Environmental Scan of PACE Articles 2009 – 2022

This document summarizes select research on PACE from 2009 to July 2022.

S.N.	Article Citation	Data Sources	Article Focus	Key Findings	Key PACE References	Summary of Research and Analysis/Future PACE Research Needs
1	Aggarwal, N., Sloane, P. D., Zimmerman, S., Ward, K., & Horsford, C. (2022). Impact of COVID-19 on Structure and Function of Program of All-Inclusive Care for the Elderly (PACE) Sites in North Carolina. *Journal of the American Medical Directors Association*, 23(7), 1109-1113.e8. https://doi.org/10.1016/j.jamda.2022.05.002	Data were obtained from interviews with administrators of PACE programs across North Carolina (NC); if the director was unavailable, a suitable alternate representative was interviewed. All 12 sites in the state participated. Interviews were conducted during December 2020 and January 2021 using a secure Zoom link after respondents provided informed consent.	Identify the extent to which PACE was affected by COVID-19, the responses the programs initiated, and the potential impact of these events on the future role of PACE in the post-COVID-19 long-term care environment.	Reported COVID-19 infection rates among PACE participants for 2020 averaged 12.3 cases, 4.6 hospitalizations, and 1.9 deaths per 100 enrollees. Six themes emerged from analyses: new, unprecedented administrative challenges; insufficient access to and integration with other health care providers; reevaluation of the core PACE model, resulting in a transition to home-based care; reorientation to be more family-focused in care provision; implementation of new, creative strategies to address participant and family psychological and social well-being in the home; and major reconfiguration of staffing, including transitions to new and different roles and a concomitant effort to provide support and relief to staff.	During the pandemic, NC PACE sites demonstrated resilience, largely maintained their census and received high participant and caregiver satisfaction scores. Care focus shifted from center-based care to a blended center-based/home-based model, thereby creating an attractive alternative to high-density congregate settings such as nursing homes. Therefore, PACE may have changed for the better and be well-positioned to play an expanded role in the evolving long-term care system.	Additional studies are needed to address such issues as the variation between programs: potential inequities arising from socioeconomic and educational variation between families; the long-term impact of the changes documented in this study; and family caregiver experiences, including burnout.
2	Zimmerman, S., Wretman, C. J., Ward, K., Aggarwal, N., Horsford, C., Efird-Green, L., & Sloane, P. D. (2022). Medical and Mental Health Care Challenges in Nursing Homes, Assisted Living, and Programs of All-Inclusive Care for the Elderly (PACE) During COVID-19. *J Am Med Dir Assoc*, 23(5), 754-755. doi:10.1016/j.jamda.2022.01.072	This study used statewide (North Carolina) data to examine experiences regarding medical and mental health care in Nursing Homes (NH)s, Assisted Living (AL), and PACE programs. The NHs and AL community closest to the 12 PACE program participated. Interviews were conducted from December 2020 to January 2021, and questions referred to the entirety of the COVID-19 experience during 2020.	Examine experiences regarding medical and mental health care in NHs, AL, and PACE programs during COVID-19. Inform the ongoing evolution of models of long-term care.	Most administrators reported challenges providing on-site medical and mental health care (69% and 78%, respectively). Telemedicine was used for 29% and 42% of visits, respectively, with related satisfaction between "somewhat" and "moderately." Almost all respondents (94%) felt that the pandemic permanently changed their future care delivery model. • Overall: 34 out of 36, 94.4% • NH: 12 out of 12, 100.0% • AL: n= 11 out of 12, 91.7% • PACE: n= 11 out of 12, 91.7% COVID-19 cases (per 100 PACE participants or 100 beds) by setting type were categorized as	AL and PACE programs-both home-and community-based settings (HCBS)-depend on the availability of medical and mental health care for service delivery.	Given that virtually all respondents recognize that their care delivery model will change going forward, the role of medical and mental health providers in HCBS is clearly a critical component of evolving long-term care models.

				positive participant/ resident cases and positive staff cases (Mean (SD)) • Overall: 21.6 (23.7) and 11.2 (11.5) • NH: 35.7 (29.6) and 19.4 (13.0) • AL: 15.8 (23.8) and 9.9 (10.9) • PACE: 13.4 (3.3) and 4.3 (2.4), respectively.		
3	McIntyre, C. C., Prichett, L., & McNabney, M. K. (2022). Impact of COVID-19 Stay-At-Home Restrictions on Falls in One Community of High-Risk Older Adults. Journal of Applied Gerontology, 41(5), 1473–1479. https://doi.org/10.1177/07334648211073	The study compared falls at one PACE site in Maryland during the 3 months before its Day Health Center (DHC)'s closure on March 17th, 2020 ("pre–COVID-19") to falls during the 3 months following its closure ("COVID-19"). The context described above remained relevant for the 6-month length of the study period.	Examine the relationship between falls among high-risk older adults at one PACE site and the COVID-19 closure of its DHC, providing participants with social and rehabilitative services and contributing to their weekly physical activity	A total of 135 participants were enrolled at Hopkins ElderPlus and were included. Participants who had at least one fall in the 6 months ("fallers") were more likely to be female as compared to participants who had no falls in the 6 months ("non-fallers"). There were no other differences between fallers and non-fallers. Participants experienced fewer falls during COVID-19 (mean = 0.64) than they did pre–COVID-19 (mean=1.24, p = 0.0003)	The centrality of the DHC in its care model puts PACE in a better position than other outpatient geriatric care settings to understand how participants' daily activities changed during the COVID-19 closure. Weekly wellness calls from PACE social workers provided participants with a facilitated opportunity to report a fall during COVID-19.	If the restrictive conditions of COVID-19 did indeed bring about a temporarily safer environment for the PACE population, quality of life represents an unmeasured tradeoff. While this study provides a snapshot of one short-term beneficial health outcome caused by the conditions of COVID-19, the long-term consequences of a comparably prolonged period of inactivity merit further study. Heightened caution to protect against falls during this time of transition is warranted.
4	Arku, D., Felix, M., Warholak, T., & Axon, D. R. (2022). Program of All-Inclusive Care for the Elderly (PACE) versus Other Programs: A Scoping Review of Health Outcomes. *Geriatrics (Basel)*, 7(2). doi:10.3390/geriatrics7020031	This study is a literature review. There is no study contained in this article. All relevant articles published between 1 January 1997 and 12 March 2021 were screened. (Between the date PACE was established under the Balanced Budget Act of 1997 as a permanent part of the Medicare program and an option under the state Medicaid program and final search date.)	Identify and describe the various health outcomes of individuals enrolled in PACE compared to older adults enrolled in similar programs. The six studies reported outcomes such as ADL limitations, IADL limitations, unmet needs, healthcare resource use, clinical and survival outcomes; and economic outcomes	Studies reported mixed results for PACE participants relative to their respective comparators. Some studies suggest PACE is superior to Visiting Choice Program (VCP) and Medicaid-only-managed long-term care (MMLTC) for managing functional disability among older adults. However, one study shows a greater percentage of PACE participants reported needing help with most ADL and IADL limitations than Wisconsin Partnership Program (WPP) participants. This represents patients with dependencies who needed help in the form of bathing, dressing, toileting, etc., but did not receive help. PACE participants had lower rates of hospital	This review addresses the limited and mixed evidence suggesting better outcomes for PACE participants than participants in other care programs for older adults. This study provides some evidence that PACE offers quality and cost-effective community-based care to older adults who would otherwise require a nursing home or other model of care. However, some other programs also have their advantages.	The six studies included in this review included ADL and IADL limitations, unmet health and social care needs, healthcare-resource utilization, clinical and survival outcomes, and one study reported economic outcomes. There is a need for additional robust comparative effectiveness studies of PACE and other care models for older adults to improve understanding of health outcomes in this population.

				use, with shorter lengths of stay in hospitals (<6 days) within 12 months compared to other programs. Mixed results in clinical and survival outcomes. The average 2005 fiscal year Medicaid attrition-adjusted one-year payment for PACE participants was about seven times more expensive than those in the waiver program in the study and about twice lower than the cost of those in nursing homes, but with no test for significant difference reported		
5	Gustavson, A. M., LeDoux, C. V., Himawan, M., Stevens-Lapsley, J. E., & Nearing, K. A. (2022). Implementation of a rehabilitation model in a Program of All-Inclusive Care for the Elderly (PACE): Preliminary data. *J Am Geriatr Soc*, 70(3), 880-890. doi:10.1111/jgs.17674	The research involved a mixed-methods, pre-post implementation study with longitudinal patient follow-up at one PACE site in Denver. Older adults at risk for institutionalization (n = 28) participated in Screening and high-intensity interventions to improve falls risk and transform expectations in age and aging (SHIFT) rehabilitation program over six weeks.	Explore the feasibility of implementing progressive intensive rehabilitation to improve physical function and preliminary patient-level improvements.	The rehabilitation team demonstrated high treatment fidelity to SHIFT (>80%). No treatment-specific adverse events were reported. SPPB scores and gait speeds improved significantly over time ($p < 0.005$). The average short physical performance battery (SPPB) score at evaluation was 4.6 ± 0.24 compared to 7.7 ± 0.38 points at discharge. The average gait speed at evaluation was 0.58 ± 0.03 meters/second (m/s) compared to 0.79 ± 0.04 m/s at discharge. Common barriers to program completion included changes in health status and environmental factors (e.g., transportation).	The program demonstrated successful implementation of high-intensity resistance training into the routine care of older adults in PACE. PACE participants are at risk for falls, rehospitalization, and institutionalization, which are costly yet potentially modifiable through improvements in physical function.	Future studies will identify and characterize adaptations and their effect on implementation and clinical effectiveness. Future work will examine necessary resources and associated costs to inform scalability. A future multisite study will explore the impact of SHIFT on longer-term outcomes such as falls, rehospitalizations, and community living within a larger sample of PACE participants. Future studies will focus on interdisciplinary strategies to address the multifactorial nature of falls, institutionalization, and other adverse events.
6	Oishi, M. M., Momany, E. T., Collins, R. J., Cacchione, P. Z., Gluch, J. I., Cowen, H. J., Damiano, P. C., & Marchini, L. (2021). Dental Care in Programs of All-Inclusive Care for the Elderly: Organizational Structures and Protocols.	This study uses a national model of community-based long-term services and supports, the Program of All-inclusive Care for the Elderly (PACE)	Identify organizational structures and protocols that facilitate the delivery of dental examinations.	This is believed to be the first study to propose domains that characterize dental care at PACE. Most programs mandated a dental examination within 31-60 days of enrollment (63.6%). Few programs had a dental manual (15.6%) or any quality assurance for dental care (32.3%). Many programs (58.8%) stated that they had a protocol for enrollees to receive a cleaning every 6-12 months.	Organizations providing long-term services and supports, including PACE, can use these identified domains to develop minimal standards to ensure dental care is part of innovative models of community-based long-term services and supports.	Many programs did not have a measurement for the quality of dental care provided, although not unique to PACE. This presents an opportunity for PACE to lead the conversation in developing oral health care performance measures that relate to value and overall health measures.

	Journal of the American Medical Directors Association, 22(6), 1194–1198. https://doi.org/10.1016/j.jamda.2021.02.012			Having a system for quality assurance for dental care, the protocol for a cleaning every 6-12 months, mandating a comprehensive dental examination and providing preventive dental services onsite with built-in equipment were all statistically associated with a higher reported delivery of dental examinations.		Additional measures can be built around systemic conditions such as those with diabetes or those at risk for aspirational pneumonia ensuring targeted routine professional oral health care. Dental care quality metrics, along with the findings of this study of 4 identified organizational structures and protocols that influence dental examinations and the 10 identified domains, can help PACE programs incorporate dental components into their arsenal of services to be a high-quality program.
7	Gonzalez, L. (2021). Will For-Profits Keep Up the Pace in the United States? The Future of the Program of All-Inclusive Care for the Elderly and Implications for Other Programs Serving Medically Vulnerable Populations. *International Journal of Health Services*, *51*(2), 195–202. https://doi.org/10.1177/0020731420963946	There is no study contained in this article. However, the Mathematica 2013 report has been discussed in the article. To date, no scholarly research beyond the Mathematica report has been conducted on profit status and PACE.	Provide the legislative background for the final ruling and critique the study that was used to justify the removal of the nonprofit provision Urge policymakers to implement rules and enforcements to ensure that PACE continues to provide quality, cost-effective care under for-profit operation.	There were several issues with the study design and methodologies, and the evaluation findings did not ultimately reflect the final decision. CMS's response to these valid comments was simply, "As a result of the comments, we are making no changes to our proposal and finalizing this provision as proposed." The PACE Final Rule removed the nonprofit operator requirement. In early 2016, for-profit interest in PACE began to grow with support from the National PACE Association, which viewed for-profit investment as a mechanism to expand the number of programs. The difference between for-profit and nonprofit ownership and operation lies in motivation, incentives, and accountability. However, some have argued that these differences are narrowing as charitable funding has declined, encouraging nonprofits to operate in a more efficient, business-like manner.	CMS's final rule (4168-F) removes the provision that PACE operators be nonprofit, thus allowing for-profit operated programs. The Balanced Budget Act (BBA) of 1997 allowed for-profit PACE operators on a demonstration basis with the hope that for-profit operators could expand the program and save money. Recommendations made in Medicare Payment Advisory Commission (MedPAC)'s 2019 report to Congress on the status of traditional Medicare and Medicare Advantage (MA), PACE providers should be required to submit monthly, demographic, and detailed encounter data to CMS for better program oversight.	Although the evaluation of the for-profit PACE demonstration found no significant reasons to restrict PACE to not-for-profit entities, CMS should continue its evaluation to identify and better understand any potential differences driven by ownership by a for-profit entity and to ensure that regulatory oversight is applied uniformly to all Providers of Service (POs) as it pertains to service utilization, participant frailty and outcomes and costs and experience. Enforcement mechanisms such as civil money penalties, fines for non-compliance with the rules governing PACE programs, and termination of the contracts of providers that fail to provide the required services under the program will continue to be important to ensure quality of care. Like nursing homes, all PACE programs should be surveyed annually, and those found in non-compliance should receive some form of penalty depending on the severity of the deficiency.

8	Chen, L. Y., Hsu, T. J., Ke, L. J., Tsai, H. T., Lee, W. T., Peng, L. N., Lin, M. H., & Chen, L. K. (2021). Care for older adults with dementia: PACE day care or residential dementia care units?. Archives of gerontology and geriatrics, 93, 104310. https://doi.org/10.1016/j.archger.2020.104310	This case-control study compared outcomes between care recipients of PACE services (PC group) and residential dementia care (RC group). Demographic characteristics, underlying diseases, physical function, cognitive function, mood status, and behavioral and psychotic symptoms of dementia (BPSDs) were assessed every 3-6 months in both groups, while frailty status and Timed Up-and-Go Test (TUGT) performance were assessed every 6 months in the PC group only.	Compare the physical and neurocognitive performance of persons with dementia (PwD) in the PACE and residential dementia care units.	Overall, 96 participants (PC group: 25, RC group: 71; mean age: 86.4 ± 6.8 years) were enrolled with a median follow-up period of 43.6 weeks. Lower incidence of hospital admissions was noted in the PC group (0.52 ± 1.12 vs 1.38 ± 2.49 admissions/1,000 person-days, p=0.023), even though the PC group had higher multimorbidity and more severe BPSDs. During the study period, the PC group showed a significant improvement in body mass index, less physical dependence, better cognitive performance and reduced depressive mood. The PC group showed improvement in frailty, leisure hour activities, and TUGT results. However, participants in the PC group were more likely to experience BPSD deterioration (β coeff.: 0.193, 95% CI: 0.1210.265).	PACE services significantly reduced unexpected hospital admissions of PwD, facilitated the maintenance of physical independence, and improved cognitive performance and mood status.	This study identified essential findings to support the clinical benefits of PACE services for PwD, even those with more severe BPSDs and a higher disease burden. Further prospective randomized controlled trials are needed to confirm the clinical benefits of PACE services for PwD.
9	McKay, M. A., & Copel, L. (2021). Factors associated with health-related quality of life in PACE participants. Geriatric Nursing, 42(1), 145–150. https://doi.org/10.1016/j.gerinurse.2020.12.011	This is a cross-sectional, descriptive, correlational design using paper surveys administered to a convenience sample of nursing home eligible community-dwelling older adults 55 years of age and older. Study participants were identified from four PACE day center sites located in Philadelphia County, Pennsylvania and surrounding areas between February 2018 and May 2018.	This study aimed to determine the relationship between frailty, fear of falling, and depression with HRQoL in nursing home eligible community-dwelling older adults.	Frailty and fear of falling were elevated among the high-risk nursing home eligible study sample. Over 20% were screened as positive for depression. Frailty and fear of falling predicted poorer physical health and well-being, while depression independently predicted poor mental health and well-being even when controlling for significant demographic covariates.	Potentially, the PACE day centers that provide not only home care services but socialization with peers through group activities and cafeteria-style meal services influence participants' mental health. There may be less stigma surrounding mental health and treatment in PACE enrollees because of frequent screenings and consistent contact with healthcare professionals as compared to other community-dwelling older adults or members of other home care programs.	Further study on the influence of a program like PACE on the mental health of participants who may ordinarily be socially isolated or who would otherwise be institutionalized would identify the benefits of consistent contact with healthcare professionals and peers on the mental health and well-being of older adults. Future studies focused on community and PACE program services and novel interventions targeting modifiable risk factors such as frailty, fear of falling, or depression may improve HRQoL in this population. Study of the modifiable risk factors that influence physical and mental health and well-being is necessary to ensure that

						services provided are appropriate and useful for preserving HRQoL.
10	Morton, C., Prichett, L., & McNabney, M. (2020). Opioid Prescriptions and Health Care Utilization at End of Life in a Program of All-Inclusive Care for the Elderly. *Journal of the American Medical Directors Association*, *21*(9), 1362–1363. https://doi.org/10.1016/j.jamda.2020.05.043	This study used electronic health records of 93 PACE participants who died between March 31, 2014, and April 19, 2019, and monthly reports describing the utilization of health care resources and opioid prescriptions.	Examine the relationship between opioid use and health care utilization at the end-of-life care in community-dwelling older adults.	The mean age of participants at the time of death was 83 years (range 58e104), 85% were women, and 47% were African American/Black. The mean length of enrollment was 56 months. In the first 6 months of the last year of life, 18% (17 of 93) of the participants were prescribed at least 1 opioid, whereas 56% (52 of 93) received opioids in the last 6 months of life. Participants who received opioids in the last 6 months of life used fewer acute and long-term health resources than those who did not. Those not receiving opioids had twice as many mean ED visits (0.8± 0.13 vs. 1.6± 0.21, P=0.002, mean± SEM) and hospital admissions (0.6± 0.09 vs. 1.2± 0.20, P=0.013), and spent twice as many days in the hospital, on average (5.2± 1.81 vs. 9.2± 2.15, P=0.03). Comparing opioid users with nonusers did not yield significant results in a skilled nursing facility or long-term care usage.	Opioids as a component of end-of-life therapy may confer benefits in the context of a PACE program. Although the results do not show that opioids were directly responsible for lowering health care utilization among PACE participants, they contribute to the picture of overall quality end-of-life care being provided through PACE. These findings have implications for PACE participants and warrant examination in other older adult populations enrolled in other managed health care systems at the end of life.	Opioids may potentially be associated with the ability for older adults approaching the end of their lives to remain more comfortable in their homes. The study results help to support further inquiry into the times when this powerful method of pain control, opioid therapy, can be best deployed in the care of patients and opioids' appropriate use in the context of geriatric patients in PACE.
11	Bain, K. T., Knowlton, C. H., & Matos, A. (2020). Cost avoidance related to a pharmacist-led pharmacogenomics service for the Program of All-inclusive Care for the Elderly. *Pharmacogenomics*, 21(10), 651–661. https://doi.org/10.2217/pgs-2019-0197	PHARM-GENOME-PACE study was conducted at a national PACE pharmacy (CareKinesis, NJ, USA) that provides medication therapy management (MTM) and other services for approximately 25% of all PACE participants in the USA.	Estimate cost avoidance of pharmacist recommendations for participants enrolled in PACE.	In total, 165 participants had at least one actionable drug-gene pair totaling 429 drug-gene pairs, of which 158 (36.8%) were clinically actionable. The majority (70.5%) of pharmacists' recommendations were accepted by PACE prescribers. Estimated cost avoidance was $233,945 when all recommendations were included but conservatively $162,031 based on acceptance rates. Overall mean cost avoidance per actionable drug–gene pair was $1063 or $1983 per participant.	PACE participants commonly have actionable drug–gene pairs, which allow for impactful recommendations by pharmacists. This study suggests that pharmacist-based, PGx-driven recommendations in a PACE model of capitated financing can avoid substantial costs for payers.	There is a need to consider the actual cost of PGx testing, the cost of providing the PGx service itself and indirect costs associated with PGx recommendations and interventions; need to devise methods to account for costs (e.g., savings, avoidances, and benefits) associated with these future treatment decisions; need to consider evaluating how estimated cost avoidances translate into actual cost savings. A longer observation period following PGx consultations is likely warranted with future studies that include PACE participants.

				The cost analysis showed that integrating Pharmacogenomics (PGx) testing into MTM-type services for PACE has economic benefits.		Incorporate discussions of the PGx consultations into the PACE interdisciplinary team meetings.
12	Bankes, D. L., Jin, H., Finnel, S., Michaud, V., Knowlton, C. H., Turgeon, J., & Stein, A. (2020). Association of a Novel Medication Risk Score with Adverse Drug Events and Other Pertinent Outcomes Among Participants of the Programs of All-Inclusive Care for the Elderly. *Pharmacy*, *8*(2), 87. https://doi.org/10.3390/pharmacy8020087	This was a retrospective cross-sectional study that analyzed administrative medical claims data of PACE participants who received care from a national provider of PACE pharmacy services, CareKinesis	Examine whether a novel medication risk prediction tool, the MedWise Risk Score (MRS), is associated with Adverse Drug Events (ADEs) and other pertinent outcomes in PACE participants	Every point increase in the MRS corresponded to an 8.6% increase in the odds of having one or more ADEs per year (OR = 1.086, 95% CI: 1.060, 1.113), $1037 USD in additional annual medical spending (adjusted R^2 of 0.739; $p < 0.001$), 3.2 additional emergency department (ED) visits per 100 participants per year (adjusted R^2 of 0.568; $p < 0.001$), and 2.1 additional hospitalizations per 100 participants per year (adjusted R^2 of 0.804; $p < 0.001$).	The results indicate that it is possible to utilize the pharmacological properties of a drug regimen to risk stratify PACE participants and predict a host of important and relevant outcomes pertaining to medication-related morbidity. Adopting the MRS in PACE offers PACE organizations the opportunity to identify and prospectively manage participants at risk of ADEs and other relevant outcomes in a standardized manner.	Novel MRS that derives a level of risk strictly through aggregation of pharmacological properties of a medication list positively correlates with ADEs, total utilization, hospitalizations, ED visits, and hospital length of stay among PACE participants. Future studies should assess the MRS in a prospective manner, with clinical ADE validation. Future research will need to validate the MRS against other ADE-specific risk scores and various risk indices highly relevant to PACE (e.g., Hierarchical Condition Category scores). Additional studies will be needed in alternative cohorts.
13	Oishi, M. M., Gluch, J. I., Collins, R. J., Bunin, G. R., Sidorov, I., Dimitrova, B., & Cacchione, P. Z. (2019). An oral health baseline of need at a predominantly African American Program of All-Inclusive Care for the Elderly (PACE): Opportunities for dental-nursing collaboration. *Geriatric nursing (New York, N.Y.)*, *40*(4), 353–359. https://doi.org/10.1016/j.gerinurse.2018.12.014	This descriptive study was conducted at one PACE center in Philadelphia. A systematic random sample of 120 enrollees from this PACE center was selected. The sample size of 120 was chosen based on power calculations using OHAT scores and sample sizes from previous studies. A total of 66 enrollees met the inclusion criteria and agreed to participate in the study. Sixty-four participants were included in the final analysis, of which 70% were	Establish a baseline of oral health of PACE enrollees, compare oral health among the PACE participants with that of those in other LTSS, and explore the role of nurses in oral health care to direct future interprofessional oral health interventions. This study tested the hypothesis that oral health does not differ by age, sex, or dentition status in this group of PACE enrollees.	It appears that enrollees at this Philadelphia PACE may have better oral health than those in nursing homes but poorer than those who live in residential care facilities. This study could not detect a statistically significant difference in mean total OHAT scores by age or sex but found that those with natural teeth only or dentures with natural teeth had higher mean total OHAT scores than those with dentures alone.	PACE has great potential to be able to incorporate daily oral hygiene routines, such as mid-day supervised brushing programs, into the activities at the PACE center because, unlike LTC facilities, many of the time-consuming basic hygiene tasks that are typically delegated to nursing staff in an LTC facility are minimized at PACE. PACE provides and finances dental services regardless of each state's adult Medicaid dental benefit and provides access to dental care for the dual-eligible, PACE population.	This study identifies the need for nurses to address enrollees' oral health and relay information back to the PACE interdisciplinary team (IDT) to initiate referrals to the dentist as needed. Future work should look to incorporate continued and routine oral hygiene care and assessment by the nurses and evaluate the program with the OHAT. In addition, future studies should focus on other elements of oral health, such as physiological function (the ability to speak, chew, swallow) and psycho-social function (the capacity to be in social situations without feeling uncomfortable or embarrassed), which are equally crucial to the overall health and well-being of PACE enrollees.

		female and 30% were male, with a mean age of 74.1 years (SD = 8.9; Range 6095 years).			PACE center is necessary to ensure a common location where members regularly congregate, and health providers and nurses have access to individuals. This is where older adults can receive routine medical and dental assessments and obtain preventive homecare products, such as fluoridated toothpaste and toothbrushes.	
14	Falvey, J. R., Gustavson, A. M., Price, L., Papazian, L., & Stevens-Lapsley, J. E. (2019). Dementia, Comorbidity, and Physical Function in the Program of All-Inclusive Care for the Elderly. *Journal of geriatric physical therapy, 42*(2), E1–E6. doi: 10.1519/JPT.0000000000000131	This project was a retrospective cross-sectional analysis of medical record data of 671 consecutive PACE participants assessed between March 31st and July 31st, 2015, extracted from a network of 4 clinics that provide PACE services in the Denver, Colorado metropolitan area. Of these, 525 had recorded data for gait speed and TUG.	Characterize physical performance in the PACE population Evaluate how multimorbidity and dementia impact both self-selected gait speed and timed-up-and-go (TUG) in this population.	PACE participants overall have a high degree of functional disability, with an average gait speed of 0.66 meters/second, an average Short Physical Performance Battery (SPPB) score of 6.0/12, and an average TUG time of nearly 20 seconds. A higher number of comorbidities and a diagnosis of dementia were associated with greater impairment for gait speed and TUG time. After adjusting for age, sex, strength, and balance, each additional comorbidity was independently associated with 0.015 m/s slower gait speed, as well as a 3.5% increase in TUG time for PACE participants with dementia.	Understanding that comorbidity burden is associated with significantly greater limitations in ambulatory function may encourage PACE programs to implement routine assessments of physical performance after a diagnosis of a new medical condition, especially for those participants with dementia.	A higher number of comorbidities and a diagnosis of dementia were associated with greater impairment for gait speed and TUG time, resulting in a high degree of functional disability. Further study is needed to evaluate specific comorbidities that may differentially influence ambulatory performance in the presence of dementia. Further research will explore the relationships between changes in physical performance, dementia, comorbidities, and important health outcomes such as hospitalizations, emergency room visits, and falls.
15	Kwiatkowski, J., & Gyurmey, T. (2019). Program of All-Inclusive Care for the Elderly (PACE): Integrating Health and Social Care Since 1973. *Rhode Island medical journal (2013), 102*(5), 30–32.	This study consists of two case studies on two PACE-RI (Rhode Island) participants with chronic healthcare needs.	Review PACE model	Below is a sampling of PACE-RI successes: • Average enrollment (living at home rather than in a nursing home) = 4.3 years • PACE-RI participants having no hospitalizations since enrollment = 31 % • ER visits per 100 than RI Medicare FFS = 11 % fewer • Influenza immunization rate = 93 % • Participants would recommend PACE-RI to family or friends = 90 %	The PACE model of creating a personalized care plan with the individual and their loved ones and coordinating every aspect of their health care has proven to give participants what they want: to live safely at home, to stay out of the hospital and emergency room, and to reduce strain for their caregivers. PACE participants have seen an	The patients reduced hospitalizations and increased mental and physical health while alleviating caregiver stress. With the older population slated to double by 2060, the time has come to expand PACE to more people.

				One of the PACE-RI participants continued to live at home with stable medical conditions and rarely has had ER visits or hospitalizations. And the other case received geri-psych follow-up at the PACE center, which led to a decrease in dementia-related behavioral symptoms. Her daughter gets respite care services so she can go on occasional vacations and get some personal time while keeping her mother at home and minimizing strain.	improvement in their behavioral health, mental health, and quality of life as well.	
16	Segelman, M., Cai, X., van Reenen, C., & Temkin-Greener, H. (2017). Transitioning From Community-Based to Institutional Long-term Care: Comparing 1915(c) Waiver and PACE Enrollees. Gerontologist, *57*(2), 300-308. doi:10.1093/geront/gnv106	The two principal data sources for this study were the Medicaid Analytic Extract Personal Summary (MAX PS) file and the Minimum Data Set (MDS). MAX and MDS data from 2005 to 2009 were used for this study.	Confirm that PACE reduced long-term NH admissions compared to waiver programs using more states and a study design incorporating the competing risk of death. Determine whether PACE enrollees had greater functional and/or cognitive impairment at NH admission compared with waiver program enrollees.	Compared with waiver enrollees, those who entered PACE were less likely (13% vs. 17%, $p < .0001$) to enter a NH for a long-term admission. PACE enrollees had a 31% lower instantaneous risk ($p < .001$) of long-term NH admission than waiver program enrollees. The two cohorts had no statistically significant differences concerning functional status at NH admission. However, those who entered NH from PACE were significantly ($p < 0.0001$) more cognitively impaired (by 0.34 points on the 0–6 point CPS) than those who entered NH from waiver programs. PACE enrollees had 45% higher odds ($p = 0.003$) of having an overall high impairment (ADL $\geq$ 17 or CPS $\geq$ 3), at the time of long-term NH admission, compared with waiver enrollees.	PACE enrollees have worse cognitive status and are more likely to have severe cognitive impairment at the time of long-term NH admission may suggest that PACE, which provides comprehensive and fully integrated health and social support services, is better equipped to handle enrollees with cognitive impairment compared with significantly less integrated waiver programs.	Findings suggest the need to focus more on the issue of targeting, that is, whether some individuals would be better served in a particular program. As states continue to expand HCBS and develop integrated Medicare–Medicaid models for dual eligibles, policymakers should pay increased attention to which individuals are best served by which form of LTSS.
17	Meunier, M. J., Brant, J. M., Audet, S., Dickerson, D., Gransbery, K., & Ciemins, E. L. (2016). Life after PACE (Program of All-Inclusive Care for the Elderly): A retrospective/prospective, qualitative analysis of	A baseline assessment was conducted on all participants before the closure of the PACE site, including ADL and instrumental ADL (IADL) scores and cognitive level via the Saint Louis University Mental Status (SLUMS) exam.	Examine how closing a PACE program impacts the health outcomes of previously enrolled participants.	Higher ED visits, hospitalizations, and nursing home placements occurred post-PACE. For every hour of home health per month, the number of ED/hospital visits decreased in 6 months by 5.4%. PACE/post-PACE differences in ADL and IADL scores were neither significant nor death rates. Death rates were higher in PACE, representing	Comprehensive care programs such as PACE effectively reduce healthcare utilization, thus limiting costs. Home care, which is provided as part of the PACE program but not traditionally covered under Medicare and private insurance,	Stratification of outcome comparisons between participant groups such as age, gender, or cognitive score was not conducted, as these were not a focus of this study. Further research could be carried out to evaluate differences between these groups and potential relationships between variables.

	the impact of closing a nurse practitioner centered PACE site. *Journal of the American Association of Nurse Practitioners*, *28*(11), 596–603. https://doi.org/10.1002/2327-6924.12379	Emergency department (ED) visits, hospitalizations, and home healthcare utilization while in PACE were recorded. Baseline interviews were conducted during May and June 2011; the PACE program was closed on July 1, 2011.		an increased emphasis on palliative care in PACE. No relationship was found between PACE enrollment and functional decline. Higher satisfaction existed with PACE versus non-PACE care.	may substantially benefit older adults by reducing ED visits and hospitalizations. PACE sites may have higher mortality rates than usual care because participants are dying at home per the participant's wish versus undergoing multiple tests and procedures and surviving in a hospital setting.	Further research is needed to perform this type of assessment and further explore quality-of-life issues for individuals and families regarding the loss of the PACE program. Elimination of PACE programs should not be considered solely based on cost; instead, a more comprehensive analysis should be undertaken. More extensive, case-controlled studies that compare populations over a long period need to be conducted. Further work is required to help maintain, develop, and support comprehensive models like PACE.
Studies using PACE sites/Model						
18	Chan, C. S., Davis, D., Cooper, D., Edes, T., Phibbs, C. S., Intrator, O., & Kinosian, B. (2021). VA home-based primary care interdisciplinary team structure varies with Veterans' needs, aligns with PACE regulation. *Journal of the American Geriatrics Society*, 69(7), 1729–1737. https://doi.org/10.1111/jgs.17174	This is a cross-sectional cohort study on all Veterans enrolled in home-based primary care (HBPC) in 2018, based on VHA administrative data.	Describe the variation in team composition and utilization among Veterans Affairs (VA) HBPC programs Assess whether the variation is driven by Veterans' frailty and complexity or site-specific characteristics Examine if there are potential efficiency gains from using the PACE regulation framework, albeit for complex, frail elders at home rather than in a PACE center.	HBPC provided Full IDT care to 21%, Core+ care to 54%, and Home Health+ (HHA+) care (skilled home health services plus additional disciplines, without primary care) to 16% of Veterans. Team type was associated with medical complexity ($p < 0.0001$). The majority of HBPC patients are high-risk and receive robust care. High-risk Veterans (72% of sample) were more likely to receive Full IDT care ($p < 0.0001$), while low-risk Veterans (28%) were more likely to receive HHA+ care ($p < 0.0001$).	Recent CMS PACE regulations allow flexibility in interdisciplinary team-directed care. About 86% of VA Home-Based Primary Care (HBPC) sites deploy diverse interdisciplinary teams tailored to patient needs, in line with PACE flexibilities.	There is significant variation in the types of interdisciplinary teams used by HBPC programs, tailored to the Veterans' needs. The complexity of the HBPC population suggests that most Veterans will require care from a robust team. Flexible interdisciplinary teams can promote the efficient expansion of HBPC. VA policy makers may use the study results to support HBPC practitioners in guiding program development to improve patient outcomes and maximize team effectiveness.
19	McNabney, M. K., Suh, T. T., Sellers, V., & Wilner, D. (2021). Aligning geriatric medicine fellowships with the Program of All-Inclusive Care for the Elderly (PACE). *Gerontology & geriatrics*	In this study, the PACE survey was sent to a total of 113 fellowship programs in the United States, where a total of 48 (42%) responded to the survey. The pace survey had an online survey to query	The article wanted to understand the perspectives of fellowship program directors regarding the value of training collaboration between existing PACE sites and fellowship training programs and to use this information to	Of the 34 programs where fellows were not spending time at PACE, the majority (91%) thought a PACE experience, in general, would be "helpful" to fellows for achieving competence in ACGME fellowship milestones. For 2 of the 23 ACGME Reporting Milestones, PACE was considered "extremely valuable" by at least 70% of respondents: # 17 ("Has	Fellowship program directors have identified PACE as a valuable training site for several important training objectives. PACE programs are equipped with a curricular roadmap to achieve that goal.	Fellowship program directors identified several ACGME-required reporting milestones for which a PACE rotation is most valuable as a training site – specifically, those involving interpersonal communication, team dynamics and communication.

	education, *42*(1), 2–12. https://doi.org/10.1080/02701960.2018.1532891	fellowship program directors regarding familiarity with PACE, the extent to which PACE is part of the fellowship and the perceived value of a PACE rotation in achieving competence in the 23 reporting milestones which are required by the Accreditation Council for Graduate Medical Education (ACGME).	inform the design of a useful training curriculum that could be implemented immediately to guide the training of geriatric fellows at PACE.	professional and respectful interactions with patients, caregivers, and members of interdisciplinary team (IDT)") and # 9 ("Works effectively within an IDT"). On the other hand, PACE was considered "Not valuable" by over 1/3 of respondents regarding # 8 (Scholarship), #5 (Requests/ provides consultation) and #7 (Knowledge of diagnostic testing). This information was useful to PACE education leaders who used this information, along with input from the PACE community, to create a PACE fellowship curriculum (training guide) for use by fellowship programs working with PACE.		Conversely, certain milestones were rated much lower (having less value) – scholarship development and skills related to medical expertise (consultation and interpretation of diagnostic tests). This study tries to establish PACE centers as valuable training sites. However, since the survey was sent to only people familiar with PACE, it might have been biased. The study would have also identified barriers to using PACE by those fellowship programs that were geographically close. So that further utilization of the PACE center as training site would get enhanced.
20	Petrovsky, D. V., Sefcik, J. S., & Cacchione, P. Z. (2020). A Qualitative Exploration of Choral Singing in Community-dwelling Older Adults. Western Journal of Nursing Research, 42(5), 340–347. https://doi.org/10.1177/0193945919861380	In this study they selected a qualitative descriptive approach for this naturalistic inquiry aimed to explore the perceived benefits of group singing among PACE older adults and the factors contributing to sustained engagement. They convened three focus groups, each at a different PACE center that had an active choir, to elicit perceptions from the choir members. The study was conducted in three PACE centers located in urban environments in Northeast United States.	Explore the perceived benefits of choral singing among older adult PACE participants.	The majority of the 19 participants in three focus groups were female (n = 17, 89%) and identified themselves as Black or African American (n = 17, 89%). The mean age of participants was 71.6 years (SD = 6.6). On average, participants completed 13.3 years of formal school education (SD= 2.2). One main theme emerged from the findings, "Something for us to do that we love," with two subthemes, "Joyful time together" and "Uplifting experience performing for others."		Since this study was only focused on the choir singing activity with the participants, it is unsure if the older adults felt similarly or dissimilarly to other activities offered at the PACE center. This is worth future exploration. Furthermore, examining factors associated with continued participation in choirs may be helpful in identifying strategies to keep minority older adults mentally and socially engaged. Additionally, studies examining the mechanisms of perceived benefits may provide additional insight as to who is most likely to benefit from choir participation.
21	Bankes, D. L., Amin, N. S., Bardolia, C., Awadalla, M. S., Knowlton, C. H., &	This was a retrospective analysis of pharmacy records from a national provider of	Evaluate pharmacist-encountered MRPs among PACE participants. It's	Overall, 2004 MRPs were encountered. The most frequent MRPs identified were related to medication safety concerns, including drug	The MRPs commonly identified by pharmacists in this study, if resolved, may reduce costs, and	More research is needed to ascertain differences in the numbers and types of

	Bain, K. T. (2020). Medication-related problems encountered in the Program of All-Inclusive Care for the Elderly: An observational study. Journal of the American Pharmacists Association, 60(2), 319–327. https://doi.org/10.1016/j.japh.2019.10.012	PACE pharmacy services between March and May 2018.The pharmacy involved in this study has 3 locations within the United States and provides services for more than 35 PACE organizations, including approximately 75 individuals PACE sites.	secondary objectives were to assess recommendations that pharmacists made to resolve MRPs, assess methods pharmacists use to communicate MRPs to prescribers, and appraise responses prescribers enacted to pharmacist-provided recommendations.	interactions (720, 35.9%), adverse drug reactions (ADRs, 356,17.8%), high doses (270,13.5%), and unindicated drugs (252, 12.6%). Drug interactions frequently involved competitive inhibition, 3 or more drugs, opioids, anticoagulants, antiplatelets, and antidepressants. Deprescribe medication (561, 24.8%), start alternative therapy (553, 24.4%), change doses (457, 20.2%), and monitor (243, 10.7%) were the top 4 types of recommendations made by pharmacists. Among 1730 responses obtained from PACE prescribers,78.1% (n = 1351) of pharmacists' recommendations were accepted. Compared with electronic communication, telephonic communication was associated with more acceptance and less prescriber nonresponse ($X^2 = 78.5$, $P < 0.001$).	improve patient outcomes for PACE organizations. The PACE IDT model presents an excellent opportunity for pharmacists to collaborate with prescribers on drug-regimen adjustments and changes.	MRPs among PACE participants along the continuum of care. Further research is needed to fully evaluate the economic, clinical, and humanistic outcomes associated with pharmacists' encounters in PACE.
22	Bankes, D. L., Schamp, R. O., Knowlton, C. H., & Bain, K. T. (2020). Prescriber-Initiated Engagement of Pharmacists for Information and Intervention in Programs of All-Inclusive Care for the Elderly. *Pharmacy (Basel, Switzerland)*, *8*(1), 24. https://doi.org/10.3390/pharmacy8010024	This was a retrospective analysis of pharmacy records from a national provider of PACE pharmacy services, between March through December 2018. The 414 encounters were determined to be DIIs that originated organically from a PACE prescriber and were included in the analytical sample.	Analyze the types of drug information inquiries (DIIs) that prescribers made to pharmacists during the routine care of community-dwelling older adults enrolled in PACE. Compare the drug information needs of non-physician prescribers (e.g., nurse practitioners) to physicians, to appraise recommendations that pharmacists made in response to those DIIs and determine the implementation of these recommendations by PACE prescribers.	Medication safety concerns motivated many prescribers' inquiries (223, 53.9%). Inquiries received frequently involved modifying drug therapy (94, 22.7%), identifying or resolving adverse drug events (75, 18.1%), selecting or adjusting doses (61, 14.7%), selecting new drug therapies (57, 13.8%), and identifying or resolving drug interactions (52, 12.6%). Central nervous system medications (e.g., antidepressants and opioids), were involved in 38.6% (n = 160) of all DIIs. When answering DIIs, pharmacists made 389 recommendations. Start alternative medications (18.0%), start new medications (16.7%), and change doses (12.1%) were the most frequent recommendations rendered. Prescribers implemented at least 79.3% (n = 268) of recommendations based on pharmacy records (n = 338 verifiable recommendations). The characteristics of DIIs were found to be	Collaboration with an interdisciplinary team (IDT) comprised of various healthcare professionals is a cornerstone of PACE. Most PACE prescribers strictly care for older adults, yet they still actively engaged pharmacists when faced with drug-related uncertainties.	During clinical practice, PACE prescribers commonly ask pharmacists a variety of DIIs, largely related to medication safety. In response to these DIIs, pharmacists provide medication management recommendations, which are often implemented by prescribers. Further research is needed to fully evaluate the economic, clinical, and humanistic outcomes associated with the provision of drug information in PACE. this study would underestimate the value of collaboration with pharmacists specializing in geriatrics and could suggest a greater need for collaboration beyond geriatric-predominant settings. Specific to PACE, the findings could be the impetus for regulators to revise the PACE model to make pharmacists requisite members of the IDT.

				similar between non-physician prescribers and physicians. Majority of DIIs were motivated by prescribers' concerns related to safety and effectiveness and involved clinical decisions for drug treatment (e.g., altering doses, selecting medications) and patient management (e.g., managing adverse effects).		
23	Oishi, M. M., Momany, E. T., Cacchione, P. Z., Collins, R. J., Gluch, J. I., Cowen, H. J., Damiano, P. C., & Marchini, L. (2020). Setting the PACE for frail older adults in the community: An underused opportunity for furthering medical-dental integration. *Journal of the American Dental Association (1939)*, *151*(2), 108–117. https://doi.org/10.1016/j.adaj.2019.10.001	The authors used a 56-item online survey to explore aspects of oral health care within PACE, including organizational structure, availability and provision of care, preventive protocols, and provider reimbursement. The survey was distributed to all 124 (at the time of January 2018) programs nationally.	Understand PACE's current programmatic policies for delivering and financing integrated oral health care.	Thirty-five programs completed the survey (28%) in 23 states (74%) where PACE is available. This is the first study to explore the delivery of oral health care within PACE. The results of this study suggest that, in accordance with the CMS regulations, programs are able to provide medically necessary and appropriate oral health care on-site and off-site that includes preventive, basic restorative, and advanced restorative care. Most programs reimbursed dentists at Medicaid fee-for-service rates and some at commercial rates. Dentistry was most frequently ranked the second-highest specialty focus behind mental health.	PACE is an opportunity for the dental profession to further medical-dental integration and ensure that newer models of long-term care include comprehensive and coordinated oral health care programs. Unlike ACOs, PACE does not receive a bonus for the quality of care or for keeping their enrollees healthy and places any savings from care back into the services they provide. Thus, there is an incentive for PACE to focus on aggressive early detection and preventive health, including oral health care.	PACE provides an opportunity for the growing population of nursing home-appropriate adults to remain in the community and receive oral health care regardless of the state's Medicaid adult dental benefit. Future researchers should explore whether the programs that reported somewhat difficult to meet their participants dental needs had problems with provider availability or the complexity of patient needs, both of which can impact furthering medical-dental integration. Future research could help explain some of the variation seen among programs and better understand how programs are able to facilitate integration.
24	Patel, A., & McNabney, M. (2020). Evaluation of emergency room visits and subsequent hospitalization within the Programs of All-inclusive Care for the Elderly. *Geriatrics & Gerontology International*, *20*(5), 503–505. https://doi.org/10.1111/ggi.13899	This was a retrospective case series study that used the PACE data log, which contained information about emergency room (ER) visits. The study included 276 ER visits from 2014 to 2016 among participants at one PACE program in Baltimore, Maryland.	Identify a series of PACE participants who visited the ER Evaluate patient characteristics that influenced whether the patient was admitted to hospital.	The rate of hospitalization after presenting to the ER was 70.7% and was associated with age ($P = 0.047$), living arrangements ($P = 0.014$), presenting symptom ($P = 0.02$) and hospital ($P = 0.005$). Admission to hospital from the ER was more likely among those who aged 55–65 years (83.3%), living alone (78.6%), presenting with cardiovascular/pulmonary symptoms (82.0%) and admitted to a Johns Hopkins Hospital (75.9%). The study revealed several factors that influence ER use and subsequent hospital admission. The	PACE programs can customize services to each patient in ways that have the potential to minimize the need for acute medical care that would require ER use and hospitalization.	The study defines the population of PACE participants who are likely to use ER; this information can be used by PACE programs to develop strategies for providing care in lieu of ER and to understand which subgroups are most likely to need subsequent hospital admission. Therefore, characteristics associated with increased likelihood of patients in PACE being admitted to the hospital after presenting to the ER can be used by

				youngest cohort in this study of older adults (age 55–65 years) was more likely to be admitted. In addition, those who were living alone were more likely to be admitted than those who lived with people or in assisted living facilities or nursing home.		other programs throughout the United States to develop methods for appropriate ER usage.
25	Mamo, S. K., Mayhew, S. J., Nirmalasari, O., Oh, E. S., McNabney, M. K., Rund, J., & Lin, F. R. (2018). Age-related hearing loss and communication at a PACE Day Health Center. *Journal of the American Medical Directors Association*, *19*(5), 458–459. https://doi.org/10.1016/j.jamda.2018.01.005	This was a qualitative study that included three focus groups offered to all Day Health Center (DHC) staff (n=63). Fourteen staff members, including but not limited to medical technicians, recreation, transportation, and rehabilitatists participated.	Evaluate the hearing loss burden and communication needs of participants and staff at the DHC to develop a meaningful staff training and communication intervention that addressed the group needs—both observed and expressed.	This study identified staff's perception of communication difficulties and how communication breakdowns impacted their workday. Positive strategies described by the staff included moving the participant to a quiet location before communicating and using teamwork when a participant became agitated because of communication breakdowns. The staff expressed an interest in communication training, learning how to recognize hearing loss in the communication and behavioral patterns of older adults and welcomed the idea of training in communication strategies and amplification products to improve communication.	To fully take advantage of the social engagement opportunities at the PACE DHC, identifying and treating hearing loss needs to be a key component of individualized care plans. While sending each individual for a diagnostic evaluation and custom hearing aids may create an undue burden and expense for the PACE program, there are group-oriented steps that can alleviate the burden of hearing loss.	The results of this study provide insights into how to better prepare staff to communicate with participants who have hearing loss.
26	Bain, K. T., Schwartz, E. J., Knowlton, O. V., Knowlton, C. H., & Turgeon, J. (2018). Implementation of a pharmacist-led pharmacogenomics service for the Program of All-Inclusive Care for the Elderly (PHARM-GENOME-PACE). *Journal of the American Pharmacists Association*, *58*(3), 281-289.e1. https://doi.org/10.1016/j.japh.2018.02.011	Participants 55 years of age and older enrolled in PACE who underwent PGx testing as part of their medical care from May 2014 to June 2016 and consented to the use of their deidentified data for research purposes were included. The practice setting was a centralized pharmacy (CareKinesis, Moorestown, NJ) that services 15%-20% of PACE participants in 21 states. The data were collected from CareKinesis pharmacy records.	Determine the feasibility of implementing a pharmacist-led pharmacogenomics (PGx) service for PACE. Describe pharmacists' roles in the implementation and report the results of PGx consulting, including pharmacists' recommendations and prescribers' acceptance of these recommendations.	Overall, nearly every participant (n 1⁄4 295; 99.7%) had at least 1 genetic variant, and more than one-third (n 1⁄4 106;35.8%) had 4 or more. Participants frequently used drugs posing DGI risks, with the majority (73.6%) having at least 1reported interaction: 29.1% had 1 interaction, 24.3% had 2 interactions, 10.5% had 3 interactions, and 9.8% had 4 or more interactions. A total of 446 DGIs were detected, and in many cases (n 1⁄4 228;51.1%), potential interaction threats were determined by pharmacists to be severe enough to warrant consideration or implementation of a drug-dose adjustment or drug-regimen change. The overwhelming majority (89.0%) of pharmacists' recommendations were accepted by referring prescribers. The percentage of recommendations to “consider” a change in drug regimen was 34.4%, and these types of recommendations were always (100%) accepted by referring	This study showed that implementing a pharmacist-led PGx service for PACE is feasible, demonstrating that pharmacists and prescribers can collaborate to integrate PGx information into participants' care. Community-based pharmacists who desire to pursue this type of service in their practice should be encouraged by the solutions presented in this study but must also consider the challenges associated with implementation.	Future considerations will entail methods to better encapsulate the experiences of participants, decisions of prescribers and outcomes associated with the PGx service, including clinical utility of pharmacist recommendations and interventions. Future iterations of PGx service will include inquiring and documenting the reasons for PGx testing (e.g., insufficient response to current drug regimen, adverse drug reaction at standard drug dose) and requesting access to PACE electronic health records.

				prescribers. The percentage of recommendations to "implement" a change in drug regimen was 17.9%, and these types of recommendations were accepted roughly one-third of the time.		
27	Brooks Carthon, J. M., Rearden, J., Pancir, D., Gamble, K., & Rothwell, H. (2017). "They're on the Fast Track": Older Blacks Describe Experiences of Nursing Care Quality During Hospitalization. Clinical Nursing Research, 26(5), 557–575. https://doi.org/10.1177/1054773816674478	This was a qualitative descriptive study that used semi-structured interviews with older Black patients. The patients were members of a PACE facility between May 2014 and April 2015 and were identified by a discharge nurse practitioner employed by the PACE program.	Elicit the perceptions of older Black patients at high risk for readmission. Explore their nursing care needs and preferences during and following hospitalization.	Nineteen interviews were conducted for this study. This study viewed older minorities as "experts"—fully capable of accurately assessing their care experiences. Four themes were captured, encompassing characteristics of nursing care quality, unmet care needs, nurse-patient communication, and observations of competing nursing demands. Participants primarily expressed global satisfaction with care, but when questioned about specific aspects of care delivery, all respondents provided examples of nursing care that was missed, such as basic care needs, communication failures, limited information sharing, and inadequate pain management.		Efforts to improve care transitions and prevent readmissions must address the needs and preferences of high-risk older adults. Opportunities to facilitate transitions into community settings may be hampered when nurses are unable to attend to all predischarge care needs. These narratives offer important perspectives on the relationship between nursing care quality and outcomes. They have significant implications for future initiatives to address the needs of Black patients at risk for gaps in transitions and avoidable readmissions.