

Contextual forces shaping home-based healthcare services between 2010 and 2020:

Insights from the social-ecological model and organizational theory

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## Abstract

Demands for home-based care have surged alongside population aging, preferences for aging in place, policy-driven reforms incentivizing lower hospital utilization, and public concerns around COVID-19 transmissions in institutional care settings. However, at both macro and micro levels, sociopolitical and infrastructural contexts are not aligned with the operational needs of home healthcare organizations, presenting obstacles to home healthcare equity.

We integrate the social-ecological model and organizational theory to highlight contextual forces shaping the delivery of home-based care services between 2010 and 2020. Placing home-based healthcare organizations at the center of observation, we discuss patterns and trends of service delivery as systematic organizational behaviors reflecting the organizations' adaptations and responses to their surrounding forces. In this light, we consider the implications of provision and access to home care services for health equity, discuss topics that are understudied, and provide recommendations for home-based healthcare organizations to advance home healthcare equity. The paper represents a synthesis of recent literature and our research and industry experiences.

Keywords: Home-based care and services; Age in place; Healthcare Policy; Medicaid/Medicare; Health equity

Home-based healthcare is a complex industry involving payer and provider organizations that plan, coordinate, manage, and deliver skilled outpatient care and long-term care services to recipients in their homes (Caffrey et al., 2011; Landers et al., 2016). As a form of community-based care, provision of home-based care is distinctive from care provision in institutional settings (e.g., nursing facilities), for it is shaped by neighborhood resources and infrastructure, staff travel, and care recipients' home environments. Major home care services include post-acute care, counseling, therapeutic, and treatment services, and chronic and long-term care for disease management, health maintenance, and assistance with daily activities (Landers et al., 2016; Harris-Kojetin et al., 2019). Demands for home-based care have surged alongside population aging, preferences for aging in place, policy-driven reforms incentivizing community over hospital care, and public concerns around COVID-19 transmissions in institutional settings (Hoffman et al., 2020; Rowe et al., 2016; van Houtven & Dawson, 2020). However, at both macro and micro levels, the healthcare system and its supporting infrastructure are not aligned with the operational needs of home healthcare organizations. Scholars and industry leaders have noted that supply of home-based care services has not kept pace with consumer demand. Furthermore, many organizations are experiencing prolonged financial and staffing crises (Gleckman, 2020; Scales, 2021). Understanding the multi-level pressures surrounding home-based healthcare organizations can inform policies and strategies that support the organizations in meeting the growing need for their services.

To put these multi-level pressures into context, we integrated the social-ecological model and organizational theory to highlight notable forces shaping home-based healthcare services between 2010 and 2020. The social-ecological model considers the interplay between multi-level institutional systems and environmental, interpersonal, and individual factors shaping population health (Anderies et al. 2005). In home healthcare, these levels include political

and environmental contexts, social institutions and infrastructural systems, home-based healthcare organizations, community and interpersonal contexts, and the service population. (Figure 1) Additionally, organizational theory outlines how socio-environmental circumstances affect the structures, processes, and operations of healthcare organizations (Tolbert & Hall, 2009). While numerous authors have applied the social-ecological model to study public health topics, the emphasis is often on patient-level outcomes (Figure 1, Level 1). By placing home-based healthcare organizations at the center (Level 3), we describe how organizational behaviors, including patterns of service provision, reflect adaptations and responses to surrounding influences. In this light, we discuss the implications of provision and access to home care services for health equity, the equal opportunity to achieve “full health potential” without disadvantages from one’s social position or structural circumstances (Centers for Disease Control and Prevention, 2013). We consider *home healthcare equity* a state where home-based care services are equitably provided on the basis of need and reduce, rather than exacerbate, existing population health disparities. The perspectives presented represent a synthesis of recent literature and our research and industry experiences.

Table 1 provides a roadmap for our discussion, organized based on the social-ecological model (Figure 1). We highlight selected contextual forces that influence home-based healthcare organizations and industry trends. We describe each force, their influences, and the implications for home healthcare equity. We conclude with recommendations for organizations to advance home healthcare equity.

### **Political and Environmental Contexts**

Federal and state policies influence home-based healthcare through business licensing, provider certifications, operational regulations, and reimbursement models. Strongly associated with organizational survival (Tolbert & Hall, 2009), reimbursement models are

powerful drivers of organizational attitudes, behaviors, and inter-relationships. Below, we highlight two reimbursement-related forces: *value-based payment reforms* and *the push to discharge hospitalized patients quickly*.

### *Value-based payment reforms*

As most home care recipients are older adults, Medicare and Medicaid represent the top payers in the industry, and government reimbursement methods are widely adopted by private insurers (Van Houtven 2020). Historically, the federal government manages Medicare, which finances inpatient and skilled care services (e.g., hospital care, physician and nursing services) mostly for adults aged 65 or older. Medicaid is a federal-state partnership primarily managed at the state level and finances health-maintenance services and long-term care for eligible persons with low incomes, disabilities, or special health needs (Rice et al., 2013). Some individuals are “dually-eligible” beneficiaries of both Medicare and Medicaid.

Since the 1990s, the nation’s healthcare system has shifted towards rewarding value and quality over volume, with attempts to control costs and expenditures and avoid inadvertently incentivizing service overprovision or services of minimum standards as seen in the traditional fee-for-service payment model and the prospective payment system first introduced to hospitals in the 1980s<sup>1</sup> (Chee et al., 2016; Qian et al., 2011). This shift accelerated in the 2010s, when the Affordable Care Act and Medicare Access and CHIP Reauthorization Act were signed into law (Chee et al., 2016; Conrad et al., 2014). Various quality programs and payment models have been introduced to tie organizational metric performance (e.g., clinical outcomes, service costs) to financial incentives or penalties (Chee et al., 2016; Damberg et al., 2014). These metric-determined payment methods are commonly known as “value-based payment” or “value-based purchasing.” Presently, most value-based

payment methods involving home-based healthcare are designed and implemented through state Medicaid programs (Chee et al., 2016; Conrad et al., 2014). At the federal level, the Centers for Medicare and Medicaid Services (CMS) piloted an initial *Home Health Value-Based Purchasing Model* among Medicare-certified Home Health Agencies in nine states between 2016 and 2021. The model is expanding nationally in 2022 (CMS, 2022a). Despite many differences, Medicare and Medicaid share the objectives of curtailing healthcare costs and reducing expenditures through value-based payment reforms (Bailit Health, 2020; Damberg et al., 2014).

Viewed from an investment and return perspective, *value* in healthcare reflects measured improvement in health outcomes against invested costs (Taisberg et al., 2019). Value-based payment reforms attempt to develop reimbursement mechanisms that effectively control spending, reduce wastes, and reward care quality to facilitate more value from healthcare services (Porter, 2010, 2011; Teisberg et al., 2016). Nonetheless, determining *care value* remains debatable. Value-based payment measures represent finite criteria to evaluate healthcare services and quantify *care value* (c.f., Damberg et al., 2014: 9). According to Porter (2011), most existing value-based payment measures were “process measures” (e.g., timely initiation of care, experience of falls), which may differ from client-centered health outcomes reflecting what matters most to recipients. Additionally, the implicit *value* in many value-based payment measures often relates more to payer costs than client-centered health goals. Well-designed value-based payment models for home-based healthcare should entail reasonable expectations of home care services and providers, incorporate client health goals, and reflect a balance between healthcare process and health outcome measures (Kaplan & Porter, 2011; Conrad et al., 2014; Miller, 2017). Conceptualization of these models ultimately affects measurement metrics, organizational behaviors, and client experiences.

Recent literature suggests mixed results of value-based payment reforms in home-based healthcare. In New York, Medicaid payment reform and its associated value-based payment initiatives fostered cross-organizational collaborations between risk-sharing managed long-term care health plans and licensed home care services agencies to develop shared quality goals around incentivized measures (Russell et al., 2022). Nevertheless, several potential problems and unintended consequences warrant attention. First, since definitions of value-based payment measures vary across payment programs, quality goals developed around these measures could cause variations in service planning and provision between care recipients by payment sources. Second, financial risks could narrow organizational focus to metric performance, overlooking “softer” but important indicators of recipients’ quality of life and well-being. Furthermore, misaligned incentives across payment programs may cause competing priorities challenging the operations of individual organizations and industry-wide service quality.

Along this line, Fong and colleagues’ (2022) study on homebound Medicaid long-term care plan clients in New York reported positive impacts of scaled home health aide training on some value-based payment measures (i.e., receiving an influenza vaccination; not experiencing uncontrolled pain; stable or improved pain intensity; stable or improved shortness of breath). However, the authors noted that some measures (e.g., not having emergency room visits; not experiencing falls resulting in injuries; stable or improved urinary continence) may not fully align with aides’ work or adequately capture the value of their services in assisting clients with daily activities, providing psychosocial support, and supporting client overall well-being. There are also questions about the utility of high-performing measures for determining value, and whether emphasis of metric performance in value-based payment environments may obscure the value of workforce training.

More research is needed to better assess how value-based payment reforms impact home-based healthcare, including links between organizations' adaptation strategies, changes in service models, client outcomes, and lessons learned through an equity lens.

*The push to discharge hospitalized patients quickly*

Many value-based payment models incentivize reducing hospital expenses, which comprise the largest amount of national healthcare expenditures (National Center for Health Statistics, 2021), by reducing avoidable hospital admissions and length of stays. Payment reforms targeting hospitals and hospital practices can also affect home-based healthcare. Although intended to improve patient safety, experience, clinical outcomes, and care cost-effectiveness (Chee et al., 2016; CMS, 2021a), scholars have criticized hospital-focused payment reforms, including the *Hospital Value-based Purchasing Program (HVBP)* introduced through the Affordable Care Act and the preceding *Prospective Payment System for Hospitals*, for discharging hospitalized patients “quicker and sicker”, hindering evidence-based practices, penalizing hospitals and providers serving disadvantaged populations and patients with complex conditions, and discouraging inter-provider collaboration (Kosecoff et al., 1990; Hong et al., 2020; Miller, 2017; Qian et al., 2011). Over time, to address identified issues with hospital care, CMS has adjusted *HVBP* performance domains, metrics, and reimbursement calculations, and implemented the *Hospital Readmissions Reduction Program* (CMS, 2021a, 2021b). Yet, despite these efforts, problems of inadequate physician and patient communications and rushed hospital discharges regardless of patient readiness persist, and risks in transitions to home-based post-acute care remain high (Lawrence et al., 2020; Nasarwanji et al., 2015; Qian et al. 2011).

Rushed hospital discharges can strain post-acute care by discharging patients too early, referring patients not meeting admission eligibility or otherwise unsuitable, and



initiating transfers with incomplete or inconsistent information (Finkel & Worsowicz, 2017; Lawrence et al., 2020). These problems could delay starts of home care services, affect care timeliness, and increase risks for complications and hospital readmission (Nasarwanji et al., 2015). Nevertheless, associations between hospital discharges, transitions to home-based care, and hospital readmissions have not been adequately documented in the literature. Ma et al.'s (2018) review of 18 studies on home care recipients' hospital readmissions discovered that while 16 studies (89%) reported readmission rates, only six (33%) reported readmission reasons. Research examining care transitions between hospitals and home-based care and incentives encouraging safer practices are needed to facilitate cross-sector collaborations that *meaningfully* minimize hospital expenses.

### **Social Institutional and Infrastructural Systems**

Provision of home-based care services relies on local resources and systems. Below, we highlight *variations in local resources and infrastructural support*.

#### *Variations in local resources and infrastructural support*

Geography and region affect population health through multiple pathways including physical characteristics, community resources and healthcare services, built environment, and social institutional systems (Braveman et al., 2011). Prior research has reported access barriers to home-based healthcare in rural regions (Nelson & Gingerich, 2010). Recent research suggests neighborhood factors intersect with residential segregation to affect home care service experience at group and individual levels: recipients in low-income neighborhoods or communities with high proportions of residents of color were less likely to receive services from high-quality organizations (e.g., Fabius 2019; Fashaw-Walters, 2022). More research is needed to clarify the inter-relationships between home-based care delivery, regional variations in resources and infrastructure, recipient characteristics, and population

health. In metropolitan areas with heavy reliance on public transportation, the design and operations of public transportation systems (e.g., routes, schedules, maintenance, and weather-related shutdowns) could affect the availability, continuity, and timeliness of service delivery. Likewise, rural, secluded, and disadvantaged communities have fewer providers, lengthier and more costly commutes, and limited equipment and transportation vendors to support operations and services. Studies examining associations between regional infrastructure, home-based care delivery, and recipient characteristics are needed to inform targeted interventions that strengthen local systems and advance home healthcare equity across geographies and demographic groups.

### **Home-based Healthcare Organizations**

Across sectors, healthcare organizations depend on information technology for business functioning and service provision. However, home-based healthcare organizations face unique challenges due to the industry's decentralized nature. Below, we highlight two forces: *fragmented data informatics systems* and *data-sharing barriers*.

#### *Fragmented data informatic systems*

The 2009 *Health Information Technology for Economic and Clinical Health Act* facilitated the adoption of information technology by U.S. hospitals and private providers (Gold & McLaughlin, 2016). Since then, information technology has played a vital role in healthcare operations and public health interventions. Yet, the effectiveness of an informatics system depends on the data it captures, the knowledge it represents, its capability to transfer information, and data security (Bakken & Hripcsak, 2004). While legislation has regulated and safeguarded information sharing (e.g., the *Health Insurance Portability and Accountability Act*, or “HIPAA”), home-based healthcare organizations face data problems that often reflect a mutually reinforcing cycle, where the absence, incompleteness,

inconsistency, or bias of data reflects unresolved issues in data acquisition processes and/or the design, management, and usage of Electronic Health Record (EHR) systems (Gervasi et al., 2022; Yi et al., 2022). As an industry, besides adopting federal and state mandated data tools to fulfill regulatory and reimbursement requirements, home-based healthcare lacks agreed-upon standards that govern data acquisition and systems design (c.f., LeadingAge, 2016). Many critical decisions about what information to collect, methods and venues of data gathering, selection of EHR vendors, and utilization of EHR systems are driven by an organization's billing, administrative, and operational purposes combined with financial and staffing resources to afford investments into data informatics systems (LeadingAge, 2016). Since many home healthcare providers are smaller, independent organizations with limited institutional resources, there are huge variations in quality and effectiveness of data informatics systems across organizations (c.f., Russell et al., 2022). For instance, besides insurance identifiers changeable by enrollment statuses (i.e., Medicaid and/or Medicare numbers; health plan identifiers), some organizations may not have client identifiers unique enough within their data systems to effectively identify repeat clients serviced in different time periods, or who receive multiple services (e.g., skilled nursing care and home health aide services). Moreover, client demographic and health conditions are sometimes designed as unstructured fields in EHR systems and sporadically entered. These problems hinder health surveillance, quality assurance, and continuous quality improvement efforts.

Recent government payment reforms and growing emphasis on care quality have fostered some standardization through reporting requirements and mandated assessments, such as CMS' Outcome and Assessment Information Set required of Medicare home health patients, and the Uniform Assessment System of New York required of the State's managed long-term care clients. However, contingent on reporting and operational structures and inter-organizational *HIPAA*-compliance policies and data-sharing terms (see next section for

detail), client medical history and health assessments are usually not readily accessible to provider organizations (Gervasi et al., 2022). Many provider organizations are left on their own to collect information about their clients. This creates barriers to reliably identifying client needs and impedes emergency preparedness. Together, the data issues systematically obstruct implementation of culturally appropriate care, widen existing gaps between organizations, place disproportionate burdens on less technologically mature or well-resourced agencies, and hinder population needs assessments to inform home healthcare equity and quality improvement efforts.

#### *Data-sharing barriers*

Data-sharing is a known challenge in healthcare. While *HIPAA* set important national regulations and standards for the usage, transmission, and storage of health information, it has also created cumbersome data-sharing processes to ensure legal standards are heeded, proper protocols are followed, and terms are approved between business entities (e.g., data disclosure or access, data protection plans, legal documents, obtaining organizational approvals). The process to enable data-sharing can burden more organizations with limited resources.

Relatedly, the home-based healthcare industry lacks an integrated, *HIPAA*-compliant data-sharing infrastructure to warrant timely and secure information-sharing within and across EHR systems to effectively support its organizations and workforce. These limitations could delay administrative processes and create service delivery logjams, referral backlogs, duplicated data collection, and communication gaps between frontline staff, management, and support teams. These issues could impede coordination in care transitions; continuity of care; service quality; and client safety and satisfaction (Georgiou et al., 2013; Nasarwanji et

al., 2015; Sockolow et al., 2020). Barriers in data-sharing also challenge cross-sector and cross-organizational collaborations for common population health goals.

Home-based healthcare organizations could benefit from coordinated, standardized, and interoperable EHR systems. To prompt the industry towards pertinent population health goals proposed in the *21<sup>st</sup> Century Cures Act*, CMS released a request for information in 2019 to help incentivize the interoperability of EHR systems in post-acute care settings (CMS, 2019). Industry-wide enhancement of information technology is needed to advance home healthcare equity (Lindeman et al., 2020).

### **Community and Interpersonal Contexts**

The workforce is the pillar of the healthcare system. Below, we highlight implications of *workforce shortages and turnover* for home-based healthcare.

#### *Workforce shortages and turnover*

The nation's healthcare system has struggled with an insufficient workforce since the late 1990s. The COVID-19 pandemic has created unprecedented challenges throughout the healthcare system and exacerbated staffing shortages on top of ongoing workforce recruitment, retention, and development problems (Bateman et al., 2021; Scales, 2021). Staffing challenges have been especially pronounced in home healthcare, which sees a growing need for workers alongside a rapidly aging society, older adults' desire to age in place, and the rebalancing of public long-term care away from institutions to the community.

Home care clinician (e.g., nurses, therapists) shortages and turnover are well-known industry challenges but under-examined in U.S. scholarship. Studies of facility-based clinicians identified job satisfaction, burnout, shift schedules, organizational cultures, and managerial styles as important factors affecting clinician retention or turnovers (Choi et al.,

2012; Kelly, 2021). In home-based healthcare, *job preparedness* is likely another turnover factor. Despite a century-long industry history, core competencies required of clinicians to service homebound patients are usually beyond the scope of formal credentialing programs (Andersson et al., 2017; Rock et al., 2014). Beyond technical skills, delivering care in the home requires strong ability to work independently, shrewd decision-making and reactions to the home environment, flexibility, and sociocultural competence to appropriately develop and execute care plans (Andersson et al., 2017; Rock et al., 2014). Clinician shortages limit the types of outpatient services organizations can provide, keep patients in hospitals longer than needed, and can lead to delayed, missed, or inadequate services and increased risks of patient deterioration. Clinician shortages and turnover also challenge care team coordination and communication, and increase staff workload, documentation burdens, stress, and burnout risks.

Direct care workers (e.g., home health aides, personal care assistants) supporting clients' daily health and functioning comprise the largest proportion of the home-based healthcare workforce. Low wages, low public valuation, lack of career ladders, marginalization within the care team, and competition with other low-waged jobs hinder recruitment and retention (Franzosa et al., 2018; Russell et al., 2022; Scales, 2022). Bateman et al.'s (2021:4) healthcare labor market analysis projected that by 2026, demands for direct care workers would increase to 10.7 million; nevertheless, 6.5 million current staff would leave the field permanently and only 1.9 million new staff would step in. New York and California were projected to be the most affected states, each facing a shortage of 500,000 workers (Bateman et al., 2021:3). These shortages will limit service access and undermine policy and advocacy efforts to expand home-based care. Additionally, direct care workforce shortages and turnover imply greater net costs on provider organizations to maintain staffing

levels, inconsistent or interrupted care provision, lower client satisfaction, and greater family caregiver strain (Franzosa et al., 2018; Reckrey et al., 2022).

Higher wages, continuous training, development, workplace support, and staff empowerment interventions are jointly needed to address industry-wide workforce insufficiency (e.g., Kennedy et al., 2022; Russell & Bowles, 2016; Russell et al., 2022; Scales, 2021, 2022).

### **Service Population**

Over 80% of home-based healthcare recipients are aged 65 and older (Harris-Kojetin et al. 2019). Below, we highlight two forces: *recipient-related service barriers* and *campaigns to empower recipients*.

#### *Recipient-related service barriers*

The multi-level factors we describe lead to delayed starts of care, missed services, lapses of provider continuity, transportation barriers for medical appointments, and medical equipment delays for home care recipients. Home environmental barriers (e.g., unsafe housing, pests, mold) can also constrain service provision and inhibit providers from maintaining safety and infection control practices (Adams et al., 2021; Phillips 2016). Moreover, admission may be denied when there is neighborhood or home violence endangering staff and recipient safety, no secure space to provide care, or when heat or running water is unavailable. Individuals in disadvantaged and hard-to-reach regions are likely more affected by these barriers; however, our literature search found limited investigation of these problems.

### *Campaigns to empower care recipients*

Over the past three decades, amongst other forces, patient rights advocacy and market strategies to manage rising healthcare costs have led to nationwide campaigns to empower healthcare consumers (Stevens 2008), including home-based care recipients. At the federal level, the bipartisan *Choose Home Care Act* was introduced in the U.S. House of Representatives in July 2021, intending to enable Medicare beneficiaries to receive home-based care following a hospital stay (Zorn, 2021). Since the 1990s, many states also offered consumer-directed personal services programs that promote “choice and control” among Medicaid beneficiaries, including options to hire family or friends as personal caregivers (CMS, 2022b). Additionally, some state Medicaid programs allow beneficiaries to receive long-term care services in facility-based or institutional settings (e.g., nursing homes, adult care centers). Although options and terms vary by payment programs, these policies aim to empower recipients, particularly older adults, by expanding their healthcare choices. These policies have led to official reporting of consumer ratings and satisfaction, such as the CMS *Home Health Care Consumer Assessment of Healthcare Providers and Systems Survey* (CMS 2021c).

The empowerment of care recipients poses opportunities and challenges to home-based healthcare. For one, it extends the industry’s market and clientele. Nevertheless, as many organizations are already experiencing multiple infrastructural constraints and staff shortages (Scales 2021), without sufficient preparation, business growth could further challenge inter- and intra-agency care coordination and management, development of interdisciplinary care teams, and cultivation of provider continuity (Russell & Bowles, 2016; Russell et al., 2022). These challenges can widen existing inequalities between organizations and their service populations. Research is needed to understand how expanded consumer options affect home-based healthcare organizations, their services, and client outcomes.



## Conclusion and Recommendations

Examining home healthcare organizations with the social-ecological model and organizational theory helps properly contextualize multi-level factors shaping the provision and access to home-based healthcare services. Beyond individual factors, patterns of service delivery reflect organizational adaptations and responses to their surrounding forces. While social-ecological contexts shape the structure and operation of home-based healthcare organizations, as system constituents, organizations can also work within their ecosystem to identify and implement system-level solutions that advance home healthcare equity.

Drawing from literature and our industry and research experiences, we provide five recommendations for home-based healthcare organizations to work across levels of the ecosystem towards greater home healthcare equity. First, organizations should actively pursue intra-organizational and cross-sector collaborations to champion (1) interventions that enhance supporting infrastructure for equitable service delivery; and (2) policy changes that support evidence-based practices, cross-organizational care teams, and inter-provider coordination to minimize risks in care transitions and meaningfully reduce hospital expenses (Benyo & Silverman, 2022). Second, as many resources are locally generated and managed (Hoffman et al., 2020), organizations could develop resource hubs to strengthen regional systems of care and share information about local referral and vendor contacts, environmental risk factors, and prevalent social determinants of health for strategies and policy recommendations addressing common barriers. Third, organizations could respond to calls for proposals to recommend strategies and needed resources for industry-wide improvement of data and information technology to reduce information gaps. Fourth, to strengthen the workforce, organizations could increase partnerships with educational institutions to incorporate home care into the curriculum and internships for future providers and provide “on-the-job” career development training opportunities (Rowe et al., 2016:5). Furthermore,

organizations should conduct research with care recipients, workforce, and local communities to develop targeted interventions (e.g., workflow adjustments; pilot programs to improve communications, strengthen coordination, or test new service models) to effectively address gaps in existing service provision and client experiences alongside business expansions (Benyo & Silverman, 2022).

The time is opportune to strengthen home-based healthcare with an equity lens to support the health, well-being, and positive aging of home-based care recipients.

### **Author Note**

1. Traditionally, the U.S. healthcare system employs a *fee-for-service* payment model which reimburses providers by itemized services provided (Rice et al., 2013). The *fee-for-service model incentivizes* providers to deliver more services, leading to service over-provision, overpayment, and healthcare costs inflation. To solve these problems, in the 1980s, Medicare introduced the *Prospective Payment System (PPS)* for hospitals, where the highest healthcare spending was observed. Under *PPS*, providers receive fixed rates of reimbursement by service types and are hence incentivized to move between patients quickly (greater efficiency), which adversely affects care quality (Qian et al., 2011). In this article, we used the term “prospective payment system” or *PPS* to refer to the *Prospective Payment System for Hospitals*, through which fixed rates of reimbursement for health services were introduced officially. In late 1990s, Medicare extended this reimbursement method and introduced the prospective payment system for skilled nursing facilities (*Nursing Facilities PPS*). In 2000, this payment method was extended to include skilled outpatient home-based care, known as the *Home Health PPS (HH PPS)*.

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Table 1. Impacts of Contextual Forces on Home-based Healthcare Organizations and Recommendations for Advancing Home Healthcare Equity

Level and Type within Social-ecological Model	Contextual Forces Shaping Home-based Healthcare	Impacts on Organizational Behaviors and Industry Trends	Home Healthcare Equity Considerations	Recommendations <sup>a</sup>
Political and Environmental	Value-based payment reforms	Endorsement and pursuit of <i>value</i> and quality over volume in service planning and delivery Emphasis on metric performance Cross-organizational collaboration in defining and implementing quality goals	Variation in service planning and delivery models by payment models and recipient payment sources Focus on narrowly defined metric-driven care goals in the care process Absence of care recipient input in the processes of defining care goals and service planning Misaligned incentives by payment programs challenge organizational priorities and operations and industry-wide service quality Obscurity of long-term benefits of investments into workforce development	Actively pursue intra-organizational and cross-sector collaborations to champion (1) interventions that enhance supportive infrastructure for equitable service delivery (2) policy changes that support evidence-based practices, cross-organization care teams, and inter-provider care planning to minimize risks in care transitions and meaningfully reduce hospital expenses
	The push to discharge hospitalized patients quickly	Rushed hospital discharges and increased volume of post-acute referrals to home-based healthcare despite patient readiness or suitability Lengthened screening and admission processes related to inadequate handling from hospitals	Increased risks in care recipients' transitions of care Delayed starts of home care services and care timeliness Increased recipient risks of condition worsening and hospital readmissions	
Social Institutional and Infrastructural Systems	Variations in local resources and infrastructural support	Limited service provision in remote/hard-to-reach and disadvantaged neighborhoods Organizations and staff experience service delivery constraints (e.g., limited equipment and transportation vendors, longer staff travel time between clients, and higher staff travel costs).	Lack or limited access to home-based care services in some regions Delayed or missed service delivery Deferred medical equipment arrangement and delivery Lapses in provider and/or service continuity Local resources and infrastructure intersect with residential demographic make-up to affect group and individual level home care experience	Develop resource hubs to strengthen regional systems of care and share information about local referral and vendor contacts, environmental risk factors, and prevalent social determinants of health for strategies and policy recommendations addressing common barriers
Home-based Healthcare Organizations	Fragmented data informatics systems	Adoption of electronic health records systems and information technology for planning, coordination, and management of services and client health assessment and surveillance Selection of electronic health records vendors, the design of	Information gaps--critical data may be missing from electronic health records systems and the data systems may not generate information adequately characterize needs of care recipients Multiple data quality issues, including inconsistent	Respond to calls for proposals to recommend strategies and needed resources for industry-wide improvement of data and information

Level and Type within Social-ecological Model	Contextual Forces Shaping Home-based Healthcare	Impacts on Organizational Behaviors and Industry Trends	Home Healthcare Equity Considerations	Recommendations <sup>a</sup>
		<p>data systems, and data acquisition processes driven by payment, administrative, and operational purposes, and organizational financial and staffing resources</p> <p>Segmented and inconsistent information technology across electronic health record systems</p>	<p>information gathered across payment programs</p> <p>Challenge in implement culturally appropriate care among service populations</p> <p>Challenge in assessing and monitoring population health needs to inform health equity efforts, large-scale quality improvement initiatives, and emergency readiness.</p>	<p>technology to reduce information gaps</p>
	Data-sharing barriers	<p>Government regulations constrained and restricted health information-sharing</p> <p>Cumbersome process to enable data-sharing between organizations</p> <p>Lack of integrated data-sharing infrastructure for secure and efficient intra- and inter-organizational information sharing</p>		
Community and Interpersonal Contests	Workforce shortages and turnover	<p>Limited types of services offered to care recipients</p> <p>Heavy staff caseloads, workload, and stress, and heightened staff burnout risks</p> <p>High staff turnover, exacerbated staff shortfalls, and persisting problems of recruitment and retention</p>	<p>Limited accessibility of home care services</p> <p>Delayed, missed, or inadequate delivery of services</p> <p>Some patients are kept in hospitals longer</p> <p>Increased recipient risks of condition deterioration</p> <p>Increased difficulty in care team coordination and communication</p> <p>Lapses in provider and/or services continuity</p>	<p>Partner with educational institutions to incorporate home care into the curriculum and internships for future providers and provide on-the-job training and career development opportunities</p>
Service Population	Recipient-related service barriers	<p>Residential regions and neighborhoods reflect variations in local resources and infrastructural support</p> <p>Absence of service provision in some regions</p> <p>Recipient home environment affected staff ability to maintain safety and infection control practices</p> <p>Denial of admissions due to client neighborhood safety and/or home environmental barriers</p>	<p>Differential experiences with home-based healthcare by regions (e.g., differential prevalence of delayed starts of care, service interruptions, provider continuity, transportation barriers, and deferred obtainment of medical equipment)</p> <p>Access barriers and denied admissions associated with neighborhood and home environments</p>	<p>Conduct research to hear from care recipients, workforce, and local community members to develop targeted interventions that address gaps in current service provision and care recipient experiences</p>
	Campaigns to empower care recipients	<p>Expanded industry market, clientele, and business opportunities</p> <p>Growing inter-organizational competitions</p> <p>Aggravated problems related to data informatics, staffing levels, and operational capacity</p>	<p>Greater challenges in service planning, care coordination, and management of service delivery with business growth</p> <p>Increased difficulty in cultivating cross-organizational interdisciplinary care team and continuity of caregiver-recipient relationships.</p>	

<sup>a</sup> We developed the recommendations based on information from the literature and our industry and research experiences. Since we placed home-based healthcare organizations at the center of observation, our recommendations also focused on strategies the organizations could implement to work within and across levels of the health ecosystem to facilitate changes in advancing home healthcare equity.

Figure 1. Theoretical Framework: Socio-Ecological Model and Organizational Theory

Notes: Illustration of interplay between social-ecological contexts and home-based healthcare organizations, which shapes service provision and access of home-based care.



Accepted