7-23-2018

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Recommended Citation
Irani E, Hirschman KB, Cacchione PZ, Bowles KH. How home health nurses plan their work schedules: A qualitative descriptive study. J Clin Nurs. 2018 Nov;27(21-22):4066-4076. doi: 10.1111/jocn.14548.

HHS Public Access

Author manuscript

J Clin Nurs. Author manuscript; available in PMC 2019 November 01.

Published in final edited form as:

J Clin Nurs. 2018 November ; 27(21-22): 4066–4076. doi:10.1111/jocn.14548.

How Home Health Nurses Plan Their Work Schedules: A Qualitative Descriptive Study

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Abstract

Aims and objectives—To describe how home health nurses plan their daily work schedules and what challenges they face during the planning process.

Background—Home health nurses are viewed as independent providers and value the nature of their work because of the flexibility and autonomy they hold in developing their work schedules. However, there is limited empirical evidence about how home health nurses plan their work schedules, including the factors they consider during the process and the challenges they face within the dynamic home health setting.

Design—Qualitative descriptive design.

Methods—Semi-structured interviews were conducted with 20 registered nurses who had greater than 2 years of experience in home health and were employed by one of the three participating home health agencies in the mid-Atlantic region of the United States. Data were analyzed using conventional content analysis.

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Conflict of Interest Statement
Dr. Kathryn Bowles is the director of research at one of the participating agencies.

Contributions
Study design: EI, KBH, PZC, KHB; data collection: EI; data analysis: EI, KBH; data interpretation: EI, KBH, PZC, KHB; manuscript preparation: EI, KBH, PZC, KHB.

Results—Four themes emerged about planning work schedules and daily itineraries: identifying patient needs to prioritize visits accordingly, partnering with patients to accommodate their preferences, coordinating visit timing with other providers to avoid overwhelming patients, and working within agency standards to meet productivity requirements. Scheduling challenges included readjusting the schedule based on patient needs and staffing availability, anticipating longer visits, and maintaining continuity of care with patients.

Conclusion—Home health nurses make autonomous decisions regarding their work schedules while considering specific patient and agency factors, and overcome challenges related to the unpredictable nature of providing care in a home health setting. Future research is needed to further explore nurse productivity in home health and improve home health work environments.

Relevance to clinical practice—Home health nurses plan their work schedules to provide high quality care that is patient-centered and timely. The findings also highlight organizational priorities to facilitate continuity of care and support nurses while alleviating the burnout associated with high productivity requirements.

Keywords

Home health care; nursing workforce; work schedule; work environment; patient acuity; needs assessment; nurse-patient relations; continuity of care; qualitative descriptive research; conventional content analysis

Introduction

Home health nurses value the nature of their work because of the relationships they develop with patients and the flexibility and autonomy they have in developing their work schedules (Ellenbecker, Boylan, & Samia, 2006; Samia, Ellenbecker, Friedman, & Dick, 2012). Nevertheless, they work within policy constraints and struggle with productivity requirements and time-consuming documentation (Samia et al., 2012). Home health patients often receive services from multiple disciplines and home health nurses are expected to coordinate care and visits with other clinicians (Gjevjon, Eika, Romoren, & Landmark, 2014; Pinelle & Gutwin, 2003). Most of the research addressing work scheduling in home health is focused on job satisfaction and burnout, mainly as it relates to the home health aide's workload (Czuba, Sommerich, & Lavender, 2012; Doniol-Shaw & Lada, 2011; Nugent, 2007). There is a lack of empirical evidence about the decision-making process that registered nurses use to plan their daily work schedules and the challenges associated with unanticipated changes, as most of the scheduling strategies and challenges are supported by only anecdotal information. Therefore, it is important to understand how nurses plan their daily work schedules in order to better support their decisions and consequently improve their work environments and patient outcomes.

Background

The need for home health care services is increasing worldwide as the older adult population continues to grow rapidly and patients are discharged earlier from hospital to home with complex care needs (Murtaugh et al., 2009). In 2014, approximately 3.4 million Medicare beneficiaries received services from 12,461 home health agencies, totaling $17.9 billion in

Medicare spending (Medicare Payment Advisory Commission [MedPAC], 2016a). In the United States, home health agencies provide skilled care to homebound patients requiring the services of skilled healthcare professionals, such as registered nurses; physical, occupational, and speech language therapists; and social workers on a temporary, intermittent basis (Centers for Medicare and Medicaid Services [CMS], 2015). The majority of home health agencies in the United States are prospectively reimbursed by the Centers for Medicare and Medicaid for services and supplies at fixed, predetermined rates for 60-day care episodes. This episodic payment system depends on the initial comprehensive assessment of the patient's clinical severity, functional capacity, and need for skilled services (MedPAC, 2016b). Using the fixed, predetermined payment, home health agencies are expected to cover all expenses related to care, including skilled services and routine medical supplies. Over the last decade, reductions in home health payment rates led home health administrators to make care decisions that helped agencies remain financially viable within budget constraints (Cabin, 2011). These managerial changes, such as increased workloads, fewer visits, and shortened patient length of stay, may have had an impact on the home health nursing workforce and care delivery processes.

Nurses' work environment influences the processes and quality of care, further impacting patient outcomes (Aiken, Clarke, Sloane, & International Hospital Outcomes Research Consortium, 2002; Flynn, 2007). Specifically, home health agencies with good work environments have lower rates of nurse burnout and better patient outcomes, including lower rates of acute hospitalization and higher rates of patient discharges to community living arrangements as opposed to institutional care settings (Jarrin, Flynn, Lake, & Aiken, 2014). Home health nurses value the support they receive from their managers, who act as the liaison for any clinical, operational, or logistical question or problem (Ellenbecker et al., 2006; Flynn, 2007; Tullai-McGuinness, Riggs, & Farag, 2011). They also value their autonomy in self-scheduling patients and the flexibility of their work schedules (Ellenbecker et al., 2006; Samia et al., 2012). However, home health nurses voice concerns related to high productivity requirements and case overload and report adjusting their schedules to accommodate for frequent daily interruptions such as unanticipated patient needs and unscheduled visits (Ellenbecker et al., 2006; Samia et al., 2012).

Home health differs from other settings because clinicians work in patients' homes and receive remote administrative and support services from a central office. Home health nurses aim to develop and maintain a therapeutic relationship with patients (Ellenbecker et al., 2006). They rely on specific patient attributes such as clinical status or understanding of the treatment regimen in order to make decisions on visit intensity, set common goals, and determine patient readiness for discharge from home health (Irani, Hirschman, Cacchione, & Bowles, 2018; O'Connor, Moriarty, Madden-Baer, & Bowles, 2016). Although home health nurses are viewed as independent providers in the patient's home, they are expected to act as interprofessional team players and coordinate with other healthcare providers to ensure appropriate care delivery (Pinelle & Gutwin, 2003).

There is an increased need for home health services worldwide and the demand for nurses working in home health in the United States is projected to grow at twice the rate of nurses overall (Sochalski, 2004). At this point in time, there is limited evidence in the literature that

describes how home health nurses plan their daily work schedules and what factors influence their planning. Also, relatively little is known about how nurses manage scheduling challenges within the dynamic and unpredictable home health setting. These important gaps in the literature need to be addressed to improve the process of scheduling home visits and support home health nurses' scheduling decisions. Therefore, the purpose of this study is to describe the decision-making process that home health nurses use to plan their daily work schedules, including the challenges associated with the planning process.

Method

Design

This study followed a naturalistic paradigm and employed a qualitative descriptive design to explore and describe home health nurses' daily work scheduling (Sandelowski, 2000). The data were collected as part of a larger qualitative study focused on nursing visit intensity planning (i.e. how nurses decide on the amount and frequency of their visits over the episode of care) and guided by an adapted decision-making model (Irani, Hirschman, Cacchione, & Bowles, 2018). We recruited visiting nurses, Medicare case managers, and nurse managers from three large urban agencies in the mid-Atlantic region of the United States and collected data between August 1, 2016 and November 30, 2016. In this study, we analyzed data from audio-recorded semi-structured interviews with visiting nurses using conventional content analysis. This study conformed to the principles outlined in the U.S. Federal Policy for the Protection of Human Subjects and was approved by Institutional Review Boards at the University of Pennsylvania and each study site.

Sample and Recruitment Procedures

Three large urban home health agencies located in three Mid-Atlantic states and serving diverse patient populations participated in this study. Eligible nurses held a current Registered Nurse license, were employed full-time by one of the three agencies, had at least two years of experience as a Registered Nurse in home health, and provided skilled nursing care during home visits to adult patients. Skilled nursing care includes patient education and assessment, case management, and other procedures related to the management of acute and chronic conditions such as medication reconciliation and wound, ostomy, or catheter care (CMS, 2015). Adult patients receiving home health services in the United States must be under the care of a physician, be unable to leave their home without taxing effort, and require intermittent skilled care provided by a licensed nurse and/or physical therapist on fewer than seven days each week or less than eight hours of each day (CMS, 2015).

After building connections with staff from each agency, the first author asked research coordinators and nurse managers to share the research opportunity with home health nurses via an e-mail announcement. Interested nurses reached out to the first author who conducted further screening to verify their eligibility. A convenient time was set up for data collection with eligible nurses who remained interested following initial contact. Participants were given a $50 gift card as a token of appreciation for their time.

Data Collection

Participants completed a demographic questionnaire using Qualtrics software (Provo, UT) and participated in semi-structured interviews that took place in private rooms either in-person or via Zoom, a web-based videoconferencing tool. The web-based interviews served as a strategy to overcome data collection challenges and provided participants with greater flexibility regarding the timing and location of the interview (Deakin & Wakefield, 2014). This interviewing tool was deemed suitable because the study was focused on work processes and did not address sensitive topics requiring a high level of intimacy and direct interpersonal connections with the interviewer (Seitz, 2016).

The first author used open-ended questions and targeted probes to guide the interview while allowing participants to speak freely about planning their daily work schedules. Participants were encouraged to recall and describe specific experiences related to developing their work schedules, including the challenges associated with the process. Interviews lasted 45 minutes on average, and were audio-recorded and transcribed verbatim by a professional transcriptionist. The first author reviewed transcripts against the audio files to assess for accuracy and remove participant identifiers. While progressing through the first six interviews, we removed redundant probe questions and added new probes based on emerging themes in the initial interviews. Interviews were simultaneously completed and analyzed in order to inform subsequent interviews and determine data saturation.

Data Analysis

Interview data were stored, managed, and analyzed using Atlas.ti.7 (Berlin, Germany). We used a conventional content analysis technique that consists of coding and identifying patterns in the data to describe how visiting nurses create their work schedule (Hsieh & Shannon, 2005). The first author obtained a sense of the data by reading and immersing in all transcribed interviews, then completed a line-by-line coding of the first six interviews (two from each agency) to develop the initial codebook (Graneheim & Lundman, 2004). This first-level coding approach is appropriate to provide new knowledge about creating work schedules in home health due to the limited information available (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). The first author and the qualitative expert on the team (KBH) reviewed the initial expanded list of codes for redundancy and similarity to refine the codebook. Subsequent transcripts were coded and the codebook was updated as new codes emerged, until reaching data saturation. Major themes were identified based on the final codebook and discussed with all team members to reach final approval.

Rigor

Methodological rigor was ensured by keeping an audit trail to record a detailed description of analytical decisions (Koch, 2006), engaging in peer debriefing to discuss any methodological concerns (Graneheim & Lundman, 2004), and having a qualitative expert code a subset of interviews to establish coding reliability (Morse, 2015). The first author also kept a reflexive journal to record a description of her interactions with participants as well as her reactions to various comments made during the interviews. This increased her self-awareness and reflexivity on how personal biases might have influenced the findings (Koch, 2006).

Results

Sample Characteristics

Twenty nurses participated in the study and were predominantly female (90%), with a mean age of 46 years (± 8.6, range 30–59 years) and a Bachelor's degree in Nursing (75%). The sample consisted of racially diverse nurses, with 45% self-identifying as White, 35% as Black or African American, and 15% as Asian. On average, participants had 9 (± 5.5) years of experience as Registered Nurses in home health care, and reported admitting five new patients every week and visiting seven patients every day.

Nurses described how they planned their schedule, including strategies they used to create their daily itinerary and prioritize visiting their assigned patients. Most nurses planned their schedule one week in advance and considered that they will be assigned one new patient every day. They communicated with their patients the night before the visit to provide them with a time range for the visit. Four themes emerged about creating work schedules: (a) identifying patient needs, (b) partnering with patients, (c) coordinating with other providers, and (d) working within agency standards (see Figure 1). The following presentation of the themes includes a description of the schedule planning process and the associated challenges that nurses faced.

Identifying Patient Needs

Nurses identified initial patient care needs upon admission to home health care and created their daily route according to the acuity of their assigned patients. The start of care visit required a lot of time because it included a comprehensive assessment to identify patient needs for skilled services, provide education, reconcile medications, and in some cases perform wound care. Therefore, most nurses preferred to leave their assigned new admission cases until the end of the day to devote more time to their other patients, unless the new patient had immediate needs to be addressed such as wound care or an injection at a specific time.

Patient acuity influenced the daily itinerary of nurses. Nurses evaluated how "acute, sick, or fragile" patients were in order to triage who needed a visit early in the day. One nurse provided the following example:

> If somebody went to the hospital because their [blood] pressure was elevated, and their medications were changed, and they were stabilized then sent home. Okay, 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.

Nurses 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 said, "I see my most critical patients first and that gives me leeway if there's a patient who's not that critical but needs a visit once a week. I play around with that." However, if patients 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 the patients became confident to self-manage their condition.

Nurses shared how they readjusted their schedules 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. Nurses also described how therapists helped in identifying early changes in patient conditions, leading the nurse to add visits to their daily 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 from other nurses with their "must see" cases. For example, one nurse explained:

> I call patients that I can see the following day and let them know that I'm running very late. 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?"

Nurses remained flexible throughout the day and were open to any unanticipated schedule changes to meet the changing needs of their patients.

Partnering with Patients

Nurses built a trusting relationship with patients, became comfortable with patients' neighborhoods, and planned their work schedules according to patient preferences and availability. As nurses got to know their patients during the episode of care, they had better estimates of the length of each visit. One 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 and provide them with the needed support. Experienced nurses also became familiar and comfortable with the neighborhoods they visited, which made it easier for them to get around. Most nurses described 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. One nurse said:

> No matter what team you work on, once you're in that team, you get used to that type of population… Nurses become part of the community, so they get used to it. They know where to go to the bathroom. They know which block they've got to be careful on. So they tend to make it like their second home; they know it.

Nurses aimed to know and accommodate patient preferences and schedules, as exemplified by one nurse: "You try to make it convenient for them because they're trusting you to come into their home and you become kind of a part of their family too." Most nurses preplanned the upcoming week's visits before they left the patient's home to agree on a day and time that worked best for both persons. A few nurses suggested involving the patient in scheduling visits by adding upcoming visits to a personal calendar offered by the agency.

Patients expressed to the nurses their preference for an earlier or later visit in the day, but sometimes refused to be seen as frequently as was originally planned. In response, nurses considered patients' wishes and cooperated with them to meet their needs while keeping them comfortable. However, sometimes the nurses faced scheduling challenges when they reached the patient's house and the patient was unavailable, because it affected their workflow. One nurse said:

Sometimes you schedule your visit, you get there and you're knocking, ringing the bell. No, they're not there. Sometimes, they're there, but they don't want to be seen. That's a challenge, especially if they're counted as your patient for the day.

Besides considering patient needs, preferences, and availability, nurses assessed the availability of family caregivers who were actively participating in the plan of care to schedule visits accordingly.

Coordinating With Other Providers

Patients received visits from other home health clinicians and had other medical appointments or treatments scheduled, such as dialysis or hyperbaric oxygen therapy. Nurses coordinated with home health team members to avoid visiting the patient on the same day or around the same time. One nurse explained:

> Patients don't want someone walking in the door right after a therapist leaves because they're not focused, they need to rest. Or they got a bath, [or] the therapist just worked them out. Now the occupational therapist is here, and a nurse is coming later. Dear God, I can't handle that many visits in a day, much less them. So, it's good to help them with spacing out their day 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 midmorning. One nurse offered the following example:

I have a lady who 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 [patient]. So I try to be out there between 10:30 and 11:00 so I can do wound care when she's already washed.

Lastly, nurses rescheduled visits if patients had a provider appointment on the same day. They preferred to see patients the next day or later in the week to discuss any updates to the plan of care based on the provider's recommendations. Yet, nurses visited patients on the same day of the provider appointment if they needed to perform wound care and connect the patient to the wound vacuum equipment. One nurse explained:

> When they go to the doctor, I won't make a visit. Most insurances won't pay for a nurse visit and a doctor visit [on the same day] because, again, it's redundant anyway. The doctor's going to be evaluating them. I would only make a visit if they need wound care and the doctor will not address their wound.

Nurses often asked patients about upcoming scheduled healthcare encounters before leaving the patient's home to plan ahead early on and avoid rescheduling nursing visits in cases of scheduling conflict.

Working Within Agency Requirements

Agency characteristics, including productivity and staffing factors, influenced how nurses planned their work schedules. Nurses described how the productivity requirement influenced their planning for visit length and travel time. Time management was essential to achieve productivity, especially in situations where the nurse had a case overload. Therefore, nurses

estimated the length of each visit while planning their day. They developed their organizational skills and learned how to manage their time better "to get everything done timely and accurately." Nurses allocated one to two hours for a start of care visit and based their estimate on prior experience as well as the referral information. One nurse explained:

> *If it's an ileostomy or colostomy, brand new, or any surgical incision of the abdominal region, I know it's going to be at least a two-hour visit if I have to do my assessment, a dressing change, and teach them on that day.*

As for a routine visit, nurses planned for 30 to 45 minutes, including the time spent on documentation. They were encouraged to document while in the patient's home, but sometimes did not have enough time. One nurse explained her experience with point-of-care documentation:

> *I usually leave some time for charting at each house. In some cases, I won't be able to chart, and I just go to the next visit. That's why I chart when I get home. Yes, it can extend the day a little bit.*

Nurses allocated more time for patients with complex medication regimens or complex wounds. However, they struggled to anticipate longer visits in cases of unexpected circumstances and emergencies, especially when they needed to communicate with the referring physician any changes in the patient's status. Nurses found it difficult to proceed in a timely manner with their scheduled visits when they could not reach a provider to resolve their patients' problems. Some nurses described the process of contacting physicians as time-consuming and explained how it contributed to longer visits in certain cases. Nurse managers maintained a level of oversight to reinforce nurses' compliance and productivity. For instance, at one agency, they conducted intermittent reviews of nurses' schedules to identify whether they were meeting productivity requirements. One nurse mentioned her manager's comment on increased visit lengths: "You're probably better off increasing your visit frequency because the patient can only absorb so much in one visit."

Travel time played a major role in nurses' decisions about their daily itinerary because they were expected to visit a specific number of patients per day (including one new patient) without working extended hours. Consequently, they geographically mapped their patients' addresses to decrease their travel time as much as possible, and faced difficulty when patients lived very far apart. One nurse said:

> *I try to clump my clients together as much as I can, so I'm not driving all over the place. That just wastes time, energy, and gas. I'm much more productive when I have three in one area, and then go to the next area.*

Nurses also took into consideration the interplay between patients' needs, preferences, and physical addresses, as illustrated in one nurse's explanation: "I try to compact patients within areas… I start in the area where patients are much more complicated, and move to areas where patients are less complicated." Although most nurses tended to leave admissions to the end of the day, one nurse explained that if the new patient lived near a high-acuity patient, she visited the new patient in the morning. Some nurses mentioned the difficulty they faced when they could not find a parking space to visit a patient, which unexpectedly increased their travel time.

Lastly, nurses identified patient assignment and staffing matters that interfered with their planning. For instance, when the scheduler assigned 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 be uncomfortable with the change and might refuse visits from other nurses. In order to avoid that from happening, one nurse said that she tries "to tell them in advance. Like, somebody else is going to see you, so they don't refuse the visit." Nurses stressed the importance of maintaining continuity of care and preferred to reschedule a visit (if the patient's condition permitted it) instead of having another nurse visit the patient. However, in some cases, nurses had to make drastic schedule changes and could not keep all of their patients, such as when a scheduled nurse did not work, or during the weekend, when staffing is less robust. Moreover, in cases of patient overflow, two of the participating agencies allowed licensed practical nurses to assist nurses with revisits of stable patients who required basic monitoring or wound care. Other scheduling challenges were related to "late drop" cases, as one nurse commented about receiving a new patient late in the day:

> [The scheduler] *calls me at 1:00 [and said,] "The patient just got out of the hospital. They need a nurse the same day. Can you please go?" All nurses get frustrated with late drops. It's really very disruptive to our entire planning. So, we always tell them, "If it's after 1:00, you shouldn't even accept a late drop."*

Nurses were expected to visit new patients on the same day of assignment and found difficulty managing the schedule changes when the scheduler assigned patients before their discharge from the hospital. Therefore, nurses could not always estimate what time the patient would be home for the visit in order to modify their schedule accordingly.

Discussion

In this qualitative descriptive study, we interviewed home health nurses to better understand how they create their daily work schedules and what challenges they face during the process. Nurses evaluated patient needs in order to prioritize those with higher acuity and partnered with patients to accommodate their preferences. They also coordinated visit timing with other providers to avoid overwhelming the patient with visits around the same time. Lastly, in order to meet their agency's productivity requirements, they used scheduling strategies such as minimizing travel time and planning the length of visits. However, they shared scheduling challenges related to the unpredictable nature of providing care in a home health setting and the difficulty of maintaining continuity of care.

Nurse participants evaluated patient needs in order to identify those who needed visits early in the day. Most nurses referred to "patient acuity" when asked about how they take into consideration patient needs to develop their work schedules. However, they did not provide a comprehensive definition of what it means, which is consistent with the existing confusion related to the concept of patient acuity (Brennan & Daly, 2009). Despite the widespread use of the term "patient acuity" by healthcare professionals, its meaning remains unclear and inconsistent, complicating its measurement and usefulness. A patient-classification instrument for home health patients was developed and revised to assess patient acuity and

inform case assignment and productivity monitoring (Albrecht, 1991; Anderson & Rokosky, 2001; Storfjell, Allen, & Easley, 1997). However, there is no current research evidence reporting or supporting the use of this patient-classification instrument. This may be because it was developed prior to major policy changes in home health care regulations.

Previous research suggests that nurses rely on specific patient characteristics to decide on visit intensity and to evaluate patient readiness for discharge from home health (Irani, Hirschman, Cacchione, & Bowles, 2018; O'Connor et al., 2016). Nurse participants described how patient characteristics also influenced visit scheduling. Nurses determined visit priority based on their assessment and clinical judgment; they only relied on the referral information to determine the timing of the first home visit in cases of wound care or injection administration. The priority determination to schedule the start of care visit may be associated with patient outcomes (Topaz, Trifilio, Maloney, & Bowles, 2016) and the transfer of comprehensive and accurate patient information across care settings can support nurses' scheduling decisions regarding the first home visit (Irani, Hirschman, Cacchione, & Bowles, 2018). Therefore, it is important to enhance visit prioritization strategies especially for newly admitted patients with specific needs that require timely attention and care.

Nurses in this study were not guided by a standardized evidence-based tool to evaluate patient acuity and determine patients in need for earlier visits. Nurses document their assessment in the electronic health record, which can include clinical decision support tools that guide nurses' decisions. Sockolow, Bass, Eberle, and Bowles (2016) reported how a frailty measure embedded in the electronic health record assisted home health nurses in determining visit frequency. The development and integration of similar tools into the electronic health record may assist nurses in their visit scheduling decisions. A tool was recently developed to facilitate decision-making on patient prioritization for the timing of the first home visit, and its preliminary testing showed promising results mainly related to potentially lower hospital admission rates for high-priority patients (Topaz, Trifilio, Maloney, & Bowles, 2016). However, this tool was focused on the initial visit timing for newly admitted patients and did not take into account patient prioritization throughout the home health episode. With the increased acuity of patients receiving home health services, there is an increased need for a valid and reliable patient classification tool to guide nurses' clinical decisions, including visit scheduling decisions such as patient prioritization for visits earlier in the day.

Nurse participants expressed the importance of partnering with patients to accommodate their preferences for the date and timing of upcoming visits. Patients often struggle with the unpredictable nature of nurses' schedules (Byrne, Sims-Gould, Frazee, & Martin-Matthews, 2011). Therefore, being respectful of patient's preferences helps establish a trusting nurse-patient relationship (Leslie & Lonneman, 2016) and can subsequently improve patient experience and satisfaction. The findings of this study suggest that the nurse-patient relationship promoted patient commitment to engage with the nurse and reach goals, which is consistent with the existing literature on nurse-patient relationship in a community setting (Sefcik et al., 2016).

Nurse participants described the scheduling challenges that required them to substitute another nurse for their patients. This led to disruptions in continuity of care that negatively impacted their relationship with patients, which is supported by previous research (Byrne et al., 2011; Leslie & Lonneman, 2016; Samia et al., 2012). This dimension of continuity, known as *interpersonal* or *relational continuity*, refers to a caring relationship that develops following the ongoing interaction between provider and patient, and is characterized by personal trust and responsibility (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 healthcare utilization (Saultz & Albedaiwi, 2004; Saultz & Lochner, 2005). In home health, maintaining consistent nursing personnel throughout an episode of care is also associated with positive patient experience (Russell & Bowles, 2016), as well as lower rates of hospital readmissions and emergency department visits, and improved physical function (Russell, Rosati, Rosenfeld, & Marren, 2011). 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 inpatient 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 frequently changes. Managers or other agency staff responsible of assigning patients to field clinicians play a central role in ensuring continuity of care while patients are receiving home health services (Gjevjon, Romoren, Kjos, & Helleso, 2013).

Nurse participants coordinated with other disciplines and considered whether the patient had any scheduled appointments. Nurses are often expected to coordinate care with other providers in order to develop connected and interdependent goals and work with the patient towards achieving them. However, little attention is given to the practicalities of coordinating other aspects of care delivery in a home health setting, such as coordinating the timing of visits with other clinicians. Improving awareness of other home health clinicians' schedules may prevent a common scheduling problem in home health (Pinelle & Gutwin, 2003). Software-based scheduling systems offer a potential solution, and have been increasingly used by agency personnel to track home visits and referrals (Fazzi Associates, 2017). Depending on the agency's culture, home health clinicians can engage in remote or in-person meetings in order to coordinate the plan of care for patients. They need to also consider discussing the logistics of providing visits at the end of their regular meetings. However, the time that clinicians spend on coordinating care is sometimes not considered as part of their productivity, which has future implications on how administrators measure and evaluate productivity.

Nurse participants worked within their agency's requirements and achieved their productivity by scheduling visits for minimum travel time and monitoring the length of their visits. In the United States, nurse productivity in home health is often measured in average number of visits performed per day. Participants reported visiting seven patients on average every day, which is consistent with the productivity of most full-time employed nurses nationwide (Fazzi Associates, 2017). Home health nurses are the least satisfied group of nurses, partly due to the increased work demands related to case management and documentation and the incentives to limit the amount of direct patient contact (Sochalski,

2004). Nurse participants shared the time burden associated with travel and documentation and described how patient emergencies sometimes lead to extended visits. In a recent study, researchers found that nurses often complete their documentation after leaving the patient's home to reduce the time they spend in the home and focus on developing a one-on-one relationship with patients during the visit (Yang, Bass, Bowles, & Sockolow, in press). While travel and documentation time account for a great proportion of nurses' working time, they are not counted as part of their productivity, and are often underestimated as highlighted in a study conducted in Norway (Holm & Angelsen, 2014). Therefore, reaching specific productivity expectations is an international concern that needs to be addressed first by clarifying the concept of nurse productivity in a home health setting.

Based on the current definition of productivity in home health (i.e., average visits per day), it can be perceived as equivalent to patient-to-nurse ratio in acute care settings. Previous research targeting hospital nurse staffing linked patient-to-nurse ratio to patient and nurse outcomes (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). It is time to extend workforce research to the home health setting in order to better operationalize productivity, examine how it is associated with nurse and patient outcomes, and seek strategies to improve those outcomes. There is a recent call to focus on improving workforce outcomes in order to improve care experience and population health while containing health-related costs (Bodenheimer & Sinsky, 2014). Home health agencies with good work environments have lower rates of nurse burnout and better patient outcomes (Jarrin et al., 2014). As a result, linking work environment characteristics to care delivery processes (e.g., creating a daily work schedule) is important because it has great implications for improving workforce and patient outcomes. The findings highlight specific patient and agency factors that influence nurses' decisions to schedule patient visits, which in turn may influence patient outcomes. Nurses take into account patient needs while minimizing travel time to meet their agencies' productivity requirements. A mapping software can be developed to illustrate the best route while considering patient needs, which would an enhacement to the existing web-based mapping services that nurses currently use. This mapping software would facilitate the planning of daily itineraries and help nurses gain efficiencies in their care delivery processes.

While we asked nurses how they planned their daily work schedules, none of our participants mentioned non-patient related, professional activities as part of their schedule planning. This may be a reflection of the current perception about nurse productivity in home health. Nevertheless, besides scheduling patient visits and planning for patient care, home health nurses need to engage in continuous professional development to bolster their skills as independent providers. Home health managers have a responsibility of supporting nurses and providing them with opportunities to develop professionally and influence change in decisions impacting their practice. Managers can also adopt a participatory governance model that enables shared decision-making based on the principals of partnership, equity, ownership, and accountability (Ellenbecker et al., 2006; Samia et al., 2012; Tullai-McGuinness, Madigan, & Anthony, 2005). Therefore, nurses should be allowed time to represent their peers in strategic planning and standing committees in order to advocate for adjusting their productivity requirements (Ellenbecker et al., 2006) and consequently decrease their burnout, improve their job satisfaction, and retain home health nurses in the long term.

Limitations

Although participants were an experienced and diverse group of nurses, they were employed by only three large urban home health agencies in the mid-Atlantic region of the United States. Therefore, the findings may not be representative of work scheduling by home health agencies across the United States or worldwide. Moreover, interviews were conducted either in-person or via a web-based video tool, which may have led to different levels of participant engagement in the study. Nevertheless, there was no noticeable difference in the findings between the two interviewing techniques. Finally, while this study focused on understanding visit scheduling from nurses' perspectives, nurses also considered multiple patient and agency factors. Hence, future research should focus on gaining a comprehensive understanding of this practice from multiple perspectives by interviewing patients, family caregivers, and agency leaders. Despite these limitations, this study was, to our knowledge, the first to examine how home health nurses create their work schedule. The findings provide direction to visiting nurses and managers to improve the practice of scheduling home visits.

Conclusion

Home health nurses make autonomous decisions regarding their work schedules while considering specific patient and agency factors. They evaluate patient needs in order to prioritize visits accordingly, partner with patients to accommodate their preferences, and coordinate visit timing with other providers to avoid overwhelming the patients. Home health nurses create work schedules according to their agency's productivity requirement and overcome staffing and scheduling challenges. They need to remain flexible and open to adjusting their schedules based on any unexpected circumstances, including patient emergencies. Meanwhile, home health managers are encouraged to develop a support system for nurses to maintain continuity of care and alleviate the burnout associated with high productivity requirements. A mapping software that takes into consideration patient needs can be also developed to facilitate nurses' daily itinerary planning. Lastly, future research is needed to further our understanding of patient classification systems and nurse productivity in home health in order to support nurses' organizational decisions, reduce nurse burnout, and improve patient outcomes.

Relevance to Clinical Practice

The findings of this study have clinical implications for home health visiting nurses and managers. Home health nurses are perceived as autonomous clinicians who receive remote support from a central office. They are responsible for helping patients restore, maintain, or slow the decline of their functional capacity while remaining in the community for as long as possible. Little attention is directed towards the logistics of providing nursing care in the home health setting, specifically, in creating work schedules. The findings of this study highlight the complex decision-making process associated with a task that may appear to be simple. As nurses plan their work schedules, they think about providing high-quality care that is patient-centered and timely. They consider patient needs and preferences and make timely changes to their schedules to accommodate emergencies. Home health nurses practice

within a dynamic environment and need to maintain flexibility in their schedules in order to account for unexpected situations. However, in most cases, they determine visit priority after they assess the patient for the first time because of the limited patient information available upon patients' admission to home health. This may be too late for patients in need for earlier visits following their discharge from the hospital. Future research is needed to identify how work scheduling decisions influence patient outcomes. Lastly, the findings highlight the organizational factors that influence nurses' schedule planning. The ability to develop successful schedules is also a reflection of the support that nurses receive from their managers. Therefore, home health managers need to facilitate continuity of care and provide opportunities for home health nurses to represent their colleagues in standing committees in order to participate in shaping agency policies and requirements.

Acknowledgments

This study was funded by a grant from the Frank Morgan Jones Fund at the University of Pennsylvania. Dr. Irani's post-doctoral training is supported by the National Institute of Nursing Research of the National Institutes of Health (T32NR015433: Multiple Chronic Conditions, Interdisciplinary Nurse Scientist Training; Principal Investigator, Dr. Shirley M. Moore). The authors express their appreciation to the nurses who participated in the study.

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What does this paper contribute to the wider global clinical community?

- Home health nurses make autonomous decisions regarding their work schedules and face challenges related to the maintenance of continuity of care and the unpredictable nature of providing care in a home health setting.
- Home health nurses identify patients in need of earlier visits and accommodate for patient preferences. They also coordinate visit timing with other providers to avoid overwhelming patients.
- Home health nurses create work schedules that meet their agency's productivity requirement by mapping patient visits to decrease travel time and planning visit length.

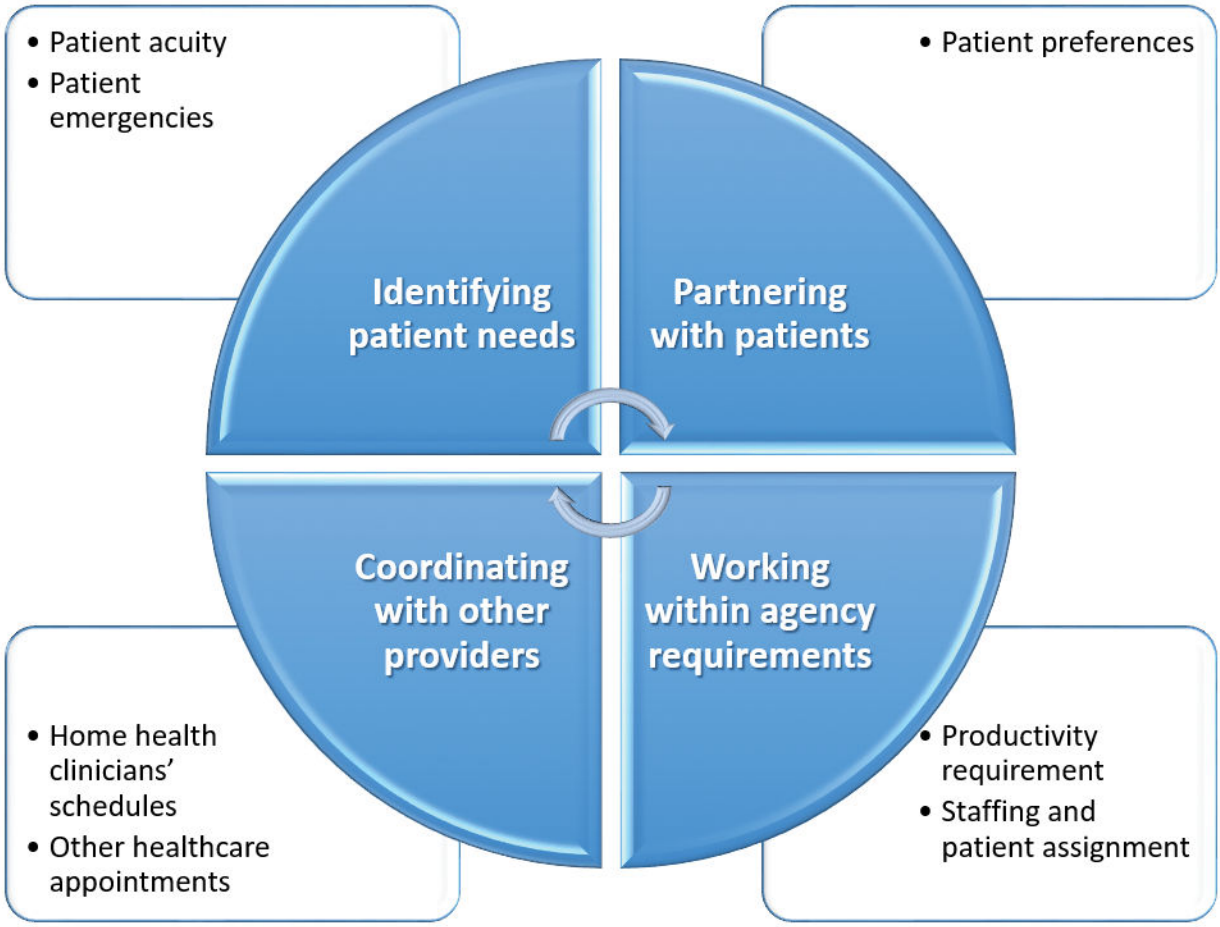

Figure 1.
The four themes describing how home health nurses plan their daily work schedules