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Housing, Transportation, And Food: How ACOs Seek To Improve Population Health By Addressing Nonmedical Needs Of Patients

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ABSTRACT **Addressing nonmedical needs—such as the need for housing—is critical to advancing population health, improving the quality of care, and lowering the costs of care. Accountable care organizations (ACOs) are well positioned to address these needs. We used qualitative interviews with ACO leaders and site visits to examine how these organizations addressed the nonmedical needs of their patients, and the extent to which they did so. We developed a typology of medical and social services integration among ACOs that disentangles service and organizational integration. We found that the nonmedical needs most commonly addressed by ACOs were the need for transportation and housing and food insecurity. ACOs identified nonmedical needs through processes that were part of the primary care visit or care transformation programs. Approaches to meeting patients' nonmedical needs were either individualized solutions (developed patient by patient) or targeted approaches (programs developed to address specific needs). As policy makers continue to provide incentives for health care organizations to meet a broader spectrum of patients' needs, these findings offer insights into how health care organizations such as ACOs integrate themselves with nonmedical organizations.**

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There is a growing consensus among policy makers, lawmakers, and health care community leaders that adequately addressing patients' nonmedical needs is a critical element of advancing population health, improving the quality of medical care, and lowering the costs of care.[1–8] Estimates suggest that 40–90 percent of health outcomes are attributable to social, behavioral, and economic factors.[5,9,10]

These nonmedical factors may also significantly affect health care utilization and outcomes.[11–15] For example, research has shown that people with housing instability have increased rates of emergency department (ED) visits and inpatient hospitalizations.[12] Targeted studies have demonstrated the benefits for health care outcomes of addressing nonmedical needs.[11,16–21] For example, among chronically homeless adults with severe alcohol problems, a randomized trial showed that stable housing reduced medical costs by 53 percent.[22]

A broad array of health policy initiatives may increase providers' capacity to address patients' nonmedical needs. Initiatives such as accountable care organizations (ACOs), bundled payment, and managed care have focused on creating financial incentives for providers to improve outcomes and lower costs. While these initiatives do not explicitly address patients' nonmedical needs, some researchers and others posit that the initiatives may spur providers to address patients' needs more broadly than they have done in the past.[1–4,7,23]

Despite broad agreement on the importance of addressing patients' nonmedical needs, little is known about whether and to what extent health care organizations operating under new payment models have addressed them. Research in this area has traditionally centered on specific interventions within a narrow range of settings, such as clinics serving homeless people.[11–13,15,24,25] While valuable, this research provides little understanding of the broader approaches that health care organizations use to address nonmedical needs, including the range of services directly provided, populations targeted, strategies for coordinating services, and organizational and financial models for integrating health care and social services. In an effort to spur innovation and test new models in this area, the Centers for Medicare and Medicaid Services recently announced the Accountable Health Communities Model, a $157 million initiative to implement and evaluate various approaches to addressing patients' nonmedical needs.[23,26]

To further inform policy in this area, evidence is needed about which approaches providers are using under payment and delivery reform to meet nonmedical needs. To provide early insights, we conducted site visits and qualitative interviews with leaders of ACOs to determine which nonmedical needs ACOs were seeking to address, and to characterize their approaches to addressing those needs.

We defined *nonmedical needs* as any patient needs that were not clinical in nature but had the potential to affect health. We defined *ACOs* as voluntary groups of providers that collectively are contractually responsible for the total cost and quality of care for a defined patient population.[27–29] Given the significant impact of nonmedical factors on health costs and patient outcomes, ACOs may address underlying nonmedical factors to control costs and improve quality.[4,30] Furthermore, proponents of the ACO model hope that it will afford providers the flexibility and incentives necessary to address patients' needs, including nonmedical needs, through better coordination and integration of care.[1,31–34] However, this is the first study to investigate whether or not value-based payment models have spurred providers to address patients' nonmedical needs.

Study Data And Methods

DATA We conducted qualitative research with leaders and managers of ACOs to understand clinical transformation activities. We included two sets of data in our analyses. The first set consisted of the results from fifty-eight semi-structured telephone interviews with leaders at thirty-two ACOs. The second set was information from in-depth site visits at three of those ACOs. To identify potential ACOs for the study, we used two sources: the National Survey of Accountable Care Organizations, which surveys newly formed ACOs, and a database of ACOs maintained by our research team. We chose ACOs to ensure diversity in terms of geographical region, composition, safety-net status, leadership type, clinical transformation activities, and payer type (for an explanation of our methodology, see the online Appendix).[35]

The telephone interviews were conducted during two periods: June–December 2013 and July–August 2014. We interviewed people from fourteen of the thirty-two ACOs during both periods. We targeted the ACOs' organizational and clinical leaders as respondents. Multiple leaders of some ACOs were interviewed during a given period.

Interviews typically lasted an hour and covered topics including the ACO's formation, overall structure, leadership structure, motivations, care delivery, initiatives and capabilities, provider engagement, implementation challenges and strategies, and future plans. We specifically asked about ACOs' strategies that were focused on socially disadvantaged patients and their nonmedical needs.

Following the 2014 phone interviews, we selected three ACOs for further in-depth study, based on their advanced clinical transformation and diversity in terms of composition, structure, patients served, and geographical region (for details about site visit selection and methodology, see the Appendix).[35] Three team members visited each site for three days. At each site the team members interviewed a range of respondents, including providers, members of key committees or boards, organizational leaders, clinical leaders, and members of care coordination teams. The team conducted at least twenty-five interviews per site and observed management, quality, or clinical meetings.

All interviews were recorded and professionally transcribed. All interviews and summaries were analyzed using QSR NVivo.

ANALYSIS Our analytic approach was collaborative and highly iterative. To establish coding consistency, two team members each coded three interview transcripts for specific nonmedical services. After review and reconciliation, coding consistency was established, and a single team member coded the remaining transcripts. We developed a memo based on initial coding that summarized proposed findings across ACOs and detailed all nonmedical activities within each ACO.[36] Data were then coded again for proposed themes, and the findings were updated.

LIMITATIONS Our study had several limitations. First, since ours was a qualitative study, our results were not meant to be generalizable to all ACOs. Instead, our findings provide insights into how some ACOs are addressing patients' nonmedical needs.

Second, our data are from 2013–15, so they might not fully represent how ACOs are currently addressing nonmedical needs. Considering how little research has been done on how providers address patients' nonmedical needs, this study nonetheless adds to the understanding of how providers and organizations address nonmedical needs.

Third, our data were primarily from the perspective of ACO leaders; we had less information from providers, staff members implementing the programs, or representatives of the ACOs' partner organizations. However, interviews with ACO leaders gave us a broad understanding of the range of each ACO's activities.[27,31]

Fourth, our study described the approaches and methods ACOs were using to address nonmedical needs, but we did not have data on the effectiveness of these approaches and methods. Our interviewees reported that they believed addressing nonmedical needs would yield cost savings for their ACOs and improve patients' health. However, the interviewees were unable to offer concrete data on the effectiveness of their efforts.

Study Results

TYPOLOGY FOR ORGANIZATIONAL AND SERVICES INTEGRATION Sixteen of the thirty-two ACOs we studied addressed patients' nonmedical needs. Based on our analyses, we developed a typology that divided the approaches used to integrate patients' nonmedical needs with medical care into four categories (Exhibit 1). We distinguished between two types of integration: organizational integration (for example, related to the integration of governance across distinct medical and nonmedical services) and service delivery integration. ACOs that addressed patients' nonmedical needs displayed varying levels of partnership and integration with other types of organizations (for example, public health, community, social service, and government organizations). We defined *service delivery integration* as the use of programs or processes designed to meet patients' nonmedical needs with some degree of integration across organizations.

Most ACOs, including those that did not address nonmedical needs, fell into the noncoordinated category, in which neither services nor organizations were significantly integrated. One ACO fell into the segmented category because its county owned and operated both health care and county social service organizations, but services provided by the different types of organizations remained distinct and were not integrated across organizations.

Among ACOs that did address nonmedical needs, most fell within or were moving toward the coordinated category, in which nonmedical and medical services were coordinated in some way, but organizations remained fully independent and distinct. For example, one ACO created a formal process throughout which medical providers referred to partner organizations patients who were identified as having nonmedical needs. Another ACO negotiated with local housing agencies and streamlined processes for patients to receive housing support from those agencies.

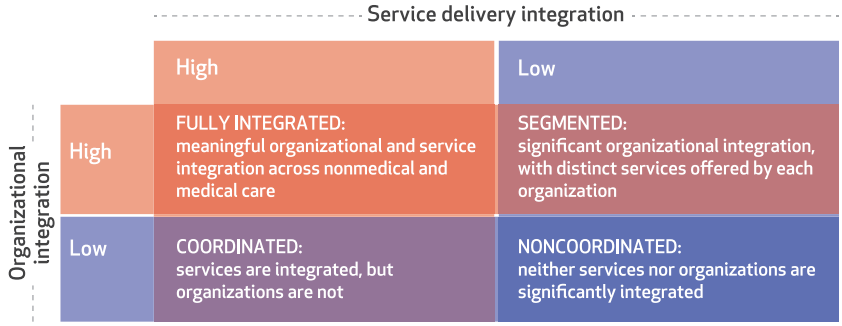
Two ACOS were moving toward the fully integrated category, in which services and organizations were integrated across medical and nonmedical care in meaningful ways. In both of these cases, organizational integration did not involve a merger of organizations; instead, it involved representatives of nonmedical providers or agencies joining representatives of medical providers as voting members on the ACO's board of directors. In both cases, ACO formation served as a catalyst for the integration between medical and community services.

NONMEDICAL NEEDS THAT ORGANIZATIONS ADDRESSED The most common nonmedical needs that the ACOs addressed were the need for transportation and housing, and food insecurity. ACO leaders said that these needs were common among their populations, the needs affected how patients engaged in medical care, and the ACOs had the potential to address these needs.

▶ **TRANSPORTATION:** Many ACO leaders viewed transportation as a barrier for patients

EXHIBIT 1

Typology of integration of nonmedical and medical care within accountable care organizations



SOURCE Authors' analysis. **NOTES** Service delivery integration refers to the use of programs or processes that span organizations. Organizational integration refers to the extent to which distinct medical and nonmedical service organizations are integrated structurally, operationally, or both.

to receive timely high-quality care. ACOs addressed this need in different ways: Some ACOs collaborated with transportation companies, others relied on public transportation systems, and still others designed new programs. How an ACO met patients' transportation needs varied based on the area's geographic characteristics, such as its degree of urbanicity, and its transit infrastructure. ACOs in areas with high-quality public transit typically relied on existing infrastructure. For example, some ACOs gave transportation passes to patients before their appointments. One ACO provided monthly bus passes—which could be used for any transportation need—to all patients who had four or more medical visits per month.

ACOs in suburban or rural areas experienced challenges in meeting transportation needs because of poor infrastructure. One ACO invested heavily in a local community agency that provided medical transportation, so that the agency could expand its services. A rural ACO provided transportation services through an external for-profit transportation company. The ACO paid the company a per member per month rate that allowed it to provide comprehensive services such as a twenty-four-hour telephone line that the ACO's patients could use to arrange immediate transportation for unscheduled emergency medical services.

Finally, one ACO in an urban area with poor public transportation was considering developing a mobile device application that would allow patients to request transportation from local drivers, who would be paid by the ACO.

▶ **HOUSING:** Many ACO leaders reported that stable housing was a basic need that had to be addressed before patients could effectively engage in medical care. To provide emergency and short- and long-term support, ACOs most commonly developed partnerships or other relationships with external housing agencies. ACOs also frequently worked with public health agencies and sometimes with other community agencies.

ACOs served as an administrative resource for these relationships by identifying housing options, liaising with housing agencies on the availability of housing and the process for accessing housing, negotiating with housing support organizations, and completing paperwork for their patients in need of housing. These activities helped patients obtain the housing support they needed, thus reducing a barrier to receiving appropriate health care.

Some ACOs developed innovative solutions to address patients' housing needs. For example, one ACO negotiated with a housing program to alter the substance use requirements so that the ACO's patients could first receive housing and then begin addiction treatment as a requirement of keeping their housing benefits. An ACO that had incurred high ED costs because its patients were not discharged appropriately negotiated with a housing agency to have beds designated for the ACO's patients. This helped streamline the discharge process and, ACO leaders hope, will reduce subsequent ED costs.

▶ **FOOD INSECURITY:** ACO leaders commonly reported that nutrition and food insecurity were important issues for their patients. Some ACOs offered assistance for patients to access public programs such as the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) by determining patients' eligibility and helping them enroll. Many ACOs partnered with local food banks, since these organizations were already a common resource for the ACOs' patients.

Two ACOs used unique approaches to address their patients' food insecurity. One partnered with a food bank and farmers to offer subsidized seasonal produce to patients. With support from the food bank, the ACO purchased local produce from the farmers and then held "market" days in the parking lot of the community health center, offering patients reduced prices. The second ACO gave financial support to a local food bank to prepare fresh and healthy meals each day for patients with a qualifying illness. This program was developed after a representative of the ACO observed that many patients were obtaining processed and unhealthy food from the local food bank.

IDENTIFYING PATIENTS WITH NONMEDICAL NEEDS ACOs used two common methods to identify patients with nonmedical needs: processes in primary care visits and care transformation programs (Exhibit 2). ACOs using the first method reported that the processes were typically used by a provider or with a health assessment. Patients who were identified as having nonmedical needs were then referred to appropriate programs, with staff members at the ACO available to help address those needs.

Several of the ACOs that used the second method identified patients with nonmedical needs by analyzing hospital utilization patterns. For example, some ACOs used staff members within the ED to discuss patients' medical and nonmedical needs and connect patients to appropriate resources. Other ACOs targeted conditions—for example, chronic conditions—through quality improvement programs and identified nonmedical needs during the use of these programs.

ALLOCATING RESOURCES TO MEET NONMEDICAL NEEDS ACO leaders reported using both internal and external resources to allocate

EXHIBIT 2

Actions, methods, and approaches used by accountable care organizations (ACOs) to address patients' nonmedical needs

Actions	Methods—using:	Specific approaches
Identify patients with nonmedical needs	Processes in primary care visits	Provider identifies needs Health assessment identifies needs Patient identifies needs
	Care transformation programs	Programs to reduce utilization (such as ED navigators to identify patients who need housing support) Identifying patients via chronic condition management programs (such as a person with diabetes who needs a refrigerator)
Allocate resources to meet nonmedical needs	Internal resources	Designated staff members allocated to meeting needs
	External resources	Community partners Purchased services Public health agencies
Develop approaches to meeting nonmedical needs	Individualized approaches developed on a patient-by-patient basis	Formalized via well-defined processes or care pathways Ad hoc as needs are observed
	Targeted approaches with well-defined solutions or programs to meet a specific need	Programs implemented to meet needs (such as ACO programs that provide transportation to patients)

SOURCE Authors' analysis. **NOTE** ED is emergency department.

resources to meet nonmedical needs (Exhibit 2). Internal resources often included staff members in existing team-based care management programs, with specific care teams assigned to assist patients with nonmedical needs. For example, ACOs used existing ED navigators to identify patients who needed housing support at the time of discharge. Some ACOs designated staff members such as social workers or care managers to be consistently responsible for meeting specific nonmedical needs, so that patients with observed nonmedical needs were referred to existing staff members.

ACOs also used external resources such as community partners and public health agencies to meet nonmedical needs. One ACO worked with local churches to meet patients' nonmedical needs—even when patients were not members of the church. Another ACO partnered with local public health agencies to streamline the application and enrollment processes for public social service programs, such as nutrition and housing assistance. ACOs commonly partnered with community agencies such as food banks, fitness centers, community centers, and other nonprofits to provide additional staffing and financial support. A few ACOs purchased external services from private companies to provide transportation for patients or meet other common needs.

APPROACHES TO MEETING NONMEDICAL NEEDS

ACOs used both individualized and targeted approaches to meet nonmedical needs (Exhibit 2). Individualized approaches were sometimes well defined and sometimes ad hoc. For example, as part of one ACO's care pathway, patients were given individualized assessments to identify their medical and nonmedical needs, and then a plan was developed to meet those needs. At ACOs with less well-defined approaches, staff members would identify a patient need via care management or during a clinical visit and then attempt to find an appropriate resource (for example, providing the patient with a bus token or locating housing resources).

In contrast, targeted approaches were well-defined, formalized solutions designed to meet a specific nonmedical need for a population instead of an individual. Examples of targeted approaches include programs to provide transportation.

ACOs often used a mix of individualized and targeted approaches, depending on the volume of their patients' needs and their organizational resources.

Discussion

Population health management through integrated medical and nonmedical services has garnered significant attention in the past few years,[1,24,37–39] yet there is little understanding of how best to implement integrated services to improve population health. Reform initiatives, especially ACOs, hold the potential for expanding the base of responsibility by moving from a reactive approach to a proactive one.[4,40] Our

study offers early insights into how some ACOs assumed responsibility for addressing patients' nonmedical needs.

We found that the nonmedical needs most often addressed by ACOs were related to housing, transportation, and food insecurity. While a variety of specific approaches to meeting needs existed, approaches were characterized as either individualized solutions (developed patient by patient) or targeted approaches (with formalized solutions for a given need). Based on these findings, we developed a typology of ACO integration of medical and nonmedical services that classified ACOs by degree of organizational and service integration. We found that a few ACOs were moving toward the fully integrated category, in which both organizational activities and services were highly integrated. Representatives of these ACOs, which we characterized as being more advanced than their peers, believed that by partnering with other types of providers and services—such as public health agencies, community health resources, and social service agencies—they could provide better patient care.

Our research uncovered several other findings. We found that ACOs struggled with program scalability. ACO leaders described instances in which they observed a general need but were able to provide only individual solutions, not broader programs. ACOs may encounter several barriers to developing formalized programs to meet patients' needs—barriers including lack of adequate financial resources, limited staffing capacity, lack of expertise, and competing clinical priorities.

Even ACOs with formalized programs to meet patients' nonmedical needs faced significant implementation barriers. Programs were often developed for one segment of the patient population, such as nutrition assistance for those with a specific medical condition. Many other population segments could also benefit from such programs, but ACOs often lacked the resources to implement programs broadly. Additionally, only people who were engaged with the medical system had the opportunity to be involved in an ACO's nonmedical programs. For example, a patient first had to be diagnosed with diabetes to be referred to the nutrition program for people with this condition. Thus, ACOs have only limited ability to comprehensively address any given need—medical or nonmedical—across a broad population.

Only people who were engaged with the medical system had the opportunity to be involved in an ACO's nonmedical programs.

Our study also offers insights into and implications for policy initiatives such as Accountable Health Communities.[23] For example, such organizations may experience challenges similar to those faced by ACOs in dealing with screening capabilities, scalability of programs, and comprehensively addressing people's needs. Future research should examine the effects of medical and social service utilization programs on community and patient outcomes. The intersections between patients' medical outcomes and social service programs may be complex and heterogeneous: For example, participation in social services may increase while ED visits decrease. It will be important to tease out varying effects to determine which activities are most effective at addressing patients' needs while reducing the cost and improving the quality of health care. ■

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