

A Collaborative Approach to Improving Care Outcomes for Residents in Assisted Living

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Abstract

Purpose: Assisted Living (AL) residents are embedded in “care convoys” comprised of a dynamic network of formal and informal care partners. Using the *convoys of care* model—a multi-level framework connecting care convoy properties to resident outcomes—we examined healthcare management and communication between convoy members. We recommend strategies to engage primary care in supporting collaboration, communication, and consensus-building for older adults and their convoys. **Methods:** Data were collected from the longitudinal study, *Convoys of Care: Developing Collaborative Care Partnerships in AL*. Fifty residents and their care convoy members ($N=169$) were followed in eight AL homes in Georgia over 2 years. Original data were analyzed using Grounded Theory Methods of qualitative data, including formal and informal interviewing, participant observation, and record review. **Results:** The convoys of care model provide an innovative perspective that will assist providers in supporting AL residents and their care partners to achieve better care outcomes. Findings demonstrate the utility of understanding the structure and function of social resources and implications for improving healthcare outcomes. **Conclusion:** This research informs the work of physicians and mid-level providers with patients in AL by providing strategies to uncover specific social determinants of health. Recommendations for use in patient encounters are enumerated.

Keywords

assisted living, convoys of care, primary care, social determinants of health.

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Introduction

As the population ages, the number of assisted living (AL) residents continues to grow (Clement & Khushalani, 2015). AL residents often have multiple chronic conditions in addition to functional and cognitive decline (Walsh & LaJoie, 2018). The typical AL resident is in their 80s, frail, or disabled; about 75% have multiple chronic illnesses, 28% have depression, and an estimated 50% to 70% have cognitive impairment (Khatutsky et al., 2016). AL residents often obtain medication and therapy for chronic health problems, 15% experience falls with injury, 35% go to the emergency room, 24% are hospitalized, and 8% have a nursing and rehabilitation care stay while residing in AL (Khatutsky et al., 2016; Zimmerman et al., 2014). The high numbers of adverse outcomes emphasize the need to better coordinate care for AL residents.

Social determinants of health have an impact on morbidity and mortality in older adults, including those living

in AL facilities. Healthcare providers acknowledge the pervasiveness of social determinants of health but often lack specific strategies to intervene on behalf of patients (here AL residents) (Behforouz et al., 2014; Northwood et al., 2018). Social isolation and loneliness are persistent challenges for older adults (Leigh-Hunt et al., 2017); this was more pronounced during the recent COVID-19 pandemic leading to further social disengagement of an already isolated population producing more strain on caregivers (Zimmerman et al., 2020). Physicians and mid-level providers (i.e., primary care providers [PCPs])

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have positional authority and medical expertise to facilitate consensus surrounding care goals, encourage collaboration, and individualize care for their patients and care partners. Person-centered care planning and care-goal setting are common practices in healthcare; however, they often fall short, resulting in a focus on symptom or disease management without regard for the underlying processes of care (Carder et al., 2015). Use of the *Convoys of Care* model as a sensitizing framework can help providers work with care partners and address this gap.

Convoys of Care model is a way of conceptualizing the intersections between formal and informal care, a comprehensive understanding of formal-informal care relationship targeting better outcomes for care recipients and their caregivers (Kemp et al., 2013). Individuals in the care convoys may or may not have personal relations with the care recipients, but assist them in activities of daily living (ADLs), instrumental activities of daily living (IADLs), emotional support, and provide skilled health care (Kemp et al., 2013). Researchers identified a typology of care convoys based on their structure and function (Kemp et al., 2018). Structure refers to convoy characteristics, such as size, member types, and leadership arrangements. The *structure* of the convoy gives insight into the relational dynamics of the care network, such as leadership and supporting roles, number of members and members' access to resources, authority, and collaborative care arrangements. In contrast, *function* refers to how members operate within the convoy to provide care—understanding how the convoy functions provide more insight into the communication between members and the strengths and weaknesses of collaborative care arrangements. One of the most important things to ascertain is if the resident is an active member of his or her care process and if the goals, needs, and desires of the resident are being met through the collaboration of the members. Another important factor in understanding convoy function is if members are knowledgeable and consent to these goals, needs, and desires and how consensus and disagreement unfold as they negotiate care. AL residents are embedded in “care convoys” comprised of a dynamic network of formal and informal care partners. Using the *convoys of care* model—a multi-level framework connecting care convoy properties to resident outcomes—we examined healthcare management and communication between convoy members.

Methods

Data were collected for the *Convoys of Care* study between 2013 and 2018 in eight AL communities in Georgia. Maximum variation sampling (Patton, 2015) was employed to select sites with diversity in size, location, ownership, resident characteristics, fee structure, and availability of dementia care units. A total of 50 residents and 169 convoy members were interviewed and followed for up to 2 years. Twenty-three residents transi-

tioned out of the study due to discharge ($n=2$), relocation ($n=12$), or death ($n=9$).

Data collection included formal interviews with executive directors, residents, healthcare providers, AL staff, and informal care partners; regular informal interviews during visits; participant observation; and medical records review (onsite at AL). A detailed methodology appears elsewhere (see Kemp et al., 2017; Kemp et al., 2018). The executive director granted written consent for community access to each home. Attaining individual consent, including assent from those without the capacity to provide written consent, was an ongoing process (Kemp et al., 2017). Interviews addressed residents' personal and health history, their care needs and arrangements, the relationship to the resident, the roles of everyone in their care network, and the quality of their relationships. Longitudinal observations allowed for monitoring change over time. Researchers completed 809 visits, yielding 2,225 observation hours captured in field notes. Follow-up interviews with residents and AL staff were conducted weekly. Researchers attempted to contact convoy members twice monthly, and ongoing record review detailed information on diagnoses, care plans, treatments, and acute events. The study was approved by Georgia State University's Institutional Review Board.

Following Grounded Theory Methods, our analysis was guided by our research questions, data, and the literature. NVivo 10 software was used to store, manage, and facilitate coding and analysis of all qualitative data. We developed codes that captured broad concepts according to the research aims (e.g., “care interactions,” “convoy properties,” and “life transitions”) and engaged in an iterative analytic process of data collection, coding, and preparing memos, refining codes repeatedly until appropriate for higher-level analysis (Corbin & Strauss, 2014; Kemp et al., 2017). We followed a three-prong coding process. First, we identified emergent concepts based on the research aims through open coding. Then, through axial coding, we related these initial codes to other categories to identify the context. Lastly, we used selective coding to refine and relate the concepts around our core categories.

Results

The *Convoys of Care* model identifies convoys as an “evolving community or collection of individuals. . . who provide care” (p. 18); these individuals make up networks and relationships that operate within multi-level contexts (e.g., federal, state, and community level policies and resources) and care settings (Kemp et al., 2013). In our studied sample, 58% of the resident participants were women; 30% were African American. Most were unmarried and had a high school education or greater. Table 1 provides detailed description of residents' demographic and health characteristics and Table 2 describes participant types of care convoy members.

Table 1. Residents' Demographic and Health Characteristics at Baseline (N=50).

Resident characteristic	Total (N)	Range	Percent (%)	Mean
Age (years)		57–96		82
Gender				
Female	29		58	
Male	21		42	
Marital status				
Married	7		14	
Widowed	29		58	
Divorced/separated	11		22	
Never married	3		6	
Race				
White	34		68	
Black	15		30	
Asian	1		2	
Education				
Less than high school	2		4	
High school diploma	20		40	
Some college	9		18	
College	8		16	
Post graduate	11		22	
Care needs				
Needs help with 3 or more ADLs	28		56	
Needs help with 3 or more IADLs	38		76	
Needs help with medications	41		81	
Use of wheelchair	17		34	
Health conditions				
High blood pressure	34		68	
Dementia ^a	29		58	
Heart disease	18		36	
Depression	14		28	
Osteoarthritis	18		36	
Diabetes	9		18	
Emphysema, Chronic Bronchitis, COPD	5		10	
Cancer	7		14	
Stroke	8		16	
Other conditions	47		94	
Number of co-morbidities	283	1–10		5.66 ^b

^aDementia diagnoses were as follows: unspecified dementia (n=20); Alzheimer's disease (n=2); Lewy-Body dementia (n=3); Parkinson's-related (n=1); Vascular (n=2); Behavior Variant Frontotemporal dementia (n=1).

^bMean per resident.

Findings reflect the variability found in care arrangements over time, and the multiple multilevel factors were identified related to residents and care partners, care networks, residences, and community and regulatory contexts. This variability leads to a *healthcare mosaic* among AL residents and communities.

Figure 1 shows that care results from multi-level factors influencing healthcare arrangements, experiences, and outcomes that shape and change the mosaic over time. Here we focus on Healthcare Provider Factors: accessibility, policies, and practices of healthcare providers and organizations, resources, and services. Accessibility to providers appears to be key. About half of AL residents in the study exclusively received care from health providers onsite at the AL; about one-third

received care offsite. Accessibility to a wide range of healthcare services (e.g., podiatry, flu vaccines, dental care, rehabilitative care, and primary) was influenced by the policy and practices of AL and whether they arranged for onsite visits to residents or relied mainly on informal care partners to arrange transportation. In-house arrangements often reduced transportation and logistics barriers for residents and increased access for those without high levels of social support from informal care partners. Other healthcare practices that facilitated quality care include communicating with direct care workers at the AL in terms of follow-through on resident self-care, rehabilitative care, and chronic disease management. Practices that included collaborative communication with the healthcare point person and informal care

Table 2. Care Convoy Members by Participant Type (N = 169).

Convoy member type	N	%
Formal convoy members		
Assisted Living Workers		
Executive directors	10	20
Licensed nurse	2	4
Resident services directors	4	8
Direct care workers/ Medication techs	19	39
Activity personnel	9	18
Maintenance/transportation	2	4
Housekeeping/food services	3	6
	49	100
External care workers		
Physicians	3	10
Registered nurses	2	7
Nurse practitioners	3	10
Physical, occupational, speech therapists	6	20
Hospice personnel	13	27
Private care aides	1	3
Mental health professionals	1	3
	29	100
Informal convoy members		
Daughters	3	14
Sons	3	3
Spouses	1	1
Parents	6	7
Grandchildren	7	8
Siblings	9	10
Friends	18	20
Other: kin ^a	2	2
Volunteers	91	100
Informal participants per resident convoy	Min-max 0–5	Mean per resident 1.82

^aIncludes: step-children (1); daughters- (5), sons- (2), sisters- (2), brother- (1) and mothers- (1) in-law; nieces (2); aunts (1); uncles (1); cousins (1); ex-wife (1).

Bold numbers are the sum of the respective categories.

partners also facilitated the achievement of better health outcomes for residents.

Using the care convoy framework begets a myriad of questions to use during the patient encounter. Figure 2 documents potential strategies, informed by the convoy model, that would help a provider play a vital role in improving care outcomes for AL residents. These suggestions include asking about the structure and the function of the convoy and serving as a catalyst, expert, or resource for facilitating a process to strengthen the convoy and/or use the strengths of the convoy to better meet the resident's goals for improved care outcomes and ultimately improved quality of life.

Discussion

The current study extended prior research that the *Convoys of Care* model as a sensitizing framework

emphasizes the pivotal role that physicians and mid-level providers can play. AL varies widely in the healthcare resources available. This variability was seen in the education and training of the healthcare point person (e.g., medical assistant, licensed practical nurse, registered nurse), the availability of transportation resources (e.g., an accessible bus, family-only or staff vehicle transportation), and the levels of staffing and the integration of other healthcare services (e.g., podiatry, dental care, rehab services, primary care, hospice). By using the convoys of care model as a sensitizing framework, providers can support care partners and patients in a variety of important ways: (1) using a basic assessment of the strengths and weaknesses of the convoy; (2) using their positional authority to endorse clear and collaborative goals; and (3) planning for individualized care.

Provider as Catalyst

Providers can use their positional authority with AL staff, residents, and their informal care partners to start the process or elaborate the process of communication, collaboration, and consensus-building among care partners (Kronhaus et al., 2018). Acknowledging the value of informal care partners, the centrality of residents in determining goals, and need for consensus, will have an impact on convoy function and care outcomes.

Provider as Expert

As medical experts within the care convoy, providers can assess and provide treatment with a fuller understanding of the social and material resources available to their patients and in light of resident and care partner goals. Primary care providers have an important role to play in the prevention of functional decline and support for enhanced quality of life (Morley et al., 2017). In this role, the provider can function as a resident advocate and make sure that the resident and their loved ones' balance risk and benefit in ways that support quality of life for residents.

Provider as Resource

Due to the structure, context, and resources of AL communities, healthcare providers have the opportunity to better support AL residents (Kane & Mach, 2007). As a resource for the care convoy, providers can write orders for other healthcare services that align with convoy goals. For example, orders might include physical therapy, occupational therapy, speech and language therapy, or specialty care. Provider allowances might also be negotiated for the accommodation of medical care to support simple pleasures (e.g., nature walks, alcohol, private space for sex/intimacy, going out for events, returning to old or making new hobbies) for residents.

The current work highlights the pivotal roles of both direct care workers and informal care partners as observers and advocates for key primary care areas of focus,

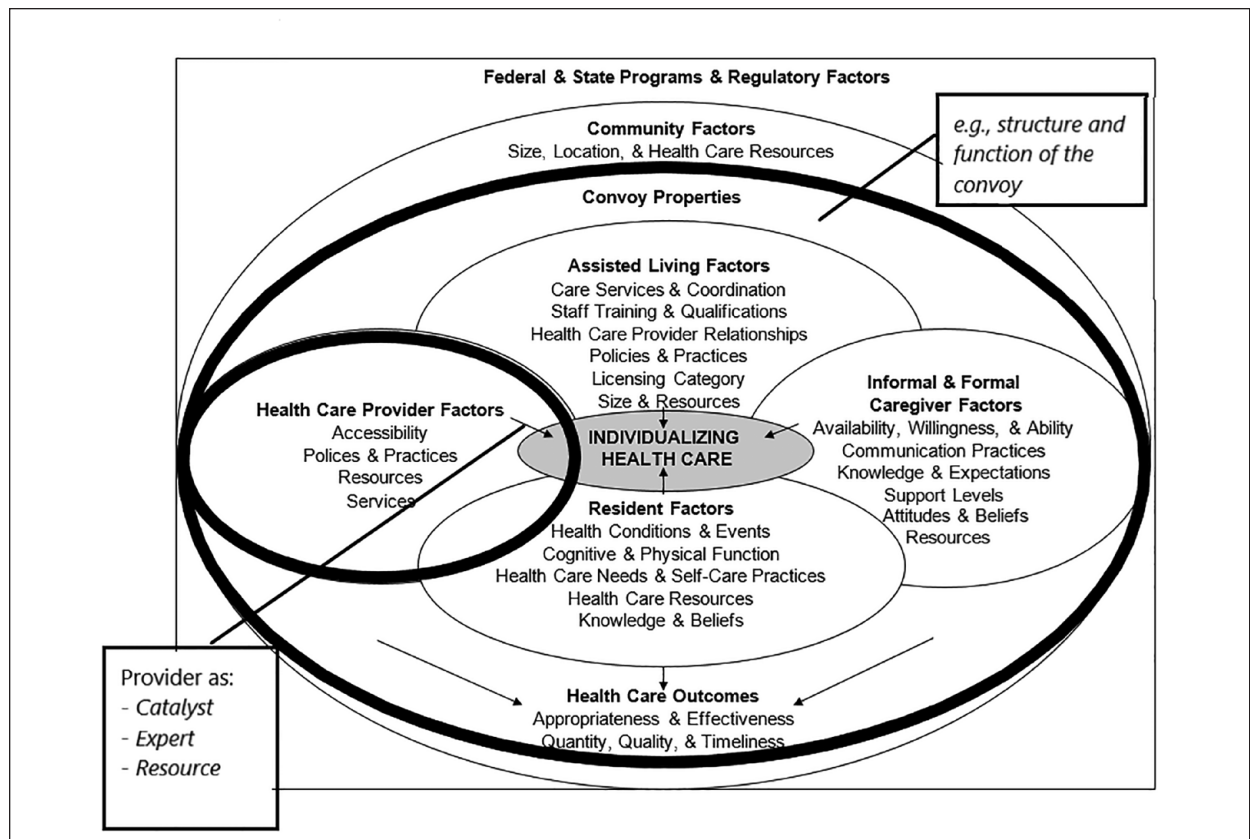


Figure 1. Individualizing health care: Provider as catalyst, expert and resource.

Note: Figure modified from Kemp et al., 2019.

including medication management, chronic disease management, adherence to advance directives, care coordination, management of acute illness or injury and rehabilitative care, corroborating earlier research (Kemp et al., 2018, 2019). Findings from the study emphasize the need for: (1) clear, well understood, agreed upon, and up-to-date care goals and (2) ongoing and effective communication between members, including healthcare providers, which leads to effective care partnerships. The findings affirm the crucial role of the healthcare point person within the AL paid staff, who often steps in to a greater extent when informal care partners are less available to advocate for care coordination. Direct care workers usually are the main support for daily medication administration and therapeutic support. Many residents also benefit from in-house healthcare provided by external partners, such as speech therapy, physical therapy, hospice, and even primary care services. Because of the greater awareness of context and better coordination and communication, residents with access to these in-house services have fewer barriers to receiving good care. Extensive transportation barriers for offsite care make these in-house services particularly useful.

Our findings support earlier research that physicians and mid-level providers are part of a larger convoy of care partners for most AL residents (Dys et al., 2020; Kemp et al., 2018). PCPs provide care coordination and

essential emotional and motivational support. PCPs have the opportunity to create robust convoys by assessing the strengths and weaknesses of the convoy, using their positional authority to endorse clear and collaborative goals with other care partners—including AL staff and informal care partners, and planning for individualized care driven by the resident’s goals for care. The current study shows a shifting pattern of conventional care approaches by emphasizing intersections of formal and informal care and focusing on entire care convoys studied qualitatively, in-depth, and over time.

Our research, as an extension of “Convoy Model of Social Relations” (Kahn & Antonucci, 1980) focuses on the convoy metaphor to highlight the constellation of care resources that are dynamic across time and context. The formal and informal care networks have patterns and consequences for care outcomes (Kemp et al., 2013). The Convoys of Care model, like the literature on interprofessional care teams, draws attention to the need for communication, collaboration, and consensus-building but moves beyond just the paid care partners to also include the person at the center of care and their informal care partners (Wei et al., 2022). Care convoys in AL are unique in that they include family, friends, AL staff, and external care providers; however, because multiple care relationships and contexts shape trajectories, this area warrants further exploration for building successful

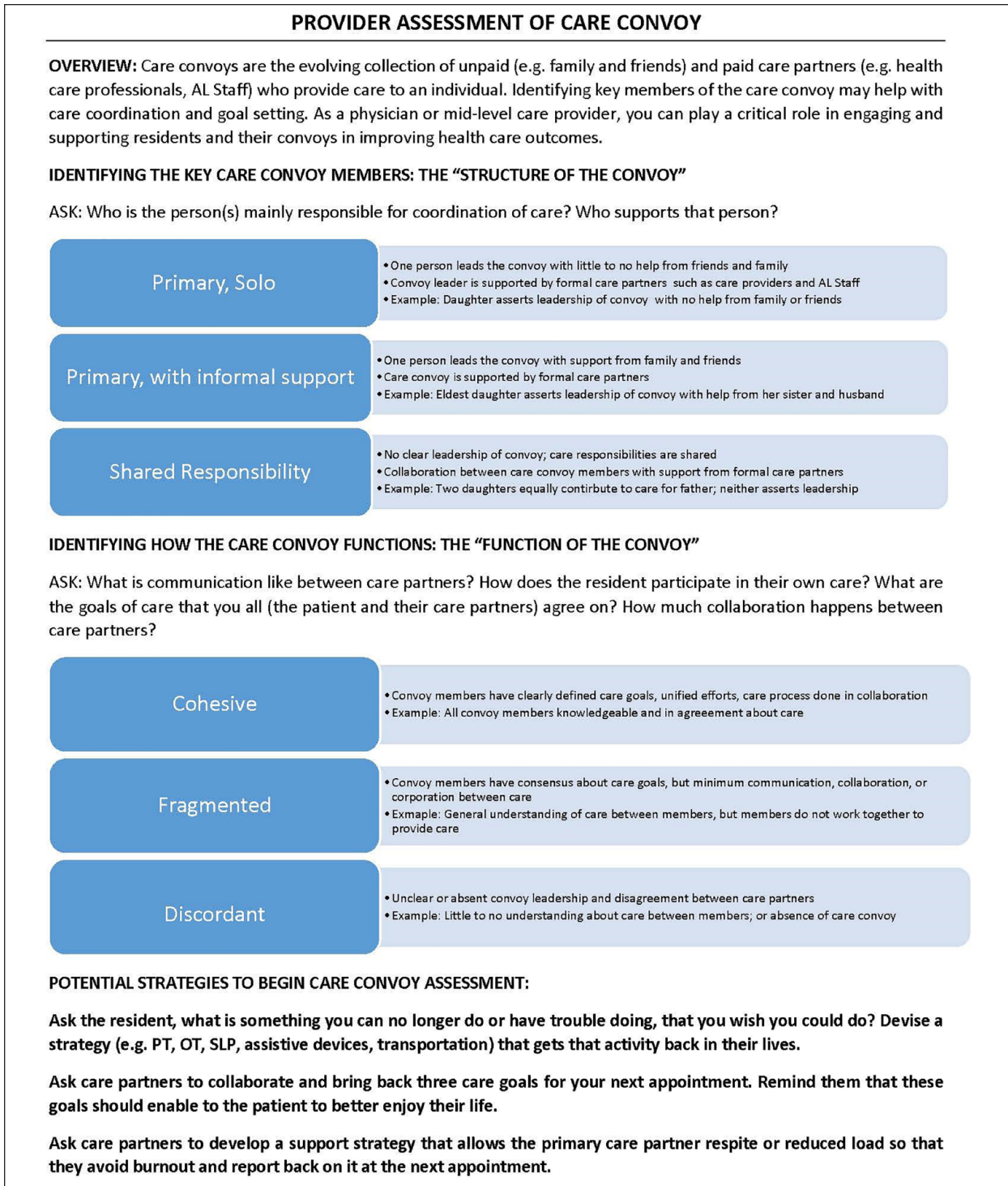


Figure 2. Provider assessment of the care convoy: Strategies for facilitating communication and consensus.

strategies to integrate social and medical care models in AL.

Strengths, Limitations, and Future Directions

Although using Convoys of Care as a sensitizing framework has implications for the primary care of AL residents, further research is needed to assess the

effectiveness of these strategies in diverse AL contexts. Further, this study has strengths and limitations. This research was conducted in one geographical area, which limits transferability. Georgia, however, is a rich context because of the variability and diversity of homes and residents in terms of resident demographics, economic resources, size, rurality, and corporate ownership. The longitudinal qualitative design

allowed researchers to follow residents' overtime and interview a large proportion of convoy members, which provided rich contextual data and is a strength. Although we attempted to interview all convoy members in multiple ALs, we did not accompany residents to other health care settings. Further research, including work using quantitative methods, is needed to understand how and if these patterns apply to other groups and contexts.

Conclusions

Findings show the wide range of healthcare that is provided for AL residents, including routine, acute, rehabilitative, and end-of-life care. The resulting conceptual model demonstrates "individualization and the health-care mosaic" for AL residents, emphasizing a holistic approach that includes understanding the resident and informal care provider contribution to the implementation and coordination of care. Informal care partners play a significant role in accessing and coordinating healthcare for residents, and without capable support, residents' health and well-being often suffer (Kemp et al., 2019).

AL should not be ignored in COVID-19 response planning (Zimmerman et al., 2020). The use of telehealth onsite at AL communities that has increased due to the COVID-19 global pandemic may be a good opportunity for providers to have greater direct communication with AL staff and understand more about the context of care. Increasing collaboration through technologically-supported means with informal care partners and AL staff, particularly consistently assigned direct care workers, could improve the quality of information that PCPs use to make critical care decisions for AL residents in their care. Acknowledgment of the social embeddedness of care must go beyond recognizing the vague importance of social determinants of health and move toward a strengths-based approach to include and empower convoy members and residents in collaboration to achieve the best possible quality of care and quality of life outcomes.

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Declaration of Conflicting Interests

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References

- Behforouz, H. L., Drain, P. K., & Rhatigan, J. J. (2014). Rethinking the social history. *New England Journal of Medicine*, 371(14), 1277–1279. <https://doi.org/10.1056/NEJMp1404846>
- Carder, P. C., O'Keeffe, J., & O'Keeffe, C. (Eds.). (2015). *Compendium of residential care and assisted living regulations and policy* (2015 ed.). RTI International. <https://aspe.hhs.gov/basic-report/compendium-residential-care-and-assisted-living-regulations-and-policy-2015-edition>
- Clement, J. P., & Khushalani, J. (2015). Does assisted living capacity influence case mix at nursing homes? *Gerontology and Geriatric Medicine*, 1, 1–8. <https://doi.org/10.1177/2333721415587449>
- Corbin, J., & Strauss, A. (Eds.). (2014). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). Sage Publications.
- Dys, S., Smith, L., Tunalilar, O., & Carder, P. (2020). Revisiting the role of physicians in assisted living and residential care settings. *Gerontology and Geriatric Medicine*, 6, 1–12. <https://doi.org/10.1177/2333721420979840>
- Kahn, R. L., & Antonucci, T. C. (1980). Convoys over the life course: A life course approach. In P. Baltes & O. Brim (Eds.), *Life span development and behavior* (pp. 253–286). Academic Press.
- Kane, R. L., & Mach, J. R., Jr. (2007). Improving health care for assisted living residents. *Gerontologist*, 47(Supp_1), 100–109. https://doi.org/10.1093/geront/47.Supplement_1.100
- Kemp, C. L., Ball, M. M., & Perkins, M. M. (2013). Convoys of care: Theorizing intersections of formal and informal care. *Journal of Aging Studies*, 27(1), 15–29. <https://doi.org/10.1016/j.jaging.2012.10.002>
- Kemp, C. L., Ball, M. M., Morgan, J. C., Doyle, P. J., Burgess, E. O., Dillard, J. A., Barmon, C. E., Fitzroy, A. F., Helmlly, V. E., Avent, E. S., & Perkins, M. M. (2017). Exposing the backstage: Critical reflections on a longitudinal qualitative study of residents' care networks in assisted living. *Qualitative Health Research*, 27(8), 1190–1202. <https://doi.org/10.1177/1049732316668817>
- Kemp, C. L., Ball, M. M., Morgan, J. C., Doyle, P. J., Burgess, E. O., Perkins, M. M. (2018). Maneuvering together, apart, and at odds: Residents' care convoys in assisted living. *Journals of Gerontology: Series B*, 73(4), 13–23. <https://doi.org/10.1093/geronb/gbx184>
- Kemp, C. L., Ball, M. M., & Perkins, M. M. (2019). Individualization and the health care mosaic in assisted living. *The Gerontologist*, 59(4), 644–654. <https://doi.org/10.1093/geront/gny065>
- Khatutsky, G., Ormond, C., Wiener, J. M., Greene, A. M., Johnson, R., Jessup, E. A., Vreeland, E., Sengupta, M., Caffrey, C., & Harris-Kojetin, L. (2016). *Residential care communities and their residents in 2010: A national portrait* (DHHS Publication No. 2016–1041 (p. 78). National Center for Health Statistics. www.cdc.gov/nchs/data/nsrnf/nsrnf_chartbook.pdf
- Kronhaus, A., Zimmerman, S., Fuller, S., & Reed, D. (2018). Implementing integrated care into assisted living—the road

- (finally) taken. *Journal of the American Medical Directors Association*, 19(10), 914–915. <https://doi.org/10.1016/j.jamda.2018.05.003>
- Leigh-Hunt, N., Bagguley, D., Bash, K., Turner, V., Turnbull, S., Valtorta, N., & Caan, W. (2017). An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Public Health*, 152, 157–171. <https://doi.org/10.1016/j.puhe.2017.07.035>
- Morley, J. E., Arai, H., Cao, L., Dong, B., Merchant, R. A., Vellas, B., Visvanathan, R., & Woo, J. (2017). Integrated care: Enhancing the role of the primary health care professional in preventing functional decline: A systematic review. *Journal of the American Medical Directors Association*, 18(6), 489–494. <https://doi.org/10.1016/j.jamda.2017.03.015>
- Northwood, M., Ploeg, J., Markle-Reid, M., & Sherifali, D. (2018). Integrative review of the social determinants of health in older adults with multimorbidity. *Journal of Advanced Nursing*, 74(1), 45–60. <https://doi.org/10.1111/jan.13408>
- Patton, M. Q. (2015). *Qualitative methods and evaluation methods*. Sage.
- Walsh, S. E., & LaJoie, A. S. (2018). Influence of built environment quality and social capital on mental health of residents of assisted living communities in Louisville, Kentucky. *Gerontology and Geriatric Medicine*, 4, 1–9. <https://doi.org/10.1177/2333721418795900>
- Wei, H., Horns, P., Sears, S. F., Huang, K., Smith, C. M., & Wei, T. L. (2022). A systematic meta-review of systematic reviews about interprofessional collaboration: Facilitators, barriers, and outcomes. *Journal of Interprofessional Care*, 36(5), 735–749. <https://doi.org/10.1080/13561820.2021.1973975>
- Zimmerman, S., Sloane, P. D., Katz, P. R., Kunze, M., O’Neil, K., & Resnick, B. (2020). The need to include assisted living in responding to the COVID-19 pandemic. *Journal of the American Medical Directors Association*, 21(5), 572–575. <https://doi.org/10.1016/j.jamda.2020.03.024>
- Zimmerman, S., Sloane, P. D., & Reed, D. (2014). Dementia prevalence and care in assisted living. *Health Affairs*, 33(4), 658–666. <https://doi.org/10.1377/hlthaff.2013.1255>