Exploring the Attitudes Toward Interprofessional Practice:

Eastern North Carolina Perspectives

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This research was executed as partial fulfillment of the Doctor of Nursing Practice Degree.

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Abstract

Interprofessional health care delivery has the potential to greatly impact the experience, costs, and outcomes of health care. Primary care providers have the capacity to be the tipping point of this change. Primary care providers' attitudes toward interprofessional care may bolster or impede implementation of the concept. The purpose of this study was to ascertain the attitudes toward interprofessional practice as self-reported by primary care providers in eastern North Carolina (NC). The Attitudes Toward Health Care Teams Scale (ATHCTS), a validated 21-item scale, was used to explore providers' attitudes toward intentional team-based collaborative practice within a large health system in eastern NC. Providers included physicians, physicians' assistants and nurse practitioners. Cronbach's alpha for the 21-item scale was calculated at .877. A Kruskal-Wallis test was used to examine a between groups analysis of the mean scores, finding no significant difference between the mean scores of the three professional groups. The findings of the nonparametric, cross-observational, quantitative study are discussed in this report. Further exploration of the attitudes of larger numbers of primary care providers is indicated.

Key words: interprofessional, collaboration, collaborative care, primary care, Triple Aim

Acknowledgements

I would like to offer heartfelt gratitude to my children, Nick and Samantha Tillman, David and Brittney Tillman, and my grandchildren, Mary Haven, Teagan, and Miles, for cheering me on through this journey. Dr. Bobby Lowery, Dr. Michelle Skipper, Dr. Ann King, Dr. Debra Thomson, Dr. Wesley Rich, and Dr. David Tillman – thank you for countless hours of coaching, mentoring, and editing. Dr. Sylvia Brown, thank you for opening the door to DNP studies at ECU. To my husband of nearly four decades, I thank you for your steadfast love and selfless spirit that supported me as I scratched one more educational itch.

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I. Introduction

Interprofessionalism has been a noteworthy concept in health care for over 15 years. The concept was validated by the Institute of Medicine (IOM) in 2000 in *To Err is Human: Building a Safer Health System* (IOM, 2000), a formal statement which provided evidence that various health care professionals would be needed to work as interprofessional teams in order to meet the needs of increasingly complex patients.

Collaboration and teamwork are integral to interprofessionalism. These concepts represent deliberate sharing of the responsibilities, decisions, processes, plans of care, and patient outcomes among the divergent disciplines exemplifying contemporary health care. This grouping of professionals, known as an interprofessional team throughout this paper, is unique to each clinical setting. Team structures are defined by the cultural constructs of the geographical locations of the interprofessional teams and may include lay health providers, spiritual health advisors, and folk medicine practitioners as contributing members of the team. Compilation of teams may be limited when there are few practitioners or broad and deep when the locale is rich in graduate education programs, such as medicine, nursing, social work, etc.

Health care is experiencing a season of redefinition and transformation. The change is poorly understood by consumers and health care providers, alike. Though the business and practice of health care was already evolving, the Institute of Medicine (IOM, 2010) added some momentum and clarification that punctuated the transformation. "Transforming the health care system and the practice environment will require a balance of skills and perspectives among physicians, nurses, and other health care professionals" (IOM, 2010, no page).

Perceptions and attitudes of health care providers contribute substantial lethargy in the movement of interprofessionalism from recommendation to implementation. The purpose of this

study is to determine primary care providers' (physician's assistants, physicians, and nurse practitioners) attitudes toward interprofessional practice within ambulatory clinics owned and managed by a large health system in eastern North Carolina (NC). Completion and analysis of this baseline inquiry proposed to offer guidance for future examination and discovery of attitudes of providers throughout NC toward interprofessional collaborative practice. The knowledge gained through this assessment will be one stimulus toward formative change in the delivery of health care within NC and provide strength to a new national model.

The potential benefits of interprofessionalism and collaboration were also cultivated in *Crossing the Quality Chasm: A New Health System for the 21st Century,* (IOM, 2001). In the publication, collaboration was identified as one contributor to improve the quality of health care and promote improved outcomes for patients. This possible contribution was emphasized by the Institute for Healthcare Improvement (IHI) in 2008 through the launch of the Triple Aim. The Triple Aim laid the groundwork for improved efficiency and outcomes from more intentional interventions in care. The efforts were based on a triad of goals, (a) improved population health; (2) improved health outcomes for each person; and (c) decreased costs of health care (Berwick, Nolan & Whittington, 2008).

Organizations supporting and advocating for health care professional education accepted ongoing involvement in the evolution of interprofessionalism. In 2001, the Council on Graduate Medical Education (COGME) and the National Advisory Council on Nurse Education and Practice (NACNEP) released a joint report that closely mirrored the tenets of the IOM and the Triple Aim in regards to interprofessionalism in health care education and practice (IOM, 2000 & 2001, Berwick et al., 2008). The resulting report, *Collaborative Education to Ensure Patient*

Safety, provided responses to the IOM's ideals and potential actions toward creating a new standard in the delivery of health care education and practice (COGME & NACNEP, 2001).

The World Health Organization (WHO) formalized a statement in 2010 regarding interprofessional collaboration in the *Framework for Action on Interprofessional Education and Collaborative Practice.* This framework calls for joint endeavors by educators, practitioners, policymakers, community leaders, and health advocates from around the world concerning increased readiness of the health care workforce toward intentional teamwork.

II. Review of the Related Literature

This paper intended to provide a foundation of literature on which additional building blocks toward interprofessional teamwork, education, and practice were laid. Results of the literature review provided an overview of information, including strengths, weaknesses, and gaps in the empirical works regarding interprofessional practice. Discovery of this information will undergird further inquiry regarding perceptions, practices, and evaluation of interprofessional collaborative practice in the primary care setting, most specifically the attitudes of primary care providers in eastern NC toward interprofessional practice.

The strategy for the literature search included the utilization of keywords "interprofessional," "interdisciplinary," "transdisciplinary," "multidisciplinary," and "collaboration" in the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Medline databases. The search was limited to publications between 2005 and 2014 printed in English and only those that were peer-reviewed. An additional literature search using PubMed database resulted in meaningful Medical Subject Headings (MeSH) terms of "cooperative behavior" and "primary health care." The literature search totaled 3,311 citations. Additional filters of "primary care," "practice," "patient-centered," and "attitudes" were applied from which 172 of the original citations were retained. Abstracts of the 172 papers were reviewed and 12 manuscripts were found to be potentially significant to examination of interprofessionalism in health care. Following critical review of the 12 papers, 10 were applicable to this analysis (Aboelela et al., 2007; D'Amour, Ferrade-Videla, San Martín-Rodríguez, & Beaulieu, 2005; Gardner 2005; Goldberg, Beeson, Kuzel, Love, & Carver, 2013; Kenaszchuk, Reeves, Nicholas, & Zwarenstein, 2010; King, Strachan, Tucker, Duwyn, Desserud, & Shillington, 2009; Lusk &

Fater, 2013; O'Daniel & Rosenstein, 2008; San Martín-Rodríguez, Beaulieu, D'Amour, & Ferrada-Videla, 2005; Thibault & Schoenbaum, 2013).

PubMed database suggested additional MeSH terms of "cooperative behavior" and "primary health care." The exploration of these terms resulted in 588 citations, which were reduced to 11 papers when all filters were applied. Critical reading of the 11 manuscripts retained 7 additional pieces of literature to be included in the cumulative foundation for this scholarly project (Bankston & Glazer, 2013; Gilbert, Yan, & Hoffman, 2010; Légaré et al., 2013; Long, Dann, Wolff, & Brienza, 2014; San Martín-Rodríguez, Beaulieu, D'Amour, & Ferrada-Videla, 2005; Xyrichis & Lowton, 2007; and Zwarenstein, Goldman, & Reeves, 2009).

Exploration of the 17 manuscripts chosen for the literature review found that two papers reported primary empirical studies (Goldberg et al., 2013; Légaré et al., 2013). The remaining papers were theoretical literature that described or defined concepts or models of interprofessional teams in health care, discussed the elements necessary to foster interprofessionalism, or identified barriers to achieving interprofessionalism. The period of time in which the empirical studies were undertaken may have been an essential contributing factor in their implications to the body of knowledge. Both studies were published in 2013, potentially indicating an era demanding increased assessment of interventions related to collaborative practice. Geographic locations of the studies may have been contributory, also, with one study being of Canadian origin (Légaré et al., 2013) and one study originating from the mid-Atlantic region of the US (Goldberg et al., 2013).

Goldberg et al. (2013) conducted the evaluation of 8 primary care practices between 2009 and 2011. This long project included 16 months of qualitative assessment, much of it onsite at the participating practices. Participants in the study were administrators, nurses, nurse

practitioners, physicians, and non-licensed staff. The areas of focus for the research included health information technology (HIT), scheduling for providers, care coordination efforts, physical office space, and patient engagement strategies. These foci were strongly diagnostic toward process measures, especially applicable to the assessment of quality improvement (QI) strategies and performance of each practice.

One mix-methods study design assessed respondents' views and approaches to interprofessional shared decision-making (Légaré et al., 2013). This assessment included use of questionnaires, focus groups, and structured private interviews using both open-ended and closed questions. Home care employees of varied disciplines participated in the study. The final analysis of the questionnaire provided insight into the intentionality of employee participation in interprofessional shared decision-making (IP-SDM) through the aggregated responses from 272 unlicensed and licensed employees. Focus groups and structured private interviews provided self-reported knowledge of IP-SDM, perceived barriers to greater implementation of IP-SDM, and identification of facilitators to assist with advancing implementation of the process (Légaré et al., 2013).

Five pieces of literature, 4 from periodicals (Aboelela et al., 2007; D'Amour et al., 2005; Gilbert et al., 2010; Lusk & Fater, 2013) and a chapter from a book (O'Daniel & Rosenstein, 2008), aspired to define teamwork in research, education, and practice. Terms used by the authors to reflect teamwork include interdisciplinary (Aboelela et al., 2007), interprofessional (D'Amour et al., 2005; Gilbert et al., 2010), and collaborative (Lusk & Fater, 2013).

Aboelela et al. (2007) reviewed the definitions and characteristics of interdisciplinary research from various fields of professional study or practice and then conducted 14 interviews to define interdisciplinary research. The majority of information gathered was from critical

reviews of the literature. The previously noted interviews, as well as a field survey of 12 researchers, provided additional information for defining interdisciplinarity or interdisciplinary research.

Critical appraisal of the literature assisted with identification of concepts related to either collaboration or team. Collaboration was described as interactions and relationships that occur between people. Team, as a term, contextualizes the people that collaborate (D'Amour et al., 2005). This important literature review provided understanding of the frameworks of various aspects of health care organizations, including definitions and theories that contribute to the larger body of knowledge. This review was foundational in defining conceptual and theoretical frameworks for interprofessional collaboration.

Gilbert et al., (2010) condensed the World Health Organization's report *Framework for Action on Interprofessional Education and Collaborative Practice.* The report provided strategies for engaging policymakers and leadership to set the tone for implementation of interprofessional education and collaborative practice, both globally and locally. The framework outlined the creation of a newly informed workforce with deeper roots in collaboration.

An exploration of the concept of patient-centeredness within interprofessional care was the intention of Lusk and Fater (2013). While the central purpose of this study did not include any key phrases previously identified, there were significant contributions appropriate for this scholarly project. The concept of patient-centered care within the paradigm of interprofessional engagement was the focus of this search. Themes found elucidating behaviors and communications between members of the health care team, as well as between team members and patients. As team members worked together toward patient-centric outcomes, interprofessional relationships and collaboration naturally developed (Lusk & Fater, 2013).

Team collaboration and the communication needed to expand collaborative environments in health care were endorsed as vital to successful transformation of health care (O'Daniel and Rosenstein, 2008). To facilitate transformation, the professionals involved must reflect on catalysts for and barriers to collaboration, communication to support the culture of collaboration, the potential benefits of practice with heightened collaboration, and meaningful communication among members of health care teams. Defining terms, identifying strategies and interventions, and providing examples of factors influencing team collaboration are strengths of this literature.

Additional papers weigh factors that either foster or impede interprofessional teamwork. A literature review by Xyrichis and Lowton (2007) explored teamwork in the context of community-based and primary care settings. The authors noted the need for rapid growth of ongoing, non-acute care as a developing phenomenon. Team structure, where team members work (location), team size, the composition of the team, support provided by the employing organizations, clearly defined goals and objectives, the ability to meet together as teams, and team evaluation were significant concepts found to effect interprofessional teamwork.

Differences existed between the processes of becoming collaborative as health care teams and what the action of collaboration is as an outcome measurement. How professionals collaborate, when collaboration occurs, and a keen awareness that health care providers must concur that dichotomies, such as interdependence versus autonomy, must be explored will transform health care delivery from siloed care to interprofessional practice. These concepts must be mediated when defining and advocating for collaborative practice as an intentional model of care (Gardner, 2005).

Interprofessional teamwork as a concept for providing health care is two decades in the making. Though the concept is recognized among members of the health care industry, diffusion

and adoption of the concept have been slow. Factors impeding the spread and utilization of the practice were noted, including gender gaps in the health care workforce, the perceptions of subordinate roles among professionals, fast-paced changes in technology, and economic considerations (Bankston & Glazer, 2013). Professional schools of health sciences within the same universities often have varied opinions and practices regarding interprofessional education. These variations in beliefs can potentially impede the adoption of interprofessionalism as an accepted delivery methodology (Thibault & Schoenbaum, 2013).

Investigation of theoretical and empirical studies identified determinants to enhance and strengthen success toward collaboration in health care. Traditional health care constructs were presented as barriers to operationalizing transformation toward an integrative collaborative system of care. Those constructs included shared decision-making and joint care planning (San Martin-Rodriquez et al., 2005). Health care organizations' structures and philosophies, administrative support, available resources for health care teams, and ease and availability of communication are organizational determinants. Willingness to communicate and trust among the individuals comprising the team were noted interactional determinants (San Martin-Rodriquez et al., 2005).

Zwarenstein et al. (2009) conducted a literature review of randomized controlled trials (RCT) and found only five published studies between 1950 and 2007. Inclusion criteria utilized during the review were measurable health status outcomes for patients, health care process outcomes, or measurability of the intervention itself. The interventions were interprofessional rounds, interprofessional meetings, or interprofessional evaluations. While the results were mixed among the five studies, the interventions indicated decreased length of hospital stay, decreased costs of care, and improved prescribing patterns related to psychotropic medications in

nursing homes. Of the two remaining RCTs, one resulted in no change and the last reported mixed outcomes (Zwarenstein et al., 2009).

Models of care utilizing interprofessional care as interventions are scarce. In one study the term transdisciplinary was used as a collaborative concept within the realm of early intervention services for children and their families. A literature review by King et al. (2009) identified elements considered essential to successful transdisciplinary approaches in caring for the families and children impacted by the child's complex health needs. The first element was a formal group assessment of the child, which was followed by a time for team analysis and case review of the clinical situation. Intentional communication and cooperation among all team members was the second essential element. The third essential element, and potentially the most controversial, was identified as role release, or the purposeful letting go of member's professional precepts and tasks. Team members were required to seek insight from and exchange perspectives with others on the team. Each case had a team leader who served as a key responder and communicator, but who received support from the team. The intentional actions resulted in efficient, cost-effective, holistic plans of care that were less intrusive and less confusing for families being served, and enhanced professional development of collaborating team members (King et al., 2009).

An interprofessional training program for physicians, nurse practitioners, pharmacists, and psychologists was used by the Veterans Administration (VA) Health System in Connecticut. Professional program faculty members in each field were paired with trainees in the program for mentoring toward the goal of collaborative care for patients. Ongoing orientation and collaborative instruction were conducted to increase baseline knowledge toward operationalization of shared decision-making, facilitative communication, conflict management,

health policy awareness, and increased advocacy. Nurse practitioner (NP) trainees had an additional opportunity to participate in a one-year interprofessional fellowship. The NPs were assigned to a physician or seasoned nurse practitioner for a year of support, mentoring, skill building, and integration into interprofessional teams. Early evaluation of the VA program indicated an increase in the total amount of time for patient care to twice the pre-intervention totals. Patient benefit included the increase in same-day open access for clinic appointments. This increase was felt to be directly attributable to improved efficiency of the interdisciplinary team (Long et al., 2014).

The literature review applicable to this scholarly project was compiled of theoretical discussions or descriptions of programs, discussions of interprofessionalism, teamwork, and collaboration as concept, and literature reviews. Among the papers was 1 qualitative study and 1 mixed-methods study. The discussions of the manuscripts weighed heavily toward the evaluation of interprofessionalism as a potential method of patient-care. Defining terms and concepts, discussions of inter-office collaboration between licensed and non-licensed staff, and models of care were explored in several papers. Two papers discussed outcomes of programs, both finding positively for interprofessional patient-care and professional engagement. Among the favorable factors was an increase in open-access clinic appointments resulting in more daily patient encounters without extension of clinic hours. Patient quality outcomes improved along with clinic efficiency. Five papers discussed determinants of successful interprofessional practice.

There are some notable gaps in the literature. None of the papers reviewed discussed the attitudes or perceptions of providers toward interprofessional practice as a barrier or facilitator of implementation. Additionally, more research regarding implementation of interprofessional teamwork, process or outcomes measurement, and professional engagement and activation is

needed to further inform the transformation of health care services from the current state to a new practice model.

The Conceptual Framework

This study of interprofessionalism is built upon the conceptual framework of collaboration. The words collaboration and interprofessional are used daily in the health care industry. Collaboration is the inquiry for information from others, the provision of information for others, the solicitation of the opinions of others, and the discussion of cases with others. Collaborate stems from the Latin *collaborare*, meaning to labor together. Collaborate, according to Merriam-Webster (n.d.), is an intransitive verb meaning to work with other people or groups for a common achievement or to give help to an enemy invading a country during wartime. Other definitions include working jointly together in intellectual tasks or cooperating with agencies or groups with whom one is not directly connected (Merriam-Webster, n.d.). Collaboration, the noun from the same Latin root, is the work accomplished with others to create or produce a common product or process (Oxford Dictionary, n.d.).

Collaboration is a perpetual cycle of interaction between people. The Association for Information and Image Management (AIIM, n.d.) identified the attributes of collaboration within the framework of the perpetual cycle. In the context of collaboration as a concept, awareness is the state of becoming part of the larger system whose objectives represent a shared goal or purpose. The motivation towards collaboration is problem-solving and idea development with other actors representing a larger body of knowledge. The process of collaboration requires reciprocal sharing and respect, and therefore likely includes consensus building. Collaboration requires self-synchronization to ensure the timing best suited for actions to take place. Negotiation creates balance and defines the action or product of the collaboration. The process of

negotiation requires reflection to consider all options and alternatives in context of the problem, action, or process of deliberation. Engagement is the intentional participation in the issue or process, and it is an active, not a passive, state (AIIM, n.d.). Fusing these terms generates clarity in defining and understanding collaboration as a circular model on a conceptual level.

Joint decision-making and mutual communication are keys to appreciating the concept of collaboration. Recommendations from the National Institutes of Health (NIH) included an intentional collaborative practice model requiring all members of the care team to share in decision-making and care planning with, not for, patients (NIH, n.d.). The collaborative model was, and must be, developed through input from each member of the care team without restrictions of acculturated roles, academic degrees, and professional credentials. Fusion of various educations, professional experiences, licensures, cultivated knowledge, and professional skill sets are necessary to shape a collaborative model of patient care.

Collaboration between patients and members of the group of care providers purposefully identifies the patient as the primary decision-maker. Collaboration of this caliber is less likely to be diluted with misinformation, criticism, or intentional conflict and must be strongly erected to enhance open critique with trust, respect, cooperation, optimism, and patient-centered or patient-driven goals as the target (NIH, n.d.). Collaboration is for the benefit of patients, which leads to the possibility that there may or may not be any direct benefit for members of the diverse group of health care providers involved in patient care.

This scholarly project focused on interprofessionalism as one method for providing health care. Interprofessionalism is identified in health sciences literature as one of three defining attributes of collaboration as a concept. Transdisciplinary and interdependence are the other defining attributes (D'Amour et al., 2005; McDaniel, 2013). Interprofessionalism is defined as

learning ‘with, from, and about” other professionals as work is accomplished alongside others (WHO, n.d.). The definition suggests that effective communication must be present for interprofessional practice to occur. Interprofessionalism takes place between two or more people from two or more professional genres. Though presupposed to be health care professionals, it should be noted that this communication and resultant actions may, or may not, be among members of formal health care disciplines. Interprofessionalism is synonymous with teamwork and signifies an organization’s creation of behaviors, attitudes, and conditions that convey the organization’s philosophies that must be adopted by all members of the organizational team (McDaniel, 2013).

Transdisciplinary, the second defining attribute of collaboration, is defined as “an approach to creating and carrying out a shared social contract that ensures multiple health disciplines, working in concert, are worthy of the trust of patients and the public” (McDaniel, 2013, slide 3). Transdisciplinary care is delivered by a team drafted from members of varied professions who cooperate across all representative disciplines for the express purpose of improving patient care through research or practice (Miller-Keane, 2005). Transdisciplinary research is conducted by representatives from discrete disciplines working together toward the creation of “new conceptual, theoretical, methodological, and translational innovations that integrate and move beyond discipline-specific approaches to address a common problem” (Aboelela et al., 2007).

The last defining attribute of collaboration is interdependence, which simply means mutually dependent (Oxford Dictionary, n.d.). This relationship of mutual dependence can be between anyone involved in the situation, whether those individuals are professionals or lay members of the patient care team. Patients and care teams have reciprocal relationships, each

needing the other, and are, therefore, interdependent. Interdependence is key to producing genuine relational work within the collaborative group by generating the openness and trust needed to put one's own disciplinary paternalism aside and work together for the benefit of the patient, or group of patients (D'Amour et al., 2005).

The Theoretical Framework

The Theory of Change, originally created by Kurt Lewin (Lewin, 1997; Burnes, 2004), informed the possibility and substance of collaboration within the health care system. The theory melded several premises that now undergird the Change Theory of today as presented by John Kotter (1996), Chip and Dan Heath (2010), Malcolm Gladwell (2002), and other contemporaries. The underpinnings of Lewin's theory provided one explanation regarding the reluctance of health care providers to appreciate interprofessional collaboration.

Lewin postulated that behaviors and personal interactions are understood and contextualized only in the environments or situations in which the interactions take place. This contextualization, termed field theory, provided support for interprofessional practice to occur at the point-of-service. Future outcomes will be empowered or disempowered by these actions and behaviors. This work was foundational for understanding resistance to change (Lewin, 1997; Burnes, 2004). Building on this premise, Lewin defined the second postulate, group dynamics, as a sociological interplay of people in assessment and reassessment of norms, roles, expectations, and interpersonal communications leading to inevitable and never-ending change. This constant reassessment produces dynamic transformation of groups (Lewin, 1997; Burnes, 2004). The third postulate is action research. This idea is realized when action generates change. Such change will find success following a vigorous evaluation of all options, resulting in one obvious correct action. A central belief of this postulate was that effective change must occur within the

identified group as a whole (Lewin, 1997; Burnes, 2004). This work was foundational for understanding resistance to change and recognition of the actions and behaviors leading to that resistance.

The last premise of the Theory of Change was the idea of the 3-step model toward change. Lewin himself noted that this model could stand on its own, but believed it best contextualized as it merged with the three previously noted postulates. Step 1 of this 3-step process is unfreezing, characterized by the thawing of behaviors and beliefs, resulting in openness toward new precepts. Step 2 is moving, the action that follows unfreezing. It is the opportunity provided when disequilibrium demands change. What change will be or how change will occur cannot be defined or formed without persistent evaluation. Step 3 is refreezing, and is the process in which individual or group stabilization returns and is defined by new norms (Lewin, 1997; Burnes, 2004).

The substratum of Lewin's Theory of Change can provide pivotal points toward transformative collaboration in health care. Collaboration is a set of group interactions and vigorous exploration of these interactions with the goal of 'unfreezing' from inflexible isolated actions and behaviors, and the opportunity to move in the direction of newly invoked patient-centered, even patient-driven, processes. Through the series of actions, health care would regain stability with establishment of new norms, new understanding, and innovations toward care. Though this interplay takes place within traditional environments, collaboration can generate redefinition of the normative milieu and landscapes in which professionals perform their roles. Creation of new norms will change group dynamics within the healthcare arena by redefining acceptable actions, processes, and expectations.

III. Methodology

Design

The study for this scholarly project was a nonexperimental, cross-sectional, quantitative pilot (*N*=72). The purpose of the study was to ascertain self-reported attitudes of primary care providers toward interprofessional practice. Providers in these practices cared for patients representing a cross-section of North Carolina's coastal plains and coastal counties and included pediatric, adult, and geriatric subsets.

Setting

This study was coordinated with a large health system in eastern NC, which included a large flagship tertiary care center, seven smaller hospitals, as well as more than 70 primary care and specialty care practices. The payer mix was also representative of the cross-section of NC populations, including uninsured, self-pay, commercial insurance, Medicare, and Medicaid.

Sample

The sample for this study (*N*=72) were participants from 33 primary care clinics. As shown by the demographic data represented in Table 1, participants' roles included physicians, physicians' assistants, and nurse practitioners with varying degrees of practice experience. This was a convenience sample of all primary care providers in practices owned and operated by the health system. The clinics were located in 10 rural eastern NC counties and included six Tier 1 counties (Beaufort, Chowan, Edgecombe, Hertford, Nash, and Washington) and four Tier 2 counties (Dare, Duplin, Pamlico, and Pitt) (North Carolina Department of Commerce, 2014). Tier 1 counties were the 40 counties in greatest economic distress of the 100 counties in NC and Tier 2 counties were ranked 41st-80th economically distressed counties. Primary care was defined as internal medicine, family practice, pediatrics, and obstetrical/gynecological practice.

Table 1

Demographic Summary

Years in Practice	MD	PA	DO	NP	Role Not Indicated
Female	6	0	1	0	1
Male	3	0	1	1	
1-5 Years	2	1	0	0	
6-10 Years	1	0	0	0	
11-15 Years	0	1	0	0	
16-20 Years	1	1	0	1	
Greater Than 20 Years	5	0	0	0	

Doctor of Medicine = MD; Physician's Assistant = PA; Doctor of Osteopathy = DO; Nurse Practitioner = NP

Instrument

The *Attitudes Toward Healthcare Teams Scale* (ATHCTS, Heinemann et al., 1999), an instrument consisting of 21 items measured on a 6-point Likert-type scale, was used for this study. The instrument was available for open-access utilization without express permission or charge (McMaster University, n.d.). The instrument was composed of 2 distinct subscales. Response options for the scale range from 1, indicating strongly disagree to 6, indicating strongly agree with higher scores indicative of greater favorability toward interprofessional care teams or higher endorsement of physician centrality. The 16-item quality of care subscale was previously shown to have good internal consistency with a Cronbach's alpha coefficient of .83 (Heinemann et al., 1999). The quality of care subscale surveyed providers regarding efficiency of care, physicians' perceptions of team-based care, communication between members of the health care team, and communication and support between care team members and patients. There was good test-retest reliability of the quality of care subscale. The Pearson correlation coefficient was indicative of a strong positive correlation between the scores of the original test and the retest of the subscale (r =0.71; p<0.001) for the quality of care subscale (Heinemann et al., 1999).

The second discrete subscale was the physician centrality subscale, consisting of 5 items. These five items measured the extent to which it was perceived by providers that physicians have ultimate control and authority over clinical decisions made on behalf of patients with whom the physicians are involved (Heinemann et al., 1999). The physician centrality subscale had a previous Cronbach's alpha of .68 (Heinemann et al., 1999). The physician centrality subscale was previously found to have acceptable internal consistency with a Cronbach's alpha of 0.68 and marginal test-retest as identified in the Pearson correlation coefficient (r=0.36; p=0.05).

Protection of Human Subjects

Completed submission of the University and Medical Center Institutional Review Board (IRB) application was made on April 14, 2014. The IRB application contained appendices including a letter of support from the cooperating health system, a copy of the instrument, and the introductory letter defining the scholarly project, which was intended to be sent to all potential participants. The IRB certified the study as exempt on May 6, 2014.

Methods

The initial process in the implementation phase was straightforward. The first step in the process included onboarding of health system executives. This was accomplished through a series of face-to-face meetings, a written one-page proposal for review by health system leadership, and an email confirmation of agreement to collaborate between the researcher and the health system.

The 21-item ATHCTS (Heinemann et al., 1999) was converted to an electronic survey using Qualtrics software, Version 2.1 of the Qualtrics Research Suite (Qualtrics©, copyright© 2014 Qualtrics). In addition to the original 21-item scale, three pieces of demographic information were requested; responder's profession or licensure, number of years in practice, and

gender. The survey was tested for functionality by 4 individuals and found to be simple to use with straightforward access to data.

An introductory letter was drafted and attached to the Qualtrics© (2014) survey and then forwarded through the health system corporate email to the addresses of 72 primary care providers. The introductory letter served as the initial invitation to participate in the survey. Participation in the survey indicated implied consent. Table 2 provides an overview of the number of surveys sent, returned, and completed. Immediate notification specified that 13 surveys were undeliverable. The survey remained open to the 59 potential participants for one month. Requests to complete the survey were issued by the corporation's practice managers and the executive vice president of physician services. Emails were sent to all potential participants at 1, 3, and 4 weeks by the researcher (Dillman, 2009). Eighteen surveys were returned with 13 respondents answering all 24 items (Tillman, 2014).

Table 2

Number of Surveys Sent and Completed

Totals	MD	PA	DO	NP
Total number of Surveys Sent	47	4	2	19
Total Number of Surveys Completed	9	3	0	1
Percent of Surveys Completed	19%	75%	0%	5%

Doctor of Medicine = MD; Physician's Assistant = PA; Doctor of Osteopathy = DO; Nurse Practitioner = NP

Data Collection

Upon closure of the survey, the electronic responses were imported into SPSS 22® from Qualtrics©. The responses were divided into three sections, (a) 3 demographic items, (b) the 16-item subscale indicating attitudes toward quality of care and interprofessional practice, and (c) the 5-item subscale demonstrating respondents' attitudes toward physician centrality. Six of the

21 items required reverse-coding to control for negatively worded responses (Furr, n.d.; Heinemann et al., 1999).

Data Analysis

SPSS 22® was used to analyze data provided by responses to the ATHCTS. Cronbach's alpha was calculated for the 21-item scale, as well as both subscales of the ATHCTS. A Kruskal-Wallis test was used to measure the between professional roles mean scores for the quality of care/interprofessional practice subscale and the physician centrality subscale.

Limitations

There are several limitations of this pilot study. The small sample (n=13) likely decreased the power of the study. Data was potentially skewed as a result of little professional role diversity represented by respondents, with 66% of respondents self-identifying as doctors of medicine. A similar limitation was due to minimal variance in the number of years in practice, with the majority (n=9) having been in practice 16 years or longer.

Strengths

There was equitable gender sampling in the study. This pilot study provided baseline analysis of process and outcome measures, supplying criteria for replication among a larger sample of professionals. The full 21-item scale was found to be reliable, as was the quality of care/interprofessional care team subscale.

IV. Results

Sample Characteristics

The population for this pilot study (*N*=72) included doctors of osteopathy, doctors of medicine, physicians' assistants, and nurse practitioners (see Table 1). However, the responding sample (*n*=13) was overwhelmingly represented by doctors of medicine, with only 4 respondents self-identifying as physicians' assistants or nurse practitioners. No doctors of osteopathy responded to the survey. Seven respondents were male and 6 were female. The majority of respondents (66%) had been in practice as health care providers for at least 16 years.

Findings

Cronbach's alpha was calculated for the 21-item scale at .877. Cronbach's alpha was calculated for both subscales, with a score of .917 for the quality of care or interprofessional practice subscale, indicating good internal consistency, and a Cronbach's alpha of .446 for the physician centrality subscale, indicating poor internal consistency. Identification of subscale assignment, mean, and median scores for each question are shown in Table 3. The Kruskal-Wallis, a nonparametric test that allows comparison of continuous variables among 3 or more groups, was used for a between groups analysis comparing the mean scores of both subscales in relation to the professional providers' roles as identified by education and certification or licensure.. This test was appropriate due to the small number of respondents (n=13) and the unequal distribution between the three groups. No significant difference was found between the provider roles in regard to physician centrality ($H(2) = 1.833$, $p > .05$) and there was no significant difference found between the professional roles in relation to attitudes toward interprofessional (or collaborative) practice ($H(2)=.197$, $p>.05$). The providers' professional

Table 3

Descriptive Statistics for Attitudes Toward Health Care Teams Scale

Item	Subscale	Mean	Median
Working in teams unnecessarily complicates things most of the time.*	IPC/Q	5.00	5.00
The team approach improves the quality of care to patients.	IPC/Q	5.00	5.00
Team meetings foster communication among team members from different disciplines.	IPC/Q	5.00	5.00
Physicians have the right to alter patient care plans developed by the team.	PC	5.00	5.00
Patient's receiving team care are more likely than other patients to be treated as whole persons.	IPC/Q	4.00	4.00
A team's primary purpose is to assist physicians in achieving treatment goals for patients.	PC	5.00	5.00
Working on a team keeps most health professionals enthusiastic and interested in their jobs.	IPC/Q	4.00	4.00
Patients are less satisfied with their care when it is provided by a team.*	IPC/Q	4.00	5.00
Developing a patient care plan with other team members avoids errors in delivering care.	IPC/Q	4.00	4.00
When developing interdisciplinary patient care plans, much time is wasted translating jargon from other disciplines.*	IPC/Q	4.00	4.00
Health professionals working on teams are more responsive that others to the emotional and financial needs of patients.	IPC/Q	4.00	4.00
Developing an interdisciplinary patient care plan is excessively time consuming.*	IPC/Q	3.00	4.00
The physician should not always have the final word in decisions made by health care teams.*	PC	5.00	5.00
The give and take among team members help them make better patient care decisions.	IPC/Q	4.00	4.00
In most instances, the time required for team meetings could be better spent in other ways.*	IPC/Q	4.00	4.00
The physician has the ultimate legal responsibility for decision made by the team.	PC	5.00	6.00
Hospital patients who received team care are better prepared for discharge than other patients.	IPC/Q	4.00	4.00
Physicians are natural team leaders.	PC	3.00	2.00
The team approach makes the delivery of care more efficient.	IPC/Q	4.00	4.00
The team approach permits health professionals to meet the needs of family caregivers as well as patients.	IPC/Q	4.00	4.00
Having to report observations to the team helps team members better understand the work of other health professionals.	IPC/Q	4.00	4.00

Note. *Reverse-coded. Interprofessional Collaboration/Quality = IPC/Q; Physician Centrality = PC.

interprofessional (or collaborative) practice ($H(2)=.197$, $p>.05$). The providers' professional roles did not influence providers' attitudes toward agreement with physician centrality or favorability toward interprofessional, team-based practice (Tillman & Lowery, 2014).

Descriptive statistics were compiled for the 21-item survey, (as seen in Table 1, which provides the mean and median for each item). The overall favorability of quality of care or interprofessional care team practice, was calculated for the 16-item subscale with a mean of 4.1 points, indicating that respondents somewhat agreed with the premise of interprofessional collaboration. The overall agreement with physician centrality was calculated at a mean of 4.5 points, indicating that respondents moderately agreed with physician centrality in patient care (Tillman & Lowery, 2014).

The purpose of this pilot study was to gain baseline information on the attitudes toward interprofessional health care as reported by primary care providers in eastern NC. The instrument was found to have good internal consistency. Measurement of between professional roles group mean scores of self-reported attitudes toward quality of care/interprofessional care teams subscale and the physician centrality subscale were not significant.

V. Discussion

Discussion

The Interprofessional Education Collaborative (IPEC) was founded in 2009 by six national education associations representing divergent health care disciplines. This group identified core competency domains to achieve interprofessional collaborative patient care: (a) communication; (b) roles and responsibilities; (c) teams and teamwork; and (d) values and ethics. Values and ethics serve as antecedents of individual and group beliefs and attitudes. It is plausible, then, that attitudes are significant axioms in developing behaviors (Ruebling et al., 2014).

The purpose of this study was to gain insight into the attitudes of primary care providers toward interprofessional practice by surveying a small group of doctors of osteopathy, doctors of medicine, physicians' assistants, and nurse practitioners. The *Attitudes Toward Health Care Teams Scale* (Heinemann, 1999) was the vehicle by which the providers reported individual attitudes toward interprofessionality and physician centrality. This pilot study found no significance in the between group means for the various professional roles. The absence of differentiation in self-reported attitudes among the discrete health care providers' roles was of interest.

Implications of Findings

Careful consideration of the data summary indicated favorability toward providing care as interprofessional care teams, as well as favorability toward preservation of physician control of patient care plans and health care teams. However, these indicators showed only marginally positive agreement with the premises and could be interpreted as near neutral. Further exploration of the attitudes of primary care providers representing all regions of NC will provide

a more statistically meaningful sample. Discovery of the self-reported attitudes from a larger sample may provide the framework for strategic planning by providers, professional organizations, insurance vendors, consumer groups, and policymakers. Moving NC toward a patient care model that will enable the appropriate provider to deliver evidence-based care that is culturally acceptable and delivered within a timely fashion may be one solution to reduce the costs of care and improve patient outcomes (Tillman & Lowery, 2014).

Implications of this scholarly project are rooted in reviews of health sciences literature, quantitative research findings, and professional legacy. Strong and effective collaborative health care teams include professionals and laypersons with the skills and support to evaluate and facilitate interprofessional patient-centered care (American Hospital Association, AHA, 2011). Professional health care organizations have recommended that all members of the industry move toward patient-centeredness. Patient centrality must be accomplished before successful transformation of process measures and patient outcomes can occur. Successful integration of interprofessional team-based patient care is dependent on innovative nonhierarchical models that place patients at the head of the health care team. Such transformation did not find support in the statistical data analysis of this scholarly project. On the contrary. If attitudes toward collaboration and interprofessional practice were indicative of shared decision-making, patient-centrality, team-based care, and decentralization of physician control, then eastern NC has made little progress toward the recommendations of the IOM (2000, 2001) and WHO (2010). Negligible between group means scores from the ATHCTS responses indicated little advancement toward more comprehensive partnerships.

The evolution of new models of care delivery rely on interprofessional relationships and shared responsibilities for interventions, risks, and outcomes (AHA, 2011; Betheze, 2011;

Martin, 2014; Wexler, Hefner, Welker, & McAlearney, 2014). The attitudes of health care providers are crucial toward modification of interprofessionalism and resultant forward momentum advancing team-based care. Mutual understanding of professional roles and acceptance of collaboration as one actionable process to augment improved patient outcomes can break down barriers toward interprofessionalism (Martin, 2014). Successful collaborative practice is dependent upon mutual respect and recognition of divergent concepts and practices. Intentionally accepting professional relationships as interdependent and inclusive can progress the state of US health care toward patient-centrality.

Support for the tenets of the Triple Aim are difficult to extract from the literature. A literature review found some incremental advancement for individual providers, local health care clinics, and some health care organizations. The progress was in the areas of change in knowledge, skills, and attitudes of all members of the health care team. While the reported findings documented progress toward collaboration, support for cost-savings or improvement of health outcomes as a result of interprofessional care remained elusive (Brandt, Lutfiyya, King & Chioreso, 2014). Though there was support for changes in process measures, more research is needed to document a causal relationship between interprofessional care, patient outcomes, financial benefits, and quality of care. Without considerable mutual expectations between patients and providers and rigorous evaluations of resultant outcomes, transformation in the delivery of health care will remain static. Relational practice within the theater of patient care must be operationalized.

Limitations

This scholarly project attempted to identify and categorize the attitudes of providers in eastern NC toward interprofessional practice. Based upon current recommendations of domestic

and global health care entities, it was the perception of the researcher that there would be extensive forward movement toward interprofessional practice. These perceptions were not supported in the data analysis from the survey responses.

Though the original sample was 72 providers, only 82% of the emails containing the survey invitation and link were deliverable. As indicated in Table 2, final evaluation found that 22% of all the surveys successfully delivered were completed and returned. The small number of participants completing the survey likely diminished the statistical power of the study. The causation of the poor response is not known. It is possible that the rate of participation is congruent with providers' interest in interprofessional patient care.

A lack of diversity in professional roles for those completing the survey was another limitation (see Table 1 for details related role diversity). It was not possible to determine the roles of those whose emails were undeliverable due to the anonymity of the survey recipients' email addresses. This blurred possible process measurement and conclusive descriptive statistics.

There were two demographic impediments for this study. The first was the minimal diversity of professional roles, which likely influenced the study analysis. Nine of the 13 respondents were doctors of medicine. This may be contributory to the favorability score of physician centrality. The second demographic limitation was respondents' number of years in practice. Nine of the 13 people participating identified practice tenure as 16 years or longer. Consideration must be given to the possibility that providers receiving formal professional education in more recent years may have more tutelage and practice in regards to interprofessionality. If that presupposition was accurate, the increased consciousness on the part of less experienced providers might translate into increased participation in interprofessional practice.

It is possible that homogeneity of participants was a limiting factor. All providers surveyed lived and worked in eastern NC. Possible community biases and acculturation impacted participants' responses. All providers surveyed are employed by the same health care system. Consideration of like-mindedness as a limiting factor is prudent, as corporate practices or philosophies may be contributory variables.

Strengths

A deep and broad literature search strengthened the footings on which this scholarly project and study were laid. Gaps in the literature confirmed the researcher's premise that little is known about providers' attitudes in regards to interprofessional practice. Successful implementation of the study provided the guidance needed to translate the operationalization of this small pilot into a larger statewide study. The pilot provided insight into possible technical and analytical barriers, such as utilization of Qualtrics© for survey delivery and selection of statistical tests.

Delimitations

There were delimitations of this study. Utilization of a convenience sample of providers representing different primary care practice foci and various professional roles increased control of variables. This expanded efficiency in implementation since onboarding was narrowed to only one organization. The second delimitation was the inclusion of only those surveys received as completed with responses to all 24 items. This delimitation allowed for greater congruency in analysis of the information as n=13 for all survey items, which conceivably helped minimize the distortion of data.

VI. Conclusions

Health care in the US is an expensive enterprise that can be inefficient and time-consuming. Interprofessional health care delivery may be one solution to ameliorate the stressors of the contemporary system of care. However, literature regarding best practices in delivery of interprofessional care is limited. Research examining the comprehension of providers toward interprofessional practice, as well as literature exploring providers' attitudes and values related to interprofessional health care delivery are even more limited. Innovative methodology is required in order to move past rhetoric and toward practical implementation and assessment of team-based health care.

In order for the health care industry to realize the projected benefits of interprofessionalism as defined by the IOM (2000 & 2001) and WHO (2010), community-based health care entities must begin purposeful dialogue with sister organizations regarding the new practice model. Dissemination of information and diffusion of new conventions may continue to proceed slowly. However, strategic planning and continuous quality improvement efforts around the implementation of interprofessional care teams will amplify collaboration as an intervention.

Qualitative and quantitative research is needed to further examine attitudes toward interprofessional health care delivery. Providers and consumers of health care services must be queried to determine values and beliefs that will impede or accelerate transformations of practice and delivery of care. Randomized control studies of interprofessional practice and collaborative care are small in number. Design and implementation of RCTs will increase the pool of available objective findings beneficial for justifying forward momentum toward collaborative health care. Qualitative studies will assist in identifying beliefs and attitudes germane to interprofessional care. An understanding of these attitudes and values will provide the basis for mapping

successful strategies for team-based care delivery. Additional research will be useful in verifying successful processes toward actualization of best practices.

Activation and motivation are needed to empower paradigm shifts of this magnitude. Establishing the pathway toward interprofessional health care delivery will require ambitious professional negotiation and concurrence. It is vital that hospitals, professional organizations, health sciences educators, and individual health care providers begin the thawing of empirical processes necessary to ignite change. University departments of health sciences can be the genesis for shifts toward collaborative practice. Development of classes, case studies, and practicums that cross the brick and mortar barriers of health sciences campuses and reach to involve all professional schools and colleges will potentiate interprofessional practice. Driving this change forward will also require movement beyond the walls of classrooms and labs and into community settings, thereby increasing consumer knowledge and familiarity with new care delivery modalities. Providing continuing education alternatives that consolidate theory and point-of-care implementation strategies will contribute to evolving change. Persistent assessment and reassessment of processes and outcomes will ensure appropriate rigor in development of new systems of care.

This pilot study provided a foundational framework for evaluating primary care providers' attitudes toward team-based health care. Application of this preliminary data may be useful for institutional administrators and policymakers when considering an interprofessional agenda for healthcare delivery. Improved methodology and action will be essential in meeting the goals of the Triple Aim (Berwick et al., 2008). It is possible that such exploration will increase appreciation of diverse, interprofessional roles and decrease historical hegemony among health care providers. In addition, it is likely that this improved professional empathy will foster

ongoing teamwork, which may improve patient centrality, enhance patient outcomes, and decrease unnecessary costs of care.

Statewide exploration of providers' attitudes toward interprofessional health care is indicated. Replication of this pilot study will involve doctors of osteopathy, doctors of medicine, physicians' assistants, midwives, and nurse practitioners providing services in primary care clinics across North Carolina. The processes and implementation strategies will remain unchanged from the pilot study. However, it is likely that the number of participants from the 5 provider roles will be sufficient to warrant parametric analysis of between groups' mean scores. Increased statistical power of the statewide survey can substantiate areas of thought and practice in need of transformation. Statistically significant findings will be useful to motivate health care organizations and health care providers toward larger systems' involvement and, most importantly, improved patient outcomes.

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Appendix A
Project Overview for Partnering Health System

Doctor of Nursing Practice Scholarly Project: Exploring the Attitudes of Primary Care Providers in Eastern North Carolina Toward Interprofessional Practice

Jan Tillman, MSN, FNP-BC, DNPs, East Carolina University

Request to query all primary care providers within Vidant Medical Group practices using an electronic form of the Attitudes Toward Health Care Teams Scale, a 20-item survey, which is a validated tool:

- Created and revised by Heinemann, G.D., Schmitt, M.H, Farrell, M.P., and Brallier, S.A.
- Assessment of two factors
    1. Quality of Care/Process - measures team member's views of quality of care and quality of team work;
    2. Physician Centrality - measures team member's attitudes related to physician control of patient information and physician authority; and
- Requires approximately fifteen minutes to complete the six-point scale for all 20 questions

Purpose: The purpose of this query is:

- To inform interprofessional educational opportunities and partnerships through East Carolina University and Vidant Health, Incorporated;
- To identify areas of opportunity for future research related to interprofessional practice; and
- To meet the criteria for completion of the Doctor of Nursing Practices Scholarly Project at East Carolina University

Timeframe:

- Completion of University and Medical Center Institutional Review Board application, February 2014;
- Administering of the Qualtrics electronic survey over a 3-week span in April 2014;
- Compilation and analysis of data in May 2014;
- Baseline feedback and analysis reported to Vidant Medical Group in June 2014; and
- Formal completion of the scholarly project and accompanying paper in September 2014

About the Investigator:

- Janet Tillman, MSN, FNP-BC, DNPs;
- Registered nurse in North Carolina since 1983;
- Family Nurse Practitioner since 2008;
- Employed with Vidant Medical Center, Community Care Plan of Eastern Carolina (CCPEC) since 2003; currently the Assistant Director of Program Evaluation and Accountability with CCPEC;
- Clinical instructor, East Carolina University, College of Nursing, since 2011 (part-time);
- Current Doctor of Nursing Practice student, East Carolina University, College of Nursing

Doctor of Nursing Practice Scholarly Project Committee Members:

- Dr. Bobby Lowery, PhD, FNP-BC, Committee Chair, East Carolina University College of Nursing; DNP Program Director
- Mr. Jacob Parrish, MPH, Director of Growth and Reform, Vidant Health, Incorporated; and
- Dr. Carol Ann King, DNP, FNP-BC, Assistant Professor, East Carolina University College of Nursing

Appendix B
Letter of Support from Vidant Medical Group

VIDANT HEALTH™

March 5, 2014

Ms. Janet Tillman, MSN, FNP-BC
East Carolina University School of Nursing
Greenville, NC 27834

Dear Ms. Tillman:

On behalf of **Vidant Medical Group**, formerly UHS Physicians, Inc., I am providing a letter of support for the study "Exploring the Attitudes of Primary Care Providers in Eastern North Carolina Toward Interprofessional Practice". In review of this study, you will conduct a survey of Vidant Medical Group primary care providers to assess two factors: views of quality care/teamwork and attitudes related to physician control/authority related to patient information.

Vidant Medical Group (VMG) is Vidant Health's provider enterprise that encompasses approximately 933 staff (375 physicians and advanced practitioners) who provide care in 10 hospitals and 77 ambulatory practices throughout eastern North Carolina. Additionally, VMG is leading efforts to improve care coordination through post-acute care services, the Patient Centered Medical Home (PCMH) initiative and integrated care navigation services as Vidant Health continues to build its system of care to ensure the best-in-region access, exceptional patient experience, and optimal outcomes for the citizens of eastern North Carolina.

Your study will provide insight and build on strengthening our healthcare delivery. Please feel free to contact me at 252-847-1946 should you have any questions concerning our support to this initiative.

Respectfully,

Travis Douglass
Executive Vice President and Director

Vidant Medical Group
2100 Stantonsburg Road
PO Box 6028
Greenville, NC 27835-6028
252.847.6156 phone
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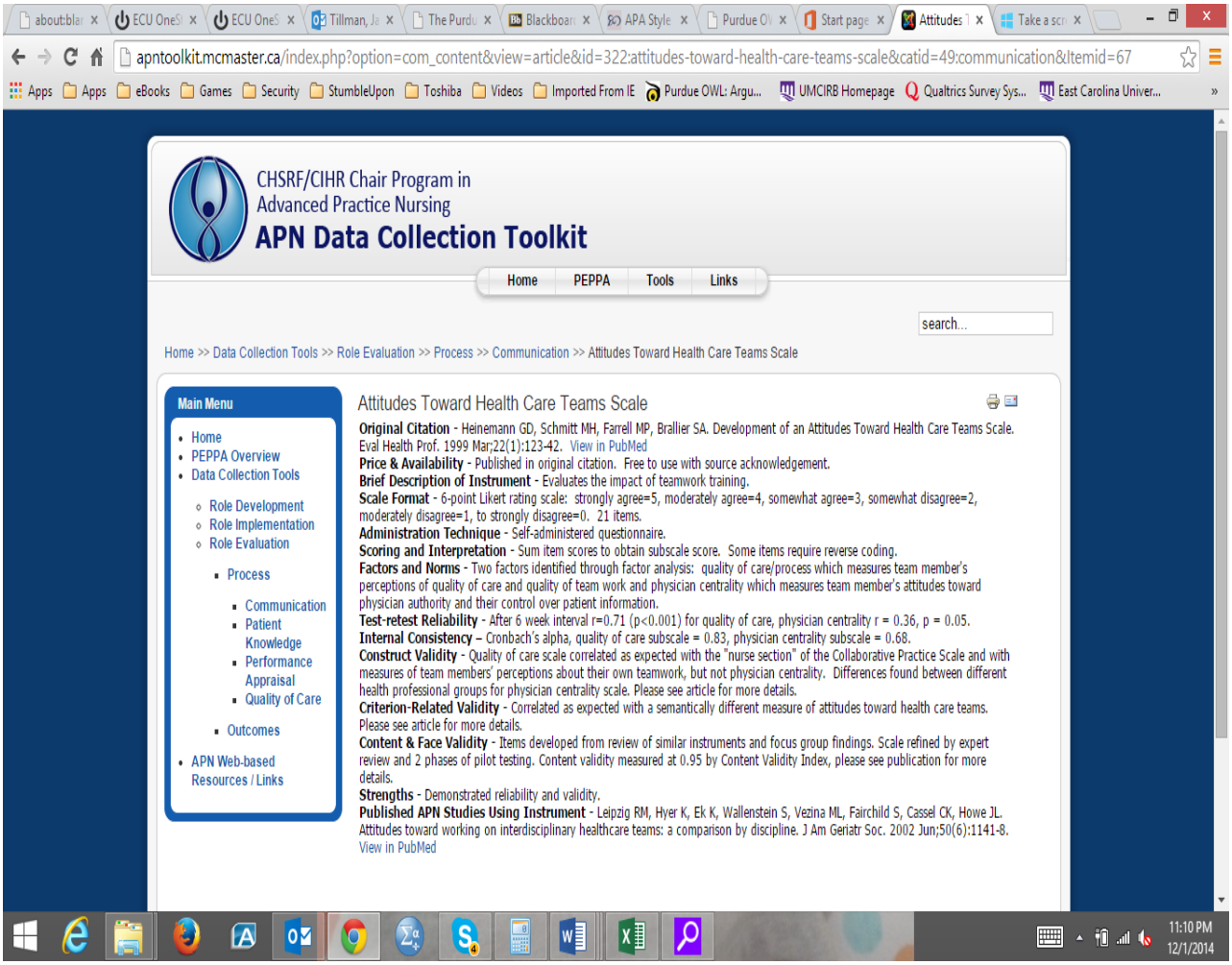
Appendix C
Permission to Use Instrument



Appendix D
University and Medical Center Institutional Review Board Certification

Notification of Exempt Certification

From: Biomedical IRB
To: Janet Tillman
CC:
Bobby Lowery
Date: 5/6/2014
Re: UMCIRB 14-000269
Attitudes of Primary Care Providers Toward IPP

I am pleased to inform you that your research submission has been certified as exempt on 5/6/2014 . This study is eligible for Exempt Certification under category #2 .

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The UMCIRB office will hold your exemption application for a period of five years from the date of this letter. If you wish to continue this protocol beyond this period, you will need to submit an Exemption Certification request at least 30 days before the end of the five year period.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

Appendix E
Introductory Letter to Study Participants

Dear Vidant Medical Group Primary Care Provider,

You are being invited to participate in a **research** study titled "Attitudes of Primary Care Providers Towards Interprofessional Practice being conducted by Jan Tillman, MSN, FNP-BC, DNPs, a Doctor of Nursing Practice Student at East Carolina University in the College of Nursing. The goal is to survey 100 - 125 individuals at Vidant Medical Group. The survey will take approximately 20 minutes to complete. It is hoped that this information will assist us to better understand how primary care providers (PCPs) perceive interprofessional practice with others. For the purposes of this study, interprofessional practice includes all members of the health care team (i.e., primary care providers, specialists, physical therapists, pharmacists, occupational therapists, and nutritionists), just to name a representation of possible the professions. The survey is anonymous, so please do not include your name. Your participation in the research is **voluntary**. You may choose not to answer any or all questions, and you may stop at any time. There is **no penalty for not taking part** in this research study. Please call Jan Tillman at 252-560-2522 for any research related questions or the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant.

Thank you for taking your time to complete the accompanying survey. I'm familiar with the vast number of hours and patients who fill your days. I am also aware that you are continually expected to do more patient care with fewer resources. I feel that you are an authority on the subject of health care and health care teams in rural North Carolina. Your years of expertise in primary care are appreciated and add valued dimension to the current and future state of care delivery in North Carolina. The *Attitudes Towards Health Care Teams Scale* is a reliable tool that was created, utilized and validated by Heinemann et al (1999). **Would you please take 3-5 minutes of your time to complete this anonymous survey?** As you are aware, the Institute of Medicine has endorsed interprofessional practice in several reports such as *To Err is Human: Building a Safer Health System* (2000) and *Crossing the Quality Chasm: A New Health System for the 21st Century* (2001). I am extremely interested in your perceptions of team functionality in the primary care workplace in eastern North Carolina. My goals for the information gathered at completion of this survey are both broad and deep. While it is my goal for this survey to provide the practice application for the framework of my DNP scholarly project, it is also my hope that the results of this survey will provide baseline knowledge used for future planning. This information provides insight and guidance to enhance the structures of health care teams for Vidant Health and Vidant Medical Group, as well as other practices throughout eastern North Carolina.

Regards,
Jan Tillman, MSN, FNP-BC, DNPs
East Carolina University

References

Heinemann, G.D., Schmitt, M.H., Farrell, M.P., & Brallier, S.A. (1999). Development of an attitudes toward health care teams scale. *Evaluation and the Health Professions, 22*(133). doi: 10.1177/01632789922034202

Kohn, L.T., Corrigan, J.M., & Donaldson, M.S. (Eds). (2000). *To err is human: Building a safer health system.* Committee on Quality of Healthcare in America. Institute of Medicine. Washington, D.C.: National Academies Press.

National Research Council. (2001). *Crossing the quality chasm: A new health system for the 21st century.* Committee on Quality of Healthcare in America. Institute of Medicine.

Appendix F
Study Instrument
Attitudes Toward Health Care Teams Scale (with added demographics)

Demographic Indicator						
Please indicate your designated professional licensure or certification for your role on the health care team.	MD	PA	DO	NP		
Please indicate the number of years you have been in your indicated profession.	1-5 YEARS	6-10 YEARS	11-15 YEARS	16-20 YEARS	GREATER THAN 20 YEARS	
Please indicate your gender.	MALE		FEMALE			
ATHCTS Item	**Strongly Disagree**	**Moderately Disagree**	**Somewhat Disagree**	**Somewhat Agree**	**Moderately Agree**	**Strongly Agree**
Working in teams unnecessarily complicates things most of the time.*	1	2	3	4	5	6
The team approach improves the quality of care to patients.	1	2	3	4	5	6
Team meetings foster communication among team members from different disciplines.	1	2	3	4	5	6
Physicians have the right to alter patient care plans developed by the team.	1	2	3	4	5	6
Patient's receiving team care are more likely than other patients to be treated as whole persons.	1	2	3	4	5	6
A team's primary purpose is to assist physicians in achieving treatment goals for patients.	1	2	3	4	5	6
Working on a team keeps most health professionals enthusiastic and interested in their jobs.	1	2	3	4	5	6
Patients are less satisfied with their care when it is provided by a team.*	1	2	3	4	5	6
Developing a patient care plan with other team members avoids errors in delivering care.	1	2	3	4	5	6

ATHCTS Item	Strongly Disagree	Moderately Disagree	Somewhat Disagree	Somewhat Agree	Moderately Agree	Strongly Agree
Health professionals working on teams are more responsive that others to the emotional and financial needs of patients.	1	2	3	4	5	6
Developing an interdisciplinary patient care plan is excessively time consuming.*	1	2	3	4	5	6
The physician should not always have the final word in decisions made by health care teams.*	1	2	3	4	5	6
The give and take among team members help them make better patient care decisions.	1	2	3	4	5	6
In most instances, the time required for team meetings could be better spent in other ways.*	1	2	3	4	5	6
The physician has the ultimate legal responsibility for decision made by the team.	1	2	3	4	5	6
Hospital patients who received team care are better prepared for discharge than other patients.	1	2	3	4	5	6
Physicians are natural team leaders.	1	2	3	4	5	6
The team approach makes the delivery of care more efficient.	1	2	3	4	5	6
The team approach permits health professionals to meet the needs of family caregivers as well as patients.	1	2	3	4	5	6
Having to report observations to the team helps team members better understand the work of other health professionals.	1	2	3	4	5	6

**Indicates reverse-coding*

Heinemann, G.D., Schmitt, M.H., Farrell, M.P., & Brallier, S.A. (1999). Development of an attitudes toward health care teams scale. *Evaluation and the Health Professions, 22*(133), 123-142. doi: 10.1177/01632789922034202

Appendix G
Doctor of Nursing Practice Essentials

	Description	Demonstration of Knowledge
Essential I ***Scientific Underpinning for Practice***	**Competency** – Analyzes and uses information to develop practice **Competency** -Integrates knowledge from humanities and science into context of nursing **Competency** -Translates research to improve practice **Competency** -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes	Concept Analysis Paper Concept Application Paper Theoretical Framework Paper Literature Review-Interprofessionalism IRB Submission Community Assessment Overviews of Theorists
Essential II ***Organizational & Systems Leadership for Quality Improvement & Systems Thinking***	**Competency** –Develops and evaluates practice based on science and integrates policy and humanities **Competency** –Assumes and ensures accountability for quality care and patient safety **Competency** -Demonstrates critical and reflective thinking **Competency** -Advocates for improved quality, access, and cost of health care; monitors costs and budgets **Competency** -Develops and implements innovations incorporating principles of change **Competency** - Effectively communicates practice knowledge in writing and orally to improve quality **Competency** - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems	Organizational Assessment Paper Logic Model Quality Improvement Plan Paper Diffusion of Innovations Paper Virtual Clinic Case Building Teamwork Action Plan *Switch* - Heath & Heath Leadership Self-Assessment CQI Plan IHI Leadership Certificate Prochaska Paper
Essential III ***Clinical Scholarship & Analytical Methods for Evidence-Based Practice***	**Competency** - Critically analyzes literature to determine best practices **Competency** - Implements evaluation processes to measure process and patient outcomes **Competency** - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients **Competency** - Applies knowledge to develop practice guidelines **Competency** - Uses informatics to identify, analyze, and predict best practice and patient outcomes **Competency** - Collaborate in research and disseminate findings	Literature Review Concept Analysis Paper Concept Application Paper Statistical Analysis of Project Data CONSORT Memo Statistical Design Paper Community-Based Participatory Research Cert
Essential IV ***Information Systems – Technology & Patient Care Technology for the Improvement & Transformation of Health Care***	**Competency** - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care **Competency** - Analyze and operationalize patient care technologies **Competency** - Evaluate technology regarding ethics, efficiency and accuracy **Competency** - Evaluates systems of care using health information technologies	Qualtrics Survey-ATHCTS SPSS Utilization Access Database Creation Consumer Health Website Eval EHR evaluation Virtual Clinic Case Building Diffusion of Innovation Paper CHERRIES tool Nursing Informatics Self-Assessment

	Description	Demonstration of Knowledge
Essential V ***Health Care Policy of Advocacy in Health Care***	**Competency**- Analyzes health policy from the perspective of patients, nursing and other stakeholders **Competency** – Provides leadership in developing and implementing health policy **Competency** –Influences policymakers, formally and informally, in local and global settings **Competency** – Educates stakeholders regarding policy **Competency** – Advocates for nursing within the policy arena **Competency**- Participates in policy agendas that assist with finance, regulation and health care delivery **Competency** – Advocates for equitable and ethical health care	Policy Analysis Paper Policy Process Presentation Health Care Rationing DB Get Out the Vote VOLUNTEER Letter to NC Rep. McElraft Agenda Setting DB Strategic Plan Analysis Paper Policy Process Presentation DBs - ACOs, Health Policy, ACA, DNP role in policy & social programs
Essential VI ***Interprofessional Collaboration for Improving Patient & Population Health Outcomes***	**Competency**- Uses effective collaboration and communication to develop and implement practice, policy, standards of care, and scholarship **Competency** – Provide leadership to interprofessional care teams **Competency** – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings	Effective Communication Certificate CQI Plan Teamwork Action Plan Scholarly Project Dissemination Plan Virtual Clinic Case Building Finance Case Studies Discussion Boards
Essential VII ***Clinical Prevention & Population Health for Improving the Nation's Health***	**Competency**- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery **Competency** – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care **Competency** – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity	Evidence-Based Strategies Paper CQI Plan WHO Biostatistics Paper Community Assessment Cultural Competency Certification SWOT Analysis *The Immortal Life of Henrietta Lacks* DB Diffusion of Innovation Paper
Essential VIII ***Advanced Nursing Practice***	**Competency**- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings **Competency** – Design, implement & evaluate nursing interventions to promote quality **Competency** – Develop & maintain patient relationships **Competency** –Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes **Competency** – Mentor and support fellow nurses **Competency**- Provide support for individuals and systems experiencing change and transitions **Competency** –Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures	Evidence-Based Strategies Paper SWOT Analysis Finance Case Studies Innovation Analysis Paper Diffusion of Innovation Paper Design & Outcomes Variables Paper Cultural Competency Certification Organizational Assessment Paper Effective Communication Certification Finance Case Studies

American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced practice nursing*. Retrieved from http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf