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Primary Care at Home: Nurse Practitioners' Perceptions and Practices

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Abstract

Background: Primary care at home is not a new idea, but rather a reinvention of an old and almost forgotten practice. Today, only 1% of primary care visits are provided in a home setting; despite the increasing aging homebound population in the United States. Current primary care at home research relates improved patient outcomes with primary care at home visits. Primary care at home is reemerging in the United States, but currently is not generating many positive reviews. There is a gap in the current primary care at home literature regarding nurse practitioner home visit practices and perceptions.

Methods: A quantitative quasi-experimental study design was utilized for this study. The underlying researcher hypothesis was that primary care home visits are underutilized. The purpose of this study was to examine the perceptions, barriers, knowledge and practices of nurse practitioners (NPs) regarding home visits in primary care and to evaluate changes in perceptions and practices following an educational intervention. The sample chosen for this study was volunteer nurse practitioners attending two pharmacology update conferences. Ninety eight nurse practitioners were included in this convenience sample study. The data collection of this study occurred in three phases. The first and second phases of the study used a face to face approach. The third phase occurred approximately six weeks later via email. The analysis methods were cross tabulations and descriptive statistics.

Results: The nurse practitioner participants in this study indicated that 27% had made a primary care home visit, thus supporting the hypothesis for this study. Fifty four percent indicated that they had not considered making a primary care at home visit. Forty three percent stated that they would be more likely to make or increase a home visit based on the educational intervention. Eighty five percent of initial study participants were aware that Medicare could be billed for

primary care home visit. Six percent of the Home Visit Implementation Post Survey participants indicated making primary care home visits since September 2013.

Conclusions: The primary conclusion of this study was that primary care home visits are underutilized by nurse practitioner study participants. The findings from this study will add to the body of knowledge regarding nurses' perceptions and practices of primary care at home. The researcher believes that by increasing awareness of benefits of primary care home visits; nurse practitioners will increase the amount of home visits being made. Ultimately, increasing access of primary care to homebound patients will improve their overall patient outcomes.

Keywords: primary care at home, home visit, nurse practitioner

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Section 1 – Background and Significance

Statement of the Problem

Access to primary care seems like a reasonable expectation for everyone. However, homebound persons do not always have that accessibility. Homebound persons are considered those individuals who require a taxing effort to leave their home (Unwin & Tatum, 2011). The elderly are more likely to become homebound and faced with challenges in accessing primary care. The elderly population in the United States is increasing. It is estimated that "between 2010 and 2030, the number of Americans age 65 and older is expected to double" (Okie, 2008, p. 2410). This increase is partly due to baby boomers entering retirement age. Another reason is that the average life expectancy has increased. Since people are living longer, the likelihood of developing multiple chronic diseases increases. Multiple chronic diseases are the largest contributing factor to debilitation and homebound status (Okie, 2008).

The current health care system has never been able to consistently meet the primary care needs of the elderly homebound patient (Desai, Smith, &Boal, 2008). The "lack of primary care has been associated with a number of adverse outcomes, including increased emergency department visits and hospitalizations" (Desai et al., 2008, p. 744). It is projected that since the current health care needs of the homebound elderly are not being met now; the future will pose many significant challenges for an already burdened United States healthcare system (Landers, Suter, & Hennessey, 2010).

Other countries are experiencing the same issues as the United States, but in most cases not to the same degree. A recent study shows that the "United States had low marks for access to care" (Pitts, Carrier, Rich, & Kellermann, 2010, p. 1625). The U.S. has more emergency

department visits when compared to other countries such as Germany and the Netherlands. "Many countries belonging to the Organization for Economic Cooperation and Development already provide incentives to their primary care physicians to offer after-hours care and set clear expectations for performance"(Pitts et al., 2010, p. 1625). These incentives are to help alleviate the costs incurred with after-hours emergency department visits.

Primary care at home is not a new idea, but rather a reinvention of an old and almost forgotten practice. During the mid-20th century, home visits were the "primary mode of healthcare delivery" by physicians (Theile, Kruschinski, Buck, Muller, & Hummers-Pradier, 2011, p. 1). Today, about 1% of primary care visits are provided in a home setting (Hayashi, Phillips, Arbaje, Sridharan, Gajadhar & Sisson, 2007). In the United States and most of Europe, home visits made by a physician or nurse practitioner are not the usual mode of healthcare delivery (Theile et al., 2011). Primary care at home typically offers a different, more holistic view of a patients' health than the in-clinic 15 minute visit. Home visits provide a vision of the patient's lifestyle, eating habits, mobility, activities of daily living and medication administration (Ratnayake, 2010). These insightful visions can offer an opportunity for the provider to make needed changes for the patient's plan of care before problems arise or become too complex; therefore, reducing the costs of healthcare.

Significance of Project for Nursing and Health Care

Since the implementation the Patient Protection and Affordable Care Act, decreasing hospitalizations and preventing hospital readmissions have become a priority for hospitals. The Patient Protection and Affordable Care Act imposes financial penalties for "hospitals with higher-than-expected readmission rates" (Hansen, Young, Hinami, Leung, & Williams, 2011, p. 527). These penalties have hospitals searching for new methods of healthcare delivery. The

Institute of Medicine has recommended integrating healthcare into communities (Institute of Medicine [IOM], 2012). With these recent healthcare changes and recommendations, primary care home visits for homebound, chronically ill and vulnerable populations makes more sense than ever before.

One promising benefit of providing primary care at home is a reduction in overall health care costs, while maintaining or improving quality of care (Okie, 2008). Measuring these reductions in health care costs and quality is somewhat complex. Current literature offers conflicting ideas regarding cost and quality. The increase in the quality of healthcare outcomes is not disputed, but the cost of providing primary care at home is debatable. The reported immediate costs may increase depending on the current price of fuel and distance traveled to the patient home. Overall healthcare costs are reduced by decreasing hospitalizations and emergency department visits (Desai et al., 2008). Other factors that affect cost reduction are the reduced chance of falls, reduced taxi/ambulance expense and reduction in contagion exposures such as the flu or common cold (Desai et al., 2008). These factors are more difficult to measure, but are extremely beneficial for a positive health outcome and decrease in health care costs. Unfortunately, the short-term increase of cost is a deterrent for nurse practitioners to make home visits, despite the improved patient health outcomes.

The majority of nurse practitioners work in primary care and have been identified as "a potential answer" (Naylor & Kurtzman, 2010, p. 898) to the primary care physician shortage. Nurse practitioners "function both independent and collaborative" (Naylor & Kurtzman, 2010, p. 893) providing high quality care at a lower cost than physicians (Naylor & Kurtzman, 2010). "Nurse practitioners have by tradition worked with underserved populations and at-risk groups" (Amazon, 2012, p. 1), making them an ideal match for primary care at home.

Since the benefit of primary care at home has been well established, it was the researcher's intent to survey a sampling of nurse practitioners' perceptions, barriers, knowledge and practices toward primary care at home visits. The survey was followed by an educational intervention consisting of benefits and other facts about home visits in primary care. This study identified current practice and gaps in nurse practitioners' knowledge and captured a snapshot of their attitudes toward primary care at home. By revealing these current practices and attitudes, some possible solutions to homebound primary care access can be determined.

Theoretical Foundation

Two theoretical foundations, the Chronic Care Model and Lewin's Change Theory were utilized in the Nurse Practitioners' Perceptions and Practices study. The Chronic Care Model is a complex and holistic approach to improving chronic disease patient outcomes by demanding healthcare focus through six elements (Wagner et al., 2001). The six elements of the Chronic Care Model are: "health care organization, delivery system design, clinical information systems, decision support, self-management support and community resource linkages" (Strickland et al., 2010, p. 295). All six elements could be achieved by primary are at home. The nurse practitioner would be exposed to the in-home visit insight to lead the health care organization and coordinate collaborations. The delivery system design would be achieved by meeting the primary care access need. Home visits would provide additional time for chronic disease education to achieve the decision support and self-management support elements of the Chronic Care Model. Community resource linkages could be easily identified by observing the patient in their home environment.

Lewin's Change Theory was utilized to assist with the development of the Primary Care at Home study. By introducing an intervention in this study, the researcher expected a change in

home visit behavior to occur. Lewin's Change Theory was regarded for its three elements of change; unfreezing, moving or transitioning and refreezing (Shirey, 2013). These elements focus on behavioral change. "Unfreezing involves getting ready for change" (Shirey, 2013, p. 69), moving or transitioning engages the change (Shirey, 2013) and refreezing "demands stabilizing the change" (Shirey, 2013, p. 70). It was anticipated that behavioral change would need to transpire among study participants before implementation of primary care at home visits could occur. The Primary Care at Home study uses unfreezing by exposing study participants to current information regarding positive outcomes associated with home visits in primary care. The study then moves or transitions by offering an option for those patients that are homebound and missing their primary care in-clinic visits. The refreezing element would come into play by nurse practitioners setting new protocols or policies regarding those homebound patients who are unable to make in-clinic visits.

Clinical Questions

The research questions for this study were:

1. What are current home visit practices among nurse practitioners?
2. Is there a difference between years of practice or previous experience and nurse practitioners willingness to make primary care at home visits?
3. Does the introduction of an educational intervention change nurse practitioners' willingness to make home visits?
4. Is there a change in home visit practices after the introduction of an educational intervention?

5. What barriers are perceived by primary care nurse practitioners that prevent home visits and is there a change in those perceptions after the introduction of an educational intervention?

Definition of Key Terms

The following are some defined key terms to enhance clarification of pertinent terminology used in this study.

Educational intervention. The educational intervention, Primary Care at Home Fact Sheet was developed by the researcher from key points identified during the review of the literature (see Appendix A, p. 48-49). This intervention was introduced after an initial survey of nurse practitioners' perceptions and practices was obtained.

Homebound. Homebound persons are considered those who require a taxing effort to leave their home due to chronic conditions. This taxing effort can be physical or psychological (Unwin & Tatum, 2011).

Primary care provider (PCP). A clinician such as a physician, nurse practitioner or physician assistant that provides advanced health assessments, diagnose and prescribe treatments (National Institutes of Health [NIH], 2012).

Primary care at home. A home-based form of primary care consisting of a primary care provider (physician or nurse practitioner) visiting a patient in their home instead of an in-office environment (DeCherrie, Soriano, & Hayashi, 2012).

Nurse practitioner. An advanced practice registered nurse that provides advanced health assessments diagnoses and prescribes treatments (Mosby's Dictionary, 2009). For the purpose of this study, nurse practitioners practiced in Kentucky, Tennessee, California, Illinois and Indiana.

The types of nurse practitioner certifications included: family, adult, acute care, women's health, psychiatric, gerontology, hospice, oncology, pediatric and nurse midwife.

Section 2 - Critical Review of Pertinent Literature

Theoretical, Methodological and Empirical Research

Recognizing the Institute of Medicine's recommendation for community healthcare integration (IOM, 2012) and the benefits of home visits; a literature review was conducted to assess and identify the prevalence, benefits, downfalls, and gaps in the literature pertaining to primary care provided in a home setting by a nurse practitioner or physician. The clinical question underlying this review was that primary care home visits are currently underutilized by primary care providers (PCPs). The purpose of this study was to examine the perceptions, barriers, knowledge and practices of nurse practitioners regarding home visits in primary care and to evaluate changes in perceptions and practices following an educational intervention. It was the aim of the author to provide study participants with the most current evidence-based research regarding primary care at home.

This literature review searched CINAHL, Cochrane Libraries, Google Scholar, and PubMed databases from 2007 to 2013 using the key words; primary care at home, home visits, and house calls. After applying inclusion and exclusion criteria to titles and abstracts, the remaining literature was hand searched for eligibility. The author independently screened all results. A narrowing of the literature was performed by reviewing titles and abstracts to establish that primary care at home was the direct content of the literature. It was necessary to carefully review titles and perform advanced searches to narrow the number of citations that included 'primary care' in the title.

The population for this review was homebound adults receiving primary care at home, primary care providers who offered primary care at home visits or provider specific perceptions or practices related to home visits. Any type of study design was to be included. The study must

have a publication date between 2007 and 2013 and be printed in English. The inclusion criterion for the home care population was broad and not disease specific. Some studies were restricted to the treatment of a disease or chronic illness at home. This was not the intention of this review, so those were excluded. Exclusion criteria were; disease specific primary care at home, pediatric patients, mothers' as home patients, medical homes and non-English publications. The key words "primary care" in titles and abstracts that were not associated with home visits were excluded. Literature that reviewed other's studies and systematic reviews were also excluded from this review.

Empirical Evidence Strength Rating

Seventeen thousand one hundred and fifty six citations were initially retrieved; one from CINAHL, three from Cochrane Libraries, 17,900 from Google Scholar, and 133 from PubMed were identified. Thirty nine potential articles yielded further review. Using the inclusion and exclusion criteria, the reviewer examined the titles and abstracts. In the event of indecision or the unavailability of an abstract, the full text of the article was reviewed. No other reviewers were consulted. Of the 39 studies, 12 met the criteria for this literature review. The design of the 12 studies meeting the criterion varied in levels of evidence; one quasi-experimental study, three retrospective cohort studies, two correlational studies, two descriptive quantitative studies, one descriptive case-control study and three descriptive qualitative studies.

One of the most researched primary care home visit programs is The Mount Sinai (New York) Visiting Doctors Program (DeCherrie et al., 2012). Their home visit program report serving the needs of urban homebound populations and decreasing hospitalizations, reducing overall healthcare costs and improving patient health outcomes all while increasing patient and provider satisfaction (DeCherrie et al., 2012).

In a quasi-experimental study conducted by Ornstein, Smith, Foer, Lopez-Cantor, and Soriano (2011) consisting of an existing home visit program that introduced an aggressive transition program post hospitalization aimed at reducing length of stay and readmission rates. This study failed to significantly decrease either. The study did specifically identify a direct cost increase and an indirect cost decrease of their home program. The cost savings was related to a decrease in emergency department visits and hospitalizations. Improved patient satisfaction was also noted as a benefit of this program (Ornstein et al., 2011).

Another study by Desai et al. (2008) reviewed the positive financial contributions of a specific primary care home program. The study was performed with a group of visiting physicians that was established in 1995. Using a retrospective design to target Medicare eligible patients who were enrolled in a primary care at home program. Their study indicates that primary care at home visits are cost effective. One reason noted was the reimbursement rate for a home visit is higher than that of an in-office visit. Their research also reveals a decrease in hospitalizations for its primary care at home participants (Desai et al., 2008).

Thomas Edes (2010) conducted a descriptive qualitative study utilizing a homecare program initiated through the Veterans Administration (VA) was reviewed. This study describes the outcomes of a VA homecare program. These benefits were mostly positive. They identified improved quality, reduction in costs when compared to institutions and decreased hospitalizations. This study did not make it clear whether nurse practitioners were utilized in this program (Edes, 2010).

Wajnberg, Wang, Aniff, and Kunins (2010) examined hospitalization and skilled nursing facility admissions before and after the implementation of a primary care at home program. In this retrospective study, the authors researched their participant population to identify that 61

percent had one or more hospitalizations prior to the intervention and that 38 percent had a skilled nursing facility placement prior to the intervention. Their research concluded that the use of a primary care at home program was positively identified as reducing hospitalizations and skilled nursing facility placements as well as reducing morbidity and costs (Wajnberg et al., 2010).

Beck, Arizmendi, Purnell, Fultz and Callahan (2009) conducted a correlational study comparing home visit costs, healthcare utilization, and quality. Overall this study reveals that quality and access to healthcare were improved using home visits. A reduction in hospitalization was noted. The costs of this program were increased initially; however, show a reduction in overall healthcare costs (Beck et al., 2009).

Okie (2008) performed a descriptive study regarding home delivery of primary care. This study determined that hospital admission rates were lower with primary care at home, though it also identified that the average cost per month of a primary care at home patient was significantly higher, by almost three times, than a patient receiving in-clinic treatment (Okie, 2008).

A descriptive qualitative study with semi-structured interviews was conducted by Theile et al. (2011) regarding home visit attitudes of general practitioners. This study examined the tradition or obligation of primary care at home visits. It explores in detail the type of home visits made by general practitioners in Germany. It also relates the emotional perspective when making primary care visits at home and obstacles that arise. This study brings forth a number of objects for future research. It was found that a male practitioner was more likely to make a primary care at home visit, while a female practitioner was more likely to stay longer at the visit than a male. It was also concluded that primary care home visits were “simply part of the job”

(Theile et al., 2011, p. 5) and that home visits did decrease hospitalizations and improve patient outcomes (Theile et al., 2011).

Landers, Gunn and Stange (2009) conducted a quantitative study consisting of randomly contacting primary care providers that made home visits. The surveys conducted were to establish characteristics of the primary care providers such as motivators, training and barriers. Primary care provider rankings of common home patient diagnosis were also included in this study. The primary care providers consisted of 28 physicians, six nurse practitioners and two physician assistants. The key discussion points for this study were that most primary care providers believed that the quality of care improved through home visits. Other perceptions noted were autonomy and the opportunity to work with underserved populations (Landers, Gunn, & Stange, 2009).

Edwards, Bobb and Robinson (2009) compared nurse practitioners to physicians within a home visit program in Britain. This study revealed that a nurse practitioner was more likely to write a prescription than a physician in this in home program. Nurse practitioners were likely to seek physician consultation when needed. No significance was noted in other areas such as rate of home visits made or referrals (Edwards et al., 2009).

A descriptive quantitative needs assessment survey regarding medical curriculum was conducted by Hayashi et al. (2007). This study was performed to support the need for a curriculum to teach medical residents how to perform a house call for an older adult. Attitudes and knowledge were gained by this needs assessment survey of internal medicine residents. The vast majority of the medical residents polled agreed that there was a need for primary at home visits, however they did not feel adequately prepared to make such visits. An overwhelming

amount of the residents polled did not know if Medicare would reimburse for a primary care home visit (Hayashi et al., 2007).

Peterson, Landers and Bazemore (2012) conducted a retrospective study examining the use of house calls in 2000, 2003 and 2006. The authors utilized the American Medical Association's Masterfile for their data. They found that the number of house calls increased during this time frame, but the number of physicians making house calls decreased. Some common characteristics of the physicians making house calls were; older providers, geritricians, osteopaths, residing in rural areas and having an independent practice (Peterson et al., 2012).

Empirical Support Synthesized

After reviewing all 12 studies, a number of conclusions can be made. Nurse practitioners were evaluated exclusively in two studies by Beck et al. (2009) and Ornstein et al. (2011). Nurse practitioners and physicians were evaluated together in four studies (Edwards et al., 2009; Desai et al., 2008; Landers, et al, 2009; Wajnberg et al., 2010). Physicians were evaluated exclusively in two studies by Hayashi et al. (2007) and Theile et al. (2011). One study by Edes (2010) did not specify whether nurse practitioners were included in their study.

A study by Theile et al. (2011) concluded that a male provider was more likely to make a home visit, while a female provider was more likely to stay longer at the visit. Another study by Edwards et al. (2009) concluded that a nurse practitioner was more likely than a physician to write a prescription. Provider satisfaction and autonomy are noted in a study by Landers et al. (2009). While another study identifies provider knowledge deficit of Medicare billing and home visit process is noted in a study by Hayashi et al. (2007).

A reduction in hospitalizations is noted in eight of the twelve studies (DeCherrie et al., 2012; Ornstein et al., 2011; Desai et al., 2008; Wajnberg et al., 2010; Beck et al., 2009; Okie,

2008; Edes, 2010; Theile et al., 2011). Decreased emergency visits are noted with the association of home visits in a study by Ornstein et al. in 2011. Wajnberg et al. (2010) also notes a decrease in skilled nursing facilities in association with home visits.

Improved quality of care is noted in two studies by DeCherrie et al. (2012) and Theile et al. (2011). Cost is discussed in seven of the twelve studies. Two studies indicate an increase and decrease in costs (Beck et al., 2009; Ornstein, et al., 2011). Both studies note that immediate costs increase while long term and overall costs decrease. Four studies by Decherrie et al. (2012), Desai et al. (2008), Wajnberg et al. (2010) and Edes (2010) note a cost reduction by making home visits. Another study by Okie (2008) indicates a sizable cost increase in making home visits of up to three times that of an in-clinic visit. There is a need for extensive research into the healthcare costs associated with primary care at home visits and the reduction of hospitalizations, emergency department visits and introduction of preventative services to homebound populations.

The first gap in the literature is cost. This literature review revealed contradictory information regarding reimbursement, funding and costs of providing primary care at home. Home visit primary care is well associated with improved patient health outcomes and overall cost reduction, but the initial out of pocket costs are increased. The reimbursement for a home visit varies upon the amount of time spent in the home based on acuity. The reimbursement from Medicare for an established patient in the home for one hour is similar to that of a level three in-clinic visit conducted in 15-20 minutes (Centers for Medicare & Medicaid Services [CMS], n.d.). There is then further expense incurred with a greater amount of time out of the office for travel and in-home visit time versus in-clinic visits. This leaves an unknown gap of what is the best

method or approach to providing primary care in the home. Perhaps offering home visit incentives to primary care providers would increase the number of home visits being made.

Secondly, there is a minimal amount of literature that solely addresses nurse practitioners making primary care at home visits. Thirdly, there is mention of a knowledge deficit and safety barrier in only one study. It may prove worthy to this study to investigate these findings further. Lastly, the vast amount of the data in this review was from qualitative data and is somewhat more subjective than that originating from quantitative studies.

Section 3 - Methods

Design

A quantitative quasi-experimental study design was utilized in this study. This design allowed for comparison of variables by using the educational intervention, Primary Care at Home Fact Sheet as the independent variable. This type of design was selected because it involves repeated measurements before and after an intervention. The underlying researcher hypothesis was that primary care home visits are underutilized. The purpose of this study was to examine the perceptions, barriers, knowledge and practices of nurse practitioners regarding home visits in primary care and to evaluate changes in perceptions and practices following an educational intervention. This study occurred over three phases; the first and second phases of the study used a face to face approach and the third phase occurred approximately six weeks later via email.

Description of Population

The target population was nurse practitioners. The convenience sample chosen for this study was nurse practitioners attending two conferences on pharmacology. This population was chosen due to the lack of research studies specifically naming nurse practitioners as primary care at home providers in the literature review. Many nurse practitioners already have experience in home health prior to their nurse practitioner education, which might make them an immediate relief to this quickly increasing problem. Nurse practitioners making regular primary care home visits appear to be a good fit for many reasons. One reason is that nurse practitioners were educated as nurses first. Nurses are taught to manage multiple facets of a patients care.

Inclusion criteria were nurse practitioners who were able to speak and read English and practiced in the United States. Exclusion criteria were those that were not a nurse practitioner. All nurse practitioner volunteers met the inclusion criteria and were included in this study.

To assess this population, the researcher selected two pharmacology continuing education conferences occurring over a two day period. Both two day conferences were in Kentucky, within two weeks of each other, were within 40 miles of each other, and both had the same keynote pharmacology speaker.

Outcomes

Surveys were the instruments of research measure used in this study. Established surveys regarding primary care at home questions were not identified. Due to the lack of an established survey instrument, the researcher developed three specific survey instruments for this study. The initial survey, Nurse Practitioners' Perceptions and Practices Survey was reviewed by two family nurse practitioners prior to their use in the study for reliability and content validity. No inconsistencies or bias were noted during the review. The two nurse practitioners reviewers were excluded from participating in the study. Due to the straightforward nature of the survey questions, some reliability in replicating this study is implied; for example: Have you ever made a primary care visit to a patient in their home? The type of questions were primarily yes/no or multiple choice. There were some opportunities to write in an answer if it was not provided in multiple choice.

The educational intervention, Primary Care at Home Fact Sheet (see Appendix A) was researcher developed based on key evidence-based research points from peer-reviewed journals that were identified during the literature review of primary care at home. These key points were displayed on a newsletter layout using 8 ½ by 11 inch portrait front and back color handout. The

front side of the newsletter handout housed the key points and back side included the detailed references and the primary researcher's contact information. Key points included some quotations from the journal articles such as: "homebound patients have high rates of hospitalization" (Ornstein et al., 2011, p. 554) and "data suggest that a house call program can reduce costly hospitalizations and skilled nursing facility placements" (Wajnberg et al., 2010, p. 1147). Another key point included was Medicare Current Procedural Terminology (CPT) billing codes for home visits that were directly referenced to a journal article with more specific details (Unwin & Tatum, 2011).

Procedures for Implementation

Institutional board approval through Western Kentucky University was obtained prior to data collection (see Appendix H, I & J). The educational intervention and a table poster were professionally printed in color. The initial surveys, email cards and informed consents were professionally printed in black and white.

Permission to conduct research at both pharmacology continuing education conferences was obtained prior to data collection (see Appendix K & L). The primary researcher utilized two volunteer research assistants. One research assistant was utilized at each pharmacology update conference. Both research assistants were formally educated with a Master in Nursing Education. The research assistants were educated and informed on the consent process as well as procedures for obtaining the Nurse Practitioners' Perceptions and Practices Survey by the primary researcher prior to data collection. The research assistants obtained informed consent and distributed the Nurse Practitioners' Perceptions and Practices Surveys.

The first and second phases of this study were to assess current practice and perceptions toward primary care at home. The third phase was to evaluate if a change in home visit practice behavior occurred after the implementation of an educational intervention.

The study participants were asked to complete three surveys; Nurse Practitioners' Perceptions and Practices Survey (see Appendix B), Home Visit Likelihood Post Survey (see Appendix C) and Home Visit Implementation Post Survey (see Appendix D). The Nurse Practitioners' Perceptions and Practices Survey included basic demographics questions such as; the state of residence, number of years as a nurse practitioner, and the type of practice in which they work. Other questions were primary care home visit specific. The post surveys both followed the educational intervention. The Home Visit Likelihood Post Survey consisted of one question immediately following the educational intervention, Primary Care at Home Fact Sheet. The Home Visit Implementation Post Survey was emailed to each study participant approximately six weeks after the first two surveys were completed. The questions were formatted to receive nominal and ordinal data. Most questions were multiple choice with two questions giving an open 'other' option if needed. The study participants were expected to answer the surveys honestly.

During both face to face conferences, a table was set up outside of the continuing education room. An 11x14 inch landscape color table top poster (see Appendix F) was displayed with the title of the research study. The primary researcher and one research assistant remained at the table awaiting volunteer nurse practitioners. Conference attendees volunteered for the study during 15 minute break sessions. Once a nurse practitioner volunteered, the research assistant provided and obtained informed consent (see Appendix G). Participants were advised on the informed consent process and of their right to withdraw from the study at any time.

After the informed consent was obtained, the study participant was asked to complete an email card (see Appendix E) and the Nurse Practitioners' Perceptions and Practices Survey consisting of 10 questions. After completing the email card and Nurse Practitioners' Perceptions and Practices Survey, the study participant was directed to the primary researcher who provided them with a color copy of the educational intervention, Primary Care at Home Fact Sheet. The primary researcher reviewed the key evidence-based points of the educational intervention such as the benefits of home visits and billing codes with the study participant. The study participants were asked to complete the Home Visit Likelihood Post Survey which contained one question (see Appendix C). The primary researcher compiled both surveys with no assistance from the research assistants.

The primary researcher emailed an electronic version of the Home Visit Implementation Post Survey (see Appendix D) to all 98 initial survey participants approximately six weeks after the initial survey was collected. The electronic survey utilized Qualtrics online research survey software (Qualtrics, 2013). The survey link was emailed all initial survey participants twice, one week apart.

Data Analysis and Evaluation

The purpose of this study was not only to assess current nurse practitioners' perceptions of primary care at home visits, but to evaluate relationships that may exist among variables. The collected data was first entered into an Excel spreadsheet. The data for this study was analyzed using SAS software (SAS, 2013). The analysis methods were cross tabulations, descriptive and chi-square statistics.

The initial survey findings were analyzed to assess current practices of home visits. Post surveys were analyzed for home visit behavior changes in their practice following the introduction of the educational intervention.

Protection for Human Subjects

The hard copy of the surveys were scanned and saved onto a secure server at Western Kentucky University. This data was password protected. All originals will be retained for three years in a locked filing cabinet at WKU. After three years these original hard copies will be shredded. The only identifying information may be the email address of participants. To ensure participant anonymity, email addresses will be obtained separately from the surveys. Participants were advised in the informed consent process to use a non-identifying email and of their right to withdraw from the study at any time.

Section 4 - Results

Demographics

A total sample of 98 nurse practitioners were recruited from a potential combined population of 146 conference attendees. This study sample accounted for 67 percent of the potential population. All ninety-eight nurse practitioner volunteers were eligible for this study as participants to complete the initial survey. The follow-up survey response rate was significantly lower at 37 percent of the combined sample population. Conference one had 45 attendees and conference two had 101 attendees. Thirty two (71%) of conference one attendees volunteered for the research study. Sixty six (65%) of conference two attendees volunteered for the research study (see Table 1).

Table 1

Survey Population

	Conference Attendees	Nurse Practitioners' Perceptions and Practices Survey	Home Visit Implementation Post Survey
Conference one	45	32 (71%)	17 (53%)
Conference two	101	66 (65%)	19 (29%)

A convenience sample of 98 (67%) nurse practitioner participants were recruited from two conferences. The population sample were identified to practice primarily in Kentucky (94%) with Tennessee, California, Illinois and Indiana, rounding out the other states of practice included in this study Two participants listed dual practice states of Kentucky and Indiana (see Table 2).

Table 2

States of Practice n=98

Practice States of Sample Nurse Practitioners' Perceptions and Practices Survey				
KY	TN	CA	IL	IN
92	2	1	1	2*

Note *denotes dual state practice of KY & IN: Question four results of Nurse Practitioners' Perceptions and Practices Survey

The practice setting of study participants completing the Nurse Practitioners' Perceptions and Practices Survey varied widely with private practice accounting for 35%, hospitals 19% and rural clinics 14% (see Table 3). The other 32% of the participants listed practice settings such as; university academia, home visits, Veterans Administration, community health, occupational health, research, church, emergency department, mental health, nursing home, women's health, school, hospice, camp, college health, health department and retired. Five participants failed to select a practice setting leading to missing data. Less than one percent of study participants currently practice in a home visit setting.

Table 3

Practice Setting

Setting Types of Population Practice		
34 – Private Practice	2 – Occupational Health	1 – School
19 – Hospital	1 – Research	1 – Hospice
14 – Rural Clinic	1 – Church	1 – Camp
5 – University academia	2 – Emergency Department	1 – College student health
5 – Home visits	1 – Mental Health	1 – Retired
3 – Veterans Administration	1 – Nursing Home	1 – Health department
2 – Community Health	1 – Women's Health Clinic	5– Missing data

Note. Five participants noted two practice settings: Question five results of Nurse Practitioners' Perceptions and Practices Survey

The study sample consisted of numerous types of nurse practitioners participating in the Nurse Practitioners' Perceptions and Practices Survey. The types of nurse practitioners included in the study sample were; fifty-seven family, nineteen adult, six acute care, five women's health, one psychiatric, one gerontology, one Hospice, one oncology, one pediatric, one nurse midwife, and one not specified. Four nurse practitioners were dually certified; one adult/occupational, one adult/women's health, one family and women's health and one family and pediatric (see Table 4). The follow-up survey was emailed to all 98 original face to face study participants approximately six weeks after the initial survey was administered.

Table 4

Types of Nurse Practitioners: n=98

Specific Certification Type/s		
57 – Family	19 – Adult	1 – Adult & Occupational
6 – Acute Care	5 – Women's Health	1 – Adult & Women's Health
1 – Psychiatric	1 – Gerontology	1 – Family & Women's Health
1 – Hospice	1 – Oncology	1 – Family & Pediatric
1 – Pediatric	1 – Nurse Midwife	1 – Unspecified

Note. Question one results of Nurse Practitioners' Perceptions and Practices Survey

The number of years in practice also varied in range. Study participants with 11 years or more experience accounted for 33 percent of the sample and those with one to three years of experience accounted for 31 percent of the sample (see Table 5).

Table 5

Years of Practice (n=98)

Practice years	Frequency	Percent
< 1 year	6	6%
1-3 years	30	31%
4-7 years	19	19%
8-10 years	11	11%
11+ years	32	33%

Note. Question two results from Nurse Practitioners' Perceptions and Practices Survey

Specific Results

The purpose of this study was to evaluate participants' perceptions and practices regarding primary care at home before and after the introduction of an educational intervention. Using a researcher developed survey instrument, nurse practitioners' perceptions and practices were measured after data collection. First, the data were analyzed using descriptive statistics to determine initial practices and perceptions. Then the data were further analyzed to identify any changes in practices or perceptions after the introduction of the educational intervention. The underlying researcher hypothesis was that primary care home visits are underutilized.

The following research questions guided this study:

1. What are current home visit practices among nurse practitioners?
2. Is there a difference between years of practice or previous experience and nurse practitioners willingness to make primary care at home visits?
3. Does the introduction of an educational intervention change nurse practitioners' willingness to make home visits?
4. Is there a change in home visit practices after the introduction of an educational intervention?
5. What barriers are perceived by primary care nurse practitioners that prevent home visits and is there a change in those perceptions after the introduction of an educational intervention?

Research question one. What are current home visit practices among nurse practitioners? Current home visit practices were established by the Nurse Practitioners' Perceptions and Practices Survey, question number six (see Appendix B); 'have you ever made a primary care visit?' Seventy three percent of the 98 initial study participants indicated that they

had never conducted a home visit in primary care. Twenty six participants indicated that they had made a primary care at home visit. Table 6 illustrates home visit practices in this study.

Table 6

Home Visit Practices (n=98)

	Frequency	Percent
Yes	26	27%
No	72	73%

Note. Question six results of Nurse Practitioners' Perceptions and Practices Survey

Table 7 illustrates the results of question seven from the Nurse Practitioners' Perceptions and Practices Survey; 'how many primary care at home visits have you made?' Question seven was to be answered by those study participants answering yes to question six; 'have you ever made a primary care visit to a patient in their home?'

Table 7

Number of Home Visits Made (n=26)

Number of visits	Frequency	Percent
1-5 visits	3	12%
6-15 visits	8	31%
16-30 visits	5	19%
31-50 visits	1	3%
51+ visits	9	35%

Note. Question 7 results from Nurse Practitioners' Perceptions and Practices Survey

Table 8 illustrates the results from question eight of the Nurse Practitioners' Perceptions and Practices Survey; 'have you ever considered making a primary care at home visit?' Fifty-four percent of the seventy participants that answered this question indicated that they had not considered making a primary care at home visit. Question eight of the Nurse Practitioners' Perceptions and Practices Survey was to only be answered by those participants that answered 'no' to question six; 'have you ever made a primary care visit to a patient in their home?'

Table 8

Considered Making Home Visit (n=70)

	Frequency	Percent
Yes	32	46%
No	38	54%

Note. Question eight results from Nurse Practitioners' Perceptions and Practices Survey

Lastly regarding current practices, question nine of the Nurse Practitioners' Perceptions and Practices Survey asked; can Medicare be billed for a primary care home visit made by a nurse practitioner. The correct answer to this question was yes. Table 9 illustrates the results from the 98 participants. Eighty five percent of initial study participants did know that they could bill Medicare for a primary care home visit. Eight percent answered incorrectly that Medicare could not be billed and seven percent of study participants gave no answer for this question.

Table 9

Can Medicare be Billed (n=98)

	Frequency	Percent
Yes	83	85%
No	8	8%
No answer	7	7%

Note. Results from question nine of Nurse Practitioners' Perceptions and Practices Survey

Research question two. Is there a difference between years of practice or previous experience and nurse practitioners willingness to make primary care at home visits? Table 10 illustrates nurse practitioners' years of practice range in correlation with making a primary care home visit. Eleven percent of the 98 study participants with eleven years or more years of practice as a nurse practitioner had made a primary care home visit. While the six nurse practitioners with less than one year of practice experience had never made a primary care home visit. Twenty seven percent of nurse practitioners with one to three years of practice, twenty six percent of nurse practitioners with four to seven years of practice and eighteen percent of nurse practitioners with eight to ten years of practice indicated making primary care home visits. The relation between years of practice and home visit practices was not significant, $X^2(4, N = 98) = 3.57, p\ .47$. Years of home health experience and home visits made was also not significant, $X^2(4, N = 98) = 4.27, p\ .37$. Therefore, years of practice or previous home health experience did not impact nurse practitioner's willingness to make primary care home visits.

Table 10

Years of Practice Related to Home Visit Practices (n=98)

Years of NP practice	Home Visit Practices	
Range	Yes	No
< 1 years (n=6)	0 (0%)	6 (100%)
1-3 years (n=30)	8 (27%)	22 (73%)
4-7 years (n=19)	5 (26%)	14 (74%)
8-10 years (n=11)	2 (18%)	9 (82%)
> 11 years (n=32)	11 (34%)	21 (66%)

Note. Cross tabulation table between questions two and six of Nurse Practitioners' Perceptions and Practices Survey

Table 11

Difference in Years of Practice or Previous Experience in Home Visits

Chi-square	DF	Value	Probability
Years of Practice and Home Visit Practices (n=98)	4	3.57	0.47
Home Health Experience and Home Visit Practices (n=97)	4	4.27	0.37

Note. No relation if >.05 probability – failed to reject null hypothesis

Research question three. Does the introduction of an educational intervention change nurse practitioners' willingness to make home visits? This question was answered by asking initial study participants a one question survey immediately after they were given the educational intervention. The results in Table 12 are from the initial one question follow up survey. Forty three percent stated that they would be more likely to make or increase a home visit based on the

educational intervention. Thirty three percent indicated possibly, 20 percent replied no and four percent did not answer.

Table 12

Likelihood of Making Home Visit after Educational Intervention (n=98)

	Frequency	Percent
Yes	42	43%
No	20	20%
Possibly	32	33%
Missing data	4	4%

Note. Results from Home Visit Likelihood Post Survey

Research question four. Is there a change in home visit practices after the introduction of an educational intervention? Question five of the six week follow up email survey asked the study participants if they made a primary care home visit since September of 2013. This question was used to establish whether the educational intervention influenced the study participants' decision to make primary care home visits. Table 13 illustrates the results of the 36 study participants that participated in the six week follow up email survey. Six percent of the Home Visit Implementation Post Survey participants indicated making primary care home visits since the introduction of the educational intervention. This question could not be adequately answered due to the low response rate of the six week follow up email survey.

Table 13

Made Home Visit after Educational Intervention (n=36)

	Frequency	Percent
Yes	2	6%
No	34	94%

Note. Question five results of Home Visit Implementation Post Survey

Another question used to assess for any influence that the educational intervention may have had was question six on the Home Visit Implementation Post Survey (see Appendix B). This question asked the participant if they had made inquiries to their collaborative physician and/or office manager regarding procedures needed to make home visits since September 2013. Of the 36 Home Visit Implementation Post Survey participants, eight percent of study participants indicated that they had made such inquiries. This was lower than expected, perhaps due to only allowing six weeks to make such inquiries. According to Lewin's Change Theory, the change process or refreezing takes place over time by changing policies, protocols and behaviors (Shirey, 2013). Six weeks was likely not adequate time for such changes to be made.

Research question five. What barriers are perceived by primary care nurse practitioners that prevent home visits and is there a change in those perceptions after the introduction of an educational intervention, Primary Care at Home Fact Sheet. Question 10 on the Nurse Practitioners' Perceptions and Practices Survey specifically asked the participant what barriers to making primary care home visits they perceived. The survey question gave travel time, travel expense and time out of the office as possible selections. The survey question also allowed for a write in of 'other'. The participant was allowed to mark as many barriers that applied. Fifty nine percent of the study participants chose time out of the office as a barrier. Thirty two percent

chose ‘travel time’, sixteen percent chose ‘travel expense’, three percent chose ‘safety’, two percent chose ‘revenue’, two percent chose ‘reimbursement’, two percent chose ‘productivity’, one percent chose ‘home conditions’, one percent chose ‘government’, one percent chose ‘unsure of billing method’ and five percent gave no answer. Table 14 illustrates these results.

Table 14

Perceived Barriers to Home Visits

Barrier	Frequency	Percent
Time out of office	58	46%
Travel time	32	26%
Travel expense	16	13%
Safety	3	2%
Revenue	2	2%
Reimbursement	2	2%
Productivity	2	2%
Home conditions	1	1%
Government	1	1%
Unsure of billing methods	1	1%
No answer	5	4%

Note. Study participants were allowed to name as many barriers as they perceived: Question 10 results of Nurse Practitioners’ Perceptions and Practices Survey

Validity of Results

The subjects for this study were convenience sample nurse practitioner volunteers. The population sample was strictly dependent upon conference attendance and volunteers. The initial Nurse Practitioners' Perceptions and Practices Survey sample was 65 percent of the potential sample. Conferences total attendances were 146. Ninety eight conference attendees volunteered for the study. After applying the inclusion and exclusion criteria to study volunteers, it was determined that all 98 volunteers met the criteria for this study and were included in the study results.

Initial data collection took place at two conferences that occurred two weeks apart in September 2013. The follow-up emailed survey data collection occurred approximately six weeks after the initial survey data collection. All data were analyzed using descriptive statistics with some cross tabulations and chi-square to identify relationships.

The Primary Care at Home Fact Sheet educational intervention was provided after the completion of the initial survey was researcher developed based on the hypothesis of a knowledge deficit regarding home visits. This hypothesis was recognized during a literature review of primary care at home. The surveys were researcher developed with assumed face validity due the straight forwardness of the questions and a field test using two nurse practitioners who met the inclusion and exclusion criteria.

The study participants nor research assistants were not privy to the research hypothesis in order to maintain study blindness (Portney & Watkins, 2009). Both conference groups were treated equally using the same data collection methods including the table poster and table set-up for the initial data collection. The emailed Home Visit Implementation Post Surveys were

identical and sent at the same six week follow-up interval to both initial conference nurse practitioner study participants.

Section 5- Discussion and Conclusions

Summary of Results

The clinical questions for this study were determined after the completion of a literature review of primary care at home. The literature review yielded studies that supported the need for primary care home visits. Most of the literature reviewed focused on physician based primary care home visits. Nurse practitioner based primary care home visits yielded less literature than that provided by physicians.

The underlying hypothesis in this study was that primary care home visits by nurse practitioners are underutilized. The nurse practitioner participants in this study indicated that only 27% of them had ever made a primary care home visit, thus supporting the hypothesis for this study. Of the 27% nurse practitioner participants making primary care home visits, only nine percent had made more than 50 visits. The study participants that had not made primary care at home visits were asked if they had ever considered making a primary care at home visit. Out of the 70 study participants that answered, 46% indicated that they had considered making a primary care at home visit.

There was a suspected knowledge deficit among nurse practitioners based on a study that performed a needs assessment among physicians that indicated that physicians felt inadequately trained to make home visits (Hayashi, et, al. 2007). A question was asked of the nurse practitioner study participants whether Medicare could be billed for a primary care home visit performed by a nurse practitioner. Eighty three percent selected the correct answer of ‘yes’. Eight percent answered incorrectly and seven percent gave no as an answer.

Another question of the researcher was that years of practice may have a bearing on primary care home visits made. Nurse practitioner study participants with practice years greater

than 11 responded the highest in making primary care home visits at 34 percent. While the six nurse practitioner participants with less than one year of practice had never made a primary care at home visit.

After collecting the initial survey and providing the educational intervention, Primary Care at Home Fact Sheet; the nurse practitioner study participants were asked if the newly acquired knowledge would impact their decision to make a primary care at home visit. Forty two percent responded yes and thirty two percent responded possibly indicating they would be more likely to make a primary care at home visit after the educational intervention, Primary Care at Home Fact Sheet.

Six weeks after the Nurse Practitioners' Perceptions and Practices Survey, nurse practitioner participants were surveyed again to assess if they had made a primary care home visit since September 2013. Only six percent of the 36 Home Visit Implementation Post Survey participants responded that they had made a home visit during that time frame. The barrier most indicated in making primary care home visits was 'time out of the office'; fifty nine percent of the nurse practitioner study participants selected this barrier.

Clinical Implications of Results/ Impact on Practice

The findings from this study will add to the body of knowledge regarding nurses' perceptions and practices of primary care at home. The goal of this study with an educational intervention was to provide the nurse practitioner study participants with the knowledge that a home visit could be an option for those patients that cannot physically make an in-clinic visit. The researcher believes that by increasing awareness of benefits of primary care home visits, nurse practitioners will increase the amount of home visits being made. Ultimately, increasing access of primary care to homebound patients will improve their overall patient outcomes. This

is expected to have a positive impact on the current health problem of access to primary care. It will also meet a goal of the Institute of Medicine; to integrate health care into the community (IOM, 2012). Increasing the number of nurse practitioners who make primary care home visits also supports Chronic Care Model by improving delivery system design, decision support, self-management support and community resource linkages (Strickland et al., 2010).

Limitations and Suggestions for Improvement

The first limitation to the study that was observed was the limited amount of break time at the conferences to introduce the educational intervention. The study participants actively participated in the study during break sessions of 15 minutes during the conference. This proved to be a challenge for the research assistants and the primary researcher to administer the survey and educational intervention in such a limited amount of time.

The initial survey sample size was more than adequate; however, the six week follow up email survey sample size was small with a low response rate. This sample size was too small to note statistical significance in findings or relationships.

Surveys were not linked, so, specific analysis between pre and posttest were not possible. It is a suggestion for improvement that surveys have anonymous linking codes for better cross tabulation of relationships. Surveys were researcher developed with minimal reliability acquired through pre-study peer review. A larger field test of the survey instruments would have been optimal.

There was a small amount of missing data that somewhat limited results. When reviewing the results for the Medicare billing question, it was noted that seven percent of participants gave no answer. It appeared since this was a ‘yes’ or ‘no’ question that maybe another option should have been available such as ‘other, write in’ or ‘unsure’. This may have

offered a more accurate account of the study participants' true knowledge of Medicare billing. Another suggestion for a replication study would be to exclude nurse practitioners who have ever worked in a home visit practice setting. This would increase the researchers' ability to more accurately assess primary care home visit practices.

Suggestions for Future Clinical Projects or Research

Since the results of this study supported the hypothesis that primary care home visits are underutilized by nurse practitioners, it would most likely be of value to repeat this study on a larger random scale. Another suggestion would be to allow for a longer period to elapse between the initial and follow up surveys to allow nurse practitioners more time to encounter a patient in need of a home visit. It might be beneficial to the study to allow longer than two weeks for emailed results to be returned during follow up surveys. By anonymously linking surveys, the researcher could target only those participants who have not previously responded without inundating others with survey emails when they had already completed it.

Since revenue and time out of the office were listed as primary barriers to providing primary care home visits, it would be beneficial for more research to be conducted regarding reimbursement opportunities. The Centers for Medicare and Medicaid Services provide funding for Community-based Care Transition Programs aimed at reducing readmissions to hospitals (Hansen et al., 2011). Perhaps policy and/or reimbursement changes are needed to provide nurse practitioners more incentive to provide primary care home visits.

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Appendix A

Primary Care at Home Fact Sheet - Educational Intervention – Side One

Primary Care at Home

Fact Sheet- September 2013

Improved Patient Outcomes

Providing access to primary care

"Nurse practitioners have by tradition worked with underserved populations and at-risk groups" (Amazon, 2012). Nurse practitioners seem to be a perfect fit to make home visits to those in need of primary care. Homebound elderly patients often have limited resources and are unable to travel to a primary care clinic without a large monetary cost or significant physical burden. Research concludes that the use of a primary care at home visits is positively identified in reducing hospitalizations and skilled nursing facility placements as well as reducing morbidity and costs (Wajnberg, Wang, Aniff, & Kunins, 2010). The costs associated with primary care home visits can vary. Studies show that overall healthcare costs are reduced while the per visit costs may increase when compared to clinic visits (Okie, 2008).

Primary care at home can be billed to Medicare and provides a unique glimpse into the homebound patients' life (Unwin & Tatum, 2011).

"Homebound patients have high rates of hospitalization" (Ornstein, Smith, Foer, Lopez-Cantor, & Soriano, 2011)

In 2007, "an estimated 1 million adults aged 65 and older in the United States were homebound" (Hayashi et al, 2007, p 1287)

"By 2030, 70 million U.S. citizens will be older than 65 years" (Unwin & Tatum, 2011, p. 925)

Decreased Hospitalizations

"Data suggest that a house call program can reduce costly hospitalizations and skilled nursing facility placements" (Wajnberg, Wang, Aniff, & Kunins, 2010, p. 1147)

CPT Codes for House Calls

Medicare can be billed for house calls. CPT codes for house calls are 99341 to 99350 (Unwin & Tatum, 2011, p. 930)

Unique Perspective

"House calls provide a unique perspective on a patient's life that is not available in an office visit or during hospitalization" (Unwin & Tatum, 2011, p. 925)

Appendix A continued

Primary Care at Home Fact Sheet - Educational Intervention – Side Two

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Thank you for participating in this Primary Care at Home study!

Tonya Bragg-Underwood, MSN, FNP-BC, CNE
Western Kentucky University Doctorate of Nursing Practice Student
270-576-2546

In one month you will receive an electronic survey via email from the following email address:
tonya.bragg-underwood@wku.edu
Please take a few minutes to complete this last survey so that it might maximize the research gained from this study.

Appendix B

Nurse Practitioners' Perceptions and Practices Survey

Primary Care at Home: Nurse Practitioners' Perceptions and Practices

Please circle your answers. If your answer is other, please write in your answer.

1. What type of nurse practitioner are you? (**circle all that apply**)
   a. Family b. Adult c. Nurse Midwife d. Pediatric e. Psychiatric
   f. Other _____
2. How many years have you practiced as a nurse practitioner?
   a. < 1 year b. 1-3 years c. 4-7 years d. 8-10 years e. > 11 years
3. Do you have any experience as a home health nurse prior to becoming a nurse practitioner?
   a. Yes b. No
4. What state do you practice in?
   a. KY b. IN c. TN d. OH e. other _____
5. In what setting do you practice as a nurse practitioner?
   a. Private practice b. Rural clinic c. Home visit program d. other_____
6. Have you ever made a primary care visit to a patient in their home?
   a. Yes b. No
   ** If yes, complete question 7 and skip question 8
   ** If no, complete question 8 and skip question 7
7. If yes in question 6, how many primary care at home visits have you made? (**please estimate**)
   a. 1-5 visits b. 6-15 visits c. 16-30 visits d. 31-50 e. >51
8. If no in question 6, have you ever considered making a primary care home visit?
   a. Yes b. No
9. Can Medicare be billed for a primary care home visit made by a nurse practitioner?
   a. Yes b. No
10. What do you perceive as a barrier preventing primary care home visits? (**please mark only one**)
    a. Travel time b. Travel Expense c. Time out of office d. Other_____

Please wait for the educational fact sheet to be distributed before proceeding to side 2.

Appendix C

Home Visit Likelihood Post Survey

Primary Care at Home: Nurse Practitioners' Perceptions and Practices

Please circle your answers.

1. Would you be more likely to make or increase primary care at home visits based on your new knowledge of primary care at home visits?

a. Yes b. No c. Possibly

Thank you for participating!

Appendix D

Home Visit Implementation Post Survey

Primary Care at Home: Nurse Practitioners' Perceptions and Practices

Please circle your answers. If your answer is other, please write in your answer.

1. What type of nurse practitioner are you? (**circle all that apply**)
   a. Family b. Adult c. Nurse Midwife d. Pediatric e. Psychiatric
   f. Other_____

2. How many years have you practiced as a nurse practitioner?
   a. < 1 year b. 1-3 years c. 4-7 years d. 8-10 years e. > 11 years

3. What state do you practice in?
   a. KY b. IN c. TN d. OH e. other_____

4. In what setting do you practice as a nurse practitioner?
   a. Private practice b. Rural clinic c. Home visit program d. other_____

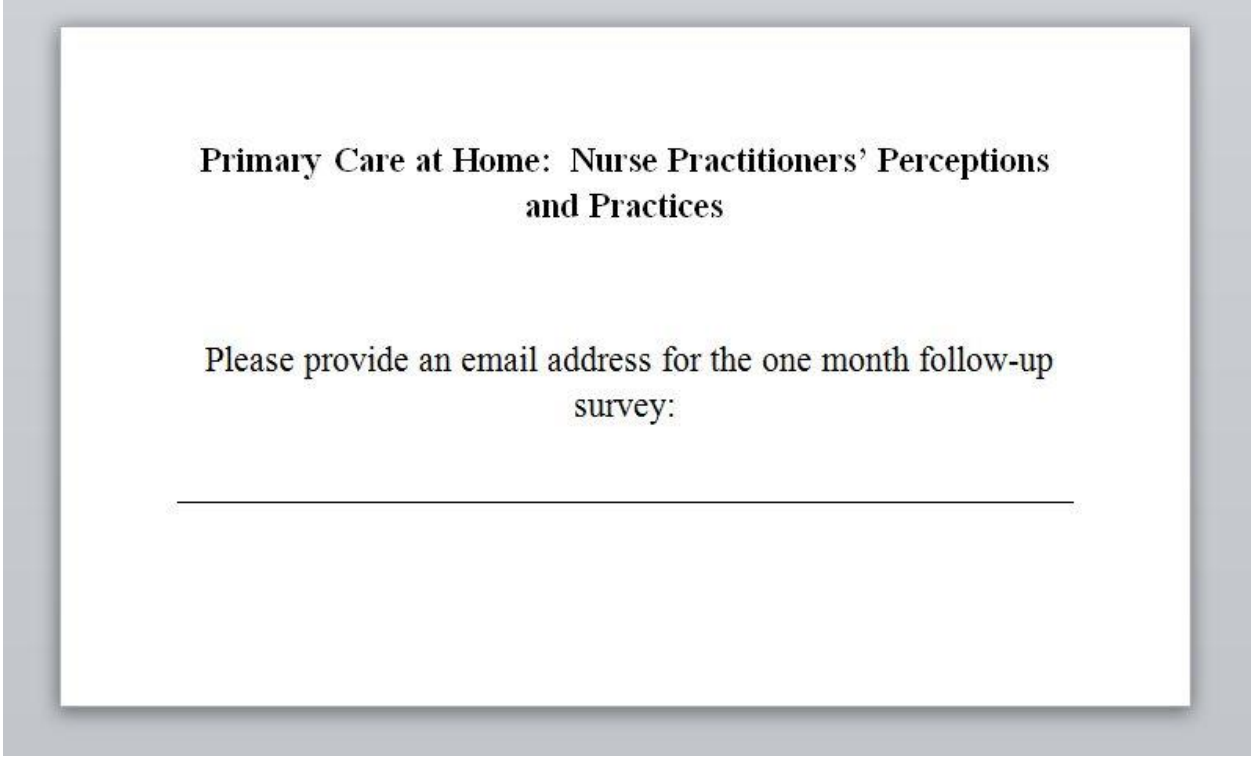
5. Have you made a primary care visit to a patient in their home since September 2013?
   a. Yes b. No

6. Have you made inquiries to your collaborative physician and/or office manager regarding procedure/s needed to make home visits since September 2013?
   a. Yes b. No

7. If you have made a home visit or made inquiries to your collaborative physician and/or office manager; what barriers are you encountering? (list all that apply)
   a. _____
   b. _____
   c. _____
   d. _____
   e. _____

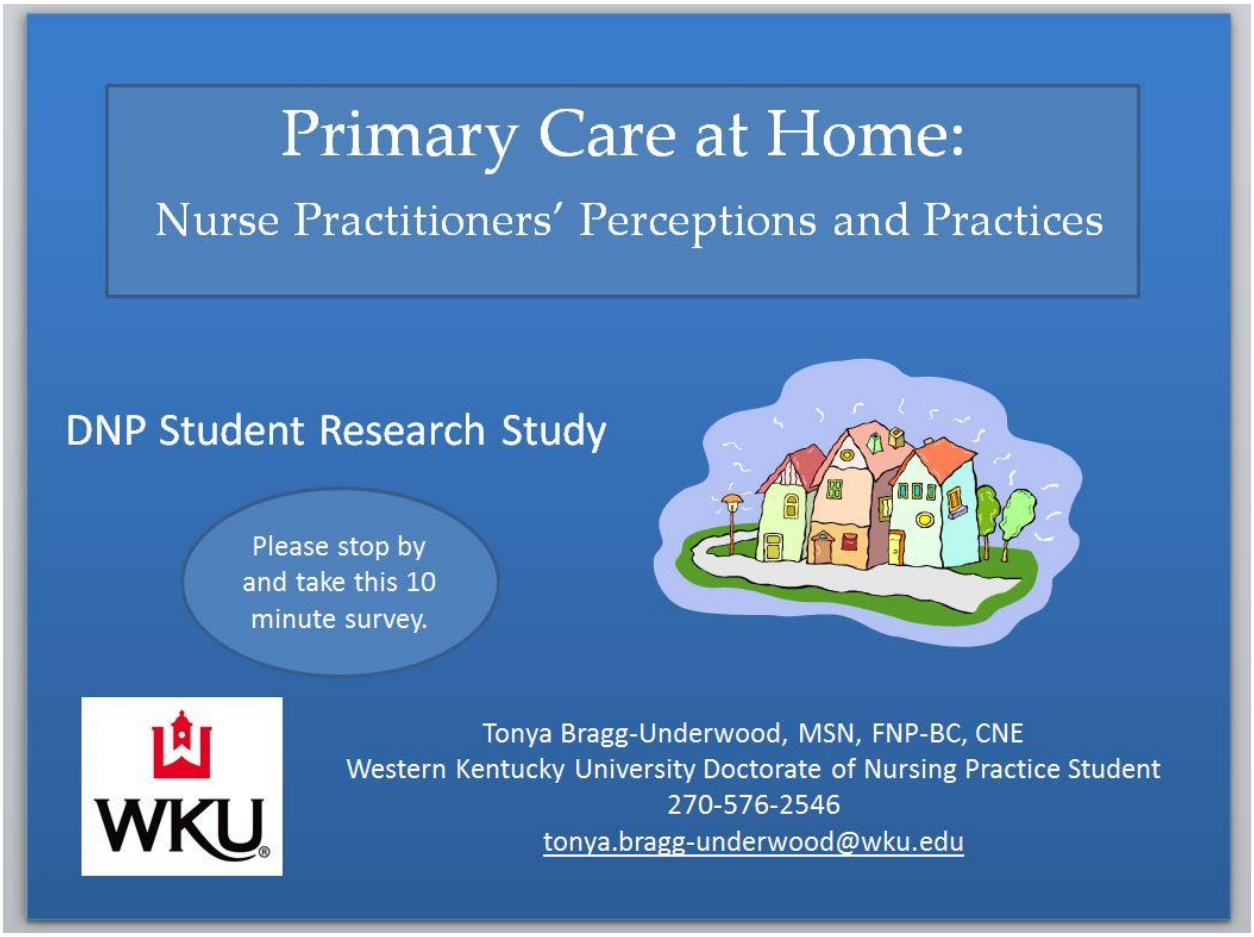
Appendix E

Email Card



Appendix F

Table Poster



Appendix G

Informed Consent Form

INFORMED CONSENT DOCUMENT

Project Title: Primary Care at Home: Nurse Practitioners' Perceptions and Practices
Investigator: Tonya Bragg-Underwood, MSN, FNP-BC, CNE; Western Kentucky University School of Nursing, 270-576-2546.

The investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask him/her any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you then decide to participate in the project, please sign on the last page of this form in the presence of the person who explained the project to you. You should be given a copy of this form to keep.

1. **Nature and Purpose of the Project:** Primary Care at Home Nurse Practitioners' Perceptions and Practices assessment to advance the speciality.

2. **Explanation of Procedures:** You will be asked to complete a 11-item survey regarding primary care at home on two different occasions. Upon completing the initial survey, you will offered snacks as a thank you token for your time. One month after the initial survey is completed; you will be emailed an electronic survey to complete from tonya.bragg-underwood@wku.edu.

3. **Discomfort and Risks:** Participation in this study requires participants to complete a survey which will only take approximately 15-20 minutes.

4. **Benefits:** The findings from this study will add to the body of knowledge regarding nurses' perceptions and practices of primary care at home.

5. **Confidentiality:** Participants will be asked to place an email address on the initial survey so that a subsequent survey can be obtained electronically. Data will be scanned and kept on the server at WKU for 3 years. Original documents will be in a locked file cabinet in the office of the primary researcher. During data recording and analyzing, data will be entered and stored on a computer that is password protected. Once data analysis is completed, the copy of the data will be deleted. Another copy will be maintained on a removal device and will be maintained in a locked file cabinet for three years. After this time, data will be erased from the media device.

6. **Refusal/Withdrawal:** Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

You understand also that it is not possible to identify all potential risks in an experimental procedure, and you believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

_____ _____
Signature of Participant Date

_____ _____
Witness Date

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT
THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY INSTITUTIONAL REVIEW BOARD
Paul Mooney, Human Protections Administrator
TELEPHONE: (270) 745-2129

WKU IRB# 14-031
Approval - 8/22/2013
End Date - 8/15/2014
Expedited
Original - 8/22/2013

Appendix H

IRB Approval Letter

INSTITUTIONAL REVIEW BOARD
OFFICE OF RESEARCH INTEGRITY

DATE:	August 22, 2013
TO:	Tonya Bragg-Underwood, MSN
FROM:	Western Kentucky University (WKU) IRB
PROJECT TITLE:	[488175-1] Primary Care at Home
REFERENCE #:	IRB 14-031
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	August 22, 2013
EXPIRATION DATE:	August 15, 2014
REVIEW TYPE:	Expedited Review

Thank you for your submission of New Project materials for this project. The Western Kentucky University (WKU) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a *signed* consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of August 15, 2014.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Paul Mooney at (270) 745-2129 or irb@wku.edu. Please include your project title and reference number in all correspondence with this committee.

Generated on IRBNet

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Western Kentucky University (WKU) IRB's records.

Appendix I

Stamped Approval Letter One

WESTERN KENTUCKY UNIVERSITY

Institutional Review Board
Continuing Review Report

If this is your third year for your Continuing Review Request, please complete a new application.

Name of Project: Primary Care at Home: Nurse Practitioners' Perceptions and Practices
Name of Researcher: Tonya Bragg-Underwood
Department: WKU – DNP Student

How many total subjects have participated in the study since its inception? #32

How many subjects have participated in the project since the last review? #32

Is your data collection with human subjects complete? ☐ Yes ☒ No

1. Has there been any change in the level of risks to human subjects? (If "Yes", please explain changes on a separate sheet). ☐ Yes ☒ No

2. Have informed consent procedures changed so as to put subjects above minimal risk? (If "Yes", please describe on a separate sheet). ☐ Yes ☒ No

3. Have any subjects withdrawn from the research due to adverse events or any unanticipated risks/problems? (If "Yes", please describe on a separate sheet). ☐ Yes ☒ No

4. Have there been any changes to the source(s) of subjects and the Selection criteria? (If "Yes", please describe on a separate sheet). ☐ Yes ☒ No

5. Have there been any changes to your research design that were not specified in your application, including the frequency, duration and location of each procedure. (If "Yes", please describe on a separate sheet). ☒ Yes ☐ No

6. Has there been any change to the way in which confidentiality of the Data is maintained? (If "Yes", please describe on a separate sheet). ☐ Yes ☒ No

7. Is there desire to extend the time line of the project? ☐ Yes ☒ No
On what date do you anticipate data collection with human subjects to be completed? _____

WKU IRB# 14-031
Approval - 9/18/2013
End Date - 8/15/2014
Expedited
Original - 8/22/2013

Appendix J

Stamped Approval Letter Two

WESTERN KENTUCKY UNIVERSITY

Institutional Review Board
Continuing Review Report

Name of Project: Primary Care at Home: Nurse Practitioners' Perceptions and Practices
Name of Researcher: Tonya Bragg-Underwood
Department: WKU – DNP Student

How many total subjects have participated in the study since its inception? #98

How many subjects have participated in the project since the last review? #66

Is your data collection with human subjects complete? ☐ Yes ☒ No

1. Has there been any change in the level of risks to human subjects? (If "Yes", please explain changes on a separate sheet). ☐ Yes ☒ No

2. Have informed consent procedures changed so as to put subjects above minimal risk? (If "Yes", please describe on a separate sheet). ☐ Yes ☒ No

3. Have any subjects withdrawn from the research due to adverse events or any unanticipated risks/problems? (If "Yes", please describe on a separate sheet). ☐ Yes ☒ No

4. Have there been any changes to the source(s) of subjects and the Selection criteria? (If "Yes", please describe on a separate sheet). ☐ Yes ☒ No

5. Have there been any changes to your research design that were not specified in your application, including the frequency, duration and location of each procedure. (If "Yes", please describe on a separate sheet). ☒ Yes ☐ No

6. Has there been any change to the way in which confidentiality of the Data is maintained? (If "Yes", please describe on a separate sheet). ☐ Yes ☒ No

7. Is there desire to extend the time line of the project? ☐ Yes ☒ No
On what date do you anticipate data collection with human subjects to be completed? _____

INSTITUTIONAL REVIEW BOARD WKU APPROVED

Requesting to add questions 5, 6 & 7 to follow-up survey

5. *Have you made a primary care visit to a patient in their home since September 2013?*
   a. *Yes* b. *No*
6. *Have you made inquiries to your collaborative physician and/or office manager regarding procedure/s needed to make home visits since September 2013?*
   a. *Yes* b. *No*
7. *If you have made a home visit or made inquiries to your collaborative physician and/or office manager; what barriers are you encountering? (list all that apply)*
   a. _____
   b. _____
   c. _____
   d. _____
   e. _____

WKU IRB# 14-031
Approval - 11/1/2013
End Date - 8/15/2014
Expedited
Original - 8/22/2013

Appendix K

Conference One Email Letter of Permission to Conduct Study

On May 30, 2013, at 6:27 AM, "Chappell, Hazel" <hwchap1@email.uky.edu> wrote:

Hi Tonya, I think we could make that work if you could pay the 25.00 fee that we have to pay we get tables set up in that area. The hospital makes us rent linens etc.

Hazel W. Chappell, RN, MSN
Assistant Director, Nursing Continuing Education
315 CON Bldg, 751 Rose Street
University of Kentucky
Lexington, KY 40536-0232
Phone: 859-323-6256
Fax: 859-323-1057
e-mail: hwchap1@uky.edu
www.ukconce.org

From: Bragg-Underwood, Tonya [mailto:tonya.bragg-underwood@wku.edu]
Sent: Wednesday, May 29, 2013 9:28 PM
To: Chappell, Hazel
Subject: Conference Request for DNP Research -- RE: FW: Save the Date / Advanced Practice Provider Conference / September 2013

Hazel,
I plan to attend this update, but I have an additional request. I am a DNP student at Western Kentucky University. Would it be possible to have a table (booth) at this conference to gather survey information for my capstone research project. My research is; Primary Care at Home: Provided by the Nurse Practitioner. Nurse practitioners are my target research population. This project would have WKU IRB approval (by conference time). This conference would be a great opportunity for me to obtain interested volunteers for my study. Thanks in advance for your consideration on this matter.

Sincerely,
Tonya Bragg-Underwood

Tonya Bragg-Underwood, MSN, APRN, CNE
Western Kentucky University
270-576-2546 (cell)
270-745-4377 (office)
tonya.bragg-underwood@wku.edu

Appendix L

Conference Two Email Letter of Permission to Conduct Study

-----Original Message-----
From: Melissa G. Grubbs [mailto:MGrubbs@emhealth.org]
Sent: Monday, September 16, 2013 5:59 AM
To: Bragg-Underwood, Tonya
Subject: FW: Pharmacology Update - Danville

Tonya,
It will be fine for you to set up a table during the breaks Friday and Saturday.
If you will plan to be available beginning at 2:30pm Friday we will have a table inside the event area ready.

Melissa G. Grubbs RT (R)
Physician Support Manager
859-239-2407
859-516-2027 (Cell)
859-239-6738 (Fax)

-----Original Message-----
From: Bragg-Underwood, Tonya [mailto:tonya.bragg-underwood@wku.edu]
Sent: Thursday, September 12, 2013 12:00 PM
To: Melissa G. Grubbs
Subject: Pharmacology Update - Danville

Hello,
I am a doctoral student at Western Kentucky University. I am conducting a research study (survey) of nurse practitioners regarding primary care at home visits. I would like to set up at this pharmacology update to obtain volunteer participants. Do you think that this would be possible?

Thank you!
Tonya Bragg-Underwood - DNP Student

WKU - School of Nursing
270-745-4377; MCHC 3327
270-576-2546 Cell
tonya.bragg-underwood@wku.edu