Exploring Home Health Nurse Decision Making: Development And Implementation Of The Visit Plan

Elliane Irani
University of Pennsylvania, elliane.irani@gmail.com

Follow this and additional works at: https://repository.upenn.edu/edissertations

Part of the Databases and Information Systems Commons, Health and Medical Administration Commons, and the Nursing Commons

Recommended Citation
https://repository.upenn.edu/edissertations/2352

This paper is posted at ScholarlyCommons. https://repository.upenn.edu/edissertations/2352
For more information, please contact repository@pobox.upenn.edu.
Exploring Home Health Nurse Decision Making: Development And Implementation Of The Visit Plan

Abstract
Demand for home health services is increasing due to the growing aging population, increasing rates of chronic conditions, and advances in health care that support the provision of many health-related services in patients’ homes. Home health agencies must adapt care delivery procedures to meet the needs of diverse and complex patients in order to keep them in their homes for as long as possible. However, it is unknown how home health nurses decide on visit patterns and implement their visit plans within the dynamic and unpredictable home health setting.

This qualitative descriptive study was guided by an adapted nurse decision-making model with a superimposed socio-ecological lens and explored the processes that home health nurses use to decide on visit patterns and implement their visit plans for newly admitted patients. Semi-structured interviews were conducted with twenty-six home health nurses from three different agencies and analyzed using directed content analysis.

Nurses reviewed the referral information but did not make any visit plan decisions before assessing the patient because the information was often incomplete and inaccurate. Following a multifactorial assessment of the patient and their post-discharge environment, nurses relied on their experience and clinical judgment and referred to their agency’s protocols to create the visit plan. Agencies had varying levels of oversight and different practices that influenced nurses’ final decisions. Nurses planned their daily itinerary based on patient acuity, preferences, and geographic location then adjusted as needed. During the care episode, nurses modified their visit plans based on changes in the patient’s clinical condition, engagement, and caregiver availability. Nurses faced challenges related to home health policy constraints; they were expected to justify patient needs and provide matched condensed care to assist patients in reaching their maximum potential.

These findings suggest strategies to improve visit planning through the use of health information technology that can facilitate the standardized transfer of patient information across care settings and support nurses in their decisions as they develop and update visit plans. By providing targeted skilled nursing visits, home health nurses can positively influence outcomes by promptly intervening to decrease hospital readmissions and optimize patient wellbeing.

Degree Type
Dissertation

Degree Name
Doctor of Philosophy (PhD)

Graduate Group
Nursing

First Advisor
Kathryn H. Bowles

This dissertation is available at ScholarlyCommons: https://repository.upenn.edu/edissertations/2352
EXPLORING HOME HEALTH NURSE DECISION MAKING:
DEVELOPMENT AND IMPLEMENTATION OF THE VISIT PLAN

Elliane Irani

A DISSERTATION
in
Nursing

Presented to the Faculties of the University of Pennsylvania
in
Partial Fulfillment of the Requirements for the
Degree of Doctor of Philosophy
2017

Supervisor of Dissertation
Kathryn H. Bowles, PhD, RN, FAAN, FACMI
van Ameringen Chair in Nursing Excellence
Professor of Nursing

Graduate Group Chairperson
Eileen T. Lake, PhD, RN, FAAN
Jessie M. Scott Term Chair in Nursing and Health Policy
Associate Professor of Sociology

Dissertation Committee:
Kathryn H. Bowles, Professor of Nursing
Pamela Z. Cacchione, Associate Professor of Geropsychiatric Nursing
Karen B. Hirschman, Research Associate Professor of Nursing
EXPLORING HOME HEALTH NURSE DECISION MAKING: DEVELOPMENT AND IMPLEMENTATION OF THE VISIT PLAN

COPYRIGHT

2017

Elliane Irani

This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License

To view a copy of this license, visit

https://creativecommons.org/licenses/by-nc-sa/3.0/us/
I dedicate this dissertation to my loving mother, Therese Bejjani, who through her unconditional love has taught me how to be a successful person and mother. Without her unwavering support, I would not have been able to start my family while successfully completing my dissertation work. I can never thank her enough!
ACKNOWLEDGMENTS

Multiple individuals provided me with invaluable support and guidance throughout my doctoral journey and to whom I am grateful. First I would like to acknowledge my dissertation committee for their contribution to my dissertation work. I would like to express my deepest gratitude to my dissertation chair, Dr. Kathryn H. Bowles who offered continuous guidance and mentorship to complete my dissertation study. Dr. Bowles was of tremendous help as I was designing my study and facilitated my introduction to the agencies. I also thank her for her persistently efficient and constructive feedback. I am very grateful to Dr. Karen B. Hirschman, my dissertation committee member, for her methodological expertise and her close assistance in the data analysis process. I am appreciative to our multiple meetings where she pushed me to think further about my data and see the bigger picture. I would also like to thank Dr. Pamela Z. Cacchione, my dissertation committee member, for supporting me since I joined the Center for Integrative Science of Aging and started participating in the geroscholar seminars that she led. Dr. Cacchione provided me with generous advice and guidance that enabled me to see this work accomplished.

Thank you to Drs. Janet A. Deatrick and Adriana Perez for serving as proposal and dissertation readers and sharing their research expertise and rich knowledge. Many thanks to every member of the Advanced Qualitative Collective who engaged with me in an open dialogue about my dissertation study, from its planning to the reporting of the findings. I would also like to thank the twenty-six nurses who offered their time to participate in my study and shared with me their experiences practicing in home health.
They are true champions, fully dedicated to the care and wellbeing of their patients, despite all the challenges they face during their home visits.

I would like to express gratitude to all faculty and staff at the school of nursing who supported me during my doctoral education. My sincere thanks to Drs. Rosemary Carol Polomano and Therese S. Richmond who were my academic advisors for the first two years of the program. I would like to especially thank Dr. Richmond for her generous mentorship, kind understanding, and tireless support in helping me rethink my dissertation focus and my research trajectory. I am also grateful to the guidance and encouragement of Dr. Marilyn S. Sommers, especially during the first two years of my doctoral education. The training that I received through the weekly group discussions (as part of the training grant) and her two doctoral seminar courses were invaluable to my development as a person and a researcher. I would like to acknowledge Drs. Eileen T. Lake and Connie B. Scanga, two exceptional educators with whom I collaborated as a Teaching Assistant. They provided me with many opportunities to develop and refine my teaching skills.

I would like to acknowledge the financial support that I received during this journey: the National Institute of Nursing Research, Ruth L. Kirschstein National Research Service Award (NRSA) in Research on Vulnerable Women, Children, and Families (T32NR007100; Principal Investigator, Dr. Marilyn S. Sommers) funded the first two years of my doctoral education and the Frank Morgan Jones grant covered the expenses of my dissertation study.

Last but not least, the support of my family and friends was indispensable to my completion of the doctoral program. No words can express my deep love and gratitude
for my husband Pierre, who has learned about nursing and home health care more than any other person outside of Nursing. Together, we reached exceptional accomplishments during the past five years, and most importantly started our little precious family.

Anthony and Ayden shared with me long days and nights at the school and at home, reading, writing, planning, and completing my dissertation work. My brother Elias, with his sense of humor and his caring demeanor always boosted my morale and made me laugh on my hardest days. My father Charbel, and my mother Therese, raised me to become the person I am today. Thank you to my friends from Lebanon, Philip and Nour who were always there for me and believed in my potential. I am very grateful to Dr. Houry Puzantian who provided me with continuous support and feedback to develop professionally. I am grateful to the support of my fellow doctoral students, especially the friendships I have developed with Terri-Ann Kelly, Hyejin Kim, Tim Sowicz, and Miranda Varrasse. Together we made it because we Care to Change the World!
ABSTRACT

EXPLORING HOME HEALTH NURSE DECISION MAKING: DEVELOPMENT AND IMPLEMENTATION OF THE VISIT PLAN

Elliane Irani
Kathryn H. Bowles

Demand for home health services is increasing due to the growing aging population, increasing rates of chronic conditions, and advances in health care that support the provision of many health-related services in patients’ homes. Home health agencies must adapt care delivery procedures to meet the needs of diverse and complex patients in order to keep them in their homes for as long as possible. However, it is unknown how home health nurses decide on visit patterns and implement their visit plans within the dynamic and unpredictable home health setting.

This qualitative descriptive study was guided by an adapted nurse decision-making model with a superimposed socio-ecological lens and explored the processes that home health nurses use to decide on visit patterns and implement their visit plans for newly admitted patients. Semi-structured interviews were conducted with twenty-six home health nurses from three different agencies and analyzed using directed content analysis.

Nurses reviewed the referral information but did not make any visit plan decisions before assessing the patient because the information was often incomplete and inaccurate. Following a multifactorial assessment of the patient and their post-discharge environment, nurses relied on their experience and clinical judgment and referred to their agency’s protocols to create the visit plan. Agencies had varying levels of oversight and
different practices that influenced nurses’ final decisions. Nurses planned their daily itinerary based on patient acuity, preferences, and geographic location then adjusted as needed. During the care episode, nurses modified their visit plans based on changes in the patient’s clinical condition, engagement, and caregiver availability. Nurses faced challenges related to home health policy constraints; they were expected to justify patient needs and provide matched condensed care to assist patients in reaching their maximum potential.

These findings suggest strategies to improve visit planning through the use of health information technology that can facilitate the standardized transfer of patient information across care settings and support nurses in their decisions as they develop and update visit plans. By providing targeted skilled nursing visits, home health nurses can positively influence outcomes by promptly intervening to decrease hospital readmissions and optimize patient wellbeing.
TABLE OF CONTENTS

ACKNOWLEDGMENTS .................................................................................................................. IV

ABSTRACT .................................................................................................................................... VII

TABLE OF CONTENTS ................................................................................................................ IX

LIST OF TABLES .......................................................................................................................... XII

LIST OF FIGURES ....................................................................................................................... XIII

CHAPTER I: INTRODUCTION .................................................................................................... 1

Overview and Significance ............................................................................................................ 1
  Gaps in Home Health Visit Planning .......................................................................................... 2
  Home Health Payment System Overview .................................................................................. 4

Purpose of the Study ..................................................................................................................... 5

Implications .................................................................................................................................. 6

CHAPTER II: BACKGROUND AND REVIEW OF LITERATURE ........................................... 8

Home Health Care: A Rapidly Growing Field .......................................................................... 8
  Introduction ............................................................................................................................... 8
  Eligibility Criteria for Home Health Services ...................................................................... 9
  Initial Visit and Plan of Care ................................................................................................. 10
  Payment System in Home Health .......................................................................................... 11
  Impact of the PPS on Care Delivery ..................................................................................... 13
  Visit Intensity and Frontloading ............................................................................................ 15
  Home Health Work Environment ......................................................................................... 17

Decision Making and Nursing Practice ..................................................................................... 21
  Overview ................................................................................................................................. 21
  Decision-making Process: Analysis and Intuition ................................................................. 22
  Nurse Decision Making in the Home Health Setting ............................................................ 25

Conceptual Framework ............................................................................................................. 30
  Central Concept: Nurse Decision Making .......................................................................... 31
  Influencing Factors ............................................................................................................... 32

Conclusion .................................................................................................................................. 34
CHAPTER III: STUDY DESIGN AND METHODOLOGY ........................................ 36
  Study Design ........................................................................................................ 36
  Setting .................................................................................................................. 36
  Sampling ............................................................................................................... 37
  Procedure ............................................................................................................. 39
  Data Collection ................................................................................................... 42
  Data Management ............................................................................................... 46
  Data Analysis ...................................................................................................... 46
  Rigor ....................................................................................................................... 51
  Protection of Human Subjects .............................................................................. 53

CHAPTER IV: RESULTS ......................................................................................... 61
  Sample Characteristics ....................................................................................... 61
    Overview ............................................................................................................ 61
    Sample Description ......................................................................................... 62
  Process of Plan Development (Aim 1) ............................................................... 63
    Situation Awareness ......................................................................................... 64
    Nurse Decision Making .................................................................................. 68
    Decision ............................................................................................................ 70
    Influencing factors ........................................................................................... 71
    Summary of Aim 1 ............................................................................................ 94
  Process of Plan Implementation (Aim 2) ............................................................ 94
    Daily Schedule .................................................................................................. 95
    Patient Encounter ............................................................................................. 105
    Making Changes to the Visit Plan .................................................................. 110
    Summary of Aim 2 ........................................................................................... 114

Summary of the Overall Findings ....................................................................... 115

CHAPTER V ........................................................................................................... 117

Discussion and Implications of Main Findings .................................................. 117
  Revision to the Conceptual Framework ............................................................ 117
  Nurse Decision Making and Assessment: a Recursive and Multifactorial Process .... 118
  Intersection Between Influencing Factors ........................................................ 122
  Decreasing Hospital Readmissions .................................................................. 127
  Care coordination and Information Sharing Across Care Settings .................... 129

Study Limitations .................................................................................................. 132

Recommendations for Future Research ............................................................. 133
  Improving the Transfer of Patient Information ................................................. 133
  Developing Clinical Decision Support Systems ................................................. 134
# Home Health as a Short-term Teaching Environment

Conclusion

APPENDICES

Appendix A: Form CMS-485

Appendix B: Clinical functional, and service utilization information from OASIS determines patients’ home health resource group

Appendix C: Interview Guide for Visiting Nurses

Appendix D: Revised Interview Guide for Visiting Nurses

Appendix E: Interview Guide for Nurse Managers

Appendix F: Codes and Categories

REFERENCES
LIST OF TABLES

**Table 1**: Inclusion and Exclusion Criteria .......................................................... 38

**Table 2**: Recruitment Procedure at Each Agency .................................................. 40

**Table 3**: Categories Derived from the Conceptual Framework ............................... 47

**Table 4**: Categories Derived from the Conceptual Framework by Specific Aim ........... 48

**Table 5**: Participant Roles within each Agency ..................................................... 61

**Table 6**: Demographic and Professional Characteristics ........................................ 62
LIST OF FIGURES

Figure 1: Nurse Decision-making Process Regarding Visit Intensity in Home Health Care
........................................................................................................................................ 31

Figure 2: Revised Model of Nurse Decision-making Process Regarding Visit Intensity in Home Health Care
........................................................................................................................................ 118
CHAPTER I: INTRODUCTION

Home health (HH) agencies provide skilled care to homebound patients requiring the services of a skilled health care professional, such as registered nurses, physical, occupational and speech language therapists, and social workers. Skilled care includes teaching, assessment, and other interventions related to the management of acute and chronic conditions on a temporary, intermittent basis to homebound beneficiaries (Centers for Medicare and Medicaid Services [CMS], 2015a). Demand for HH services is increasing due to the growing aging population, the increasing rate of chronic conditions, and the advances in health care that support the provision of many health-related services in patients’ homes. Therefore, HH agencies need to adapt their organizational structures and care delivery procedures to meet the needs of their complex patient population.

During the initial HH visit, the nurse conducts a comprehensive patient assessment and develops the plan of care according to the patient’s skilled need for the rest of the HH episode. Despite patients requiring different levels of care and attention, otherwise known as intensity, there are no decision support tools to guide the timing and visit patterns based on individual patient need. It is unknown how HH nurses determine the amount and frequency of their patient visits and what factors influence their decision-making process. The purpose of this study is to explore HH nurses’ decision making regarding the planning and implementation of the visit plan for newly admitted HH patients.

Overview and Significance

The number of HH agencies is on the rise, increasing by 65% since 2000 (Medicare Payment Advisory Commission [MedPAC], 2017). In 2014, there were 12,461
HH agencies serving 3.4 million Medicare beneficiaries at a cost of 17.9 billion U.S. dollars (MedPAC, 2016a). The goals of skilled HH care include: helping patients restore, maintain, or slow the decline of their functional capacity. HH clinicians assist patients to remain in the community for as long as possible by preventing hospitalizations or admissions to long-term care facilities (The National Association for Home Care & Hospice [NAHC], 2010). The role of HH care in preventing rehospitalizations is critical because hospitalizations negatively affect patients and their families by increasing physical and emotional burden (Cornette et al., 2006; Covinsky et al., 2003; Graf, 2006; Naylor, Stephens, Bowles, & Bixby, 2005). On a societal level, rehospitalizations also contribute to the rising costs of healthcare. The Medicare Payment Advisory Commission reported that Medicare expenditures for potentially preventable rehospitalizations may be as high as $12 billion a year and 78% of 15-day readmissions are thought to be potentially preventable (MedPAC, 2007).

**Gaps in Home Health Visit Planning**

The first two weeks following discharge from hospital to home are a critical time as patients often experience *post-hospital syndrome*, defined as a temporary period of greater risk for poor health outcomes (Krumholz, 2013). Half of unplanned hospital readmissions among HH patients occur within the first two weeks following admission to HH (Rosati & Huang, 2007), further highlighting the critical role of HH clinicians who provide targeted care by continuously monitoring patients and being attentive to early cues of health decline. It is essential for HH clinicians to focus on high risk patients to promptly intervene before the patient deteriorates to the stage where a hospital admission is unavoidable. HH clinicians need to provide adequate care to address their patients’
clinical status and health needs. However, it is not clear how HH nurses consistently determine “high risk” or what evidence-based tools they use to categorize their patients’ risk, and thus develop the visit plan.

Seeing patients early following their discharge from the hospital to home is crucial to preventing rehospitalization and avoiding further decline in the patients’ health status. The Center for Medicare and Medicaid Services (CMS)-mandated conditions of participation for HH agencies require that all patients admitted to HH care receive an initial assessment within 48 hours of referral or within 48 hours of the patient’s return home from an inpatient facility (CMS, 2015b). The first HH visit is the first encounter with the patient where the nurse conducts an initial thorough patient assessment and develops the plan of care for the rest of the HH care episode. In subsequent visits, nurses provide intensive teaching and close monitoring to detect early cues of health decline before a hospital readmission becomes inevitable.

Providing more visits in the first few weeks of the HH episode allows clinicians to maximize teaching opportunities and identify issues early. This practice has been referred to in the literature as frontloading, initially defined as providing 60% of the planned visits within the first two weeks of the HH episode (Rogers, Perlic, & Madigan, 2007). In their seminal study, Rogers and colleagues (2007) established that frontloading decreased the rates of hospital readmissions for patients with heart failure by 23.6%. Frontloading is recognized by the Home Health Quality Improvement (HHQI) National Campaign as one of the best practices to decrease the rates of avoidable hospital readmissions (Esslinger, Kevech, Anderson, & Knowles, 2008). More recently, a group of experts defined frontloading as providing “at least one nursing visit on the day of or day after hospital
discharge and at least three nursing visits (including the first visit) in the first posthospital week.” (Murtaugh et al., 2016, p. 5)

The number of subsequent skilled nursing visits also has an impact on the rates of hospital readmissions. HH Medicare beneficiaries receiving at least four skilled nursing visits have lower rates of hospital readmissions following their discharge from HH agencies than patients who received fewer nursing visits per HH episode (O'Connor, Hanlon, Naylor, & Bowles, 2015). Although initial intensive assessment is key for early interventions, maintaining a steady pattern of visits can also have an impact on patient outcomes. However, it is still unknown how HH nurses decide on the amount and frequency of visits delivered to HH patients to ensure optimal care delivery and health outcomes. Throughout this dissertation, the term visit intensity will refer to the amount and frequency of visits that patients receive throughout a HH episode. Visit intensity is not restricted to the first two weeks of the HH episode (which is known as frontloading); it is more inclusive and includes visits planned for the whole 60-day episode. Visit length has also been viewed as a way to operationalize visit intensity (Adams, DeFrates, & Travis, 2000), however, visit length will not be the focus of this study.

**Home Health Payment System Overview**

Medicare is the largest single payer of HH care services (NAHC, 2010). In October 2000, the Prospective Payment System (PPS) replaced the previous fee-for-service Medicare payment system (MedPAC, 2016b). Now, Medicare reimburses HH agencies for the care they provide in 60-day care episodes versus by the visit. Payment for patients receiving five or more visits is determined based on their Home Health Resource Group (HHRG) (Komisar, 2002). Upon admission, patients are classified into
one of 153 HHRGs based on the initial comprehensive, in-home assessment of their clinical and functional statuses, and their need for skilled services. HH agencies that provide five or more nursing or physical therapy visits receive the full episodic payment, and are expected to manage all expenses related to care including skilled services and routine medical supplies with that payment. Medicare provides additional or outlier payments for patients who require unusually higher levels of care that exceed a threshold dollar amount. HH agencies are paid the national per visit amount by discipline for patients visited less than five times.

Following the initial assessment, HH nurses decide on the amount and frequency of patient visits and include it in the patient’s plan of care that is signed by the primary physician caring for the patient. The plan of care includes the visit plan, which specifies the amount, frequency, and expected duration in weeks of the visits for each discipline. This study focused on the visit plan for skilled nursing visits and did not explore the visit intensity of other disciplines. Since HH agencies are reimbursed for the episode of care versus by the visit, nurses’ decision making regarding visit intensity may be influenced by the need to minimize cost. Little is known about the information that nurses use to determine visit intensity and how they are influenced by the episodic reimbursement from CMS or other factors.

**Purpose of the Study**

While there is some available data on the impact of visit intensity on outcomes for HH care in the United States (US) (O’Connor et al., 2015; O’Connor et al., 2014), empirical evidence about the decision-making process of HH nurses regarding visit
intensity planning does not exist. Nor are there empirically-derived tools to guide HH nurses decisions regarding the amount and frequency of skilled nursing visits for newly admitted patients. It is likely that HH nurses base their decisions on tradition and agency-specific protocols. Yet HH nurses are required to make these decisions daily for each newly admitted patient, which annually equates to 6.6 million decisions (MedPAC, 2016a). While little is known about the underlying phenomenon, these decisions are potentially costly because they have an impact on patients’ and agencies’ outcomes (MedPAC, 2016a; O’Connor et al., 2014). Concurrently, HH agencies strive to maintain the most effective and efficient way to provide care for patients.

There are two specific aims for this qualitative descriptive study designed to explore HH nurses’ decision making regarding the planning of nursing visits and the process of implementing the visit plan to achieve optimal care delivery for HH patients:

**Aim 1:** To describe the influencing factors and process of decision making through which HH nurses determine visit intensity over a HH episode for newly admitted HH patients.

**Aim 2:** To describe how HH nurses implement the visit plan for newly admitted HH patients.

**Implications**

This will be the first study to understand the decisions involved in determining the amount and frequency of skilled nursing visits over a HH episode for newly admitted patients. Information gained will provide insight for future development of a clinical decision support tool to guide HH nurses in determining visit intensity once they admit new patients. By providing optimal and targeted care to the growing HH population, HH
nurses can have an impact on outcomes by promptly intervening to decrease hospital readmissions, improve patient function, and optimize patient wellbeing.

This chapter (Chapter I) contains a general overview of the study including the background and significance, a definition of visit intensity and visit plan, the gaps in the literature, the purpose and implications of the study. Chapter II will present a review of the literature about HH, including the eligibility criteria and process of care, the payment system and its impact on care provision, the HH practice environment, the concept of decision making as it relates to nursing practice and the existing evidence about decision making in the HH setting. Finally, a conceptual framework will be presented to guide the study. Chapter III will describe the methods for the study, including the study design, research protocol, data collection and analysis, rigor, and human subject considerations. Chapter IV will present a description of the sample and the results of the study by specific aim. Lastly, Chapter V will present the revised model and provide a discussion of the main findings and their implications on patient care and nursing practice, followed by the study limitations and recommendations for future research.
CHAPTER II: BACKGROUND AND REVIEW OF LITERATURE

Home Health Care: A Rapidly Growing Field

Introduction

Home health (HH) care is a regulated program of care that is delivered in the patient’s home. HH clinicians provide skilled care to improve or maintain their patients’ current conditions or in other cases to prevent or slow further decline of the patients’ conditions. Most HH care is reimbursed by Medicare or Medicaid and is provided to older patients; 85.6% of HH episodes are for adults 65 years or older (Murtaugh et al., 2009). Among a national sample of patients receiving HH services as a Medicare benefit, 37% live alone, 32% have two or more functional limitations, and 85% have 3 or more chronic conditions (Avalere Health, 2015). Murtaugh and colleagues (2009) reported that the mean and median length of stay in HH increases with each additional condition. Their findings further illuminate the care planning and management challenges that current health care providers face when caring for a rapidly ageing population.

Chronic conditions are a major public health concern. The prevalence of having multiple chronic conditions increases with age, exceeding 80% among persons aged 85 years or older (Salive, 2013). Older adults with chronic conditions account for a substantial portion in all Medicare expenditures (Thorpe & Howard, 2006). Medical advancements that improve screening and chronic disease management practices are coupled with longevity. Hence, the proportion of individuals living with multiple chronic conditions is gradually increasing, and the number of Americans with chronic conditions is predicted to increase by 37 percent between 2000 and 2030 (G. F. Anderson, 2010).
People with multiple chronic conditions require greater health resource utilization (Charlson, Charlson, Briggs, & Hollenberg, 2007; Condelius, Edberg, Jakobsson, & Hallberg, 2008; Lehnert et al., 2011; Starfield, Lemke, Herbert, Pavlovich, & Anderson, 2005; Wolff, Starfield, & Anderson, 2002) and are particularly vulnerable to fragmented and suboptimal care due to lack of care coordination and continuity (Buck et al., 2012; Maeng, Martsolf, Scanlon, & Christianson, 2012).

Given that most HH care is provided to older patients with multiple chronic conditions (Avalere Health, 2015; Murtaugh et al., 2009), the rate of patient referral to HH services will gradually increase with the increased prevalence of older adults and chronic conditions (G. F. Anderson, 2010; Salive, 2013). Concurrently, the Patient Protection and Affordable Care Act (ACA) (Public Law 111-148) encourages the provision of home and community based services to keep people in their communities for as long as possible. This increase in need for HH services will engender further considerations for HH agencies to provide optimal care to its growing population with limited resources. One area for improvement relates to the assignment of skilled nursing visits. Skilled nursing visits, a central phenomenon of this study, include patient education, medication reconciliation, assessment, case management, or procedures such as wound, ostomy or catheter care.

**Eligibility Criteria for Home Health Services**

To be eligible for HH care under Medicare rules and regulations, a patient must meet the following criteria: (1) be under the care of a physician, (2) be unable to leave his or her home without taxing effort, and (3) require intermittent skilled care provided by a nurse and/or physical therapist. The second condition requires a patient to be *homebound*;
the patient is permitted to leave home occasionally (such as going to the barber or attending a funeral) but is expected to be heavily relying on the assistance of other people or assistive devices (CMS, 2015a). The third condition, requiring intermittent skilled care, means that care is needed on fewer than seven days each week or less than eight hours of each day. The patient must require the skills of a nurse and/or therapist for the safe and effective provision of care. Patient teaching can be considered a skilled service if it is essential to the treatment and recovery of the patient (CMS, 2015a).

Initial Visit and Plan of Care

On the initial assessment visit, the HH nurse verifies that the patient meets all conditions for the HH episode to be eligible for Medicare reimbursement. It is expected that the physician who certifies the patient’s eligibility for Medicare HH services will also establish and sign the plan of care. In the majority of cases, during that initial visit, the nurse completes the comprehensive patient assessment, identifies the needs of the patient, and develops the plan of care accordingly.

The plan of care, also known as Form CMS-485, includes all pertinent diagnoses, the types of supplies and equipment needed, the frequency of skilled visits to be made, and goals for timely discharge or referral (See Appendix A). The skilled visit orders written by HH nurses usually indicate a range in the number, frequency, and expected duration in weeks of the visits for each discipline, and may include “as needed” or “PRN” orders accompanied by a description of the situation that would require an occasional visit. For example, an order might indicate that skilled nursing visits are needed three to four times per week for two weeks followed by two to three times per week for three weeks. It is up to the nurse to determine the actual frequency of the visits, with leeway to
visit up to four times per week during the first two weeks and only two times per week for weeks 3-5 of the episode. It is this variation, based on nurse decision making that is the focus of this study. The general plan of care is reviewed and signed by the physician upon admission and at least every 60 days. Any change in the frequency of services beyond the range outlined on the form CMS-485 must be authorized by the physician by securing a written or verbal order.

Often, patients are admitted to HH care from acute care settings. These patients have unique needs as they recover from their recent hospital stay. Krumholz (2013) suggested that patients recently discharged from hospitals often experience a post-hospital syndrome, which is a temporary period of greater risk for poor health outcomes. This higher risk can be attributed to the physiological and allostatic stress that they have experienced in the hospital as they were receiving treatment for their illness exacerbation or injury. Patients are admitted to the hospital for different reasons, and at the time of their discharge to HH, they have diverse needs based on their functional status and the complexity of their necessary interventions. It is not clear what factors guide nurses in developing the initial plan of care and how they decide on their subsequent visit patterns.

Payment System in Home Health

Following the rapid expansion of HH utilization, Congress passed the Balanced Budget Act in 1997 which called for the development and implementation of a prospective payment system (PPS) for Medicare HH services (Komisar, 2002). In October 2000, HH agencies transitioned to a PPS, where Medicare reimburses agencies prospectively for services and supplies at fixed predetermined rates of 60-day care episodes. This episodic payment system depends on the initial comprehensive assessment
and the completion of the Outcome and Assessment Information Set (OASIS) after the first visit.

OASIS is a comprehensive assessment tool that is completed by HH nurses (or physical therapists) at specific time points following a patient’s admission to HH. The nurse must complete the Start of Care (SOC) OASIS within five calendar days following the start of care date. The OASIS data items are usually incorporated into the agency’s documentation process. Other versions of the OASIS data set are required to be completed upon resumption of care following a hospital admission, if the patient is recertified for a new episode, transferred to another setting, discharged from HH, or deceased. OASIS is also completed if the patient has any change of health status given its implications on payment. Data are collected at these time points to evaluate whether appropriate progress toward desired outcomes is achieved.

Completing an accurate initial assessment of the patient is critical because it is the basis for the agency’s reimbursement by Medicare and may serve as the source of information for nurses’ decision making. As presented in Chapter I, following the initial assessment, patients are assigned to a Home Health Resource Group (HHRG). HHRGs indicate the extent of the patient’s need for HH care and drive reimbursement. The greater the need for services, the higher expected costs, and the more Medicare will pay for the episode. The HHRG classification is based on the information gathered from the initial OASIS assessment of the patient’s clinical and functional statuses, and service need (See Appendix B).

HH agencies are paid the national per visit amount by discipline for patients visited four times or less per HH episode. This is also known as LUPA (Low Utilization
Payment Adjustment). Most often, patients receive five or more visits and payment follows a case mix methodology and is adjusted according to their HHRG. HH agencies then receive full episodic payment based on their patients’ clinical severity, functional capacity, and service utilization (Komisar, 2002; MedPAC, 2016b). The clinical dimension has three levels of severity (low, moderate, and high) and considers whether the patient has certain conditions such as wounds, pressure ulcers, vision limitations, bowel incontinence, or injectable drug use (See Appendix B). The functional dimension is also based on three levels (low, moderate, and high) and indicates the ability of the patient to perform certain activities of daily living such as dressing, toileting, bathing and transferring. The third dimension is service utilization and is based on the number of therapy visits that the patient is expected to receive. The combination of severity levels for each of the three dimensions determines a patient’s HHRG. Each HHRG is assigned a national cost weight that will indicate the payment that HH agencies will receive. This national cost weight reflects the average cost of providing HH care for a patient in each of the HHRGs, and is adjusted for local geographic factors. HH agencies may receive an outlier payment for patients who require unusually costly services in a 60-day care episode. Using that fixed predetermined payment, HH agencies are expected to cover all expenses related to care including skilled services and routine medical supplies.

**Impact of the PPS on Care Delivery**

The PPS in HH has a great impact on how HH agencies deliver care to their patients. There is some evidence that limiting reimbursement for HH services can lead to decreased utilization (McCall, Petersons, Moore, & Korb, 2003; McCall, Komisar, Petersons, & Moore, 2001; Murkofsky, Phillips, McCarthy, Davis, & Hamel, 2003).
During the Medicare interim payment system (which was put in place after passage of the Balanced Budget Act and until the PPS was implemented), patients were 2.9 times more likely to be discharged from HH within the first 60 days of admission when compared to patients who received services prior to the interim payment system (Han & Remsburg, 2006). Moreover, since the implementation of the PPS the number of visits per HH user over a year period was reduced by more than half (73 visits on average before the PPS compared to 33 visits in 2015) (MedPAC, 2017).

One retrospective analysis found that patients with a longer length of stay and more skilled nursing visits can result in financial loss for the agency under the PPS (Livesay, Hanson, Anderson, & Oelschlaeger, 2003). Several HH agencies were not able to sustain this financial change and went out of business during the interim payment system period. The number of HH agencies fell dramatically from 10,917 in 1997 to 7,528 in 2000 (MedPAC, 2017). Agencies at greater risk of closure tended to be smaller, newer, providing more visits per patient, and operating in areas with more competitor agencies (Porell, Liu, & Brungo, 2006). HH agencies needed to adjust their care delivery and match their patients’ characteristics to avoid service over utilization and remain financially viable under the PPS. Despite the significance of providing targeted and efficient care, there is a lack of standards or evidence-based guidelines to guide the practice of visit intensity and frontloading in HH, which potentially results in variation in the patterns of care delivered by different agencies (Murtaugh et al., 2009; Murtaugh, McCall, Moore, & Meadow, 2003).
Visit Intensity and Frontloading

HH nurses are proficient in chronic disease management; they assist patients to remain in the community by preventing hospitalization, rehospitalization, or admission to long-term care facilities (NAHC, 2010). HH nurses have exceptional patient assessment skills and are well positioned to detect early decline in a patient’s condition. They are in continuous communication with their patients’ providers to timely report any change in health status and implement adjustments to the plan of care to avoid hospital readmissions. HH agencies are always looking for strategies to reduce preventable hospital readmissions. Frontloading is recognized by the Home Health Quality Improvement (HHQI) National Campaign as one of the best practices to decrease the rates of avoidable hospital readmissions (Esslinger et al., 2008) and is defined as providing 60% of the planned visits within the first two weeks of the HH episode (Rogers et al., 2007). A more recent definition of frontloading was offered by a team of experts in HH and heart failure. The panel suggested that frontloading consists of providing “early and intensive” skilled nursing visits and is specifically defined as providing “at least one nursing visit on the day of or day after hospital discharge and at least three nursing visits (including the first visit) in the first posthospital week.” (Murtaugh et al., 2016, p. 5)

In a recently published article, the authors synthesized the current literature related to frontloading and visit intensity in the HH setting (O’Connor et al., 2014). They identified only two studies examining the practice of frontloading (Markley, Sabharwal, Wang, Bigbee, & Whitmire, 2012; Rogers et al., 2007) and five studies investigating visit intensity in the HH setting (Adams et al., 2000; Brega, Jordan, & Schlenker, 2003; Madigan et al., 2012; O'Sullivan & Volicer, 1997; Riggs, Madigan, & Fortinsky, 2011).
Overall, frontloading was shown to decrease the rate of hospital readmissions. By providing more visits in the first few weeks of the HH episode, nurses can maximize teaching opportunities and timely identify early signs of deterioration to intervene accordingly. However, frontloading was not effective for patients with insulin-dependent diabetes (Rogers et al., 2007). The study had a small sample size and the clinical outcome measures used for the two groups of patients (heart failure and diabetes) were not comparable. In the second study, frontloading was one of many other best practice strategies that were used to reduce 30-day hospital readmissions so the authors could not identify one strategy that more strongly impacted readmissions (Markley et al., 2012).

The investigators of the five studies that examined visit intensity used different methods to calculate visit intensity and had different operational definitions for low versus high visit intensity. Outcome measures also varied, which complicates the comparison between studies. Interestingly, Adams and colleagues (2000) proposed that total direct time (visit length) is as important, if not more so than the number of skilled visits provided to HH patients. By looking at visit intensity and total direct time, we can have a more comprehensive understanding about resource utilization. The number of subsequent skilled nursing visits also has an impact on the rates of hospital readmissions (O'Connor et al., 2015). HH Medicare beneficiaries receiving at least four skilled nursing visits have lower rates of hospital readmissions following their discharge from HH agencies than patients who received fewer nursing visits per HH episode.

Center for Medicare and Medicaid Services (CMS) mandates that all patients admitted to HH receive an initial assessment within 48 hours of referral or within 48 hours of the patient’s return home from an inpatient facility (CMS, 2015b). However,
there are no requirements or recommendations for subsequent visits. Although a timely initial assessment is key for early interventions, maintaining a steady pattern of visits can also affect patient outcomes. Identifying the appropriate time and sequence for the initial nursing visits is critical, especially for patients with pressing healthcare needs. About half of unplanned hospital readmissions are happening within the first two weeks following admission to HH (Rosati & Huang, 2007). It is not clear what patient profile will most likely benefit from frontloading as defined by Rogers and colleagues (2007), and whether this is the best definition of frontloading. The next step would be to explore what factors HH nurses consider as they decide on their visit intensity. The proposed study will fill this gap.

**Home Health Work Environment**

Nurses’ work environment has a great impact on how nurses plan for and deliver care to patients. For instance, higher organizational support for nursing practice enhances the processes and quality of care, improving patient outcomes (Aiken, Clarke, Sloane, & International Hospital Outcomes Research Consortium, 2002; Flynn, 2007). Although the research on nurse work environment has been predominantly conducted in hospital settings, studies focused on HH work environment suggest that HH nurses value comparable work environment attributes as hospital-based nurses (Ellenbecker, Boylan, & Samia, 2006; Flynn, 2007; Tullai-McGuinness, Riggs, & Farag, 2011). The valued characteristics of the HH work environment range from the support that nurses get from their managers and peers to the logistics of visiting patients in their homes. Following the implementation of the PPS, HH nurses are expected to develop a comprehensive plan of care based on their initial assessment of patients’ needs. The plan of care will ensure
quality care to maximize patient outcomes while minimizing the number of HH visits a patient receives (M. A. Anderson, Clarke, Helms, & Foreman, 2005). This has led to a role change of HH nurses, providing less direct care to more indirect coordination of services (Samia, Ellenbecker, Friedman, & Dick, 2012). However, this change in the practice environment resulted in making HH nurses the least satisfied group of nurses (Sochalski, 2004). This is due to the increased work demands and the incentives to limit the amount of direct patient contact. HH nurses find their job satisfying mainly because of the therapeutic relationships they build with their patients (Ellenbecker et al., 2006; Mensik, 2007). In fact, knowing the patient and family is essential to plan their care and make appropriate clinical decisions (Smith Higuchi, Christensen, & Terpstra, 2002).

Other stressors exist in all HH agencies, however, some stressors are more pronounced in some agencies than others. One of the major contributors to stress is the limited opportunity for shared decision making and the insufficient support from managers and peers. HH nurses perceive limited opportunities to influence change in decisions impacting their practice (Samia et al., 2012; Tullai-McGuinness, Madigan, & Anthony, 2005). For example, some express a lack of control over decisions made by their managers regarding scheduling patient visits (Samia et al., 2012). Having a flexible work schedule and being able to self-schedule patients is an important attribute of HH nurses’ autonomy and satisfaction (Ellenbecker et al., 2006; Mensik, 2007; Samia et al., 2012). Experts recommend a participatory governance model that supports shared decision making based on the principals of partnership, equity, ownership, and accountability (Ellenbecker et al., 2006; Tullai-McGuinness et al., 2005). Therefore, HH nurses should be encouraged to represent their peers in strategic planning and standing
committees in order to advocate for adjusting their productivity requirements (Ellenbecker et al., 2006).

HH nurses voice concerns related to high productivity requirements and case overload where they have to manage the needs of more patients within a practice environment that they do not control (Samia et al., 2012). Concerns about increased caseloads are less pronounced in high-quality agencies with adequate staffing (Tullai-McGuinness et al., 2011). Additionally, nurses are concerned with the amount of time spent on documentation that results in billing (M. A. Anderson et al., 2005; Ellenbecker et al., 2006). Nurses aim to develop and maintain a therapeutic relationship with their patients, which is an essential element of care continuity. However, given the nature of assigning patients in HH, nurses struggle to keep their patients due to the nurses’ unpredictable schedules (Byrne, Sims-Gould, Frazee, & Martin-Matthews, 2011). This can compromise patient safety especially when nurses have to cover their colleagues’ patients whose needs and response to treatment are unfamiliar with (Berland, Holm, Gundersen, & Bentsen, 2012). Having good relations with colleagues can facilitate communications about patients’ established plan of care in order to ensure a “team approach” for continuity (Samia et al., 2012). Other miscellaneous challenges that HH nurses report include the difficulty they experience in extreme weather, excess travelling and car maintenance, distractions encountered during a patient’s visit such as frequent phone interruptions, and unanticipated patient needs (Ellenbecker et al., 2006; Samia et al., 2012).

HH nurses rely on their managers who act as the liaison for any clinical, operational, or logistical question or problem (Tullai-McGuinness et al., 2011).
Therefore, having supportive managers can greatly empower nurses and assist them in gaining confidence and progressing towards autonomy, as well as safeguarding patient safety (Berland et al., 2012; Ellenbecker et al., 2006; Tullai-McGuinness et al., 2011). Empowerment enables HH nurses to utilize their knowledge and skills to respond to complex patient needs (Williamson, 2007). Also, HH nurses value collegial support within the isolated nature of the HH practice environment where communication opportunities between nurses are often limited. Nurses view their colleagues as consultants whose feedback can enhance confidence in making appropriate clinical decisions. Colleagues can validate concerns and suggest alternative patient care strategies (Ellenbecker et al., 2006; Smith Higuchi et al., 2002). Limited peer support in situations where nurses feel they are not adequately prepared can affect patient safety (Berland et al., 2012). Although HH nurses are viewed as independent providers in the patient’s home, they are expected to act as a team player to coordinate with other health care providers and ensure an appropriate plan of care for the patient.

There is a growing demand for HH services. The demand for nurses working in that field is projected to grow at twice the rate of nurses overall (Sochalski, 2004). Therefore, it is essential to monitor the HH work environment to ensure job satisfaction for HH nurses. HH agencies with good work environment have lower rates of nurse burnout and better patient outcomes, including lower rates of hospital readmissions and higher rates of discharges to community living arrangements (Jarrin, Flynn, Lake, & Aiken, 2014). As a result, linking workforce and practice environment to service delivery patterns is important because it has great implications for patient outcomes and will lead to improving the workplace to ensure quality care for all HH patients. At this point, it is
not clear how particular characteristics of the HH environment influence nurse decision making regarding planning visit intensity and the implementation of the visit plan. Also, there is a lack of empirical evidence about the specific barriers that nurses face while following their plan of care and the facilitators to implementing it; most of these challenges and facilitators are supported by anecdotal information.

**Decision Making and Nursing Practice**

**Overview**

Decision making is a central process of nursing practice. Nurses routinely make decisions in clinical and nonclinical situations that influence patient care and patient outcomes. HH nurses are charged with making decisions about the care of patients and the allocation of HH services. They commonly rely on standardized criteria such as the OASIS to assess and evaluate patients’ needs. Like any other clinical setting, the HH environment is very dynamic and at times unpredictable. Despite the use of a standardized assessment tool, there is no empirical evidence about how HH nurses decide on resource allocation (mainly visit intensity) based on their assessment and evaluation. Hence, the standardized assessment is not accompanied with a clinical decision support tool to guide nurses’ interpretation of their assessment findings. In this section, the concept of decision making will be presented as a complex process used by practicing nurses, including the different factors that influence it. The current literature on nurse decision making in the HH setting will be also summarized.

Decision making is fundamental to human beings and as a concept is primarily derived from the fields of psychology and economics. Multiple factors contribute to the
decision-making process and decision makers often experience uncertainty as they evaluate the cues they consider under a specific situation (Johansen & O'Brien, 2015). In the nursing literature, decision making is also referred to as clinical judgment (Tanner, 2006), or clinical reasoning (Simmons, 2010). In fact, clinical reasoning is embedded into the decision-making process. Decision making implies having a certain outcome or endpoint (which is the decision). Clinical reasoning is about the cognitive processes used to think about patient information and make decisions (Jones, 1988). In this study, the term decision making is used to encompass both the process (cognition and thinking) and the product (decision).

Decision-making Process: Analysis and Intuition

Decision making is a complex process that involves analysis and intuition, which are inherently connected. In the nursing literature, two models of clinical decision making have been commonly discussed: the information processing model (analytical model) and the intuitive-humanist model (intuitive model) (Banning, 2008).

The information processing model consists of a hypothetico-deductive scientific approach to decision making (Banning, 2008). The decision-making process is a rational approach that involves recognizing cues (following the initial encounter with the patient), generating hypotheses (based on the gathered information and depending on previous experience and education), interpreting cues and evaluating whether they contribute to the original hypothesis, and evaluating hypotheses to confirm or reject original hypotheses. For instance, based on this model nurses can use decision trees to evaluate potential outcomes. This analytical model depends on the nurse’s experience, accuracy of knowledge, and cues available to make a decision. This becomes a challenge in a HH
setting where decisions are often made with missing information, sometimes due to failure to transfer information between settings (Alhuwail & Koru, 2016; Egan et al., 2009).

As for the intuitive-humanist model, intuition plays a central role, and there is an emphasis on the interplay between experience, knowledge, and their impact on the clinical decision-making process (Banning, 2008). Hypothesis generation and evaluation are not used as part of the reasoning process. The experienced nurse, as opposed to the novice nurse does not rely on analytical strategies to link his/her knowledge and assessment of the situation to the appropriate decision. The expert nurse identifies patterns encountered across patients. These patterns become the guide for an intuitive approach to clinical decision making. The drawback of following this model is the possibility that certain patterns might have been previously associated with unsuccessful decisions, and further careful consideration would have been required to reach better decisions. This might be evident in a HH setting where nurses follow the agency’s tradition of deciding on visit intensity for patients without referring to evidence-based tools.

Heuristic strategies are partial explanations of how nurses arrive at intuitive judgments (Cioffi, 1997). Heuristics are most commonly used under uncertain circumstances (Tversky & Kahneman, 1974), especially by experienced nurses as they evaluate clinical situations. Nurses intuitively assess the extent to which a situation is similar to previous situations. Nurses rely on pattern recognition and previous experiences to interpret certain clinical situations and make decisions. Experienced nurses develop mental shortcuts that will facilitate their reasoning and help them convert
complex situations to simple ones based on previous recollections. As previously outlined, heuristics are useful as they enable prompt decision making but sometimes they lead to systematic erroneous conclusions due to “thumbnail views” (Simmons, 2010; Tversky & Kahneman, 1974).

O’Neill, Dluhy, and Chin (2005) proposed a multidimensional clinical decision-making model based upon a computerized decision support system that uses information processing and pattern recognition as a basis of decision making. This model was developed from a synthesis of evidence from the nursing literature and from the novice to expert clinical reasoning model (O’Neill et al., 2005). The model presents the multidimensional aspect of nurses’ clinical decision-making process and starts with patient specific pre-encounter data that nurses refer to in order to anticipate risk to the patient and reduce it by implementing appropriate nursing care. The next feature of the model is the nursing standards of care that are derived from the institution’s policies and procedures. Other elements that influence clinical decision making are situational patient factors and salient concerns, such as a change in patient status, that trigger hypothesis generation, evaluation, and subsequent nursing action. The hypothesis selection process also involves matching the current information to recognized patterns that the nurse has been previously exposed to. This model does not capture the dynamic nature of the clinical decision-making process and does not include all factors that influence clinical decision making such as nurse educational background, type of practice environment, and range of clinical decisions. As it relates to the proposed study, nurse decision making is not only centered on a change in a patient status, rather stems from the baseline condition of the patient upon admission to HH. Some of the factors presented in this model can
guide HH nurses’ decision making as they allocate resources and plan for visit intensity. For instance, nurses can use pre-encounter data and baseline assessment data to predict the amount of care that a patient will require over the HH episode and limit the risk for adverse health outcomes. However, pre-encounter data is not always comprehensive and significant information about the patient is often omitted or not adequately relayed to HH nurses.

**Nurse Decision Making in the Home Health Setting**

The literature on nurse decision making is mostly focused on decisions about patient conditions and treatment in acute care settings. In HH in particular, the literature on decision making as it relates to services allocation, specifically skilled visits is limited and cannot guide us in developing a clinical decision support tool to guide visit intensity planning. Four studies explored the decision-making process within the HH setting and three of them primarily addressed resource allocation and visit planning. The latter studies were conducted in Canada, and so given the differences in policies and population, their findings may not be applicable to the U.S. HH setting.

In a qualitative study, Smith Higuchi and colleagues (2002) explored the clinical decision making challenges that HH nurses faced in their practice. The investigators collected data through home visit observations, formal and informal meetings, and in-depth interviews with 16 HH nurses. The challenges that HH nurses encountered fall under four different categories: (1) developing person-centered care plans, (2) practice environment challenges, (3) gaining confidence in clinical decision making, and (4) ethical challenges. First, nurses voiced a concern as they established a therapeutic relationship with their patients; they wanted to understand the expectations of their
patients to set realistic and attainable person-centered goals. Also they wanted to ensure the availability of health care resources to match their patients’ needs. They often struggled as they were developing and updating their patient’s plan of care, and coordinating and scheduling services. Although this study was conducted in Canada where policies guiding HH practice are different from the US, HH nurses in the US have similar concerns as they are often torn between working within budget and policy constraints and providing timely and optimal care for patients.

The second category of challenges that HH nurses described relates to the practice environment (Smith Higuchi et al., 2002). Nurses often had limited opportunities to consult with their colleagues, especially due to the communication and technological restrictions. Although HH nurses are expected to be autonomous and self-directed decision makers, they greatly value collegial support within the confinement of the isolated nature of the home care practice environment. Third, nurses shared a concern about gaining confidence in clinical decision making especially when most of them did not receive formal education about HH in their nursing programs. They overcame this challenge by transferring the experience they gained from other practice settings to HH. Finally, nurses faced ethical dilemmas such as the conflict between their provision of safe and competent care and their patients' decision to live at risk. These ethical situations were often discussed with other health care professionals during informal and formal meetings. It is essential for the nurses to know their patients and set common goals to make appropriate clinical decisions and develop an acceptable plan of care.

Egan and colleagues (2009) interviewed hospital-based and community-based case managers in Ontario to understand their decision-making process and information
needs related to care planning and the allocation of HH services for older adults recovering from hip fracture. The interview questions were aimed to uncover the information used by case managers when assessing the home care needs of patients and the sources of information that inform their decision-making. Case managers considered patient characteristics, environment and availability of services within their region. They started with the same basic information for all patients then evaluated when they need to individualize the care plan. Also, the investigators asked case managers what information that is not currently available to them they would find useful to assist them in their decision-making process. Case managers wanted information about the patient’s physical environment upon discharge, the presence of comorbidities, and the health status of the patient’s spouse, partner, or caregiver. Case managers also shared the importance of knowing the patient’s functional status prior to the hip fracture to set attainable functional goals. The authors suggested that expert decision making can be modelled if it arises from the development of mental templates based on experience. Hence, decision support tools can be developed to mirror this expert decision-making process and guide future nurses without completely replacing clinical judgment. The interviewed case managers developed an expert decision-making process and valued their non-standardized approach to gather the needed information. The investigators concluded that further research is required to determine whether decision support tools can provide similar decisional quality, and if so, when and how to maintain the ability of the skilled case manager to challenge these decisions.

Stajduhar and colleagues (2011) explored HH nurses’ decision making about the need for and amount of service by patients and families at the end of life. Although this
study was not conducted in a HH setting as defined in my proposed study, the
investigators explore a central concept of my study: decision making about service need
and allocation. This study design and results can inform my research strategy and will
guide the discussion of my findings in the future. Qualitative data were collected in the
form of narrative descriptions and in-person interviews with nurses who have practiced in
HH in Canada for more than one year. Nurses revealed the characteristics of decision-
making, including knowing the client and family through assessments, building
relationships with clients and families, knowing the resources of HH, nursing expertise,
and approaches to care. Nurses reported that the assessment and evaluation of the
“overall picture” including physical, functional, emotional, and cognitive needs of their
patients as well as the family caregiver capacity to give the needed care guided their
decisions. HH nurses also considered the patient’s physical environment and the family
dynamics to determine overall needs and capacity. During the decision-making process,
the HH nurse draws on previous experiences to determine care needs. Nurses discussed
using personal intuition, experience, knowledge, and consulting with other health
professionals to collect information. They also emphasized the establishment of trust on
the part of the patient and the importance of building relationships with the patient and
family to get to know them and gather more information about their needs and capacity.
Nurses referred to the contextual factors influencing their decision making, such as
working in an under-resourced environment and managing increasingly large workloads.

Based on the findings of this qualitative study (Stajduhar et al., 2011), the same
group of researchers developed the Palliative Care: Determining Next Home Care Nurse
Visit decision guide and instructions to support clinicians with next visit decisions for
patients receiving palliative care services from a particular program in Canada (Roberts, McLeod, Stajduhar, Webber, & Milne, 2014). These findings may not be transferable to the US because of the differences in the HH systems. Nevertheless, these findings in general are consistent with research on nurse decision making in clinical practice, reflecting the foundation required for HH nurses’ decision making in general.

The single study identified in the US that focused on nurse decision making in the HH setting dates back to 1997 (O'Neill, 1997) and therefore took place in a different HH practice environment than today. The study aimed at identifying the types of decisions made by HH nurses by reviewing 100 records of patients cared for by 10 HH nurses with various level of work experience in HH. Nurses made autonomous and collaborative decisions to address their patients’ needs. Nurses often decided on the level of care needed, such as increasing nursing visits or requesting visits from other disciplines. They also made recommendations regarding the nature of care provided, specifically as it relates to symptom management. Collaborative decisions consisted of instances where nurses sought help from other health professionals (the physician or a nurse specialist) to determine the best plan of care. This was an exploratory study and did not describe what factors nurses consider as they make their decisions. Nevertheless, this study highlights the importance of clinical decision support tools, especially for novice HH nurses who need additional guidance and rely more than experienced HH nurses on collaboration to determine the most appropriate care decisions.
Conceptual Framework

This section presents the proposed conceptual framework that guided the study. The framework consists of an adapted Model of Decision Making (Johansen & O'Brien, 2015) with the addition of a socio-ecological lens (McLeroy, Bibeau, Steckler, & Glanz, 1988) to illustrate the different levels of factors (micro, meso, and macro) that can influence HH nurse decision making. The original decision-making model was developed as part of a concept analysis using Rodgers’ evolitional method of concept development. The original model proposed by Johansen and O'Brien (2015) depicts the antecedents, attributes and consequences of decision making. The authors postulate that decision making is a cyclical and recursive process whereby decisions are reevaluated to be either reaffirmed or replaced with other options by engaging in a new decision-making process (Noone, 2002; Simmons, 2010). Following is the nurse decision-making model which guided the study.
Central Concept: Nurse Decision Making

Nurses use interrelated patterns of reasoning in their decision-making process: analytic processes and intuition (Tanner, 2006). Following the analytical strategy, nurses use a process of gathering information, weighing alternatives, making a final decision, then evaluating their decision. On the other hand, experienced nurses use heuristics to...
reason about complex issues. Using heuristics alone as a decision making strategy may lead to inaccurate conclusions because important information can be easily overlooked or discarded (Simmons, 2010). The use of formal strategies (analysis or information processing) or informal strategies (intuition or heuristics) depends on the situation at hand and the experience of the nurse. In the proposed model, decision making is a shared function of both strategies: intuition/heuristics and analytical processing. It involves both the weighing of alternative options and the use of intuition. This is consistent with previous work on decision making where analytical and intuitive thinking are perceived as two poles on the same continuum (Johansen & O'Brien, 2015).

The awareness of a particular situation prompts the nurse to engage in the decision-making process and make a decision. The description of the proposed model illustrated in Figure 1 (above) is as follows: during the initial HH visit of a newly admitted patient, the nurse assesses the patient and becomes aware of their needs. Then, the nurse uses intuitive and/or analytical strategies to decide on the visit intensity that is required for the patient to receive optimal and adequate skilled care. After determining visit intensity and throughout the HH episode, the nurse re-evaluates the visit plan based on the patient’s health status. If the nurse identifies a deterioration in the patient’s condition, a new situation is perceived and warrants the nurse to engage in a new decision-making process to revise the initial plan.

**Influencing Factors**

There are multiple factors that influence decision making in nursing practice, specifically decisions about resource allocation in a HH setting. Socio-ecological models have the ability to account for multidimensional interactions that are non-linear and/or
reciprocal. Therefore, from a socio-ecological perspective, there are micro (nurse- and patient-level) factors, meso (HH agency-level) factors, and macro (policy/payer) factors that influence the processes of developing and implementing a visit plan.

At the micro (nurse and patient) level, decision making is influenced by the internal decision-maker’s variables and information-based variables (sources of information used to make decisions such as pre-encounter data and patient assessment data) (Thompson, 1999). Decision making rests on knowing the self, including personal values and professional scope of practice (Gillespie & Paterson, 2009). Also, decision making is influenced by prior experiences with similar situations (Tversky & Kahneman, 1974), the knowledge necessary to evaluate the situation at hand and weigh potential alternatives, and the complexity of the situation. More specifically, decision making relies on knowing the patient and their response to treatments (Simmons, 2010). When a nurse knows the patient’s typical pattern of response, certain aspects of the situation stand out and draw the nurse’s attention (Tanner, 2006). From the initial visit, nurses cannot know their patients’ patterns of response because little information transfers with the patient when they are admitted to HH (Alhuwail & Koru, 2016; Egan et al., 2009). This can further complicate nurses’ decisions regarding visit intensity.

At the meso (HH agency) level, decision making is influenced by the organizational context or the HH agency culture of practice (Tanner, 2006). As already mentioned in the Home Health Work Environment section, the work environment including support from managers and colleagues, adequate staffing, agency policies, and degree of collaborative practice has an influence on the degree to which nurses see themselves as active decision makers. At the macro (policy/payer) level, the HH
regulations and payment system that were previously described (in the section about the
impact of the PPS on care delivery) can influence nurse decision making but lie outside
of their immediate control. For instance, following the implementation of the PPS, the
number of visits per HH user over a year period was reduced by more than half
(MedPAC, 2017).

Conclusion

Every day HH nurses in more than 12,000 HH agencies admit new patients across
the US. These nurses are deciding on health resource allocation for patients with complex
needs. The initial HH visit is critical because it has an impact on the patient’s plan of
care, as well as the agency’s reimbursement. During this initial visit, nurses conduct a
comprehensive patient assessment that will serve as the basis for payment and create a
care plan according to patients’ unique needs. Currently, CMS mandates that Medicare
and Medicaid patients admitted to HH services receive an initial assessment within the
first 48 hours of their hospital discharge or referral to HH. However, there are no other
requirements for the amount and frequency of subsequent visits.

Among HH patients who have a hospital readmission, half of them are
rehospitalized within 14 days of their admission to HH and 28% are rehospitalized within
15 to 30 days (Rosati & Huang, 2007). HH agencies serve patients with diverse clinical
complexity (Murtaugh et al., 2009), but some of these hospital readmissions may be
prevented by timely and appropriately targeting patients at greater risk (Markley et al.,
2012; McDonald, King, Moodie, & Feldman, 2008). There is a gap in the literature
regarding the process of determining the patterns of skilled nursing visits. It is not clear
what factors nurses consider when they decide on the amount and frequency of their visits. Also, given that HH care is provided in a very dynamic and unpredictable setting, nurses face several challenges as they develop and implement their visit plans. Exploring HH nurses’ decision making in that regard is critical as our healthcare system strives to improve care coordination, limit unnecessary care, and reduce costly and avoidable hospitalizations. By identifying the best practices for HH nursing visit intensity, patients will benefit from smooth transitions back to their community and will be able to remain in their homes for as long as possible.
CHAPTER III: STUDY DESIGN AND METHODOLOGY

Study Design

The purpose of this study was to explore HH nurses’ decision making regarding the planning of nursing visits and the process of implementing the visit plan. The proposed study followed a naturalistic paradigm and employed a qualitative descriptive design to gather new knowledge about HH visit planning and provide a rich, straight description of the complex decision-making process embedded within nursing practice (Neergaard, Olesen, Andersen, & Sondergaard, 2009; Sandelowski, 2010; Sullivan-Bolyai, Bova, & Harper, 2005). “Qualitative description is especially amenable to obtaining straight and largely unadorned (i.e., minimally theorized or otherwise transformed or spun) answers to questions of special relevance to practitioners and policy makers.” (Sandelowski, 2000, p. 337) Therefore, this qualitative approach allowed for the exploration of how HH nurses develop and implement the visit plan for their patients. The conceptual framework guiding this study consisted of an adapted model of decision making with a superimposed socio-ecological lens that illustrates the different contextual factors influencing the process of visit plan development and implementation (refer to Figure 1, p. 31).

Setting

Three urban HH agencies located in three Mid-Atlantic states and serving a diverse patient population participated in this study: Agency 1 is affiliated with a larger health system and provides care for eligible patients following their discharge from one of the system’s three hospitals. Agency 2 is a large private for-profit corporation that
includes multiple HH agencies; nurses from two offices participated in the study. Agency 3 is a large not-for-profit home and community-based health care agency. Dissertation Chair, Dr. Kathryn Bowles has connections with all three agencies and facilitated introduction to the sites.

**Sampling**

A purposeful sampling approach was employed to recruit participants and provide a rich understanding of nurses’ decision-making process by targeting nurses with diverse roles and levels of experience. Given that the main concept explored in this study is clear and not too interpretative, it was thought that a sample of 30 HH nurses (up to 10 nurses from each of the participating HH agencies) would suffice to reach saturation (Morse, 2015). Following challenges in recruitment, a snowballing approach was used to ensure adequate number of participants in the study until saturation of the data was achieved (Sandelowski, 1995). Participants were asked after the interview to present the study to their colleagues who might be interested. Participants would then share their colleagues’ contact information with the Principal Investigator (PI) for formal screening and study presentation.

Following initial contact with the research coordinator at Agency 2, the PI concluded that nurses’ decisions regarding visit intensity are influenced by a central team of nurses called Medicare Case Managers (MCMs). MCM is a role specific to Agency 2 where Registered Nurses are only responsible for reviewing nurses’ documentation and making recommendations at the start of care to ascertain compliance with Medicare’s rules and regulations. MCMs work remotely and may cover multiple offices at the same
time. Therefore, with the approval of the dissertation committee, the sample at that agency included nurses providing home visits as well as MCMs.

As iterative analysis progressed, we sought managers from each of the three agencies to contribute to meaning saturation (Hennink, Kaiser, & Marconi, 2016). Based on the preliminary analysis of initial interviews, nurses holding managerial positions within each agency serve critical roles in guiding nurses’ decisions regarding visit intensity. Hence, their perspective would enrich the overall description of nurses’ decision-making process. We obtained approval from the Institutional Review Boards (IRBs) to modify the recruitment strategy and expand the sampling frame to include nurses serving these managerial roles.

The following table presents the inclusion and exclusion criteria for participating in the study:

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed full-time by one of the three HH agencies</td>
<td>Caring for children or pregnant/postpartum women</td>
</tr>
<tr>
<td>Holding a current Registered Nurse (RN) license</td>
<td></td>
</tr>
<tr>
<td>Having at least two years of work experience in HH</td>
<td></td>
</tr>
<tr>
<td>Caring for adults or older adults or serving a role that allows them to make suggestions/changes to the visit plan</td>
<td></td>
</tr>
</tbody>
</table>

We sought full-time employed RNs with at least two years of experience in HH to ensure that they became autonomous decision makers. HH nurses go through different stages before they become autonomous decision makers, which might be after two to three years of practice in HH (Ellenbecker et al., 2006). Nurses with less than two years of HH experience might be still working on their competence and confidence regarding the logistical and clinical aspects of HH care, such as communicating with the
interdisciplinary team, understanding the payment system, and identifying and locating available resources while caring for a patient with complex needs. They may be still dependent on peers and managers for help with certain aspects of their practice. Further, clinical decision making has been shown to be influenced more by nurses’ experiences rather than the objective data about the situation (Tanner, 2006).

The focus of this study is on HH nurses’ decision making regarding visit intensity over a HH episode. In some cases, patients are referred to HH services for therapy only, and in other cases physical therapists conduct the initial patient assessment and create the plan of care. This study only targeted nurses who develop the plan of care and did not involve interviewing other HH clinicians.

Procedure

Prior to conducting this research, approval was obtained from the IRBs at the University of Pennsylvania and Agency 3, and the research review committee at Agency 2. The study was deemed exempt. After building connections with each agency and gaining support from the top administration, the PI contacted research coordinators directly to describe the study and present the eligibility criteria for recruitment. HH nurses only come to the agency’s office when they have to pick up supplies or if they have to attend a training session or team meeting, therefore fliers placed at the office as a recruitment strategy was not realistic. Instead, the PI asked nurse managers at each agency to contact their respective team members about this opportunity by sending an email announcement that includes the study purpose, eligibility criteria, and PI’s contact information. Following a low response rate from team members, the PI also asked nurse managers to propose names of potentially eligible nurses who might be interested in
participating. The nurse managers then forwarded the contact information of interested and potentially eligible nurses to the PI.

Once the PI received the list of potential participants, direct contact by email or text messaging was initiated to complete further screening and ensure that the nurse was interested in the study and met the eligibility criteria presented in Table 1 (p. 38). Once the PI confirmed that the nurse met the eligibility criteria, the study was described in-depth including all expectations, and any concerns or questions were addressed. A convenient time was set up to meet the nurse for a face-to-face or video interview. The following table outlines the recruitment steps followed with each agency:

<table>
<thead>
<tr>
<th>Agency 1</th>
<th>Agency 2</th>
<th>Agency 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Received approval of chief nursing officer</td>
<td>1. Received approval of practice leader who facilitated contact with the research coordinator</td>
<td>1. Received approval of director of research</td>
</tr>
<tr>
<td>2. Received approval of Penn IRB</td>
<td>2. Received approval of Penn IRB</td>
<td>2. Received approval of Penn IRB</td>
</tr>
<tr>
<td>3. Contacted the operations committee who arranged a meeting with all nurse managers</td>
<td>3. Received approval of research review group</td>
<td>3. Received approval of Agency 3 IRB</td>
</tr>
<tr>
<td>4. Met in person with nurse managers to present the study</td>
<td>4. With the assistance of the research coordinator, identified offices whose clinicians in the past have been interested in participating in research</td>
<td>4. The research coordinator reached out to managers of one office via email to introduce my study and request the names of potential participants</td>
</tr>
<tr>
<td>5. Followed up via email to request the names of potential participants</td>
<td>5. The research coordinator arranged a video call to present/discuss the process with the</td>
<td>5. Contacted potential participants via email to ask about their interest in participating</td>
</tr>
<tr>
<td></td>
<td>directors of chosen offices and the Medicare Case Managers’ (MCM) team leader</td>
<td>in the study</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6.</td>
<td>Contacted potential participants via email to ask about their interest in participating in the study</td>
<td>6.</td>
</tr>
<tr>
<td></td>
<td>6.</td>
<td>Following a low response rate from managers and interested nurses, the research coordinator reached out to managers from another office</td>
</tr>
<tr>
<td>7.</td>
<td>Screened nurses who expressed interest over the phone to ensure that they met eligibility criteria</td>
<td>7.</td>
</tr>
<tr>
<td></td>
<td>7.</td>
<td>Contacted potential participants via email to ask about their interest in participating in the study</td>
</tr>
<tr>
<td>8.</td>
<td>Interview dates were set with interested and eligible nurses and took place at the office before or after their team meetings</td>
<td>8.</td>
</tr>
<tr>
<td></td>
<td>8.</td>
<td>Set interview dates with interested and eligible participants. Interviews took place over Zoom, a web-based video calling tool that was previously used with nurses from another agency</td>
</tr>
<tr>
<td>9.</td>
<td>Set interview dates with interested and eligible nurses. Interviews with visiting nurses took place at the office before or after their team meetings, interviews with MCMs took place via Zoom, the video conferencing tool used by the agency</td>
<td>9.</td>
</tr>
</tbody>
</table>

Informed consent was obtained from nurses electronically before having them complete the online survey. The PI obtained verbal consent before collecting data on the
day of the scheduled interview. She arranged for the face-to-face interviews to take place at the HH agency’s main office or another location that allowed for a private conversation to occur. Each participant was offered a $50 gift card as a compensation for their participation in the study and the time spent to complete the interview. This amount ($50) for compensation is reasonable for the following reasons: 1) interviews lasted approximately one hour and the average hourly rate for a RN working in HH is $32.94 (Bureau of Labor Statistics, 2016); 2) some participants needed time to travel to the place of interview; and 3) some participants incurred parking charges. Interviews with Agency 2 MCMs and Agency 3 nurses occurred over Zoom due to convenience and logistical reasons. These participants were also offered a $50 gift card for consistent compensation.

Data Collection

The direct communication via semi-structured interviews with the participants provided a rich description of their decision-making process. The PI conducted all semi-structured interviews which lasted an average of 45 minutes. She followed an interview guide (see Appendix C) developed based on the conceptual framework presented in Chapter II (Figure 1, p. 31). Prior to data collection, the PI pre-tested the interview guide with a RN who has been practicing in HH for 7 years. She provided insight to reword some of the questions by adding the common language used by HH nurses and improving the clarity of each question. For instance, she recommended to use “visit patterns” instead of “visit intensity” when referring to the amount and frequency of skilled nursing visits.

Open-ended questions followed by targeted probes about the predetermined categories that are in the conceptual framework were used to guide the interview while allowing the participant to speak freely and distinguish essential aspects of information.
The PI encouraged nurses to recall and describe specific experiences related to admitting patients to HH and determining the amount and frequency of nursing visits. Additionally, she asked nurses to elaborate on the facilitators and challenges related to developing and implementing their visit plans by using case examples. We revised the interview guide as new patterns emerged in the concurrent process of data collection and analysis. While progressing through the first six interviews, we modified the main and probing questions by deleting similar probes and incorporating new topics that were addressed by initial participants and are relevant to the purpose of the study (refer to Appendix D for revised interview guide).

Following the iterative process of data collection and analysis, the need to interview nurses holding managerial positions within each of the agencies emerged. Several nurses described how their practice involved referring to their managers for support and guidance. Other nurses, when asked about specific protocols or practices within the agency shared that they would defer to their managers. Hence, we developed an interview guide to complete the managers’ interviews based on some of the main questions from the initial interview guide and additional questions related to specific topics or concerns addressed by visiting nurses (see Appendix E).

As previously described, the PI scheduled interviews at a convenient time for the participants and reserved private rooms at the agency’s office. She completed interviews with Agency 2 MCMs and Agency 3 visiting nurses over Zoom, a web-based video calling tool. The PI asked participants interviewed over Zoom to choose a quiet private room for the video call in order to avoid any distraction and keep all information confidential. Agency 2 MCMs are located across the country, therefore they hold
positions that allows them to work remotely using Zoom on a daily basis to communicate with their colleagues. To overcome challenges in recruitment and data collection, the PI also offered Agency 3 visiting nurses the option to complete the interview via Zoom. This allowed nurses to shift times and dates at the last minute given their dynamic and unpredictable work schedules, without feeling any obligation towards the investigator travelling to New York City to conduct the interview (Deakin & Wakefield, 2014; Hanna, 2012).

Although interviewing over a video calling tool is not devoid of obstacles and drawbacks (Deakin & Wakefield, 2014; Seitz, 2016), it can provide a viable alternative to face-to-face interviews. It enabled the PI to see participants in real time while preserving the flexibility of timing and surmounting issues of geographic distance (Deakin & Wakefield, 2014; Hanna, 2012). This interviewing tool is particularly relevant to this study because it is focused on work processes and agencies’ policies and does not address sensitive topics nor requires a high level of intimacy and direct interpersonal connections (Seitz, 2016). The PI recorded all interviews using two digital audiotaping devices in case one malfunctioned. Interviews were simultaneously completed and analyzed in order to inform subsequent interviews and determine when data saturation had been reached.

A supplementary source of data was the proprietary protocols that nurses use at each of the agencies to guide their decisions regarding visit intensity. During the interviews, visiting nurses mentioned referring to protocols while developing the visit plan. However, they did not articulate the specific visit patterns outlined by the protocols. Nurse managers and MCMs described in-depth the different elements of the protocols and provided confidential copies upon the investigator’s request. Given that this study is
not focused on a particular agency’s practice regarding visit intensity, we did not import
the copies of proprietary protocols into the analysis software. They served as a secondary
source of data to support and substantiate the transcribed interviews. While reviewing the
transcribed interview data, we referred to the copies of protocols and added memos to
highlight the specific areas that nurse managers and MCMs addressed during the
interviews.

The PI kept a reflexive journal to record field notes that supported subsequent
analysis. The reflexive journal included a thorough description of the interview’s
ambience, the investigator’s interactions with participants as well as her reactions and
impression to various events or comments. This increased her self-awareness and
reflexivity on her biases and provided contextual data to inform the analysis phase (Koch,
2006; Milne & Oberle, 2005).

We developed an online survey using Qualtrics software (Provo, UT) to collect
demographic and professional information on participants. Participants completed the
survey using their smartphones, tables, or laptops before the interview. We collected the
following demographic data on each participant: age, gender, race/ethnicity, educational
background (highest level of education completed), years of professional experience as a
Registered Nurse, years of professional experience in HH, length of experience at their
current HH agency. We also asked participants how many patients on average they
visited every day and how many new admissions they received every week in order to get
an estimate of their workload. These data were used to describe the sample and inform
the data analysis.
Data Management

Audio recordings were shared with a University of Pennsylvania affiliated transcription service company to be transcribed verbatim by a professional transcriptionist. To check for accuracy, the PI reviewed each transcription against the audio recording; she resolved discrepancies and corrected typos. Audio recordings and transcriptions were kept on a password-protected secure drive provided by the University of Pennsylvania School of Nursing. Atlas.ti 7 (Berlin, Germany), a software program, was used to store and manage the transcribed data. It is useful for qualitative research, where a large body of data needs to be analyzed for codes and categories. The demographic data were collected through an online survey administered before the interview date using Qualtrics software (Provo, UT).

Data Analysis

A. Overview

We used a qualitative content analysis approach to address the specific aims of the study. Directed content analysis, used to validate and/or extend a previously existing or developed conceptual framework or theory (Hsieh & Shannon, 2005), was employed to map out the features of the conceptual framework presented previously (refer to Figure 1 in Chapter II, p. 31). Directed content analysis is used when existing research about a phenomenon is incomplete or would benefit from further description (Hsieh & Shannon, 2005). The use of directed content analysis is appropriate for this study because although studies regarding the decision making about HH visit planning and implementation of the visit plan are lacking, the available evidence on clinical decision making provides a beginning understanding of this complex process in the HH setting.
B. Categories Derived from the Model

The conceptual framework presented at the end of Chapter II (Figure 1, p. 31) guided this study. A socio-ecological lens was superimposed on an existing nurse decision-making model in order to develop the framework guiding this study. Therefore, the main concepts of the model served as pre-determined categories during the analysis process. The review of the literature led to initial operational definitions for these categories. Table 3 presents a list of the categories derived from the conceptual framework and their operational definitions.

<table>
<thead>
<tr>
<th>Table 3: Categories Derived from the Conceptual Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nurse Decision-making Model</strong></td>
</tr>
<tr>
<td><strong>Category</strong></td>
</tr>
<tr>
<td>Situation Awareness</td>
</tr>
<tr>
<td>Nurse Decision Making</td>
</tr>
<tr>
<td>Decision</td>
</tr>
<tr>
<td>Re-evaluation / Self-reflection</td>
</tr>
<tr>
<td><strong>Socio-ecological Lens</strong></td>
</tr>
<tr>
<td><strong>Category</strong></td>
</tr>
<tr>
<td>Patient-level Factors</td>
</tr>
<tr>
<td>Nurse-level Factors</td>
</tr>
</tbody>
</table>
situation and weigh potential alternatives.

<table>
<thead>
<tr>
<th>Agency-level Factors</th>
<th>Culture of practice and work environment including support from managers and colleagues, adequate staffing, agency policies, and degree of collaborative practice.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy/Payer-level Factors</td>
<td>HH regulations and payment system.</td>
</tr>
</tbody>
</table>

C. Analysis Process

We used a combination of inductive and deductive content analysis techniques to address the study purpose. Table 4 presents the list of pre-determined categories by study aim and the analytic technique to address each specific aim.

| Table 4: Categories Derived from the Conceptual Framework by Specific Aim |
|-----------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| **Aim 1: Plan Development** | **Aim 2: Plan Implementation** |
| **Process** (Nurse Decision-making Model) | Situation Awareness | Re-evaluation / Self-reflection |
| | Decision Making | |
| | Decision | |
| **Influencing Factors** (Socio-ecological Lens) | Patient-level Factors | Patient-level Factors |
| | Nurse-level Factors | Nurse-level Factors |
| | Agency-level Factors | Agency-level Factors |
| | Policy/Payer-level Factors | Policy/Payer-level Factors |
| **Content Analysis Technique** | Predominantly Deductive | Inductive and Deductive |

We addressed the first aim about the decision-making process and influencing factors to develop the visit plan using mainly a deductive content analysis technique based on the categories derived from the nurse decision-making model and the socio-ecological lens. We addressed the second aim about how HH nurses implement their visit plans using a combination of inductive and deductive content analysis techniques. While the process that HH nurses use to implement the visit plan is unknown, there are patient,
nurse, agency, and policy factors that influence the visit plan implementation. Hence, we used an inductive technique to explore the visit plan implementation process, whereas the deductive technique based on the categories derived from the socio-ecological lens assisted in exploring the factors influencing plan implementation.

D. First-level Coding

Directed content analysis allows for a more structured approach and occurs through coding, data reduction, and identification of findings in relation to initial pre-determined categories (Graneheim & Lundman, 2004). Data analysis was initiated immediately following the transcription of each audiotaped interview. After obtaining a sense of the data by reading and immersing in all transcribed interviews, we followed a structured analytical process using inductive and deductive content analysis techniques (Hsieh & Shannon, 2005).

First, while reviewing the transcripts, the PI identified sentences and sections that fell under the pre-determined categories. Then, coding involved a line-by-line review to determine the meaning units that were assigned a code (Graneheim & Lundman, 2004). This first-level coding approach is appropriate to provide new knowledge about the phenomena of interest due to the limited information available (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). The PI reviewed the first six interviews (two from each agency) and coded them using an inductive approach to create the preliminary expanded list of codes. First-level coding resulted in 186 codes that the PI and the qualitative expert on the team reviewed for redundancy and similarity.
E. Deductive Analysis

We reviewed the coded data to collapse the first-level codes according to commonalities and align them with the categories derived from the framework (Graneheim & Lundman, 2004). We then organized the first-level codes by study aim and matched them to the existing categories that were substantiated (see Appendix F). As part of the iterative analysis process, the initial pre-determined categories were further expanded and adapted based on the data and subcategories were created whenever possible.

Three new categories emerged for codes that did not fit the initial categories. Two of the new categories (daily schedule and patient encounter) served to describe the process of plan implementation (aim 2), whereas the third category (continuity of care) emerged from data addressing both aims.

F. Data Saturation

As new codes emerged, the codebook was updated and revisions to existing and new categories were made until analysis failed to yield new information, indicating data saturation (Streubert & Carpenter, 2011). This informational redundancy occurred after coding 17 interviews, but the PI completed and analyzed nine additional interviews to ensure saturation in all categories (Sandelowski, 1995). The combination of inductive and deductive content analysis techniques confirmed the existing concepts of the framework and added new information to expand the description of the processes involved in developing and implementing a visit plan for newly admitted HH patients.
G. Analysis of Other Supporting Data

Field notes were analyzed using inductive content analysis and served as a secondary data source to supplement or validate the data that emerged from the transcribed interviews. The PI reviewed copies of the proprietary protocols while reading and immersing in the MCMs’ and nurse managers’ transcribed interviews to substantiate the narrative and facilitate initial coding. By referring to the copies of protocols while immersing in the transcribed interviews, the PI added memos to highlight the specific areas that nurse managers and MCMs addressed related to creating a visit plan. Survey data were imported into Stata 14 for windows (College Station, TX) and analyzed using descriptive statistics to characterize the sample.

Rigor

Methodological trustworthiness of this study was ensured through the following criteria: credibility, confirmability, and transferability (Polit & Beck, 2012; Streubert & Carpenter, 2011). Credibility refers to the confidence in how well the data and analysis process address the intended focus of the study (Polit & Beck, 2012). It was established by 1) keeping a reflexive journal throughout the data collection and analysis process to reflect on how personal biases might have influenced the findings (Koch, 2006; Milne & Oberle, 2005); 2) pre-testing of the interview guide to determine if the questions and probes are suitable to obtaining rich data that answer the purpose of the study (Elo et al., 2014); 3) using representative quotations from the transcribed text to illustrate each of the final categories (Graneheim & Lundman, 2004); and 4) using methodological and data triangulation (using different data collection methods and different data sources: interviews with visiting nurses, interviews with managers, visit intensity protocols, and
reflexive journal), and investigator triangulation (involving in the data analysis process
dissertation committee members and the Advanced Qualitative Collective, a group of pre-doctoral students and post-doctoral fellows who meet weekly at the School of Nursing and are moderated by Dr. Sarah Kagan, a qualitative research expert) (Farmer, Robinson, Elliott, & Eyles, 2006).

Confir**m**ability is a criterion about the congruence between different individuals evaluating and analyzing the same data (Polit & Beck, 2012). Confirmability was maintained through the following steps: 1) keeping an audit trail to preserve the integrity of ongoing data analysis. An audit trail includes a detailed description of the decisions made throughout the study about methodological and analytical strategies. This allows other individuals to follow the activities and thought processes of the researcher, which would lead to the final conclusions (Koch, 2006); 2) engaging in peer debriefing through the Advanced Qualitative Collective (Abboud et al., 2017). Peer debriefing allowed the PI to engage in an open dialogue with peers about any methodological concerns and alternative interpretation of the data that may have been overlooked (Connelly & Yoder, 2000; Graneheim & Lundman, 2004); 3) scheduling regular meetings with the dissertation committee members to discuss the ongoing process of data collection and analysis; and 4) establishing reliability of coding by having the qualitative research expert on the dissertation committee (Dr. Karen Hirschman) code a subset of interviews (n=3) and calculating inter-coder reliability. Agreement in coding of the transcripts exceeded 95%. Any divergent opinions concerning the coding and categorization were discussed and disagreements were resolved through consensus agreement.
Lastly, *transferability* refers to the potential for extrapolating findings to other settings and “that the study findings have meaning to others in similar situations.” (Polit & Beck, 2012; Streubert & Carpenter, 2011, p. 39) This is enhanced by providing a rich description of the findings and the context for data collection, which will make comparison possible with other HH agencies. This criterion is particularly ensured during the presentation of the results in Chapter IV. A thorough and adequate description allows the readers to judge if findings are meaningful and applicable to other settings (Graneheim & Lundman, 2004; Koch, 2006).

**Protection of Human Subjects**

**A. Human Subjects Involvement, Characteristics, and Design**

The proposed study, conducted in three HH agencies, explored HH nurses’ decision making regarding the planning of nursing visits and the process of implementing the visit plan. The study consisted of face-to-face or video interviews with a purposeful sample of 26 HH nurses. Nurses were eligible to participate in the study if they 1) are employed full-time by one of three HH agency; 2) hold a current RN license; 3) have been practicing in HH for at least two years; and 4) are caring for adult and older adult patients or serving a role that allows them to make suggestions/changes to the visit plan. Nurses were not eligible to participate in the study if they are caring for pediatric and maternity patients. Participants were recruited from three large HH agencies located in three Mid-Atlantic states. Nurse managers and research coordinators assisted in recruiting eligible nurses and arranging a private room for the face-to-face interviews to occur.

HH agencies were indirectly affected by this study in that HH nurses might be portraying the practice of a specific agency. However, the impact on the agencies was
minimal in that the results were de-identified and reported in aggregates whenever possible. Moreover, the care provided to HH patients at each of the participating agencies was not be affected by the nurses’ participation in the study. Nurses met with the PI outside of their working hours. Additionally, this study did not seek to change the practice of visit intensity in any of the participating HH agencies, but rather to understand the naturally-occurring decision-making process involved in developing and implementing the visit plan for newly admitted HH patients. However, there were potential risks to actual study participants (HH nurses) in that there was a possibility for 1) privacy breach; 2) a breach of confidentiality; and 3) participant burden. These potential risks are further addressed in the section entitled “Protections Against Risk” below.

**B. Sources of Materials**

The main source of data was audiotaped, transcribed interviews with HH nurses. Other sources of data included field notes, demographic/professional questionnaires, and proprietary visit intensity protocols. Most interviews were conducted in-person and took place in private rooms at participating agencies or another private space chosen in agreement with the participants in order to protect participants’ privacy. Agency 2 MCMs working remotely from multiple cities in the US and Agency 3 visiting nurses were interviewed over Zoom, a web-based video calling tool. Participants were asked to choose a quiet private room for the video call in order to avoid any distraction and keep all information confidential. The PI conducted and audiotaped all interviews while taking field notes. Interviews lasted on average 45 minutes and face-to-face as well as video
interviews followed the same semi-structured format using open-ended questions and prompts.

The audio files of interviews were first downloaded on a password-protected computer and then saved on a designated, password-protected secure research drive at the University of Pennsylvania (Penn) School of Nursing that can only be accessed by the PI and the dissertation committee members. The recordings were deleted from the voice recorders and securely transmitted to a local transcription service that meets all requirements of Penn’s IRB regarding confidentiality and has a long history of working with researchers at the University of Pennsylvania. Verbatim transcripts were stored on the secure research drive at the School of Nursing and compared with the original audiotapes.

The PI reviewed the transcribed data for accuracy and replaced participants’ private information with unique identifiers to conceal participants’ identities. Agency names were also substituted with generic names. The de-identified transcribed data were analyzed using Atlas.ti 7 (Berlin, Germany) and stored on the same secure research drive. Moreover, the collected demographic and professional data were entered into Stata 14 for windows (College Station, TX), which was used to generate descriptive statistics to characterize the sample. These were also stored on the same secure research drive. The research drive was only accessible to the research team (dissertation committee and student investigator). In addition, paper records such as the investigator’s written field notes and the proprietary protocols were stored in a locked cabinet in a room at the Penn School of Nursing requiring authorized card access.
C. Potential Risks

This study posed the following risks to participating HH nurses: 1) privacy breach; 2) a breach of confidentiality; and 3) participant burden. One potential risk was a privacy breach, which includes a possibility of nurses’ knowledge and skills being evaluated and their job status being affected by their participation. Another potential risk was a breach of confidentiality. There was a possibility of inappropriately disclosing participants’ private information and the content of their interviews. This may have led to emotional stress and concerns about potential disadvantages to their job status. Lastly, nurses may have experienced some burden from participating in the study. Burden can be seen as physical tiredness due to the time spent in interviews and moral distress experienced when asked about their work environment. Following the semi-structured approach of the interview, participants could have been burdened by the number of questions asked, and might have felt uneasy when talking about their nursing practice. Strategies were developed to mitigate these potential risks and are addressed in the section entitled “Protections Against Risks.”

D. Recruitment and Informed Consent

After gaining approval and support from each of the three participating agencies, the PI contacted research coordinators to present the study and the eligibility criteria for participation, address any questions and concerns, and gain support for recruitment. The PI then introduced the study to nurse managers and asked them to send a letter via email to their respective team members announcing the proposed study. The letter briefly described the study, presented the eligibility criteria for participating, and introduced the contact information of the PI. Nurses were advised to contact the PI directly if they were
interested in participating. Following a low response rate, nurse managers were asked to propose names of eligible nurses who might be interested in participating. The PI then contacted potentially eligible nurses via email or phone to confirm their interest, assess their eligibility, and address their questions or concerns about the study. Upon agreement to participate, the PI arranged for a mutually agreed upon date and site (i.e., private room) for the interview. The agency contact persons were made aware of the interview schedule to assist in reserving a private room, unless the interview was completed over Zoom. Participants were sent reminders regarding the date, time, and location of the interview.

Once nurses confirmed their interest in participating, the PI initiated the informed consent process over the phone by describing the purpose of the study and what was expected of the participants in detail. The PI also informed potential participants that their participation was voluntary and that they could withdraw from the study at any time, without impacting their position at the HH agency. Other topics discussed were the potential risks/discomforts/inconveniences and benefits associated with participation, compensation, and privacy and confidentiality. The PI then allowed time for participants to address their concerns and answer their questions before obtaining their approval to participate and scheduling the interview date. Additionally, participating nurses provided consent electronically before completing the survey. Given the ongoing nature of the informed consent process, participants were reminded on the day of the interview of the purpose of the study, their rights, and their responsibilities. They then provided verbal consent prior to beginning data collection.
E. Protections against Risk

The potential risks and related strategies to address them were discussed with the dissertation committee throughout the entire study. The PI developed her skills to manage potential risks and her own emotional reactions and biases during data collection.

Strategies to protect against potential risks were as follows:

<table>
<thead>
<tr>
<th>Potential Risk</th>
<th>Protections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk to privacy breach of participants, including a possibility of nurses’ knowledge and skills being evaluated and their job status being affected by their participation</td>
<td>Nurses’ privacy and confidentiality was protected throughout the study:</td>
</tr>
<tr>
<td></td>
<td>• Nurses were recruited through an email announcement, and interested nurses contacted the PI directly without having to contact their managers or any other person at the agency. For potential participants who were proposed by nurse managers, the PI contacted directly and did not share with nurse managers the status of their participation</td>
</tr>
<tr>
<td></td>
<td>• Interviews took place at a private place, either a room at the agency or another location in agreement with the participant</td>
</tr>
<tr>
<td></td>
<td>• Nurses were ensured that the data generated from this study will be used only for research purposes and their participation or nonparticipation will have no effect on their job status</td>
</tr>
<tr>
<td>Breach of confidentiality</td>
<td>Confidentiality of data was maintained through careful manipulation of the data:</td>
</tr>
<tr>
<td></td>
<td>• Audio recordings, transcripts, demographic data, and analyzed data were stored on a designated, password-protected, research drive of the secure server at the Penn School of Nursing</td>
</tr>
<tr>
<td></td>
<td>• The investigator’s written field notes were stored in a locked cabinet in a room at the Penn School of Nursing that requires authorized card access</td>
</tr>
<tr>
<td></td>
<td>• Audio recordings were deleted from the audio recorders after being successfully downloaded and saved on the secure research drive</td>
</tr>
<tr>
<td></td>
<td>• A local transcription company that meets all requirements of the Penn IRB regarding confidentiality was used to transcribe interviews</td>
</tr>
</tbody>
</table>
- The transcribed data were reviewed to replace all participants’ and agencies’ names with unique identifiers
- De-identified transcripts and field notes were analyzed via Atlas.ti 7 (Berlin, Germany)
- The research drive was only accessible by the research team (dissertation committee and student investigator)
- All publications and written reports generated from this study will not contain any identifiable private information of subjects

| Participant burden, including moral distress and physical tiredness of nurses participating in the study | - Participants were ensured that participation is voluntary
- Participants were informed that they could withdraw from the study at any time without impacting their position at the HH agency and that the information shared will be kept confidential
- Participants were informed that they can take a break at any time during the interviews and skip interview questions if they felt uncomfortable answering
- All interviews were completed within 60 minutes, hence there was not a need to schedule a follow up interview to avoid physical burden |

**F. Potential Benefits of the Proposed Research to Human Subjects and Others**

Participating in this study did not provide direct or immediate benefit to the participating nurses or HH agencies. However, their participation enabled researchers to understand how HH nurses develop and implement their visit plans and subsequently, guide HH nurses in determining visit intensity for their patients. Therefore, the results of this study may benefit both HH agencies and nurses in the future, as well as patients referred to HH by receiving adequate and targeted nursing visits.

**G. Importance of the Knowledge to be Gained**

The results of this study will contribute to a greater understanding of visit planning in HH. Furthermore, the information gained from this study may provide an important foundation for future development of a clinical decision support tool to guide
HH nurses in determining visit intensity once they admit new patients. Therefore, there are minimal potential risks to participants involved with the proposed study, and these risks are balanced by the knowledge to be gained from this study.
CHAPTER IV: RESULTS

This chapter includes a description of the sample and study results. The results are presented by aim based on the categories derived from the conceptual framework (refer to Table 3 in Chapter III, p. 47).

Sample Characteristics

Overview

Twenty-six nurses from three home health (HH) agencies participated in the study, including 20 visiting nurses, two Medicare Case Managers (MCMs), and four nurse managers. The visiting nurses were field clinicians responsible for providing direct patient care in the home; they did not hold any office or managerial positions. The MCMs were specific to Agency 2 and responsible for reviewing nurses’ documentation and evaluating whether it justified the need for services requested. They covered multiple offices; therefore they worked remotely. The nurse managers were responsible for supervising an interdisciplinary team of HH clinicians covering a specific geographic area. The team included nurses, HH aides, social workers, physical therapists, occupational therapists, and speech therapists. The nurse managers at Agency 2 were referred to as “clinical managers.” Table 5 presents a breakdown of participants’ roles within each agency.

<table>
<thead>
<tr>
<th>Table 5: Participant Roles within each Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency 1</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Agency 1</td>
</tr>
<tr>
<td>Agency 2</td>
</tr>
<tr>
<td>Agency 3</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Sample Description

The sample was composed of predominantly White (46.2%) female (92.3%) nurses, with a mean age of 47 years (± 8.7, range 30-65 years). Most nurses (76.9%) had a Bachelor’s degree in Nursing. Participants reported practicing as a Registered Nurse for 17 (± 10.2) years with most of their professional experience in HH (12 years ± 9). Nurse managers and MCMs had more years of experience when compared to visiting nurses. Nurses reported working for their current agency for at least three years, which meant they were very familiar with their agency’s protocols. On average, nurses received five new admissions every week and visited seven patients every day. Nurses employed by Agency 3 had a higher caseload when compared with those working for Agencies 1 and 2. Table 6 shows the demographic and professional characteristics of the participants.

<table>
<thead>
<tr>
<th>Table 6: Demographic and Professional Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td><strong>Age</strong> (years) mean ± SD</td>
</tr>
<tr>
<td><strong>Gender</strong> number (%)</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td><strong>Race</strong> number (%)</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Black or African American</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>Ethnicity</strong> number (%)</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
</tr>
<tr>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>Missing response</td>
</tr>
<tr>
<td><strong>Educational background</strong> number (%)</td>
</tr>
<tr>
<td>(highest level of education completed)</td>
</tr>
<tr>
<td>Diploma in Nursing</td>
</tr>
<tr>
<td>Associate’s degree in Nursing</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>Bachelor's degree in Nursing</td>
</tr>
<tr>
<td>Master's degree</td>
</tr>
<tr>
<td>Professional experience as a Registered Nurse (years) mean ± SD</td>
</tr>
<tr>
<td>Professional experience as a Registered Nurse in home health care (years) mean ± SD</td>
</tr>
<tr>
<td>Experience at your current home health agency (years) mean ± SD</td>
</tr>
<tr>
<td>Home visit per day (patients) mean ± SD</td>
</tr>
<tr>
<td>Total (n=20)</td>
</tr>
<tr>
<td>Agency 1 (n=7)</td>
</tr>
<tr>
<td>Agency 2 (n=6)</td>
</tr>
<tr>
<td>Agency 3 (n=7)</td>
</tr>
<tr>
<td>New admission per week (patients) mean ± SD</td>
</tr>
<tr>
<td>Total (n=20)</td>
</tr>
<tr>
<td>Agency 1 (n=7)</td>
</tr>
<tr>
<td>Agency 2 (n=6)</td>
</tr>
<tr>
<td>Agency 3 (n=7)</td>
</tr>
</tbody>
</table>

**Process of Plan Development (Aim 1)**

This section addresses the first aim of the study about the influencing factors and process of decision making through which HH nurses determine visit intensity over a HH episode for newly admitted patients. It contains a description of (1) the decision-making process that nurses go through to decide on their visit patterns and (2) the factors influencing this decision-making process. The following presentation of the results is not according to their significance but based on the categories derived from the conceptual framework (Table 3, p. 47).
Situation Awareness

A. Referral Information

Nurses first reviewed the referral information to identify where the patient was before being referred to HH and what treatment they received. One nurse described how the referral information helped her prepare for the first visit and start developing her plan:

*The referral guides my assessment. So I, when I go in there I have all the background information. I know what kind of questions to ask. I know what to look for. There’s other information that’s helpful about the patient’s history, so it just gives you the guidelines to be able to do the assessment and come up with a plan.*

Nurses expressed their preference to be prepared before the first visit in order to provide the best care for their patients. The referral information gave them an idea of what they were walking into and guided their assessment. This background information helped them paint a preliminary picture of the patient and set certain expectations of the first visit. It also facilitated their planning for the first visit, especially when the patient needed a specific treatment that required certain supplies or that the nurse may not be familiar with. In such cases, nurses would learn the skill before visiting the patient for the first time. Nurses also had an idea of whether they need to provide the patient with any teaching material or supplies.

When reviewing the referral information, nurses considered the patient’s primary diagnosis (whether it is a new or existing diagnosis), the reason for hospital admission or emergency department visit, their: level of known adherence, cognitive ability, medication list, and whether they have a wound, a drain, or a history of falls. The referral information rarely included any description of their social background. Nurses also reviewed physicians’ orders. By reviewing the reason for referral to HH, nurses identified
the skilled need to be addressed (such as assessing the incision) and the goal desired to be achieved during the episode. In certain cases, visit patterns were mainly guided by the physician’s order such as when the patient is prescribed injections or specific treatments such as wound care or a pleurX catheter drain. For instance, patients on wound vacuum therapy were visited every Monday, Wednesday, and Friday, unless otherwise indicated.

Nurses shared the challenges they faced when they had incomplete or inaccurate referrals. Many nurses described the referral information as being limited, skimpy, scanty, incomplete, and poor. Nurses also shared that referrals from different sources (community versus hospital referrals) were of different quality and depth. Some nurses differentiated between referrals and discharge instructions that they accessed during the first home visit. The latter were often more coherent and more information-rich (depending on the hospital). Some nurses from Agency 1 talked about the availability of additional patient information accessed through the electronic health record unless the patient was referred from an outside hospital or skilled facility.

**B. Initial Assessment**

After reviewing the referral information, nurses completed a thorough assessment of the patient during the Start of Care (SOC) visit. One nurse shared: “The information is in our computer so we can look at all the attachments and read their medications, diagnosis, and everything. Um, but that doesn’t always give you a good picture of the patient until you actually see them.” In fact, the referral information often missed describing the patient’s health behaviors, their adherence to treatments, their level of health literacy, and their socioeconomic concerns. During the SOC visit, the nurse
verified the information obtained through the referral and gathered additional information about the patient and their support system.

Nurses often encountered discordant findings where the referral information did not match their assessment findings. Sometimes, the patient was either better or worse than the description on the referral as one nurse described: “it may look very simple on paper, and when you get there, they're disheveled, and they have no idea what they're doing. And so they would need a couple extra visits.” Nurses then planned for additional visits to meet patients’ needs.

The initial assessment at the SOC visit served as a way for nurses to build rapport with their patients and caregivers, offer emotional support, and set common goals for the episode of care. Nurses got to know their patient by asking them about their full health history and what led to their referral to HH. There were often a lot of emotions at that first encounter. Patients were readjusting and somewhat anxious about caring for themselves following discharge from the hospital; they were moving from a controlled environment to being on their own. Even though they were not in a critical condition, patients had difficulty caring for themselves and often requested immediate assistance as one nurse described: “Some of them are so frightened when they get home that they want any, anybody there as often as they can get them there.” Hence, nurses tried to visit them on the same day of their hospital discharge to provide guidance and support and help them become engaged in their care. Other patients, such as older patients who feel lonely and love having the company, wanted the nurse to come as often as possible. Nurses offered them emotional support but remained objective in their judgment about visit intensity; they evaluated the patient’s skilled need to provide visits accordingly.
Some nurses shared situations where they were assigned a patient that they previously cared for. Knowing the patient and having developed a previous relationship with them and their caregivers made the development of the plan easier. In that case, the nurse knew the baseline level of the patient, their knowledge level, their caregiver capacity, and how they might progress based on previous experience. It was a matter of identifying changes since they last cared for that patient. Therefore, the nurse was able to anticipate how the patient will react and interact and found it easy to set goals and expectations.

Nurses faced challenges when evaluating how honest the patient was at the SOC visit in order to develop their visit plan and set common goals. Patients did not always express genuine readiness to engage with the nurse and achieve those common goals as exemplified in the following quotation:

If I ask, like, really direct questions, that’ll help me understand how far we need to go, how long it’s gonna take. Um, but sometimes patients aren’t honest with you, so they’ll say, “Yeah, yeah, yeah, yeah, yeah.” Then you find out in three visits that they were just talking, and they didn’t do anything. So, you don’t always get all the information you want up front, but it certainly makes it easier or harder.

Sometimes, issues around honesty and commitment arose before their discharge from the hospital. For instance, some patients made deceptive promises to the discharge planners in order to be immediately discharged from the hospital or as one nurse shared: “we’ll have patients who give us bogus addresses just to get outta the hospital. […] The nurse is standing in front of the address: “I know it says that. I’m right here. It’s a Chase Bank”.”
Nurse Decision Making

Nurses started developing their plan after seeing the patient. By reviewing the referral information, nurses had an idea of the visit pattern but they did not make any determination prior to the SOC visit. They based their judgment on their assessment more than on the referral information. They engaged in an analytical reasoning process where they first gathered information about patients’ needs, and then decided on what to address during the HH episode. One nurse expressed: “What drives my plan of care is my assessment—you know—my findings in that first visit. The first visit is extremely important. I’m not just collecting data. I’m really making judgement, you know—so that’s critical.”

At this stage, nurses engaged in a multidimensional analysis and considered multiple factors in order to decide on an adequate visit pattern for their patients. The factors that nurses evaluated will be presented in the next section, Patient-level Factors. Nurses also relied on their experience and the training they received when they started practicing in HH. They were cognizant of their agencies’ protocols and the current HH practice environment where they are expected to provide condensed care and assist patients to care for themselves.

After the initial visit, nurses documented their findings and completed the SOC OASIS documentation based on their initial assessment. At this point, there was a variation between agencies in how nurses proceeded to develop and finalize their visit plan. Specific agency practices such as frontloading, telemonitoring, and telephone call visits also influenced nurses’ final decisions. These differences in agency practices will be further described in the section about Agency-level Factors.
Varying levels of agency oversight affected how HH nurses engaged in the decision-making process and to what extent they were active decision makers. Nurses at Agency 1 wrote their visit orders based on the information they gathered from the SOC visit. They also participated in admission huddles twice or three times per week, where they met as a team over the phone to discuss all new admissions, get feedback from their managers and colleagues, and finalize their plans of care. A team of experts performed documentation reviews but did not give any feedback on visit orders.

In the case of Agency 2, a central team of Medicare certified nurses also called Medicare Case Managers (MCMs) reviewed nurses’ SOC documentation related to patients on Medicare or other Prospective Payment System models within the five-day window. MCMs were responsible for ensuring that the documentation is thorough and accurate, and justifies the services that will be provided during the episode. Nurses’ documentation of the patient’s need for skilled nursing visits should match and support the visit patterns ordered. MCMs relied on the “Care Plan Appropriateness” (CPA) guidelines that were developed by the agency to make such decisions. They reached out to nurses via email to clarify any missing or unclear information before they finalized the plan of care and visit orders. Although nurses were reminded that patients should receive the visits they needed according to the nurses’ assessment and judgment, Agency 2 still had a tighter level of control over the process.

Nurses employed by Agency 3 completed their SOC documentation, which generated a Home Health Resource Group (HHRG) score. Each HHRG score was associated with a specific visit pattern on the clinical pathway that was developed by this agency’s education department for nurses to use as a guide. Nurses evaluated the clinical
pathway’s recommendations alongside their clinical judgment to finalize their visit orders. Nurses were then able to account for factors that are overlooked by the clinical pathway. A specific department was responsible for reviewing OASIS documentation without giving feedback on visit orders. However, if the visit order did not match a patient’s condition, the manager usually reached out to the nurse to inquire about the case.

Decision

Nurses decided if the patient had a skilled need that should be addressed at home. If a patient was too sick, the nurse referred them to a palliative care program. If the patient met the criteria to receive HH services, the nurse developed a visit plan to address their needs and reach goals. Nurses wrote visit orders for nine weeks while trending down their frequency because “it’s supposed to look like there’s a plan, you know?

Eventually the patient gets better, and you pull out.” If the patient was stable and did not receive any specific treatment, nurses started with a baseline of two visits per week as described by one nurse:

Baseline is probably—I would do two visits the first week—you know, usually, that’s the most I will do if they’re—if they seem stable. If they’ve been discharged, they’re supposed to be stable. As long as you don’t see anything on that first initial assessment, uh, they should not be getting more than probably two visits in a week. If they’re in that yellow, close to going into a red zone, I would possibly do three visits the first week just to make sure that they are onboard with their medications, that they’re onboard with what they’re supposed to be doing.

Nurses from Agency 1 still used ranges of visits while nurses from the other two agencies wrote specific numbers of visits for each week. Using ranges in visit orders offered some flexibility because the nurse did not need to change the visit order when the patient cancelled or refused a visit. On the other hand, nurses who were no longer allowed to use
ranges in their visit order shared that it was a strategy to improve compliance with visit orders as illustrated in the following quotation:

*It could be so we can, um, follow the plan of care more closely and monitor the patient more closely. Than having, like, a sort of an open-ended situation. So according to the patient’s situation, we can alter the plan of care, the visit frequency.*

In some cases, nurses added as needed (PRN) visit orders for Foley catheter replacement, assessment of a change in health status specifically for patients with heart failure, or additional wound care for those with an ostomy or wound. Besides describing visit patterns, one nurse spontaneously mentioned the importance of having patients visit their primary care provider within the first two weeks of the episode:

*We tell them they have to be seen by their primary within two weeks of discharge. Because we need to make sure that they’ve got a current visit with—with the primary or with, um, whoever is signing the home care order, so that they know that, um, they have seen them, and they understand why we’re sending whatever orders we’re sending over to them.*

**Influencing factors**

Several contextual factors influenced nurses’ decisions about developing their patients’ visit plans. From a socio-ecological perspective, factors ranged from the micro-level such as patient- and nurse-level factors, to agency-level factors, and policy/payer-level factors.

**A. Patient-level Factors**

Nurses started by evaluating patient characteristics during the initial assessment visit. They took into consideration the patient's clinical status, social status, and level of participation in care. One nurse spoke about the multidimensional aspect of visit planning:
It’s not diagnosis-dependent, no because you could have somebody with a very severe diagnosis with a lotta support, that’s well-educated, that has everything in place that doesn’t need as much nursing as, say, somebody that might even have a lower acuity but can’t read, can’t get their medications.

A.1. Clinical Assessment

Nurses assessed the patient’s physical status including vital signs, breathing pattern, pain, etc. and how “acute, sick, or fragile” they are. Nurses assessed incisions and wounds for any signs of infection and for the amount of drainage in order to adjust their visit frequency from what the physician had already ordered. In addition, nurses assessed the patient’s level of function to evaluate their need for other services (such as physical therapy, occupational therapy, or speech therapy), especially when they were not ordered on the initial referral. Few nurses described how they evaluated their patient’s cognitive ability and alertness because it influenced the extent of their involvement in the plan of care and the level of support they need, such as reminders to take their medications.

Nurses differentiated between new and pre-existing diagnoses. They prioritized new diagnoses and associated them with increased visit intensity. For example, nurses planned for daily visits to patients newly diagnosed with diabetes and prescribed insulin to teach them about monitoring their blood glucose levels and administering insulin. Subsequently, they followed up with weekly visits and sometimes added telephone checks in between visits. In addition to frontloading visits to teach patients about their new disease process, nurses referred patients to other resources (such as a heart failure clinic) that assisted them with the transition. Whereas if the patient had an existing diagnosis of diabetes, nurses did not plan for intensive visits because the patient was not newly learning about the disease process but in need for reinforcement. Some nurses
shared how they faced resistance from patients who had been living with their conditions for a long time; therefore, increasing visit intensity was not always the solution to change their level of engagement.

Nurses also differentiated between chronic (wounds, heart failure) and acute (orthopedic, surgical) conditions, requiring different levels of skilled nursing care. For instance, patients recovering from orthopedic surgery often required more therapy than nursing visits when compared to those who had a recent heart failure exacerbation. One nurse explained: “[Nurses] need a couple visits just to teach pain management and, um, signs and symptoms of infection, make sure they’re taking their medications okay. And then therapy usually takes over.”

When discussing diagnosis as a factor to develop their visit plan, all nurses focused on patients with heart failure and those requiring wound care. Patients with heart failure needed frequent early visits because of their high tendency for hospital readmission, especially if they were not adherent to their medications and diet recommendations. Nurses also assessed those with wounds to decide on the adequate frequency of wound care. If the patient needed daily visits, the wound care nurse could be asked to assess them and recommend an alternative wound treatment that could be performed less frequently. Nurses described “long-term patients” as those who had conditions leading to their frequent recertification or referral to HH. These patients mostly had chronic wounds or conditions that did not get better. Some of these patients required a different level of care, such as being referred to rehabilitation services or palliative care.
Nurses assessed the patient’s understanding of and adherence to the medication regimen. They identified patients who were prescribed new medications and "high risk/high alert" medications such as anticoagulants, insulin, and narcotics to provide them with increased visit frequency because if not taken properly, patients will be readmitted to the hospital. The importance of looking for polypharmacy was exemplified by one nurse who stated:

If I feel like the patient really cannot organize meds and cannot take meds independently and needs a caregiver to either remind them or to administer to them, then that would be a problem. Especially if he’s taking a lotta cardiac medications or like Coumadin. You know, it’s a little more dangerous or he can take too much or too little. Um, so in that instance, then I would go back the next day just to make sure that he’s taking the meds that were ordered correctly.

Patients prescribed new medications also needed reinforcement and frequent reminders because they were sometimes resistant to the change. They required additional monitoring to make sure that they were safe with the new medication (such as Coumadin) and that the medication was effective (anti-hypertensive drugs dosages may need to be readjusted).

Nurses also evaluated the patient’s risk for hospital readmission, which was related to other factors, such as having a new diagnosis or being prescribed high risk medications. However, some nurses talked about it as a standalone factor. One nurse described how she assesses her patients’ risk for being readmitted to the hospital by asking them about their history of hospital admissions and emergency department visits. For patients at risk, nurses increased their visit frequency and provided at least two (or three) visits during the first week, depending on what conditions the patient had and what skilled need the nurse was addressing. Nurses from one agency gave special attention to patients rehospitalized during the HH episode. Following resumption of care, nurses
added one visit per week to their pre-hospitalization visit frequency for at least 2 weeks. Nurses from another agency aimed to lower readmission rates for particular (preferential) hospitals with whom the agency had developed relationships. Hence, nurses frontloaded patients at higher risk for hospital readmissions (such as those with heart failure).

A.2. Social Assessment

Nurses evaluated the social factors that could influence the frequency of their visits including caregiver support and home environment. Nurses aimed to schedule the SOC visit at a time that was convenient to the patient and potential caregivers involved in the plan of care because nurses assessed the patient and their support system. Caregivers helped the nurse in getting a thorough understanding of the patient’s situation when they were present at the SOC visit. They provided additional information that the patient forgot to mention. In cases of language barriers, caregivers served as interpreters to assist the nurse in establishing a trusting relationship with the patient. If the patient lacked adequate support, nurses planned for more frequent visits, as one nurse described:

“Sometimes the patients are alone. Um, and if you are their only means of support, and if they’re the only, uh, source of eyes and ears, um, I’ll have to visit them a little bit more often.” Nurses also consulted with social workers to assess what could be done to assist those patients during the episode.

For patients with wounds or daily injections, nurses faced challenges when caregivers were not available or not willing to participate in the plan of care. Caregivers were sometimes available but not ready to assume that responsibility. One nurse shared:

If a patient comes home and their wound is draining […] you can’t expect family members, uh, especially lay peoples to just kind of pick up, uh, right away. It usually takes about two to three visits at the very least.
Another nurse offered the following description of caregiver availability and willingness to participate in the patient’s care:

*Another thing is, do they have a support system? [...] Even if people are there, I say well, do you live here alone. And if they say yes, then, you know, my thought process goes another way. If they say no, then the question is, is your family supportive, do they help, because just because people are there, it don’t mean that they’re gonna participate in the care. So, you have to identify that need, as well.*

If a caregiver was available, capable, and willing to participate, the nurse visited the patient frequently for the first couple of weeks to teach the caregiver and provide support and reinforcement. Once the caregiver demonstrated an ability to perform the wound care or give the injection, the nurse alternated with the caregiver and visited the patient two or three times per week, instead of every day.

Nurses also shared the importance of caregivers in other cases where patients did not require daily visits for wound care and injections. Having a caregiver could safeguard patient safety as it related to two areas: medication management and fall prevention. Patients who had limited cognitive ability or memory issues benefited from the presence of a caregiver who assisted in filling the pill box and reminding them to take their medications as prescribed. As for fall prevention, the caregiver assisted the patient in their activities of daily living and continuously monitored the home environment for any fall hazards.

Besides considering caregiver support, few nurses mentioned their assessment of the home and neighborhood environment. For instance, if a patient lived in an assisted living facility, the facility staff often assumed responsibility for their long-term maintenance, such as medication management. Hence, the nurse visited them less frequently. On the other hand, patients living in poor condition housing were at a higher
risk for falls. Therefore, nurses assessed whether they were safe or needed to be transferred to a facility. In addition, their financial situation could affect the type of food they had access to or the number of medications they afforded. One nurse offered the following description of social factors:

*I’m not just assessing the human. I’m assessing everything. […] I don’t always rule out non-adherent first. Um, because there may be a reason. They may have to choose between purchasing medications, um, buying food, and paying their electric bill. And they have to kind of figure out—you know, you assess the whole situation basically. If they can’t pay for meds, they’re gonna end back up in the hospital.*

The assessment of such factors did not directly influence nurses’ visit patterns but provided them with a comprehensive understanding of the patient’s situation and why they were not improving as expected. Therefore, nurses collaborated with the patient to set realistic goals. Additionally, they sometimes asked for the social worker’s assistance and communicated with the physician about alternative treatment options. One nurse shared:

*Another thing is like their environment. You know, where do they live? Do they have access to get the medicine or the right foods for their diet? Because sometimes they can’t get the right foods or they can’t afford their medicine, and then we have to do something about—we just can’t say they can’t take it. They have to take it. We could either call the doctor, try to find an alternative to see if there’s something that costs less. We can get the social worker in; see if they can get ’em on some kind of, you know, reduced program or maybe a discounted medicine. Some counties even give out free medicine for a little while.*

A.3. Patient’s Participation in the Plan of Care

Nurses assessed their patients’ level of knowledge and adherence, and looked for any health literacy issues. In fact, one nurse shared that her assessment started when she contacted the patient for the first time to establish care. That was when she could tell whether a patient was ready and interested in working with her. Nurses faced difficulty
creating their visit plan when the patient was not engaged or interested in working with
the nurse to reach certain goals. These patients often relied on their providers to make
decisions on their behalf. Hence, in some cases, nurses needed to increase the number
and frequency of their visits in order to reach the goals before discharging patients.

B. Nurse-level Factors

Nurses relied on their experience and critical thinking to make decisions about
their patients’ plan of care. Their reasoning was refined as they were exposed to diverse
cases and trained to become autonomous decision makers. Over time, nurses learned to
be objective and rational in their evaluation of their patients’ needs.

B.1. Experience in Home Health

Experience played an essential role in the nurses’ ability to estimate a visit plan
from the SOC visit; it assisted nurses in becoming more autonomous clinicians and better
critical thinkers. Over time, nurses encountered several scenarios and became better at
evaluating those who required more attention through increased visit intensity. In
addition, experienced nurses became better at recognizing patients who would improve
and become engaged during the episode and patients who might refuse services down the
line. One nurse shared:

You can kinda know just from experience who those patients are that-that will
tend to be unsteady. You know, and by that I mean maybe frequent in the ER more
than you would like or not being adherent. Um, you could kinda get a feel for that
the first visit or so and say: Hey, you know what, I’ve gotta go back and check on
her, I’m not sure if she’s gonna take those meds like I taught her today. I might
need to reinforce that again tomorrow.

Moreover, experienced nurses easily identified situations when the physician’s orders did
not align with the patient’s needs. One nurse offered the following example:
You kind of use your nursing judgement, like, if somebody is a wound, then you—you know that you have to see them according to usually, like, the surgeon will say, oh, we want the wound done such and such, like, every other day, daily, you know, whatever. You do your assessment, and then if it’s different—if we think it’s different from what the doctor says then we have to call back to the doctor and say, hey, we think, you know, this person don’t need it every day, or whatever.

Over time, and in parallel with the policy changes and the new HH practice environment, nurses realized that they could condense the care they provided and avoid over-utilizing services. Some older and more experienced nurses had embraced these changes whereas others were still struggling. Some had recognized that the current HH environment was no longer a doing environment, rather a teaching environment. However, others had developed habits of visiting patients more frequently just to “check on them” and found difficulty to realize that the insurance companies were regulating the number of visits most of the time. These nurses often struggled to justify the need for their visits.

B.2. New-to-Home Health Practice Nurses

Nurses who were new to HH faced difficulty when predicting how many visits a patient would need because this process was multifactorial. Therefore, these nurses often provided more visits than needed and were not sure when to discharge patients. They were easily manipulated by patients (especially frequent flyers) and tended to keep them longer on service to address all their problems before discharging them. One nurse reflected on her practice when she started in HH:

A lot of times, um, when you first start in home health, you’re much more nervous and you tend to schedule a lot more because you’re like, oh, I need to see them three times, four times a week because God knows what’ll happen when I’m not there, not realizing that 23 hours outta the 24, you aren’t there.
Experienced nurses were more confident, especially when discharging patients. They were better at setting expectations. Experienced nurses were more familiar with their agency’s protocol and the HH rules and regulation and better formulated a plan that would be adequate for the patient and approved by the agency and insurance company.

**B.3. Experience in Other Settings**

Prior experience in other health care settings influenced how nurses thought about planning visits and visit patterns. One nurse was working in an acute visiting program and initially felt the urge to visit her patients more often until she fully transitioned to the HH paradigm and adjusted her mindset. Another nurse reflected on how previous experience in an acute hospital setting influences nurses’ thought process:

> When I first started doing the starts, I would put on more visits then because—and I think that still happens if you’re new to homecare. If you’re new to doing it, you’re thinking of it as a hospital nurse, and, “Oh, my goodness, they need to be seen, you know, three or four times the first week.” But they don’t. If they’ve been discharged, they’re supposed to be stable. As long as you don’t see anything on that first initial assessment, uh, they should not be getting more than probably two visits in a week.

Two other nurses had a background in corporate banking and accounting. They were in full support of the current HH practice environment where everything needs to be accounted for and justified in order to be approved and legitimate.

**C. Agency-level Factors**

Agency-specific factors influenced how nurses engage in the decision-making process to develop their visit plans. These factors included: 1) the varying levels of agency oversight in terms of securing insurance authorization, meetings with managers, training nurses, and reviewing nurses’ documentation, and 2) specific agency practices such as protocols, frontloading, telemonitoring, and telephone call visits.
C.1. Insurance Authorization

The agency played a role in mediating the challenges imposed by insurance companies through several strategies. Agencies often had a department in charge of securing insurance authorization to avoid any interruption in care provision. Designated staff followed up with insurance companies to obtain or expedite authorization. One agency had an internal approval system for managed care patients.

When asked about the challenges imposed by insurance companies, nurses from two agencies spontaneously talked about providing care according to the patient’s needs, even if not being reimbursed by the insurance company. That came up as a short-term solution instead of declining to care for the patient and denying service, while the agency worked with the patient to find a better insurance plan. Therefore, in some cases, nurses shared being allowed to provide “free care” as long as the need was supported by the documentation.

C.2. Meeting with Managers

Managers were in continuous contact with nurses to support them in their decisions through individual and team meetings. Team meetings served as a learning experience where nurses benefited from the feedback they received from their colleagues who had previously cared for the same patient or a similar one. One manager shared:

*I don’t do it where, okay, give me a report—I like the team to stay on, because this is where I get feedback from other nurses. And then, they come, they are faced with situation that they’ve had and didn’t know what to do, but they’re learning as they go with this situation as well.*

Following the discussion and the manager’s recommendations, nurses reconsidered their visit patterns. There were some differences between and within agencies in how managers planned their team meetings and followed up individually with nurses.
At Agency 1, nurses participated in the admission huddles that took place over the phone two or three times per week where they discussed all new admissions, not only complex cases. Nurse managers followed a systematic approach and used a template to identify whether a patient was high alert, which influenced the visit pattern. They reviewed eight specific factors (the 8 Ps) to evaluate the appropriateness of the visit plan: 1) problems with medications including polypharmacy and high alert medications such as anticoagulants, hyperglycemic agents, antiplatelet, 2) psychological issues, 3) principal diagnosis, 4) physical limitations and need for other disciplines, 5) poor literacy, 6) patient support, 7) prior hospitalization, 8) need for palliative care by asking: “would you be surprised if the patient died in the next year?”

At Agency 2, the clinical manager acted as an advocate for nurses when communicating with MCMs regarding any variance from the CPA (Care Plan Appropriateness) guidelines as illustrated in the following quotation:

I tell them that we wanna give the patient what they need. We know this is a guideline, but we still need to give the patient what they need and what they deserve. So, sometimes—I’ve had to step in like when they’re telling the nurse, “We’re gonna cut these visits,” and the nurse is trying to explain. They already said it in their whole narrative, but the nurse is trying to explain in their email back, “Well, this is why I put all these,” and then they keep going on [chuckles] with the, “This is the guideline,” and then I’ll step in there and I’ll say, “I would like these visits to remain as they are,” and they’ll say, “Okay. Thanks.”

At Agency 3, team members participated in weekly pod calls where interdisciplinary clinicians discussed and “troubleshoot” complex cases and received suggestions from other team members. The nurse manager offered the following description of the team meeting:

It’s structured in that we review the clinical pathway. We review if there are any variances. We review if there are gonna be any, um, barriers to care. Um, that’s
discussed on every case. And then suggestions for—you know, getting the best care possible.

Several nurses form Agency 3 described the nurturing relationship they developed with their managers. Nurses also referred to their managers if their judgment and the clinical pathway were not well-aligned.

C.3. Training

Nurses stressed the importance of the training they received when they started working in HH. Nurses reported that case management was more complex than direct patient care, therefore they needed to develop essential skills to become autonomous case managers. One nurse shared how she developed those skills with the assistance of her manager:

*I had a really great manager, um, when I started. The way that she taught me home care is the way that I do it now. Um, because what she did was she, weekly, case managed with me. So what that means is she basically—I opened a case. We discussed the case. “So, what is your thought process? What do you think is going on with the patient? How often you think the patient needs to be seen?” Just to kinda, you know, start with the critical thinking component. And then, you know, the following week, she would say, “So, how’s that patient doing. So, when do you think your patient’ll be ready for discharge?” Like, cuz you’re guesstimating. Like, you’re saying, okay, based on this, this is what I think. So, it-it taught me how to critically think in the home and the importance of visit patterns, cuz first of all, you’re by yourself.*

The relationship developed with the preceptor/mentor could last longer than the orientation period and had a great impact on how HH nurses refined their critical thinking skills. During the orientation phase, nurses appreciated when they were guided to think about visit patterns and how these patterns might change with any change in the patient’s condition. Nurses were actively engaged in this thought process every time they had a new admission.
Another area of training that HH nurses received was the continuous education about any policy changes affecting their practice and ways to improve their documentation. For example, “dry sterile dressing on a surgical incision is no longer considered a skilled need.” This was especially relevant to older nurses who had been practicing in HH for a long time. Newer nurses were more receptive to change. However, most nurses struggled because change happened so frequently: “thank God they do that [training], because you would be making tons of mistakes, and you feel like just when you figured it all out, then they change it again.”

C.4. Protocols

Protocols helped in preventing over-utilization and offered standardization and a reference especially for new nurses. Therefore, they served as a guide but the clinical judgment remained the final decisive factor. Given that visit planning was a continuous process that evolved as things changed, protocol were only a starting point. Nurses still relied on their judgment and evaluation of the patient’s needs because every patient was different.

Agency 1 did not have a specific set of protocols but encouraged nurses to follow certain initiatives such as frontloading for high alert patients including those with heart failure, those frequently readmitted to the hospital, those who have problems with medication, and those commonly referred to HH. These patients were visited more frequently (at least three or four times every week) in the first few weeks of the episode. Nurses who had been employed by Agency 1 for longer than five years mentioned a heart failure-specific protocol that was developed in collaboration with field staff. The protocol consisted of a template of how many visits patients would need based on their NYHA
classification, and what therapy services were recommended. However, this protocol was no longer enforced and newer nurses were not aware of it.

Agency 2 used the CPA protocol, which was developed to avoid over-utilization. However, it affected nurses who “kind of feel defeated now, so they won’t order what the patients need cuz they don’t wanna go back and forth, and they’ll just order less, which is hurting the patient.” The CPA protocol was based on the clinical acuity derived from the HHRG score. Besides clinical acuity, the functional items from the OASIS assessment helped in determining the therapy visit patterns. One MCM gave the following example when she was describing the relationship between specific diagnoses and clinical acuity:

*We could have a heart failure patient that’s a C1, a C2, and maybe even a C3. Cuz if that heart failure patient also has a trauma wound, they would be a C3. So it’s like, the trauma wound is what’s driving those visits though, because they need the nurse out there to do this wound care.*

The documentation on the SOC OASIS determined on average what services CMS anticipates for the patient. Therefore, MCMs completed their chart reviews at the SOC and looked at what CMS expected to see using the CPA as a guide. In cases of discrepancies between visit patterns and nurses’ documentation of patient need, MCMs reached out to nurses and made suggestions to add or remove visits. Sometimes, they replaced a face-to-face visit with a telephone call visit. The MCMs’ recommendations served only as a starting point. If a patient’s status changed during the episode, the nurse discussed any updates to the visit plan with the clinical manager.

Although nurses perceived MCMs to be very strict in their reviews and recommendations, some were satisfied with the MCMs reviewing their documentation to improve it as described by one nurse:
They do a really good job. I think they do. Like, they go through your notes and then maybe it’s me, you know, not making my notes as specific enough to keep the visits there. […] but overall, I think it’s a good thing to have somebody watching you, making sure it’s correctly being done as far as Medicare verification and things like that.

Most disagreements between nurses and MCMs were about wound cases, heart failure cases and new diagnosis cases especially when the patient lacked adequate social support. Nurses talked about the struggle with having to justify the need to keep their visits because MCMs did not see and assess the patient. On the other hand, MCMs argued that CMS was not in the patient’s home either. Therefore, they aimed to work collaboratively with visiting nurses and relied on documentation to paint a true picture of the patients and their needs: “even though we don’t see the client, if the nurse tells the story correctly and gets her assessment done accurately, with our expert knowledge on what the item intent is, we can get the answer right.”

Agency 3 used clinical pathways that recommend visit patterns based on the HHRG score of the patient upon admission. The higher the HHRG score, the more services the patient needed. Nurses were encouraged to use the clinical pathway as a guide, but still relied on their clinical judgment to make final decisions according to patient needs. Nurses shared how the clinical pathway missed to account for several factors that were essential to providing a complete picture of the patient:

[The OASIS assessment] doesn’t really see the depth of what we see. You know, unfortunately the OASIS is very clean cut. It’s either black or white. It’s no grey area. And we see all the grey areas. And that’s what we have to supplement, what we see with what the OASIS gives.

Examples of these deficiencies were mental health assessment, ability and willingness of the patient to be engaged in the plan of care, and psychosocial factors such as emotional distress, socioeconomic status, literacy level, family dynamics, and willingness of
available caregivers to participate in the care plan. The clinical pathway never indicated daily visits to provide wound care and did not account for changes that might happen during the episode, such as when a caregiver was no longer be available, or when the patient realized they needed additional support.

C.5. Frontloading

Nurses from agencies 1 and 3 used the term “frontloading” when they were describing the practice of providing more frequent visits in the beginning of the episode, then decreasing it as the patient stabilized and became more responsible of their own care. Some nurses specified the number of visits, such as at least three times per week, or every other day, or even back-to-back visits. One nurse explained:

_Probably the first two weeks would be the priority of what I’m thinking. The first week definitely, two to three visits back to back. So even if—whatever day we open the case, I will frontload, uh, so that first day start of care, the following day definitely and then maybe skip a day and then come back and follow on another day._

Fewer nurses from agency 2 described the application of this concept within their practice and none of them used the term “frontloading.” Agencies used frontloading as an initiative to decrease hospital readmissions. Frontloading depended on the patient’s stability and diagnosis, frequent medication changes, ability of the patient to manage themselves, and level of teaching and reinforcement required.

Nurses were encouraged to frontload visits for patients with frequent fluctuations in their health status, such as patients with heart failure. Nurses also visited patients with wounds more frequently when the patient could reach the wound and did not have caregivers to assist. Lastly, nurses added more visits in the beginning of the episode for teaching, especially if the patient had multiple medications, decreased cognitive ability,
or a new diagnosis. Nurses also provided education to caregivers who needed reinforcement and continued instructions in the beginning on how to perform wound care as illustrated in the following quotation:

*If there is an ability to teach a caregiver—that’s another reason why I may frontload visits, because they might need reinforcement the following day, so if there’s something like a new medication injection or some kind of new treatment, even—mostly for wounds, um, it may not be too comfortable the first day. So we definitely do like the—we do the demonstration the first day. And then we come back the next day to watch them do it.*

C.6. Telemonitoring

Agency 2 never used telemonitoring, while the other agencies used it for patients who had a primary or secondary diagnosis of heart failure, unless the patient refused. Agency 3 also used it for those with uncontrolled high blood pressure. Nurses employed by agencies 1 and 3 evaluated whether the patient was a good candidate for telemonitoring at the SOC visit. Patients needed to be reliable, willing and able to use the equipment on a daily basis.

Nurses were more comfortable decreasing visit frequency once a patient was stable and engaged in using telehealth because they were being continuously monitored. Nurses employed by Agency 1 decreased their visit frequency by one visit per week. One nurse offered the following example:

*Once telehealth is installed, we basically wait to make sure that the patient is utilizing the machine appropriately and then we would decrease our visit patterns. If we’re seeing them three times a week, we would decrease it by one. So the telehealth will take one visit per week. So if it’s twice a week, we’ll now see them once a week. There’s never a case where we leave telehealth and not see them.*

As for Agency 3, nurses replaced some face-to-face visits with telephone call visits. Nurses still visited the patient (at least once per week) to make sure that they were using
the equipment appropriately, physically assess them, and provide them with adequate education about their disease process. One nurse explained:

*The telehealth does not take the place of the nurse. Telehealth is in conjunction with the nurse. And the real reason I keep them on is because a lot—most of the time, patients will think, "I have the equipment. I don't need the nurse." That's not absolutely the case because I still wanna make sure that you understand the education component of it.*

The telehealth coordinator contacted patients and nurses if patients had any fluctuation in their health status. Subsequently, the nurse added a PRN visit to assess the patient.

**C.7. Telephone call visits**

Nurses in Agency 1 only used telephone calls to confirm upcoming visits and ask patients whether they received supplies, picked up their medications, or scheduled an appointment with their provider. At the other agencies, nurses officially relied on telephone calls to reinforce teaching, follow up with stable patients who became engaged in self-management, and reassure patients and families. Nurses also considered telephone calls to follow up on any changes to the patient’s plan of care following a visit to the doctor. Few nurses mentioned replacing a face-to-face visit with a telephone call for patients who had a high copay because telephone call visits were not billable. Nurses used a systematic assessment approach, even without being in the patient’s home. If they found any change in the patient’s status, that alone justified the addition of more visits. Nurses who have been practicing in HH for a while preferred to go see the patient rather than add a telephone call.

**D. Policy/payer-level Factors**

These factors lied outside of nurses’ immediate control and were common to all agencies.
D.1. Insurance as Challenge

Agencies were enacting payers’ regulations by using multiple strategies discussed in the previous section. Nurses shared the importance of documenting patient needs and justifying the number of visits requested to facilitate the insurer’s approval of visits. One nurse stated:

*It’s more of, you know, what is my patient’s need. Because if you can justify why you’re there, they don’t mind giving you the visit. It’s when you can’t justify it. So, as long as it can be justified, that’s the main word, justified. As long as it could be justified, you’re fine. And with Medicare, they like to see what the skill need is there, so, nursing will continue to perform skilled nursing assessment of—being specific, so they know what they’re paying for."

However, many times the insurance company did not authorize all visits and the nurse faced the dilemma of providing patients the care they needed at the agency’s expense. One nurse explained: “I can still go in, but with that level of anxiety where, is that authorization going to come? Will I have to explain why I cost the company so much money on this patient if the authorization doesn’t come?”

Given that some agencies provided “free care” until they referred the patient to other resources or other insurance plans, some nurses stressed that insurance status did not determine the number of visits a patient received. Nevertheless, one nurse stated: “it’s easier to provide care when it’s approved. You don’t have to worry about a phone call like, why did you make all these.” In cases where the private insurance only approved a specific number of visits for the whole episode, nurses spread their visits out to ensure that patients were still monitored until they were ready to be discharged.

Many nurses perceived Medicare patients as easier to case manage because they did not require authorization. One nurse expressed:
Medicare patients, since we get paid, like, episodic, the agency gets a certain amount for 60 days, whether you do five visits or 50 visits. So it kind of gives you more, like, leeway. I mean, the agency, I know they lose money, but if you think about the patient, as long as the patient got a skilled need, a Medicare patient, I don’t really get too concerned.

On the other hand, few nurses were in favor of managed care because it was an efficient way of providing care according to patient needs without over-utilizing services, while keeping the agency running. In one case, the nurse shared that it was easier to develop a visit plan for a patient on managed care because they could be firm about how many visits the insurance company allowed. Hence, patients could get more motivated to be engaged and discharged from HH faster. However, in some cases nurses expressed a concern that patients did not get the care that they needed. One nurse offered the following explanation:

The doctor can give us a plan of care and say, “I want you to see this patient every day.” But if managed care says, “I’m only gonna give you two visits a week,” we only can see the patient twice a week. […] It is a limitation to our plan. So once I see managed care, I know I’m going to have to work twice as hard because sometimes—those are the times that I feel I need more visits and I’m not getting them.

Few nurses shared how copays influenced their visit patterns. If the patient had a copay, nurses considered other ways to provide adequate care without overwhelming the patient financially. Nurses invited caregivers to become more involved in assisting with the care, especially in the case of wounds. Sometimes, nurses referred patients to cheaper resources to receive basic care, such as daily injections. Nurses also worked closely with the patient to complete as many goals as possible with the least number of visits to avoid the high cost of care. One nurse described how she encouraged her patient to be engaged in quickly learning the skills to perform her wound care:
[...] her co-pay was 150. So that means every time the nurse comes, it’s $150.00 per visit. And, it’s evident she needed—the wound was right here, so it’s evident she needed the nurse to come. But, what do you say to someone that’s like no, I don’t want the nurse? I just basically had to convince her, like, why don’t I teach you, and then we come, you know, a couple times a week.

D.2. Medicare Rules and Regulations: Homebound Status and Skilled Need

Some nurses felt the pressure to complete the first five visits and avoid creating a LUPA (Low Utilization Payment Adjustment) in order to get full episodic payment. Nurses carefully identified the skilled need of their patients and continuously evaluated their homebound status. If the patient had a skilled need but was not homebound, nurses informed them that their need should be addressed elsewhere and they were discharged from HH.

Nurses shared feeling limited by the homebound criterion because it did not always paint a true picture of the patient. One nurse shared: “There’s also some cases where you’re—are they homebound? So then you’re kind of like, on edge. Like, should I even be admitting them? But you know they kind of need the skilled help.” Therefore, some patients were not homebound according to Medicare’s definition, but were still in need for skilled services at home. In some instances, when a patient no longer had a skilled nursing need, the physical therapist coordinated the case and if there was a change in the patient’s status, they reactivated nursing services and requested nurses to visit the patient. Nurses emphasized the importance of justifying and documenting the skilled need they were addressing during each visit. One MCM stated: “If there’s no true justification, if it’s just a gut feeling, Medicare doesn’t pay for gut feelings. You know, there’s gotta be a skilled reason.”
D.3. Policy Changes and Home Health Today

The changes in the CMS rules and regulations led nurses to condense the care that they provided and reduce the number of visits, as one nurse expressed: “It’s a lot more discipline.” Nurses shared how they provided visits according to patients’ needs and made every visit count. They no longer visited patients just to “check on them”. One nurse explained:

*Every visit has to stand alone and it has to have a skilled intervention done. So what is this visit for? Right. And it has to be focused towards the primary condition. You know, what’d you build your plan of care around, and that’s what these visits have to be for, to move the client towards independence. […] handholding is no longer something we can do. It really does need to be structured and as in-depth teaching as possible, making every visit truly count for that client. And if we don’t make every visit truly count, we’re really not doing the client any good.*

Nurses planned for discharge from the SOC visit; they described how HH was a short-term plan to patients. Experienced HH nurses differentiated between the former and current HH settings; HH used to be a doing environment where nurses provided care without involving patients. Nowadays, HH is a teaching environment where nurses are assisting patients and their caregivers to achieve the skills they need to care for themselves. One nurse reflected on his communication with patients about discharging them from HH:

*I always joke around with my patients, um, that as a visiting nurse, my job is to get you to fire me. And I’d say, “Hey, look. I want you to not need me. I want you to graduate from me. I don’t want you to be a crutch. I’m a short-term nurse, I’m like a hospital without walls. Uh, I want you to get out of here eventually, and I want you to not need me. I’m—I’m here if you need me, but my job is to kind of instill in you the tools to take care of yourself, uh, whether it be teaching you about your medicine, or healing your wounds, or, uh, teaching you about your illness and how to deal with it.”*
Summary of Aim 1

This section presented how HH nurses developed the visit plan for newly admitted HH patients, including their decision-making process and the factors they considered during this process. Nurses started by reviewing the referral information to get a preliminary picture of the patient and start preparing for the visit. The referral information was often incomplete and inaccurate. Hence, nurses did not make any decision regarding the visit plan before completing a comprehensive assessment of the patient and their support system to identify their clinical and social needs, and their readiness to participate in the plan of care. Nurses engaged in a multifactorial analysis to decide on visit intensity. After documenting their assessment, they referred to their agency’s protocols and complemented them with their experience and clinical judgment. Nurses also participated in regular team meetings where they received feedback from their managers and colleagues. Moreover, specific agency practices such as frontloading, telemonitoring, and telephone call visits influenced nurses’ final decisions. Nurses were cognizant of the current HH practice environment where they are expected to justify patient needs and provide condensed care to assist patients in reaching their maximum potential.

Process of Plan Implementation (Aim 2)

The second aim of this study is about how HH nurses implement the visit plan for newly admitted HH patients. It will be addressed by describing how nurses planned their daily schedule and how they revisited their initial visit plan to make changes based on patient need. The implementation process included the logistics of planning the daily
schedule and the encounter between the nurse and the patient. Therefore, patient-, nurse-, and agency-level factors influenced the implementation process. During the implementation process, changes occurred leading the nurse to adjust the initial plan. These changes were often related to the patient’s condition and nurses relied on their experience to respond to the changes according to their agency’s procedures.

**Daily Schedule**

Once nurses decided on their visit pattern and received approval for the requested visits, they started planning their schedule in order to meet the needs of their patients. Most nurses planned their schedule a week at a time, and took into consideration that they needed to visit one new patient every day, even if they handed the patient over to another nurse. Some patients had to receive a visit. Therefore, if the nurse had a case overload, they requested help from other nurses to cover their stable cases, also known as patients on the “pending list”. However, many nurses were concerned that their patients might not be receptive to the change and refuse visits from other nurses. This will be further described under the section about agency-level factors. Following is a description of the factors that influenced how nurses planned their daily schedule. The factors are presented according to the socio-ecological lens and include patient factors, nurse factors and agency factors.

**A. Patient-level Factors**

Nurses described how they planned their schedule including strategies they used to create their daily itinerary and prioritize visiting their assigned patients. Most nurses communicated with their patients the night before the visit to confirm the visit and provide them with a time range because they could not always estimate how long
previous visits would last. Nurses presented three main factors that influenced how they created their daily route: patient acuity or need, patient preference or availability, and patient location.

A.1. Patient Acuity or Need

Nurses referred to patient acuity to triage who needed a visit early in the day; they preferred to visit stable patients later in the day, so if there was an emergency, they could reschedule the visit with the stable patients for the next day. One nurse stated: “I see my most critical patients first and that gives me leeway if I, if there’s a patient who’s not that critical, but I need to see them once a week. I play around with that.” For instance, if a patient had a new diagnosis of diabetes, nurses preferred to visit them first to assist them with checking their blood sugar level and administering their insulin, until they became confident. Another nurse shared how he balanced his schedule by visiting patients who required more emotional support on days that were not too busy in order to spend enough time with them.

Nurses shared how they readjusted their schedule based on patient emergencies. One nurse described how he visited one of his patients a day early because the patient called him and reported having increased shortness of breath. Due to this change, he needed to rearrange his schedule. In other cases, nurses gave examples of patient emergencies where they spent more time at a patient’s house and had to reschedule their stable cases and request help with their must-see cases. For example, one nurse shared:

*The only thing I can do is call my other patients and let them know that I’m running very late. I had an emergency or if the, if there’s patients that I can see the following day, I’ll say, “I’m really sorry, I had an emergency situation. It delayed me a lot. Can I see you the following day or another day during the week?” Um. There’s always a way of handling situations like that.*
The start of care visit required a lot of time because it included a full assessment, teaching, and in some cases wound care. Therefore, most nurses preferred to leave new admission cases until the end of the day to devote more time to their patients, unless the patient had immediate needs to be addressed such as wound care or an injection at a specific time. One nurse described the factors that she considered when triaging her new patients:

Like somebody comes home, and they went to the hospital because their pressure was elevated, and their medications were changed, and they were stabilized, and then they’re sent home. Okay, and he lives with caregivers—spouse, kids, whatever. So that’s a little less acuity than someone coming on post op, and they’ve got an open wound, and they need wound dressings, etc. So that kind of factors in.

A.2. Patient Preference or Availability

Most nurses preplanned their next week’s visits before they left the patient’s home to schedule upcoming visits on days when the patient was available and accommodate their preferences. One nurse shared how she communicated with her patients about upcoming visits:

I usually schedule the visit before when I’m with them. I schedule for whatever—you know, the next week, um, if they’re seen once a week, I’ll say, “What day works best for you? You know, what time?” I try to schedule it, you know, that they like it. Um, I know some people like mornings. Some people like afternoons.

Nurses knew their patients’ routines, especially when followed over long periods as exemplified by one nurse who stated:

A lot of these patients have other nurses and caregivers coming in all the time. So, you try and make it convenient for them, um, because they’re trusting you to come into their home, and you become kind of a part of their family too. I do always try and get them taken care of in the morning. Um, the long-term patients are, like, catheters and stuff like that cuz you've been seeing them for a while.
Some patients preferred morning visits, while others requested a late visit. This preference was mainly due to having visits from other disciplines or having other treatments scheduled such as dialysis or hyperbaric oxygen therapy. Nurses coordinated with other disciplines to avoid visiting the patient on the same day or around the same time. One nurse shared her personal experience as a patient with physical therapy and suggested involving the patient in scheduling visits by adding upcoming visits to their personal calendar:

*The calendar for visits, that may seem strange. When someone has a nurse, a physical therapist, an occupational therapist, a speech therapist, a social worker, and a home health aid, they are so overwhelmed by everybody that we have calendars in our packets that we give them. Or, if they have a calendar in the home, to make sure that, after therapy, I know after my therapy, I’m sore as get out. I need to rest. I don’t want someone walking in the door right after a therapist leaves because I’m not focused. Or, I need a nap. Or, I’m 95 years old, and I just got a bath. The therapist just worked me out. Now the occupational therapist is here, and a nurse is coming later. Dear god, like, I can’t handle that amount of visits in a day, much less them. So-so, that’s a good thing to help—to help them with spacing out their day and their—and who’s seeing them.*

If the patient had a therapy visit and a skilled nursing visit for wound care on the same day, nurses often preferred to visit their patient after therapy to let the bandage adhere. Some patients preferred to get a shower before the nurse performed the wound care, hence nurses visited them around mid-morning. One nurse gave the following example:

*I have a lady who—she has a home health aide that comes out to the house between 9:30 and 11:30 every day, and she’s my daily wound care. So I try to be out there between 10:30 and 11:00 so when she’s already washed, then I can do wound care.*

Besides receiving visits from other disciplines, having an appointment with a provider influenced when nurses visited their patients. For instance, in the case of patients on wound vacuum therapy, the nurse visited them immediately after the appointment to connect them to the equipment. For other patients, nurses decreased their
visits for that week or rescheduled their visit because the provider had already assessed the patient and the insurance would not cover two encounters on the same day. One nurse explained:

*When they go to the doctor, I won’t make a visit. For most insurances, they won’t pay for a nurse visit and a doctor visit—which, again, it’s redundant anyway, the doctor’s gonna be evaluating them, unless they have wound care and the doctor will not address their wound. I’ll come see them, do their wound care; then they’ll go to their doctor. But generally, yeah, I don’t—I’ll come after the doctor’s visit like, the next day or later in the week, just so we have something to talk about and follow up on any problems, any changes, any updates to what I need to be doing with the patient.*

Nurses working with Agency 2 sometimes added a telephone call visit to follow up with their patients about any updates to the plan of care following an appointment with a provider. This was exemplified by one nurse who stated:

*If they are going for an important doctor’s appointment where there might be changes made, I would make a telephone call for that day, cuz we don’t see them the same day as they go to the doctor’s, and then that way I’ll kind of see how it went, see if there’s any changes where I need to do a visit, or make the visit pattern more frequent.*

Some patients relied on their caregivers; hence, the nurse planned to visit the patient when the caregiver was available, even if it created challenges. Nurses went above and beyond to provide patients with the care they needed to get better. One nurse shared how she had to reschedule some of her visits to meet the caregiver and the patient during the weekend. Another nurse explained why she made sure that caregivers were available:

*There’s an elderly person, and they’re up on the second floor. They can’t answer the door. So they can only get a family member on these days to answer the door to let the nurse in. So that happens sometimes. Umm, but that would be one thing that would limit us. If someone was not there to help them, to let us in.*
Some patients refused to be seen according to what the nurse had originally planned. Therefore, the nurse collaborated with them and their providers to meet their needs while keeping them comfortable. Nurses did their best to accommodate their patients’ schedules and preferences. However, they faced challenges when they reached the patient’s house and the patient was unavailable as described by one of the nurses:

*I mean sometimes you get there and the patient isn’t there, that’s a challenge. You schedule your visit and you get there and you’re knocking, ringing the bell. No, they’re not there. Sometimes you get there, they’re there, but they don’t wanna be seen. That’s a challenge. Especially if they’re counted as your patient for the day.*

A.3. Patient Location

Nurses took into consideration the interplay between several factors when planning their daily schedule. Besides patients’ needs and preferences, nurses accounted for patients’ addresses as illustrated in the following quotation: “*I try to compact patients with areas. […] I try to start in the area where the patients are much more complicated and I try to move to areas where patients are less complicated.*” Therefore, it was difficult for a nurse to plan her schedule when patients were not flexible or lived very far apart. Some nurses also mentioned the difficulty they faced when they could not find a parking space to visit a patient.

Although most nurses “*tend to leave admissions to the end of the day because [they] need to spend more time with them,*” one nurse shared that if the new admission case lived near a patient with diabetes, she visited the new patient in the morning. This also exemplified how nurses considered multiple factors when planning their daily itineraries. Nevertheless, geography still played a big part in nurses’ decisions because they were expected to maintain their productivity level and visit a specific number of patients while not working extended hours. One nurse shared:
I try to clump my clients together as much as I can, so I’m not driving all over the place. Um, that just wastes time, energy, and gas. So, and I’m much more productive when I have, you know, three in one area and then go to the next area.

B. Nurse-level Factors

Nurses’ experience in plotting patient visits throughout the HH episode was exemplified by one participant:

I think learning how to move those visits, plot them differently to each patient and their needs. You learn how to do that, you know—all these years doing that, now like, okay. Well, let’s see how many visits I actually have. Let’s see where the cert period ends, and let’s see if I can space this out and let them still have their visits, but more spaced out.

Over time, nurses developed their organizational skills and learned how to manage their time better “to get everything done timely and accurately.” Therefore, they became proficient at estimating how long they needed to complete each visit as they were planning their daily schedule.

In addition to the ease of creating their schedule, experienced nurses became used to the neighborhoods they visited and accustomed to the patient population they cared for. By knowing the area and the patients, nurses became part of the community, which made it easier for them to get around. Some agencies provided a security guard to accompany the nurse if they were visiting a patient in an unsafe neighborhood. Some nurses shared how they felt protected because patients “look out for them” by waiting at the door or walking them to their cars, especially in areas known to be unsafe. For example, one participant shared:

The thing is no matter what team you work on, once you’re in that team, you get used to that type of population. West Philly is kinda like tough but I have a lot of young nurses who work in West Philly who are used to it um, they become part of the community as they work in the—so they get used to it. They know where to go to the bathroom. They know which block they gotta be careful on. So they tend to
make it kinda like their second home, they know it. And then in return, the patients get to know them. The neighbors know them because of the frequency they go see the patient. The neighbors get to know them. People in the area get to know them. They say oh, that’s the nurse.

C. Agency-level Factors

Nurses described the HH work environment as a very dynamic and unpredictable setting. They shared staffing and scheduling matters that interfered with their daily schedule planning. For instance, when their scheduler assigned them a new patient, nurses evaluated whether they could manage their caseload. Sometimes, they needed to hand over one of their regular patients to another nurse for a revisit. Nurses voiced concerns about this practice because they had developed relationships with their patients who might refuse visits from other nurses. In order to avoid that from happening, one nurse shared that she tries “to tell them in advance. Like, somebody else is gonna see you, so they don’t refuse the visit.” Nevertheless, nurses remained concerned that their patients might not be as comfortable with another nurse. One nurse stated that she preferred to reschedule the visit with her patient if it was not a necessity instead of having another nurse visit them.

Nurses stressed the importance of keeping their patients to preserve the continuity of care. One nurse explained how difficult it was to know what the previous nurse covered during prior visits:

If you have three or four different nurses, it’s hard to read in-between the lines in your notes and see where they were with their teaching. Sometimes it’s concrete. You know, “We did this, this, and this. They still need—” but not always is it clear in there.

However, sometimes nurses could not keep all their patients such as when a nurse called out or during the weekend. Other times, nurses requested to reassign the patient to
another nurse due to personality conflict or a need for a second opinion. If there was an overflow of patients, some agencies allowed licensed practical nurses (LPNs) to assist nurses with revisits. LPNs could not make changes to the plan of care or add orders; they followed nurses’ instructions to complete the revisit and communicated with the nurse any changes in the patient’s condition. Therefore, LPNs visited patients who were stable and required basic monitoring or wound care. Some insurance companies did not cover an LPN visit.

Other scheduling challenges that nurses faced while planning their daily schedule were related to “late drop” cases. Sometimes, the nurse was assigned a new patient before their discharge from the hospital. Therefore, they could not estimate what time the patient would be home for the visit. One nurse offered the following description of her experience with getting a new patient late in the day:

_The thing that just screws me up during the day is if they have late drops. They call me at 1:00, “Oh, you know what, the patient just got outta the hospital. They have to have a nurse go the same day. Can you please go?” All the nurses get frustrated with late drops. And it really is actually very disruptive to our entire planning, you know, how we plan our day. So, we always tell them, “If it’s after 1:00 you shouldn’t even accept a late drop. Don’t call us at 2:30 and say: Can you go see this patient?”_

Besides assigning patients to nurses, the agency staff maintained a level of oversight to reinforce nurses’ compliance and productivity. For instance, nurse managers at Agency 1 monitored whether nurses were compliant with their visit plans. In cases of discrepancies between the visit orders and nurses’ schedules, managers reviewed the electronic documentation to identify if the nurse had a justification to miss a visit. Nurse managers also completed intermittent reviews of nurses’ schedules to identify if they were meeting productivity requirements and if they were spending too much time with
patients. One manager stated regarding visit length: “I will talk to them about it, “You’re probably better off increasing your visits and going more because the patient can only absorb so much”.”

D. Length of Visits

Time management was very important especially in situations where the nurse had a case overload and needed to provide care to all patients. Therefore, while planning the sequence of visits, nurses considered how long each visit may take. Nurses allocated 60 to 90 minutes for a Start of Care (SOC) visit. By reviewing the referral information, nurses could estimate the length of the SOC visit, unless the information was inaccurate. One nurse explained:

If it’s a ileostomy or colostomy, brand new, I have to teach, uh, and if there’s a surgical incision of the abdominal region, dressing change, I know it’s gonna be at least a two-hour visit, if I have to do a colostomy change and teach them on that day.

As for a regular revisit, nurses planned for 30 to 45 minutes, including the time spent on documentation. Nurses were encouraged to document while in the patient’s home, but sometimes they did not have enough time. One nurse shared her experience with point of care documentation:

My time that I factor in, I usually leave a little time for charting at each house, too. So in some cases I just won’t be able to chart, and I just go to the next visit and that’s why I chart when I get home, so. Yeah, so it can extend the day a little bit with that.

Once the nurse knew their patients, they could better estimate how long each visit would last, given that some cases were more complex than others, and some required more time for emotional support. Therefore, knowing the patient influenced how the nurse planned the day and spaced out visits. However, in cases of unexpected
circumstances and emergencies, visits tended to be longer. Patients were often worried and unable to advocate for themselves. Therefore, nurses provided them with support and remained with them until they became stable or were transferred to the hospital. Sometimes, nurses also had longer visits if they needed to communicate with the physician any changes in the patient’s status. Visits also were longer if the patient had a complex wound or “if you know a patient needs a lot of teaching, a lot of time you know you have to take your time with them and make sure they understand the disease process or which medication is being used for what.” In fact, one of the nurses shared:

*The education piece usually takes about half the visit whether it’s, um, observing them do something, whether it’s the medication box or wound care, or just telling me what they know, um, versus me teaching them what they need to know […] the other half is for assessment.*

**Patient Encounter**

Besides the logistics of planning the daily schedule, the implementation process included the encounter between the nurse and the patient and their caregivers. During the visit, nurses performed specific procedures and interacted with patients and their caregivers to assess them, support them, and provide education about the disease process. Therefore, patient- and nurse-level factors influenced the encounter.

At the agency level, nurses participated in regular interdisciplinary team discussions and one-on-one meetings with their managers. They consulted with their colleagues on complex cases where patients were not willing to work with the nurse. Nurses received recommendations about services, approaches, and treatment options that might benefit patients. Nurses often referred to these recommendations during their
encounter with their patients to improve the care provided and assist the patient in reaching their goals.

**A. Patient-level Factors**

Nurses found it easy to work with proactive patients who were engaged in their care because they could preplan and set common goals for each visit. One nurse offered the following description of patients’ willingness to learn and get better:

* A lot of it is, are they trying to get better, or are they trying to learn from you, or if they’re just trying to get done. You know, are they trying—did their doctor force them to get into home care. Uh, a lot of doctors do, believe it or not. So, a lot of it is the willingness to learn. That’s the biggest portion that I would say is my stumbling block.

On the other hand, nurses faced challenges during the visit when a patient had limited cognitive ability or a language barrier, especially if they did not have caregivers available at the time of the visit.

Caregivers served as a source of information especially if the patient was forgetful or purposefully did not share everything with the nurse. Caregivers provided a full representation of the situation so the nurse could make informed decisions and tailor the interventions to the patient’s needs. Moreover, some caregivers assisted in providing care to their loved ones, as one nurse explained: “A patient with a good, strong family support system that can help or friends, that makes life a lot easier. If it’s a stable wound, you know, we can always teach the family or friend that’s willing to learn.” Caregivers who were engaged in providing care needed to be available, willing, ready, and able to learn the skills. Unfortunately, some nurses shared instances where caregivers interfered with care provision and were not a source of support.
Sometimes, patients had other priorities or concerns, which prevented them from being fully engaged with the nurse during the visit. Therefore, nurses tried to address their psychosocial and emotional needs prior to focusing on their medical needs. One nurse shared an example of an older patient who was distracted during the visit by her grandchildren screaming and running around. Another nurse described how her patient did not listen to her until they had a cup of tea, which helped strengthen their relationship and made the patient feel more comfortable sharing her concerns. Another nurse stressed the importance of listening to patients and building a therapeutic relationship with them:

_Sometimes some patients they need that extra attention. And you would never believe how powerful just listening can, how relieving and how therapeutic. That’s why therapeutic listening is so incredible in my job. That’s why I love being a home care nurse. Because I can’t do that in the hospital setting. I can only really do it in the home care setting. And sometimes, and I have some patients who really, they don’t have a lot of physical needs, but they have so many emotional and mental distress that all they need is somebody to, to, to cry on. To listen to them, hear them out, no judgment. Just give them a lot of empathy and care. So sometimes, yeah, those visits, they take a little longer than I expect, but they, they’re very valuable to me._

Nurses were invested in their patients’ recovery and developed professional relationships with them. They perceived patients as “_people who happen to be sick._” One nurse shared how she communicated with her patients:

_My care, my motto is I tend to treat my patients as if they’re my family. If I see that you’re not adherent, I’m fussing at you just like I’m fussing at my own parents. Because I shouldn’t care more about your health than you, you know what I mean. So, it’s your body._

However, despite having that therapeutic relationship, some patients remained not interested in changing their lifestyles. One nurse talked about using different approaches with her patients in order to motivate them, instead of just increasing the frequency of her
visits: “sometimes, it’s the way you treat them. Making it more casual tends to help a little bit, so they don’t feel like they’re being railroaded.”

Once nurses established rapport, the patient was more receptive to education and more eager to get better. Nevertheless, some patients became too dependent on the nurse especially when they lived alone; they sought extra support and company and did not express a readiness for discharge from HH. Nurses addressed specific short-term needs during each visit. One nurse shared how she held the patient accountable and let them decide what they needed to master in order to get better. Together, they set common goals and steps to reach those expectations:

\[
\text{For people who are very willing to learn, I'll be like what do you wanna know next time? This is what we need to talk about. What do you wanna learn about next time? Cuz it gives them that, you know, this is mine. That's a way to motivate them. And you also, like, set common goals that we're both together trying to reach. I mean, I might be thinking, okay, these are the best meals that you can come up with, where they're thinking I get $15.00 in grocery money a week. How am I gonna do that? Home health is cool I think, because we can see the client and take the time to really talk with them and set up a plan of care to make them successful with you in this outcome.}
\]

During the visit, nurses assessed their patients’ living condition to evaluate patient safety as well as nurses’ safety and comfort while providing care. One nurse gave the following example about how living conditions influenced the care she delivered:

\[
\text{Some of the living conditions you go into, it's just, like, hoarding. There was one patient—there was just a little path to walk in, and, um, you have to do wound care or wrap legs, so you go in with all kinds of paper towels and drapes, and you just try and do your best.}
\]

**B. Nurse-level Factors**

New-to-practice nurses were not hired to work in HH; they needed prior foundation and experience in acute care. One nurse described how his previous
experience in critical care helped him refine his assessment skills, level of autonomy, and critical thinking under stressful situations. Whereas his experience in a medical surgical setting benefited him in prioritizing his patients’ needs. Therefore, as one of the managers explained:

In home care, because you’re going into the home, you have no clue what happened prior to you getting there. So, during orientation, we don’t teach them how to be nurses. We teach them how to develop what they already know, and how to use it in a home environment.

One nurse practiced as a home social worker before becoming a HH nurse. She used to spend most of her visit time focusing on her patients’ social needs. Therefore, she needed constant reminders from her manager to think like a nurse: “My manager say, “Oh, you gotta remember. You’re a nurse not a social worker.” Cuz sometimes it’s easy to get caught up in people’s social issues, and you don’t address the medical issues. It’s easy for that to happen.”

Experienced HH nurses were more comfortable in the patient’s home because they were better prepared to assess the patient, perform the care, and act autonomously and preemptively in a timely manner. Nurses described how their experience in HH made them better clinicians; they developed broader skill sets and became more competent in identifying any changes in the patient’s status. This comfort level also facilitated building rapport with patients and having in-depth conversations about their lifestyle. One nurse explained:

I think that I’m better now at doing what I have to do when I go in. I think once you get more comfortable, like, being around these people and going into their homes you’re easier able to educate and you know, provide that care you need.
In addition to refining their clinical skills, experienced nurses better identified if the patient was truthful or not. Another nurse offered the following description about autonomy and accountability while providing home visits:

*I'm responsible for all the care of the patient, uh, making sure they stay outta the hospital. Providing wound care, trach care, A, B, C, and D. As a new nurse, I had a very structured environment in the hospital. Now, I'm a little on my own—I'm a lot on my own. Because if I’m going into the home, I'm the primary medical person taking care of this patient in the home.*

**Making Changes to the Visit Plan**

Nurses described the planning of visit intensity as an ongoing process based on the patient’s condition. During the episode, nurses encountered changes leading them to adjust the initial visit plan and experienced nurses were better at identifying these changes and acting upon them. Nurses documented their justification for any change in their visit frequency and depending on their agency’s practice, they discussed those changes with their managers. Nurses also communicated with the responsible physician any changes in their patients’ condition when they needed to modify their visit patterns. They shared facing challenges when physicians were not available and did not promptly respond to their requests.

**A. Patient-level Factors**

Nurses described the SOC visit a snapshot of the episode and often faced uncertainty anticipating changes following that initial visit. They could not always predict how the patient’s condition would change. Hence, they faced difficulty when developing the visit plan and sometimes underestimated or overestimated the amount of needed visits. At the end of each visit, nurses had the opportunity to revisit their visit order. For instance, when the patient improved faster than expected or appeared more stable than
they really were, nurses decreased their visit frequency quicker. One nurse offered the following example:

*Young, healthy woman has a cesarean, and she’s got a wound that deep—you know—cuz it’s dehisced. Um—it’s gotta be daily visits. You go in daily, and you assume, “Okay, that’s probably gonna take two to three weeks to close up,” and on the third or fourth visit, now, that wound is this big [motioned with fingers that wound was very small] —you know what I’m saying? So you’re young, you’re healthy, you don’t have other comorbidities. You’re basically in good health. You’re eating well. You’re drinking your fluids. You’re doing everything you would be doing if you didn’t have that wound. So you heal much quicker—that would be overestimating.*

The plan of care continued to evolve as things changed with the client. Nurses altered their visit pattern according to the patient’s changing clinical needs. Any change in condition, better or worse led to a change in the visit pattern. For instance, if a patient with heart failure had an exacerbation, they needed adjustments in their diuretics, requiring additional visits from the nurse to monitor the medication effectiveness and their fluid status. In some instances, nurses shared how the therapist helped in identifying early changes in a patient’s condition. One nurse offered the following description of communicating with the therapist:

*Therapy does help. When therapy goes in, they still take vitals, and we have a lot of communication with each other. Um, there have been times where therapy has gone out and noticed a change in the patient and they’ll say, “This patient needs an extra nursing visit. Can you come see them today?”*

On the other hand, once patients were clinically stable and their symptoms were well managed, nurses decreased their visit frequency. Nurses also shared adding visits when new problems emerged such as sustaining a fall, getting a wound infection or a new pressure ulcer, and having a change in their medication regimen. Therefore, the nurse revisited the teaching plan, adding more visits to reach the goals. Nurses’ description of adding visits for wound care was exemplified by one nurse who stated:
Patient was being seen twice a week to monitor clinical status, uh, diabetic teaching, uh, disease management teaching, and the aid says, "Nurse, she has a red spot on her hip." And then I go and I assess, and I say, "Oh, when did she develop this?" "Oh, it's been there for about three days." No one called me. So, it's a Stage Two, 'cause, you know, she's diabetic so she has poor perfusion. So then I have to reach out to the doctor, take a picture of the wound. Might get orders to provide wound care and the wound care may be every day for two weeks, and then every other day. And then, you know, three times a week. So, that will change the plan of care. That will change my visit frequency.

Besides patient’s clinical need, nurses adjusted their visit patterns based on caregivers’ availability and involvement. If the patient needed daily wound care and the caregiver was able to learn the skill, then the nurse alternated with the caregiver and decreased their visits to every other day. One nurse explained:

*If I have a supportive caregiver who's very involved and doing things appropriately, caring for the patient appropriately, then I'm okay with decreasing my visit pattern. Uh, however, I'm lettin' the physician know as well: “Patient's daughter is independent in performing the wound care, I'll go assess weekly or something.”*

However, the nurse added visits if caregivers were no longer available or realized that they could not assume full responsibility for caring for their loved one.

In addition to clinical need and caregiver factors, nurses described the importance of patient engagement as illustrated in the following quotation:

*Having a patient who participates is very important because then you feel like each visit, you kind of got somewhere. You’re slowly reaching your goal. Um, so if a patient is more cooperative and more compliant or able to, uh, comprehend your teaching, then you get to your goal quicker. You could decrease your visits quicker. Um, but if a patient is not listening to you or just simply can’t understand, it does make it more difficult, so they may require more visits—uh, a lotta reinforcement.*

The nurse added visits if the patient did not follow up with their provider and was not compliant with the health recommendations. In some cases, patients did not take their medication as prescribed. One nurse shared the following example:
She was twice, and we moved her up to three times cuz we found out she wasn’t taking her Lasix the way she was supposed to, and there was another medicine that was missing. Um, so she started swelling up, so increased her to three times a week.

In another case, the nurse described how her patient was distracted during the visit, which made her add visits to provide additional teaching and reinforcement. On the other hand, nurses gradually decreased their visit frequency when patients were collaborating with the nurse, responsive to the teaching, and meeting their goals. Nurses also felt comfortable decreasing their visit frequency quicker when a patient was stable and fully engaged with telemonitoring. In some cases, nurses shared how they decreased their visit frequency when a patient refused to be seen according to the nurse’s plan. Nurses ultimately worked towards discharging their patients when they reached their maximum potential or returned to their baseline.

**B. Agency-level Factors**

There were some differences between and within agencies in how nurses communicated with their managers any changes in the visit plan. Nurses working at Agency 1 consulted with their managers when they revisited their visit plan because visit planning is a continuous and evolving process as described by one manager:

> Even though we do admission huddle, it doesn’t end there. Because I may say, you know what, you need to see this patient say three times a week. And when a nurse goes out, they’ll say: “hey, I just want you to know, I went out and saw this patient. Their wound looks worse.” They will up it.

Nurses also reached out to their managers if they needed to add visits for wound care because managers could assist in securing authorization for additional visits.

At Agency 2, clinical managers reviewed every additional order. Therefore, nurses discussed with them any changes in the visit orders that happened after completing
the SOC documentation. In the case of wound care, wounds were continuously reassessed and if there was little improvement within two to three weeks, the nurse met with the clinical manager and contacted the doctor to request a change to the visit frequency or the wound care protocol. Nurses also received close guidance and feedback from their clinical managers on their cases during one-on-one meetings; they evaluated whether patients would benefit from other treatment options. One nurse offered the following description of how the meeting helped her improve the care that she provided and assess whether the patient was ready for discharge:

> It’s collaborating with another nurse. It helps a lot. It just makes you, you know, think in another way. [The manager] may ask me questions that I wasn’t thinking of, um, to either justify or to say, “Well, wait a minute. We don’t need necessarily any more visits.”

Nurses employed by Agency 3 did not discuss with their managers any changes to their visit plan, unless there were drastic changes in visit intensity, such as an increase in service from twice weekly to daily if the wound was infected.

**Summary of Aim 2**

This section presented how HH nurses implemented the visit plan and included a description of the logistics of planning the daily schedule, the encounter between the nurse and patient, and the process of revisiting the initial visit plan. Most nurses preferred to plan their schedule one week in advance and took into consideration that they would be assigned one new patient every day. Nurses planned their itinerary based on patient acuity, preferences, and location. In cases where they were not able to visit all scheduled patients, they either rescheduled some of the visits or asked for assistance from other nurses. Nurses expressed the importance of continuity of care and shared the scheduling
challenges they faced. During patient visits, nurses interacted with patients and their caregivers to assess them, support them, perform treatments, and provide education about the disease process. During the episode, changes occurred and led the nurse to adjust the initial plan. These changes were related to the patient’s condition, their level of engagement, and the availability of caregivers. Nurses relied on their experience and depending on their agency’s practice, some referred to their managers to respond to these changes.

**Summary of the Overall Findings**

This qualitative descriptive study was guided by a nurse decision-making model with a superimposed socio-ecological lens and explored the processes that HH nurses use to (1) decide on their visit intensity and (2) implement their visit plans for newly admitted patients, in addition to the multi-level factors that influence both processes. In order to develop their visit plans, nurses started by reviewing the referral information but did not make any decision before visiting and assessing the patient because the referral information was often incomplete and inaccurate. Specific agency practices and protocols also influenced their decision-making process. During the initial assessment, nurses considered multiple factors including patient clinical data such as diagnoses and functional status, social factors such as caregiver support and living conditions, and readiness to participate in the plan of care. Once nurses created their visit plans, they planned their daily schedule and constantly adjusted it according to patient acuity or need, preference or availability, and location. Besides the logistics of planning the daily schedule, the plan implementation process included the encounter between the nurse and
the patient and their caregivers. During the home visit, the nurse interacted and established rapport with the patient and their caregivers in order to address their needs and concerns. Lastly, during the implementation process, changes arose leading the nurse to reevaluate and modify the initial plan. These changes were related to the patient’s clinical condition, engagement in the plan of care, or caregiver availability.

Nurses relied on the skills they developed through their clinical experience in HH and elsewhere to create and implement their visit plans. Over time, nurses refined their critical thinking and organizational skills, which enabled them to better match patient needs and timely identify subtle changes in patient status to act accordingly. Nurses’ experience also facilitated their planning of the daily schedule, their relationship building with the patient and their caregivers during home visits, and their communication with physicians and other HH clinicians.

Despite the great level of autonomy within the HH practice environment, nurses were expected to refer to their agency’s common practices such as protocols, frontloading, telemonitoring, and telephone call visits. Agencies had different levels of oversight related to reviewing nurses’ schedules and documentation, holding regular team or individual meetings to discuss visit planning, and assigning patients to different nurses.

Lastly, nurses faced challenges related to HH policy changes and securing insurance authorization. Nurses shared the importance of justifying how their visit plans matched patient needs. They often needed to condense the care they provided to assist the patient to reach their maximum potential.
CHAPTER V

This chapter provides a discussion of the salient findings and the implications on patient care and nursing practice. Study limitations are then presented. Lastly, recommendations for future research are offered.

Discussion and Implications of Main Findings

Revision to the Conceptual Framework

The original framework guiding the study was based on a nurse decision-making model with the addition of a socio-ecological lens. A directed content analysis showed a lack of fit in the decision-making process component of the framework. Therefore, the conceptual framework was refined as illustrated in Figure 2 (below) to incorporate the salient points that nurses shared during the interviews.

Nurse decision making was situated as a central concept in the original framework and patient- and nurse-level factors were combined into one section to form the micro-level factors based on the socio-ecological lens. Following the analysis, nurse decision making became an overarching concept that encompassed both processes of visit plan development and implementation. Moreover, patient- and nurse-level factors were split into two separate sections in order to differentiate between their impacts on each step of the process.
Figure 2: Revised Model of Nurse Decision-making Process Regarding Visit Intensity in Home Health Care

Note: Conceptual framework revised based on the study findings

**Nurse Decision Making and Assessment: a Recursive and Multifactorial Process**

Nurse decision making happened at multiple stages and was coupled with an assessment of the situation. According to the information processing model, the first step of decision making consists of recognizing cues in order to generate hypotheses.
(Banning, 2008). In the case of this study, cues were equivalent to patient needs. Nurses described how they assessed the patient at the initial visit and recognized their needs in order to develop the visit plan. During plan implementation, nurses also engaged in a decision-making process to determine the daily schedule based on their productivity and their patient needs. Moreover, nurses decided on what needed to be discussed and performed during their encounter with the patient. During the episode, nurses engaged in reassessing the patient to identify new needs that would require a change in the initial plan. Therefore, nurse decision making coupled with assessment happened in a cyclical pattern throughout the home health (HH) episode, covering plan development and implementation.

Nurses’ decisions were based on a multifactorial assessment of the patient and their caregivers. This is consistent with the results of an earlier study that explored HH nurses’ decision making about the need for and amount of service by patients and families at the end of life (Stajduhar et al., 2011). Nurses started by conducting a comprehensive clinical assessment to identify patient needs. A patient’s physical status influenced visit intensity. For instance, a previous study established that those with open wounds receive more nurse visits per week as compared to those with other needs (Yeboah-Korang, Kleppinger, & Fortinsky, 2011). Few participants mentioned assessing cognitive ability while developing the visit plan; those who considered cognitive ability shared that it influenced the extent of patient engagement in the plan of care and the level of support they needed to achieve their goals. It is suggested that the lack of adequate training and confidence and the productivity requirements are related to the lack of cognitive assessments in HH (Burns & Neville, 2016; Cliff & McGraw, 2016). Therefore,
it is not surprising that HH nurses overlooked cognition assessments because they were working within the constraints of the HH work environment and may not have been well prepared to address cognitive limitations within a HH episode focused on other health priorities. In addition to evaluating a patient’s cognitive ability, an assessment of mental well-being was beneficial to identify those who had depressive symptoms and were not ready or able to be engaged in the plan of care. There is evidence of lower risk of hospitalizations when integrating depression care management into routine HH nursing care for HH patients who screen positive for depression (Bruce, Lohman, Greenberg, Bao, & Raue, 2016).

Besides evaluating clinical status, nurses described how they assessed social factors that influenced their visit plan development and implementation. There is evidence that non-clinical factors, specifically social environmental factors that are related to lower functional ability contribute to hospital readmissions in HH patients (Tao, Ellenbecker, Chen, Zhan, & Dalton, 2012). Although this study was not focused on hospital readmission, participants shared how they developed their visit plans to contribute to lower rates of hospital readmission. Therefore, an assessment of socio-environmental factors was warranted to target those at greater risk. Participants described how they identified whether the patient had an available and capable caregiver who was willing to help. This was also recognized as a factor to determine patients’ discharge readiness from HH (O'Connor, Moriarty, Madden-Baer, & Bowles, 2016). Informal caregivers play a critical and largely invisible role in the period following discharge from the hospital (Graham, Ivey, & Neuhauser, 2009). Additionally, they can contribute to decreasing rates of hospital readmission when provided with tools and support to
participate in the care of their loved one as they transition from hospital to home (Coleman et al., 2004). Informal caregivers integrate their knowledge of the patient with the knowledge about their illness and develop their skills over time as a result of practice and experience (Schumacher, Stewart, Archbold, Dodd, & Dibble, 2000). Unfortunately, caregivers are expected to provide skilled services in the home with minimal training or advance preparation (Foust, Vuckovic, & Henriquez, 2012; Landers et al., 2016). Some participants described how caregivers were no longer available during the episode because they were overwhelmed and could not assume full responsibility for caring for their loved one. This has implications on the role of providers across care settings to help better prepare caregivers because HH nurses may not have enough time and resources to address all the needs of caregivers.

In addition to examining the level of support, some participants shared how they evaluated other social factors such as the living condition and financial status of the patient. The neighborhood where patients reside also has an influence on their outcomes because of the availability of and accessibility to community resources supporting post-acute care needs (Chen, Homan, Carlson, Popoola, & Radhakrishnan, 2016; Egan et al., 2009). These non-clinical factors were beyond nurses’ control and often non-modifiable but important to consider because they could influence health behaviors, subsequently influencing the amount of visits patients needed to meet their goals. These factors were not directly related to visit planning but influenced how nurses perceived their patients and how they collaboratively set realistic goals, while exhausting all possible resources.

Patient engagement was another factor that nurses considered when developing and implementing their visit plan because the level of participation influenced how
quickly and efficiently the patient reached their maximum potential. Patient engagement, defined as “actions individuals must take to obtain the greatest benefit from the health care services available to them,” has emerged as a critical concept in recent research designed to promote patient participation in health care activities (Gruman et al., 2010, p. 351). Highly engaged patients have lower rates of hospitalization and emergency department use and are more likely to engage in healthy behaviors compared to patients who are less engaged (Hibbard & Greene, 2013). This is consistent with the examples that participants shared about providing less frequent visits to patients who were actively involved in the plan of care. In other words, the findings of this study support the existing literature in that highly engaged patients have lower rates of health care utilization, including HH skilled nursing visits.

Patient engagement can be modified and increased over time (Hibbard & Greene, 2013), and is associated with better patient outcomes and lower health care costs over time (Greene, Hibbard, Sacks, Overton, & Parrotta, 2015). From a theoretical perspective, the HH nurse is perfectly situated to promote patient engagement and foster collaborative goal setting with patients. However, it is unknown how HH nurses can do so and what strategies can be extrapolated from other community-based interventions to promote patient engagement in HH. Additionally, given the critical role that caregivers play in the HH setting, it is important to expand the concept of patient engagement to include caregivers.

**Intersection Between Influencing Factors**

Nurses described the multiple layers of factors that influenced their decisions regarding developing and implementing the visit plan. These factors represented the
different levels of the socio-ecological lens: patient, nurse, agency, and policy/payer factors. The use of a socio-ecological lens illustrated how these factors were interrelated and interacted with plan development and implementation. By sharing their experiences, nurses exemplified how each level of the lens was interacting with each step of the plan development and implementation. For instance, the agencies’ practices influenced what decision the nurse made and implemented. Some agencies relied on telemonitoring, others on telephone call visits, both influencing visit patterns. Moreover, nurses’ rich description of how they developed and implemented the visit plan illustrated the intersection between the multiple levels of the lens. This provided evidence for the multidimensionality of HH practice.

The intersection between patient and nurse factors was exemplified through participants’ description of their relationship with patients. Nurses started building a relationship with patients and their caregivers at the initial visit, which was beneficial to obtain truthful information in order to develop the visit plan. The initial visit is the first encounter with the patient and serves as a foundation to a trusting relationship (Leslie & Lonneman, 2016). Participants shared how they interacted with patients and their caregivers, if available and willing to participate in the plan of care. In some cases, participants described how they referred to caregivers in order to gather additional patient information or to teach them how to perform wound care. It is important to consider this triad (patient-caregiver-nurse) when thinking about how HH nurses make decisions regarding visit patterns and other patient-related needs. Dalton (2005) studied the coalition between patients, caregivers, and HH nurses. Coalitions occurred when two individuals in the triad adopted a common strategy to achieve a mutually-agreed upon
goal. Dalton (2005) offered an example of patient-caregiver coalition that formed against the nurse due to the frequency of planned home visits. The patient and caregiver were questioning the need for daily visits to perform wound care because it interfered with their daily routine. Therefore, this example is consistent with findings from this dissertation study. Participants explained how they collaborated with patients and their caregivers, taking into consideration their preferences and availability when implementing the visit plans.

Participants also shared how the nurse-patient relationship promoted patient commitment to reach goals and move towards independence, requiring less intensive visits. This finding is consistent with the existing literature highlighting the importance of the nurse-patient relationship in fostering patient engagement (Leslie & Lonneman, 2016; Sefcik et al., 2016). Older adults are inspired and remain engaged in maintaining healthy behaviors when nurses develop a relationship with them and provide continuous support and attention (Sefcik et al., 2016). Participants also stressed the importance of continuity of care when implementing their visit plans because it influenced their relationship with patients, which is supported by previous studies (Byrne et al., 2011; Leslie & Lonneman, 2016; Samia et al., 2012). They felt uncomfortable handing their patients to other nurses in cases of emergency. This dimension of continuity is referred to in the literature as \textit{interpersonal} or \textit{relational continuity}. It is described as a caring relationship that develops following the ongoing interaction between provider and patient and is characterized by personal trust and responsibility (Gulliford, Naithani, & Morgan, 2006; Haggerty et al., 2003; Saultz, 2003). Despite the methodological limitations of the studies focusing on continuity of care and patient outcomes, interpersonal continuity is
associated with improved patient satisfaction and decreased health care utilization (Saultz & Albedaiwi, 2004; Saultz & Lochner, 2005; Van Walraven, Oake, Jennings, & Forster, 2010). In the HH setting, maintaining a consistent nursing personnel throughout an episode of care is also associated with lower rates of hospital readmissions and emergency department visits as well as improved physical function (Russell, Rosati, Rosenfeld, & Marren, 2011). In fact, interpersonal continuity is particularly important in this setting because patients welcome clinicians from different disciplines into their own homes as opposed to visiting providers at the clinic or receiving in-patient care. Hence, they would prefer to be visited by the same nurse who knows them and has formed a relationship with them; this relationship is not easily replicated if the nurse caring for them changes often.

The intersection between nurse and agency factors was evident through participants’ description of the interplay between their clinical judgment and the agencies’ practices, such as following protocols or having MCMs review and make changes to visit plans. Nurses referred to protocols but based their final decision on their clinical judgment because protocols often missed to account for key factors such as patient engagement. In these cases, nurses intuitively assessed the extent to which a situation was similar to previous situations. They relied on pattern recognition and previous experiences to interpret the situation at hand and make decisions about visit intensity (Simmons, 2010). A recently published article reported how an agency’s protocol can be embedded in the electronic health record to assist the nurse in determining visit frequency (Sockolow, Bass, Eberle, & Bowles, 2016). The suggested frequency is determined based on patient frailty generated from nurses’ documentation.
However, the researchers did not explore how the protocol was developed and how in some cases the nurse may override the suggested visit frequency. The findings of this dissertation highlight the nurses’ autonomy in creating visit plans by complementing the protocol’s suggestions with their clinical judgment.

Another area that illustrated the intersection between nurse and agency factors was the level of agency oversight, specifically the impact of the management team on visit planning. Nurses consulted with their managers to resolve any conflict between their judgment and the protocol’s suggestions. Most participants described having supportive managers who helped them refine their case management skills. They also appreciated the team discussions and perceived them as a learning opportunity. The interdisciplinary team meetings were invaluable to nurses who improved their care strategies in the home and revised their visit plans based on other clinicians’ feedback. Nurse managers often facilitated these meetings and invited all disciplines to participate and collaborate instead of dictating what needed to be done. These findings are consistent with previous research highlighting HH nurses’ positive experiences with supportive managers and other team members who provide continuous support and feedback (Ellenbecker et al., 2006; Samia et al., 2012; Smith Higuchi et al., 2002; S. Tullai-McGuinness et al., 2011).

With the expansion of the HH care setting, there is a growing demand for HH nurses to meet the needs of the aging population. Despite the remote support that HH nurses receive during patient visits, they are expected to make autonomous decisions and serve as case managers. This role is particularly complex and stressful (Samia et al., 2012) and requires extensive training to master an enhanced set of knowledge and skills. Participants described how they referred to their previous clinical experience outside of
the HH setting to manage their patients. They also shared how their managers and preceptors guided them to develop their case management abilities and reason about visit intensity. However, no one mentioned any formal training as part of their nursing education, which highlights a lack of focus on care transitions in nursing curricula. The sample consisted of middle-aged nurses (on average 47 years old), who have probably completed their degree at a time where care coordination was not a central aspect in health care provision. In order to mirror the changes in care provision, there is a call to redesign nursing education and better prepare the future nursing workforce to assume care coordination roles and collaborate with other disciplines across care settings (Fraher, Spetz, & Naylor, 2015). Current nursing residency programs are more prevalent in acute care settings but can be considered an opportunity to bolster care coordination skills in new graduates if they are increasingly adopted in HH settings (Pittman, Horton, Terry, & Bass, 2014). Additionally, exposing nursing students to transitional care through formal lectures, in-class activities, field experiences, and clinical simulations can improve students’ understanding of transitional care (Ellis, Meakim, Prieto, & O’Connor, 2017; O’Connor et al., 2016).

**Decreasing Hospital Readmissions**

HH agencies strive to decrease the rates of hospital readmission and participants shared how they developed their visit plans to contribute to this goal. For instance, they provided early frequent visits to patients at risk for hospital readmission. These patients were identified by frequent fluctuation in their health status and included patients with heart failure and patients with a new diagnosis. They benefited from early frequent monitoring to identify early cues of deterioration and from continuous teaching and
reinforcement to maintain healthy behaviors. Nurses from two agencies used the word *frontloading* to refer to this practice, which is consistent with the existing literature (O’Connor et al., 2014). Some participants described it as providing early and frequent visits while others specified the number of visits, such as at least three times per week, or every other day, or even back-to-back visits.

Frontloading is defined as providing 60% of the planned visits within the first two weeks of the HH episode (Rogers et al., 2007). However, it is difficult for nurses to estimate the total number of planned visits given that unexpected circumstances may arise during the episode leading to changes in the visit plan. A panel of experts in HH and heart failure offered a more recent definition. Frontloading consists of providing “early and intensive” skilled nursing visits, more specifically “at least one nursing visit on the day of or day after hospital discharge and at least three nursing visits (including the first visit) in the first post-hospital week.” (Murtaugh et al., 2016, p. 5) This definition is more practical and provides direction to visiting nurses as they plan their daily schedule. Participants did not have a role in determining the timing of the first visit. Nevertheless, given the importance of promptly evaluating the patient and the complexity of their needs, nurses should be actively involved in this process or at least the people assigning patients for the SOC visit need adequate training and expertise.

Early and intensive skilled nursing visits are important to timely identify early signs of deterioration but do not contribute to decreased hospital readmission unless combined with an early physician follow-up visit in the week after hospital discharge (Murtaugh et al., 2016). Nurses and other HH clinicians need to identify who would benefit from this treatment combination to prevent or at least delay their readmission to
the hospital. Additionally, some patients are less likely to follow up with their provider within seven days after hospital discharge (Kociol et al., 2011). Therefore, it is essential to start planning for post-acute care services while patients are still in the hospital. This planning includes close communication and coordination between in-patient providers and HH clinicians as well as patients and their caregivers to arrange for timely intensive skilled nursing visits and early physician follow-up.

**Care coordination and Information Sharing Across Care Settings**

Providing “seamless, connected and coordinated care” is an essential characteristic of HH agencies and HH clinicians are particularly situated in a critical position to ensure successful transitions of patients from acute care settings to the home (Landers et al., 2016). Most participants described the importance of coordinating care with other HH clinicians as well as patient’s providers in order to develop a targeted plan of care. By communicating with other providers, nurses collaboratively assisted patients in meeting goals and regaining their maximum potential to be discharged from HH.

As highlighted in a recent article, HH clinicians rely on optimal communication across care settings, including communication with referring sources and primary care physicians (Landers et al., 2016). This communication consists of sharing relevant patient information between providers from different care settings and is fundamental for continuity of care (Coleman, 2003; Kripalani et al., 2007). In the literature, it is also known as *informational continuity*, which is a dimension of continuity of care representing the transfer of patient information between health care encounters (Gulliford et al., 2006; Haggerty et al., 2003; Saultz, 2003). Participants described how the poor communication with primary care providers and the lack of comprehensive referral
information served as barriers to developing visit plans. These results are consistent with previous studies that highlight the challenges to interacting with providers to make changes to the plan of care (Bowles, Holland, & Horowitz, 2009) and the suboptimal transfer of patient information across care settings, specifically from hospitals to HH agencies (Alhuhail & Koru, 2016; M. A. Anderson & Helms, 1993; M. A. Anderson, Helms, Black, & Myers, 2000; Bowles, Pham, O’Connor, & Horowitz, 2010; Egan et al., 2009; Waters, 1987). Following the initial visit, nurses could not confidently estimate visit intensity because the referral information lacked a comprehensive description of the patient and nurses were not familiar with the patient’s pattern of response to treatment. This lack of informational continuity was identified three decades ago (M. A. Anderson & Helms, 1993; M. A. Anderson et al., 2000; Waters, 1987) and is still unresolved despite the big advancements in health information technology.

When asked about creating visit plans for newly admitted patients, most participants defaulted to sharing their decision-making process related to patients transitioning from hospital to HH. Few participants mentioned that community referrals were of poorer quality when compared to hospital referrals. Hence, the informational continuity dilemma is further complicated when broadening the patient population to include those referred from the community or skilled nursing facilities. Given the increased complexity and diversity of patients referred to HH (Murtaugh et al., 2009), optimizing informational continuity need to be prioritized in order to improve care provision as patients transfer from different settings to HH.

Recently, payers have shifted away from reimbursing for volume towards paying more for value. HH agencies need to develop new strategies to coordinate and collaborate
with providers across care settings. Unfortunately, the fee-for-service payment system does not cover services that are essential to integrate patient care, such as health information technology and staffing for care coordination (Landers et al., 2016). However, the value of health information technology on patient care provision in the HH setting was recently established (Alhuwail & Koru, 2016; Sockolow, Bowles, Adelsberger, Chittams, & Liao, 2014). Health information technology has the potential to facilitate the timely and efficient collection and transmission of patient information across care settings to support clinician’s decisions regarding patient care. Moreover, it facilitates care coordination by allowing clinicians to timely share relevant patient information (Helleso & Lorensen, 2005). Therefore, health information technology has promising implications on securing informational continuity to assist HH nurses’ decisions regarding visit planning.

Participants from one agency shared how accessing additional critical patient information through the electronic health record helped them prepare for the initial visit. However, that was only feasible if the patient was referred from a hospital within the same health system. This is consistent with the findings of a previous study where the majority of HH clinicians confirmed that having a common electronic health record is extremely or moderately useful (Fairchild, Hogan, Smith, Portnow, & Bates, 2002). Therefore, the electronic health record can assist in integrating patient information across care settings and HH clinicians will benefit from accessing this information if their agency is affiliated with the health system. Other strategies need to be implemented to take into consideration free standing agencies. While the development and implementation of a universal electronic health record is the ultimate solution to the
fragmentation in patient information access and transfer, it is accompanied with numerous considerations related to cost, maintenance, and security and is not feasible in current time. An alternative solution is the adoption of a standardized document, such as the Continuity of Care Document (Ferranti, Musser, Kawamoto, & Hammond, 2006) that includes up-to-date patient information that patients can use as they transfer across care settings and providers. Regularly updating and including patient information relevant to all care settings will remain a challenge to adopting this strategy. The findings from this study can help HH agencies better understand their nurses’ information needs at the start of care to incorporate in such a document. By improving the quality of the referral information, facilitating its transfer across care settings, and enhancing communication with primary care providers, HH nurses can develop targeted plans of care for their patients, specifically visit plans to address their needs.

**Study Limitations**

This study was conducted with three large urban HH agencies serving a diverse patient population in three Mid-Atlantic states. Therefore, the findings may be different if interviews were conducted with nurses from HH agencies that are smaller or located in other geographical regions of the US. Moreover, due to the small sample size from each agency, the comparison between the three agencies may not reflect an accurate representation of their differences and similarities. Additionally, nurses from each agency described their practice so there may have been personal variations based on clinical expertise, work philosophy, and previous experiences. Hence, the results should be
handled with caution and conclusions about agency differences should be interpreted in light of the small sample size.

In this qualitative descriptive study, nurses were asked about the process they use to create and implement their visit plans. The purpose was not to match specific agency practices to patient outcomes. Therefore, one cannot draw conclusions about which process has a better impact on patient care. By reviewing the performance of each agency on the Home Health Compare database, all three agencies had comparable patient outcomes. Hence, the qualitative data can provide an understanding of the process of plan development and implementation without suggesting a model that has a better impact on patient outcomes. Future studies can evaluate the impact of different agency practices regarding planning visit intensity on patient outcomes to estimate which model is associated with better and more efficient care provision.

**Recommendations for Future Research**

**Improving the Transfer of Patient Information**

HH is a low-cost setting when compared with other institutional care settings and patients prefer to receive care at home (Landers et al., 2016). Therefore, they are discharged from the acute care setting to HH sooner and have more complex health and social needs. HH clinicians are expected to interact with a broad range of providers in order to meet those needs. One way to address patient needs is providing targeted skilled nursing visits to assist patients in reaching their maximum potential and keep them in their homes for as long as possible. Participants shared the challenges they faced due to incomplete referral information and poor communication with primary care providers.
Health information technology provides promising hope to solve this problem. It would be important to start by promoting the use of a standardized document such as the Continuity of Care Document, then revising it to meet the information needs of HH clinicians by including them in the process. The next step would be to implement such an initiative and evaluate its impact on information access and transfer.

**Developing Clinical Decision Support Systems**

The findings from this study provide evidence to suggest that visit planning is an inherently complex process. Given the increased number and complexity of patients referred to HH, these findings demonstrate the importance of ensuring HH nurses are adequately prepared to create visit plans that target patient needs. Besides training initiatives, nurses would benefit from evidence-based clinical decision support tools to guide their decisions. The protocols currently used by the agencies were developed by agency staff and there was no mention of them being evidence-driven. Participants shared the patient factors that they considered in order to develop visit plans. Future studies can focus on identifying different visit patterns associated with different patient characteristics. Once visit patterns are identified, researchers can examine their impact on specific patient outcomes and make suggestions about effective and efficient protocols for visit intensity.

The findings of this study and the contribution of future outcomes studies will inform the content of a clinical decision support tool to guide HH nurses in determining visit intensity for their patients. The clinical decision support system is a computer software designed to guide clinicians’ decision making regarding care delivery by matching patients’ characteristics with a computerized clinical knowledge base (Sim et
al., 2001). HH nurses often report working without guidelines or with outdated ones, which can compromise patient safety (Berland et al., 2012). The use of health information technology, especially at the point of care, is often considered as a way to improve care coordination and quality (Blumenthal, 2010). This is particularly relevant to the HH setting where nurses provide their care at the patient’s home rather than in a hospital or ambulatory settings, and often require access to the most current patient health information to make timely decisions about the plan of care. The adoption of health information technology in the HH setting can also facilitate the use of clinical decision support systems to impact nurses’ decision making at the point of care. Although the development and implementation of clinical decision support systems in nursing is an emerging field, it has promising impact on the quality of nurses’ decision making (J. A. Anderson & Willson, 2008), specifically in the HH setting as it relates to visit planning. (J. A. Anderson & Willson, 2008) called for additional research to develop clinical decision support systems that inform and guide nurses in their clinical decision-making process, specifically as it relates to prevention, patient education, and self-management interventions. While the use of clinical decision support systems in HH is a promising start, the federal government needs to provide financial support to implement health information technology initiatives in HH because HH agencies are not eligible for meaningful use incentive payments.

**Home Health as a Short-term Teaching Environment**

Patients referred to HH have increasingly complex needs and are discharged sooner from acute care setting. HH clinicians are expected to address these complex needs within a short period of time and assist patients in reaching their maximum self-
care potential to be discharged from HH. Additionally, HH clinicians connect patients to community-based resources to manage their long-term needs (O'Connor et al., 2016). Therefore, as described by participants, the current HH setting is perceived as a short-term teaching environment where clinicians are supposed to reach goals with the least number of skilled visits. One area that requires improvement and is related to how nurses create and implement their visit plans is the presence of available, capable, and willing caregivers. Unfortunately, caregivers are not always equipped with the necessary skills to care for their loved ones. In some cases, nurses need to interact with distant caregivers. It is important to explore the role of distant caregivers in the post-acute period and how they communicate with HH nurses. Future research needs to address how to better engage patients and their caregivers and prepare them to reach autonomy in care provision during a HH episode. This may also require a joint effort from clinicians across care settings to address the needs of caregivers and assist them in assuming their role as they transition with patients from acute care settings to home.

**Conclusion**

Patients are referred to HH as a strategy to facilitate their transition back to the community and keep them in their homes for as long as possible. Therefore, in order meet these goals, HH nurses need to provide targeted visit intensity to meet the specific needs of patients and their families. This qualitative descriptive study was guided by a nurse decision-making model with a superimposed socio-ecological lens and explored the processes that HH nurses use to (1) decide on their visit intensity and (2) implement their
visit plans for newly admitted patients, in addition to the multi-level factors that influence both processes.

In order to develop their visit plans, nurses started by reviewing the referral information but did not make any decision before visiting and assessing the patient because the information transferred was often incomplete and inaccurate. Following a multifactorial assessment of the patient and their post-discharge environment, HH nurses relied on their experience and clinical judgment and referred to their agency’s protocols and practices to create the visit plan. They planned their daily itinerary based on patient acuity, preferences, and location and make adjustments based on unforeseen circumstances. During patient visits, nurses developed relationships with patients and their caregivers while assessing them, performing treatments, and providing education and support, which fostered continuity of care. During the care episode, nurses modified their visit plans based on any changes in the patient’s condition, their level of engagement, and the availability of caregivers.

In the current HH practice environment, nurses face challenges related to HH policy changes and securing insurance authorization. They are expected to justify patient needs and provide matched condensed care to assist patients in reaching their maximum potential. Strategies to assist nurses in providing targeted skilled nursing visits include the use of health information technology to facilitate the transfer of patient information across care settings and support nurses in their decisions as they create the visit plan. Given the vital role of caregivers in the transition of patients from hospital to home, HH nurses also need to assist caregivers in being prepared to care for their loved ones.
APPENDICES
## HOME HEALTH CERTIFICATION AND PLAN OF CARE

1. **Patient's H.I. Claim No.**
2. **Start Of Care Date.**
3. **Certification Period.**
4. **Medical Record No.**
5. **Provider No.**

<table>
<thead>
<tr>
<th>From:</th>
<th>To:</th>
</tr>
</thead>
</table>

6. **Patient's Name and Address**

7. **Provider's Name, Address and Telephone Number**

8. **Date of Birth**

9. **Sex:**
   - Male (M)
   - Female (F)

10. **Medications:**
    - **Dose:**
    - **Frequency:**
    - **Route:**
    - (N)ew (C)hanged

11. **ICD**
    - **Principal Diagnosis**
    - **Date**

12. **ICD**
    - **Surgical Procedure**
    - **Date**

13. **ICD**
    - **Other Pertinent Diagnoses**
    - **Date**

14. **DME and Supplies**

15. **Safety Measures**

16. **Nutritional Req.**

17. **Allergies**

18A. **Functional Limitations**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amputation</td>
<td>1</td>
</tr>
<tr>
<td>Paraplegia</td>
<td>5</td>
</tr>
<tr>
<td>Legally Blind</td>
<td>9</td>
</tr>
<tr>
<td>Bi-Bilateral Paraplegia</td>
<td>6</td>
</tr>
<tr>
<td>Ambulation Aids</td>
<td>A</td>
</tr>
<tr>
<td>Other (Specify)</td>
<td>B</td>
</tr>
<tr>
<td>Other (Specify)</td>
<td>C</td>
</tr>
<tr>
<td>Hearing Loss</td>
<td>8</td>
</tr>
</tbody>
</table>

18B. **Activities Permitted**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Bed Rest</td>
<td>1</td>
</tr>
<tr>
<td>Partial Weight Bearing</td>
<td>6</td>
</tr>
<tr>
<td>Bi-Bilateral</td>
<td>2</td>
</tr>
<tr>
<td>Transfer Bed Chair</td>
<td>4</td>
</tr>
<tr>
<td>Transfer To Chair</td>
<td>7</td>
</tr>
<tr>
<td>Walks</td>
<td>5</td>
</tr>
<tr>
<td>No Restrictions</td>
<td>C</td>
</tr>
</tbody>
</table>

19. **Mental Status**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capable</td>
<td>1</td>
</tr>
<tr>
<td>Forgetful</td>
<td>3</td>
</tr>
<tr>
<td>Disoriented</td>
<td>5</td>
</tr>
<tr>
<td>Agitated</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
<tr>
<td>Lobotomy</td>
<td>8</td>
</tr>
<tr>
<td>Depression</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
</tbody>
</table>

20. **Prognosis**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>1</td>
</tr>
<tr>
<td>Guarded</td>
<td>2</td>
</tr>
<tr>
<td>Fair</td>
<td>3</td>
</tr>
<tr>
<td>Good</td>
<td>4</td>
</tr>
<tr>
<td>Excellent</td>
<td>5</td>
</tr>
</tbody>
</table>

21. **Orders for Discipline and Treatments (Specify Amount/Frequency/Duration)**
Privacy Act Statement

Sections 1812, 1814, 1815, 1816, 1861 and 1862 of the Social Security Act authorize collection of this information. The primary use of this information is to process and pay Medicare benefits to or on behalf of eligible individuals. Disclosure of this information may be made to: Peer Review Organizations and Quality Review Organizations in connection with their review of claims, or in connection with studies or other review activities, conducted pursuant to Part B of Title XI of the Social Security Act; State Licensing Boards for review of unethical practices or nonprofessional conduct; A congressional office from the record of an individual in response to an inquiry from the congressional office at the request of that individual.

Where the individual’s identification number is his/her Social Security Number (SSN), collection of this information is authorized by Executive Order 9397. Furnishing the information on this form, including the SSN, is voluntary, but failure to do so may result in disapproval of the request for payment of Medicare benefits.

Paper Work Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0938-0357. The time required to complete this information collection is estimated to average 15 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: CMS, Mailstop N2-14-26, 7500 Security Boulevard, Baltimore, Maryland 21244-1850.
Appendix B: Clinical functional, and service utilization information from OASIS determines patients’ home health resource group

Clinical
Add the scores for a range of clinical indications such as:
- Primary home care diagnosis
- IV/infusion or parenteral/parenteral therapy
- Volume limitation
- Wound/lesion
- Multiple pressure ulcers

Most problematic
- Pressure ulcer stage
- Stasis ulcer status
- Surgical wound status
- Shortness of breath
- Bowel incontinence
- Injectable drug use

Clinical score
- C2 (Mod.)
- C3 (High)
- C1 (Low)

Functional
Add the scores from each of these factors:
- Dressing
- Toiletting
- Locomotion
- Bathing
- Transferring

Functional score
- F3 (High)
- F2 (Mod.)
- F1 (Low)

Home health resource group (153 groups)

Service utilization (therapy visits)
- 0-5
- 6
- 7-9
- 10
- 11-13
- 14-15
- 16-17
- 18-19
- 20+

Note: OASIS (Outcome and Assessment Information Set), NIH (intravenous).
## Appendix C: Interview Guide for Visiting Nurses

### Visit Plan Development

<table>
<thead>
<tr>
<th>Question</th>
<th>Follow up/Probe</th>
</tr>
</thead>
</table>
| **Elicit detailed description of their decision-making process while determining visit intensity**                                        | Think of a recent patient that you admitted to home health. Guide me through your process of determining the amount and frequency of nursing visits for a new patient. (If it helps, feel free to use case examples).  
How do you determine the amount and frequency of visits a patient needs?  
• What information do you need to decide on the amount and frequency of your nursing visits?  
• How and when do you access this information?  
• How does this information support you or hinder you from creating a plan of care?  
• How much does your visit plan vary from patient to patient?  
• If it does vary, what factors do you consider when deciding to vary the visit patterns?  
• What do you consider when deciding on the timing of your visits? Can you share an example with me? |
| **Elicit information about the barriers and facilitators to develop a visit plan**                                                          | Think of a time where you had difficulty making a decision about the visit plan based on your assessment. Tell me about that situation. Why was that the case?  
Tell me about the factors that make it easy or difficult for you to choose how many visits a patient should receive?  
• When do you feel that the visits you recommend for a specific patient are more or less than what the patient really needs? In what circumstance does that tend to happen?  
• Think of a time when you thought a patient needed more than you were able to offer them. Tell me about that case. Tell me about how you made that work.  
• Think of a time when you were not able to justify the number of visits a patient might need. Why was that? What were the barriers? |
| **Explore how home health nurses’ professional experience influences visit plan development**                                                 | How has your experience in home health influenced your thought process in determining the amount and frequency of visits to newly admitted patients?                                                                                                                                                                                                 |
| **Explore how the home health agency environment/protocols influence the visit plan**                                                       | Tell me about the training you have received regarding the amount and frequency of visits to give to each patient?  
*In the case where nurses are following a protocol*  
→ Learn about the conflict between clinical
| Decision making and protocols: “what I think the patient needs” vs. “what I’m told the patient should get” | • What are the barriers to following this protocol?  
• What makes it easy/hard to follow the protocol?  
• When does this protocol work well and really help?  
• When does this protocol not work well? Where does this protocol limit you in doing what you know the patient needs?  
• Can you think of an example?  
• To what extent are you involved in developing or revising these protocols?  
• What happens if you do not follow the agency policy on visit numbers and frequency? |
|---|---|
| Elicit information about home health policy and home health payer sources | How do federal policies and regulations influence your visit plan?  
• How does Medicare home health policy influence the amount and frequency of visits you provide to patients?  
• How are you trained on policy updates?  
• How does your home health agency put these policies and regulations into practice?  
| How do different payers influence your visit plan?  
• Tell me about when you are caring for a straight Medicare patient. Any particular things that you consider as you develop your visit plan?  
• What about other payers? How different is the visit plan for patients with Managed care or private health insurance? |
| Visit Plan Implementation | Elicit information about implementing a visit plan  
How do you implement your visit plan?  
What are the barriers and facilitators to implementing your visit plan?  
• What are the factors that influence how you carry out the visit plan that you made? What are the factors that influence how you provide home visits according to your plan?  
• How often do you make changes to your visit plan? What are the factors that influence a change in your visit patterns?  
• Think of a case where you were limited in how many visits you could make. Tell me what happened?  
• Think of a time where you were not able to complete the number of visits you had planned. Tell me about that situation. |
| Closing | • Is there anything else you would like to share with me? |
# Appendix D: Revised Interview Guide for Visiting Nurses

<table>
<thead>
<tr>
<th>Visit Plan Development</th>
<th>Question</th>
<th>Follow up/Probe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elicit detailed description of their decision-making process while determining visit intensity</td>
<td>Tell me about the process you use to develop the visit plan. Think of a recent patient that you admitted to home health. Guide me through your thought process of planning your visit patterns for a new patient.</td>
<td>• What information do you need to decide on the amount and frequency of your nursing visits? • How and when do you access this information? • What factors do you consider when planning your visit patterns? • How is your plan influenced by visits that patients receive from other disciplines? • When you have a patient on telehealth, how do you plan your visits around that? • How does a telephone call visit influence your visit patterns? • What about the length of visits? How do you plan how long you will spend at each visit?</td>
</tr>
<tr>
<td>Elicit information about the barriers and facilitators to develop a visit plan</td>
<td>What makes it easy or difficult for you to choose how many visits a patient should receive?</td>
<td>• Think of a time where you had difficulty estimating how many visits a patient will need for the nine week episode. Tell me about that situation. Why was that the case? • Think of a time where you were limited in how many visits you could provide and you thought a patient needed more visits than you were able to offer. Tell me about that case. Tell me about how you made that work.</td>
</tr>
<tr>
<td>Explore how home health nurses’ professional experience influences visit plan development</td>
<td>How has your experience in home health influenced your thought process in determining the amount and frequency of visits to newly admitted patients?</td>
<td>• How has your experience changed or evolved over time in terms of estimating visit patterns? • Over your X years of experience in home health, there have been several changes in policies and regulations. How has these changes, along with your experience, influenced how you plan your visit patterns?</td>
</tr>
<tr>
<td>Explore how the home health agency environment/protocols influence the visit plan</td>
<td>How does your home health agency influence your decision regarding the amount and frequency of visits?</td>
<td>• Tell me about the training you have received regarding the amount and frequency of visits to give to each patient? • Tell me about the resources available to support you, or guide you in becoming a better nurse at identifying the best visit patterns? • As a team, what process do you follow to get feedback on visit planning from your manager or other team members?</td>
</tr>
<tr>
<td>Tell me about any agency protocols that you follow to guide you in your visit planning?</td>
<td>[In the case where nurses are following a protocol] Learn about the conflict between clinical decision making and protocols: “what I think the patient needs” vs. “what I’m told the patient should get”</td>
<td></td>
</tr>
<tr>
<td>Elicit information about home health policy and home health payer sources</td>
<td>How do different payers influence your visit plan?</td>
<td>Tell me about when you are caring for a straight Medicare patient. Any particular things that you consider as you develop your visit plan? What about other payers? How different is the visit plan for patients with Managed care or private health insurance?</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

**Visit Plan Implementation**

<table>
<thead>
<tr>
<th>Elicit information about implementing a visit plan</th>
<th>How do you implement your visit plan?</th>
<th>Can you tell me how you plan your schedule? What influences in what order you visit your patients? When you get a new patient, how do you decide who needs to be seen within the first 24 hours versus who can wait? How often do you review your visit orders to make any changes? What are the factors that influence a change in your visit patterns?</th>
</tr>
</thead>
</table>

| What are the challenges and facilitators to implementing your visit plan? | What are the factors that influence how you provide home visits according to your plan? What are things that make it easy or difficult for you when you’re visiting your patients? Think of a time where you were not able to complete the number of visits you had planned. Tell me about that situation. |
| --- | --- | --- |

**Closing**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Is there anything else you would like to share with me?</th>
</tr>
</thead>
</table>

**Note:** Highlighted questions are those that were either added or revised while progressing through initial interviews. Some questions from the initial interview guide were deleted because nurses found them redundant or confusing.
Appendix E: Interview Guide for Nurse Managers

1. Once the nurse creates the initial plan, tell me about the process you use to evaluate it.
   a) What information do you need in order to decide on the amount and frequency of your nursing visits?
   b) What factors do you consider when deciding to vary the visit patterns?
   c) How is the plan influenced by visits that patients receive from other disciplines?

2. What makes it easy or difficult for you to choose how many visits a patient should receive?
   a) Think of a time where you had difficulty making a decision about the visit plan. Tell me about that situation. Why was that the case?

   [Question for Agency 2 Managers] Tell me about your experience working with MCMs.
   a) What makes it easy/hard collaborating with them?
   b) When do you feel that the visits recommended for a specific patient are more or less than what the patient really needs?
   c) When does this process limit you in your practice?

3. How has your experience in home health influenced your thought process in guiding nurses to determine their visit patterns to newly admitted patients?
   a) Tell me about the training you have received as a clinical manager.
   b) Have you noticed any differences between nurses who are newer to home health (as compared to older nurses) in terms of estimating their visit patterns?

4. How do different payers influence your visit plan?
   a) Think about a straight Medicare patient. Any particular things that you consider as nurses develop the visit plan? What about implementing the plan?
   b) What about other payers? How different is the visit plan for patients with Managed care or private health insurance?

5. How do you monitor nurses’ visiting patterns?
   a) Think of a case where nurses provided more visits than the patient needed.
   b) What about the length of their visits?

6. Some nurses refer to you when they make any changes to their initial visit plan. Tell me about your role in supporting them.
   a) What factors influence this change? How do you go about doing this?

7. Is there anything else you would like to share with me?
## Appendix F: Codes and Categories

### Aim 1: Visit Plan Development

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Situation awareness</strong></td>
<td></td>
<td>Factors: initial assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Referral or transfer information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Start of care</td>
</tr>
<tr>
<td><strong>Nurse decision making</strong></td>
<td></td>
<td>Challenge + development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Facilitator + development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors considered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors: initial assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors: MD orders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protocol</td>
</tr>
<tr>
<td><strong>Decision</strong></td>
<td></td>
<td>Daily visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frontloading</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nursing visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other discipline visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PRN visit order</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Referral to other resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Telemonitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Telephone call visit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visit frequency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visit string</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weekend visit</td>
</tr>
<tr>
<td><strong>Influencing factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient-level</strong></td>
<td>Clinical factors</td>
<td>Catheters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cognitive ability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>COPD and respiratory patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diabetic patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors: diagnosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors: hospital readmission</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors: medications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors: new problem or diagnosis or medication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors: patient safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Functional status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heart failure and cardiovascular patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mental health or psychiatric diagnosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Orthopedic patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ostomy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Patient acuity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Patient will not get better</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-hospital syndrome</td>
</tr>
<tr>
<td>Category</td>
<td>Examples</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Stable health status</td>
<td>Stroke patients, Surgery patients, Wounds</td>
<td></td>
</tr>
<tr>
<td>Social factors</td>
<td>Ability to get to doctor appointment, Factors: family or caregiver or in home support, Factors: home environment or living condition, Factors: literacy level, Factors: patient safety, Financial constraints</td>
<td></td>
</tr>
<tr>
<td>Patient participation in care</td>
<td>Passive patient, Patient agreement to plan of care, Patient compliance (vs. non-compliance), Patient honesty, Patient independence, Patient investment or engagement, Patient willingness to learn, Understanding or knowledge of disease/condition process</td>
<td></td>
</tr>
<tr>
<td>Nurse-level</td>
<td>&quot;Florence Nightingale Syndrome&quot;, Autonomy and Accountability, Critical thinking or nursing judgment, Education, Experience (home health), Experience (previous)</td>
<td></td>
</tr>
<tr>
<td>Agency-level</td>
<td>Agency oversight, Agency reimbursement, Computer, MCM, Meeting with manager</td>
<td></td>
</tr>
<tr>
<td>Agency practices</td>
<td>LPN visit, Protocol, Telemonitoring, Telephone call visit, Training</td>
<td></td>
</tr>
<tr>
<td>Policy/Payer-level</td>
<td>&quot;Make every visit count&quot;, Agency reimbursement, Copay, Documentation and/or justification, Homebound status, Insurance, Medicare, Payment system, Skilled need</td>
<td></td>
</tr>
</tbody>
</table>
### Aim 2: Visit Plan Implementation

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily schedule*</td>
<td></td>
<td>Challenge + implementation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Challenge+impl: Safety (RN)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge from home health</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Doctor appointments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Facilitator + implementation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Patient communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Schedule logistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visit length</td>
</tr>
<tr>
<td>Patient encounter*</td>
<td></td>
<td>Assessment and monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Family or caregiver or in home support - Aim 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medications - Aim 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skilled need</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teaching (patient or caregiver)</td>
</tr>
<tr>
<td>Re-evaluation /</td>
<td>Accommodate or adjust</td>
<td></td>
</tr>
<tr>
<td>Self-reflection</td>
<td>Assessment and monitoring</td>
<td></td>
</tr>
<tr>
<td>(changes to the plan)</td>
<td>Challenge+impl: Patient emergency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change in health status</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change in plan of care</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change in visit plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change in visit plan -Adding visits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change in visit plan -Tapering or decreasing visits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hospital readmission</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New problem or diagnosis or medication - Aim 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patient communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revisit or review visit plan</td>
<td></td>
</tr>
<tr>
<td>Influencing factors</td>
<td>Home environment or living condition - Aim 2</td>
<td></td>
</tr>
<tr>
<td>Patient-level</td>
<td>Parking space</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patient acuity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patient availability or not answering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patient location or address</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patient preference and flexibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supplies</td>
<td></td>
</tr>
<tr>
<td>Nurse-level</td>
<td>Autonomy and Accountability</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Critical thinking or nursing judgment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Experience (home health)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Experience (previous)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Go above and beyond</td>
<td></td>
</tr>
<tr>
<td>Agency-level</td>
<td>Agency oversight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agency oversight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agency reimbursement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer</td>
<td></td>
</tr>
</tbody>
</table>

### Influencing factors

<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient-level</td>
<td>Home environment or living condition - Aim 2</td>
</tr>
<tr>
<td></td>
<td>Parking space</td>
</tr>
<tr>
<td></td>
<td>Patient acuity</td>
</tr>
<tr>
<td></td>
<td>Patient availability or not answering</td>
</tr>
<tr>
<td></td>
<td>Patient location or address</td>
</tr>
<tr>
<td></td>
<td>Patient preference and flexibility</td>
</tr>
<tr>
<td></td>
<td>Supplies</td>
</tr>
<tr>
<td>Nurse-level</td>
<td>Autonomy and Accountability</td>
</tr>
<tr>
<td></td>
<td>Critical thinking or nursing judgment</td>
</tr>
<tr>
<td></td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td>Experience (home health)</td>
</tr>
<tr>
<td></td>
<td>Experience (previous)</td>
</tr>
<tr>
<td></td>
<td>Go above and beyond</td>
</tr>
<tr>
<td>Agency-level</td>
<td>Agency oversight</td>
</tr>
<tr>
<td></td>
<td>Agency reimbursement</td>
</tr>
<tr>
<td></td>
<td>Computer</td>
</tr>
<tr>
<td>Category</td>
<td>Sub-category</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Meeting with manager</td>
</tr>
<tr>
<td></td>
<td>Patient assignment</td>
</tr>
<tr>
<td></td>
<td>Staffing</td>
</tr>
<tr>
<td>Agency practices</td>
<td>Flexible and dynamic home health environment</td>
</tr>
<tr>
<td></td>
<td>LPN visit</td>
</tr>
<tr>
<td></td>
<td>Telemonitoring</td>
</tr>
<tr>
<td></td>
<td>Telephone call visit</td>
</tr>
<tr>
<td></td>
<td>Training</td>
</tr>
</tbody>
</table>

**Additional Category** *(emerged from the data and described across Aims 1 and 2)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuity of care*</td>
<td>Interdisciplinary communication and care coordination</td>
<td>Discordant findings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home health aide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interdisciplinary communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physician communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PT and/or OT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Referral or transfer information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speech therapy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uncertainty anticipating change</td>
</tr>
<tr>
<td>Relationship building</td>
<td>Emotional support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Long-term patient</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patient honesty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Relationships with patients and their families</td>
<td></td>
</tr>
</tbody>
</table>

*Notes*

- Categories highlighted in grey are new categories created for codes that could not be grouped using the initial categories derived from the conceptual framework.

- None of the quotations under the “Policy/Payer-level” category described how home health nurses implement the visit plan. Therefore, the “Policy/Payer-level” category was not listed as an influencing factor for plan implementation (aim 2).
REFERENCES


doi:10.1177/2158244014522633


doi:10.1097/01.NHH.0000326317.94218.5a


and primary care physicians: Implications for patient safety and continuity of care. 

*JAMA, 297*(8), 831-841.


167


