

DETERMINING THE ELEMENTS OF SUSTAINABILITY IN ACADEMIC  
NURSING CLINICAL PRACTICES

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## **Dedication**

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## **Abstract**

Demand for healthcare resources have exploded as baby-boomers age-in to Medicare, seniors live longer, and chronic conditions proliferate. Millions of new patients, many with complex health-care needs, will enter the health-care system as Medicare and Medicaid expand under the Accountable Care Act. Additionally, shortages of primary care physicians and clinic closures have severely diminished access to healthcare services. Reimbursement rates are low and administrative barriers considerable. The pressure is increasing to determine sound and reliable programs/systems that will improve patient health and ensure sustainability.

For over a century Academic nursing clinical practices (ANCPs) and nurse-managed health clinics/centers have provided comprehensive high-quality primary care to populations in rural, urban, and suburban communities. An alarming number of these practices have closed while others struggle to remain viable. A complete array of the elements impacting sustainability have not been examined empirically.

This study analyzed and determined elements that contributed to the sustainability of academic nursing clinical practices to inform the continuance of these vital primary care health centers. No suitable established analytical instrumentation corresponded to the specific purpose and evaluative needs of this study. Therefore, themes and data from clinical and social science arenas were extracted to guide the creation of a valid and reliable tool to measure sustainability in academic nursing clinical practices (Aim 1).

The original study instrument consisted of two hundred and fifty elements and employed a three-phase survey design. This instrument was substantiated by seven academic clinical practice nursing experts. Instrument construct validity, content validity,

**Abstract (continued)**

and instrument reliability were established. Recommendations were made to replace the laborious finance questions with the Institute of Nursing Center's (INC) most recent study results. Seventy-seven elements achieved eighty percent or greater agreement required for retention.

The final instrument elements were segmented into four Aims/Domains - *Academic Infrastructure, Clinical Practice Leadership and Planning, the Academic Clinical Practice Site, and Academic Practice Finance* - and converted to an on-line instrument.

A field-test was conducted with a sample of fifty-two participating ANCPs associated with fourteen Schools/Colleges of Nursing (SoNs) across the United States. Study participants entered data for each designated practice and rated their impression of each practice's sustainability using a defined likert scale (1-9).

A non-normal distribution was determined by Kruskal-Wallis analyses and revealed multiple significant elements of sustainability associated with these 52 clinical practices within each primary domain. These included: Aim 2 - Academic Infrastructure - Mission and Vision are addressed in Promotion and Tenure Documents; Aim 3 - Practice Leadership and Planning demonstrated five significant elements (when analyzed together) including: Faculty may Opt Out of the Practice Plan when no contract is available; A formal planning structure exists to grow practices; Faculty are involved in practice design; the Practice Champion credentials; and Minimum Service allocation for practice workload. Two element sets were significant when evaluated together for Aim 4 - the Clinical Practice Site and Total Hours Practiced each week for all faculty. However, a combination of elements -

Students + Providers + Staff - when evaluated with financial Gross charges, produced a negative inverse relationship regarding sustainability.

Achieving sustainability is a dynamic, rigorous, and purposeful process. These foundational elements facilitate analysis and intervention of new and existing clinical practices before they are threatened with closure. The knowledge acquired from this study will assist in forming and sustaining these vital clinical practices and in turn, deliver continuation of healthcare to those in need.

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## CHAPTER I

### THE RESEARCH PROBLEM

#### Introduction

For decades, the major focus of the U.S. health care system has involved treating acute illnesses and injuries (Institute of Medicine, 2011). Health care challenges faced in today's 21st century have progressed exponentially. Although primary care is fundamental to health system performance, the nation has undervalued and underinvested in primary care for decades (McGlynn, E. A., Asch, S. M., Adams J. et al., 2003). As a result, health care in the U.S. is often poorly coordinated and expensive—to the detriment of patients and clinicians alike.

#### Description of the Problem

The United States is at an important crossroads as health care reform implementations transform the health care system. The number of U.S. citizens aged 65 or older (baby boomers) is expected to rise from 12.7% in 2008 to 19.3% by 2030 (U.S. Census Bureau, 2010). Nearly one in two of these Americans experience health care issues related to chronic conditions (Center for Disease Control, 2010). Additionally, the number of individuals living with disabilities is expected to significantly increase over the coming decades. These prevalence's are expected to progress as Americans "age in," producing additional intensified demands for health care services (Institute of Medicine, 2012). In addition to aging, other barriers threaten our health care system. These include: provider workforce shortages, access to care, the rapid growth of populations with limited English proficiency (U.S. Census Bureau, 2010), and rising health care costs.

Evidence suggests that access to quality care can be greatly expanded by increasing the use of Advanced Practice Registered Nurses (APRNs) in primary, chronic, and transitional care (Bodenheimer et al., 2006; Craven & Ober, 2009; Naylor et al., 2004; Rendell, 2007). Academic nursing clinical practices and nursing centers have existed for over a century (McNeil & Mackey, 1995). Since 1985, there has been rapid growth in nurse-managed health clinics/centers, many of which were established by academic schools of nursing. Although these academic nursing clinical practices (ANCPs) offer communities progressive and alternative options for access to high-quality primary care services, an alarming number of these have closed (King, 2008). The nursing literature has identified important—but limited—factors that impede the efficiency of nurse practitioner practices including legal limitations constraining APRN scope of practice, prescriptive authority, and third-party reimbursement. The universal elements to evaluate sustainability in these clinical practices remain undefined (Ervin, Chang, & White, 1998; Pohl, Vonderheid, Barkauskas, & Nagelkerk, 2006).

This chapter will present the background and significance of the problem and the theoretical framework that provided the foundation for the study. The chapter concludes with the study's purpose, specific aims, and accompanying questions and hypotheses.

### *Background of the Study*

The Henry J. Kaiser Family Foundation (Kaiser Family Foundation, 2010) reported health care expenditures surpassed \$2.3 trillion in 2008—three times in excess of the \$714 billion spent in 1990 and eight times greater than the \$253 billion in 1980.

This outstripping of financial growth, coupled with the nation's economic slowdown and rising federal deficit, places extreme strains on the systems used to finance health care.

An updated National Association of Community Health Centers (NACHC, 2009) report disclosed over 2 million people had been added to health center patient rosters. Even with these additions, the numbers of those medically disenfranchised expanded beyond 60 million. The populations of individuals disproportionately affected included those underinsured, uninsured, low-income, and minorities (NACHC, 2009).

As the United States government implements the Affordable Care Act (ACA), health care coverage will extend to approximately 30 million additional Americans by 2014 (NNCC press release, June 16, 2010), leaving the remaining 30 million without coverage. This influx of newly covered recipients places an "immediate strain on the country's existing primary care system and increases the demand for primary care access now and in future years" (HealthcareReform.Gov. June 22, 2010).

At the same time health care coverage is expanding, dilemmas are emerging within the supply chain. Health care workforce supply is not meeting demand. Medical students face intense disincentives to become primary care providers. They are less interested in long hours and greater responsibilities (JAMA, 2009). Primary care salaries are at the low end of the practice specialty spectrum and reimbursement rates for primary care services are deteriorating. At the same time, medical students experience mounting medical school debt, escalating medical malpractice premiums, and increasing costs of operating a medical practice—from rent to labor. The combination of these factors contributes to the deterrence of medical students entering the primary care specialty.

Primary care disparities are most acute in rural areas. Bodenheimer (2006) found that while only 9% of physicians in the United States practice in rural areas, the expectation is to care for more than 50 million people—equating to approximately 20% of the U.S. population. This shortage of primary care providers negatively impacts the health of our most vulnerable populations in rural areas.

A similar shortage of primary care providers occurred in the early 1960s. The main drivers of physician departure from primary care at that time included: the emergence of practice specialization (with increased compensation in non-primary care specialties), new innovations and developments in medical knowledge and practice, and the introduction of governmental programs (1965) that provided health care coverage to the underprivileged. These departures facilitating a shortage of physician providers created the impetus for the development of the nurse practitioner role, with the expectation that they fill the primary care access void for underserved and underprivileged patients (Ford & Silver, 1967).

Academic nursing clinical practices (ANCPs) have expanded and evolved over the last few decades (Lang, N. M., Jenkins, M., Evans, L. K., & Matthews, D. 1996). Schools of nursing (most based at universities with academic health centers) started establishing their own practices in the 1970s. These ANCPs advocated an expanded role in health care delivery to nursing faculty, nursing students, and other health care students by offering primary care services, disease prevention, and health education and promotion. By the early 1980s, 63 schools of nursing were sponsoring or affiliated with ANCPs (Mezey, Baisch, Kinsey, Torrisi, & Huether, 1999). In 1987, the American

Nurses Association defined these primary care practices as community nursing centers:

Organizations that give the client direct access to professional nursing services. Using nursing models of health, professional nurses in these centers diagnose and treat human responses to actual and potential health problems, and promote health and optimal functioning among target populations and communities. The services provided at these centers are holistic and client-centered, and are reimbursed at a reasonable fee level. Accountability and responsibility for client care and professional practice remain with the professional nurse. (Aydelotte, M.K. et. al., 1987)

Consistent with that definition, these practices today may be referred to as a “nurse-managed health center,” “nurse-run clinic,” “community nursing organization,” or “academic nursing clinical practice” (as denoted in this paper). Leadership for these practices is designated as: “(1) a nurse holds the chief management position; (2) accountability and responsibility for patient/client care and professional practice remain with nursing staff; and (3) nurses are the primary care providers seen by clients at the center” (Lockhart, 1995).

The National Nursing Centers Consortium (NNCC) was established in 1996 as the Regional Nursing Centers Consortium and has since become the first national association of nurse-managed centers in the U.S. It is a not-for-profit organization whose vision is to: “support nurse-led care and nurses at the front lines of care” with its mission to:

Advance nurse-led healthcare through policy, consultation, programs and applied research to reduce health disparities and meet people’s primary care and wellness needs.

NNCC’s foundation is based on the concept of holistic care nursing promoting wellness into a primary care model known as nurse-managed health centers. These nurse-

managed health centers are defined as “nongovernmental, community-based health clinics that are managed by nurses in partnership with the communities they serve” (National Nursing Centers Consortium, 2010).

There are approximately 250 NNCC-affiliated nurse-managed health centers in the United States, located in 39 states and the District of Columbia, that reduce health disparities by providing high quality comprehensive primary health care, health promotion, and disease prevention services to uninsured, underinsured, and vulnerable patients in rural, urban, and suburban communities (NNCC, 2010). Depending on location and population, select clinics may apply and receive Centers for Medicare and Medicaid (CMS) designation as “safety net clinics” or “nursing centers” designed to care for and treat vulnerable communities without regard for payment. However, many ANCP providers bill and are reimbursed for their services.

Practice in these settings extends beyond direct patient care, as ANCPs play an important role in the education of health professionals. More than 85 of the nation’s leading nursing schools either own and/or operate academic nursing clinical practices that serve as clinical education and practice sites for nursing students and faculty preceptors. These clinics are led by nurse practitioner (NP) faculty who practice independently, providing care within a nursing model. The practices also promote interprofessional collaboration among faculty experts and students from other academic schools or colleges, producing expanded learning opportunities in evidence-based practice, enhanced care delivery models, and patient care outcomes.

Nationwide ANCPs provide value to the communities they serve by increasing access to quality health care at an affordable cost. Clinical practice site locations are

determined by the needs of the local communities. These sites include freestanding facilities, school-based clinics, not-for-profit clinics, academic nursing clinical practices serving university campus communities, and retail practices (Barkauskas et al., 2004; King, 2008). They deliver a full range of primary care services that often include a strong focus of educating and engaging patients in adopting healthier lifestyles and preventing at-risk medical episodes (Munding, 2000). Data also indicate that ANCPs have high patient satisfaction (Hill & Doddato, 2002) and lower hospitalization rates than similar safety net providers, and they utilize higher rates of generic medications (NNCC, 2007).

### *Challenges Facing ANCPs*

While academic nursing clinical practices are engaged in improving the quality of life for the populace they serve, they face a number of challenges. ANCPs have operated in the U.S. for many years with varying degrees of success (Barger, Nugent, & Bridges, 1993; Cole & Mackey, 1999; Mackey & McNiel, 2002; Davis, Holman, & Sousa, 2000). Nichols (1992) reported the underutilization and ineffective use of advanced practice registered nurses (APRNs) cost the health care system between \$6.4 and \$8.75 billion. The nursing literature continually describes nurse practitioner successes as reductions in direct costs of care and production while attributing favorable patient clinical outcomes to cost effectiveness (American Academy of Nurse Practitioners, 2010); Burgener & Moore, 2002; Dierick-van Daele, 2010). Unfortunately, these metrics are not often extrapolated to operational or financial results (Sawyer, Alexander, Gordon, Juszczak, & Gilliss, 2000).

Financial issues continue to threaten the sustainability of these clinics. Although innovative clinical practices and practice models have sought and received initial funding by various granting agencies, 39% of the 70 grantees receiving federal funding to establish nurse-managed centers from 1993–2001 have closed (NNCC, 2007). Additionally, over the past decade, traditional sources of financial funding for academic schools of nursing have steadily eroded (Esperat, Green, & Acton, 2004).

Current economic conditions have further reduced budgetary resources, placing increased pressure on academic institutions to use ANCPs as supplementary revenue streams with the expectation that patient revenues will sustain a clinic's operations. Further barriers to practice include outdated state and federal regulations, biases, and policies preventing APRNs from practicing to the full extent of their education, skills, and competencies (Hansen-Turton et al., 2010; Safriet, 2010). Restrictions and medical professional opposition regarding scope of practice have undermined the nursing profession's ability to provide and improve routine and advanced care (Safriet, 2010).

Securing continuing, adequate, and equitable reimbursement for enduring clinical services is challenging. Financial shortfalls by ANCPs arise from difficulties obtaining adequate reimbursement and combating continually declining reimbursement from third party payers. Some managed care organizations (MCOs) have refused to credential nurse practitioners as primary care providers, while others reimburse NPs at a lesser rate than primary care physicians (Hansen-Turton, et. al., 2010). Further shortfalls occur from uncompensated care resulting from the increasing numbers and care needs of under- and uninsured patients.

Other financial impediments include direct competition from alternative private and retail practitioners and the cost of navigating legal and regulatory issues. For academic nursing clinical practices to be operative and viable, federal, state, and local policies must support the practices and the nurses who run them. Centers and their directors need legal authority, provider recognition, and financial reimbursement for services to be successful (NNCC, 2007).

The evolving health care system commands an informed, educated, skilled health care workforce, with maximal utilization of APRNs (Bodenheimer et al., 2005; Craven and Ober, 2009; Naylor et al., 2004; Rendell, 2007). *The Future of Nursing* (Institute of Medicine, 2011) commands that advanced practice registered nurses realize and broaden their potential as primary care providers across practice settings to the full extent of their education and training (Robert Wood Johnson Foundation, 2011).

As schools of nursing strive to meet national workforce needs, nursing faculty are expected to impart current and applicable didactic clinical expertise. According to Benner (1984), the knowledge of nursing is embedded in practice, and Starck, Walker, and Bohannon (1991) assert that the mission of a health sciences university cannot be fully achieved without practice. Schools that compel faculty to maintain active clinical practices also incorporate practice as an essential component of the tripartite mission (research, teaching, and service/practice). Furthermore, faculty who do not practice lose their credibility in the classroom and the respect of their colleagues in practice/service settings (Millonig, 1986).

Schools of nursing, through academic nursing clinical practices, find themselves perfectly positioned to converge into the primary care niche as defined by the Institute of Medicine's (IOM) National Academy of Sciences (1994). Primary care is the

provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community (Baer, 1999).

### *Significance of the Problem*

As academic nursing clinical practices continue to grow and provide health services to communities in the evolving health care market, it is clear that long-term survival depends upon successful financial management (Swan and Cotroneo, 1999). Dependence on financial support from charitable agencies, government, or private grants and/or funds from schools of nursing can no longer replace the management of operational costs and are not acceptable for substitutes for sustainability.

There is no perceived "silver bullet" or quick fix for this dilemma. Although the nursing literature contains some studies describing the issues of sustainability, these focused discussions are non-encompassing and provide limited contextual factors and empiric evidence needed to define a robust framework for clinical practices (Pohl et al., 2006; Vonderheid, Pohl, Schafer, Forrest, Poole, Barkauskas, & Mackey, 2004; Vonderheid, Pohl, Tanner, Newland, & Gans, 2009; Vincent, 1999). Even though these practices stressed the need to become solvent and sustain operations, they were unable to define more than a few elements that lead to practice sustainability (King, 2008; Barger, 1995; Pohl et al., 2006; Barkauskas et al., 2004). Elements discussed have been reported in isolation and lack the development of a comprehensive tool to test those that effect and

impact practice sustainability. Executive nurse leaders in academic nursing clinical practices reiterate the immense need for the development of a sustainability tool.

### *Purpose of the Study*

This study is intended to determine the elements of sustainability in existing academic nursing clinical practices, thus ensuring long-term survival. The importance of this study lies in the potential to improve the viability and promote the continuation of nursing clinical practices to the populations they serve.

The remainder of this chapter will present the background of the problem and the theoretical framework that served as a keystone for the study. The chapter concludes with the study's research question, purpose, specific aims, and hypotheses.

Academic nursing clinical practices represent and complement the unique characteristics of their respective nursing institutions. It is these unique viewpoints of attributes—the definitions, models, and infrastructures of the practices—that generate practice variation at each school (Becker et al., 2007). However, common to all schools is the strong need for practice models and leadership that merge three perspectives: clinical practice, clinical research, and practice/financial administration (Lang, Evans, & Swan, 2002).

The National Organization of Nurse Practitioner Faculties (NONPF) acknowledges the multiple roles, complex structures, settings, and economics involved in defining, establishing, and maintaining viable ANCPs (Pohl, Duderstadt, Tolve-Schoeneberger, Uphold, & Hartwig, 2002). Although many schools of nursing have been involved in some aspect of academic practice, the lack of a unified focus, approach, and

direction has hampered nursing practice's concerted movement (Lang et al., 2002). These factors are compelling schools of nursing to re-evaluate their missions, governance, and operations.

As the U.S. devotes extensive resources to health care, the essential evaluation components of success must include how effective high-quality and high-value care is delivered in an equitable manner. The delivery of primary care and other health services in the community must grow significantly if the U.S. health care system is to be both widely accessible and sustainable.

Changes in the health care system create the necessity for the clinician to navigate complex and evolving technology-based systems and synthesize and integrate concepts and knowledge while assuring optimal quality of care in the evidence-based environment. The demands of these endeavors require intensified fluency in the area of business acumen, in conjunction with financial management and executive skill development, to effect health care delivery and policy. This knowledge and skill set requires preparation at the doctoral level of education.

The Doctor of Nursing Practice (DNP) degree expands the level of advanced practice nursing skills at organizational and system levels, allowing the degree holder to assume greater responsibility for the provision of patient care across a broad range of settings. Successful management and fiscal accountability of these practices requires intentional analyses when transitioning from traditional infrastructures and funding methods to new and entrepreneurial approaches (Bleich, 2003). ANCPs must expand and formalize to withstand increasing cost pressures by applying sound business judgment necessary to achieve a fiscally viable nursing practice. In addition, they must meet the

practice requirements of faculty clinicians, the changing needs of society (particularly the community population), the health system, and the students they serve (Miller, Bleich, Hathaway, & Warren, 2004; Lang et al., 2002; Becker et al, 2007).

The demand for nursing care has intensified over the past 100 years. These increases have occurred almost simultaneously with the availability of hospital insurance, Medicare in 1965, and two world wars (Mitchell, 2009). Supply has not kept up with demand, leaving a chronic nursing shortage. With the economic downturn there has been a renewed interest in nursing careers and increased nursing school applicants. Shortages of faculty and clinical practice teaching sites continue to be major barriers to accommodating enough students to meet future demands. Schools of Nursing are doing “more with less.” Additional pressures of declining budgets, increased faculty position vacancies, and aging faculty impact faculty availability for clinical practice. Confoundingly, clinical faculty salaries have not kept pace with those in the private sector, fueling an additional exodus out of academic settings due to economic inequities.

Academic nursing clinical practices, specifically nurse-managed health care centers, could open opportunities for the expansion and creation of new clinical opportunities for students, but many of these centers struggle with funding and are not fiscally sustaining (Veaser & Mackey, 2007; Barkauskas et al., 2004; Edwards, Oppewal, & Logan, 2003; Marion, 1997).

A temporary lifeline has been extended to these ANCPs with the Affordable Care Act. This plan makes available new funding initiatives of \$15 million, and the average grant award will be approximately \$1.5 million to ten awardees. This initiative provides:

Federal funding to support the development and operation of Nurse-Managed Health Clinics (NMHC) to: 1) improve access to primary health care, disease prevention and health promotion in medically underserved areas (including enhancements of outreach strategies); 2) enhance nursing practice by increasing the number of structured clinical teaching sites for undergraduate and graduate nursing students; and 3) enhance electronic processes for establishing effective patient and workforce data collection systems. Under this program, the focus would support the training and practice development site for nurse practitioners to build the capacity of primary care provider workforce. Additional funding for existing clinics today and new clinics in the future will offer a brief financial reprieve to struggling academic practices (Affordable Care Act, 2010).

The culture of a research-intensive environment found at many academic institutions may create a sense of competition for scarce resources (Lang et al., 2002). Faculty workload deliberations have attempted to define and integrate clinical practice components related to models of care delivery, sustainability, solvency, funding, equity, and scholarship into promotion and tenure decisions (Sawyer et al., 2000). Although nursing faculties are engaged in innovative and scholarly practices, they are continually expected to balance the effort necessary to incorporate teaching, research, and community service activities with their clinical practice roles. Additional workload concerns arise when faculty rely on their clinical practices to maintain certification (Cohen, Hickey, & Upchurch, 2009) or as a method to offset academic salaries. In many universities there is also an expectation that clinical faculty will fill the instructional void when research faculty become funded. These instructional reassignments often impact the availability of clinical faculty for clinical practice and, in turn, diminish the value of practice.

Although some schools have made progress, the issues of concern in the literature regarding the sustainability of ANCPs over the past 25 years remain basically

the same (Ervin et al., 1998; Pohl et al., 2006). No current consensus exists regarding standardized data elements for academic nursing clinical practices operated by Schools of Nursing. These data deficiencies limit the ability to produce successful academic clinical practices that are functionally operational, fiscally solvent, and revenue producing (Pohl et al., 2006).

In addition to the variation in attributes of these academic clinical practices, there is extensive discrepancy among practice plans and practice frameworks in Schools of Nursing across the United States. The traditional clinical practice plan typically describes the scope and extent of the clinical practice activities in relation to the mission of the School of Nursing (“Match to Mission”), criteria for clinical practice revenue distribution, and the faculty requirements for participation. It also specifies the responsibility, obligations, and oversight of the School of Nursing. According to the 2002 NONPF survey of Pohl et al., with more than three-quarters of the membership participating, formal practice plans existed in only one-third of the universities, with another third reporting a plan in process (18%) or being considered (21%). Twenty-five percent reported no formal practice plan. Seventy-five percent of these universities also reported that academic nursing clinical practice plans were optional. Business plans were in place for about one-fifth of academic nursing clinical practices. Even those schools which reported a cohesive practice plan found that maintaining the survival of clinical practices was a challenge as they require ongoing and many times additional resources. In the end, this may mean the school faces the hard choice of abandoning patients by closing non-viable practices that place a financial drain on the system.

Schools of Nursing have utilized the knowledge and corresponding theoretical and conceptual frameworks of nursing theorists and those from other disciplines to describe the models of care delivery that each school employs: that is, assisting patients/clients toward health, wellness, adaptation, spirit of caring, and self care (Fawcett, 2004). Frameworks have been created and used in nursing practice, education, administration, and research, but none are found in the development of formal, consistent academic clinical practice business practices. There is limited data defining the function, viability, or sustainability of academic clinical practices.

As independent practice nursing roles expand and the necessity to practice becomes a required component for competence, recruitment, and retention, practice sustainability is essential (Becker et al., 2007). Sustainability is also a requirement for academic clinical practices to progress, evolve, and meet the changing needs of society, health systems, academic faculty, and their students. Additional research is needed to provide empiric support to identify and document the salience of these sustainability factors. That is, not only to elucidate facilitating factors but also hindering factors.

Planning for clinical practice viability requires a coherent comprehension of the concept of sustainability and its operational indicators (elements) which can be used to monitor sustainability over time. Potential influences impacting sustainability may include features of programmatic methods, strategies, and clinical project design; consideration of implementation and organizational issues; and influencing factors in the broader community environment which may impact long-term program maintenance (Shediac-Rizkallah & Bone, 1998).

Therefore, a study to determine the elements/factors of sustainable academic nursing clinical practices was conducted to inform the development of successful practice models for schools of nursing. Prior to undertaking this examination, a valid and reliable instrument was created and pilot tested to measure the intervention's effectiveness in determining sustainability in academic clinical practices.

### *Theoretical Framework Supporting the Study*

#### Sustainability Research and Development of the Sustainability Theoretical Framework

There were no models or frameworks found that measured sustainability or its elements in the nursing literature. An exploration of the social sciences literature produced the biographies of two renown researchers, Professor Jay Mancini, PhD and Research Scientist, Lydia Marek, PhD of the Department of Human Development at Virginia Tech. Together, they explored the components of sustainability in community-based programs and social organizations - how it is achieved, maintained, and enhanced.

In 1996, they began sustainability research with data collected from 92 community-based programs funded by the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service (CSREES/USDA) through an annual congressional appropriation for the National Children, Youth and Families at Risk (NCYFAR) Initiative. Between 1996 and 1998, open-ended interviews were held with over 100 community program personnel to facilitate diverse and distinct descriptions of sustained programs (Mancini & Marek, 2004). Also in 1998, an equivalent set of open-ended questions was presented to 4,000 program professionals participating in an organizational change study (Betts, Peterson, Marczak, & Richmond, 2002). These

preliminary studies concentrated on definitions, descriptions, and elements of sustainability and informed a survey that was implemented from 1999 to 2003 involving 153 community-based programs in the United States. In conjunction with the data collected, their research was further informed by the existing literature on sustainability.

“Sustainability is the capacity of programs to continuously respond to community issues. A sustained program maintains a focus consonant with its original goals and objectives, including the individuals, families, and communities it was originally intended to serve” (Mancini & Marek, 2004). Mancini and Marek utilized two surveys to measure sustainability. The first determined the current state of the programs measured. Three facets of sustainability were measured. The first—program activity—found that 22 of 24 projects continued to be active (92%). Of these 22 active projects, 26% reported expanded activities; 30% reported activities were being maintained; and 44% reported a reduction in activities. Those reporting reductions described the lack of local funding for “non-traditional” programs and organizational downsizing. The second facet—perceived sustainability—reported 56% of the projects were “Mostly” (43%) to “Completely” (13%) sustained, and 39% were partially sustained. Only one of the 23 projects reporting was “not at all” sustained. Finally, the ability of the program to meet the needs of at risk youth and their families exhibited 74% of active projects “Mostly” (43%) to “Fully” (13%) met these needs, versus (26%) “Somewhat” meeting the needs of the youth and/or their families (Marek & Mancini, 2007).

The second survey, the Program Sustainability Index (PSI), initially included 53 items reflecting seven sustainability elements (number of items in parentheses): leadership competence (7), effective collaboration (12), understanding the community

(9), demonstrating program results (7), strategic funding (5), staff involvement and integration (10), and program responsiveness (3).

Data were primarily analyzed by confirmatory factor analysis using the structural equation modeling (EQS) program (Bentler & Wu, 2002). The initial confirmatory test of the model failed and an exploratory approach (EFA) was used selecting the best combinations. It was concluded that the 6-factor solution best described the data. Six factors containing a total of 29 of the original 53 PSI items were entered into a final confirmatory factor analysis. Table 1 contains the correlations among each of the six sustainability elements and these middle-range program results. Two types of correlations were computed; Pearson's  $r$  as a measure of linear association, and  $\eta^2$  as a measure of nonlinear association. Of particular note was the deletion of the element titled "understanding the community" and its nine items. Analysis of these items indicated merits as a standalone measure, but not as a good fit within the overall PSI model as it was "diffuse rather than distinctive" (Marek & Mancini, 2007).

PSI FACTORS	MIDDLE-RANGE PROGRAM		
	Meeting At-Risk Needs (N = 224)	Planning Process (N = 193)	Confidence in Program Survival (N = 223)
Leadership competence	.18**	.22**	.20**
	(.20*)	(.25*)	(.33**)
Effective collaboration	.11*	-0.14	0.08
	-0.11	0.04	(.20*)
Demonstrating program results	.22**	.13*	0.11
	(.27**)	-0.21	-0.13
Strategic funding	.17**	.24**	.18**
	-0.17	(.26*)	(.27**)
Staff involvement and integration	.19**	.19**	.16*
	(.23**)	(.28*)	(.32**)
Program responsivity	.12*	0.05	0.1
	(.17*)	-0.19	(.17*)

Note. Understanding the community is excluded in this table because of its lack of fit with the final model.  
CFA model - Nonlinear correlations, eta, in parentheses. \*p < .05. \*\*p < .01. (one-tailed)

Note. Adapted from Mancini, J.A., Marek, L. I. (2004) Replicated with permission.

Mancini and Marek's (2004) research has focused on specifying the sustainability elements and variables that reflected whether community-based programs were sustaining their benefits to families and communities. The focal point of this framework was the independence of each element and its relationship to sustainability but not to the other elements, or in other words, to identify which elements contributed to and detracted from project sustainability. Their model of community-based program sustainability is displayed in Figure 1. The relationships between the sustainability elements (leadership competence, effective collaboration, demonstrating program results, strategic funding, staff involvement and integration, and program responsivity) and their contribution to middle-range program results (continuing to focus on goals, planning for sustainability)

produce program sustainability. In addition, the realization of middle-range program results intensifies the probability that the program will be sustained.

There are three dimensions in Mancini and Marek's (2004) conceptual model "Elements of Sustainability; Middle-Range Program Results and an Ultimate Result of the Program/Center Being Sustained." This model (Figure 1) is based on tested sustainability elements that lead to desired middle-range program results; these desired results increase the chances of a sustained program. This model was updated in 2007.

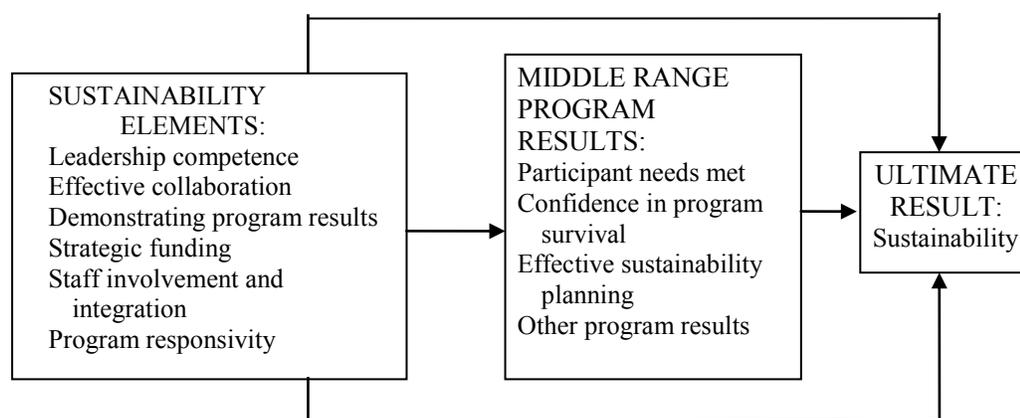


Figure 1. Conceptual Model of Community Sustainability from Marek & Mancini (2007).

Sustainability Elements may also lead directly to the Ultimate Result. The model synthesizes and links constructs and concepts from the three named dimensions.

The definition of sustainability that corresponds with this model is the "capacity of programs to continuously respond to identified community issues." This credence maintained that it was more important to "sustain benefits to families and communities than to sustain program activities *per se* since programs may vary in intensity and frequency and actual program activities can change." This definition resonates conceptually with academic clinical practices and the patient communities they serve.

Identifying the elements of sustainability in academic nursing clinical practices was this investigator's study's primary focus.

### *Conceptual Framework Definitions of the Study*

The conceptual framework utilized for this research study contains the six major factors found in the Elements of Sustainability and their definitions (italics reflect verbatim) (Marek & Mancini, 2007):

**Leadership Competence:** *Leaders are committed to the program, communicate a clear mission, and are able to develop, early in the program life-cycle, a realistic program plan with multiple strategies for sustainability.*

**Effective Collaboration:** *Collaborators include key community stakeholders that share a common vision for the program and understand that their responsibilities include providing resources, program development and implementation, and program evaluation.*

**Demonstrating and Disseminating Program Impact:** *Evaluation plans are developed early and used to demonstrate program effectiveness, inform program modification, and disseminate program successes to key stakeholders and potential funders.*

**Strategic Funding:** *Funding is sufficient for program operations and there are plans in place for obtaining additional long-term funding.*

**Staff Involvement and Integration:** *Staff is committed to the program, is involved at all levels of program operation, is flexible and creative in their approaches, and are well qualified and trained to work on the program.*

**Program Responsiveness:** *Programs are responsive to changing community needs and resources.*

Relationships between sustainability elements and the sustainability planning process measure were also in the expected direction, with four of six elements being significant. For example, higher scores on leadership competence, demonstrating program results, strategic funding, and staff involvement and integration, were related to earlier planning for program sustainability.

Advanced practice registered nurses should be utilized as primary care providers across practice settings to the extent of their education and competency. For these outcomes (and those listed above) to become a reality, nursing programs must “gear up” leadership and practice competencies while cultivating legislative initiatives to bridge the gap between insurance payment structures and access to care. Only then will the contributions of APRNs and their full economic value across practice settings be realized.

#### *Purpose, Specific Aims, and Research Questions*

From a practical perspective, based on the investigator’s professional administrative clinical work and dialogues with leaders of academic nursing clinical practices, there is copious evidence to suggest that research is needed to determine if there are specific elements that lead to clinical practice sustainability.

Therefore, the goal of this study was to develop, validate, and field test an original survey instrument to identify the elements of sustainability in selected academic nursing clinical practices of schools/colleges of nursing in the United States.

The purpose of the study was to determine the elements that contribute to the sustainability of academic nursing clinical practices. The specific aims and corresponding research questions were:

1. Evaluate instrument elements by Domain of Interest for item clarity, item relevancy, internal consistency, and content validity.

Question 1.1. Were the instrument elements clear and relevant to measure sustainability for the domain of Academic Infrastructure?

Question 1.2. Were the instrument elements clear and relevant to measure sustainability in the domain of Academic Practice Leadership and Planning?

Question 1.3. Were the instrument elements clear and relevant to measure sustainability in the domain of the Clinical Practice Site?

Question 1.4. Were the instrument elements clear and relevant to measure sustainability in the domain of Academic Practice Finance?

2. Determine the specific Academic Infrastructure elements that contributed to the sustainability of academic clinical practices in schools/colleges of nursing.

Question 2.1. Which specific instrument-elements contribute to the sustainability of academic nurse-managed clinical practices?

3. Determine the specific Academic Clinical Practice Leadership and Planning elements that contribute to the sustainability of academic clinical practices in schools/colleges of nursing.

Question 3.1. Which specific instrument-elements contribute to the sustainability of academic nurse-managed clinical practices?

4. Determine the specific Clinical Practice Site elements that contribute to the sustainability of academic clinical practices in schools/colleges of nursing.

Question 4.1. Which specific instrument-elements contribute to the sustainability of academic nurse-managed clinical practices?

5. Evaluate the Academic Practice Financial elements, using the Institute of Nursing Centers (INC) data, which contribute to the sustainability of academic clinical practices in schools/colleges of nursing.

Question 5.1. Which specific instrument-elements contribute to the sustainability of academic nurse-managed clinical practices?

6. Evaluate the relationship between the participant's impression of sustainability and the elements found to contribute to sustainability.

Question 6.1. Is there a relationship between the participant's impression of sustainability and the elements found to contribute to the practice sustainability?

## Outline of Remaining Chapters

Chapter Two presents a comprehensive review of the literature outlining the constructs of academic nursing clinical practices, and the domains and elements/items that support sustainability. The review begins with a broad topical and historical review of the literature surrounding academic nursing clinical practices, followed by a more focused, pertinent, and critical review of the research and variables that examine the sustainability of today's ANCPs. Chapter Three describes the methodologies used in the creation of the Academic Clinical Practice Sustainability Survey Tool, the description of the research design, operational definitions of the study variables, sample selection, and instruments and procedures used to collect and analyze data. The results and discussion of the study's aims and questions are presented in Chapter Four. Finally, the limitations of the study and implications for future practice and research are presented in Chapter Five.

CHAPTER II  
REVIEW OF THE RELEVANT LITERATURE  
and  
THEORETICAL /CONCEPTUAL FRAMEWORK

Introduction

Continuous availability and access to health care are paramount concerns in the United States health care system. Additionally, this major problem is predicted to exacerbate as the Affordable Care Act promises to add 32 million Americans to the rolls of the insured at a time when there is a growing shortage of primary care providers, namely physicians, who care for adult and older adult patients (Fairman, Rowe, Hassmiller, & Shalala, 2011). This shortage in internal medicine and family medicine is projected to reach 35,000 to 44,000 by 2025. These projections, coupled with the Center for Disease Control and Prevention's statistics in 2012 (accessed online , which found 133 million Americans (almost 1 out of every 2 adults) had at least one chronic illness, raise deep concerns regarding ongoing care needs.

*Definition of the Problem*

Throughout the United States, considerable resources are allocated and exhausted by planning, implementing, and maintaining academic nursing clinical practices (ANCPs). Most of these practices are operated by schools of nursing and may receive varying financial support from their parent organizations, including academic health centers (AHCs). These practices are predominately managed by nurses with the majority of primary care services delivered by advanced practice nurses (APRNs)—predominately

nurse practitioners. These practices provide health care services and promote patient wellness, disease prevention, and management of chronic conditions. They champion broad inclusivity for diverse (and many times underserved) populations while also providing distinctive student experiences. The development and characteristics of these practices are unique and often reflect the affinity and resources of the faculty and administration that conceptualized them. Furthermore, ANCPs have routinely followed the defined mission, purpose, and goals of their academic setting (Pohl et al., 2006). Additionally, many of these practices provide a critical safety net function in their communities by treating patients who are uninsured, underinsured, or living in poverty.

Systematic research regarding the long-term maintenance and sustainability of clinical practice is receiving increased attention within health care reform policy and discussions. What is meant by the concept of sustainability? Sustainability, as characterized in this study, exemplifies the phenomenon of program continuation and is distinguished by two considerations. First, sustainability is expansive and incorporates the essential ideas of perseverance, namely durability over time. It has the capacity of a health system (as a whole) to function effectively with minimal external input. Brinkerhoff & Goldman (1992) sustainability is not static or an end state, but an ongoing input-output process This is in contrast to the notions of institutionalization and routinization, which imply repetition but are inflexible and unchanging. The health care system must continuously transform resource inputs into health care outputs and may “ebb and flow and wax and wane” (LaFond, 1995) regarding the breadth and depth of their programming.

Attention and concern for the long-term viability of ANCPs has escalated.

Diminishing resources, reimbursement, and finite health care funding within this past decade have negatively impacted the longevity of these clinical practices, compelling closures soon after initial funding is exhausted and leaving patients and clients without health care resources (Goodman & Steckler, 1989; Bamberger & Cheema, 1990; Bossert, 1990). According to LaFond (1995), perpetuating a health care system that fails to meet the health needs of its patients/clients is of little value. Therefore, indicators of effectiveness must be a component of evaluation. Compounding factors include the disintegration of federal and state funding, which in turn produces severe budget shortfalls relative to economic declines (Henderson, 2011). These funding and reimbursement deficits, coupled with declines in the levels of National Institutes of Health (NIH) and other federal funding sources (Medicare and Medicaid), have forced universities, especially those with AHCs, to re-evaluate clinical program priorities and foci (Pomeroy, Rice, McGowan, & Osburn, 2008). The constraints of current education budgets and lack of additional discretionary funds prevents cross-subsidization from AHCs to assist struggling academic nursing clinical practices.

However, the lack of funding is a secondary effect. These practices are impacted by various internal and external factors that challenge sustainability and contribute to ANCP/nurse-managed health center (NMHC) demise.

A range of reports provides conceptual approaches and vision necessary to improve and sustain the health care system. However, these approaches were meant to outline the direction and roadmap for change and not the methodology necessary to *achieve* the changes. It is the intent of this study to assist in the actualization of the goals outlined in these reports by delineating the elements found to contribute to the sustainability of these essential nursing practices.

A systematic review of the nursing literature was conducted to identify attributes (elements) associated with sustainability of academic nursing clinical practices from current and previous literature, research, and other publications as rationale for those selected and presented in this study. Limited findings and elements associated with sustainability of ANCPs/NMHCs (or other clinical practices) were found. The literature search was expanded beyond nursing to the social sciences depicting community-based programs. Findings from the extended review produced cohesive background information, evaluated theories and concepts, and focused empiric evidence to support and isolate the constructs of sustainability in academic nursing clinical practices. Additionally, the social science community-based literature produced a relevant, applicable, and generalizable conceptual framework consistent with clinical program and ANCP sustainability (presented in Chapter One). The categorization of elements from these disciplines informed the Domains of Interest and associated specific aims confirming the relevance of the study.

*Description of the Problem*

There is marked emphasis in the literature to determine solutions that improve the health care system and its components. Goldman (2007) and McGlynn (2003) targeted three primary concerns: quality, access, and cost or value. In 2008, the Robert Wood Johnson Foundation (RWJF) and the Institute of Medicine (IOM) formed the Committee on the RWJF Initiative on the Future of Nursing, unleashing a two-year plan to assess and transform the nursing profession around three crucial areas—practice, education, and leadership. In 2010, *The Future of Nursing: Campaign for Action*, championed by RWJF in collaboration with AARP (formerly the American Association of Retired Persons), called for expanded utilization and partnership of nurses in achieving patient access to high quality, comprehensive centered care for all Americans. Also in 2010, as a component of new health care legislation, the Department of Health and Human Services Secretary Kathleen Sebelius dedicated \$15 million for new nurse-managed health centers.

Findings reported in *The Future of Nursing: Leading Change, Advancing Health* (IOM, 2011) underscored the “critical juncture” between the needs of diverse patient populations and the utilization of Advanced Practice Registered Nurses (APRNs). It emphasized the requirement for explicit health care workforce data to inform planning and impact change in the overall health care system.

There are large differences in the access and, consequently, the use of health care services across the country. However, little difference is found between the use of patient services in rural and urban areas within regions (MedPac, 2012). In other words, utilization of rural services is high in regions where urban use is high, and low within regions where urban use is low. Recipient satisfaction with access is also similar in rural and urban areas. Additionally, the quality of care is also similar for most types of providers in rural and urban areas.

Urban and rural primary care clinics, owned and/or operated by nurse practitioner faculties, play key roles in the plan to extend healthcare to all Americans. There are currently 250 Nurse Managed Health Centers in the United States providing over 2.5 million patient visits per year (Hansen-Turton, 2010). Additionally, Advanced Practice Registered Nurses have facilitated the largest expansion of community health centers since the 1960s, with 7,354 sites throughout the country providing care for more than 16 million people (Aiken, 2011).

ANCPs play a significant role in providing primary care services to these patients. It is critical to determine the factors that impact the viability and resources of these clinical practices as they deliver high-quality, low-cost care. Without these practices, many people in cities and rural areas would have no access to care.

#### *Rationale for Developing Sustainability Elements*

The advanced practice nursing literature illustrated positive outcomes of patient care and outlined barriers and challenges that impede the functioning of clinical practices. Few articles related impactful factors or aspects of sustainability other than those associated with financial reimbursement. However, an expansion to the social sciences literature produced additional themes and concepts pertaining to community-based

programs consistent with those in nursing practice. These thematic areas facilitated the identification and categorization of study elements as follows.

### *Definitions Used in This Study*

#### *Conceptual and Operational Definitions of Sustainability*

The literature review suggests that sustainability is not an isolated characteristic of a program, but rather an integral part of the life cycle of initiatives. A consensus definition of sustainability has not materialized in either community-based health centers or community-based program's bodies of research. The primary difference among definitions in these bodies of literature relates to the unit of analysis, that is, what is being sustained. Some definitions focus on sustaining the program or center (the intent of this study), while others focus on sustaining the activities and impacts of the programs at these centers.

Clinical programs are dynamic in the breadth and depth of their services and may contract, expand, or maintain original program activities. Sustainability refers to the degree to which a clinic or center is "embedded" in its community (Lockhart, 1995) and the capacity of its programs to continuously respond to its issues (Mancini & Marek, 2004).

A sustained program maintains a focus consistent with its original goals and objectives. This includes the populations (individuals, families, and communities) it was originally intended to serve. However, Pressman and Wildavsky (1979) maintain change is essential to program survival as "a basic reason programs survive is that they adapt

themselves to their environment over a long period of time” (p. 116) despite changes in the social system (Rogers, 1995).

*Sustainability* is the capacity of an organization to achieve long-term success and stability while serving its clients and consumers without the threat or loss of financial support and in turn, the quality of services. It is the ability to maintain and continue program services after a funding period is over and ensuring that the organization has become a permanent part of community resources (USAID Global Partnerships, 2008).

A consistent sustainability theme is the imperative to understand the community to determine care requirements and necessary resources. This insight influences program planning, asset allocation, and success. Validating program results is often difficult for community-based centers. Program evaluation measures must assess resource utilization and the effects of interventions and modifications to determine sustainability (Mancini & Marek, 2004).

A sustained program maintains consistency with its original goals and objectives. These objectives often include services to and outcomes directed toward the intended target population of the communities. Alignment or partnerships with external organizations or select established institutions may transpire (LaFond, 1995) to aid in meeting the overall community goals.

Specific to community-based health programs is the emphasis on continuation of the program or the program activities and its effects. According to Mancini and Marek (2004), it is more important to sustain benefits to clients and communities than to the program itself. In addition, several terms are used to express these phenomena, primarily emphasizing “benefits” as the core of the sustainability process. The literature describes the following definitions in clarification of the various concepts:

Sustainability is the capacity to maintain service coverage at a level that will provide continuing control of a health problem (Claquin, 1989).

Similarly, project sustainability is defined by many economists and international development agencies as the “capacity of a project to continue to deliver its intended benefits over a long period of time (The World Bank’s definition in Bamberger & Cheema, 1990).

A development program is sustainable when it is able to “deliver an appropriate level of benefits for an extended period of time after major financial, managerial and technical assistance from an external donor is terminated,” (USAID, 1988).

Sustainability is the capacity of programs to "continuously respond to community issues. A sustained program maintains a focus consonant with its original goals and objectives, including the individuals, families, and communities it was originally intended to serve (Mancini & Marek, 2004).

Additionally, in a lecture describing sustainability planning to community program leaders, Mancini summarized the following:

- The roads to sustainability are complex.
- Answering the sustainability question requires more than one answer.
- Practice professionals must be “intentional.”
- These intentional steps include: analysis of situations, conditions, purposes, desires, statuses, and discomfort.

Wolff, Suttentfield, and Binzen (1991) describe sustainability as organizational stability, outlining its three major components: the ability of the organization to provide services over time despite changes in the external environment, creating demand for services, and greater control over resources.

Three uniquely different perspectives were uncovered regarding sustainability. These included (1) the ability to maintain the health benefits attained by patients/clients throughout the initial program; (2) continuation of the program’s activities within an organizational structure; and (3) building capacity within a recipient or targeted community.

The focused archetypes comprised in the instrument were: academic infrastructure; academic clinical (faculty) practice leadership and planning; clinical practice sites; academic practice administrative and finance measures; and participant impression of sustainability. Pertinent constructs contained in the study included: primary care, academic clinical nursing practice (ANCP), nurse-managed health centers/clinics and safety-net providers. The definitions are as follows:

#### *Academic Infrastructure*

Academic infrastructure is defined as:

The systematic design of a society for the transmission and provision of knowledge, information, and technologies.  
(NASA, Sustainable Development Indicator Group, 1996).

#### *Academic Nursing (Faculty) Clinical Practice*

Academic (faculty) practice is:

the provision of professional services to individuals, families, and aggregate groups or communities by faculty members in the schools/colleges of nursing as part of their formal, negotiated workload (Edwards et al., 2003).

It is also defined by the University of Michigan (2010) as:

An innovative partnership between School of Nursing Faculty, communities, and organizations to design and implement bold new models for health care solutions.

Faculty practice is promoted in schools of nursing for the purposes of strengthening the clinical expertise of faculty, maintaining clinically relevant curricula, fostering student learning, and generating revenue. For clinical faculty, this practice often provides the foundation for academic scholarship (Becker et al., 2007).

Additionally, Vanderbilt University (2010) describes academic nursing clinical practice:

The delivery of nursing services by faculty through the roles of clinician, educator, researcher, consultant and administrator. The School [of Nursing] is committed to meeting the needs of underserved populations by continuing to open clinics in areas where nurse practitioners and nurse-midwives are needed.

#### *Primary Health Care*

In defining primary health care (or primary care), it is necessary to describe the nature of services provided to patients and to identify the primary care providers (AAFP, 2011).

Primary care is the term for the provision of health care services offered to patients by qualified clinical professionals who act as a first point of consultation for all patients and are usually located in the clients'/patients' home communities. These practices provide health promotion, disease prevention, health maintenance, counseling, patient education, and diagnosis and treatment of acute and chronic illnesses in a variety of health care settings.

### *Nurse-Managed Centers/Clinics*

Nurse-managed centers or clinics provide access to comprehensive patient care and health education services for diverse and oftentimes vulnerable populations in medically underserved suburban, urban, and rural communities throughout the country. The centers are directed, operated, managed, and staffed by advanced practice nurses (APRNs), including certified registered nurse practitioners and clinical nurse specialists, often teaming with other professionals, such as health educators, public health nurses, mental health professionals, community outreach workers, and collaborating physicians (National Nursing Centers Consortium, 2010).

Health care services at these clinics are often provided at reduced fees or free of charge to low-income, uninsured patients (also termed uncompensated care). This definition is analogous with the mission of a subset of ANCPs, designated as nurse-managed health centers and known as safety-net providers.

### *Safety-Net Providers*

Consistent with these is the Institute of Medicine's (2000) definition for safety-net providers:

Those providers that organize and deliver a significant level of healthcare and other related services to uninsured, Medicaid, and other vulnerable patients. These providers have two distinguishing characteristics (1) either by legal mandate or explicitly adopted mission they maintain an "open door," offering access to service for patients regardless of their ability to pay; and (2) a substantial share of their patient mix is uninsured, Medicaid, and other vulnerable patients.

*Academic Practice Finance Measures*

Little consensus exists regarding the conceptual and operational definitions of sustainability outside the financial arena. Financial self-sufficiency refers to the degree in which the practice is able to continue to provide services (Shediac-Rizkallah & Bone, 1998) and is often deemed the number one issue to address from the onset if a nurse-managed health center is to remain viable. Complete financial self-sufficiency for these practices indicates that they receive direct payment for services in excess of expenses and therefore are profit generating. A practice is considered mature when it can sustain itself, which is the ultimate goal in financial autonomy.

However, procuring stable and ongoing sources of revenue is challenging for these clinical practices. In many states, APRN reimbursement is disparate compared to those of physician colleagues. Contingent upon their organizational governance structure, practices that meet criteria may qualify for Federally Qualified Health Center (FQHC) designation and, in turn, access to multiple funding streams and reimbursement sources. Practices located in underserved areas may also secure higher billing revenues from Medicare and Medicaid and receive malpractice insurance coverage. To this end, the survival of nurse-managed practices calls for enhanced APRN business acumen and financial fluency to ensure these practices are efficient and sustainable (Barberio, 2010).

### *Faculty Practice Plan*

The formation of academic (faculty) practices and accompanying plans is impacted by external forces and varies by school of nursing. The practice plan provides administrative oversight and guidelines for practice approval and the distribution of clinical revenues derived from the professional services rendered.

The traditional (academic nursing) clinical practice plan typically describes the scope and extent of the faculty clinical practice endeavor, the role and responsibility of the faculty, and the faculty requirements for participation. It also specifies the responsibility and obligations of the school of nursing (King, 2008).

Membership in the plan includes faculty who provide direct or indirect professional services to clients (e.g., individuals, families, groups, communities) as part of their faculty role. Faculty participation in the practice plan may be mandatory or voluntary depending on the structure established by the school of nursing. Governance, practice contract negotiations, and oversight of the plan are delegated to a Faculty Practice Council whose membership is appointed by the school of nursing dean. The plan is reimbursed for professional services rendered to clients through a variety of mechanisms: patient self-pay, third party insurance, provider service/health care services contracts, grants, or gifts. Many practice plans exclude consultation activities, as these are often negotiated as a separate component of the faculty role.

Faculty practice has become an integral component of faculty role expectations at many schools of nursing (Sawyer, 2000). Workload and effort, especially without adequate compensation, remains a hindrance to practice. The value of faculty practice

time and expertise has not been sufficiently studied nor demonstrated. Integration of the practitioner, educator, and researcher roles remains extremely difficult and at times forbidding.

The guidelines suggest that an academic nursing clinical practices model should be fiscally self-sufficient, able to support the academic nursing clinical practices mission, and follow a developed plan (Marion, 1997; Edwards et al., 2003.) According to Pohl et al.'s National Organization of Nurse Practitioner Faculties' (NONPF) 2002 survey, with more than three quarters of the membership participating, formal practice plans existed in about one-third of the universities, with approximately another third reporting plan development in process (18%) or being considered (21%), and 25% reporting no formal practice plan. Seventy-five percent of these universities reported that practice plans for academic nursing clinical practices were optional. Business plans were in place for about one-fifth of academic nursing clinical practices.

#### *Formal Business Plans*

Shediak-Rizkallah & Bone (1998) emphasized that the establishment of a plan for sustainability is essential to success. A developed business plan is often required for each prospective practice venture. It provides the financial framework and direction for operations, provides the measures for developing and implementing sustainability strategies and determining progress, and is critical to long-term viability and continuation of academic nursing practices (Miller et al., 2004). Components of the plan include creating SMART (specific, measurable, attainable, realistic, and timely) goals and objectives; outlines specific, detailed financial projections for services; documents

growth targets, enterprise management, and marketing and recruitment strategies; describes activities and expectations for monitoring the business; and provides methods for continuously evaluating and improving strategies and results. It should be used as a blueprint for determining the feasibility of clinical services, faculty development requirements, and the expected return on investment of time and resources.

### *Billable Patient Services*

Each ANCP has focus populations. Health care diagnostic and therapeutic services, treatments, or procedures are tailored to the population served and measured by each unique patient visit. To qualify as a visit, there must be a face-to-face encounter with a covered/credentialed provider. Providers in this category include nurse practitioners, certified nurse midwives, and physicians. Each clinic must maintain an accurate and up-to-date recordkeeping system that ensures patient confidentiality. The classification and structure of the clinical practice dictate payment arrangements for services/treatments offered. These may include services paid by the patient on a sliding scale based on the patient's ability to pay, billed to the patient's insurance (including Medicare and Medicaid) for payment, provided free of charge, or subsidized by a collaborating agency, business, or grant.

Sawyer et al.'s (2000) assessment of ANCPs using NONPF evaluation criteria resulted in recommendations that quality patient outcomes demonstrating improved care should be tracked by the academic nursing clinical practice. Additionally, the practice should embrace the role of the advanced practice nurse as it leads to financial stability.

### *Productivity and Tracking Patient Care Visits*

The literature is sparse regarding the impact of the practice and use of coding patterns at academic nursing practice centers. Tracking patient visits and the corresponding revenue generated is vital and necessary for ANCP sustainability.

Provider services, which are described by current procedural terminology (CPT) codes and health care common procedure coding system (HCPCS) codes, range from those that require considerable amounts of provider time and effort, clinical staff, and specialized equipment, to those that require little if any provider time and minimal other resources.

According to Vonderheid et al. (2009), key practice financial strategies include the assessment of CPT coding patterns to insure provider understanding of the services rendered and the actual and potential revenue generated. This system also promotes adherence to federal coding guidelines.

### *Current Procedural Terminology (CPT) Codes*

Current Procedural Terminology is the list that provides unique billing codes for services rendered. This code set accurately describes medical, surgical, and diagnostic services and is designed to communicate uniform information about medical services and procedures among physicians, coders, patients, accreditation organizations, and payers for administrative, financial, and analytical purposes (Current Procedural Terminology, n.d.).

The unit of measure is the acuity level (or severity of illness) of a patient care visit and is designated by a CPT code. This system uses a rubric to determine the factors involved in the visit. Standard documentation components include patient history, examination of one or more effected area, medical decision-making, counseling (if

applicable and greater than 50% of the visit length), coordination of care, and the time spent providing the service.

According to Woodcock (2006), relative value units (RVUs) are the best measurements of provider productivity currently available and are widely used in both medical and nursing practices across the country. RVUs are considered a statistically valid measurement by the health care industry (Glass, 2002).

RVUs were initially created to establish an equitable payment structure to physicians for Medicare services and not as measures of productivity. For each service, Medicare determines RVUs for three types of resources (Dummit, 2009): *Work RVUs* account for the time, technical skill and effort, mental effort and judgment, and stress to provide a service. *Practice expense RVUs* account for the non-provider clinical and nonclinical labor of the practice, as well as expenses for building space, equipment, and office supplies. *Professional liability insurance RVUs* account for the cost of malpractice insurance premiums.

By tracking RVUs, the practice can document the work a clinician performs, irrespective of variation in fees among specialties and health plans. Furthermore, when a practice is reimbursed under both capitation and fee-for-service, the RVU system captures the work involved in treating capitated patients. However, the system assumes that providers are adept at selecting the CPT codes that appropriately represent their work. If a provider does not document the patient visit accurately and completely and assigns every visit a level 2 (out of 5), then that provider will not get credit (or reimbursement) for all of his/her work. The greatest challenge to RVU productivity benchmarking is that the scale changes annually (Woodcock, 2006).

### *Evolution of Academic Nursing Clinical Practices*

Academic nursing clinical practices (ANCPs) are referenced in the literature in a variety of ways. Most commonly these acronyms include faculty practice, nurse-managed clinics, or nurse-managed health centers.

The term “faculty practice,” as previously discussed on pages 35-37, is promoted in schools of nursing to maintain licensure, intensify and bolster clinical expertise of advanced practice nursing faculty, enhance curricula through real-life experiences and acumen, potentiate student learning, and generate revenue for the school (Starck et al., 1991; Becker et al., 2007). Ford and Kitzman (1983, p. 14) described faculty practice as

Those functions performed by faculty within a service setting that have as their principal goal the continued advancement of the nursing care of patient/clients, a goal congruent with the role of an academician in a professional discipline.

Budden (1994) defined academic nursing clinical practice as a “formal arrangement existing between a clinical setting and a university which allows nurse academics to consult and deliver client care resulting in research and scholarly outcomes.” In simplest form, it is the “provision of direct or indirect nursing services” as a component of a faculty member’s role (Miller, 1997).

The National Organization of Nurse Practitioner Faculties (NONPF) upholds clinical practice is essential for all nurse practitioner faculty (Pohl, 2002) and that practice currency is necessary to sustain and expand the critical skills required to care for clients, maintain competency in the classroom, and retain certification in the specialty area. A national survey conducted of its 1999 membership, determined 76% of the nurse practitioner faculties were practicing. In 2002, the *Criteria for Evaluation of Nurse*

*Practitioner Programs* was revised, emphasizing, “Faculty members who teach clinical components of the NP program/track must maintain currency in practice” (p. 10) asserting that institutions provide administrative support for faculty to practice the required clinical hours necessary to obtain and maintain national certification. Similarly, Edwards et al. (2003) defined academic nursing clinical practice as “the provision of professional nursing services to individuals, families, aggregate groups or communities by faculty members in the College of Nursing as part of their formal, negotiated workload arrangement.” These criteria are reviewed every 3-5 years and the fourth edition published in 2012 upholds these criteria.

Durand (1985), during her doctoral studies, investigated the meaning of practice in the context of the nursing faculty role with three groups of nurses: nursing faculty, clinical nurse specialists, and nursing doctoral students. She defined academic nursing clinical practice as the practice of nursing performed by faculty as a component of the faculty role within a predictable, consistent, and ongoing commitment of time. The attributes of practice included confrontation of clinical issues and fostered client interactions through student placement in relevant practice experiences. These definitions substantiate academic clinical practice as an integrated component of the faculty member’s role.

The practice of primary care was originally characterized by an established continuity relationship between a patient and physician and considered the central grounding of the U.S. health care system (IOM, 1996). The IOM further defines primary care as:

The provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients, and practicing in the context of family and community.

The concept of nurse-managed clinics was conceived in the late 19th century with the establishment in 1893 of the Henry Street Settlement in New York City (Glass, 1989). This practice was a non-traditional example of nurse-delivered primary health care for the poor. By 1913, the settlement had expanded to seven buildings on Henry Street and two satellite centers, with 3,000 members in its classes and clubs and 92 nurses making 200,000 visits per year. Later, in 1925, Mary Breckinridge founded the Frontier Nursing Service and launched rural health clinics in Hyden, Kentucky (Frontier Nursing Service, retrieved

Academic nursing clinical practice is a relatively new construct, emerging with the evolution of nursing education into academic settings during WWII (Christy, 1980) followed by the creation of the first nurse practitioner program at the University of Colorado in 1965 by Loretta Ford, RN, and Henry Silver, MD.

Prior to this transition, novice nurses learned nursing by practicing side-by-side with experienced nurses as mentors in hospital and clinical settings, in the role that is currently defined as a clinical preceptor. The nurse practitioner movement reinforced the necessity of combined education and clinical practice with the placement of advanced practice proficient faculty in “real world” clinical settings.

As nursing education moved from the clinical setting into the academic classroom, the evolution of an academic nurse educator role was set in motion and a new issue arose. How would schools provide clinical experience to their students? The nurses’

endeavors elevated public awareness of clinical nursing expertise and professionalism resulting in support from civic, state, and national agencies. Contractual agreements were established between schools of nursing and health care organizations to provide clinical sites for student practice experiences.

Another result of the history deriving from our all-encompassing medical practice acts is the fact that the general public almost reflexively associates healthcare with physicians. Although nursing functions have existed for millennia, the formal development and legal recognition of APRNs as a distinct professional group has occurred only in the past 40–50 years. Thus, though the public is increasingly familiar with provider titles such as nurse practitioner, nurse-midwife and nurse anesthetist, it is still “doctor” who “knows best.” As the prominent medical sociologist Eliot Freidson has noted, “health services” as understood in the United States “are organized around professional authority, and their basic structure is constituted by the dominance of a single profession [medicine] over a variety of other, subordinate occupations.” This construct, which underpins the continued centrality of “doctor” and “physician” in the popular culture, prevents the public from forming an accurate perception of the many and diverse types of essential health care providers and their spheres of competence. Instead, misperceptions are reinforced by mass media marketing messages—for example, those declaring that “only your doctor can prescribe” a drug, when, in fact, APRNs in a majority of the states can and do legally prescribe that drug on their own license. (Institute of Medicine, 2011, p. 455).

Academic nursing clinical practices have operated in the U.S. for many years with varying degrees of success (Barger et al., 1993; Cole, F. & Mackey, T., 1999; Davis, A.L., Holman, E. J., & Sousa, K. H., 2000; Mackey, T. A., & McNiel, N. O. (2002). Fagin (1985) and others chronicled the history of their struggles promoting the integration of nursing education and clinical practice. In the mid 1960s to 1970s, nurse practitioners were allowed to provide primary care. With public and private support, academic educational programs began to prepare nurses for advanced roles.

One of the earliest nursing center models on record was the Division of Nursing contract award (1970) to Arizona State University for the development and maintenance of a nursing center. Initially housed on the university grounds, the center relocated from the university's school of nursing to a community site. This ANCP was self-sustaining, covering its costs through client fees and third party reimbursement from the state and county payment plans. It was also in the 1970s that nurses achieved "organized collective power," which created the means essential to reach desired clinical and professional goals.

The availability of government and private funding sources accentuated the synergism of nursing practice and education roles. In 1979, thirteen prominent nursing leaders formulated a proposal statement for the establishment of academic nursing clinical practices. As the result of that action, The Robert Wood Johnson Foundation funded the Frontier Nursing Service and 38 other freestanding health clinics with nurses as primary providers (Barger & Rosenfeld, 1993). Also between 1979 and 1980, start-up funding was provided for ANCP projects at the universities of Connecticut-Storrs, Montana-Bozeman, and Wisconsin-Milwaukee by the Division of Nursing (Reisch, 1992).

In 1987, the American Nurses Association (ANA) narrowly defined community nursing centers as:

Organizations that give the client direct access to professional nursing services. Using nursing models of health, professional nurses in these centers diagnose and treat human responses to actual and potential health problems, and promote health and optimal functioning among target populations and communities. The services provided at these centers are holistic and client-centered, and are reimbursed at a reasonable fee level.

Accountability and responsibility for client care and professional practice remain with the professional nurse.

The expansion of academic nursing clinical practices paralleled the allocation of federal funding through the Division of Nursing at the Bureau of Health Professions in the mid-1980s (Clear, Starbecker, & Kelly, 1999). In the late 1980s, the number of schools of nursing operating community nursing centers expanded (Boettcher, 1996). These ANCPs provided clinical practice sites for student learning experiences and clinical services to the community for those who were most often poor, underserved, and vulnerable populations.

In December 1987, the Community Nursing Centers Bill was signed into law. This law formalized direct Medicare and Medicaid reimbursement for nurses practicing in nursing centers, initially covering ten demonstration sites (NLN Publications, 1985). In 1988, the National League for Nursing's Council on Nursing Centers (NLNCNC) was established, and by 1991, 250 nursing centers had been launched (Dodgson, 1999).

An underpinning for financial stability was the capacity of the academic nursing clinical practices to offer economical health care. In the 1990s, the Independence Foundation, a private philanthropy in Pennsylvania, strategically invested approximately \$20 million in the development of a nurse-managed health center network in Philadelphia. The foundation envisioned these emerging practices as promising solutions to the health care needs of the underserved and contributed \$500,000 for the purchase of an electronic practice management and medical record system to determine the utilization of health care services and facilitate data collection at the eight nurse-managed health centers located in the Philadelphia region. These centers formed a practice-based research

network, four of which were academic nursing clinical practices managed by the National Nursing Centers Consortium (NNCC). They also qualified to receive a federal grant from the Centers for Medicare and Medicaid Services (CMS) to conduct an evaluation of the centers. All centers carried the caveat that they become financially self-sustaining during the ten year grant period without compromise to their mission of providing health care services to underserved, indigent populations.

The necessity of community evaluation and planning of services was exemplified with the 1994 Lillian Wald Community Nursing Center in Baltimore, Maryland (Shriber & D'Lugoff, 2002). Budget reductions had forced state health department clinics to close, creating large service voids. Subsequent preparatory planning began to evaluate service viability for the new Wald Nursing Center.

Goodman et al. (1998) found that a program's organizational longevity was not related to whether the program was fully functioning or sustainable, but to its acclimation into organizational routines. The Wald service evaluation process involved completing multiple community assessments stratified by geographic location, population health concerns, and client age. Barriers to care were identified as a lack of patient telephones and transportation, limited availability of center hours, and previous poor communications with health care providers. In addition to these barriers, the lack of health insurance coverage and diminished socio-economic status were also considered. The results of this comprehensive assessment found accessible primary adult personal care facilities readily available within the community. Further analysis validated substantial numbers of children in the community and the availability of preschool,

Head Start, and after-school programs. These additional data prompted a major shift in the evaluation team's primary client focus from adult to children's health care services.

Nurse-managed clinics have been located in geographic areas where access to clinical services has been limited (Barkauskas et al., 2004). In the past, most ANCPs were mission driven, with advanced practice nurses providing primary care to underinsured or uninsured populations. These faculty did not explore reimbursement options or push for direct or third-party reimbursement, but relied on grants or entitlement programs for support (Bleich, 2003). Also, in these early years, payment at the point of care was an additional challenge and viewed as a barrier to providing services to the underserved and uninsured populations. Consequently, payment collections were not enforced, inflicting financial hardship on these respective clinics and their benefactors. Once the initial, non-renewable funding had expired, many ANCPs continued to struggle to sustain themselves. By 1993, the number of NLNCNC academic nursing clinical practices had decreased to 50, and by 1996 only 40 centers remained.

Barger et al. (1993) found an inverse relationship regarding the revenue generated by schools with nursing centers only when compared to schools with diverse clinical practice endeavors.

New and creative modes of care began to be conceptualized and implemented. The W. K. Kellogg Foundation (1990) funded a mobile nursing clinic based at the Medical College of Georgia School of Nursing. Clinical practices at this mobile clinic provided outreach maternal-child health services to the underserved, enhanced opportunities for student educational experiences, and faculty-led research.

Ten years passed since the initial Independence Foundation grant provided funding to four ANCPs and, in 2000, an in-depth evaluation of these nurse-managed health centers was initiated. During this time, all four ANCPs were able to establish effective billing systems, obtain credentialing with major area payers, overcome barriers of trust with their respective communities, and grow client profiles. However, none of the four practices achieved financial sustainability.

Over the past decade, important policy conclusions ensued as ANCPs have become increasingly progressive and multifaceted. Determined by their operations and patient populations, ANCPs could receive formal designation as nurse-managed health centers and, in turn, qualify as safety-net providers. These designations, however, did not preclude their precarious financial positions. Billable patient volumes remained a gridlock as it was impossible to drive sufficient collectable patient billing revenue with a disproportionate number of uninsured patients (Ervin, Chang, & White, 1998). In addition to cost-based Medicare and Medicaid reimbursement, additional resources were required for these centers to affect sustainability.

A number of clinical practices were partially or fully underwritten by their affiliated nursing schools (Mackey & McNiel, 1997), while others relied on charitable grants or entitlements to supplement or, more commonly, as sole financial support for ANCP stability. According to Mackey (2002), successful ANCPs must acquire, evolve, and diversify revenue streams to stay afloat. Miller et al. (2004) echoed this sentiment, indicating it was no longer practical to rely on traditional revenue sources alone. While new funding avenues must be created to sustain, enhance, and complement academic

missions, the traditional methods of practice must also progress, develop, and integrate new ideas and concepts (AACN, 2004). Additionally, Edwards et al. (2003) emphasized the necessity to track, document, and validate ANCP successes.

The Division of Nursing (1998) funded more than 40 nursing centers and continued to endorse these practice arrangements during each funding cycle. The progression of nursing roles and responsibilities has advanced the functionality and services of ANCPs. Edwards et al. (2003) expanded the ANA definition, emphasizing academic nursing clinical practice models must be “dynamic and continually evolving” to ensure high quality clinical services. While direct patient care services are essential to maintaining traditional clinical practices, Miller et al. (2004) confirm additional faculty engaged services as consultative “client care” and professional education enhance revenues beyond the margin experienced by direct care.

All aspects of sustainability should be intentionally studied and carefully premeditated before establishing an academic nursing clinical practice or other patient care program, given the importance of the commitment to provide health care services to the community. The planning involved with these practices must be “deliberate with the objective to create services that will endure, and not as experiments or innovations to be abandoned if they do not yield the anticipated or desired results” (Esperat et al., 2004). The consequences of severing services to these patients/clients require serious consideration. This impact is particularly severe when the client originates from a medically underserved population and alternative options for health care are drastically limited.

Despite 25 years of success in a variety of communities, multiple barriers still exist and prevent ANCPs from thriving. Nurse-managed centers remain an unknown model of health care and face complex challenges generated from academic parent organizations, social and/or political environments, regulators, and, often, the communities they serve (King, 2008).

Projections of intensified demand for health care in the U.S. population spurred the Institute of Medicine's study committees (1998) toward infrastructure transformations in primary care. The following statement prepared for the National Roundtable on Health Care Quality captured the magnitude and scope of the problem:

Serious and widespread quality problems exist throughout American medicine... [They] occur in small and large communities alike, in all parts of the country and with approximately equal frequency in managed and fee-for-service systems of care. Vast numbers of Americans are harmed as a result. (Chassin & Galvin, 1998, p. 1000).

Over a decade later, barriers still exist and the state of primary care remains unresolved and unaltered. For these reasons, The Josiah Macy, Jr. Foundation (2010) convened a conference entitled, "Who Will Provide Primary Care and How Will They Be Trained?" The following excerpts are from the conference report:

We are facing an economic situation in which the current rate of rise of medical cost is unsustainable, and this situation is exacerbated by an aging population with higher care needs and expectations. These events have created a climate in which it is necessary and appropriate to question the models of care and health professions education on which we have relied... state and national legal, regulatory, and reimbursement policies should be changed to remove barriers that make it difficult for nurse practitioners to serve as primary care providers and leaders of patient-centered medical homes or other models of primary care delivery.

This document outlines and underscores the national issues hampering ANCP practices and the need for sustainability, however, few factors indicative of achieving sustainability were revealed or defined.

### *Predictors of Sustainability*

Clinical programs may be able to survive temporarily without strong collaboration, the demonstration of results through research, or responsiveness to community changes. However, they are less likely to be successful or survive with poor leadership, little funding, and poorly involved staff (Mancini & Marek, 2004).

A review of the literature funded by the U.S. Department of Health and Human Services (2010) summarized and synthesized how practitioners, researchers, and policymakers defined and measured the constructs of sustainability for community coalitions and identified theoretical frameworks that address sustainability for these coalitions. A component of this study revealed the following characteristics as pertinent predictors of sustainability: leadership, membership diversity, history of collaboration, structure, resource diversity, sustainability plans, and community buy-in (Goodman et al., 1998; Leviton, Herrera, Pepper, Fishman, & Racine, 2006; Mancini & Marek, 2004).

Diversity of funding sources in community-based health programs (Butterfoss & Whitt, 2007) was an additional predictor. Butterfoss and Whitt observed that respected community programs were more likely to obtain new resources, funding opportunities, and thrive. Effective collaboration positioned the programs to achieve their goals and

gain additional support. Organizations that engage members of the community (e.g., business professionals, policymakers, consumers, and residents) in planning and marketing have enhanced capacity to grow the program over time (Feinberg et al., 2008; Wolff, 2001).

Marek and Mancini's (2007) findings have substantive importance. Identified by these noted researchers, leadership, funding, and staffing were sound indicators of program success and sustainability. The models suggested four major perspectives of sustainability, including: adherence to program principles and objectives, organizational integration, maintenance of health benefits, and community capacity building. The examples below accompanied each type of sustainability outcome and were incorporated into data collection protocols.

#### *Adherence to Program Principles and Objectives*

- Continuing specific programs and activities begun during the initial funding period;
- Maintaining the lead organization or staffed coalition charged with implementing the program; and
- Supporting different types of services than those provided during the initial funding period, but that still reflect the central ideas and objectives of the program.

#### *Organizational Integration*

- Assimilating the programs goals and objectives into the organization's mission statement; and
- Incorporating policies and procedures initially developed for a program throughout the organization's entire system of programs and services.

*Maintenance of Health Benefits*

- Changes in the circumstances of program clients (e.g., lower rates of homelessness);
- Changes in the behaviors of program clients (e.g., maintaining drug-free status);
- Monitoring activities to ensure long-term control of community health problems.

*Community Capacity Building*

- Establishing coalitions and other formal partnerships;
- Maintaining informal connections to individuals and institutions within the community;
- Enacting longstanding policies to improve community health outcomes;
- Enhancing a community's physical and social environment, which may eventually result in positive changes in behaviors and health outcomes;
- Survival of skills and capabilities by community members, particularly for collaboration.

Altarum Institute. (2009)

*Academic Infrastructure—Factors of ANCP Success*

Barger (1995) described seven major factors considered fundamental to the success of ANCPs and faculty clinical practices. These factors included: funding; integration of the center into established community services; marketing center services; identification and mitigation of legal and regulatory issues; and faculty and research issues. King (2008) conveyed “Critical Determinants for the Future of Nursing Centers.”

These sustainability concepts addressed:

- Strategic positioning for changes in health care delivery;
- Health policy issues favoring reimbursement and NP autonomy;
- Public education and support;
- Documentation of high quality health care resulting in improved health outcomes;
- Development of a viable research agenda including cost-effectiveness and impact studies; and
- Analytics and problem-solving educational preparation of the next generation.

#### *Promotion, Tenure, and Faculty Retention*

A less obvious facet of ANCPs, in addition to the provision of client care, is the opportunity for faculty promotion, tenure, merit, and revenue generation (NONPF, 2012). Successful faculty retention requires demonstrations of value often reflected as workload accommodations and/or compensation. As competition increases and the funding for university salaries diminishes, alternative methods to recruit, compensate, and retain outstanding faculty need to be creatively expanded.

Major nursing authorities, health care institutions, special interests groups, and society have recommended the faculty role include academic nursing clinical practices in work effort and compensation. Schools of nursing that employ nurse practitioners as faculty demonstrate an increased prominence of clinical practice (Pohl, 2002).

Academic nursing clinical practice agreements may be negotiated as private sector partnerships joining other established practices. These agreements occur

commonly between the school of nursing and a clinical and/or professional agency requesting the services of faculty members (McNiel & Mackey, 1995; Spitzer, 1997).

Several schools addressed compensation and retention issues through entrepreneurial contract negotiations and distribution of funds. These ventures entailed securing faculty contracts to manage health care business performance improvement initiatives, with access to clinical, academic, and/or organizational outcomes data. Other attractive means for faculty retention include interprofessional collaborative forums with distinguished faculty and other content experts for evidence-based standards development designed to enhance care delivery and patient care outcomes. Miller et al. (2004) emphasize that “replenishing the diminished resources that confront higher education and, if well conceived and managed, academic nursing clinical practice is a viable option to support existing academic program stability and growth.”

Nursing educational institutions differ in mission, settings, priorities, and the populations they serve. Gilliss (2004), in her report to the *National Summit on Nurse-Managed Health Centers*, and Houck (2004) concurred that practice activities and their attributes included in the school of nursing’s strategic plan or expectations for faculty advancement must align with the mission and goals of the academic institution or “Match to Mission.” Pohl et al. (2006) observed characteristics of academic nursing clinical practices most often reflected the affinity and resources of the faculty and administration that conceptualized them. Consistent with Sawyer et al.’s earlier findings (2000), she acknowledged ANCPs routinely incorporated the defined mission, purpose, and goals of their academic setting into clinical practices. However, as ANCPs matured, progressive, evolutionary, and multifaceted changes occurred in these practices, promoting uniqueness

and diversity. Consequently, the definitions developed for practice, the interpretations of scope, and the parameters around viability and sustainability may vary widely.

Schools of nursing practice faculty must have significant involvement and responsibility for the design and implementation of the entire education and practice experience (Stanley et al., 2007). The social science literature insists it is imperative for health care programs, as ANCPs, to prove that they deserve sustainability. Goodman and Steckler (1989) describe a worthy program as one that is “based on established theory, is well-implemented, is cost effective, is desired both by a client constituency and the host organization, and is producing desired outcomes” (pp. 64–65).

These distinguishing changes among practices facilitated operational and organizational infrastructure challenges impacting ANCP sustainability. Most often impacted were infrastructure development and maintenance, workforce recruitment and retention, and practice financial stability. Constraints to practice consisted of outdated policies, regulations, and cultural barriers, including those related to scope of practice (Hansen-Turton et al., 2010; Ritter & Hansen-Turton, 2008; Safriet, 2010). Becker et al. (2007) found that these unique attributes, definitions, models, and infrastructures of the practices created inconsistencies and generated practice variation at each school.

Publications of two early IOM reports, *To Err Is Human: Building a Safer Health System* (IOM, 2000) and *Crossing the Quality Chasm: A New Health System for the 21st Century* (IOM, 2001), illustrated how elements such as systems, processes of care, and organizational structure fundamentally enhance or detract from the quality of patient care. Establishing structure, rules, and responsibilities includes accepting ownership of programs and system changes by academic leaders and community partners. Structures

and rules may take the forms of written policies, procedure manuals, memoranda of understanding, and bylaws (Bryson, 1988). Engaging in purposeful, strategic planning for sustainability early in the development and throughout the life of a community health program increased its operational effectiveness and survival (Goodman & Steckler, 1989; Shediak-Rizkallah & Bone, 1998; Johnson, Hays, Center, & Daley, 2004; Mancini & Marek, 2004; Beery et al., 2005; Butterfoss & Whitt, 2007). Collaboration may lead to increased practice visibility, access to desired patient populations, space allocations, equipment subsidies, availability of patient transportation, and utilization of community member volunteers. Wolff et al. (1991) advocate the infrastructure elements of sustainability:

A clear articulated mission; a strategic plan for the organization; strong, innovative leadership; recruitment and rewarding excellent staff; and responsiveness to changing environments and client needs.

Evans and Lang (2004) described conceptual dimensions used to evaluate models of nursing practice. Although these concepts were not equated with sustainability of the clinical practice, elements emerged and were extrapolated to ANCP practices.

Dimensions of these conceptual models included ownership and the relationship of the practice to its parent organization, defined as:

the extent to which the School has financial, administrative and managerial responsibility for its practices (full equity vs. contractual); measures of performance - output (volume based -number of visits or patients seen); and outcomes - health status quality (incidence and/or prevalence related changes)...

*The Entrepreneurial Model.* Faculty may design their practice and provide patient/client services as part of their faculty duties or as a separate private practice.

*The Structural Model.* The academic clinical practice was located in a nursing center owned and operated by the school of nursing. The APRN faculty members provided health care services for the local community and functioned as preceptors for nursing students. The clinical practice effort was incorporated into faculty workload.

*The Contract for Services Model.* Services were contracted with a private or public health care agency and the school of nursing for APRN faculty to deliver health care services on their behalf. The school of nursing provided release time for those faculty from other assignments during clinic time. The school, in turn, was reimbursed for the practitioner's release/service time by the employing agency.

Expansion of archetypes to entrepreneurial models (individual contracts/partnerships) facilitated faculty integration and an expansion of services into established health systems/clinics, academic nurse-managed clinics/centers, consultative practices, and patient/client related projects and services.

Just as elements were found to contribute to sustainability, elements were also uncovered that impeded sustainability. Impediments included governance challenges, structural issues, a lack of funding for core operations, turf battles, leader and member turnover, and shifting priorities. These matters hindering sustainability were not unique to community-based programs but are also challenging academic nursing clinical practices (Beery et. al., 2005; Scheirer, 2005).

### *Clinical Practice Leadership*

Leadership is a key element of sustainability. It is essential that Doctors of Nursing Practice (DNP) programs prepare and develop future leaders of academic clinical practices in business practice management and administration. This crucial leader role provides oversight of professional academic programs, including community and traditional academic nursing clinical practices. Further, it incorporates strategic program planning and evaluation, the command of fiscal and financial management, human resource/workforce knowledge, faculty development, and delegation.

Schools of nursing have multiple missions, often referred to as “tripartite,” encompassing research, teaching, and clinical practice. This traditional triad is often viewed as a “triple threat” to the academic clinician as the value of the three roles is virtually measured in that order. According to Veaser and Mackey (2007) and Eggbeer (2009), practice priorities often interfere with securing the business skills necessary to grow and sustain the clinical enterprise. Academic nursing clinical practice leadership must be aligned with clinical system goals and objectives and held accountable for their results.

The Institute of Medicine and Robert Wood Johnson Foundation agree that accessible, high-quality care cannot be achieved without exceptional nursing care and leadership (IOM, 2011). Nursing leaders act as full partners with other health professionals, engage in scientific understanding of patient needs across the continuum of care, and have the capability to lead health care system improvements and redesign in the practice environment.

### The Practice Champion

Shriber and D'Lugoff (2002) described the new and evolving senior role of the Associate or Assistant Dean for Professional Education Programs and Practice. In contrast to the original Director of Clinical Practice role (level), these “Deans” function as leaders of independent clinical entities and their interrelated components within the broader academic enterprise (Eggbeer, 2009).

This position, called the practice champion, has the responsibility for both the community academic practice and the traditional academic nursing clinical practices. A committee chaired by this academic benefactor holds responsibility for program and operations oversight, policy and operating budget review, and compliance with all applicable laws and regulations. The business objective of the faculty practice committee is to “increase the proportion of revenue from patient care services and reduce reliance on grants, gifts, and loans.”

Additional champion responsibilities include managing practice budgets, assigning clinical and teaching responsibilities, developing the practice/education track faculty, and overseeing the professional academic programs for both the community and traditional academic nursing clinical practice. This role supports and advocates necessary changes on behalf of the ANCP to academic administration and the community.

The social science literature also described the necessity of the practice champion. The champion's duties were to publicly advocate the changes necessary for success on behalf of the community (Goodman & Steckler, 1989; Shediak-Rizkallah & Bone, 1998; Johnson et al., 2004; Mancini & Marek, 2004; Beery et al., 2005).

Goodman et al. (1998) found that a competent, committed core group of leaders were the most effective facilitators of action in community-based health programs and in nursing. These successful leaders were able to facilitate member involvement and build relationships and partnerships. Collaborations set in motion the development of a network of constituents instrumental in accomplishing the work of the association and, in turn, its sustainability (Butterfoss & Whitt, 2007). Other leadership attributes included commitment, vision, and talent to develop, amplify, and expand organizational capacity to build an effective program.

#### *Diversity - Programs and People*

Very few articles described the effect of personnel attributes and composition in either community-based programs or nurse-managed clinics. However, research in community-based programs found “coalitions that have a history of working together are more likely to survive post-funding than coalitions that come together for the purpose of obtaining a grant” (Leviton et al., 2006).

Wagenaar and Wolfson (1993) found that programmatic (i.e., nurse-managed center) leaders from diverse cultural backgrounds, especially those that reflected the community, were more successful in obtaining community buy-in and participation in health care activities from these patients.

#### *Resource Diversity*

Funding diversity is cited as a key predictor of sustainability in community-based health programs (Butterfoss & Whitt, 2007). The primary focus of these programs has traditionally revolved around the determination of program efficacy, while ignoring,

overlooking, or deferring the processes of long-term viability (Goodman & Steckler, 1989). As with ANCPs, community coalitions/health programs are often seed-funded or designed as demonstration projects/programs. Research findings indicate that finding new sources of funding to replace exhausted initial seed funds is but one of many factors that contribute to the sustainability of health programs and initiatives (Butterfoss & Whitt, 2007). Barger et al. (1993) described the inverse relationship regarding revenue generated by schools with solitary nursing centers compared to schools with diverse clinical practice endeavors.

Holman and Branstetter (1997) suggested strategies for achieving financial survival and success in independent nursing practices. Additional elements supporting these strategies were derived from the literature:

- Credentialing for provider status with all payers
- Negotiation and acquisition of profitable contracts and agreements with managed care organizations
- Execution of effective marketing strategies pertinent to the targeted population(s)
- Educating community leaders, professional groups, and interested citizen advocates regarding the role of, and care provided by, advanced practice nurses
- Scheduling educational sessions for targeted community organizations
- Reimbursement methodologies - collecting a fair market price for services at the time of service delivery

- Generating and cultivating relationships with complementary agencies to ensure local health care needs are addressed

*Resource Diversity—Financial Elements*

Houck (2004) asserts that performance metrics are necessary to track results, identify progress, and reveal opportunities for practice improvement or expansion including new ventures. Miller et al. (2004) maintain metric development must incorporate strategic and business planning, including scalable measurements for marketing, recruitment, and the creation of incentives to reward faculty effort.

The future success and continuation of nursing centers and other clinical practices depends, to a great extent, on securing financial capital and resources (Holman & Branstetter, 1997). Shriber and D'Lugoff's (2002) analysis of nurse-managed clinics' sustainability was attributed to their ability to acquire financial support and achieve financial independence. These factors necessitated ongoing analyses and evaluations of established provider performance, financial metrics, and status. Vincent, Thomas, Pohl, Hirth, & Oakley (1999) discovered that although patient volume was a factor to sustainability, increasing some types of visits actually potentiated loss of revenue.

Financial challenges to academic nursing clinical practices are not unique. Feinberg, M. E., Gomez, B., Puddy, R., & Greenberg, M. (2008) observed program survival was enhanced when political, financial, and institutional resources were secured. Resources were described as the availability of money, people, goods, and services. A major lesson learned was to balance payer mix with reimbursement of services and "charity care."

The University of Kansas (KU) attributed five key funding sources to the viability of their academic clinical practices. The literature continuously referenced these funding sources, as well:

- Third-party reimbursement from federal programs,
- Fee-for-service payments,
- External contracts,
- Charity and community donations, and
- Grants.

Supplementary funding opportunities were obtained through owner/sponsor organizations, partnerships, membership dues, or in-kind contributions (Butterfoss & Whitt, 2007).

The University of Kansas adopted an entrepreneurial model for their academic practice plan. A joint venture between the KU School of Nursing and the School of Allied Health established KU Health Partners, Inc., a 501(c)(3) corporation. This corporation is the sole entity by which KU professional advanced practice nursing and allied health services faculty from the two schools negotiate and fulfill managed care contracts.

It is estimated that more than half of the nurse-managed clinics established within the past two decades have closed due to lack of financial resources (Barger & Rosenfeld, 1993; Gray, 1993; Vincent, Oakley, Pohl, & Walker, 2002). Additional financial reasons for closure cited by Barger et al. (1993) included deterioration in patient reimbursement due to limited ability or the inability to contract with third-party payers, a “weak” financial base, inadequate staffing, and adjustments in academic institutional priorities.

Various case studies documented examples of programs initiated to improve quality and decrease costs for patients and payers. However, even with extremely positive gains in quality of care, the practices could not sustain the direct costs of running the programs and the diminished revenues that resulted from their successes. Predominant reasons for closure consisted of the inability to maintain financial viability due to a lack of third-party payments for reimbursement; failure to form a partnership with a local hospital; and the financial constraints experienced by the academic institution sponsoring the nursing center (Woog, Kos, & Hyman, 1981).

Successful financial management of academic nursing programs requires creative use of revenues from educational programs, research and training grants, and clinical practices (Miller et al., 2004). Edwards et al. (2003) also advocated the necessity of new and supplementary funding in order to “sustain, enhance, and complement academic missions.” However, Bleich (2003) found insignificant exploration of external reimbursement options or motivation to secure direct or third-party payments for services.

The consensus of these experts conceded it was no longer practical to rely on traditional revenue sources alone, as even with cost-effective care delivery, the overall costs of running an ANCP often exceeds receipts from billed services, sliding-fee scale payments, and voluntary contributions.

#### *Academic Organizational Subsidies*

Although some academic health center schools of nursing contribute sizeable resources to their ANCPs, many with documented subsidies up to 50% of the annual

ANCP budget (Barger, 1995), these affiliations have presented challenges and expectations that may have perpetuated the ANCPs vulnerability (Barger & Rosenfeld, 1993; Vonderheid, Pohl, Barkauskas, Gift, & Hughes-Cromwick, 2003).

Newer research revealed that situations have not changed. Pohl et al. (2004) reported five out of six ANCPs, specifically nurse-managed health centers, required and received subsidy by their parent universities at a supplemental grant level.

Academic health centers (AHC) rely on revenues from physician and ancillary services in university-owned and contracted affiliate hospitals, student tuition, research (primarily federal) grants, and academic clinical practices (medicine, nursing, pharmacy, dentistry, and others) to fully or partially fund their education and research missions (Culliton, 1993).

In the 1980s, “revenue generated by academic clinical practices emerged as the single most significant source of revenue for U.S. medical schools” (Jolly et al., 1990). At the same time government and private payers began reducing reimbursement for billable clinical services, these academic medical specialty departments were requiring more revenue to cover the costs of compensation, state-of-the-art technological improvements, and expenses.

Additionally, the health care needs of the U.S. population were changing and increasing, exerting pressure on medical schools to reduce the sizes of their specialty practice student bases and shift funding toward primary care. A consequence of this transition meant digressing from higher reimbursed procedures and treatments to the lower reimbursement of primary care and less financial support for non-sustaining clinical practices.

*Consensus Strategies*

The nursing literature regarding consensus strategies for academic nurse-managed clinical practices is sparse. Consensus strategies are used to define levels of agreement on controversial subjects and, in turn, solve problems (Fink, Kosecoff, Chassin, & Brook, 1984). Advocates suggest that consensus strategies can use structured settings, bringing experts together to use the best information available to determine solutions.

Consensus strategies are needed to create and implement comprehensive and collaborative plans that support patient care systems and long-term sustainability of academic nurse-managed practices.

Best practices of financially sustaining centers can be used as a benchmark (Vonderheid, S., et. al., 2003). The benchmarking analysis began with the creation of metrics for internal operations and their measures. Once established, these could be compared to external high-performing practices or similar businesses (Gift & Mosel, 1994).

A study of six nurse-managed primary care centers, four with university associations, was performed to evaluate their financial performance indicators. The following resulted:

- No center made a profit when only revenues were considered; contributed/in-kind costs were added to the bottom-line.
- The ability to delegate tasks to clinic staff improved production.
- An accounting practice that removes grants and contributions from revenue was suggested.

- Consistent monitoring and collecting of financial data, including performance measures, is important to identify operating strengths and weaknesses.
- Inconsistent billing practices were problematic and required follow-up.
- Reliance on grants, in-kind contributions for funding, and school of nursing contributions/subsidy did not lead to sustainability by themselves.

Designated strategies found in the literature included addressing the implementation of quality measures in ANCPs (Mackey, 2002); the use of the NONPF guidelines in the analysis of clinical practice outcomes; and identification of improvement opportunities that reinforce the strengths of the practice (Edwards et al., 2003).

Financial management and fiscal awareness should be as much of a part of the practice mission as patient care (Vincent et al., 1999). In 2006, the W. K. Kellogg Foundation funded a National Network for Nurse Managed Health Centers Data Consensus Conference in Washington, D.C., with the goal to create a minimum data set (MDS) and data warehousing for nursing. Championing this initiative, Pohl spearheaded a group of 53 national invitees and achieved consensus in identifying critical national database elements in two key categories of financial/business data elements, namely revenue and expenses. Recommendations related to clinical demographics and diagnoses were made. These data generated calculations of costs per encounter, operating margins and productivity ratios, and preliminary benchmarks based on percentile computation.

Consensus strategies outlined in the community-based program literature focused on achieving financial sustainability, specifically leveraging additional funds to support programs after the initial funding period ended. A recommended course of action for

systematically identifying and pursuing funding was outlined in the Sustaining Grassroots Community-Based Programs Toolkit (Center for Mental Health Services, 2008).

The following four major strategies were addressed in the fund development plan section and are applicable to academic nurse-managed clinical practices. These included:

- Diversifying funding sources—use a combination of different funding options such as donations, grants, and contracts;
- Developing sustainable relationships and partnerships - build capacity to successfully attract, nurture, and sustain relationships with funders;
- Pursuing business ventures (or social enterprises) engaging in entrepreneurial and earned-income strategies and activities, such as through the sale of goods and products; and
- Tapping into tax credits as a funding option—using tax credits to help reduce taxes owed to meet social needs.

### *Funding Streams*

According to Leviton et al., (2006) a budget of at least \$25,000 per year required a funding mixture (resources from at least three diverse organizations) for program survival. Rog et al. (2007) guarded against ear-marking funds for specific program activities. She suggested that funding should be flexible and available to support the core activities of the collaborative.

The current fee-for-service payment systems reward health care providers and hospitals who order and provide more services (primarily tests and procedures) for patients. These health care providers receive increased revenues (fees) for each service

(test/procedure) performed. This system fuels inflation in health care costs. The initiation of Healthcare Reform (2010) induced payers to reduce this mechanism for payments, focus on the achievement of patient quality measures, and facilitate system change.

The achievement of financial sustainability has been associated with business acumen (Vonderheid et al., 2003) and the conceptualization of business sense (Rainey, 2006). Understanding the financial performance of nurse-managed and/or owned practices is vital (Veeser & Mackey, 2007).

Accurate financial data is necessary to track a practice or plan for sustainability and self sufficiency (Pohl et al., 2006). Poor business practices and/or lack of adequate reimbursements facilitate the demise of many academic nursing clinical practices. Roberts (2002) noted in her dissertation findings, with 27% of deans and 29% of faculty responding, participating institutions did not have measurable outcomes for ANCPs.

Financial risk taking was exhibited in approximately one-third (33%) of successful academic practice program planning for establishing both conventional and entrepreneurial academic practices (Evans, Swan, & Lang, 2003). Risk-taking adventures for these practices included contract for services negotiated between the school and a private sector clinical agency, health system, or other designated agency. These contracts were generated to create internal and/or external partnerships (i.e., within the university setting, public school, or business) to provide health care services for students or employees; to purchase selected faculty services, including specific faculty knowledge or expertise (Hale, Harper, & Dawson, 1996; McNiel & Mackey, 1995; Spitzer, 1997); or for the formation of a nurse-managed primary care clinic.

Embraced in these relationships are enterprise and strategic “emergent” thinking. Emergent strategies are a series of actions or behaviors adopted by an organization or its subset. Key components of an emergent strategy are “thinking big” or risk taking, not only in relation to finances, but also in practice opportunities.

Mintzberg (1994, p. 23) argues that “strategy emerges over time as intentions collide with and accommodate a changing reality.” These strategies suggest organizational learning occurs and, in turn, determines the effective components of practice. Strategies, however, are often developed in contrast to or in absence of the organizational mission and goals including the deliberate plans that provide an organization purposeful direction. This commonly occurs when a school of nursing accepts an agreement that is outside of the faculties’ areas of expertise. When continued over time, the result is divergence from the original strategic plan. Mixing deliberate and emerging strategies or developing “umbrella” strategies may preserve organization structural control while permitting flexibility for evolving change and growth (Mintzberg, 1994, p. 25).

#### *Metrics of Sustainability*

The financial viability of ANCPs is dependent on new and returning patient visits. According to Hill and Doddato (2002), patient satisfaction is an indicator and component of high quality care and service. The primary purpose of their study was to determine patients’ satisfaction with the quality of health care services provided by an ANCP, and a secondary purpose was to determine the relationships among patient satisfaction, intent to return, and intent to recommend services.

The study consisted of a convenience sample of 107 adult patients who responded to an investigator generated patient satisfaction survey. Findings indicated that 94 (87.8%) of the patients were satisfied. Stepwise regression analysis identified patient treatment with respect to the rating of care received and the helpfulness of the person at the front desk as the strongest predictors of patient satisfaction. Correlation analysis revealed that patient satisfaction was highly correlated with intent to return and intent to recommend services ( $p < .01$ ).

Stability and sustainability of funding for ANCPs is an annual and ongoing challenge for schools of nursing (Becker et al., 2007; Pohl et al., 2006). Financial failure of existing clinical practices results in deprivation of excellent options for primary health care services as well as diminished health outcomes to communities and individuals. The Nursing Summit (2002) goals underscored maintaining financial sustainability through reimbursement, grants, and contracts. Additionally, the summit challenged ANCPs to acquire administrative acceptance of faculty practice and NMHCs as a critical component in schools of nursing and their universities.

However, in spite of all mandates, the practice terrain has not changed. King (2008) once again indicated financial sustainability as the most difficult challenge faced by ANCPs, and added that sustainability would only be achieved through cost-based reimbursement.

Financial challenges to ANCPs are not unique. A number of case studies have documented examples of organizations that initiated programs to improve quality and decrease costs for patients and payers. Unfortunately, many successful ventures, although improving the health of their patients, closed due to the inability to sustain themselves.

Greater transparency regarding performance requires payment approaches that reward rather than penalize cost-reducing behaviors.

Edwards et al. (2003) and Pohl et al. (2006) identified key ancillaries for ANCPs including fiscal responsibility and financial stability. Although these nurse-managed centers are commonly thought to provide health care in a cost-effective manner to underserved populations, a cost analysis of a community health care clinic performed by Saywell, Lassiter, and Flynn (1995) found that the cost of a health care visit by a nurse practitioner was more expensive than the cost of a community physician visit when all costs (actual and in-kind) were considered. The cost evaluations included general cost accounting, operational cost analysis, and the relationship between unit costs and productivity.

Further examination of these factors determined a difference between physician and nurse practitioner productivity at all levels. Nurse practitioners typically spent more time with patients and, in turn, saw fewer patients than physicians. With this finding, incremental increases in nurse practitioner productivity (the incremental addition of a few more patients) enabled the clinic to operate more efficiently and cost effectively.

A second revenue inhibitor identified for ANCPs was the volume of patient cancellations and “no shows.” This deduction produced potential volume enhancement measures as a percent decrease of failed patient appointments.

The outcomes of Saywell’s study resulted in efforts heralded by ANCPs as means to increase patient volume by identifying and implementing systems to prevent future failed and missed appointments. Innovative problem recognition and solution

implementation bolstered these ANCPs to continue to provide efficient and economical health care to underserved populations.

Veaser and Mackey (2007) endorse the value of constructing an annual report to provide a reference point for comparison and evaluation. This document serves as a report card of the organization's accomplishments, an illustration of the practices' core values, and a driving force and focus of plans for the future.

### *Barriers to Practice*

APRNs play a significant role in ensuring patient access to high-quality, cost-effective health care. However, federal and state policy barriers to APRN practice continue to exist across the country, impairing access to services, impeding patient choice, and raising health care costs (AACN, 2012).

In general, the health care market continues to be biased against and hostile to non-physician practitioners and non-physician owned/operated practices (Safriet, 2010). The odds of obtaining long-term and sustainable resources for nurse-managed centers are extremely doubtful unless they are able to penetrate the virtual wall of harsh competition for commercial and private managed care contracts (O'Grady, 2008). Several factors are designated as responsible for the precarious and unstable climate of the nursing center environment.

Health professional regulations, biases, and policies restrict entry into the profession by setting minimum levels of education and experience required to practice (Hansen-Turton et al., 2010; Ritter, A. & Hansen-Turton, T., 2008; Safriet, 2010). In addition, regulations, many of which are outdated, specify legally permissible restrictive

boundaries including scope of clinical and business practice for APRNs and other health care professionals (Begun & Feldman, 1990). These restrictions prohibit non-physician providers from practicing to the full extent of their education, skills, and competencies.

The practices of health care professionals are regulated by each state along with U.S. federal government oversight. The theoretical literature suggests that these medical professional regulations may affect the quality of health care services, including the costs of producing and the prices for providing health care services. These regulations also impact the number and types of health care practitioner professionals and their associated livelihoods (Begun & Feldman, 1990).

State laws vary widely in the level of physician oversight required for nurse practitioners, with some states allowing NPs to practice independently, while others limit NPs' authority to diagnose, treat and prescribe medications to patients without supervision. In six states with a wide range of scope-of-practice laws—Arizona, Arkansas, Indiana, Maryland, Massachusetts and Michigan—the laws in and of themselves do not appear to restrict what services NPs can provide to patients, according to a new qualitative study by the Center for Studying Health System Change (HSC). However, scope-of-practice laws do appear to have a substantial indirect impact because requirements for physician supervision affect practice opportunities for NPs and may influence payer policies for nurse practitioners. Such policies include whether NPs are recognized as primary care providers and included by health plans in provider networks and whether NPs can bill and be paid directly. States with more restrictive scope-of-practice laws are associated with more challenging environments for NPs to bill public and private payers, order certain tests, and establish independent primary care practices. To ensure effective use of NPs in primary care settings, policy makers may want to consider regulatory changes beyond revising scope-of-practice laws, such as explicitly granting NPs authority as primary care providers under Medicaid or encouraging health plans to pay nurse practitioners directly.

The Institute of Medicine (2011) report “The Future of Nursing: Leading Change, Advancing Health” emphasized the following:

If the system is to capitalize on this opportunity, however, the constraints of outdated policies, regulations, and cultural barriers, including those related to scope of practice, will have to be lifted, most notably for advanced practice registered nurses.

During the course of this study, the IOM committee formulated four key messages imperative to guide the transformation:

- Nurses should practice to the full extent of their education and training;
- Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression;
- Nurses should be full partners, with physicians and other health professionals, in redesigning health care in the United States and,
- Effective workforce planning and policy-making require better data collection and an improved information infrastructure.

According to Safriet (2011):

For health care providers of all types (other than physicians), the framework defining who is legally authorized to provide and be paid for what services, for whom, and under what circumstances is among the most complex and uncoordinated schemes imaginable.

The specific restrictions resulting from these complex and unwarranted program limitations can be grouped into two principal categories:

- State-based limitations on licensure scopes of practice for APRNs, preventing them from practicing to the full extent of their license and abilities, and
- Governmental and private sector payment or reimbursement policies that:
  - Prohibit eligibility for payment, or
  - Prevent them from direct payment for their services, or

- Reimburse at a severely discounted rate when providing the same services as physicians.

Many progressive states have evolved their legal scope of APRN practice frameworks with the expanding skills, education, training, and abilities of these health care professionals. However, several states continue to constrain the utilization of nurse practitioners with outdated (or in some instances newly imposed) restrictions on professional services. Depending on their jurisdiction, these restrictions may preclude or limit the authority to prescribe medications, admit patients to hospitals or other care facilities, evaluate and assess patient conditions, and order and evaluate tests and/or procedures.

These limitations occur at the local, state, and federal levels. The effects of these governmental regulations are further compounded by the credentialing and payment policies of private insurers and managed care organizations.

#### *Existing Gaps in the Literature*

The research literature to date identified the absence of objective descriptors and measurements of sustainability in academic nursing clinical practices. Few studies have been published evaluating sustainability of academic nurse-managed clinical practices.

Gray (1993) analyzed 86 articles on ANCPs published from the 1970s through 1991. Findings disclosed 79% of the articles focused on a general description of the center's operation or characteristics of its clients. The remaining 18% of the articles provided a research and evaluation focus of ANCPs. A further review revealed these

articles related issues experienced by the centers, rather than the effects centers had on patient care (Gray, 1993).

The published nursing research literature to date describes the shortage of and necessity for additional primary care providers, specifically nurse practitioners, in low-income areas and in the care of the elderly; the quality of care and outcomes achieved by nurse practitioners; the variation, constraints, and restrictions of independence in practice by state in nurse practice acts, and federally with payer credentialing issues and payment discrepancies; and the financial reasons influencing the lack of sustainability leading to the closure of nurse-managed centers/clinics. An article by Woog et al. (1981) described a study in which they examined the impact of services provided by an ANCP on the overall health outcomes for its clientele. Although there were positive outcomes in the quality of care, the center ultimately closed. The major reasons were the inability to secure third party reimbursement and diminished support from their school of nursing.

#### *Study's Significance for Nursing Science*

The significance of this study to the science of nursing involves the integration and application of nursing and social science behavior-oriented theories. Nursing has a disciplinary focus on providing care that promotes health and well-being. Nurses assist patients to achieve their optimal health through health promotion, treatment, and preventative services.

Based on over two decades of clinical oversight and evaluation of primary care interprofessional practices, including advanced practice registered nurses (APRNs), the nurse investigator had solid rationale that these nursing practices were impacted by a

variety of factors which facilitated “failure” and, consequently, the closure of their practices.

Additionally, the “aging in” of the U.S. population increases demands for health care services. Additional primary care health care services are needed to provide disease management, care coordination, transitional care, and prevention of disease deterioration. Access to quality care can be greatly expanded by maintaining and increasing APRN providers. An important contribution to maintaining these clinical practices could be made by studying and evaluating the factors that contribute to their sustainability. A review of the nursing and the social sciences literature on community-based programs revealed findings consistent with the investigator’s clinical experiences.

### *Conclusion*

This chapter reviewed the literature surrounding academic nursing clinical practices to determine potential elements or factors that lead to practice sustainability. While there appears to be little standardization for defining and conceptualizing sustainability, an exploration of the ranges of definitions, models of care, and partnerships reveal that the emphasis can either be placed on the continuation of the alliance within the community or on its established elements, activities and impacts. These relevant elements were categorized by domain of interest in preparation for the creation of the study tool.

The literature also highlighted the struggles and challenges faced by ANCPs in the provision of clinical services to their patients and achieve sustainability while warding off the constant threat of closure.

Gaps in the literature identified the absence of objective descriptors and measurements of sustainability in these practices. The remainder of this manuscript delineates the methodology used for the development of the study instrument; the presentation of the analysis and results of the study; and its implications for theory, practice, and further research.

## CHAPTER III

### METHODOLOGY

#### *Introduction*

This chapter presents the phases of the study design, specific aims, and survey instrument development. It explains the findings from the content validity phase of the study as organized by study question domains. These domains correspond to specific aims which facilitated the development of the Academic Nursing Clinical Practice Sustainability Instrument. This instrument identifies measures that may predict sustainability in academic nurse-managed practices and assesses each measure's validity and reliability.

Section I of this chapter depicts the facets of the study's design, selection criteria and utilization of content experts, and instrument validity. It explains the processes used to determine the selection of the domains and elements to be tested. Also described is the developmental stage of content and domain validation consisting of domain identification, item generation, and subsequent instrument construction. Section II presents the formation of the content expert study instrument, techniques for data collection, and the mechanism of the study delivery. The specific statistical procedures used to analyze the content expert data and the methodology used to determine the elements to be maintained for the study participant sustainability instrument is described. Section III explains the decisions to use the Institute of Nursing Center's data and conversion to an online methodology. Section IV provides the selection strategy and inclusion and exclusion criteria of the study participants and the Institutional Review

Board statement regarding human subjects. Lastly, Section V describes the specific statistical procedures used to analyze the data, the methodological assumptions, and limitations. The chapter concludes with a summary of the study's methodology.

*Section I. Description of the Study Design and Development*

CINAHL, Ovid, and Medline databases were accessed using the keywords “nurse practitioner practice,” “advanced practice nursing clinics,” “nurse-managed clinics,” and “community-based programs and sustainability.” The published research literature and internet applications found data and instrument items that alluded to elements of sustainability in the evaluation of community-based programs (Shediac-Rizkallah & Bone, 1998; Mancini & Marek, 2004; Beckham & King, 2005; Butterfoss & Whitt, 2007), clinical patient care and interventions, industrial techniques and technology, and social economics. However, no suitable instrumentation was found to match the specific purpose of this study. Therefore, themes and data from these clinical and social science arenas were used to guide the process of constructing a valid and reliable instrument that measured sustainability in academic nurse-managed practices.

This study used an instrument development design that followed three consecutive phases, each using a cross-sectional survey design. The determination of the content representativeness or content relevance (content validity) of the elements/items in this instrument was accomplished through the application of a two-stage process—the development stage and judgment stage (Lynn, 1986). This two-stage process used to determine and quantify content validity is fundamental to the “validation of virtually all instrumentation” (Lynn, 1986).

The developmental stage consisted of domain identification, item generation, and instrument construction (Carmines & Zeller, 1991; DeVellis, 1991; Gable & Wolf, 1993; Nunnally & Bernstein, 1994; Williamson, 1981) to measure the main constructs of Academic Schools of Nursing Clinical Practices and Sustainability. The domain development of the instrument was designed to be congruent with the constructs, answer the research aims, and guide the study. The schools of nursing domains identified as crucial to this tool included: I. Academic Infrastructure; II. Clinical (Faculty) Practice Leadership/ Planning; III. Academic Clinical Practice Site Information; and IV. Financial Elements. These domains were consistent with the advanced practice literature and the investigator's extensive practice management experience.

The next component in the development stage was item generation. Using the keyword searches identified above, additional potential items/elements were identified and extracted from the literature in the following disciplines: nurse practitioner clinical practice; nurse-managed health centers/clinics; human development community programs; business development; and societal and health care economics. These collected items were categorized by the corresponding domain and organized in a suitable/logical sequence. The categorized items were reviewed with selected faculty for first level consistency, inclusivity, and possible item omissions.

#### *Content Expert Selection Process*

In the judgment-quantification stage, according to the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1985),

content experts should be selected based on relevant training, experience, and qualifications. In addition to these qualifications, Grant and Kinney (1992) encourage the selection of experts who have a history of publications in refereed journals, national presentations, and research in the area of interest. Clinical/administrative expertise may also be a criterion for content expert selection (Lynn, 1986). Clinical/administrative expertise is defined in this study as the direct accountability/responsibility for the academic clinical practices of the school of nursing.

Authorities differ on the minimum number of experts necessary for a panel. According to Lynn (1986), the number often depends on the accessibility and agreeability of persons identified. She suggests that in content domain areas with sufficient restrictions, a minimum of three experts should be used, and although a maximum number has not been established, her experience indicates that it is unlikely to exceed ten due to the availability of qualified experts. She cautioned, however, if there are five or fewer experts, all must agree on the content validity of an item to be considered a reasonable representation of possible ratings (Lynn, 1986).

Based on this information and the criteria outlined above, this investigator developed a list of academic clinical practice nurse leaders who were members of the American Academy of Colleges of Nursing (AACN) Practice Leadership Network (PLN). These selected leaders were recognized for their extensive publications, presentations, and authoritative positions over clinical practices in academic universities. In addition, the investigator contacted the executive director of the National Nursing Centers Consortium (NNCC) for validation and endorsement of the initial content expert selections and additional recommendations to the investigator's pool of candidates.

Consensus was reached and ten academic nurse leaders were contacted by this investigator for their willingness and availability to serve as content experts for the study. Experts chosen met the criteria as defined above by the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1985) and Grant and Kinney (1992), and were associated with schools of nursing academic clinical practices across the United States. An email invitation (Appendix B) was sent to establish content expert willingness, availability to participate, and the ability to meet the turn-around deadline criteria. All ten experts responded positively to the nature and necessity of the research. Eight accepted the outlined stipulations/limitations and confirmed their willingness to participate.

#### *Content Expert Sustainability Instrument Description and Review*

Once email confirmation to participate was received, a packet of the study documents was compiled and distributed to the content experts via first class U.S. mail. This packet included a formal confirmatory and explanatory cover letter restating the intent of the study, expert reviewer instructions, and desired deadline for completion. The face sheet of the study instrument outlined the study problem, the purpose and specific aims of the study, selected references, and definitions of terms. At the close of the study instrument was a sustainability scale. The purpose of this scale was to compare the participant's impression of sustainability with the study attributes (elements) and the actual practice's financial assessments. The scale indicators ranged from 10 – "Very Sustainable," 5 – "Sustainable," to 1 – "Will close within 6 months."

Two instruments were included. The Academic Nursing Clinical Practice Sustainability Tool was printed on yellow paper, formatted, and labeled “Content Expert Review.” This tool included all aspects of the study instrument, but was formatted into an evaluation tool. According to Grant (1992), content experts should be made aware of the measurement design of the proposed study instrument. To provide this perspective, a second instrument copy (printed on lavender paper) was created depicting the original and preliminary participant study instrument items. The measurement scales were included for reference purposes. As an incentive to complete and return the instrument, a five dollar coffee gift card was included (Dillman, 2007).

#### *Instrument Content Validity*

Content validity is based on the extent to which a measurement reflects the specific intended construct or domain of content (Carmines & Zeller, 1991, p. 20). When determining content validity, two fundamental assessments of an instrument must occur. The first is the determination of each item’s relevance to the content domain or construct. The second is the extent that the items comprehensively cover the domain or construct (Lynn, 1986). As a first step in evaluating content validity, Waltz, Strickland, and Lenz (1991) suggested that investigators calculate the level of inter-rater agreement. Waltz et al. (1991) used a 4-point scale, rating items 1 or 2 for relevancy and 3 or 4 for representativeness, and tallied the results. They then divided those scores by the number of items on the instrument to determine the inter-rater reliability.

Content experts in this study were asked to assess the clarity (clear/unclear) of each item, its corresponding response scale, and the study instrument as a whole. They

were also to evaluate how representative (relevant or not relevant) each individual item was to its content domain and if the domain adequately measured all dimensions of the construct (Berk, 1990). Levels of acceptable inter-rater agreement range from .70 (Davis, 1992) to .80 (Selby-Harrington, Mehta, Jutsum, Riportella-Muller, & Quade, 1994). Based on the level of inter-rater agreement (the number of agreements among the participating content experts), an item was deleted (unclear and not relevant or solely not relevant), edited (unclear, relevant), or remained unchanged (clear, relevant) for inclusion in the final instrument. In this study .80 agreement was the minimum required measure of inter-rater acceptability.

The experts were encouraged to recommend revisions for items considered ambiguous (unclear) but relevant to the operational content heading. An item declared unclear but relevant could be edited if the following logic was followed: Written suggestions were made by the content experts to achieve clarity of the item. If identifiable suggestions were present and 80% agreement could be attained, the item(s) was edited, declared clear, and remained in the study instrument.

Experts were also requested to evaluate whether the set of items was complete and characterized the comprehensiveness (belong to or generally belong) of the content domain (Lynn, 1986). In addition, at the conclusion of the content expert study instrument was an overall instrument rating evaluation consisting of five questions which addressed the quality of instructions, list of items, completeness (items omitted), and an overall impression of the tool.

### *Instrument Face Validity*

Face validity is generally defined as a lay (untrained) person's deduction that items on an instrument, or facets of an experimental procedure, appear to be relevant to the construct or area of content being measured (Litwin, 1995; Lynn, 1986). According to the literature, some experts in instrument development consider face validity to be the "least scientific" of validity measures, while others completely discount it as a psychometric measure of validity (Litwin, 1995; Lynn, 1986). However, it seemed reasonable to evaluate whether or not the instrument appeared to be relevant to those participating in a study and completing a newly designed survey instrument. In this study, face validity was defined as the quantity of the content experts that rated the items in each domain as relevant as opposed to not relevant.

#### *Section II. Sustainability Instrumentation and Data Analysis*

Seven of the eight content expert instrument evaluations were returned. Five of the seven experts completed the study instrument in its entirety, providing meaningful data with extensive written comments and suggestions. The sixth expert completed the instrument through Section IV. D4ii - Financial Elements. The seventh indicated that her practices did not engage faculty as practitioners and therefore declined to answer the survey questions that were specific to academic practice from Section III forward.

Each domain section was structured into topical content subsections which described key attributes of the section header. Data were compiled from all returned study instruments and evaluated using the inter-rater agreement criteria outlined above. The original content expert instrument contained 250 study elements evaluating item

clarity and relevance to academic clinical practices (Table 2a) and 101 questions evaluating item inter-relation to its domain (heading) and to the other items in the section or subsection.

**Table 2a. Initial Content Expert Evaluation - Item Clarity and Relevance by Section/Domain of Interest**

<b>Relevant - Items <math>\geq</math>80 only</b>	<b>Sections I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>Total All Sections</b>
Items Clear—Not Relevant	0	0	1	14	15
Items Not Clear—Relevant	2	3	7	26	38
Items Not Clear—Not Relevant	1	0	1	13	15
<b>Total Items</b>	10	24	40	176	<b>250</b>

One hundred eighty-two items were rated as clear and relevant by at least 80% of the content experts. These items were scheduled to be maintained for the final study instrument. Thirty-eight items were rated unclear but relevant. As previously noted, items declared unclear but relevant were assessed for expert responses that would achieve item clarity. Items achieving less than 80% agreement were deleted. Twenty-six of these items located in Domain Section IV: Financial Elements were unable to be clarified and were subsequently deleted. Further data analysis confirmed an additional thirty elements considered not clear/not relevant fell below 80% agreement. These items were also deleted. Table 2b illustrates the categories of the 194 total items to be maintained for the final survey.

**Table 2b. Content Expert Determination - Identification of Item Clarity and Relevance - Final**

<b>Relevant - Items <math>\geq</math>80 only</b>	<b>Sections I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>Total All Sections</b>
Items—Clear & Relevant	7	21	31	123	182
Items Not Clear—Relevant (clarified)	2	3	7	0	12
<b>Total Items Clarified &amp; Relevant</b>	9	24	38	123	<b>194</b>

The experts were also asked to review the interrelatedness of the content in each subsection to determine if the items generally belonged together and belonged to that heading (domain), and if items had been omitted that should have been included.

Table 3 depicts the analysis of these data signifying items in 23 of the 33 subsections belonged to the domains in which they were placed and items in 30 of the 35 subsections generally belonged together in those sections. Two subsections in Section III (Clinical Practice Site) had items that did not belong to the domain in which they were located, and Section IV had 12 subsections determined not to belong. Nine content sections had items that were perceived as omitted.

<b>Table 3. Item Interrelatedness - Belong/Generally Belong</b>					
<b>Instrument Section Content</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>Total All Sections</b>
<b>Does each item Belong to this heading?</b>					
Responses >.80*	2	3	6	12	23
Responses <.80	0	0	2	8	10
<b>Total Sections</b>	<b>2</b>	<b>3</b>	<b>8</b>	<b>20</b>	<b>33</b>
<b>Do these items Generally Belong together?</b>					
Responses >.80*	3	4	8	15	30
Responses <.80	0	0	0	5	5
<b>Total Sections</b>	<b>3</b>	<b>4</b>	<b>8</b>	<b>20</b>	<b>35</b>
<b>Total All Sections - Belong/Generally Belong</b>					
Total Sections >.80	5	7	14	27	53
Total Sections <.80	1	0	2	12	15
<b>Total All Sections - Belong/Generally Belong</b>	<b>6</b>	<b>7</b>	<b>16</b>	<b>39</b>	<b>68</b>
<b>Was any item Omitted that should be included?</b>					
Responses >.80**	1	2	5	16	24
Responses <.80	1	1	3	4	9
<b>Total Sections - Omitted</b>	<b>2</b>	<b>3</b>	<b>8</b>	<b>20</b>	<b>33</b>
<b>Total Sections Belong/Generally Belong/Omitted</b>	<b>8</b>	<b>10</b>	<b>24</b>	<b>60</b>	<b>101</b>

Table 3 also represents the number of subsections determined by the content experts to be incongruent or “did not belong” to the instrument section content or header. Items in these nine subsections, those responses with less than .80 agreement, were deleted from the final instrument items. The omitted item option provided content experts

the opportunity to suggest pertinent and specific items thought to be lacking from the subsections. These items were used to clarify and complete elements in subsections I-IV. Once completed, a revalidation of the instrument items was performed by the content experts.

Lastly, the clinical site sustainability scale was rated as clear by four of the five responding content experts and relevant by all five. The unclear rating suggested using a specific timeframe that would link the scale to the current state of the medical healthcare milieu. No other suggestions were made.

Upon analysis completion of the Content Expert Sustainability Instrument, the experts were asked to evaluate the components of the study instrument in its entirety. As mentioned previously, five of the seven experts completed the evaluation. However, all experts provided written comments regarding the study instrument. Table 4 presents the evaluation of the study instrument.

	<b>Clear</b>	<b>Relevant</b>	<b>Not Clear</b>	<b>Not Relevant</b>
Quality of Instructions	5	3	0	0
The List of Items	5	3	0	0
Completeness	2	2	3	0
Missing Items	2	2	1	0
Overall Impression	4	3	0	0

A review of the overall evaluation written comments revealed two distinct themes: the first confirmed the study's necessity and relevance to the continuation of academic nursing practices. The second affirmed the instrument's comprehensiveness, but indicated that its extreme length would produce great respondent burden and

potentially impact the study return. These comments corresponded to the overall instrument ratings in Table 4.

One content expert rated the five overall instrument categories as clear and relevant. Her written comments expressed that too many constructs were being measured for inclusion in one instrument and recommended segmenting the single instrument into multiple instruments delivered sequentially.

A review of the written comments was primarily focused on Section IV: Financial Elements and included item completeness, omitted items, and lack of clarity.

Restructuring suggestions incorporated the separation of selected categories and clarifying indicators for payer mix and revenue, including patient insurance revenue - commercial, government payers, and out-of-pocket payments made by those uninsured.

As previously stated, the majority of experts indicated that the survey was very comprehensive and detailed, causing the length of the survey to be prohibitive and potentially accentuate respondent burden. Their experiences indicated that it would be extremely difficult to capture the in-depth data requested. To track and obtain this level of required data would take extensive time and electronic systems. Additional comments and suggestions included a reduction in the number of constructs being measured and redesigning the financial section to a more generic and useable configuration for multiple clinical practices.

In addition to the respondent burden as noted above, an additional potential study handicap was disclosed in the written comments returned by two of the content experts. The Institute of Nursing Centers (INC) was currently engaged in capturing data for the

2008–2009 survey from nurse-managed health centers. The substantial participant overlap would potentially have negative consequences to both survey efforts.

*Section III. The Institute of Nursing Centers Data and Online Conversion*

The Institute for Nursing Centers (INC) is a network of organizations that focus on the development, promotion, and advancement of nurse-managed health centers (NMHCs). The charge of these centers is to increase access to primary health care, respond to communities' needs, and target historically underserved populations. In addition, the Institute of Nursing Centers' goal is to inform policy and to promote NMHCs as a viable health care option. The intent of the network is to enhance the work of all partners with an emphasis on developing a national data center for NMHCs. INC collects this data via a biannual survey (Nursing Centers, n.d.).

INC surveys NMHCs that provide primary care. The majority of these centers provide care by advanced practice nurses (APRNs). The concurrence of their survey activity had the potential to significantly impede the investigator's survey return rate due to the overlap in target populations and data being requested. A three-way conference call was arranged with the two content experts - the INC program director and a major university school of nursing faculty professor, who at the time served as the Associate Dean for Community Partnerships, the director of an adult nurse practitioner program, and also as a primary investigator at INC. They suggested that this investigator consider utilizing the INC financial data obtained through the most recent survey, as it would provide the majority of the study's financial data elements and, in turn, somewhat reduce the respondent survey burden. A possible deterrent to using the data was also disclosed.

The current survey (2008–2009) return rate was anticipated to be less than in previous years, as INC was not able to provide incentive funding to the clinics to assist in the data collection process as in years past.

An inspection of the *INC Data Warehouse Tool Instructions and Codebook* (2008) by this investigator revealed definitions for data elements and instructions for completion of the INC survey. Further review of the document collection specifications and definitions validated the INC survey included personnel demographics and operating expenses, billing information, and revenue generated by clinic site. One hundred three financial items were found to correspond to the investigator's study instrument. This finding justified the elimination of these specific survey items from the investigator's study instrument. Additionally, this deletion would decrease the number of elements from 220 to 117 and still provide access to critical data elements.

Due to the number of overlapping and corresponding data items in the INC survey, the investigator decided to use and analyze the existing INC survey data results reported by participating school and clinic site. This alteration in process required the deletion of the majority of items in the investigator's original instrument's Section IV: Finance. These changes included:

- The relocation of all items under subsection E.1, a-d the Practice Champion;
- Item E.2,c. Have you closed a clinic practice within the past 18 months; and
- Item E.3,d. Using the following scale - Characterize on this line - this site's sustainability (an incremental line graph starting at 10 - very sustainable; 7 - 5 sustainable; 3 - 1 will close within 6 months).

*Transformation of the Paper Instrument to an Internet-Based Format*

Electronic mail and the internet have proved to be promising means for conducting surveys as the numbers of people with access continues to increase (Schaefer & Dillman, 1998). According to Dillman (2007), web surveys provide capabilities far beyond those available for any other type of self-administered questionnaire. At this time, the College of Pharmacy (where this investigator is a doctoral student) had invested in a new online analytical survey tool by Qualtrics™, and the survey tool was made available to the investigator. Qualtrics™ is an industry-leading provider of enterprise feedback management and survey software solutions. The software is a robust and easy-to-use online survey tool which provided a customizable platform for designing, distributing, and evaluating survey results.

The ease of navigation, ability to customize, and the tutorial support available with the software convinced this investigator to convert the paper study instrument to an electronic online survey modality. In addition, data obtained through Qualtrics' survey distribution was downloadable to an Excel spreadsheet for analysis with the user's Mintab v16.0 statistical software. Mintab v16.0 was chosen for its ability to analyze large and multiple data sets. The combination of the investigator's survey data and that of the INC financial data would prove to be prohibitive for many data analysis systems.

*Instrument Conversion to Online—Qualtrics Software*

An introductory page, "Participant Special Instructions and Release," was created in Qualtrics outlining completion instructions for the online survey (Appendix D). This section validated the participant's agreement to release the INC data to this investigator

and provide the requested initials of the participant in order to correlate their specific INC data with the online survey responses. These instructions also called special attention to Section III, where the participants were requested to input data on at least one of their clinical practice sites. The instructions cautioned the participant that data entry was mandatory for the number of clinic/center sites for which they designated.

As in the content expert paper instrument, the content was divided into sections by domain: Section I—Academic Infrastructure included four items; Section II—Clinical Practice Leadership Planning included 69 items; and Section III—Academic Clinical Practice Site Information had 44 items. Although information from only one center/clinic site was required for completion of the study instrument, participants were encouraged to complete an additional Section III for each unique academic clinical practice site owned or operated, up to a total of seven sites. The instrument flexibility allowed the participant to halt the survey at any time with the capability to return to that location without fear of data loss.

The unduplicated instrument items were generated and formatted into survey statements using elements from the content expert survey that scored .80 or above by the content experts. The metrics of these items varied from a five point Likert scale (e.g. 1 - Disagree, 2 - Somewhat Disagree, 3 - Somewhat Agree, 4 - Agree, 5 - Don't Know); yes/no answers; short answer/write in; and/or a forced answer option.

A timing bar was initially included to allow participants an idea of completion status. The final survey instrument was assigned a URL which was copied and pasted into the personalized email message of each participant.

*Online Instrument Pilot Study*

The formatted online survey instrument was pilot tested and validated by two of the content experts recruited from the first cohort. They were to evaluate the online survey for content clarity, potential completion issues, and user ability.

The pilot study instrument results were available to the investigator through Qualtrics, and the two content experts relayed their evaluation remarks to the investigator via a three-way conference call. Both reviewers responded positively to the revised study instrument. All items were judged clear, and both expert reviewers believed that the study response rates would be enhanced with an online survey. The following suggested changes were discussed:

1. Removal of the completion bar. One expert described being “well into” Section III of the survey and the bar had not moved. It was determined that this modality was not functioning as prescribed and would be a demotivator to participant completion; therefore, the completion bar was removed.

2. Review wording consistency throughout all items.

3. Concern was expressed by both reviewers regarding the length of the survey if the participant elected to complete more than two or three clinical practice sites.

The content reviewer-recommended changes were made with the removal of the completion bar, and wording was evaluated and edited to provide consistency throughout the document. These changes had no effect on the context of the original questions.

The investigator decided to retain the option of entering up to seven practice sites. This decision was based on data that the majority of schools of nursing had less than three clinical practice sites. The reviewers agreed that the benefit of additional data

elements outweighed the potential burden to the participant. The investigator agreed to add instructions regarding the numeric selection of clinical sites and mandatory data requirements that would accompany each site. This information was included in both the online instructions and in the confirmatory email message the participant would receive.

#### *Section IV. Study Participant Recruitment Protocol and Strategy*

There are 69 colleges and universities in the American Association of Colleges of Nursing (AACN) Practice Leadership Network (PLN). The PLN is comprised of nursing faculty who administer and are actively engaged in academic clinical (faculty) programs and practices (AACN, 2010). The AACN directory of participating schools of nursing provided the contact information of the directors/associate deans of faculty/clinical practices and was available to *members only* on the AACN website. In addition, the commitment to sustainability was emphasized at the biennial AACN Faculty Practice Conference: “Building, Sustaining, and Innovating: Keys to Faculty Practice” (February 2010) which was attended by this investigator. The decision to utilize the INC data impacted the selection protocol of study participants.

#### *Recruitment Protocol and Participant Selection - Field Test*

In the original protocol, all 69 members of the AACN Practice Leadership Network (PLN) were to be invited to participate in the study due to the nature of their practice roles and involvement in academic clinical practice. The opportunity to utilize the INC financial data warranted a change in the original participant selection criteria for this study. Initially, a convenience sample of potential study participants was selected from the 69 schools in the AACN Practice Leadership Network directory, targeting those

engaged in and responsible for the academic clinical practices owned or operated by schools of nursing.

The decision to use the INC data required participants to be AACN schools of nursing, as noted above, *and* contributing members to the Institute for Nursing Centers (INC). Confidentiality agreements with those practices that contributed data to INC prohibited individual practice disclosure or clinical data release without the contributor's permission. Therefore, it was up to the investigator to determine those practices that were active contributors to INC and contact them for their willingness to participate in this study. A copy of *The Institute for Nursing Centers 2007 National Directory of Nurse Managed Health Centers* was provided to the investigator. The 2007 edition was the most recent publication, but the same membership in 2007 could not be assumed for 2008–2009, and clinics that were active in 2007 could potentially be closed or inactive in the current year. To determine viable participants that were both current INC members and AACN members, the investigator designed a contact spreadsheet to validate and cross check the AACN schools of nursing with the INC directory. Cross checks included contact names, titles, email addresses, telephone numbers, and the names and locations of clinical practices. A column for each contact attempt date and method of contact was created for tracking purposes. An invitation-to-participate letter was attached to emails to 38 selected schools of nursing practice contacts to determine willingness to participate and to confirm active contribution status to the INC database.

Emails were tracked through auto-generated receipt and read functions. Participants who had not responded were sent one or two additional progressive emails emphasizing the importance of their contribution (or their designee's) to this study and

the viability of academic nurse-managed clinical practices (Appendix E.). Telephone calls were made to those who did not respond or to those seeking further information.

#### *Participant Enrollment/Demographics*

Once efforts for additional participation were exhausted, a final roster of 16 schools of nursing operating a total of 52 clinics/centers was determined. The nursing leaders of these schools acknowledged willingness to participate and consent to release their contributed INC data via return email. This email acceptance notification was forwarded to INC for validation of the school's contributed data and permission. INC administrative personnel verified the participant data contribution and secured independent approval to release the school's clinic(s) data. The following depicts the geographic locations of the schools of nursing study data contributors.

Table 5. Data Contribution by Area of United States (n = 16)

Western	Central	Southern	Eastern
2	5	5	4

#### *Data Collection Procedure*

Each school of nursing participant was sent a welcome email which included instructions to begin the survey, a notice regarding the selection of clinical practice sites to be entered, and the access URL to the study instrument (Appendix F). Access to the survey site and survey completion was monitored by the investigator. Additional email messages were sent and a telephone call was made to unresponsive selectees to encourage participation. Encouraging emails to complete as soon as possible were sent to

those “in process.” Although 16 participants from 14 schools responded, only 14 participants completed the survey instrument.

#### *Section V. Data Analysis Methodology and Human Subjects*

A data analysis plan was developed for each of the study’s aims and corresponding hypothesis. Minitab v16.0 statistical software was chosen to analyze the study data. Reasons for its selection included that the statistical consultant to the investigator owned and was highly familiar with the capabilities of this software and the software’s capability to perform both Stepwise and Best Subsets Regression.

A review of the data found that the p-values were low (less than .005), suggesting the data was not normally distributed. Variable distribution was evaluated for normality using the Anderson-Darling Test. This test rejects the hypothesis of normality when the p-value is less than or equal to 0.05 and confirms with 95% confidence that the data does not fit the normal distribution.

As a non-parametric method, the Kruskal–Wallis test assumes a non-normal population and was used to determine if there was a difference between the dependent variable - multiple levels (1 - 9) of the Participant Impression of Sustainability and the other attributes defined by the study instrument. Attributes were also evaluated individually for significance.

In non-normal distributions, the mean proves to be inaccurate in defining the central tendency of data. In these circumstances, the median is used to describe the central tendencies.

Due to the large number of predictors, Minitab 16 statistical software was used for its ability to analyze large groups of data simultaneously. Best subsets regression was employed to estimate all possible combinations of independent variables in order to determine the greatest number of predictors or “best subset” that would predict the dependent variable—the participant’s perception of sustainability. The best fit of predictors was determined by the greatest adjusted  $R^2$ .

The coefficient of determination, denoted as  $R^2$ , is most often depicted as a number between 0 and 1.0 and is used as a predictor of future outcomes. It indicates how well data fits a regression line and is subsequently used as a measure of the likelihood that future outcomes are predicted by the model.

Additionally, Minitab data were analyzed using best subsets regression analysis on the variables. It was applied in the context of model selection, where a number of variables were available to predict an outcome, and the goal was to find the best model involving a subset of these predictors by selecting among the many alternative subset regressions.  $R^2$  and  $R^2$  adjusted were used to assess the fit of the regression model. In the multiple regression model, these predictor variables, using the coefficient to calculate, indicated how well the entire group of five elements actually predicted the outcome variable (sustainability). The higher the positive response number, when multiplied by a positive coefficient, increases the probability of sustainability. Conversely, a negative coefficient multiplied by a high response number proved detrimental to sustainability.

As noted earlier in this chapter, with the exception of verbiage changes for consistency, the instrument items for both the pilot and field test instruments remained unchanged.

Due to the limited number of participants, data analysis was based on the combined sample of 14 school of nursing participants and the acquired specific INC data for each of their corresponding unique 52 clinical practices producing 473 total columns of data. Descriptive statistics were used to analyze the demographics of each participant group and to establish initial content validity scores.

Once verification was confirmed, the data from each participating school and associated clinic/center was emailed to the investigator. The INC data was delivered in the form of a massive Excel spreadsheet. The data was sorted by question header rows into columns to improve data analysis by category. The INC financial data included categories not originally found in the pilot survey instrument. These categories were evaluated for data consistency across each participating school of nursing.

### *Protection of Human Subjects*

#### Institutional Review Board—IRB Review Not Required

The IRB determined your planned activities involving receiving de-identified survey data do not meet the regulatory definition of research with human subjects and do not fall under the IRB's purview for the following reasons:

Researchers will not obtain private identifiable information from living individuals; Interviews/surveys of individuals where questions focus on things not people (e.g. questions about policies) do not require IRB review. [45 CFR 46.102(f)].

### Conclusion of the Methodology Chapter

This study used an instrument development design that included three stages: determination of content validity by a convenience sample of seven content expert

leaders in academic clinical practices recruited from the American Association of Colleges Nursing Practice Leadership Network and confirmed by the executive director of the National Nursing Centers Consortium (NNCC); post analysis, the paper study was edited and converted to an online version. A major section of the deletion was the section of Financial Elements. These elements were replaced by the suggestion of two content experts to utilize data collected by the Institute of Nursing Centers (INC). A pilot study to obtain face validity of the revised study instrument and to determine the feasibility of the online study protocol was achieved. The field-test phase of the study instrument included 16 participants who were selected from the AACN Practice Leadership Network and were contributors to the Institute of Nursing Centers (INC) 2009 survey. Email confirmation was achieved and a URL to the online survey was individually distributed to each participant. In the end, 14 participants provided data on 52 nurse-managed academic clinical practices for analysis. Data was collected and analyzed. An Anderson-Darling test proved a non-normal distribution and a Kruskal-Wallis Test was used to compare multiple groups of sample data. Data analyses were conducted using Minitab v.16 statistical software.

## CHAPTER IV

### RESULTS

#### Introduction

The purpose of this chapter is to present the results from the phases of the study organized by the specific aims. The first section of this chapter describes the evaluation of the study instrument elements by Domains of Interest (I. Academic Infrastructure; II. Academic Nursing Clinical Practice (originally termed Faculty Practice) Leadership and Planning; III. (Faculty) Clinical Practice Site Information; and IV. Financial Elements) for content validity and relevancy corresponding to specific Aim 1. Section Two provides details of specific academic infrastructure elements that were found to contribute to sustainability corresponding to specific Aim 2. The field test and correlation of the INC financial data by corresponding clinical practice site(s) are described in Section Three, and the chapter concludes with an overall analysis of the participants' impressions of sustainability and the elements found to contribute to the sustainability of these clinical practices.

The evaluation of the Content Expert Sustainability Study Instrument (CESSI) and the development of the final Sustainability Instrument Tool were described in Chapter Three. The CESSI was divided into four sections. The decision to replace Section IV Financial Elements items with the Institute of Nursing Centers' (INC) financial data impacted the final study instrument content as all financial items were removed regardless of clarity or relevance.

*Findings Related to Specific Aims - Domain I*

Domain I describes the evaluation and analysis of potential survey items by nursing clinical practice content experts which led to the final study instrument creation.

*Elements—Domains of Interest**Results for Aim 1*

*Aim 1. Evaluate instrument elements (items) by Domain of Interest for element clarity, relevancy, internal consistency, and content validity.*

The expert content validity index was adapted from published examples by Lynn (1986) and Waltz, Strickland, and Lenz (1991). As described in Chapter Three (Table 2a), 250 study elements were generated for the original study instrument. Each element was evaluated by seven academic nursing clinical practice experts for clarity (element - clear/unclear) and relevance (element - relevant/not relevant). Additionally, 101 study questions measured the interrelationship (belong) of each element to others in its subsection and its overall content domain (generally belong) (Chapter 3, Table 3). Seventy-seven elements measured 0.80 or greater agreement by the content experts. These elements were incorporated into the online instrument for the study field test.

*Domain I. - Academic Infrastructure*

*Results for Question 1.1. Were the instrument elements clear and relevant to measure sustainability for the domain of Academic Infrastructure?*

Ten questions initially measured the Domain of Academic Infrastructure. The content expert's evaluation found seven elements clear and nine elements relevant (Table 6a).

**Table 6a. Content Expert Analysis of Academic Infrastructure Items\***

Domain I Elements	Responses at or above 0.80	Possible Number of Elements	Expert Agreement
Clear	7	10	0.70
Relevant	9	10	0.90
Belong to Heading	2	2	1.00
Generally Belong	3	3	1.00

\*Sample size (n=10)

Three elements in Domain I. A and B were found to overlap. Headers defining these two sections were combined into a single statement: *Academic Clinical Practice in our School is: Integral to our Organizational Mission and Vision as demonstrated by... .*

Two elements rated unclear/relevant were clarified and successfully edited by the content experts (changes are in italics):

A. ii. Supported by *sufficient numbers* (previously *a critical mass*) of practicing faculty.

B. i. Philosophically (previously *as a component of the tripartite mission*) to:

*“The SoN Mission Statement includes references to clinical/faculty practice.”*

The element *The school/college administration supports Faculty Practice - Financially (provision of facility, utilities, and supplies)* was deemed unclear and not relevant and was deleted. Although all remaining elements were rated as “belong to heading,” a recommendation was made to relocate the two financial statements to Domain IV (these were later deleted with others in that section), leaving four remaining elements in Domain I. These elements achieved 100% agreement by the content experts. Internal consistency for the adjusted Section I, as demonstrated by “belong to heading” and “generally belong” indicators, was 1.00.

**Table 6b. Content Expert Analysis of Revised Academic Infrastructure Items**

Domain I Elements	Responses at or above .80	Remaining Elements	Expert Agreement
Clear	4	4	1.00
Relevant	4	4	1.00
Belong to Heading	2	2	1.00
Generally Belong	2	2	1.00

\*Sample size (n=4)

*Results for Question 1.2. Were the instrument elements clear and relevant to measure sustainability in the Domain II - Academic Practice Leadership and Planning?*

Twenty-four elements initially measured the domain of Academic Practice Leadership and Planning (Table 7). Twenty-one elements were rated both clear and relevant.

**Table 7. Content Expert Analysis of Academic Practice Leadership and Planning Items\***

Domain II Elements	Responses at or above .80	Possible Number of Elements	Expert Agreement
Clear	21	24	0.875
Relevant	24	24	1.00
Belong to Heading	3	3	1.00
Generally Belong	4	4	1.00

\*Sample size (n=24)

Three elements in this domain rated relevant but unclear and were edited as follows:

II A. The Faculty Practice Plan—Q\_3: (previously *Faculty may be exempted from the practice plan*) was refined to, “*Clinical Faculty may be exempted from (opt out of) participating in the practice plan.*” Follow-up statements were inserted to provide clarifying information:

*If Faculty are allowed to opt out of the practice plan—Please select the reason(s):*

- Contract for services for the desired practice is unavailable or unable to be secured;
- Faculty workload will not allow time to practice;
- Faculty request (i.e., compensation is greater through private agreement);
- “There is NO formal Practice Plan” was modified to: Other reasons—“please specify” (with space to facilitate text comments).

Additionally, content experts suggested changes to “*A Written Business Plan.*”

Question six (Q\_6) was rephrased, “*There is a formal process or mechanism for external agencies and/or organizations to request services from the School/College of Nursing*” and relocated under “*A Written Business Plan.*”

The Section IIC header was determined unclear. This header, “*A formal planning structure exists to grow faculty practice; The Plan:*” was modified to “*A formal planning structure/feasibility assessment exists to grow the clinical practices. This structure...*”

Metric enhancements transformed IIC Q\_2 from “*Validates leadership commitment to the short and long-term goals of the program*” to “*Validates the leadership’s commitment to the short-term (less than 3 years) and long-term (greater than 5 years) goals of the program.*”

Q\_7 “*Do you systematically collect accurate and reliable performance data from the practice*” was relocated to Domain IV (and later deleted with others in that section).

Although perceived clear and relevant, the experts recommended the deletion of questions IIC Q\_8 (a-d) regarding nursing models in academic nursing clinical practices

due to a lack of measurability. Internal consistency, as demonstrated by “belong to heading” and “generally belong” indicators, was 1.00.

The content experts also recommended adding items that they felt to have been previously overlooked or excluded from the original survey. These “omitted” element suggestions included the addition of minimum and maximum hours to faculty workload and contract expectations. The remaining elements achieved 0.80 agreement or better. Twenty-nine final statements formed Domain II Clinical Practice Leadership and Planning.

*Results for Question 1.3. Were the instrument elements clear and relevant to measure sustainability in the Domain III - Academic Clinical Practice Site?*

Forty elements initially measured the domain—Academic Clinical Practice Site. Thirty-two of the 40 element/elements rated clear and 38 of the 40 elements relevant (Table 8).

**Table 8. Content Expert Analysis of Clinical Practice Site Items\***

Domain III Elements	Responses at or above .80	Possible Number of Elements	Expert Agreement
Clear	32	40	0.80
Relevant	38	40	0.95
Belong to Heading	6	8	0.75
Generally Belong	8	8	1.00

\*Sample size (n=40)

Clarifying recommendations were made to revise the elements rated unclear in Section III C:

- Amending Q\_1 “*Designated locations*” (as campus, urban, inner-city. etc...) to “*Practice Setting Location for this Clinical Practice*” including actual clinical

practice settings as: pre-school, school-age, hospital-based, medical center, homecare, convenient care, etc.

- Q\_2a. Refining the definitions of owned/internally operated practices;
- Q\_2e. Distinguishing targeted service recipients as adults, pediatrics, geriatrics, etc; and lastly;
- Including questions regarding educating students at the site (including participating schools and degree levels of students).

Internal consistency as demonstrated by “belong to heading” was initially rated at 0.75 due to concept redundancy in some categories. “Generally belong” indicators were 1.00. Clarification improved the remaining element agreement to 0.80 or better.

*Results for Question 1.4. Were the instrument elements clear and relevant to measure sustainability in the domain of Section IV - Academic Practice Finance?*

**Table 9. Content Expert Analysis of Academic Practice Finance Items\***

Domain IV Elements	Responses at or above 0.80	Possible Number of Elements	Expert Agreement
Clear	137	176	0.78
Relevant	149	176	0.85
Belong to Heading	12	20	0.60
Generally Belong	15	20	0.75

\*Sample size (n=176)

One hundred seventy-six elements initially measured the domain of Academic Practice Finance (originally Financial Elements) (Table 8). This section produced a plethora of written remarks by the five content experts completing the entire section (one expert opted out of Section IV and another quit approximately in the middle of the section). Critiques comprised the extensive number of elements, the complexity and detail requested for analysis, whether the participant would be able to secure the

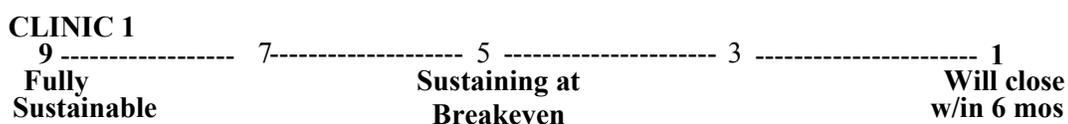
requested data, and last but not least, the large respondent burden believed this section would cause. Furthermore, internal consistency scores for this section (Table 8, above) - Belong to Heading and Generally Belong—were below the 0.80 acceptability criterion.

Written recommendations provided by two content experts suggested the deletion and replacement of Section IV with data produced by Institute of Nursing Centers' (INC) recent biannual survey as the data being collected contained similar or equivalent financial elements as this section.

Section IV, however, contained more than financial elements. Its potential deletion required relocating elements that addressed: practice evaluation (11 elements), the practice champion (24 elements), and two elements deemed critical to this study - IV E3\_2c, *Have you closed a clinical practice site within the past 18 months?*, and the study's dependent variable, a scale used to rate their impressions of the sustainability for each practice entered – IV E3\_2d.

*Using the following scale, characterize on this line this site's sustainability.*

**Figure 2a. Participant's Impression of Sustainability - Scale**



The sustainability scale was divided into increments from one to nine and labeled as follows: a score of one signified that the practice was constantly threatened with closure; two / three - mostly unsustainable; four - somewhat unsustainable; five (midpoint) - sustaining at breakeven; six - mostly sustainable; seven/eight- moderately sustainable; nine - fully sustainable.

Domain IV was re-examined and those crucial elements identified above in IV E3 were integrated into Clinical Practice Leadership and Planning. Options were expanded to permit data entry for seven unique Academic Clinical Practice Sites with the participant impression of sustainability scale embedded into each site. Internal consistency of these elements (using the five remaining expert responses) – Belong to Heading and Generally Belong – was 1.00.

As noted, there were initially 250 possible elements of analysis in the original instrument (Chapter Three, Table 2a). One hundred eighty-two elements were declared clear and relevant by the content experts. A reliability index was calculated for the instrument (Sections I–IV) based on elements that met the criteria clear and relevant *and* belonged to the domain. The original instrument calculated index was 0.761. The deletion of Section IV Financial Elements (the financial elements only) improved the reliability index to 0.983. This information, along with the content experts' trepidation regarding retrieval of the data elements in Section IV, supported the decision to utilize the Institute of Nursing Center's financial data that corresponded to these academic nursing clinical practices.

#### Online Instrumentation

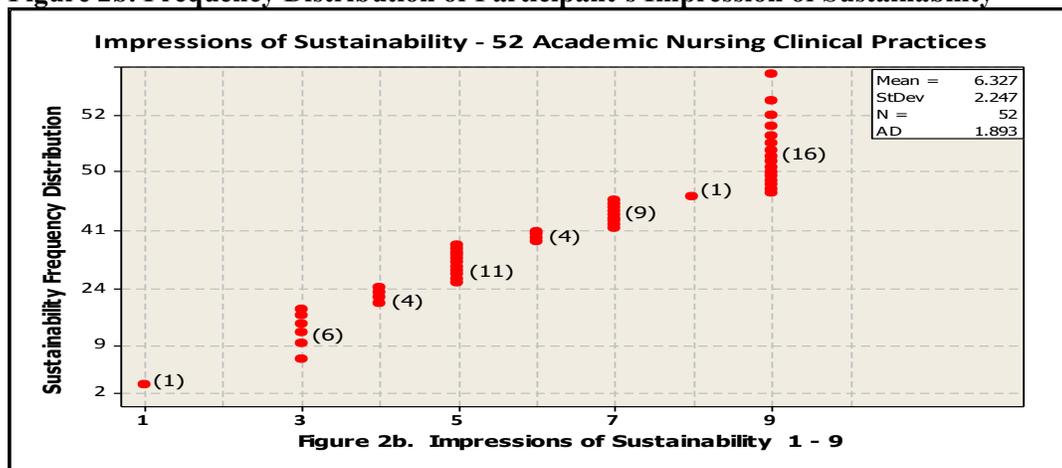
The paper study instrument was converted to an online format using the University of Minnesota College of Pharmacy's Qualtrics software. The online survey was pilot tested by two of the original content experts. The results of the pilot test were presented in Chapter 3.

### The Field Test

The Qualtrics survey data of the 14 study participants (14 schools)—including the participant’s impression of sustainability (dependent variable)—were aligned by academic practice site (52) and its specific sustainability score with their corresponding Institute of Nursing Centers (INC) data. The scale (described above) was visually divided into increments: 9—Fully Sustainable; 5—Sustaining at Breakeven; and 1—Will Close w/in 6 Months (constantly threatened with closure).

Figure 2b (below) represents the Impression of Sustainability scores assigned to each of the 52 academic nursing clinical practices (ANCPs) by the nurse participants. These data are presented by levels of sustainability (1–9). Eleven practices fell below midpoint (5) – Sustaining at breakeven, with one rated as constantly threatened with closure (1). Eleven were believed to be at midpoint (5); 14 practices rated mostly or moderately sustainable (6, 7, 8); and 16 rated fully sustainable. The results for these 52 practices was an average of 6.327, placing the “average” ANCP in category six, which was mostly sustainable.

**Figure 2b. Frequency Distribution of Participant’s Impression of Sustainability**



*Results for Aim 2*

*Aim 2. Determine the specific Academic Infrastructure elements that contributed to the sustainability of academic clinical practices in schools/colleges of nursing.*

Question 2.1. *Which specific instrument-elements contribute to sustainability of academic nurse-managed clinical practices?* A single variable was found to be significant ( $p = .011$ ) for the domain of Academic Infrastructure.

*Q1\_4 Academic Clinical Practice in our School/College is: Integral to our Organizational Mission and Vision as demonstrated by: Addressed in promotion and tenure (P&T) documents and criteria* (Table 10).

**Table 10. Academic Clinical Practice Is Addressed in Promotion and Tenure (P&T) Documents\* vs. Sustainability**

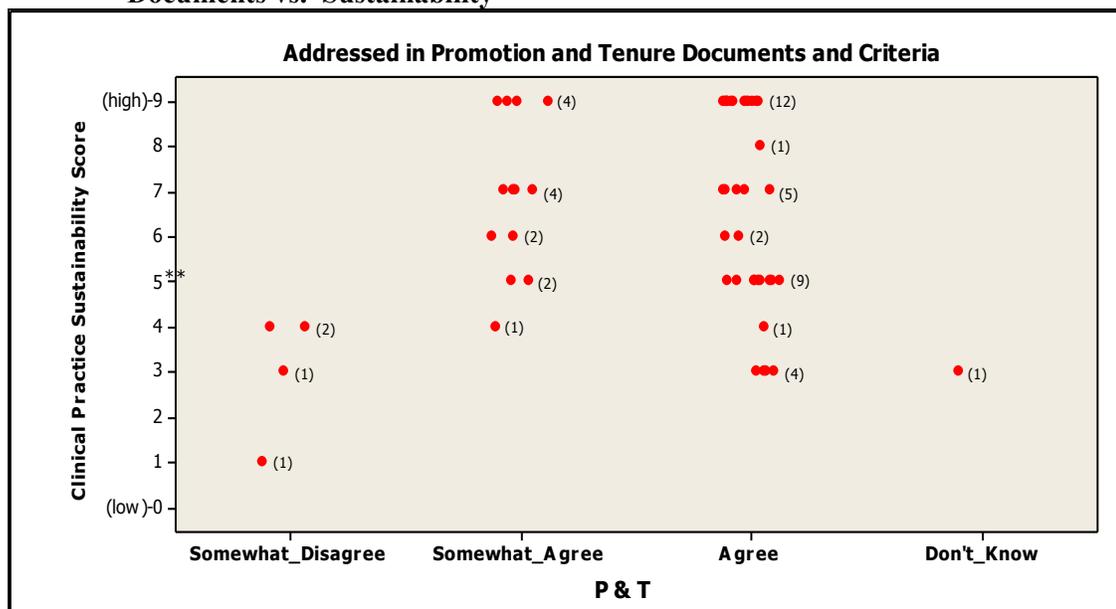
<b>Addressed in Promotion and Tenure (P &amp; T) Documents and Criteria.</b>	<b>N</b>	<b>Median*</b>
Somewhat Disagree	4	3.500
Somewhat Agree	13	7.000
Agree	34	7.000
Don't Know	1	3.000
Overall	52	

H = 11.05,  $p = 0.011$  (adjusted for ties)

\*Median represents sustainability scores

Kruskal-Wallis demonstrated a statistical difference ( $p = .011$ ) between sustainability and academic clinical practice when it was addressed in promotion and tenure documents. However, the Pearson correlation failed to show a linear relationship between these variables. This finding is visually displayed in Figure 3 below, depicting the sustainability of the practices in the Somewhat Agree category as directly opposite of the Agree categories.

**Figure 3. Plot of Academic Clinical Practice Addressed In Promotion and Tenure (P&T) Documents vs. Sustainability\***



\*Among 52 Academic Nursing Clinical Practices

\*\* Level 5 Denotes Sustaining at Breakeven

The majority of the participants agreed that clinical practice was addressed through promotion and tenure documents. Those that agreed (29) or somewhat agreed (12) registered sustainability scores from Sustaining at Breakeven (5) to Fully Sustaining (9). It should be noted, however, that the somewhat disagree respondent practices had clinical practice sustainability indices rating 4 or less (2 – Somewhat unsustainable; 1 – Mostly unsustainable; and 1 – Constantly threatened with closure).

### ***Results for Aim 3***

*Aim 3. Determine the specific Academic Clinical Practice Leadership and Planning elements that contribute to the sustainability of academic clinical practices in Schools/Colleges of Nursing.*

*Question 3.1. Which specific instrument-elements contribute to the sustainability of academic nurse-managed clinical practices?*

Q6\_5 “The Planning Structure/a formal planning structure/feasibility

assessment exists to grow the clinical practices.”

1) Identifies community partners to create new services and revenue streams

(Table 11 /Figure 4).

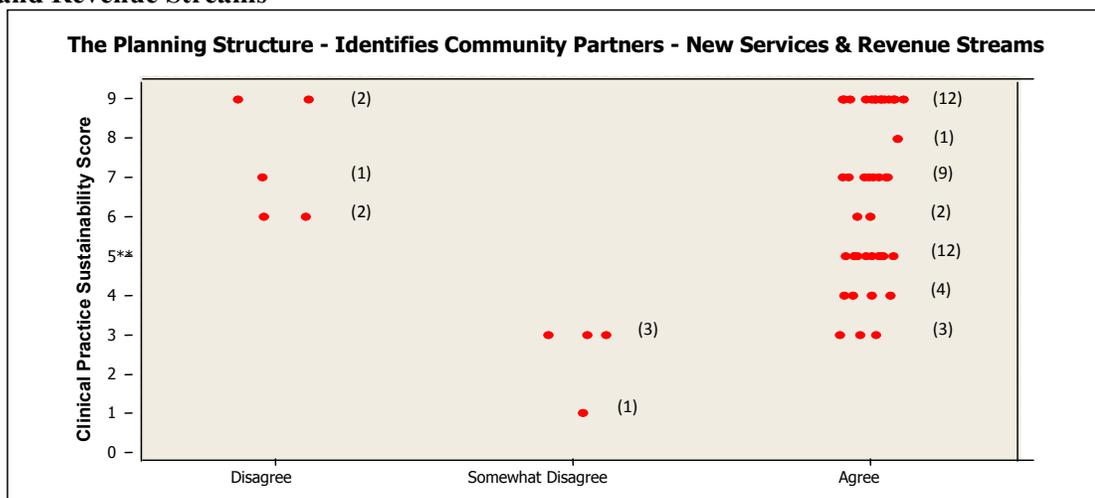
**Table 11. The Planning Structure Identifies Community Partners to Create New Services and Revenue Streams**

	N	Median*
Disagree	5	7.000
Somewhat Disagree	4	3.000
Somewhat Agree	0	
Agree	43	7.000
Overall	52	

H = 11.09, P = 0.004 (adjusted for ties)

\*Median represents sustainability scores

**Figure 4. The Planning Structure Identifies Community Partners to Create New Services and Revenue Streams\***



\*Among 52 Academic Nursing Clinical Practices

\*\* Level 5 Denotes Sustaining at Breakeven

Forty-three practices indicated (agree) that a formal planning structure or feasibility assessment existed within their participating organizations to grow clinical practices by identifying community partners that led to the creation of new services and revenue streams. The sustainability of these respondents varied from moderately (3) to

somewhat (4) unsustainable, and 24 of the practices were sustaining at breakeven and above. Twelve practices were fully sustainable.

Five practices specified “disagree,” attesting no formal planning structure, and demonstrated only sustaining practices categorized as somewhat (2), moderately (1), and fully (2) sustainable. Four participants’ practices conveyed “somewhat disagree” where no formal but some type of planning structure existed. These four were unsustainable with one practice threatened with closure.

2) Promotes strategies to respond to changes in client needs and environment

(Table 12/ Figure 5).

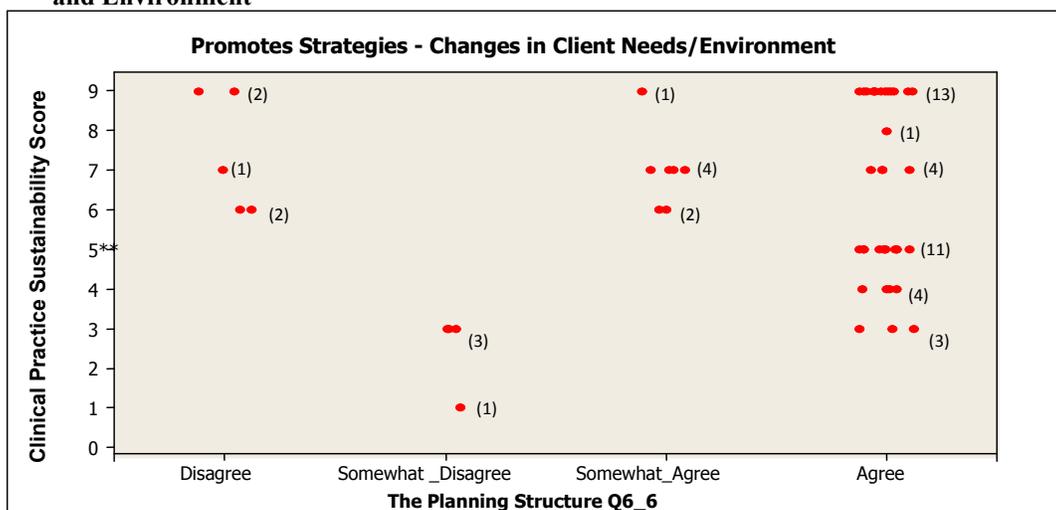
**Table 12. The Planning Structure Promotes Strategies to Respond to Changes in Client Needs and Environment**

	N	Median*
Disagree	5	7.000
Somewhat Disagree	4	3.000
Somewhat Agree	7	7.000
Agree	36	6.000
Overall	52	

H = 11.50, P = 0.009 (adjusted for ties)

\*Median represents sustainability scores

**Figure 5. Plot of Planning Structure Promotes Strategies/Responses to Changes in Client Needs and Environment\***



\*Among 52 Academic Nursing Clinical Practices

\*\* Level 5 Denotes Sustaining at Breakeven

Forty-three practice participants (36 'agree' and seven 'somewhat agree') reported formal planning structures in place promoting strategies and facilitated responses to changes in client needs and/or environment (Table 12/Figure 5). The sustainability scores registered by the 'agree' participants exhibited wider variation in comparison to the 'somewhat agree' and 'disagree' practices. Those selecting 'somewhat agree' reported six moderately to mostly sustainable practices and one fully sustainable clinical practice. The 'agree' respondents declared five moderately to mostly sustaining and thirteen fully sustaining practices. Although fewer practices reported disagree, denoting no formal planning structure to promote strategies or to respond to changes in client needs and environment, those who fully 'disagreed' displayed only sustainable practices with two moderately sustainable, one mostly sustainable, and two fully sustainable. Conversely, those designating 'somewhat disagree' reported one practice constantly threatened with closure and three others as mostly unsustainable.

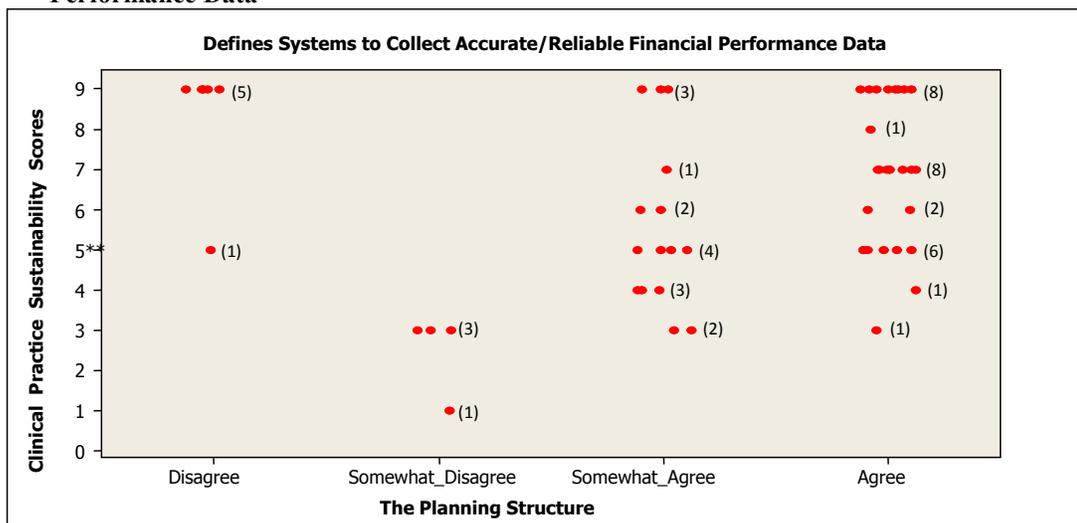
Additional Planning Structure elements, outlined in Table 13 and displayed in Figure 6 (below), defined systems to collect accurate and reliable financial performance data. The sustainability distribution for the 'agree' and 'somewhat agree' cohorts was similar, with both 'agree' practice cohorts demonstrating higher numbers and greater volumes of sustainability. Those choosing 'fully disagree' responses (no structure or systems) reported one practice sustaining at breakeven and five fully sustainable practices. In contrast, the four 'somewhat disagree' responses consisted of one practice constantly threatened with closure and three mostly unsustainable practices.

**Table 13. The Planning Structure: Defines systems to collect accurate and reliable financial performance data from each practice.**

	N	Median*
Disagree	6	9.000
Somewhat Disagree	4	3.000
Somewhat Agree	15	5.000
Agree	27	7.000
Overall	52	

H = 17.71, *df* 3, p = 0.001 (adjusted for ties)  
 \*Median represents sustainability scores

**Figure 6. Plot of Planning Structure Defines Systems to Collect Accurate and Reliable Financial Performance Data**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

*Q6\_8 “Evaluate the relationship between the participant impression of sustainability and the elements found to contribute to sustainability.”*

Is there a relationship between the participant’s impression of sustainability and the elements found to contribute to the practice sustainability (Table 14)?

As revealed in Figure 7, the sustainability distribution for these two groups was similar with the 'agree' practices demonstrating higher numbers of sustainability. Participants who chose the fully 'disagree' response reported no unsustainable practices, one sustaining at breakeven and five fully sustainable practices. In contrast, the four

'somewhat disagree' responses consisted of one practice constantly threatened with closure and three mostly unsustainable practices.

*Q7\_1 – Regarding the School/College Practice Structure as a whole: The request for health care services/programs can be met by the college/school most of the time.*

The majority (34) of the participating practices agreed that they could meet requests for health care services or programs most of the time. However, a review of the distributions illustrated in Table 14/Figure 10 demonstrated a difference between those practices that 'disagreed' with the statement and the other responses.

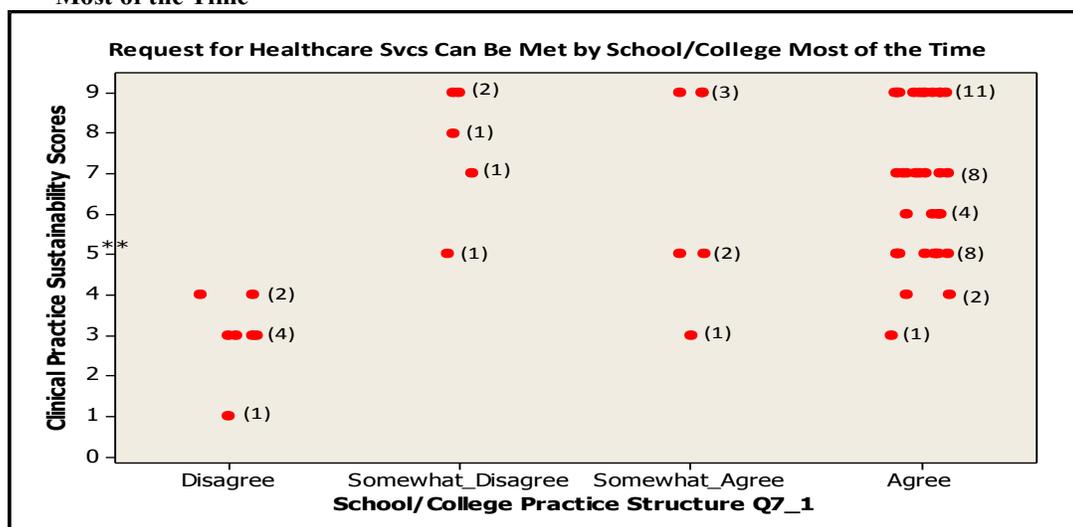
**Table 14. The Request for Health Care Services/Programs Can Be Met by the College/School Most of the Time**

	N	Median*
Disagree	7	3.000
Somewhat Disagree	5	8.000
Somewhat Agree	6	7.000
Agree	34	7.000
Overall	52	

H = 17.00, p = 0.001 (adjusted for ties)

\*Median represents sustainability scores

**Figure 10. The Request for Health Care Services/Programs Can Be Met by the College/School Most of the Time**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

Those that 'disagreed,' that is, indicated that “The request for health care services/programs *cannot* be met by the college/school most of the time,” reported no sustainable practices with six somewhat to mostly unsustainable and one practice constantly threatened with closure. In contrast, all 'somewhat disagree' practices were sustaining.

The majority of respondents agreed with the overall statement and in turn demonstrated greater numbers of sustainable practices (31) sustaining at breakeven or above. Those responding 'somewhat agree' and 'agree' also documented one mostly unsustainable practice, with two additional somewhat unsustainable practices reported by the 'agree' respondents. Practices sustaining at breakeven were reported by both 'agree' cohorts and 'somewhat disagree' respondents. The somewhat 'agree' responses revealed a gap between practices sustaining at breakeven and fully sustainable practices.

*Q8\_3 The Practice Evaluation – Clinical Practice/Service effectiveness is evaluated based on the following data: Patient contacts are tracked at the level of individual provider and CPT code.*

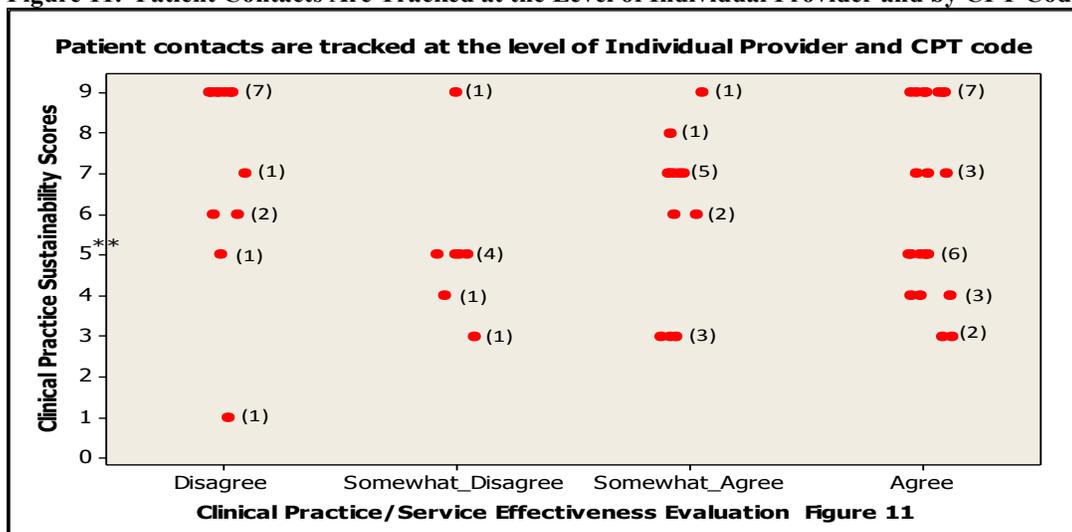
**Table 15. Patient Contacts Are Tracked at the Level of Individual Provider and CPT Code**

	<b>N</b>	<b>Median*</b>
Disagree	12	9.000
Somewhat Disagree	7	5.000
Somewhat Agree	12	7.000
Agree	21	5.000
Overall	52	

H = 8.42, p = 0.038 (adjusted for ties)

\*Median represents sustainability scores

Figure 11. Patient Contacts Are Tracked at the Level of Individual Provider and by CPT Code



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

The 'agree' respondents illustrated similar sustainable practice patterns to the 'somewhat agree' and 'disagree' respondents, but revealed the greatest number of unsustainable practices and at breakeven. Although 'disagree' respondents designated only one unsustainable practice, it was highly unsustainable as the practice was constantly threatened with closure. In direct contrast, the 'somewhat disagree' respondents reported fewer numbers of practices overall, with one fully sustaining practice, four at breakeven, and two unsustainable.

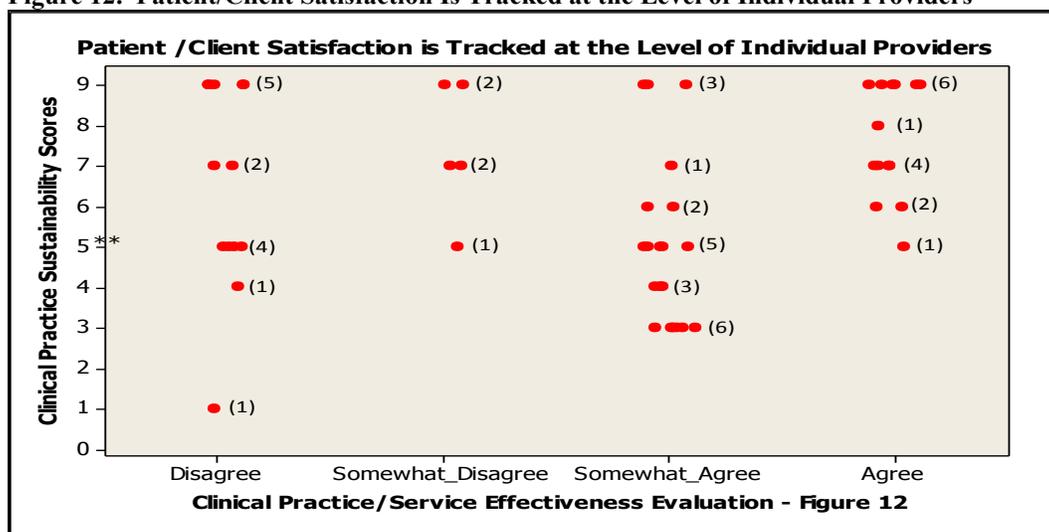
*Q8\_8 – Clinical Practice/Service effectiveness is evaluated based on the following data: Patient/client satisfaction is tracked at the level of individual providers.*

Table 16. Patient/Client Satisfaction Is Tracked at the Level of Individual Providers	N	Median*
Disagree	13	7.000
Somewhat Disagree	5	7.000
Somewhat Agree	20	5.000
Agree	14	7.500
Overall	52	

H = 13.19, p = 0.004 (adjusted for ties)

\*Median represents sustainability scores

**Figure 12. Patient/Client Satisfaction Is Tracked at the Level of Individual Providers**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

Forty-one of these practices experienced some level of sustainability at breakeven or above. Two unsustainable practices in the 'disagree' category were designated as constantly threatened with closure and somewhat unsustainable. Unsustainable practices were also denoted by 'somewhat agree' respondents as mostly unsustainable (6) and somewhat unsustainable (3). Each category had practices sustaining at breakeven.

The following questions represent those related to the Practice Champion designated with responsibility and oversight for the ANCPs.

*Q10 – The Academic Title of the Practice Champion (p = 0.00).*

Fourteen titles were found to be significant for the domain of Academic Clinical Practice Leadership and Planning (Table 17). The titles represented the Practice Champions in this study and were categorized by the mean sustainability of their associated clinical practices. Although the sample size was small, visual inspection

**Table 17. Academic Title of the Practice Champion**

Academic Title of the Practice Champion	N	Sustainability Levels							
		1	3	4	5	6	7	8	9
Instructor; Director	6				1				5
Elouise Ross Eberly Professor	1							1	
Associate Dean for Academic and Clinical Affairs	4				1		1		2
Director of Community-based Practices	5				2				3
Director of Faculty Practice and Clinical Partnerships	5					2	1		2
Clinical Coordinator	1						1		
Associate Dean - Practice and Community Engagement	7					2	4		1
Senior Associate Dean for Faculty Practice	7			1	2		2		2
Associate Dean for Clinical and Community Affairs	7		1	1	4				1
Director, School of Nursing; Director; Academic Nursing Center; Manager, Clinical Education and Practice -Bilingual Provider	1				1				
Dean and Associate Dean for Practice	3		1	2					
Project Director, Clinical Coordinator, Faculty Practice	1		1						
Department Chair	3		3						
Nurse Practitioner	1	1							
<b>Total Clinical Practice Sustainability Occurrences</b>	<b>52</b>	<b>1</b>	<b>6</b>	<b>4</b>	<b>11</b>	<b>4</b>	<b>9</b>	<b>1</b>	<b>16</b>

detects a difference in the practice sustainabilities associated with the titles of the practice champions. As demonstrated in Table 17 above, similar titles may be grouped together. These groupings, however, may not reflect the additional responsibilities specific to the position descriptions in each college/university. These limited data provide a measure of the impact that these positions have in ANCPs.

*Q12 – Does the Practice Champion have Advanced Practice Registered Nurse*

*Certification?*

Table 18a describes the certification of the Practice Champions listed in above. As presented in the table, four of the practice champions held current certification as nurse practitioners and six as clinical nurse specialists. Nineteen of these champions held no additional certification and 23 champions had no current practice certification or were certified in an administrative or education capacity.

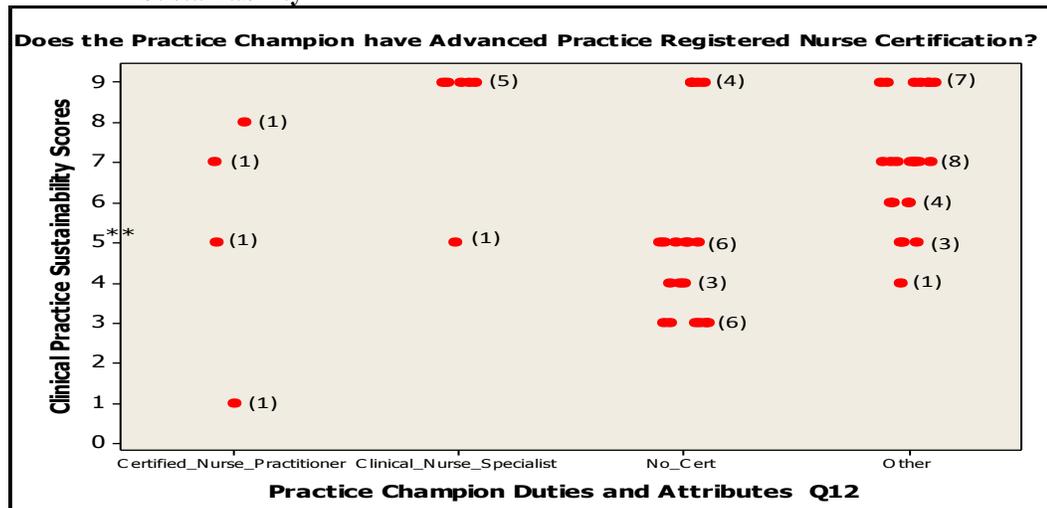
**Table 18a. Advanced Practice Registered Nurse Certification**

Criteria	N	Median *
Certified Nurse Practitioner	4	6.000
Clinical Nurse Specialist	6	9.000
No Certification	19	5.000
Other	23	7.000
Certification not current (7)		
Certified Nurse Administrator, Advanced (7)		
Cardiovascular Nursing Education Associates, Board Certified (4)		
Certification for Home Care and Hospice Executives (5)		
Overall	52	

H = 14.55, p = 0.002 (adjusted for ties)  
 \*Median represents sustainability scores

Figure 13 and Table 18b (below) graphically depict the practice champion's certification detail to the sustainability of their associated practices. Twenty-two practice champions with "other" certifications demonstrated the greatest sustainability from sustaining at breakeven (3), mostly sustainable (4), moderately sustainable (8), and fully sustaining (7).

**Figure 13. Practice Champion Advanced Practice Registered Nurse Certification and Sustainability**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

**Table 18b. Practice Champion Advanced Practice Registered Nurse Certification and Sustainability**

Sustainability level	Sustainability Definition	Number of ANCPs	Practice Champion Certification
1	Constantly Threatened with Closure	1	Nurse Practitioner Certification (1)
3	Mostly Unsustainable	6	No Certification (6)
4	Somewhat Unsustainable	4	No Certification (3) CNAA (Certified Nurse Administrator, Advanced) (1)
5	Sustaining at Breakeven	11	Nurse Practitioner Certification (1) Clinical Nurse Specialist Certification (1) No Certification (6) CNAA (Certified Nurse Administrator, Advanced) (2) CNEA-BC (Cardiovascular Nursing Education Associates Certification) (1)
6	Mostly Sustainable	4	Certified Home Care & Hospice Executive (CHCE) (2) Certification not current (2)
7 - 8	Moderately Sustainable	10	Nurse Practitioner Certification (2) Certified Home Care & Hospice Executive (CHCE) (2) Cardiovascular Nursing Education Associates - BC (CNEA-BC) certification (1) Certification not current (4)
9	Fully Sustainable	16	Clinical Nurse Specialist Certification (5) No Certification (4) Certified Home Care & Hospice Executive (CHCE) (2) CNAA (Certified Nurse Administrator, Advanced) (2) Cardiovascular Nursing Education Associates - BC (CNEA-BC) certification (2) Certification not current (1)

\*Among 52 Academic Nursing Clinical Practice

Q14\_1 – Duties and Attributes of the Practice Champion; select all that apply:

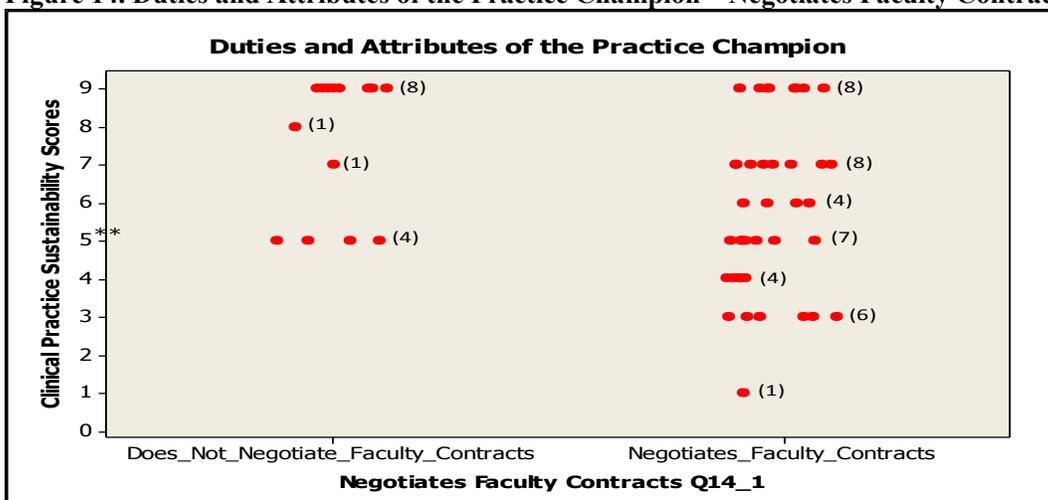
Table 19. Practice Champion Negotiates Faculty Contracts	N	Median *
Negotiates Faculty Contracts	38	6.000
Overall	52	

H = 6.42, p = 0.011 (adjusted for ties)

\*Median represents sustainability scores

Eight fully sustainable practices emerged in both groups regardless of the Champion’s involvement in faculty contract negotiations. Fourteen practices (Table 19/Figure 14) did not utilize the Practice Champion in negotiations.

Figure 14. Duties and Attributes of the Practice Champion—Negotiates Faculty Contracts



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

Although these practice volumes were fewer than those involved with negotiations, all of these practices were exclusively sustainable. In addition to the eight fully sustaining practices referenced above, other practices were sustaining (four at breakeven; one mostly sustainable; and one moderately sustainable).

Greater variability in sustainability occurred in those practices that utilized a Champion in negotiations. In addition to the eight fully sustaining practices referenced above, 19 additional sustainable practices were at or above sustaining at breakeven

(seven sustaining at breakeven; four somewhat sustainable; and eight moderately sustainable). In contrast, 11 practices were unsustainable (four somewhat unsustainable; six mostly unsustainable; and one constantly threatened with closure).

*Q44\_3 – Duties of the Practice Champion – Clinical Practice Contract Negotiation:*

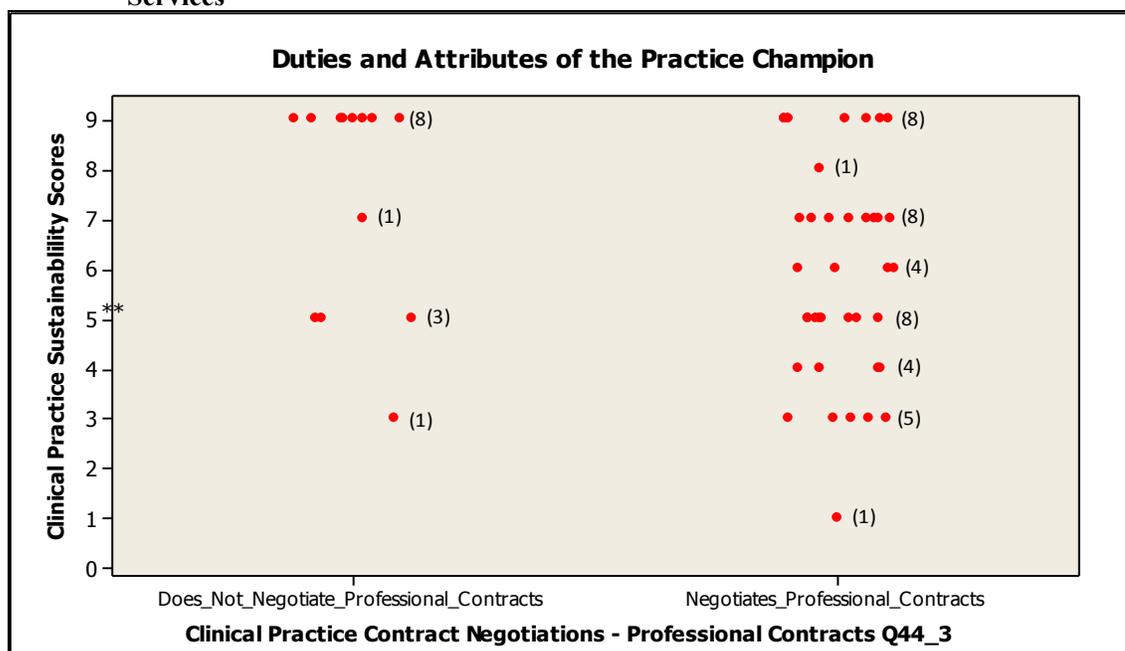
*Professional Contracts – Outsourced Services*

Thirteen practices did not utilize the Practice Champion in negotiations for professional outsourced services contracts (Table 20, Figure 15).

<b>Table 20. Professional/ Contracts—Outsourced Services</b>	<b>N</b>	<b>Median*</b>
Does Not Negotiate Professional Contracts	13	9.000
Negotiate Professional Contracts	39	6.000
Overall	52	

H = 4.50, p = 0.034 (adjusted for ties)  
 \*Median represents sustainability scores

**Figure 15. Duties and Attributes of the Practice Champion—Negotiates Professional Outsourced Services**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

All but one of the practices in this category were sustaining (eight fully sustaining; one moderately sustaining; and three sustaining at breakeven). One practice was designated mostly unsustainable.

The Practice Champion's services were used to negotiate professional outsourced services in 39 practices. Greater variation was experienced in the sustainability of these clinics with 29 practices demonstrating sustainability at breakeven or above (eight fully sustainable; one mostly sustainable; eight moderately sustainable; four somewhat sustainable; and eight sustaining at breakeven). Conversely, the remaining ten practices, which also used the Practice Champion in negotiations, reported four somewhat unsustainable practices; five moderately unsustainable practices; and one practice constantly threatened with closure.

*Q15\_1 – What Is the Percentage of Effort Allocated for the Practice Champion Duties?*

Table 21 (below) depicts the sustainability (median) of participating ANCPs by the percentage of effort allocated to the clinical practice by the Practice Champion.

Figure 16 delineates the variation in the sustainability of these practices. Eleven unsustainable practices were reported at the following percentage of effort allocations: 20% (three with moderately unsustainable practices); 30% (one constantly threatened with closure; and one somewhat unsustainable practice); and 50% (three moderately unsustainable; and three somewhat unsustainable practices).

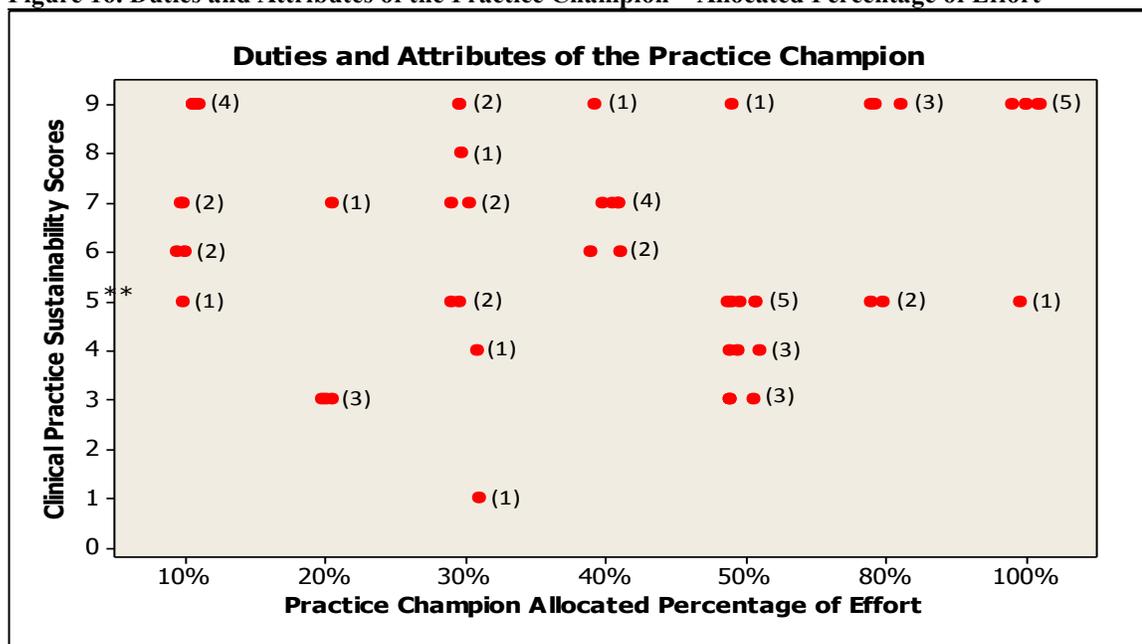
**Table 21. Percent Effort Toward Practice Champion Duties**

% Effort	N	Median*
10	9	7.000
20	4	3.000
30	9	7.000
40	7	7.000
50	12	4.500
80	5	9.000
100	6	9.000
Overall	52	

H = 21.53, p = 0.001 (adjusted for ties)

\*Median represents sustainability scores

**Figure 16. Duties and Attributes of the Practice Champion—Allocated Percentage of Effort\***



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

### Section III. Delivery of Services—Practicing Faculty Workload

#### *Q 16\_1 – Clinical Practice Effort Is Included in Faculty Workload Assignments*

Clinical practice effort was included in faculty workload assignments in 46 of the 52 reporting practices (Table 22). The analysis of practice sustainability included:

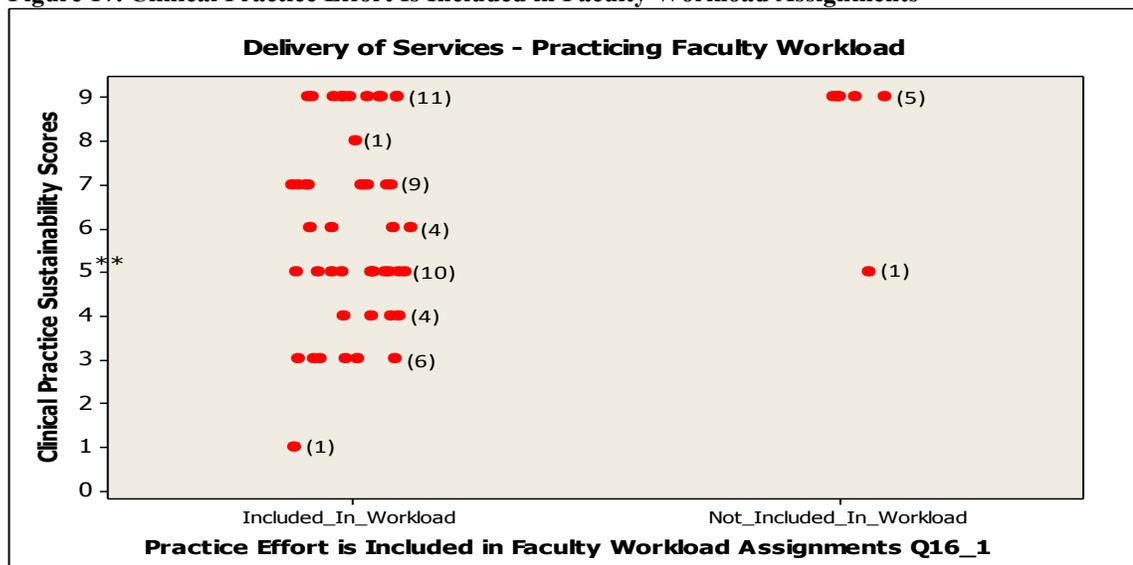
Eleven fully sustaining practices; one mostly sustaining; nine moderately sustaining;

four somewhat sustaining; 10 sustaining at breakeven; four somewhat unsustainable; three moderately unsustainable; and one practice constantly threatened with closure.

<b>Table 22. Clinical Practice Effort Is Included in Faculty Workload Assignments</b>	<b>N</b>	<b>Median*</b>
Included in Workload	46	6.000
Not Included in Workload	6	9.000
Overall	52	

H = 5.57, p = 0.018 (adjusted for ties)  
 \*Median represents sustainability scores

**Figure 17. Clinical Practice Effort Is Included in Faculty Workload Assignments\***



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

Figure 17 illustrates the distribution of the 52 practices by faculty workload inclusion. Practice was not included in workload allocations for six respondents, signifying that clinical practice was performed on the faculty member’s personal time. Five of these practices were fully sustaining and one was at breakeven.

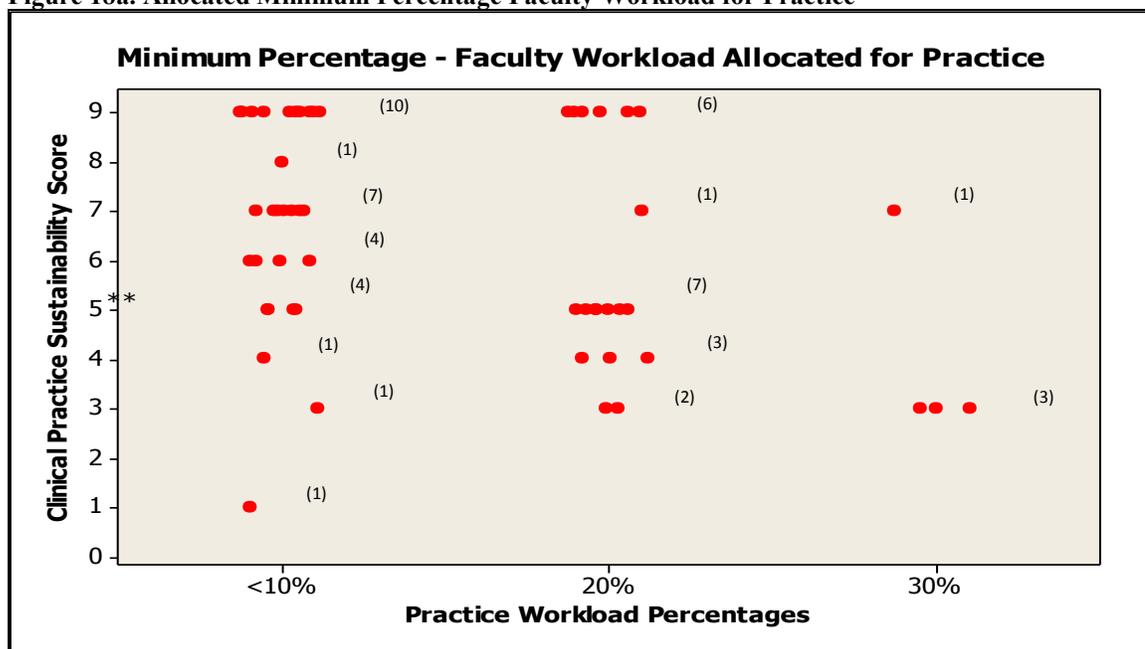
*Q 17\_1 – Designate the Minimum Percentage Allocated for Practice in Faculty Workload.*

Minimum percentages for practice designated in faculty workloads ranged between 10% and 30%. The majority of faculty in this study practiced less than 10% time. Table 23 describes the median values for these practices and Figure 18a their dispersal.

<b>Table 23. Minimum Percentage—Faculty Workload for Practice</b>	<b>N</b>	<b>Median*</b>
<10 %	29	7.000
20 %	19	5.000
30 %	4	3.000
Overall	52	

\*Median represents sustainability scores

**Figure 18a. Allocated Minimum Percentage Faculty Workload for Practice**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

Forty-one of the 52 respondents reported sustainable practices (Figure 18a). The breakdown of these sustainable practices included: less than 10% (10 fully sustaining;

one mostly sustaining; seven moderately sustaining; four somewhat sustaining; four sustaining at breakeven); at 20% (six fully sustaining; one moderately sustaining; seven sustaining at breakeven); and at 30% (one moderately sustaining).

Also depicted in Figure 18a, was that sustainability decreased as the percentage of effort increased. Eleven practices were reported as unsustainable; <10% (one somewhat unsustainable; one moderately unsustainable; and one constantly threatened with closure); at 20% (three somewhat unsustainable; two moderately unsustainable); and at 30% (three moderately unsustainable).

*Q 17\_2 – Designate the Maximum Percentage Allocated for Practice in Faculty Workload.*

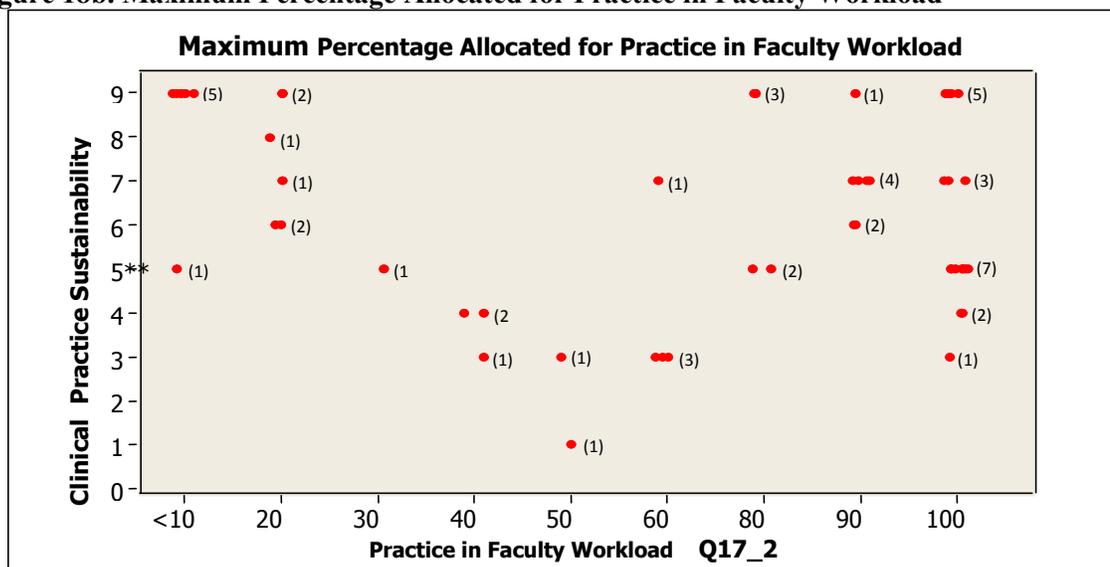
Table 24 describes the maximum percentage of faculty workload median designated for practice by participants in this study. Maximum allocated faculty effort is greatest at the lowest and highest percentage levels (at both <10% and 20%; 7 at 90%; and 18 at 100%).

<b>Table 24. Maximum Percentage Allocated for Practice in Faculty Workload</b>	<b>N</b>	<b>Median*</b>
<10	6	9.000
20	6	7.500
30	1	5.000
40	3	4.000
50	2	2.000
60	4	3.000
80	5	9.000
90	7	7.000
100	18	5.000
Overall	52	

H = 23.06, p = 0.003 (adjusted for ties)

\*Median represents sustainability scores

Figure 18b (below) represents the distribution of sustainability when correlated with the maximum percentage of faculty effort, forming a U-shaped pattern.

**Figure 18b. Maximum Percentage Allocated for Practice in Faculty Workload**

\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

*Q 20\_1 – For Faculty who practice - Is there an established expectation that a minimum percentage of time is designated for: Teaching?*

**Table 25. Q20\_1 Established Minimum Percentage—Teaching**

% Effort	N	Median*
No Min	14	7.000
20	3	4.000
40	4	3.000
50	5	7.000
60	1	7.000
70	6	7.000
80	6	9.000
90	1	3.000
N/A	12	5.000
Overall	52	

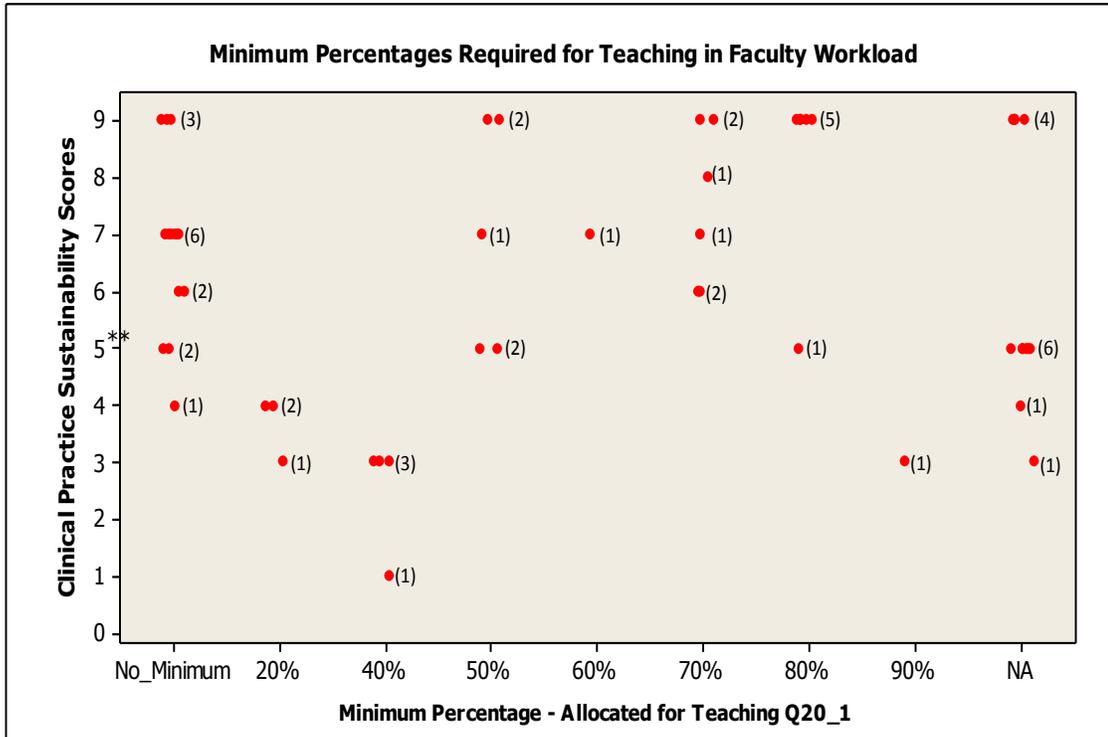
H = 23.23, P = 0.003

\*Median represents sustainability scores

Fourteen respondents indicated no minimum percentage of effort for teaching was required and 12 respondents indicated this question was not applicable at their schools of nursing. The median sustainability for those practices was 7.000 (Table 25). In addition to the participants with no minimum teaching obligations, those with 50% to 80%

teaching responsibilities appeared to have greater levels of practice sustainability (medians of 7.000).

**Figure 19. Minimum Percentages Required for Teaching in Faculty Workload**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

Figure 19 (above) visually portrays the sustainability of ANCPs by their minimum requirements for teaching. Those practices with no minimum allocation demonstrated sustainability in all but one practice (three fully sustainable; six moderately sustainable; two somewhat sustaining; two breakeven; and one somewhat unsustainable). Teaching allocations of 50% to 80% detailed only sustainable practices: 50% (two fully sustainable; one moderately sustainable; two breakeven); 60% allocation (one moderately sustainable); 70% allocation (two fully sustainable; one mostly sustainable; one moderately sustainable); and 80% (five fully sustainable; one breakeven). With the

exception of those practices at the 60% level, all others conveyed at least two fully sustaining practices.

The following teaching percentage allocations were documented by the unsustainable practices: 20% (one moderately unsustainable and two somewhat unsustainable); 40% (one moderately unsustainable; and one constantly threatened with closure). One practice was moderately unsustainable at the 90% level. Practices in the N/A grouping included (one moderately unsustainable and one somewhat unsustainable).

*Q 20\_3 - For Faculty who practice—Is there an established expectation that a minimum percentage of time is designated for: Service.*

**Table 26. Minimum Percentage Allocated in Faculty Workload - Service**

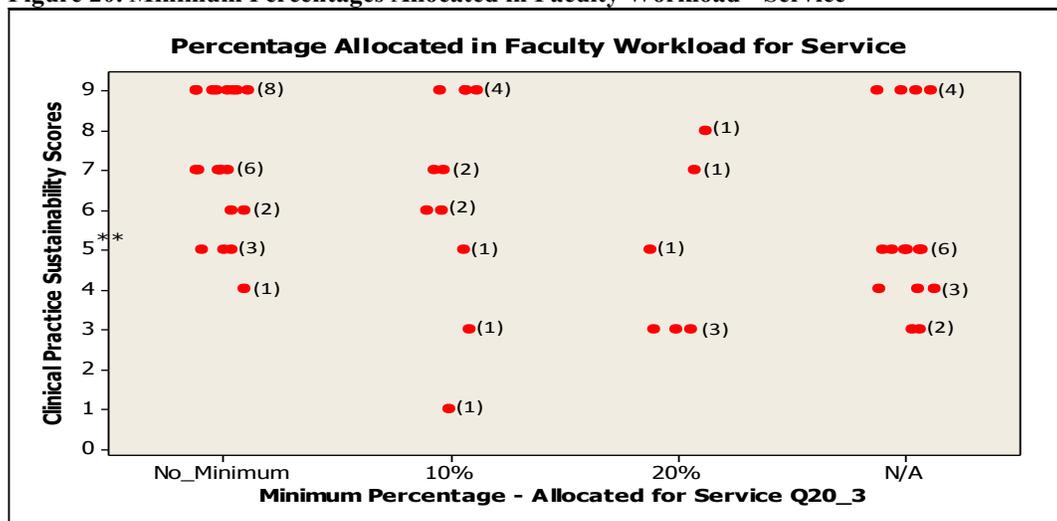
% Effort	N	Median*
No Min	20	7.000
10%	11	7.000
20%	6	4.000
N/A	15	5.000

Overall

H = 7.97, P = 0.047

\*Median represents sustainability scores

**Figure 20. Minimum Percentages Allocated in Faculty Workload - Service**



\*Among 52 Academic Nursing Clinical Practices    \*\*Level 5 Denotes Sustaining at Breakeven

Twenty of the 52 participants disclosed no minimum percentage of effort for service was required for clinical practice faculty in their organizations (Table 26 and Figure 20). All but one of these practices were sustaining (one somewhat unsustainable; three sustaining at breakeven; two somewhat sustainable; six moderately sustainable; and eight fully sustainable).

Fifteen school of nursing practices selected not applicable (N/A) for this question. Those specifying not applicable featured two moderately unsustainable, three somewhat unsustainable, six sustaining at breakeven, and four fully sustainable practices.

Faculty service workload allocations also included those practices with No Minimum allocations: one somewhat unsustainable practice; three at breakeven; two somewhat sustainable; six moderately sustainable; and eight fully sustaining. Practices with 10% service allocations were categorized with one constantly threatened with closure and one mostly unsustainable. Sustainable practices comprised one sustaining at breakeven, two somewhat sustainable, two moderately sustainable, and four fully sustainable. Lastly, practices with 20% service allocations acknowledged three moderately unsustainable, one sustaining at breakeven, one moderately sustainable, and one mostly sustainable.

#### *Results for Aim 4*

*Aim 4. Determine the specific Clinical Practice Site elements that contribute to the sustainability of academic clinical practices in schools/colleges of nursing.*

*Results for Question 4.1. Which specific instrument elements contributed to the sustainability of academic nurse-managed clinical practices?*

Table 27 describes the categorization by type of academic nursing clinical practice. Study participants were encouraged to select the designation(s) that most closely described their practice(s). More than one designation was allowed. Primary care comprised the majority of the practice designations in this study, followed by community-based clinics, clinics on college campuses or mobile clinics, those located within corporate/business settings or social service agencies, and others.

<b>Table 27. Categories of Academic Clinical Practices</b>	<b>Volume</b>
Primary Care Practices (not designated)	41
Community Clinic	6
College/University Campus Clinic (non-health services)	4
College/University Student Health Services Clinic	3
Corporate/Business Setting	3
Social Service Agency	3
Nurse-Managed Clinic	1
Health Systems-Based Clinic	1
University - Without Walls	1
Corrections Facility	1
School-Based Clinic	1
Homeless Shelter	1
	<b>52</b>

Descriptive data from the 52 clinical practice sites were also analyzed. The U.S. Census Bureau (2012) definitions and distributions for geographic locations were used to categorize these subsequent sites:

- Rural: population less than 2,500 people - two sites;
- Urban Clusters: population between 2,501–49,999 - six sites;
- Urban: population between 50,000–250,000 -18 sites; and
- Urban: population greater than 250,000 - 26 sites.

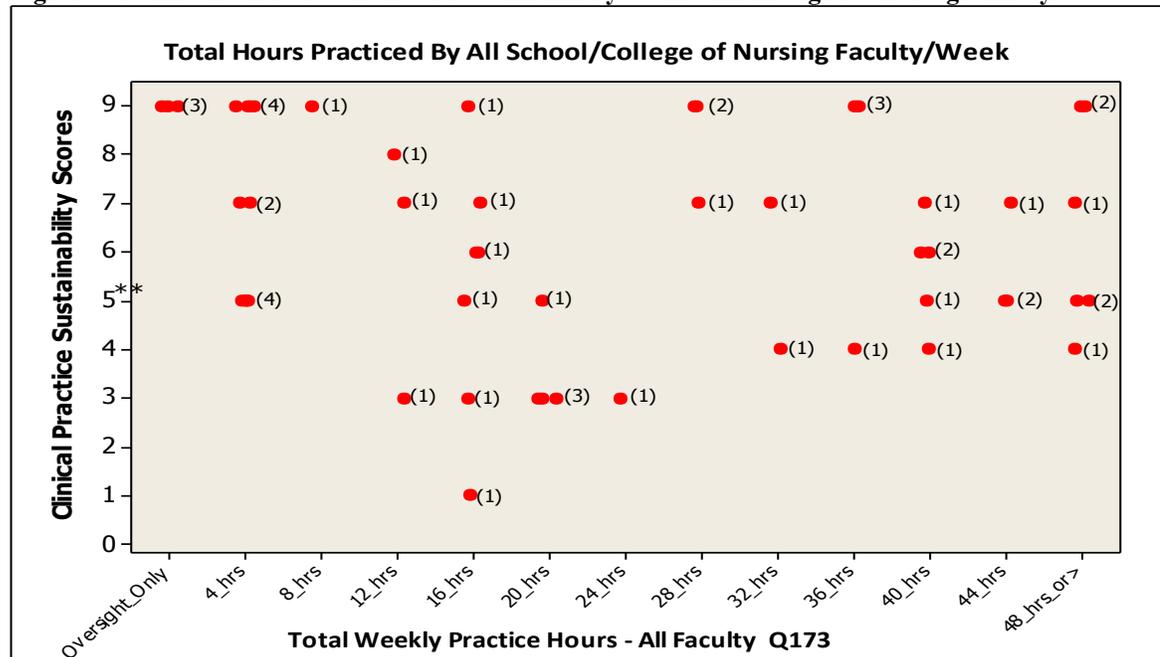
The following clinical practice site elements proved significant to Aim 4.

*Q173—In an average week, what are the total numbers of hours practiced by all School/College of Nursing Faculty?*

In addition to providing patient care, study participants were also responsible for the oversight and clinical management of the care administered by the practitioners within their respective ANCPs. The data revealed three fully sustaining ANCP sites where school of nursing faculty assumed oversight/administrative responsibilities only and did not provide direct patient care.

Figure 21 (below) pictographically illustrates sustainability by total weekly hours practiced of the 52 clinical practices in this study. Table 28 depicts the median (sustainability score) by total hours practiced each week by school of nursing faculty.

**Figure 21. Total Number of Hours/Week Practiced by All School/College of Nursing Faculty**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

Sustaining practices (breakeven or above) included those whose faculty practiced four hours/week (four sustaining at breakeven; two moderately sustaining; and four fully sustaining); eight hours/week (one fully sustaining); 28 hours/week (one moderately sustaining and two fully sustaining); and 44 hours/week (two sustaining at breakeven and one moderately sustaining).

**Table 28. Total Number of Hours/Week Practiced by All School/College of Nursing Faculty**

<b>TOTAL HOURS</b>	<b>N</b>	<b>Median*</b>
Faculty Oversight only	3	9.000
One-half day (4 hours)	10	7.000
One day (8 hours)	1	9.000
12 hours	3	7.000
16 hours	7	6.000
20 hours	4	3.000
24 hours	1	3.000
28 hours	3	9.000
32 hours	2	5.500
36 hours	4	9.000
40 hours	5	6.000
40-56 hours	3	5.000
56-72 hours	6	6.000
<b>Overall</b>	<b>52</b>	

H = 21.90, P = 0.039 (adjusted for ties)

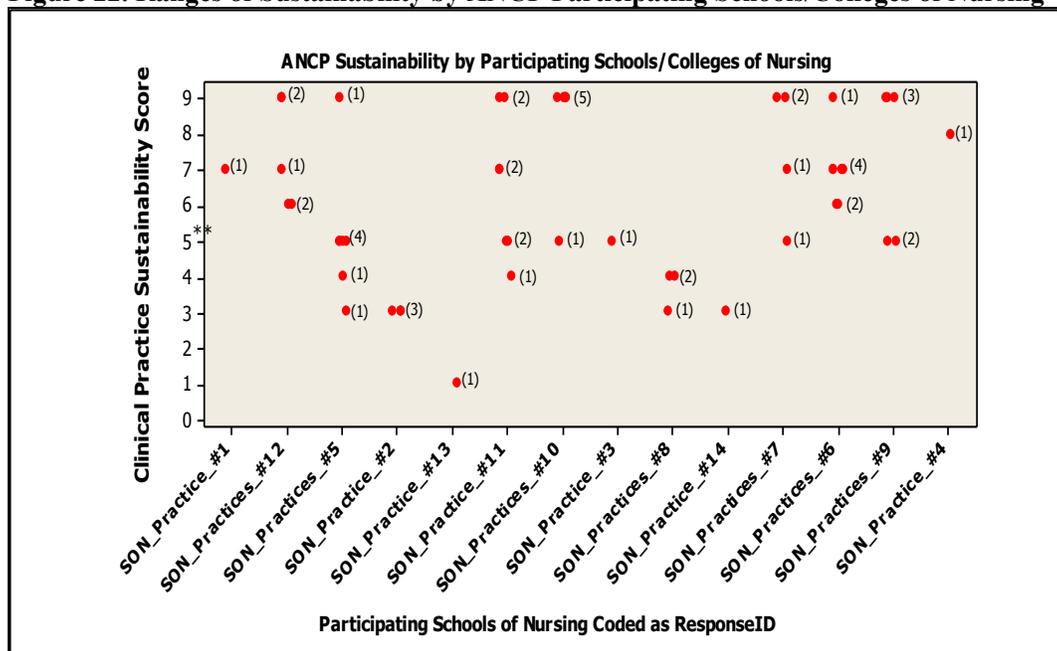
\*Median represents sustainability scores

The six practices in which faculty practiced sixteen hours/week demonstrated the widest variation in practice sustainability with one constantly threatened with closure; one mostly unsustainable; one sustaining at breakeven; one moderately sustainable; one mostly sustainable; and one fully sustainable.

After exploring correlations between the school of nursing practice sites, the next logical step was to determine if there was a relationship between the participating schools' practices and sustainability. However, the lack of uniformity in documented measurements and diversity (numbers of faculty, graduate nursing students, etc...)

of the participating schools made obtaining consistent and uniform categorization attributes arduous.

**Figure 22. Ranges of Sustainability by ANCP Participating Schools/Colleges of Nursing**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

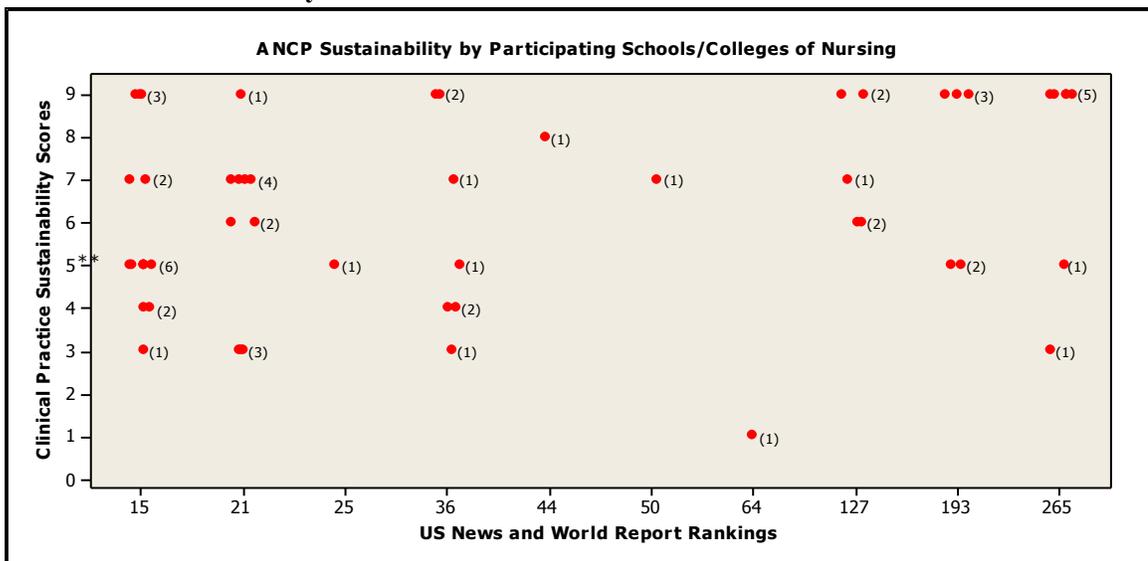
A common theme was found. In August 2011, the *U.S. News and World Report* (USN&WR) published the 2011 top-ranked schools of nursing in the United States. Currently, there are only two nationally recognized rankings for nursing schools, with the *U.S. News and World Report* the most widely known. All 14 schools of nursing in this investigator’s study participated in the *USN&WR* survey. This publication included the rankings of master’s in nursing degree programs, which incorporated several nurse specialty programs such as nurse practitioner, nurse midwife, and clinical nurse specialist. The selection methodology was as follows:

With a master’s in nursing, nurse practitioners and clinical nurse specialists can perform a full range of health services. Students may focus on areas such as geriatrics, nutrition, and women's health. These are the best nursing schools.

These rankings are highly valued by academic and research institutions as an external symbol of the quality of research staff (which may or may not be the same as the teaching staff) and academic programs employed by the school. Students may use these rankings to screen a particular nursing school as an indicator of “fit” with faculty and/or their chosen areas of focus, academic goals, and future careers. Based on the student’s criteria, the report may be a drawing card for application, enrollment, and attendance.

The Kruskal-Wallis Test was used to correlate the sustainability scores of the fourteen participating schools of nursing’s 52 practices with the results of the *U.S. News and World Report*. The results of these correlations are depicted in Figure 23 and Table 29.

**Figure 23. USN&WR Rankings by ANCP Participating Schools/Colleges of Nursing Sustainability**



\*Among 52 Academic Nursing Clinical Practices

\*\*Level 5 Denotes Sustaining at Breakeven

**Table 29. Ranges of Academic Nursing Clinical Practices Sustainability by School of Nursing and USN&WR Rankings**

<b>School of Nursing (Response ID)</b>	<b>USN&amp;WR RankN</b>		<b>Median</b>
SON Practices # 10	265	6	9.000
SON Practices # 9	193	5	9.000
SON Practice # 4	44	1	8.000
SON Practices # 7	36	4	8.000
SON Practices # 1	50	1	7.000
SON Practice # 5	15	7	7.000
SON Practices # 6	21	7	7.000
SON Practices # 12	127	5	7.000
SON Practices # 11	15	7	5.000
SON Practice # 3	25	1	5.000
SON Practices # 8	36	3	4.000
SON Practices # 2	21	3	3.000
SON Practice # 14	265	1	3.000
SON Practice # 13	64	1	1.000
<b>Overall</b>		<b>52</b>	

H = 27.51, P = 0.011

H = 28.84, P = 0.007 (adjusted for ties)

\*Median represents sustainability scores

Table 29 categorized the school of nursing practices by sustainability (median) scores – highest (9) to lowest (1), USN&WR rankings, and the number of practices at each school. These are diagrammatically depicted in Figure 23. The Pearson coefficient was calculated at .327, indicating there is no causal relationship between the variables.

#### *Results for Aim 5*

*Aim 5. Evaluate the Academic Practice Financial elements, using the Institute of Nursing Centers (INC) data, that contribute to the sustainability of academic clinical practices in schools/colleges of nursing.*

Question 5.1. Which specific financial elements contribute to the sustainability of academic nurse-managed clinical practices?

The Institute for Nursing Centers (INC) is a network of organizations that focus on the development, promotion, and advancement of nurse-managed health centers (NMHCs). INC surveys NMHCs that provide primary care with the majority of the care

provided by advanced practice nurses. Nine of the 14 participating schools of nursing in this investigator's study were ongoing contributors to the biannual Institute of Nursing Centers (INC) study. However, only five of these schools submitted data for this study. Each SoN provided written permission which was verified by the INC staff. INC released the financial data of these practices to this investigator via secure disc, which was downloaded, matched to the corresponding clinical practice in this investigator's study, and analyzed.

No single discrete INC data elements were found to be significant on their own. This investigator tested various combinations of the data to determine if significance could be identified.

Two elements emerged. Minority Students, Providers, and Staff vs. Sustainability *and* Percent of Total Gross Charges & Total Adjusted Charges - in combination - appeared to increase practice sustainability ( $p = 0.016$ ).

The equation for this specific combination of elements was:

$$\text{Sustainability} = -0.211 (-0.219 \text{ EBS} + \text{P} + \text{S}) + 0.111 (\% (\text{G2C and G1C})).$$

This equation included the combination of three significant major elements and their associated components. These are delineated in the above equation and are explained as follows:

Three components formulated the EBS equation. These included:

*Section E2b. Minority (Students)*—Bachelor of Science in Nursing students, Masters of Science in Nursing students, and Minority numbers of other students who had educational experiences at the clinical site (denoted as *EBS*);

*Section E13b.* Minority Providers offering billable primary care services to patients (denoted as **P**); *and*

*Section E14b.* Minority Numbers of Staff (non-providers) who were employed or contracted by the clinic to fulfill various functions (denoted as **S**).

The combination of these elements produced the predictor equation:

$$\# \underline{EBS + P + S \times S}$$

Two billing information elements comprised the second component of the equation:

The *Section T* equation:

Total Amount of Gross Charges (**G1c**); *and*

Total Amount of Adjusted Charges (**G2c**)

These were converted to an equation that produced a percentage of

*Total Gross Charges (T)*

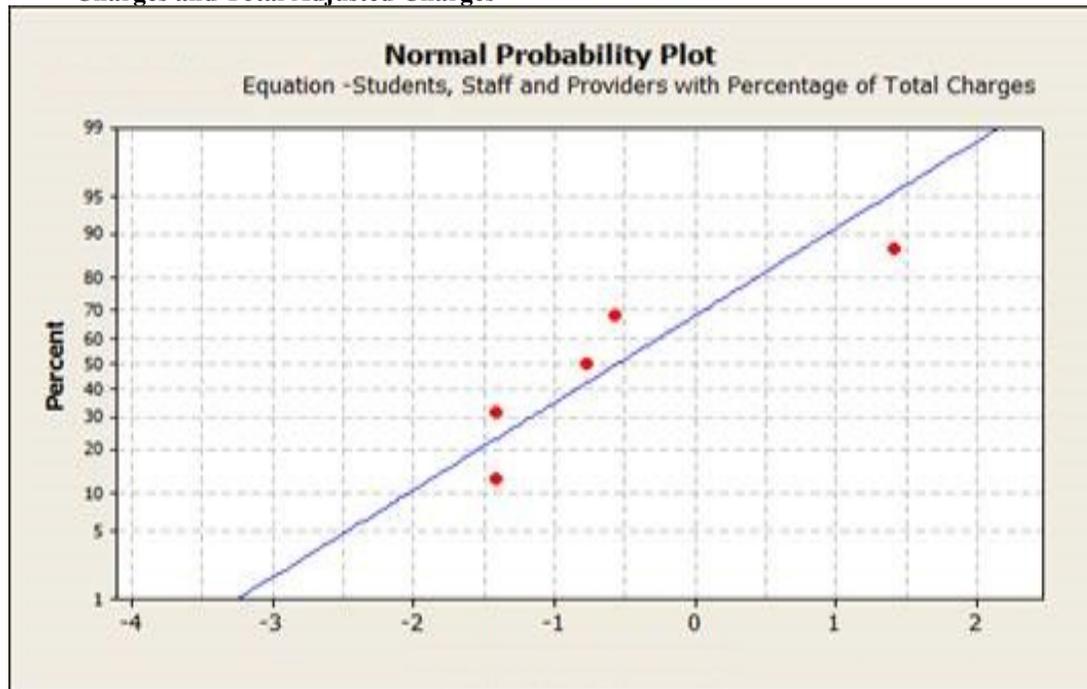
$$\frac{\mathbf{G2c - G1c}}{\mathbf{G1c}} * (100) = \mathbf{T}$$

*Sections E. Academic Activities and Staff Demographics in combination with Section G, Billing Information, were found to be significant.*

The equation associated with the data presented above was:

Sustainability =  $-0.211 - 0.219 (EBS + P + S) + 0.111(T)$  and is illustrated in the in the normality plot - Figure 24.

**Figure 24. Normality Plot: Minority Students, Providers, and Staff and Percent of Total Gross Charges and Total Adjusted Charges**



A fitted linear model was used to identify the relationship between the predictor variables and the response variable. The variables, as the graph demonstrates, are reasonably close to the predicted values with no outlier, therefore, the linear model appears appropriate.

#### *Summary of Findings by Specific Aim*

In summary, the study findings provided substantiation of elements that impact the sustainability of academic nurse clinical practices. These items were organized and categorized by corresponding Specific Aim and Domain of Interest. The domains of the study included:

I. Academic Infrastructure; II. Academic Nursing Clinical Practice Leadership and Planning; III. Clinical Practice Site Information; and IV. Financial Elements.

Specific Aim 1 – *Evaluate instrument elements by Domain of Interest for item clarity, item relevancy, internal consistency, and content validity.*

All instrument elements were organized by Domains of Interest and analyzed by an expert panel for item clarity, relevancy, internal consistency, and content validity. The Anderson-Darling test was performed to evaluate normality as a non-normal distribution was determined.

Expert agreement at 80% was required to maintain an item for the study. Items not achieving the required agreement were excluded from the revised study instrument. The original instrument contained 250 possible elements of analysis.

The evaluation determined Financial Section IV required extensive time and resources by the study participants to deliver the requested data. Experts advised deleting the financial questions in this section and replacing these items with Institute of Nursing Center data specific to the clinical practices in the study. An encumbrance to this suggestion was the limitation that only nine of the 14 schools in this study participated in the current INC study and that five of the nine chose to contribute finance data to the study.

The initial reliability index calculated for the original instrument (Sections I– IV) was .761. The deletion of the financial elements in Section IV-Financial Elements from the original instrument improved the reliability index to .983. Seventy-seven items were retained for the final study instrument.

Feasibility and face validity were determined using a limited expert (N = 8) pilot sample. Six of these forms were returned. Although all experts participating in the pilot agreed that the study was very relevant, not all fully completed the entire document.

*Specific Aim 2 – Determine the specific Academic Infrastructure elements that contributed to sustainability.*

One single element was found to contribute to sustainability in this section. This element described the relationship of sustainability and academic clinical practice as addressed in promotion and tenure documents.

*Specific Aim 3 – Determine the specific Academic Clinical Practice Leadership and Planning elements that contribute to the sustainability of academic clinical practices in Schools/Colleges of Nursing.*

A combination of five elements described over 50% of the variability in the process of sustainability. Additional elements associated with the Planning Structure were also determined significant for Aim 3, specifically:

- Identifying community partners to create new services and revenue streams;
- Strategies to respond to client needs;
- Systems to collect accurate and reliable financial data;
- The Practice Structure's ability to meet requests for health care services; and  
lastly,
- The Practice Evaluation—tracking patient satisfaction by individual provider.

Items involving the Practice Champion and practice sustainability produced significant elements, including the Academic Title of the Practice Champion ( $p = 0.00$ );

APRN Certification of the Practice Champion—Other ( $p = 0.002$ ); and Percentage of Effort Practice Champion Duties ( $p = 0.001$ ).

Additional areas of significance were found in the inclusion/exclusion of Practice Effort in Faculty Workload Assignments ( $p = 0.018$ ); the Minimum/Maximum Percentages Allocated for Practice ( $p = 0.003$ ); Teaching—Minimum Percentage ( $p < 0.001$ ); Minimum Percentage for Service ( $p = 0.049$ ).

Specific Aim 4 – *Determine the Clinical Practice Site elements and information that contributed to sustainability.*

The Field Test and correlation of the INC financial data by corresponding clinical practice site(s) were described in Section Three. Significance was found in this study in the total number of hours practiced by all School of Nursing Faculty at the clinical sites ( $p = 0.039$ ). Although significance was determined between schools of nursing and the *U.S. News and World Report Rankings* ( $p = 0.011$ ), only nine of the 14 schools participated, and the Pearson Coefficient was .327, indicating a very weak, positive linear relationship between the variables.

Specific Aim 5 – *Evaluate the Academic Practice Financial elements, using the Institute of Nursing Centers (INC) data, which contribute to the sustainability of academic nursing clinical practices in Schools/Colleges of Nursing.*

A major impact to this aim occurred with the removal of financial data elements from the Sustainability Tool. The immense detail of this section and its labor intensiveness led the content experts to recommend its deletion. Two content experts were experienced with the Institute of Nursing Center's data and recommended the

substitution of the study's financial data section with the INC data from its most recent survey.

The breadth of the INC data proved to be less robust than anticipated and its results revealed no INC elements significant on their own merit. However, the combination of two element sets – Minority Students, Providers, Staff vs. Sustainability *and* the Percent of Total Gross Charges & Total Adjusted Charges – was found to be significant ( $p = 0.016$ ) with an R-Sq (adj) of 99%.

## **Chapter V**

### **DISCUSSION**

#### **Introduction**

Academic nursing clinical practices (ANCPs), often referred to as nurse-managed health clinics/centers, offer communities progressive and alternative options for access to high-quality primary health-care services and optimal therapeutic outcomes.

The Penn Macy Initiative (Lang, 2003) reported that nursing clinical practices in academic settings held great promise for nursing's future. The members of this initiative identified that a common focus or direction was lacking for schools within their cohorts. They believed that an intentional integration of research, clinical practice, and education instilled unified focus and direction in the evolution of scientific and evidence-based practice. Also, although entrepreneurial business start-up courses were abundant, most of these schools did not have the expertise and knowledge proficiency necessary to design and establish a nursing clinical practice within an academic/business setting.

Throughout the past decade, rapid growth of ANCPs has occurred with many of these clinical practices established by or associated with academic schools of nursing and directed and managed by advanced practice registered nurses (APRNs), specifically nurse practitioners.

Approximately 250 community-based nurse-managed clinics across the United States (primarily in rural, urban, and metropolitan areas) provide over 2.5 million patient visits per year (Hansen-Turton, 2010). Additionally, APRNs were instrumental in the substantial expansion of 7,354 community health center sites throughout the country, providing care for more than 16 million people (Aiken, 2011). However, even with the

emergence of new clinical sites, unfortunate subsequent closures of these clinical practices have continued to occur at alarming rates (King 2008).

At the inception of this research, this investigator's role was Director of Faculty Practice at the University of Minnesota's School of Nursing. This role entailed securing, formulating, and/or developing clinical practice opportunities for the school's advanced practice nursing clinical faculty. The investigator was also an active member of the American Association of Colleges of Nursing's (AACN) Practice Leadership Network (PLN) and involved in intensive discussions regarding the struggles faced in establishing, securing, and maintaining clinical practices across the country. Additionally, as a graduate student in the College of Pharmacy, her knowledge, interest, and passion for sustainable patient care and practice continuation expanded beyond ANCPs to pharmaceutical care, medication therapy management (MTM) programs, and practice-based research networks (PBRNs). These major multifaceted concerns led this investigator to explore the infrastructure and configuration (elements) of these nursing clinical practices to determine why some clinical practices were sustaining and others not, and if correlations existed among these important practices that could facilitate sustainability and practice continuation.

### **Purpose of the Study**

The initial focus of this dissertation was to develop a comprehensive survey instrument that would measure sustainability in academic clinical practices. Its purpose was to rigorously evaluate both nurse-managed clinical practices and pharmaceutical care practices. However, the investigator's committee members recognized the value this

dissertation research would bring in creating new knowledge that could inform and serve as foundations for interprofessional clinical practices. Their collaborative recommendation was to develop and test the instrument with established academic nurse-managed/nurse practitioner practices due to their increased economy of scale, the foundational information that could be derived and extrapolated to other professional practices, and the necessity for action that could potentially bring results to markets sooner.

The purpose of this research study grew from designing and testing the original survey instrument to one that would differentiate and isolate elements/factors impacting sustainability from 52 selected academic nursing clinical practices associated with 14 schools/colleges of nursing (SoN) across the United States. The overarching goal of this research was to develop and validate a thorough, analytical, online instrument that could be used in future interventional studies to assist clinical professionals analyze elements of sustainability in their practices.

### **The Problem Statement**

*Determine the Elements of Sustainability in Academic Nursing Clinical Practices*

#### **Background**

Escalating costs, increasing capital clinical requirements, limited and often inadequate insurance coverage, and escalating payment structures fail to financially support and reflect the value of primary care. These factors have diminished its professional respect, further dissuading physician recruitment. Physicians are choosing specialty practices over primary care. These actions amplify health-care workforce

shortages, and in turn hinder patient access to needed medical services (NACHC, 2009). Without these clinical practices, many people in urban and rural areas have limited or no access to affordable health care. When these people become ill, they may put off necessary care and exacerbate their illnesses. These evolving, now much sicker patients may seek care at an emergency room and may require hospitalization (Rosenberg, 2012).

Confounding variables have also impacted health-care demands. The Affordable Care Act (ACA) (2010) promises to add 32 million uninsured people into an already stressed health-care system at a time when there is an actual deficit of primary care providers (PCPs) and a looming prediction of an expansive shortage of primary care physicians in the U.S. (Fairman, 2011). Also, the provision of health insurance to an additional 30+ million people is likely to strain the availability of health-care services. As these baby boomers age-in to Medicare, and older populations continue to live longer, chronic illnesses proliferate. In the meantime, health-care costs continue to soar while federally funded programs and insurance dollars diminish. These declining reimbursements may trigger PCPs to further restrict Medicare and Medicaid patient volumes.

The ACA includes a provision that establishes the ability for qualifying nurse-managed health centers to apply for grants that assist in offsetting some of the operational costs through 2014. These grants consider the financial needs of the center after other state, local, or other operational funding is secured.

A perplexing conundrum existed: Why do some clinical practices thrive while others limp along or fail? No clear-cut answer was apparent. The PLN leaders' encouragement reinforced the investigator's pursuit to isolate factors that impacted the

viability and resources of these ANCPs. The ultimate goal was to identify factors that might facilitate ANCP longevity and the delivery of high-quality, low-cost health care.

A review of the advanced practice nursing literature (Chapter 2) predominately produced articles describing patient outcomes, theoretical models of care, and/or issues related to nursing leadership and management. A concentrated search of relevant nursing literature that dealt with the actual business of clinical practice was limited to a handful of authors (Barger, Barkauskas, Esperat, Evans, Hansen-Turton, Lang, Pilon, and Pohl), and even then, the majority of these were heavily focused on financial implications (i.e., billing of services, coding the visit, reimbursement and payer mix).

Exploration of the social sciences literature led the investigator to a conceptual model associated with community-based social programs (Mancini & Marek, 2004) and further investigation identified elements associated with previous studies (e.g., Goodman et al., 1998; Leviton, Herrera, Pepper, Fishman, & Racine, 2006; Mancini & Marek, 2004; Marek et.al., 2004; Johnson et.al., 2004; Shediak-Rizkallah & Bone, 1998). This conceptual framework emphasized the relationships between these sustainability elements (leadership competence, effective collaboration, demonstrating program results, strategic funding, staff involvement and integration, and program responsivity) and their contributions to middle-range program results (continuing to focus on goals, planning for sustainability) produces program sustainability.

Simultaneously scrutinizing the elements associated with community-based programs and adapting them specifically to ANCPs, permitted this study to reinvent these element categories and create a comprehensive representation of sustainability for nurse-managed clinical practices. In fact, it was the initial work of these community scholars

that led this investigator to additional unique elements also found to contribute to sustainability.

In hindsight, the impetus to identify significant elements may have detracted from the value of other elements. The deficiency of element significance did not necessarily imply unimportance (i.e., transportation and ancillary services). Ongoing discussions with peers, colleagues, and practitioners verified that many of the schools of nursing (SoNs) approached faculty practice philosophically and methodologically from their clinical positions of strength and knowledge regimes, and not from health-care business perspectives. It was at this point that an enlightening realization occurred to the investigator: Could correlations exist between the elements of business acumen and elements of clinical practice?

Three phases comprised the study's design, including a content expert panel validity evaluation phase; a pilot study to determine the face validity of the revised study instrument and its practicality as an online survey methodology; and, lastly, a field test study to evaluate the instrument's measures as predictors of practice sustainability.

### **Expert Panel Evaluation of Validity**

The original tool was segmented into four Domains: *Academic Infrastructure*, *Clinical Practice Leadership and Planning*, *the Academic Clinical Practice Site*, and *Academic Practice Finance*. Two hundred fifty possible elements of analysis were included in the original instrument. Each of these elements was evaluated by seven academic nursing clinical practice experts for clarity (element – clear/unclear) and relevance (element – relevant/not relevant).

Expert consensus was achieved and 182 final elements were declared both clear and relevant and were maintained for the study. One hundred one of these study elements were able to be categorized into one of four content domains: Academic Infrastructure; Academic Practice Leadership and Planning; Academic Clinical Practice Site; and Academic Practice Finance. Elements were evaluated for interrelatedness within each subsection and again to the overall content domain (Chapter 3, Table 3).

Seventy-seven elements achieved at least 80% agreement by the content experts, which was the minimum acceptable agreement for item continuance. These elements were incorporated into the online instrument for the study's field test. The Anderson-Darling test (Chapter 3) was performed to evaluate normality as a non-normal distribution was determined. Non-parametric statistics – the Kruskal-Wallis test – were used to analyze the data. Attributes were also evaluated individually for significance. Attributes retained in this study were statistically significant using Kruskal-Wallis at a 0.95 confidence level. The initial calculated reliability index based on instrument Sections I - IV was 0.761.

As defined by the literature, minimum levels of acceptable interrater agreement range from 0.70 (Davis, 1992) to 0.80 (Selby-Harrington, Mehta, Jutsum, Riportella-Muller, & Quade, 1994). Additionally, the study's content experts conveyed trepidation that many of the Section IV financial elements required discrete practice metrics which would prove difficult for participants to obtain. Recommendations were made to eliminate Section IV and relocate the non-financial elements to be retained.

The results associated with the elimination of Section IV greatly improved the study instrument's reliability to an index of 0.983. However, a casualty of this decision

was that the study lacked the financial data analysis associated with each practice and potential major elements effecting sustainability. Replacement of the financial elements with the Institute of Nursing Centers' data was recommended and the obtained data were matched to each participating academic nursing clinical practice. A condition of participation in this study required the nursing leaders of the participating schools to acknowledge, consent, and release (in writing) their contributed Institute of Nursing Centers' data to the investigator. Although data from 52 clinical practices from 14 participating schools of nursing were procured, only nine of those schools had contributed data to the current INC survey, which severely limited the study's practices financial analyses and, in turn, diminished its financial generalizability.

The development of the online version of the sustainability tool using the Qualtrics software was an improved asset from its paper counterpart. The online survey provided instantaneous access to the study instrument and flexibility to the participants with the ability to exit the survey at any point in time and resume without data loss.

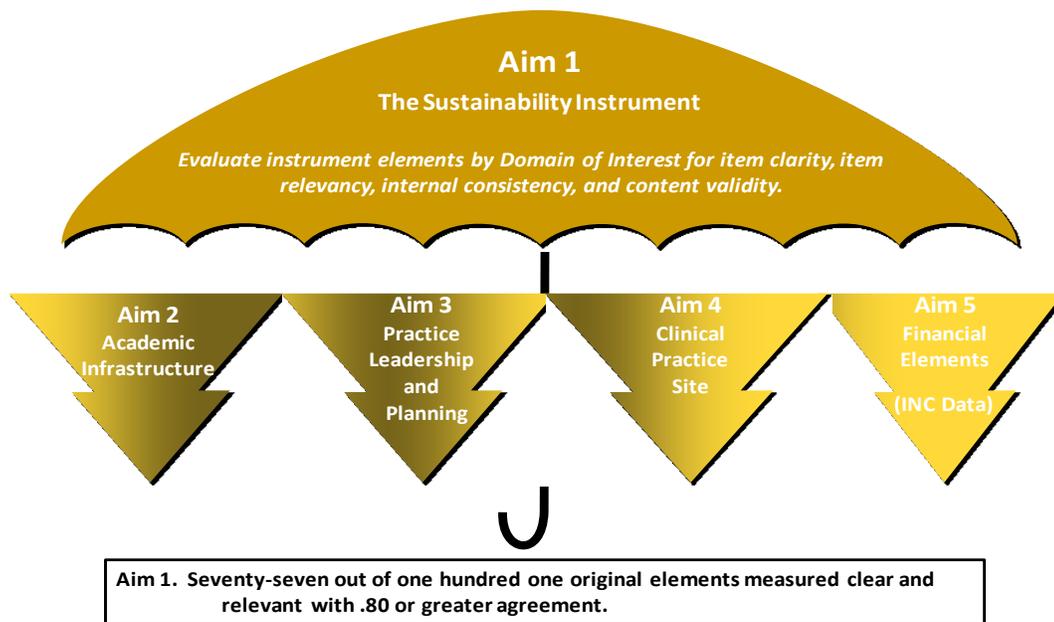
The number of unique practices to be entered was designated by participants at the beginning of the survey. Each unique practice necessitated a separate survey (identical questions). Participants electing to submit data for multiple clinical practices indicated that the study became redundant and its length prohibitive. Although the software provided real-time accumulation and tabulation of quantifiable data, additional regression analytics were needed to achieve the depth of analysis desired.

## Discussion of Specific Aim Findings

### *Aim 1. Development of the Sustainability Instrument*

*Evaluate instrument elements by Domain of Interest for item clarity, item relevancy, internal consistency, and content validity.*

**Diagram 1. Elements of Sustainability in Academic Nurse Managed Clinics By Specific Aim**



The initial purpose of this dissertation research was to develop a comprehensive study instrument that would measure sustainability in academic nursing clinical practices.

The scope of this study expanded beyond that objective. Serving as an overarching umbrella (Diagram 1), the study instrument provided consistency and structure for the four targeted study aims and their corresponding Domains of Interest.

Chapter Three (Table 2a) outlined the creation and development of the sustainability instrument. This comprehensive tool contained concrete, measurable elements found in the nursing and social sciences literature, and/or demonstrated in

clinical practice. Initially, seven academic nursing practice content experts evaluated 250 elements that were segmented into four prescribed domains for clarity and relevance. Five of the original seven experts completed the entire review with one domain (finance) recommended for deletion.

*Question 1.1. Were the instrument elements clear and relevant to measure sustainability in the domain of Academic Infrastructure?*

Redundancy was identified among two sections of elements describing the domain of Academic Infrastructure (Chapter IV). These sections were evaluated and integrated under a single archetype – *Academic Clinical Practice in our School is: Integral to our Organizational Mission and Vision as demonstrated by....* This action unified the focus of the Academic Infrastructure section and facilitated successful clarification of elements originally rated unclear but relevant.

The following two elements were notable as they were reported by various authors and agencies as important to practice success. These two elements were included in the investigator's study instrument (NONPF, 2005; Pohl, 2010).

The element *...sufficient numbers of practicing faculty...* was initially rated unclear but considered relevant by the content experts in this study. The element was clarified and added to the study instrument. However, when statistically evaluated, this element was not significant as a measure of sustainability in the investigator's study. This finding was unexpected as its importance was emphasized in a reputable journal and published by school of nursing faculty.

The second element, *The school/college administration supports Faculty Practice – Financially*, was judged unclear and not relevant by the content experts and

deleted according to the inclusion/exclusion guidelines established for this study. The deletion of this element was also unanticipated as this topic was described as contentious (in the schools) when discussed at the ANCC and PLN meetings. This item was initially included to provide details regarding each SoN's financial support for practice.

*Question 1.2. Were the instrument elements clear and relevant to measure sustainability in the Section II domain – Academic Practice Leadership and Planning?*

Modifications within this section supported the merger of the clinical nature of faculty practice with enhanced business acumen. Twenty-one of the original 24 elements were considered clear and relevant to Academic Practice Leadership and Planning. Three elements initially rated unclear but relevant were successfully edited and maintained.

Statement clarifications were strongly suggested for items defining exemption from participation in the Faculty Practice Plan. Statements were amended to include “Opt out of” the plan and “no existing formal plan.” Augmentations to the “Written Business Plan” inquired if services were requested through a formal process or mechanism; whether structure and/or feasibility assessments existed between the school of nursing and prospective external agencies; and if validation of the SoN's leadership commitment to short- and long-term program goals was present.

*Question 1.3. Were the instrument elements clear and relevant to measure sustainability in the Section III domain – Academic Clinical Practice Site?*

Initial ratings of items under the “Belong” heading of Section III demonstrated high relevancy (95% CI) but diminished clarity (80% CI) and uncertainty (75% CI). Modifications in this section revised the general practice site location (campus, inner-city...) to a specific *Practice Setting for this Clinical Practice* (i.e., preschool, homecare,

convenient care, etc....). These changes made differentiation and comparison of target service populations (pediatrics, geriatrics...), student participation, and clinical training at the practice site possible. Defining the population's health-care needs, availability of resources, access to insurance coverage (commercial, Medicare, Medicaid, private pay) and access to transportation informed the practice structure and provision of services.

*Question 1.4. Were the instrument elements clear and relevant to measure sustainability in the domain of Section IV – Academic Practice Finance?*

This section received an extensive critical review by the content experts. Item relevance was the sole category achieving greater than 80% consensus. Other categories scored 78% (clarity), 60% (belongs to heading), and 75% (generally belong). The foremost-cited reason for these diminished scores was the perceived immense respondent burden associated with the extensive numbers of questions and elements. Notably, this perceived burden was underscored by the content experts themselves, as only five of the seven completed the entire finance section, with one opting out prior to starting and the other quitting midway. Their expressed concerns included the extensive complexity and specificity for analysis and whether participants could secure the requested data.

The content experts recommended deleting the entire Section IV. However, this section contained pertinent non-financial subsets deemed critical to the study.

Two essential study elements located in that section included:

IV E3\_2c. *Have you closed a clinical practice site within the past 18 months?*

and the study's Dependent Variable, the scale used to rate the impression of practice sustainability for each practice entered:



### **The Field Test**

Data of the 16 study participants, including the participant's impression of sustainability (dependent variable), were aligned by academic nursing clinical practice site and specific sustainability score with their corresponding Institute of Nursing Centers (INC) data.

The following represents the Impression of Sustainability scores assigned to each of the 52 ANCPs by the nurse leader participants. The mean sustainability was 6.327, or mostly sustainable. This ranking is important to note as it indicates that these ANCPs have the potential to become viable and sustainable care delivery sites.

### **Discussion - Aim 2**

*Determine the specific Academic Infrastructure elements that contributed to the sustainability of academic clinical practices in schools/colleges of nursing.*

A single variable was found highly significant in the Domain of Academic Infrastructure: *Q1\_4 Academic Clinical Practice in our School/College is: Integral to our Organizational Mission and Vision as demonstrated by: Addressed in promotion and tenure (P&T) documents and criteria (p = 0.011).*

Successful faculty retention requires demonstrations of value reflected as workload accommodations and/or compensation. This investigator was perplexed that only one element proved highly significant in this domain and that it accentuated promotion and tenure. Participants with practices rated as sustaining (sustaining at breakeven to fully sustaining) "somewhat agreed" or "agreed" that clinical practice was addressed in promotion and tenure documents (Chapter 4, Figure 3). In contrast, the

responses of those participants registering “somewhat disagree” – that is, that academic clinical practice was not prominent in their promotion and tenure documents and criteria – indicated all practices affiliated with their institutions were non-sustaining.

The results were consistent with those found in the literature. Promotion and tenure (P&T) was a major topic of discussion within the investigator’s organization. This subject also arose in conversations with other SoNs within the ANCC Practice Leadership Network, although the primary focus of those discussions related to disparities between tenured and clinical-track faculty benefits. Renowned nursing authorities, health-care organizations, special interest groups, and society have recommended a nurse’s faculty role include academic nursing clinical practice in work effort and compensation considerations. Since 1993, NONPF has informed and promoted the inclusion of ANCP training and credentialing in schools of nursing curricula and in national and international practice guidelines as opportunities for faculty merit, promotion, tenure, and revenue generation. Efforts supporting the expansion of promotion and tenure (P&T) beyond tenured faculty to clinical-track nursing faculty involved academic clinical practices, corporations, and community partners.

This study embraced the rigors involved in creating, maintaining, and sustaining effective APRN clinical practices. As these practices become a mainstay for patient care in the U.S., this study’s results may influence the sustainability of current clinical practices and possibly serve as a template for the creation of new clinical practices.

### Discussion - Aim 3

*Determine the specific Academic Clinical Practice Leadership and Planning elements that contributed to the sustainability of academic clinical practices in schools/colleges of nursing.*

As previously described, Kruskal-Wallis methodology confirmed a non-normal distribution of data in this study. However, after viewing the data, this investigator speculated: Could significant elements have been revealed if a normalized distribution been determined?

With this question in mind, a specific regression methodology was employed - namely, Best Subsets Regression. This tool is commonly used in industry due to its capability to analyze large data sets and determine significant combinations. The elements isolated are depicted in Figure 26 and listed in Table 32.

This methodology revealed a five predictor element combination which explained over 50% of the variation in *Academic Clinical Practice Leadership and Planning*. In combination, these five elements, described below, proved to be highly significant ( $p = .001$ ), with three individual elements also independently significantly correlated to the outcome variable. Regression analysis was performed on the combination of these five selected variables as a single unit. The combination of the five elements described above, and presented in Table 32, were found to be highly significant ( $p < 0.001$ ) for sustainability in the domain of *Academic Practice Leadership and Planning*. The  $R^2$  was 52.6%, indicating that almost 53% of the variability was accounted for by the model.

**Figure 25. Statistically Significant Elements in Academic Practice Leadership/Planning Sustainability Predictor Analysis\***

Vars	R-Sq	R-Sq(adj)	Mallows Cp	S	P	P	P	P	P
1	18.8	17.2	28.4	2.0445					
1	14.5	12.8	32.4	2.0981					
2	31.7	28.9	18.3	1.8945					
2	28.9	26.0	20.9	1.9324	X				
3	47.3	44.0	5.6	1.6813					
3	39.3	35.5	13.1	1.8039					
4	48.8	44.5	6.2	1.6743		X			
4	48.5	44.1	6.5	1.6803	X				
<b>5</b>	<b>52.6</b>	<b>47.4</b>	<b>4.6</b>	<b>1.6294</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
5	50.4	45.1	6.6	1.6655	X	X	X	X	X

\*Among 52 Academic Nursing Clinical Practices

Predictor Analysis	Coef	SE Coef	T	P
Constant	-3.879	1.916	-2.02	0.049
Opt Out of Plan - Contract Unavailable	1.942	1.02	1.9	0.063
Plan - Structure - Systems outcomes non-financial	-0.632	0.3168	-2	0.052
Practice - Structure - Faculty Involved in practice design	2.9376	0.4804	6.11	0.000
Practice Champion Credentials	0.5041	0.1086	4.64	0.000
Practice Workload - Minimum Service	-0.14465	0.05418	-2.670	0.010
<i>df</i>	SS	MS	F	P
5	135.314	27.063	10.19	<0.001
S = 1.62940 R <sup>2</sup> = 52.6% Adjusted R <sup>2</sup> = 47.4%				

These five elements comprised the following:

*If Faculty are allowed to opt out of the practice plan – Please list the reasons:*

A contract for services for the desired practice is unavailable or unable to be secured ( $p = 0.063$ ). Although not significant on its own, this element option was identified by the ANCP leadership and practicing faculty as a legitimate and credible decision for practice plan non-participation.

*Practicing Faculty are involved in practice design and program decision making;*

( $p = 0.001$ ). The results for this element reinforced the essential involvement of ANCP faculty in clinical practice inception, oversight, and evaluation. Practice sustainability was enhanced when schools of nursing leadership and administration endorsed faculty practice (Goodman et al., 1998; Mancini, 2004; Butterfoss, 2007; IOM, 2009). These findings were consistent with the reviewed literature, the investigator's dialogues with content experts in this study, and ANCP leaders nationwide. Additionally, the investigator's experience, affiliations, and associations demonstrated the power of effective collaboration, cooperation, and engagement of faculty members across the country and community members locally in positioning practices to achieve goals and gain additional support. Organizations that engage members of the community (i.e., business professionals, policymakers, consumers, and residents) in planning and marketing have enhanced capacity to grow practices over time (Feinberg et al., 2008; Wolff, 2001).

*The Planning Structure/A formal planning structure/feasibility assessment exists to grow the clinical practices. This structure:* Defines systems to collect accurate and

reliable clinical performance outcomes/best practices data from each practice (non-financial) ( $p = 0.052$ ).

*Select the Credentials of the Practice Champion* ( $p < 0.001$ ). Although the title and credentials of the Practice Champion were found to be significantly correlated to the outcome variable separately, best subsets isolated a sole predictor attribute, *the Credentials of the Practice Champion*. These Practice Champions were represented by two certified clinical specialties – clinical nurse specialists and certified nurse practitioners. These two titles were significantly correlated to practices rated as “mostly, moderately, or fully sustaining practices.”

*For Faculty who practice – Is there an established expectation that a minimum percentage of time is designated for: Service?* ( $p = 0.010$ ).

**\*\*Note:** The Sustainability Scale used throughout this document was:

**Figure 2a. Participant Sustainability Scale**

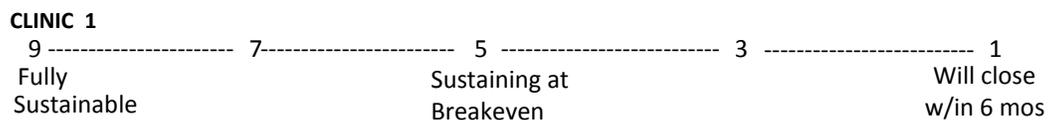
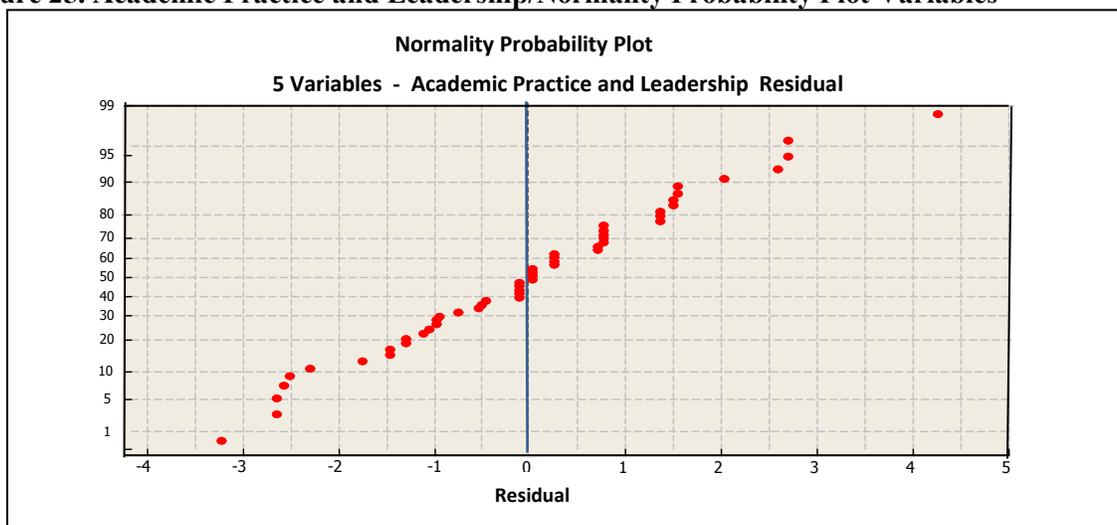


Figure 25 graphically demonstrates the evaluation of the standardized residual normality plot. The data shows no major outliers, thus affirming the goodness of the model.

**Figure 25. Academic Practice and Leadership/Normality Probability Plot Variables**

\*Among 52 Academic Nursing Clinical Practices

*If Faculty are allowed to opt out of the practice plan – Please list reason(s): The contract for services for the desired practice is unavailable or unable to be secured* ( $p = 0.063$ ). Although not significant on its own, this element option was identified by the ANCP leadership and practicing faculty as a legitimate and credible decision for practice plan non-participation.

*Practicing Faculty are involved in practice design and program decision making* ( $p = 0.000$ ). The results for this element reinforced the essential involvement of ANCP faculty in clinical practice inception, oversight, and evaluation. Practice sustainability was enhanced when schools of nursing leadership and administration endorsed faculty practice (Goodman et al., 1998; Mancini, 2004; Butterfoss, 2007; IOM, 2009). These findings were consistent with the reviewed literature, the investigator's dialogues with content experts in this study, and ANCP leaders nationwide. The investigator's experience, affiliations, and associations demonstrated the power of effective collaboration, cooperation, and engagement of faculty members across the country and

community members locally in positioning practices to achieve goals and gain additional reinforcement (in-kind and monetary). Furthermore, organizations that engage members of the community (i.e., business professionals, policymakers, consumers, and residents) in planning and marketing have enhanced capacity to grow practices over time (Feinberg et al., 2008; Wolff, 2001).

*Select the Credentials of the Practice Champion (p = 0.000).* Although the title and credentials of the Practice Champion were found to be significantly correlated to the outcome variable separately, best subsets isolated a sole predictor attribute – the Credentials of the Practice Champion. The Practice Champions were represented by two different certified clinical specialties – clinical nurse specialists and certified nurse practitioners. These two titles were significantly correlated to practices rated as “mostly, moderately, or fully sustaining.”

All practices with clinical nurse specialists as credentialed champions were sustaining with one practice sustaining at breakeven and five fully sustainable practices. In contrast, practices with certified nurse practitioners as credentialed champions were less sustainable with a wider array of sustainability, ranging from one practice constantly threatened with closure, one practice at breakeven, and two moderately sustainable practices.

This finding was unanticipated, as the investigator’s experience was with nurse practitioners as practice champions for primary care practices. Her experience indicated that the nurse practitioner role was a better fit for primary care, which was the chief categorization of the ANCPs in this study. This reasoning was related to the advanced practice clinical skills required for patient assessment, evaluation of acute and chronic

illnesses, and treatment of the diagnosed condition. Although both nurse practitioners and CNSs are educated in counseling techniques, the CNS role of influencing the quality and cost effectiveness of patient outcomes may have had some bearing on the results for these questions. A subsequent corollary study may be warranted to determine additional reasons that the CNSs were better predictors of sustainability in this area than NPs.

The study also confirmed that champions who had been certified previously but were not currently certified experienced greater sustainability than those never certified, with seven practices (two mostly, four moderately, and one fully) sustaining. In comparison, the variation of practice sustainability with champions who were never certified ranged from nine unsustainable to six practices sustaining at breakeven, and four practices fully sustainable.

Education and licensure (where required) establish minimum competency requirements. Certification denotes official endorsement and public recognition of an individual's knowledge, competencies, and capabilities within that professional arena. Not every specialty requires initial or ongoing certification. However, those that do endorse and expect a superior level of competence in the practice specialty demonstrated by the outcomes addressed above. Certification also assures consumers that professionals have met all acceptable standards of practice in their specialty (ANCC, 2010).

*For Faculty who practice – Is there an established expectation that a minimum percentage is designated for: Service? (p = 0.010).* Allocations of effort for practice selected by these faculty included: No minimum designated, 10%, 20%, and N/A. ANCPs with no minimum service allocations had the largest numbers of clinical practices (14) and exhibited one unsustainable practice, with all others sustaining at breakeven or

above, including eight fully sustaining practices. In addition to the essential elements reported and contrary to many schools of nursing practice plans, no minimum allocation for service (practice) was required of these practicing faculty ( $p = 0.010$ ). All other options (those with allocations of 10%, 20%, and N/A) revealed far fewer sustainable practices and greater unsustainability.

Throughout this manuscript, the literature cited emphasized that faculty practice provided opportunities for faculty to preserve and enhance clinical skills, maintain licensure, and meet the changing needs of the school, external clients, and the patients they serve. The investigator's experience is consistent with this study. Schools of nursing facilitating flexible practice schedules for faculty encouraged and permitted more faculty to participate in practice and accommodated the needs of the client communities and the faculty's personal and workload schedules. This type of scheduling enhanced the ability to meet licensure and certification requirements, and puts the faculty in control.

The last element isolated by Best Subsets Regression was: *The Planning Structure: A formal planning structure/feasibility assessment exists to grow the clinical practices. This structure: Defines systems to collect accurate and reliable clinical performance outcomes/best practices data from each practice (non-financial) ( $p = 0.052$ ).*

Millions of new patients, many with complex health-care needs, will enter the health-care system as Medicare and Medicaid expands under the Accountable Care Act. Reimbursement rates are relatively low and the administrative barriers are considerable. The pressure is increasing to determine sound and reliable programs/systems that will improve patient health and ensure sustainability.

The majority of the data derived from the literature focused on the financial aspects of sustainability for ANCPs. However, this investigator was pleased when the results of this study indicated that quality of care benchmarks were also predictors of sustainability in academic clinical practices.

Within the past few years, quality measures have been endorsed as critical to the reduction of health-care costs by certifying agencies such as the National Committee for Quality Assurance (NCQA) and Centers for Medicare and Medicaid Services (CMS). Furthermore, CMS has established patient care reimbursement structures for clinical practices (including ANCPs) that achieve specific quality measure thresholds in designated areas of the U.S. These measures were identified in this study and reinforced ANCP relevance and importance to the populations they serve.

Adjuncts to standard patient care services have arisen to improve sustainability. Miller et al. (2004) found faculty-engaged supplementary services such as consultative “client care” (i.e., patient-centered wellness education and counseling in exercise and diet) billable by licensed providers. These programs are targeted to improve the health of patients and may include additional reimbursements from CMS and Medicaid by meeting designated quality measures/metrics. Butterfoss (2007) observed that respected community programs were more likely to obtain funding opportunities and new resources and sustain themselves.

Exploration of the social sciences literature revealed distinctive attributes as predictors of sustainability. These were described in Chapter 2 and included leadership, membership diversity, history of collaboration, structure, resource diversity, sustainability plans, and community buy-in (Goodman et al., 1998; Leviton, Herrera,

Pepper, Fishman, & Racine, 2006; Mancini & Marek, 2004). These were components of the conceptual framework supporting this study and imperative to remember when clinical programs are designed and offered.

A key leadership role for these academic nursing clinical practices was the presence of a Practice Champion which, in this study, was executed by various levels of nursing leaders. As described in Chapter Two, Champions (they may or may not carry this moniker as a formal title) most often are successful nursing leaders charged with facilitating patient involvement, building relationships, and creating partnerships. As found in this study, their successes may be variable.

Although academic titles do not inherently define a faculty member's role, it is this investigator's experience that the academic title of Practice Champion is most often associated with perceived value, scope of influence, and ability to impact decisions in the academic arena. In many instances, the academic description also represents the hierarchical structural designation of the faculty member – tenure vs. clinical track. Three titles with the highest sustainability scores in this study were instructor, director, and an endowed professorship. These results were surprising and somewhat disappointing.

The title “instructor,” in an academic setting, commands minimal authority and in some instances may be indicative of adjunct faculty status. Six Practice Champions held titles of instructor which were, however, attributed to the highest sustainability score of 8.3 (out of 9.0). When these roles were paired with practice authority, the champions were successful in achieving practice sustainability.

Additionally, the title of director is often not associated with faculty status nor does it automatically command leadership authority. Five directors of community-based

practices and five directors of faculty practice and clinical partnerships demonstrated sustainability ratings of 7.4.

An endowed professorship – the Elouise Ross Eberly Professor – was designated as a Practice Champion with practice sustainability at 8.0. This endowed professorship supported the academic and research efforts of an exceptional tenured faculty member. In this case, access to rural health care for women was at the forefront of this faculty member's scope. However, practice is often seen as a detractor to community-engaged research, and it is frequently an add-on for tenured faculty who require practice hours to maintain certification and licensure.

Four associate deans for academic practice achieved sustainability scores of 7.5. The associate dean role is customarily awarded as a tenured faculty leadership position with a high level of authority within the school. In these cases, the faculty member assumed designated responsibilities for faculty clinical practice.

Three Champions with titles of dean or associate dean demonstrated low sustainability scores of 3.66, and a sustainability of 3.0 was associated with the title of department chair. While these were senior positions of authority and influence within the school, the low scores may suggest that clinical practice had diminished priority for these schools or that they created additional role dilution and competed with other academic activities deemed essential for the academic administrator's time.

Specific duties assigned to the Practice Champion role varied among the schools of nursing. Two of these important functions included the delegated functions of negotiating professional contracts for outsourced services and faculty contract negotiations. Unique and specific factors impacted each professional services negotiation.

Although data indicated that employing the skills of the Practice Champion in these negotiations produced additional sustainable practices, one must consider that these negotiations also resulted in clinical practices that were unsustainable, in contrast to those negotiated without a Champion where no unsustainable practices occurred. Further definition of the Champion role and qualifications should be developed and matched to the expertise and experience of the nurse.

Success in a leadership role is dependent on perceived and actual influence and authority. Further examination of these pertinent findings is suggested, especially in the specific areas of negotiations to determine what made these Champions less effective, especially in the arena of faculty contracts.

In addition to the “*formal planning structure/feasibility assessment*” element associated with the Best Subsets (defined previously), other significant elements correlated with *The Planning Structure* are described as follows:

*The structure: Identifies community partners to create new services and revenue streams (p = .004).* The necessity for formal planning and securing community stakeholder involvement was exemplified in the social sciences research literature (Altman, 1995; Goodman & Steckler, 1989; Paine-Andrews et al., 2000) and is embedded in the conceptual framework associated with this study (Mancini & Marek, 2007).

Forty-three (of the 52) practices “agreed” that a formal planning structure/feasibility assessment existed within their participating organizations to grow clinical practices by identifying and selecting specific community partners. Thirty-six of these practices registered identical volumes (12) at breakeven and fully sustaining, and

nine moderately sustaining. The diversity of sustainability of these “agree” practices could be indicative of the various stages in their planning structures, inability to adapt to change at the time of this study, and other possibilities, including administrative issues, planning, and services development. When evaluating only the agree responses, there appeared to be no statistical difference.

The focus of the “disagree” ANCPs (by definition) was to maintain current practices and not extend to new services at this time. A statistical difference became apparent when evaluating the two “disagree” categories, as they were divergently opposite of one another – the four practices in the “somewhat disagree” cohort demonstrated three practices moderately unsustainable and one constantly threatened with closure. In contrast, the five practices in the “disagree” cohort were all sustainable, including two fully sustainable. When evaluating these practice groupings, ambiguity and/or a lack of clear direction may have existed. Gaining greater insight into these practices would increase our knowledge regarding the contradictory sustainabilities within the “disagree” categories and, in turn, the similarities between “disagree” and “agree” sustainability. Further study is required and may consist of normalizing the data and performing linear regression to determine a significant difference.

A subsequent element under *The Planning Structure* was: *The structure: Promotes strategies to respond to changes in client needs and environment (p = .009)*. This study element was supported by both “agree” and “somewhat agree” categories, indicating that planning structure strategies were responsive to client needs and changes in the practice environment.

The “agree” cohort demonstrated the largest volumes and diversities in sustainable and unsustainable practices and included 11 practices at breakeven. Seven “agree” practices were unsustainable, which may imply that the planning structures associated with these practices were not as developed, robust, or responsive as the other 18 “agree” practices, or that the strategies were not utilized.

Fewer practices were associated with the “somewhat agree,” “disagree,” and “somewhat disagree” categories. The “somewhat agree” and “disagree” groups exhibited similar practice patterns with sustaining practices only and demonstrated the ability to respond to client needs even though no formal planning/strategy structures were in place. Conversely, all responses in the “somewhat disagree” cohort were very unsustainable – including three moderately unsustainable and one constantly threatened with closure. Although these groups had some planning/strategy structures in place, these results confirmed the inability of these practice planning structures to respond to client needs and environment.

The concluding element under *The Planning Structure* was: *The structure: Defines systems to collect accurate and reliable financial performance data from each practice (p = .001)*. Clinical sustainability was greater in those practices that acknowledged systems (“agree”) were in place to collect accurate and reliable financial performance data.

Planning structure data elements reinforced the value of formal planning, community partnerships, and accurate and reliable financial performance systems to achieve sustainability in academic nurse-managed clinical practices. Approximately 80% of the respondents “agreed” that their reporting structures defined systems to collect

accurate and reliable clinical performance data. The two “agree” practice cohorts reported greater sustainable practice volumes and similar graphic pattern variations with the majority registering breakeven to fully sustaining (Chapter 4, Figure 6).

Sustainability was also attained within the “disagree” practices. The volume of these practices was far fewer in comparison to the “agree” and “somewhat agree” categories, but still reported five fully sustainable practices. In opposition, however, those registering “somewhat disagree” delineated only unsustainable practices and at low levels (moderately unsustainable), including one practice constantly threatened with closure. These differences could imply that the system definitions related to the collection of financial performance data within these practices were vague or unclear. Further study is warranted to determine methodological means to take action on these results.

Additional pertinent and statistically significant variables included: *The request for health-care services/programs can be met by the college/school most of the time* (Chapter 4, Figure 10). Seven practices selected “disagree,” revealing requests for health-care services were unable to be met by their corresponding college/school. All seven of these practices were unsustainable, including one practice constantly threatened with closure. However, these results were in direct opposition to the five “somewhat disagree” practices, all of which were sustaining, with one practice at breakeven and four mostly to fully sustaining. While these “somewhat disagree” practices affirmed that requests for health-care services were not able to be met most of the time, the data showed that they were able to be met some of the time. The divergence associated with these “disagree” results warrants further study, as they may be impacted by multiple factors or combinations of other elements, many of which were identified throughout this study.

Future study could employ a root cause analysis, including resource availability and comparisons with the “agree” schools/practices. Exploratory questions may include: What phenomena impact these practices and influence their abilities to meet patient needs/demands sometimes but not all the time? Could it be that the practice, itself, is unsustainable, perhaps due to lack of reimbursement for services or resources such as staff, space, etc....? Is the practice provider mix correct? Do their scopes of practice allow the provision of care and services expected and necessary for the patient population being served? Are appropriate volumes of patients available? Does the practice location allow access to low-cost transportation and/or parking? Answers to these and other questions would provide additional and pertinent information and guidance for the SoNs in support of their clinical practices.

#### *Delivery of Services—Practicing Faculty Workload*

An additional aspect in the delivery of health-care services is the availability and utilization of credentialed practicing faculty. This final section of the study explored the tripartite aspects of schools of nursing, their relationships to practice sustainability, and an evaluation of the elements significantly correlated to practice sustainability within the clinical practice site data.

Previously described in Chapters 2 and 4, the literature pinpointed potential impediments and conflicts to maintaining essential operations of the school *and* building effective academic clinical practices. An inverse relationship exists between the percentage of time allocated for faculty practice workload and practice sustainability. In other words, as the percentage of allocated time for practice increased (greater than 10%),

the volume of clinical practices, and their associated sustainability, decreased. This actuality was counterintuitive to the practitioners who participated in this study and felt that they were barely able to meet the national standards for recertification at the greater than 10% level.

Convergence of clinical practice into faculty workloads incorporates the requirements for nursing faculty to remain clinically astute, current, and competent in practice knowledge and skills, as these are essential and necessary to maintain required nursing licensure, practice certification, and academic standing. According to the *American Academy of Nurse Practitioners Candidate and Renewal Certification Program 2013 Handbook* ([www.aanpcertification.org](http://www.aanpcertification.org)), recertification for nurse practitioners is required every five years. A minimum of 1,000 clinical practice hours *and* an additional 75 hours of continuing education (applicable to the NP's population focus) is mandated during this five-year timeframe. The calculated AANP requirement equated to 10% practice allocation.

Divergence occurred between the time allocated for clinical practice and the additional academic responsibilities expected of practicing faculty. The faculty member's position, status, and role within the school were also inversely associated with practice time allocations.

This study found that clinical practice volumes and sustainability declined as the allocated practice percentages increased, which was counterintuitive to the investigator's experience, as the majority of non-academic clinical practices sought to limit the number of very part-time providers (four hours or less per week) due to the increased administrative burden. A component of that burden aligns with the continuity of care

process. This process is the hallmark of high-quality primary patient care where the same (APRN) provider, patient, and, many times, significant others are cooperatively engaged in ongoing health-care evaluations, discussions, and decision making. The very part-time status of these practitioners does not lend itself to this model and, in fact, may impede the patient/provider relationship when continuity of care is hoped for but cannot be fulfilled. Eastern Colorado Health Care System (2007) performed a retrospective cohort study of a national sample of 615 managed care organizations. These organizations reported HEDIS (healthcare quality) data to the National Committee for Quality Assurance (NCQA) from 1999 through 2001. The intent of the study was to evaluate the association between health plan primary care provider turnover rates, member satisfaction, and use of preventive (quality) care measures. After adjusting for plan characteristics, health plans with higher primary care provider turnover rates had significantly lower measures of member satisfaction, including overall rating of healthcare ( $P < .01$ ). Lack of desired continuity may also affect the focus and types of patients attracted to the practice (i.e., transient vs. continuing; urgent care vs. primary care) and, consequently, provider satisfaction and utilization and turnover of both providers and patients. Surveys of patient populations show repeatedly that two factors lead all others in determining patient turnover. One is cost; the other is perceived satisfaction in the doctor-patient relationship (Managed Care, May 1996).

The minimum percentages designated for faculty practice workloads in this study ranged from less than 10% to 20% and 30% allocations (Chapter 4, Figure 18a). The majority of respondents (29) reported practice allocations in the less-than 10% domain. Practices in this faculty workload category exhibited the greatest number of sustainable

practices but also the greatest variation in sustainability, ranging from ten fully sustaining practices to four at breakeven and three unsustainable—one of which was constantly threatened with closure.

Although somewhat similar in configuration to the “less than 10% practices,” the graphic patterns of practices with 20% allocations visually revealed approximately one-third fewer practices. However, the percentage of unsustainable practices at the 20% level was far greater, and at 30%, this trend is exacerbated. This arena is further explored at the close of this chapter when the practice reimbursement rate is entered into the equation. With a 10% allocation for practice, these APRN providers would need additional practice hours to meet their certification requirements.

The planning involved with these practices must be “deliberate with the objective to create services that will endure, and not as experiments or innovations to be abandoned if they do not yield the anticipated or desired results” (Esperat, 2004). Consideration to the continuing needs of the clientele served is imperative, and this study sought answers to these concerns in the form of a question to study participants: “*Have you closed a clinical practice site within the past 18 months?*”

#### *Practice Effort Is Included in Faculty Workload Assignments*

*Q8\_3 – The Practice Evaluation – Clinical Practice/Service effectiveness is evaluated based on the following data: Patient contacts are tracked at the level of individual provider and CPT code.* The importance of this element and the others in this study lies in factors outside of the researcher’s purview – namely, consistency in data processing systems for the collection and measurement of this information on each visit. If individual providers are tracking and evaluating CPT codes consistently, is there a

tendency toward greater sustainability? This study found a noticeable gap in the “somewhat disagree” sustainable practice responses (graphically illustrated in Chapter Four, Figure 11), demonstrating four practices at breakeven and one practice at fully sustaining with all other groups demonstrating greater volumes of sustainable practices.

*Q8\_8 – Clinical Practice/Service effectiveness... Patient/client satisfaction is tracked at the level of individual providers.* All practices in this category demonstrated sustainability, with the greatest volumes found in the “agree” category, consisting of 13 sustaining practices above breakeven and 0 unsustainable practices. Once again, the consistent tracking of these results exhibited greater practice sustainability than those that intermittently monitored or did not evaluate satisfaction.

#### ***Discussion—Aim 4***

*Aim 4. Determine the specific Clinical Practice Site elements that contribute to the sustainability of academic clinical practices in schools/colleges of nursing.*

As previously outlined in Chapter Three, the deletion of the financial data elements from the original study necessitated its replacement with the Institutes of Nursing Centers’ (INC) data. Utilizing the INC financial data obtained through its most recent survey (2008–2009) was to have provided the majority of the study’s financial data elements. However, the following limitations were experienced:

The INC survey (2008–2009) return rate was far less than in previous years, with only 16 of the 69 AACN PLN schools of nursing participating with INC. Previously, the INC return rate was far greater, as INC allocated funding to participating schools to assist in offsetting the survey data collection cost burden. During this survey period (2008 -

2009), available funding was marginal and covered less than 25% of the participating schools.

The locations of these SoNs were almost equally distributed throughout the U.S., with the lowest number in the Western region (two) and equitable numbers of schools found within the Central and Southern regions (five each) and Eastern region (four). Collectively, these schools yielded the sample of 52 academic nursing clinical practices for the study and were categorized by geographic location (Chapter 4) as follows:

- Rural: population less than 2,500 people – 2 sites;
- Small town or city: population between 2,500–49,999 – 6 sites;
- Urban: population between 50, 000–250,000 – 18 sites; and
- Urban: population greater than 250,000 – 26 sites.

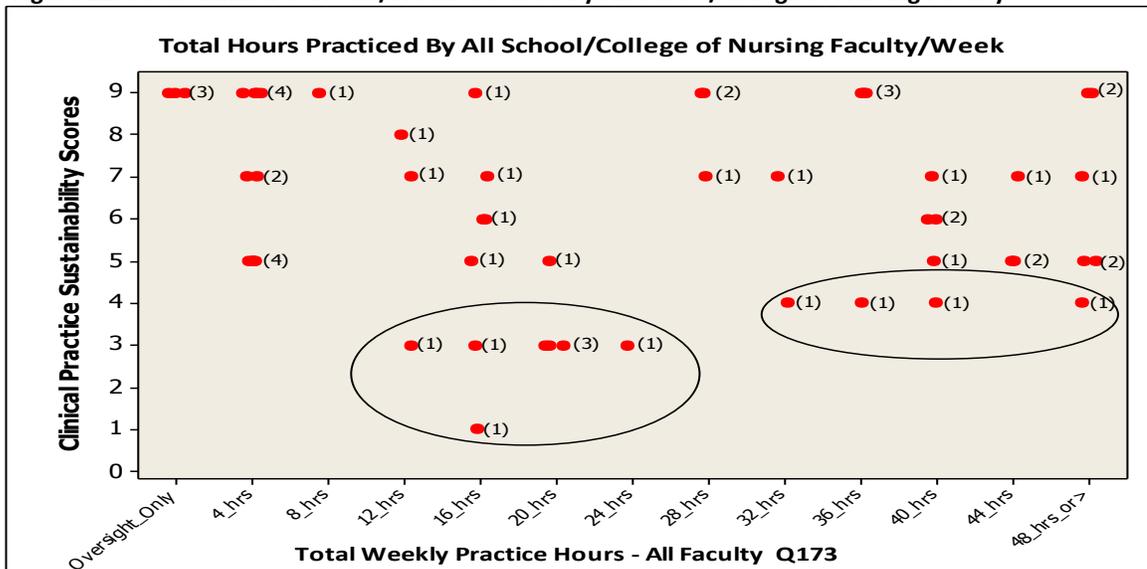
The INC survey data were matched with their respective ANCP data. Incomplete and/or missing attributes regarding fixed and variable costs in the INC financial data reduced the impact of the financial analysis on the independent variables within the study.

Primary care comprised the majority of the practice designations, followed by community-based clinics (including mobile clinics), clinics on college campuses, and those located in corporate/business settings, social service agencies, and others. The outlined distribution above produced fewer rural clinics than described in the literature and anticipated by this investigator. The locations, partnership agreements, and academic foci of the schools of nursing in this study may have played a role in this distribution, as many ANCPs are often developed in underserved inner-city urban areas where no access to health-care services previously existed.

In most practices, school of nursing faculty served expanded roles by providing clinical oversight to students, managing/overseeing clinical programs, and performing direct patient care at the ANCPs in this study. There were three fully sustaining ANCP sites, however, where faculty assumed purely oversight/administrative responsibilities and no clinical practice hours as practitioners (Figure 22). Although many reasons may exist why this level of sustainability was achieved, the most logical is that the faculty’s focus and sole responsibility was to provide student program oversight without additional diversions and time constraints of multitasking between the needs of their own scheduled patients and the needs of their students and students’ patients.

Discussed in earlier chapters, designated hours for faculty practice were often trumped or curtailed by the school of nursing’s tripartite needs – research, teaching, and finally, practice. Sustainability was greatest (breakeven or above with no unsustainable practices) in the 10 clinical practices where faculty practiced four hours (one-half day) per week.

**Figure 21. Total Number of Hours/Week Practiced by All School/College of Nursing Faculty**



Most clinics schedule providers in half days or four-hour blocks. These schedules easily conform to a typical clinic workday (two half days equals one full day) and provides flexibility to accommodate changes within other provider schedules or clinic patient volumes.

The ellipse within Figure 21 depicts the unsustainable practices by total practice hours per week. Faculty who practiced 16 to 20 hours per week (or more) were more likely to have fixed practice schedules due to inflexible academic responsibilities. These faculty may provide evening or weekend urgent/convenient care hours and are at risk for variable patient utilization that often occurs in these clinics. If these providers are scheduled during daytime hours, depending upon the size of the clinic, they may compete with other providers for examination room access (one room availability vs. staging with the capability of two). These factors may reduce provider satisfaction, productivity (waiting for exam room availability), patient satisfaction (increased wait times), return (prohibitive wait times—especially for the employed), and revenue.

The clinic operational data for this study was housed in the finance section of the original survey tool and deleted with that section. Hindsight dictates that additional clarifying questions may have been posed to these faculty to determine the duties/tasks that were actually involved with the configuration of these hours and, in turn, the logic behind the scheduling of these practices. This information would have added to the quantitative analysis of future practice assignments.

***Discussion – Aim 5***

*Aim 5. Evaluate the Academic Practice Financial elements, using the Institute of Nursing Centers (INC) data, that contributes to the sustainability of academic clinical practices in schools/colleges of nursing.*

Question 5.1. Which specific financial elements contribute to the sustainability of academic nurse-managed clinical practices?

Analysis of the INC data was disappointing as no unique elements were determined to be significantly correlated to sustainability of academic nurse-managed clinical practices.

Various combinations were tested and, to the investigator's delight, three key elements emerged from the following combinations:

- *Minority Students* (minority numbers of nursing students including Masters of Science in Nursing, Bachelor of Science in Nursing, *and* minority numbers of
- Other students – (denoted as **EBS**) who had educational experiences at the clinical site;
- *Providers* (minority providers offering billable services to patients at the clinical site – denoted as **P**), and
- *Staff* (minority numbers of staff – non-providers – who were employed or contracted by the clinic – denoted as **S**). These elements produced the predictor equation:

$$\mathbf{EBS + P + S = Personnel}$$

The combinations in this study supported Wagenaar and Wolfson's (1993) findings that programmatic (i.e., nurse-managed center) leaders (including students, providers, and staff) from diverse cultural backgrounds – especially those that reflected the community – were more successful in obtaining community buy-in, growing participation in activities, and increasing visits with health-care providers.

Although patient attraction, recruitment, and retention are crucial components of a clinical practice's sustainability, these service offerings must be coupled with adequate reimbursement and payment structures. Patient use of services without payment or other compensation jeopardizes sustainability.

Two billing information elements comprised the second component of the equation—Total Gross Charges (**G1c**) and Total Adjusted Charges (**G2c**) - which, in combination, were found to be significant. The regression equation for this specific combination of elements was:

$$\frac{\mathbf{G2c - G1c}}{\mathbf{G1c}}$$

These were converted to a percentage of Total Gross Charges:

$$\frac{\mathbf{G2c - G1c} * (100)}{\mathbf{G1c}}$$

A fitted linear regression equation was developed to identify the relationship between the predictor variables and the response variable and appeared appropriate.

$$\mathbf{Sustainability = -0.211(-0.219 EBS + P + S) + 0.111(\% G2C to G1C)}$$

The Summary of the Model: S = 0.306619 R-Sq = 99.49% R-Sq (adj) = 98.98%

These elements, when evaluated together, described approximately 99% of the variability in the INC data.

As EBS + P + S (personnel) increased, sustainability was found to decrease at a 5:1 ratio. In other words, the addition of five staff drove the sustainability down one increment. Also, for each 9% payment increase, there was a 1.0 incremental increase in sustainability.

Although the participation numbers in this study were too small to make generalizations, these findings clearly warrant further investigation and closer examination. Additional significant elements for the practices in this area included:

- matching the diversity of qualified providers, staff, and students to the populations they serve;
- ensuring an array of appropriate payment structures; and
- payment options including avenues for financial counseling.

Future analysis of the interactions of these elements, when studied together, could potentially advance the sustainability of academic nurse-managed clinics and promote continuation of care. The small sample size of schools of nursing in this study does not lend itself to generalizations regarding the schools themselves. However, the fact that 52 clinical practices were evaluated (20% of nurse-managed clinics across the United States) increases the voice and outcomes of this research.

Additional field testing of the EBS + P + S and the  $\frac{G2c - G1c}{G1c}$  formulas should be promoted to validate their predictive capabilities.

### *Limitations*

This study examined the pertinence of a large number of variables to the sustainability of academic nursing clinical practices. Limitations that may have affected the generalizability of the study included:

#### *Recruitment of Study Participants*

Recruitment efforts to discriminate specific faculty in faculty practice leadership positions to serve as content experts and study participants were extensive and arduous. Although the investigator was a member of the AACN Practice Leadership Network (PLN), the PLN cohort was a small subset of the larger AACN membership. No formal published contact list of the directors of faculty/academic nursing practice by school of nursing existed.

The investigator searched school of nursing websites extensively for faculty practice contact listings with minimal success, as practice specifics did not consistently exist. Alternatively, SoN deans and associate deans for practice (when designated as such) were contacted by email disclosing the study's logistics and requesting practice leader contact information. Invitations to participate were emailed to designated leaders based on the deans' recommendations and were followed up by personal telephone conversations, including an invitation/request to review the Sustainability tool. These conversations often yielded additional connections. A respondent bias may have occurred, as study invitations were sent only to directors or associate deans of faculty practice and, most often, those recommended by their schools' leadership.

Two tiers were established for participation in this study and communicated to the designated participants via letter and email. The first tier was to confirm that the school of nursing participating in this study had contributed data to the Institute of Nursing Centers most recent study. The second was the assurance that INC could secure permission and authorization from the corresponding participating schools to release access to their INC data to this investigator. Participant initials, authorizing approval for data release, were required upon sign-in to participate in the investigator's study. This step permitted the survey data to be correlated with the financial data received from INC (by secure transmission).

Regrettably, the numbers of participating schools of nursing were far fewer than anticipated. The final confirmation of the schools for study participation included verification, validation, and release of the INC data – by INC as the owner of the data and from the individual school. Consequently, of the 14 schools that took part in this investigator's study, only nine schools had contributed financial data to the Institute of Nursing Centers that could be correlated with the 52 contributing clinical practices. Future studies will require enhanced validation processes and electronic data acquisition.

### ***The Sustainability Instrument***

Intensive concern was articulated regarding the participants' ability to obtain the study data – predominantly those items in the financial section – as most universities, and in turn, their academic practices, lacked personnel or analytic resources to compile and/or analyze the intensity of data requested. Meticulous discussions ensued, resulting in the deletion of the financial elements from the original survey. The lack of financial data

analysis greatly reduced a major element of the sustainability analysis and, in turn, the comparisons with other clinical practices across the U.S.

The large data sets provided by the study participants challenged the analytic capabilities of the Qualtrics software. For this reason, the investigator reached out to a data analytics expert experienced in evaluating mega data sets. Minitab 16 Statistical Software was utilized to analyze the investigator's data. This software proved highly effective in capturing significant elements throughout the study and performing the Kruskal-Wallis analysis. It also had the capacity to perform regression analysis for comparative findings with two questions through the use of Best Subsets Regression.

Once participation was accepted, the capability of the Qualtrics software and the design of the online sustainability study allowed respondents to skip questions on the demographic portion if considered sensitive to the practice. An additional plus to the study's design was that the participant could leave the survey at any time and resume where he/she left off without concern of losing previous data entered. A downside, however, was that the participant may choose not to return and complete the requested practice information, which occurred in two surveys. These modalities, although friendly to the participants, left gaps in the data, potentially impacting its analysis.

In addition to those previously reported, other limitations may include the definition of sustainability itself and, therefore, a potential bias in its measurement and in the interpretation of the impression of the practices' sustainability via the Sustainability Scale. This scale (1–9) may have implied linearity (i.e., a score of 6 is twice that of 3). However, the actual relationship may be nonlinear. Also, the sustainability tool was

deployed once for each clinical practice, which signified a finite snapshot in time. This onetime event gave rise to the question: Are these data fully reliable and reproducible?

The Qualtrics software allowed great flexibility in framing questions encompassed within the sustainability tool that required the selection of quantitative number (hours worked per week) and a location (rural, urban, inner city). Most questions encouraged participants to select a data option. A few questions, however, used a five-point modified Likert scale which included “don’t know” as a fifth (and neutral) option. This method encouraged participants to respond decisively. It also took into account that the correct option, from the participant’s viewpoint, may be unknown or did not exist.

A potential bias may also exist within the perceptions and experiences of the key informants as nursing leaders who were actively involved in the practices as practitioners. These items raise questions about the objectivity and reproducibility of the ratings and the possibility that the ratings pertaining to the practice sustainability may have been unintentionally inflated or deflated. These ratings warrant evaluation over time.

### ***Sustainability Instrument Formation***

Ongoing discussions with peers and colleagues and interactions with practitioners in the field led this investigator to realize that SoNs were not systematically approaching faculty practice from a business perspective. Nurse practitioners receive basic business education mostly related to diagnosis and management coding. They are given a roster of patients to be seen each half day, and proceed to evaluate and care for patients. However, actual insight into the sustainability of their health-care business is often lacking. The days have long passed when providers could spend extended amounts of time with

patients. Today's managed care reimbursements are inadequate and schedules are often production based, established to recoup the expenses associated with the provider's salary, benefits, and overhead costs.

Recent budget reductions and increasing financial responsibilities have led academic health centers to question the feasibility of school of nursing roles in the formation and continued operation of academic nurse-managed clinics and nurse-managed health centers (NMHCs). At this same time, younger physicians are rethinking their medical school vocational choices and choosing more lucrative fields instead of primary care. The passage of the Affordable Care Act by the federal government has opened the flood gates by providing health-care coverage to millions of uninsured Americans. These occurrences in combination are impacting the availability of health care in America.

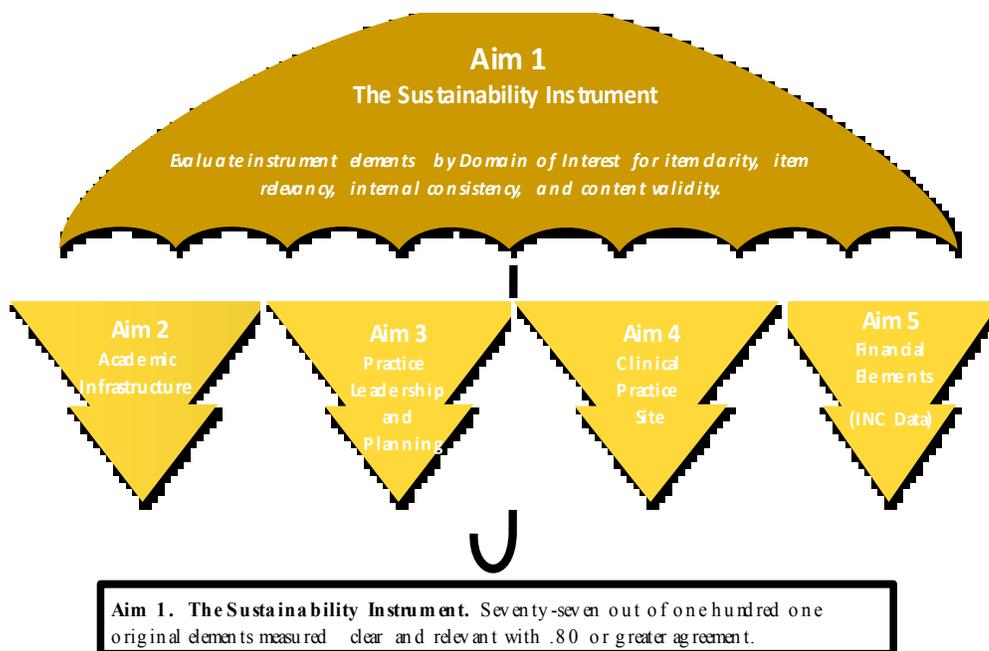
In order to improve sustainability, it needs to be defined and understood. Experiential knowledge surrounding the factors that influence sustainability is in its early stages. Building upon established/accumulated knowledge related to sustainability, this study sought to discover key predictors of sustainability.

### ***Comprehensive ANCP Sustainability Model Conceptualization***

The 14 American Academy of Colleges of Nursing schools that participated in this study represented approximately 52 of the 250 (20%) nurse-managed clinics in the United States. Significant elements revealed within each specific aim of the study by the participating ANCPs helped refine the sustainability model for ANCPs based on the opinions and experiences of ANCP nurse leaders.

The Comprehensive Academic Nursing Clinical Practice Sustainability Model, Diagrams 2 a & b (below), illustrated as an overarching umbrella, represented the methodological mantle of the Sustainability Instrument (Aim I) and its integration with Aims 2–5 (Domains of Interest). Each aim addressed a unique structural component of the ANCP with its associated significant elements displayed. As the model demonstrated, these united elements framed the foundation for ANCPs as complete entities and were found to be statistically significant to ANCP sustainability.

**Diagram 2a. Comprehensive Academic Nursing Clinical Practice Sustainability Model – All Aims and Significant Elements**



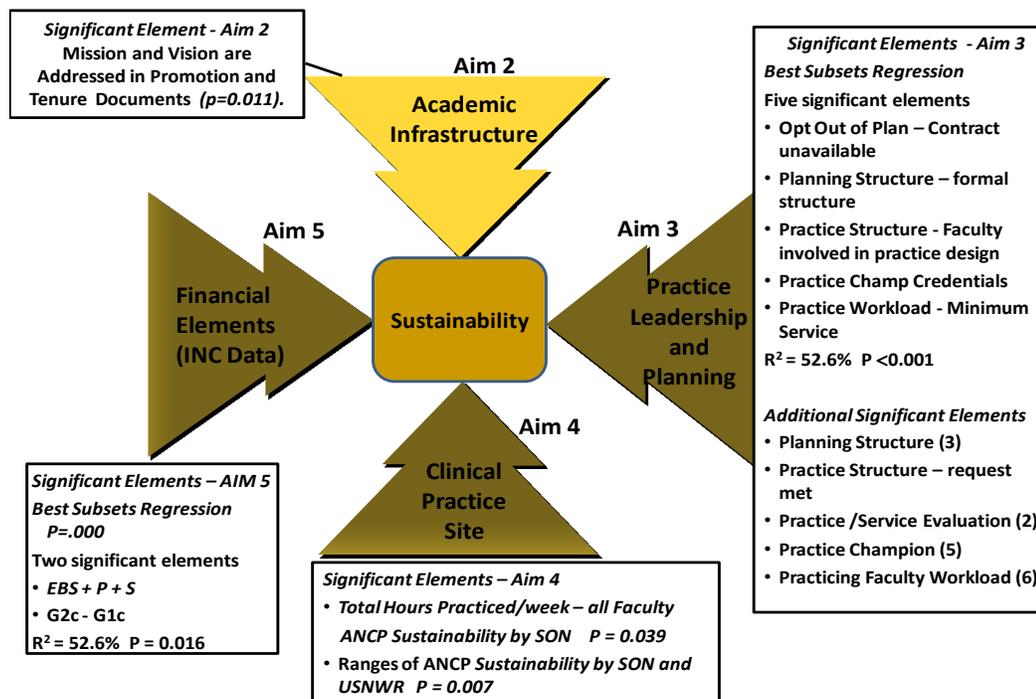


Diagram 2b

### Implications for Research and Practice

This multifaceted study contributed to the understanding of the components that comprise sustainability in academic nursing clinical practices. Several significant variables that differentiated levels of sustainability were isolated and extracted from previous studies reported in nursing and social sciences literature (Mancini & Marek, 2004; Shediach-Rizkallah & Bone, 1998; Goodman & Steckler, 1989; Esperat et al., 2004; Barger, 1993; Bleich, 2003; Butterfoss, 2004; Pohl, 2010; Torrisi, 2005). These were intentionally included, along with many others, for their salience based on opinions by expert nurse managers.

The sustainability tool was designed to determine which specific practice elements were predictors of sustainability. The values associated with each specific

element, when associated and examined together, reflected the variation in the levels of ANCP sustainability of the individual practices. These significant elements were evaluated together as a sustainable whole and not by each individual practice. Therefore, this analysis did not answer the question, “How sustainable is this individual practice today?” A sustainability scale and definition was provided to each participant. In turn, the participants provided their impression of the sustainability of each practice at that point in time. A repeat survey could pose the following question, “Given your experience from the previous survey, looking back, would your rating of this practice’s sustainability change?”

Future larger-scale studies of these and other nurse-managed practices are necessary to examine the impact of the elements of sustainability revealed in this study, the effect of the developmental phases/stages of these practices at the time of study, the result of bias, the influences of the parent organization and/or community partner(s), and the methodology used to access critical resources (i.e., accurate financial data).

Best practices for sustainability depend on data, which must be converted to operational information for action to occur. This investigator believes that the expanded business acumen focus and measurements to APRN courses of study, including ongoing updates to those in practice settings, would have a direct positive correlation to practice success and sustainability.

Planning for clinical practice viability requires a coherent comprehension of the concept of sustainability and its operational indicators (elements) which can be used to monitor sustainability over time (Shediac-Rizkallah & Bone, 1998). Comprehension of practice metrics is vital to informed business planning and patient care. The doctor of

nursing practice (DNP) programs were in their infancy at the time of this study and the focus of this report was academic achievement and not clinical practice. Also, APRNs must be current in the practice metrics and management systems that provide data that impacts the sustainability of their practices.

The environment and non-business factors, such as community involvement and the function of a Practice Champion, played important roles in sustaining practice. A community-involved benchmarking process could evaluate the merit and benefits delivered by these and other factors and assist in determining efficacy of the services offered. Expanded exploration of these factors could render explanations regarding the diversity of sustainability found across practices and potentially aid in benchmark development for practices themselves.

Nurse-managed clinics and academic faculty practices are important health-care resources for underserved and uninsured populations. Notably, these findings could inform federal programs (Medicare and Medicaid) by utilizing the attributes tested by this model to strengthen the use of APRNs and other qualified providers in the growing mandate for quality of care of the elderly and underserved populations. Of equal importance, this study supported findings in the literature that matching the ethnicity of the practice providers and clinic staff to that of the community strengthens the likelihood of sustainability.

It is this investigator's experience that creative (and legal) reimbursement measures including the availability of onsite customer services and systems, as application for Medicaid services, engage patients and enhance the member experience.

Electronic patient appointments and data collection systems, claim filing, and bill paying accommodate the busy lives of the consumers.

Many of these APRNs have experience working in the community, nursing homes, patients' homes, and schools. Their training and experience enhances their sensitivity and understanding of patient requirements and needs. In addition to medical/disease identification and management, these APRNs excel at preventive measures, counseling, and follow-up.

Furthermore, APRNs identify, encourage, and assist patients to remove barriers that hinder successful adherence to medical regimens and medication therapies. They collaborate and refer patients when additional expertise is necessary. Although this research was directed at academic nursing clinical practices, other practice disciplines should assimilate and test these factors in their unique settings. Specific disciplines, such as pharmacists in pharmaceutical care practices, physical therapists, clinical social workers, and physician assistants, especially those in rural and underserved areas, could benefit from the knowledge gained by this research.

Efforts to develop sustainable nurse-managed clinical practices and other community-based services can build on the concepts presented, the findings determined, and the strategies proposed in this study. Over time, these operationalized realities will ensure availability, continuation, and expansion of health-care services to people in need. Furthermore, although the ANCP common mission is to serve the underinsured and uninsured, insured patients may also be drawn to these practices when they discover the excellent care APRNs provide.

Lastly, state and national legal barriers continue to exist, hindering nurse practitioners from providing medical care for which they are trained and certified to provide. Chapter Two described the report published by the Institute of Medicine, in concert with Robert Wood Johnson Foundation (IOM, 2010), that called for the removal of all such barriers to practice and advocated that colleges and universities increase the number of nursing graduates with advanced practice knowledge and degrees. The IOM strongly emphasized the need for enhanced data collection regarding nurse practitioners' and other advanced practice nurses' education and the roles they are performing. This investigator further recommends that these enhanced data indicators include geographic locations by county as determinants of health-care disparity in underserved populations.

The IOM estimates that tens of thousands of APRNs will be needed within the next few years. These and other findings extracted from the cited literature should be motivators for state and federal legislatures to remove biases and overhaul outdated state and federal regulations and policies that prevent APRNs from practicing to the full extent of their education, skills, and competencies. Finally, federal and state reimbursement structures must be equitable and include APRNs and ANCPs.

This work elicits the complexities of practice and the call for schools of nursing to approach faculty practice as an organic whole, paying close attention to the status and business acumen of faculty who practice; the expansion of necessary roles and partnerships to meet the increased complexities of the patients served; the development of alternative staffing and care models for ANCPs, including home visits, community centers, and tele-health; the extension of APRNs' abilities to meet the diverse health-care needs of the community populations in which they practice; enriched education and

expanded role development, including the utilization of a Practice Champion; and finally, expansion of federal legislation insuring access to comprehensive reimbursement for the client/patient payer mix served. Additional rounds of administering the sustainability instrument are needed.

### **Conclusion**

Sustainability is dynamic. It does not merely consist of one or two elements that guarantee longevity or continuation, but rather builds on the interplay and continuation of multiple elements. Sustaining an ANCP requires extensive planning, incorporating business acumen and research expertise to support current and create new clinical practices.

Considerable dollars and other resources are expended on health care each year to establish new health-care programs and clinical practices. Nurse-managed clinical practices must be sustainable to meet the clamoring demands for health-care services. The elements contributing to sustainability discovered in this research play important roles in furthering our understanding of building sustainable and enduring faculty practices.

Further study is needed to halt the unnecessary closure of these vital academic nursing clinical practices. Building upon the available knowledge base for sustainability of nurse-managed clinics will encompass a variety of locations, populations, and health-care concerns. Encompassing the initial approach used in this study to retest the original participating ANCPs using the significant elements derived from this study would provide comparative analyses of these elements and measure the overall perception of practice sustainability over time. The results and knowledge obtained should encourage

researchers to explore enhanced and attributable specifics of the elements used in this study and determine the sustainability of specific clinical practices. This evaluation may also be repeated with new or additional existing practices and expanded to other clinical disciplines such as pharmaceutical care services, medication therapy management programs (MTMP), and practice based research networks (PBRNs). Exploration of similar and dissimilar outcomes may inform collaborative partnerships and alliances.

Secondly, acquiring and evaluating critical, specific ANCP financial data (i.e., patient case mix/payer mix third-party reimbursement; patient responsibility and ability to pay; and additional funding sources), although deemed too challenging to obtain in the current study by content experts, would provide specific data crucial to analysis of each practice and its longevity and success.

Achieving sustainability is a rigorous and purposeful process. The demand for health care from communities is mounting as the availability of adequate resources for health care shrinks. Nurse-managed clinics and academic faculty practices are vital health-care resources for underserved and uninsured populations. Understanding the capabilities of these advanced practice nurses has facilitated the expansion and utilization of these key health-care providers, not only in safety-net hospitals, but as the primary care providers for regional patient practices and the vital caregivers to many rural and underserved populations.

This focus of this dissertation's research was dedicated to prevent the unnecessary closure and facilitate the longevity of academic nursing clinical practices by determining the elements that led to the sustainability of their practices and the longevity of the care of their patients. This research was successful in starting that process, but there is much

more work to be done. It is this researcher's hope that these elements will be used as the building blocks to sustain vital clinical practices. And as these elements are tested, the additional knowledge and wisdom gained must be readily shared with practitioners in the field, the faculties in the universities, health-care and governmental agencies, and insurers and payers—but most of all with our patients, for without them we would not exist.

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## Appendices

### **Academic Clinical/Faculty Practice Sustainability Study Instrument University of Minnesota**

**Q182** Thank you for agreeing to participate in this important survey. As stated in your email - here are some special instructions:

Depending upon the number of faculty practice sites you have, the survey should take between 25-35 minutes. You need not complete the entire survey in one sitting - as the survey saves information and will return you to the last screen that was open. Because this model may be applied nationally, it is imperative that you enter data on all of your practice sites (profitable and not-profitable).

**If you have more than 7 practice sites**, please enter data from the most sustainable and least sustainable.\*\*Please note that you will be asked to designate the number of unique practices that you will enter. Once designated, data entry is mandatory for each practice to complete the study.

**Please provide your initials below so I may correlate your survey with the INC data. This survey was classified as IRB Review Not Required by the University of Minnesota IRB. All data will remain confidential.**

**Q158 Participation and data release from the Institute for Nursing Centers is necessary to participate in this survey.**

- (1) **I have granted permission and authorization to access and use the data submitted to INC in the 2006-07 and/or 2008-09 survey.** If not - and you wish to participate - stop here and email permission to:  
Clare Tanner - ctanner@mphi.org.
- (2) To allow me to correlate your survey data with your INC data, please provide your **initials** \_\_\_\_\_
- (3) We do not participate with the Institute of Nursing Centers. I would be willing to provide additional financial data in a separate survey.

**Proceed to Section I - Academic Infrastructure**

## Section I. Academic Infrastructure.

**Q1. Academic Clinical Practice in our School/ College is: Integral to our Organizational Mission and Vision as demonstrated by:**

Q6. Academic Infrastructure	Disagree (1)	Somewha t Disagree (2)	Somewha t Agree (3)	Agree (4)	Don't Know (5)
(1) Acknowledged on the SoN Organizational Chart	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(2) The SoN Mission statement includes references to clinical/faculty practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(3) Supported by sufficient numbers of practicing faculty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(4) Addressed in promotion and tenure documents and criteria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q184. You have completed Section I. Please proceed to Section II.**

## Section II. Clinical Practice Leadership and Planning.

**Q4. The School/College Practice Plan (please check one):**

- (1) There is a formal defined and written Practice Plan
- (2) A formal Practice Plan is being designed or proposed
- (3) There is no written Practice Plan

If There is a formal defined a... Is Selected, Then Skip To Practice Exemption. If A formal Practice Plan is b... Is Selected, Then Skip To The Practice Plan provides direction ...If There is no written Practic... Is Selected, Then Skip To A Written Business Plan.

**Q177. Practice Exemption - Clinical Faculty may be exempted (opt out) from participation in the practice plan.**

- (1) Yes
- (2) No
- (3) Don't Know

**Q180 If Faculty are allowed to opt out of the practice plan - Please select reasons:**

- (1) Contract for services for the desired practice is unavailable or unable to be secured
- (2) Faculty workload will not allow time to practice
- (3) Faculty request (compensation is greater through private agreement)
- (4) Other reasons - please specify...\_\_\_\_\_

**Q5. The Planning Structure.**

**A formal planning structure/ feasibility assessment exists to grow the clinical practices.**

<b>Q5. The Planning Structure</b>	<b>Disagree (1)</b>	<b>Somewhat Disagree (2)</b>	<b>Somewhat Agree (3)</b>	<b>Agree (4)</b>	<b>Don't Know (5)</b>
(1) Develops the practice(s) around the Mission and Vision of the School of Nursing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(2) Validates the leadership's commitment to the short-term (under 3 years) and long-term (greater than 5 years) goals of the program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(3) Identifies a marketing plan to promote the services of each practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(4) Is focused on practice business goals leading to diversified funding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(5) Identifies community partners to create new services and revenue streams	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(6) Promotes strategies to respond to changes in client needs and environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(7) Defines systems to collect accurate and reliable clinical performance outcomes/best practices data from each practice (non-financial)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(8) Defines systems to collect accurate and reliable financial performance data from each practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(9) Defines mechanisms/criteria to discontinue services or programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q169. The Practice Plan provides direction and governance over the following:***If There is 'No Written Practice Plan...' Is Selected, Skip To A Written Business Plan.*

<b>Q6. A Written Business Plan</b>	Disagree (1)	Somewhat Disagree (2)	Somewhat Agree (3)	Agree (4)	Don't Know (5)
(1) There is a written business plan for each clinical venture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(2) There is a formal process or mechanism for external agencies and/or organizations to request services from the School/College of Nursing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<b>Q7. Regarding the School/College...</b>	Disagree (1)	Somewhat Disagree (2)	Somewhat Agree (3)	Agree (4)	Don't Know (5)
1) The request for healthcare services/programs can be met by the college/school most (of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(2) Immediate funding (non-clinical services) is sufficient for current practice operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(3) Additional funding is available and sufficient for practice operations (at least 3 or more years)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(4) Promotes strategies to respond to changes in client needs and environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(5) Practicing Faculty are involved in practice design and program decision making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(6) Funding is available for the execution of an overall marketing plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q8. Clinical Practice/ Service Effectiveness is evaluated based on the following data:**

<b>Q8. Clinical Practice / Service Effectiveness</b>	Disagree (1)	Somewh at Disagree (2)	Somewhat Agree (3)	Agree (4)	Don't Know (5)
(1) Hours of operation match client needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(2) Healthcare services match client needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(3) Patient contacts are tracked at the level of individual provider and CPT code	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(4) Financial revenue is evaluated at the level of individual provider and specific payor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q8. Clinical Practice/ Service Effectiveness is evaluated based on the following data (continued):**

<b>Q8. Clinical Practice / Service Effectiveness (continued)</b>	<b>Disagree (1)</b>	<b>Somewhat Disagree (2)</b>	<b>Somewhat Agree (3)</b>	<b>Agree (4)</b>	<b>Don't Know (5)</b>
(5) Grant periods are tracked and renewed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(6) Sources of funding are sought and secured	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(7) Practice expenses are evaluated at the level of individual providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(8) Patient/client satisfaction is tracked at the level of individual providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(9) Patient/client clinical outcomes are tracked at the level of individual providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q9. The Practice Champion Definition:**

The Practice Champion is a senior nursing leader who is passionate, instrumental and plays a pivotal role in the support, oversight, and administration of the academic clinical practices of the School/College of Nursing. This role is an advocate for creating and designing solvent, innovative approaches to improve academic nursing practice and deliver quality health care to individuals and families.

<b>Q9. The Practice Champion</b>	<b>Yes (1)</b>	<b>No (2)</b>
(1) Is there a Practice Champion for the School/College academic clinical practices?	<input type="radio"/>	<input type="radio"/>
(2) Is there a Practice Champion for each clinical practice?	<input type="radio"/>	<input type="radio"/>
(3) Is this Practice Champion the same person for each clinical practice site?	<input type="radio"/>	<input type="radio"/>
(4) Is this Champion a faculty member?	<input type="radio"/>	<input type="radio"/>

**Q10. What is the academic title of the Practice Champion? (list all that apply)**

**Q11. Select the Credentials of the Practice Champion**

- (1) PhD
- (2) DNSc
- (3) DNS
- (4) DNP
- (5) MS
- (6) MSN
- (7) MN
- (8) Other Degree - please specify (8) \_\_\_\_\_

**Q12. Does the Practice Champion have Advanced Practice Registered Nurse Certification**

- CNP (1)
- CNS (2)
- No certification (3)
- Other - please specify (4) \_\_\_\_\_

If no Practice Champion... Is Selected, Skip To Section III - Delivery of Services. Otherwise, proceed to Q10.

**Q13. Practice Champion - Academic Faculty Track**

- Tenured/ Tenure Track (1)
- Clinical Track (2)
- Neither - please specify (3) \_\_\_\_\_

**Q14. Duties and Attributes of the Practice Champion - select all that apply**

- Negotiates Faculty Contracts (1)
- Identifies new practice opportunities (2)
- Oversees academic clinical practice administration/reimbursement/finances (3)
- Identifies and implements models of care/service delivery/clinical practice improvement (4)
- Designs and showcases patient centered approaches in the management and delivery of improved clinical services (5)
- Coordinates innovative projects with demonstrated outcomes (6)
- Develops marketing strategies for practice ventures (7)
- Is an influential leader (8)
- Is a member of the Executive/Leadership of the College/School (9)
- Negotiates Clinical Practice Contracts (10)\*\*
- Other duties not listed above (11) \_\_\_\_\_

**\*\* If Clinical Practice Contract ... Is Selected, Then Skip To - Clinical Practice Contract Negotiatio...Q44**

**Q44. Clinical Practice Contract Negotiation - Duties of the Practice Champion - select all that apply**

- a. Site (including maintenance; security) (1)
- b. Reimbursement agreements (Payors, Agencies, Grants) (2)
- c. Professional/ Contracts – Outsourced Services (3)



Q20. For Faculty who practice - Is there an established expectation that a <u>minimum</u> percentage of time is designated for:												
Min. %	0 (1)	10 (2)	20 (3)	30 (4)	40 (5)	50 (6)	60 (7)	70 (8)	80 (9)	90 (10)	100 (11)	N/A (12)
Teaching (1)	<input type="radio"/>											
Research (2)	<input type="radio"/>											
Service (3)	<input type="radio"/>											

Q21 Please designate the percentage of time (on average) that Clinical Education (CE) is provided by faculty in the faculty's practice setting.

% CE	0 (1)	10 (2)	20 (3)	30 (4)	40 (5)	50 (6)	60 (7)	70 (8)	80 (9)	90 (10)	100 (11)	N/A (12)
	<input type="radio"/>											

Q19. What Percentage of Clinical Education is provided by Faculty *in* the faculty's clinical practice setting.

Q19. Percentage of Clinical Education	> 10% (2)	10 (3)	20 (4)	30 (5)	40 (6)	50 (7)	60 (8)	70 (9)	80 (10)	90 (11)	100 (12)
	<input type="radio"/>										

Q24. Have you closed a clinical practice site within the past 18 months?

- Yes (1)  
 No (2)

If No Is Selected, Then Skip - To Have you transferred ownership ...

Q178 Reason for closure of the practice site:

Q45. Have you transferred ownership of a clinical practice site within the past 18 months?

- Yes (1)  
 No (2)

If No Is Selected, Then Skip To You have completed SECTION II. & n...

Q179. State the Reason for transfer of the practice site:

Q183. You have completed SECTION III. Please proceed to SECTION IV. to enter your clinical practice site information.

**Q25. SECTION IV. ACADEMIC CLINICAL PRACTICE SITE INFORMATION.**

Please select the number of discrete academic clinical practice sites. You will be asked to complete a separate survey for each site - **Up to Seven (7) sections are provided.** If you have more than Seven (7) sites, please select both profitable and not profitable sites to enter.

Once you have designated the number of practices - you **must enter data for each practice.** After you have entered your data for each site - you have completed all sections of the survey.

**What is the total number of Academic Clinical Practice Sites associated with the College/School of Nursing that you wish to enter (select one):**

1    2    3    4    5    6    7 *or*  >7

**Proceed to Register Clinical Practice Site Information**

**Q162. START OF SITE 1. (Information/questions required for each site is identical).**

**Q163** Site 1 Academic Clinical Practice Site Name \_\_\_\_\_

**Q165** What year did this Practice site open? (fill in four digit year) \_\_\_\_\_

**Q166** Designated Geographic Location (select the most appropriate for this site)

- Rural - population less than 2,500 (1).
- Small town or city population between 2,500 - 49,999 (2)
- Urban - population between 50,000 - 250,000 (3)
- Urban - population greater than 250,000 (4)

**Q167** Select the **Practice Setting Location** for **this** Clinical Practice:

- Hospital or hospital-based (1)
- Pre-school (2)
- School-based (elementary, middle, high school) (3)
- College/University student health services (4)
- College/University Campus Clinic (non-health service) (5)
- Convenient Care (in commercial setting) (6)
- Community Clinic (7)
- Long-term Care Facility (13)
- Home Care (8)
- Mobile Clinic (9)
- Health System based Clinic (10)
- Corporate/business Setting (11)
- Other - please specify (12) \_\_\_\_\_

<b>Q168 This Practice Location:</b>	<b>Yes (1)</b>	<b>No (2)</b>
The practice location is accessible to the population it serves (1)	<input type="radio"/>	<input type="radio"/>
Patients and staff feel safe at this location (2)	<input type="radio"/>	<input type="radio"/>

<b>Q169 Is this practice site...</b>	<b>Yes (1)</b>	<b>No (2)</b>
Located in a formally designated "medically under-served area"? (1)	<input type="radio"/>	<input type="radio"/>
Considered a "Safety Net " Clinic? (2)	<input type="radio"/>	<input type="radio"/>
A Federally Qualified Health Center? (3)	<input type="radio"/>	<input type="radio"/>

**Q170.** How many discrete SoN Clinical Practices are located at this Site?

- One (1)
- Two (2)
- Three (3)
- Four (4)
- Five or more (5)

**Q171.** How many School/College of Nursing Faculty members practice *FULL-TIME* at this site?

- No full-time faculty members (6)
- One (1)
- Two (2)
- Three (3)
- Four (4)
- Five or More (5)

**Q172.** How many School/College of Nursing Faculty members *PART-TIME* practice at this site?

- No part-time faculty members (6)
- One (1)
- Two (2)
- Three (3)
- Four (4)
- Five or More (5)

**Q173.** In an average week - what are the TOTAL NUMBER OF HOURS practiced by ALL School/College of Nursing Faculty members AT THIS SITE?

**Please select choice:**

- No SoN Faculty practice at this site (14)
- One-half day - 4 hours (1)
- One day - 8 hours (2)
- 12 hours (3)
- 16 hours (4)
- 20 hours (5)
- 24 hours (6)
- 28 hours (7)
- 32 hours (8)
- 36 hours (9)
- 40 hours (10)
- 40 - 56 hours (11)
- 56 - 72 hours (12)
- Greater than 72 hours (13)

**Q185.** In an average week - what are the TOTAL NUMBER OF HOURS practiced by Non-Faculty Clinical Providers AT THIS SITE? Please select choice:

- Only SoN Faculty practice at this site (14)
- One-half day - 4 hours (1)
- One day - 8 hours (2)
- 12 hours (3)
- 16 hours (4)
- 20 hours (5)
- 24 hours (6)
- 28 hours (7)
- 32 hours (8)
- 36 hours (9)
- 40 hours (10)
- 40 - 56 hours (11)
- 56 - 72 hours (12)
- Greater than 72 hours (13)

**Q174 Practice Ownership/Affiliation****Select the organization that owns this Clinical Practice:**

- School or College of Nursing (1)
- Hospital (2)
- Health System (includes long-term care facilities) (3)
- Long-term Care Facility (9)
- Home Care Agency (4)
- Provider - owned - Independent practice owned by one or more providers (5)
- Not-for-profit organization (6)
- Joint venture/partnership of multiple organizations \*\* (7) (see below)
- Other (8)

**\*\*If a Joint Venture or Other was selected - please specify organization(s):****Q175. Please select all (s) Targeted Services provided at this practice site:**

- Adult (Males and Females) (1)
- Family (2)
- Pediatrics (3)
- Geriatrics (all settings) (4)
- Women's Health (5)
- Maternal - Child (6)
- Acute Care - ICU or ED (7)
- Convenient Care(12)
- School-based care (8)
- Home Care (10)
- House Calls (11)
- Occupational Health (9)
- Wellness (13)

**Q.176 Does *This* clinical practice site:**

Provide training/education for:	Yes (1)	No (2)
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Nursing Students? (1)	<input type="radio"/>	
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**If No Is Selected, Skip To 178. Practice Management.****Q.177. What levels of *Nursing* students are trained/educated at this site?**

Nursing	BSN (1)	MS (2)	NP (3)	DNP (4)	Other Students (5)
Select all that apply	<input type="radio"/>				

**Q.163 If "Other Students" was selected - please designate the disciplines:**

<b>Other Students</b>	<b>Pharm D (1)</b>	<b>MD (2)</b>	<b>Social Work</b>	<b>PA (10)</b>	<b>Other (11)</b>
<i>Select all that apply</i>	<input type="radio"/>				

<b>Q178. Practice Management</b>	<b>Yes</b>	<b>No</b>
Is there a practice manager at this practice site? (1)	(1) <input type="radio"/>	(2) <input type="radio"/>
Is the practice manager employed by the School/College of Nursing? (3)	<input type="radio"/>	<input type="radio"/>
Does this person function in a dual role? (2)	<input type="radio"/>	<input type="radio"/>

**Q179. If the practice manager functions in a dual role - please describe:**

- RN - Triage/Staff functions (3)**
- APRN - Nurse Practitioner (2)**
- Other - please specify (5) \_\_\_\_\_**

<b>Q180. Practice Competition</b>	<b>Yes (1)</b>	<b>No (2)</b>
Is practice volume restricted at this site by competition from other healthcare providers?	<input type="radio"/>	<input type="radio"/>
If Yes - Please specify:		

<b>Clinical Services Offered at Practice This Site</b>	<b>Yes (1)</b>	<b>No (2)</b>
Pediatrics (3)	<input type="radio"/>	<input type="radio"/>
Geriatrics (all settings) (4)	<input type="radio"/>	<input type="radio"/>
Women's Health (5)	<input type="radio"/>	<input type="radio"/>
Maternal - Child (6)	<input type="radio"/>	<input type="radio"/>
Acute Care - ICU or ED (7)	<input type="radio"/>	<input type="radio"/>
School-based care (8)	<input type="radio"/>	<input type="radio"/>
Occupational Health (9)	<input type="radio"/>	<input type="radio"/>
Home Care (10)	<input type="radio"/>	<input type="radio"/>
House Calls (11)	<input type="radio"/>	<input type="radio"/>
Convenient Care (12)	<input type="radio"/>	<input type="radio"/>
Wellness (13)	<input type="radio"/>	<input type="radio"/>
Other ( please designate _____ )	<input type="radio"/>	<input type="radio"/>

If No Is Selected, Skip To Practice Management

