same study was that when children participated in this screening process at a clinic designed specifically for this population, they had much higher levels of identification of mental health problems or developmental delays than foster children who received customary child welfare services. This screening process would seem to be an easy solution after examining data such as this. Better results come from making changes in how things are done when improvements in care are indicated. Yet, this author has extensive experience in this one area of change in the system. A federal audit revealed similar findings regarding children not being assessed in a specific region of Idaho’s child welfare system. A survey of the various health care systems within this rural area led to the creation of a specialty clinic designed to assess children entering foster care and ensure that all of their health care needs, including mental health requirements, were met. Although this clinic had and still has the complete support of every major stakeholder involved in the system, from the head of the regional child and family services supervisor to the mayor and chief of police of the town in which it is located, there are still continuing issues involved in educating the various agencies and workers involved in child intake for this six-county region. Often, caseworkers are not familiar with the services provided by the nurse practitioners or the scope of their practice. There are also times when children do not get
adequate referrals because of confusion or miscommunication about their immediate needs and eligibility. And this comes nearly 2 years after the creation of the clinic. Although the nurse practitioners who staff this clinic are very popular with nearly all the people working within the child welfare system, change in regular daily practice continues to be slow, which illustrates how slow “the system” can be to accept change.

In addressing access to mental health services and substance abuse services in rural areas, the solutions seem to revolve around money. One solution that has gained attention is to increase reimbursement rates for Medicaid patients (Kerker & Dore, 2006). An increase in Medicaid reimbursement rates for treating foster children would enable more mental health care providers to care for these children. Additionally, it has been proposed that federal insurance programs should broaden the conditions they cover to include children with less severe symptoms or with the kinds of early life experiences that are predictive of later emotional and behavioral difficulties, regardless of current psychosocial functioning (Kerker & Dore, 2006). Although this solution makes sense, for it to have an effect in actually increasing the number of providers in rural areas, there would need to be an increase in funding for all children with mental health needs, not just foster children. For providers to either move to a rural area or choose to return to an area following graduate training, they would not only need to have the desire to do so (which many do), but be able to run a practice and have a reasonable business model to continue to provide care. Another option is to provide individual contracts to providers who are willing to commute from larger urban areas at certain times to provide services in rural facilities at regular intervals. This author has seen this system utilized very well, with excellent care being provided. This author has also seen this service eliminated because of recent state budget issues. This illustrates one of the major disadvantages of the contract method of service provision versus having regular mental health care from established providers. One bad economic year can rob many children of needed services. An established provider with a regular practice set in a rural area can potentially weather small reductions in reimbursement rates from time to time without being forced to leave. Consistent, regular continual care is a hallmark of children’s mental health treatment, and every effort should be put in place to maintain this consistency while a child has the need for these services (Kerker & Dore, 2006).

The discussion about reimbursement rates and rural health care access brings up the glaring issues of the lack of primary care funding and the rapid decrease in new care providers choosing to locate in rural areas. There has been a marked decrease in primary care access in rural areas of the last decade (Zimmerman et al., 2004). More ominous are the findings from interviews of medical school students concerning where they are planning to practice when they graduate. Between 1998 and 2001, there was a 35.3% decline in the number of U.S. graduating medical students choosing family practice (Kutob, Senf, & Campos-Outcalt, 2003). There were many reasons for this; however, financial obligations were of primary concern when these students were asked about specific reasons for not choosing family practice. An interesting conclusion noted by the authors was that although gender, age, marital status, and ethnicity were only weakly related to choice of specialty, a positive relationship between a medical student’s rural background and choice of family practice in a rural area correlated strongly. This seems
to be a potential area for exploration for recruitment by rural communities. This could easily be explored by rural communities in efforts to recruit not only family practice providers, but mental health specialists, as well.

As has been pointed out, methamphetamine abuse has become a significant issue in rural communities. The solution to such a complex problem is not easy. One program that seems to be working for rural communities is the Meth Project. The Meth Project was conceived originally in Montana as the Montana Meth Project (McGrath, 2008). It is a statewide program that focuses solely on prevention. Since its inception in 2005, the project has demonstrated some effectiveness. Methamphetamine use among teenagers in Montana has declined by 63%, and methamphetamine-related crime has dropped by 62% (McGrath, 2008). There are no specific data on how this particular project may have affected child welfare services in Montana, but one can assume that there has been a reduction in methamphetamine-related foster care intakes. Since its inception, six other primarily rural states, including Idaho, have initiated similar statewide campaigns. Although there is great hope that this project will help, one cannot forget that it is aimed at prevention and offers no solution for those already addicted or affected. For solutions to these issues, one must confront the issue of additional funding.

We are currently living in a time when state budget resources are strained to the limit. What is a true challenge for rural communities will be the ability to compete for state and federal dollars in these harsh economic times. One must remember that only 13 states have a rural majority and together, these states only account for 59 of the possible 538 electoral votes. It is an interesting fact that in examining the electoral map of the results of the last presidential election and the final tally of all the electoral votes, the entire middle section of the country (if you take out Colorado and New Mexico), the traditional “fly-over” states that contain a vast amount of rural area, are all red (indicating that all electoral votes were cast for the Republican candidate), whereas the East- and West-Coast states and a significant number of neighboring states, with much more urbanization, are blue (indicating that all electoral votes were cast for the Democratic candidate; RealClearPolitics, 2009). Regardless of one’s political affiliation, it is obvious that this “winner-take-all system” can disadvantage rural interests who are hoping for some clout in the White House. Additionally, there are only rural majorities in 37 House districts. This means that only 13% of the U.S. Congressional districts were represented by elected officials coming from a defined “rural district” (Cook & Dagata, 1997).

Another great challenge for improving child welfare outcomes in rural areas can be summarized by this quote: “Once you’ve seen one rural community…you have, indeed, seen one rural community!” (Fluharty, 2002). The incredible diversity that rural communities have can be their greatest challenge when it comes to organizing collectively to help shape public policy and resource allocation decisions. Each rural community is different, and it can be very challenging to conceptualize common goals to work toward, especially in times of limited resources. One of the best hopes yet has been the creation of the National Rural Network. This consortium of more than 80 nongovernmental organizations based in Washington, D.C., creates the broad-based rural constituency necessary to support rural initiatives (Fluharty, 2002). It has become a
strong support organization for congressional rural initiatives, but it remains to be seen how it may impact child welfare outcomes.

Perhaps the greatest potential solution to rural child welfare problems actually seems to come from urban child welfare literature. Doug Nelson (2000), president of the Annie E. Casey Foundation, has publicly stated that social welfare policy must confront the current issues with “place-based” policy because this type of community paradigm has met resistance over the years. He argues that without having public, private, and philanthropic groups coming together to focus synergistic efforts on specific “places,” concepts such as “the ghetto” will continue to exist. For this idea to take hold, it would require that small, piecemeal solutions cease and a concerted effort by all organizations involved form a “new governance” framework that focuses attention and resources on dealing with the issues confronting America’s most impoverished children and families.

If one takes this idea further, the true way to help foster children is to focus massive efforts on keeping families intact. That means providing resources and support for parents of children long before they come into contact with state workers who may need to take their children from them. This concept would require a complete change in our current public policy mindset. Rather than providing a fragile safety net to protect children from further abuse and neglect once it has happened, the health and social service sectors would operate from a mindset of providing intervention and assistance much earlier in the cycle. Families would have available resources that could help with small manageable issues long before they progress into large overwhelming ones. Additionally, this might involve the decriminalization of methamphetamine users and abusers, and extensive increases in addiction treatment services. Unfortunately this change in mindset requires long-term planning that would transcend election cycles, which often can be the underlying motivator of major decisions by elected leaders.

Although this change in mindset may sound crazy and impossible, if one ponders the alternative, it is easy to see that we can simply continue with the current Band-Aid–type approaches that may help a few families, but do not have great impact on large numbers. We could see a huge reduction in substance abuse, a reduction in the need for mental health services, a reduction in the number of children entering foster care, and a reduction in the number of people going to prison. There could also be an increase in the number of families remaining together instead of being ripped apart.

However, what could be a major negative aspect of a “new governance” framework in its efforts to help rural areas is the nature of rural areas themselves. Schulman and Slesinger (2004) noted that rural areas tend to be filled with workers (and thus families) who have strong self-sufficiency values and antiregulation biases. Those involved in a large, well-organized effort intended to help rural child welfare agencies would need to better understand the subcultures and value systems of their potential rural community in order to devise workable solutions. A huge, bureaucratic approach to helping rural areas that does not take into account the particulars of that area’s strengths and cultural issues is doomed from the start.
Conclusion

This chapter has tried to paint a picture of the major issues affecting rural child welfare and some potential solutions to the serious challenges that are mounting. In examining the complex substance abuse issues and serious lack of services available to meet the needs of the children and families, one might feel overwhelmed. However, the first step in making progress toward the solution of any problem is to first identify the problem. It has been postulated that one of the reasons that methamphetamine use became so rampant in certain rural areas was because there was no awareness of what was going on or people chose to not believe that problems such as methamphetamine abuse could actually be a part of their community (Freese et al., 2000). But now the problem is out in the open. It is really only now that the effects of this problem are being felt by one subset of its victims, the families. When we look at methamphetamine abuse and its prevalence in rural areas and we look at the vast shortage of mental health providers and substance abuse treatment programs in rural areas, we could be witnessing the “perfect storm” that could wreak havoc with the health of our rural youth. Or we could take on a more positive attitude and recall that rural populations have a long history of confronting challenges and taking unique approaches to solve difficult problems. If future researchers can take into account the value of unique cultural perspectives and practices, and drop any notion of a “one-size-fits-all” approach to this problem, then the next steps toward helping these children and families will progress and flourish.

References


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