

Integration Strategies of Pharmacists in Primary Care-Based Accountable Care Organizations: A Report from the Accountable Care Organization Research Network, Services, and Education

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ABSTRACT

BACKGROUND: The accountable care organization (ACO) is an innovative health care delivery model centered on value-based care. ACOs consisting of primary care providers are increasingly becoming commonplace in practice; however, medication management remains suboptimal.

PROGRAM DESCRIPTION: As experts in medication management, pharmacists perform direct patient care and assist in the transition from one provider to another, which places them in an ideal position to manage multiple aspects of patient care. Pharmacist-provided care has been shown to reduce drug expenditures, hospital readmissions, length of stay, and emergency department visits. Although pharmacists have become key team members of interdisciplinary teams within traditional care settings, their role has often been overlooked in the primary care-based ACO. In 2015, Nova Southeastern University College of Pharmacy founded the Accountable Care Organization Research Network, Services, and Education (ACORN SEED), a team of pharmacy practice faculty dedicated to using innovative approaches to patient care, while providing unique learning experiences for pharmacy students by partnering with ACOs in the South Florida region. Five opportunities are presented for pharmacists to improve medication use specifically in primary care-based ACOs: medication therapy management, annual wellness visits, chronic disease state management, chronic care management, and transitions of care.

OBSERVATIONS: Several challenges and barriers that prevent the full integration of pharmacists into primary care-based ACOs include lack of awareness of pharmacist roles in primary care; complex laws and regulations surrounding clinical protocols, such as collaborative practice agreements; provider status that allows compensation for pharmacist services; and limited access to medical records. By understanding and maximizing the role of pharmacists, several opportunities exist to better manage the medication-use process in value-based care settings.

IMPLICATIONS/RECOMMENDATIONS: As more organizations realize benefits and overcome barriers to the integration of pharmacists into patient care, programs involving pharmacists will become an increasingly common approach to improve outcomes and reduce the total cost of care and will improve the financial viability of primary care-based ACOs.

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What is already known about this subject

- The accountable care organization (ACO) is an innovative health care delivery model that is defined as a network of physicians and other providers who share responsibility for coordinating high-quality care across a specific patient population.
- Medication management is a key element to improving ACO quality benchmark measures.
- ACOs in the primary care setting often lack significant integration of pharmacists.

What this study adds

- Pharmacist-provided care has the potential to positively affect ACO quality benchmark measures.
- This study describes a method of integrating pharmacists into primary care-based ACOs.
- This report presents 5 opportunities to improve medication use in ACOs in the primary care setting: medication therapy management, annual wellness visits, chronic disease state management, chronic care management, and transitions of care.

The accountable care organization (ACO) is an innovative health care delivery model that is defined as a network of physicians and other providers who share responsibility for coordinating high-quality care across a specific patient population.¹ An example of an ACO model is the Medicare Shared Savings Program (MSSP). To participate in the MSSP, an ACO must serve at least 5,000 Medicare beneficiaries and agree to participate in the program for at least 3 years. In addition, the ACO is responsible for developing processes that promote evidence-based medicine, promote patient engagement, internally report on quality and cost measures, and coordinate care.¹ There is immense variation across ACOs in terms of staff composition and roles, and there is no consensus of which structure will work best.² ACOs consisting of primary care providers have evolved to include a team of providers, often without significant integration of a pharmacist. However, since medication therapy management (MTM) remains costly and problematic in practice, the need to include pharmacists is necessary.³

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TABLE 1 Benchmark Measures Affected by Pharmacist Interventions

Domain	Measure	Description	Pharmacist Intervention ^a	Type of Service ^a
Patient safety	ACO #8	Risk standardized, all condition readmissions	Patient education, medication management	MTM, AWV, CDSM, CCM, TOC
Patient safety	ACO #9	Ambulatory sensitive conditions admissions for COPD or asthma in older adults	Patient education, medication management	MTM, CDSM, CCM, TOC
Patient safety	ACO #10	Ambulatory sensitive conditions admissions for heart failure	Patient education, medication adherence	MTM, CDSM, CCM, TOC
Patient safety	ACO #13	Screening for fall risk	Screening	AWV
Preventive health	ACO #14	Influenza immunization	Screening, immunizations	AWV
Preventive health	ACO #15	Pneumococcal vaccination	Screening, immunizations	AWV
Preventive health	ACO #16	Adult weight screening and follow	Screening, patient education	AWV
Preventive health	ACO #17	Tobacco use, assessment and cessation intervention	Screening, patient education, medication management	AWV
Preventive health	ACO #18	Depression screening	Screening	AWV
Preventive health	ACO #19	Colorectal cancer screening	Screening	AWV
Preventive health	ACO #20	Mammography screening	Screening	AWV
Preventive health	ACO #21	Proportion of adults who had blood pressure screened in past 2 years	Screening, vitals	CDSM, AWV
At-risk population	Composite ACO #27 & #41	Percentage of beneficiaries with diabetes whose A1c is in poor control; percentage of beneficiaries with diabetes who receive an eye exam	Patient education, medication management, screening	CDSM, CCM
At-risk population	ACO #28	Percentage of beneficiaries with hypertension whose blood pressure is <140/90	Patient education, medication management, screening, vitals	CDSM, CCM
At-risk population	ACO #30	Percentage of beneficiaries with ischemic vascular disease who use aspirin or other antithrombotic	Patient education, medication management, screening	CDSM, CCM
At-risk population	ACO #31	Beta-blocker therapy for left ventricular systolic dysfunction	Patient education, medication management, screening	CDSM, CCM
At-risk population	ACO #33	ACE inhibitor or ARB therapy for patients with CAD and diabetes and/or left ventricular systolic dysfunction	Patient education, medication management, screening	CDSM, CCM
Patient safety	ACO #35	Skilled nursing facility 30-day all-cause readmission measure	Patient education, medication management	TOC
Patient safety	ACO #36	All-cause unplanned admissions for patients with diabetes	Patient education, medication management	MTM, CDSM, CCM, TOC
Patient safety	ACO #37	All-cause unplanned admissions for patients with heart failure	Patient education, medication management	MTM, CDSM, CCM, TOC
Patient safety	ACO #38	All-cause unplanned admissions for patients with multiple chronic conditions	Patient education, medication management	MTM, CDSM, CCM, TOC
Patient safety	ACO #39	Documentation of current medications in the medical record	Documentation, medication reconciliation	MTM
At-risk population	ACO #40	Depression remission at 12 months	Patient education, medication management	CDSM, CCM

Adapted from Centers for Medicare & Medicaid Services. Medicare Shared Savings Program quality measure benchmarks for the 2016 and 2017 reporting years.⁷

^aThe last 2 columns include additional information (i.e., pharmacist intervention and types of services) that can help address the quality measure in relation to pharmacy services.

A1c=hemoglobin A1c; ACE=angiotensin-converting enzyme; ACO=accountable care organization; ARB=angiotensin II receptor blocker; AWV=annual wellness visit; CAD=coronary artery disease; CCM=chronic care management; CDSM=chronic disease state management; COPD=chronic obstructive pulmonary disease; MTM=medication therapy management; TOC=transitions of care.

Proper use of medication is essential, since the treatment of chronic disease costs the health care system over \$1 trillion dollars annually.⁴ Medicare beneficiaries with multiple chronic illnesses visit 13 different providers on average, fill 50 prescriptions each year, account for 76% of all hospitalizations, and are 100 times more likely to have a preventable hospitalization, compared with beneficiaries who have

no chronic illnesses.⁵ Pharmacist-provided care has been shown to reduce drug expenditures, hospital readmissions, length of stay, and emergency department visits.⁶ Additionally, incorporating pharmacists within an ACO health care team is key to achieving required quality improvement benchmarks set by the Centers of Medicare & Medicaid Services (CMS; Table 1).⁷

Program Description

In 2015, Nova Southeastern University College of Pharmacy founded the Accountable Care Organization Research Network, Services, and Education (ACORN SEED), a team of pharmacy practice faculty dedicated to using innovative approaches to patient care, while providing unique learning experiences for pharmacy students by partnering with ACOs in the South Florida region. In an effort to increase awareness of the opportunities for pharmacist-provided care within primary care-based ACOs, the purpose of this report was to focus on 5 integration strategies used in the United States that are based on experiences of clinical pharmacists (the primary and co-investigators of this report), who currently practice within an ACO primary care office, and a literature review that evaluated research on MTM, annual wellness visits (AWV), chronic disease state management (CDSM), chronic care management (CCM), and transitions of care (TOC). In addition, several challenges and barriers that prevent the full integration of pharmacists into primary-care based ACOs were identified (Table 2).

Summary of Current Literature

A literature search using EBSCOhost and MEDLINE databases was performed with the following keywords: *pharmacists, accountable care, medication therapy management, ACO, MTM, transitional care, annual wellness visits, chronic disease state management, and chronic care management*. Inclusion criteria consisted of articles dated from 2009 to 2016 that described pharmacist-driven service performed within an ACO. Exclusion criteria consisted of non-English articles outside of the United States unrelated to ACOs as defined by CMS. Only 2 notable studies of pharmacist integration into ACOs were found using the keywords *MTM* and *AWV*, so it was decided by the investigators to describe the types of services that pharmacists can perform within an ACO setting based on their professional experiences. Because there is a scarcity of literature and no formal guidance for pharmacist services in an ACO, to our knowledge, this is the first study to suggest possible pharmacist integration strategies in an ACO or ACOs interested in optimal medication management.

Medication Therapy Management

MTM is defined as a service or group of services that optimizes therapeutic outcomes for individual patients through drug reviews, pharmacotherapy consults, anticoagulation management, and other clinical services.⁸ MTM services are intended to target polypharmacy, preventable adverse drug events, medication adherence, and medication misuse and are a source of billable services attributed to the pharmacist.⁹ MTM includes the following 5 core components: a medication therapy review, a personal medication record, a medication-related action plan, intervention and/or referral, and documentation and follow-up.¹⁰ These services can be provided in person or

telephonically. Once medication-related problems are identified, interventions are coordinated primarily through the prescriber in conjunction with the pharmacist.

Research has shown that pharmacist-led MTM can reduce costs, improve patient care, and reduce physician workload in a variety of patient settings.¹¹⁻¹⁷ Fairview Health Services, a Pioneer ACO caring for 15,000 high-risk patients in Minnesota, conducted a pharmacist-led MTM program that successfully reduced health care costs, resolved 2,780 drug therapy issues, and improved clinical outcomes specifically in 670 ACO patients with diabetes and asthma.¹⁷ In addition, a 12:1 return on investment was found when comparing the overall health care costs of patients receiving MTM services with patients who did not receive those services.¹⁷

With pharmacists targeting high-risk patients and medication-related problems, unnecessary physician visits, hospital readmissions, and emergency department visits can be reduced. In addition, pharmacists can identify duplicate therapies and improve medication adherence, which can reduce adverse drug events and optimize patient outcomes. Furthermore, pharmacist interventions can improve the appropriateness of prescribing by providing prescribers with education regarding evidence-based therapies for various chronic conditions.

Annual Wellness Visits

An AWV is a preventative benefit intended to improve health outcomes and is offered to Medicare Part B beneficiaries under the Patient Protection and Affordable Care Act.¹⁸ An AWV consists of acquiring a patient's medical history, assessing risk factors, and creating a personalized prevention plan with the patient. Visits include a health risk assessment to identify chronic diseases and any pressing needs that exist. Next, an assessment and plan of care for the patient is developed, and coordinated care is planned.

AWVs, which are different from annual clinic visits, are not required to be completed by a physician; as such, nonphysician licensed health care professionals, including pharmacists, physician assistants, and nurses working under the direct supervision of a physician, can provide AWVs as a reimbursable service under Medicare.¹⁹ Pharmacists in ACOs who conduct AWVs evaluate a patient's well-being, adherence, and medication optimization. In 1 study, clinical pharmacists had a mean of 5.4 interventions per patient with a high referral, laboratory test (diabetes and lipid), and vaccination completion rate (pneumococcal, Tdap, influenza, and shingles) within 1 month. In addition, the total revenue for the AWVs conducted by pharmacists and services completed during the visits exceeded \$22,000.²⁰ Several additional studies have explored pharmacist-led AWV that led to positive net income and interventions performed, with similar findings.²¹⁻²⁴

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TABLE 2 Summary of Services that Pharmacists Can Provide in ACO Settings

Type of Service	Description	Strengths	Limitations	Potential Solutions
MTM ^{8,9,17}	<ul style="list-style-type: none"> Core components include a CMR, MTR, PMR, MAP, intervention and/or referral, and documentation and follow-up 	<ul style="list-style-type: none"> Optimizes therapeutic outcomes for individual patients Identifies polypharmacy, preventable adverse drug events, medication adherence, and medication misuse 	<ul style="list-style-type: none"> Low response rate of patients and/or providers due to unscheduled calls Limited or no access to EHR Restriction of reimbursement for MTM services currently limited to select plans 	<ul style="list-style-type: none"> Hire pharmacy technicians to maximize pharmacist time for higher level tasks Obtain remote EHR access
AWV ¹⁸⁻²⁰	<ul style="list-style-type: none"> Once yearly Medicare Part B benefit Assesses medical history and risk factors through the use of an HRA Personalized prevention plan is created with patient 	<ul style="list-style-type: none"> Improves detection of omissions in preventative care Evaluates patient's well-being, adherence, and medication optimization Generates substantial revenue Provides a way for pharmacists to support their salaries in a physician's office 	<ul style="list-style-type: none"> May only be provided annually Complex and time consuming 	<ul style="list-style-type: none"> No restrictions to amount of visits annually Use ancillary staff to assist
CDSM ²⁹⁻³⁵	<ul style="list-style-type: none"> Assist patients in controlling their chronic diseases (e.g., diabetes, HTN, HLD) by providing education on lifestyle changes, monitoring, and medication adherence Development of standardized, evidence-based clinical protocols Initiate, modify, or discontinue medications through CPA 	<ul style="list-style-type: none"> Improve efficiency and increase quality and patient satisfaction and safety Enhanced coordination of care among diverse providers Easy to integrate 	<ul style="list-style-type: none"> CPAs are variable in each state Need for analytics to further address high-risk patients 	<ul style="list-style-type: none"> Understand state laws and regulations regarding CPAs for the respective state If analytics are not available, can manually assess daily schedule by working with administrative staff
CCM ^{38,39}	<ul style="list-style-type: none"> Services provided outside of face-to-face patient visits for Medicare patients with ≥ 2 significant chronic conditions expected to last at least 12 months or until death Conditions pose a significant risk of death, acute exacerbation or decompensation, or functional decline Conditions include, but are not limited to, Alzheimer's disease, arthritis, asthma, AF, cancer, COPD, depression, diabetes, HF, HTN, IHD, or osteoporosis 	<ul style="list-style-type: none"> Around-the-clock access to care management service and designated CCM practitioners Promotes continuity of care between members of CCM team Provides opportunities for the patient/caregiver to communicate through various means with the practitioner in compliance with HIPAA 	<ul style="list-style-type: none"> Patients may not agree to pay for additional services, or low socioeconomic patients may not be able to make copayments Practices without EHRs cannot participate Difficulty in coordination of care plan between primary care and specialist Lack of incentive to improve quality care or reduce cost, while continuing fee-for-service in conjunction with CCM 	<ul style="list-style-type: none"> As copay is small can provide incentives for patients to waive the cost Overall cost benefit (i.e., reducing admissions) may outweigh copayment Formulate communication strategies to develop a relationship between specialists
TOC ^{47,52}	<ul style="list-style-type: none"> Facilitate communication between hospital and outpatient providers Conduct medication histories and reconciliations for the inpatient and outpatient providers Assist in the discharge process and provide education to patients and their caregivers 	<ul style="list-style-type: none"> Reduction of preventable adverse drug events after discharge from the hospital Reduction of readmissions, an ACO quality measure 	<ul style="list-style-type: none"> Difficulty connecting with patients on follow-up Lack of standardization on how to provide transitions of care services 	<ul style="list-style-type: none"> Provide services to communicate with patients through telephone, virtual, or face-to-face visit Educate importance to patient on follow-up visit within 1 week of discharge TOC services can be adapted based on practice needs and workflow

ACO = accountable care organization; AF = atrial fibrillation; AWV = annual wellness visit; CCM = chronic care management; CDSM = chronic disease state management; CMR = comprehensive medication review; COPD = chronic obstructive pulmonary disease; CPA = collaborative practice agreement; EHR = electronic medical record; HF = heart failure; HIPAA = Health Insurance Portability and Accountability Act; HLD = hyperlipidemia; HRA = health risk assessment; HTN = hypertension; IHD = ischemic heart disease; MAP = medication-related action plan; MTM = medication therapy management; MTR = medication therapy review; PMR = personal medication record; TOC = transitions of care.

Chronic Disease State Management

CDSM is the formalized approach to treating patients with chronic and debilitating conditions using evidence-based treatment and interdisciplinary teams and has become the ubiquitous model in practice.²⁵ One in four American adults have a chronic condition (e.g., hypertension or diabetes), and by 2025, it is estimated that 164 million Americans will have more than 1 chronic condition, with the projected cost as high as \$4 trillion.²⁶ In addition, patients with chronic conditions account for 81% of hospitalizations, greatly burdening the health care budget.²⁶ Medications are the foundation of managing chronic disease, with 91% of prescriptions filled for patients with chronic conditions, and pharmacists are well positioned to help manage these patients through education on lifestyle changes, monitoring outcomes, and adherence.^{3,27} Studies have consistently shown that pharmacist involvement in CDSM improves clinical outcomes, such as glycemic, blood pressure, and lipid goals, and reduces direct and indirect health care costs.²⁸⁻³²

An important variable to consider when discussing CDSM in primary care-based ACOs is collaborative practice agreements (CPAs) for pharmacists. CPAs create a formal practice relationship between a pharmacist and other health care providers and specify what patient care services can be provided.³³ These patient care services can include modification of current drug therapy, initiation of new therapy, ordering of labs, and/or physical assessment. CPAs take maximum advantage of physician training, including expertise in disease diagnosis, and pharmacist training, including expertise in drug therapy and disease management. This collaboration allows physicians and pharmacists to share responsibility for patient outcomes.³⁴ The extent of the services authorized under CPAs depends on state CPA provisions and the terms of the specific agreement. State laws and regulations authorizing CPAs are highly variable.³³ Of the 50 states, 48 allow CPAs. Of these, 38 and 45 states permit pharmacists to initiate drug therapy and modify existing therapy under a CPA, respectively, while others do not. Furthermore, 18 states require specific pharmacy education or training. A discrepancy in the level of training among states, which ranges from requirements of only a PharmD degree or a BSPharm degree, plus 5 years of experience in Massachusetts, to a PharmD or equivalent training, certification as a specialist or completion of a residency, certificate training program or board-approved exam, defined clinical experience, and documented training related to the disease states being managed in Maryland.³³

Another key to improving efficiency and increasing patient quality and safety within an ACO is enhanced coordination of care among diverse providers. To be successful, an ACO must be effective at managing the health of its patients, which is known as population health management.³⁵ This can be accomplished with the application of standardized, evidence-based clinical protocols for chronic diseases (e.g., heart failure

and diabetes).³⁶ Because pharmacists are experts in medications, they can contribute to the creation of such protocols. Also, using predictive analytics tools to stratify patients by health risk can identify high-risk patients and disease states to target for an ACO.

Chronic Care Management

CCM is a service that incorporates CDSM, whereby patients with 2 or more chronic conditions (e.g., depression, diabetes, and heart failure) that are expected to last more than 1 year (or until death) and who are at significant risk of death or decline are eligible for distinct reimbursement. These chronic conditions must pose a significant risk of death, acute exacerbation/decompensation, or functional decline.³⁷ In 2010, out of 31 million Medicare beneficiaries, 68% had ≥ 2 chronic conditions, and 36% had ≥ 4 chronic conditions, with a higher prevalence found in elderly and non-Hispanic blacks or Hispanic women. This accounted for nearly three quarters of Medicare spending.³⁸

In addition to improved patient outcomes, CCM provides the opportunity for pharmacy-led reimbursement. Pharmacists are considered qualified health care professionals, and clinical staff are able to bill for services under the Medicare Physician Fee Schedule.³⁹⁻⁴¹

Through CCM, pharmacist responsibilities are increased. As the number of pharmacists continues to increase, the expansion of their contributions are necessary for the pharmacy profession to thrive.⁴² It is important to note that primary care physicians spend approximately 37% of their time on activities related to CCM, which often includes managing complex medication regimens.⁴³ Tarn et al. (2008) reported that during an office visit, physicians spend an average of 49 seconds talking about a new prescription with patients.⁴⁴ With CCM, an important advantage for pharmacists is their frequent interaction with chronic disease populations and their accessibility to the public. In the primary care setting, including ACO physician offices, pharmacists have begun to collaborate with physicians on medication optimization, polypharmacy, and medication safety. This nonphysician health care professional also has the ability to assist with preventive interventions, such as lipid control, osteoporosis management, vaccination, and smoking cessation.⁴⁵

Transitions of Care

TOC involves the oversight of patient responsibility between various areas of health care.⁴⁶ A provider network or ACO often includes hospitals, skilled nursing facilities, primary care physicians and specialists, home health nursing, and hospices. When fragmented care and miscommunication result from poor transitions of patients from one care setting to another, the risk of medication errors, missed outpatient follow-up appointments, duplication of resources and increased costs, poor patient understanding of self-care needs, and other

implications can occur. The impending outcome is an avoidable hospital readmission and increased financial burden to the health care system.⁴⁷ A landmark study revealed that 20% of Medicare beneficiaries were readmitted to the same hospital within 30 days, and 34% were readmitted within 90 days. The readmissions were often attributed to medication-related issues.⁴⁸ Not surprisingly, transitioning patients from acute care settings to their homes or postacute care settings has become a priority for hospitals and ACOs, since controlling the transition process can help lower unnecessary readmission rates and avoidable costs.

Pharmacists currently provide optimized TOC and have improved clinical outcomes by providing discharge counseling and obtaining medication histories and reconciliations upon transitions.⁴⁹⁻⁵⁰ Available data support pharmacists performing TOC primarily in the inpatient setting. Although there is limited data on the use of pharmacists in primary care-based ACOs, pharmacists would be expected to have similar, if not better, outcomes, since these transitions involve a highly coordinated level of care among a team of accountable providers with often fragmented communication between settings.

Potential duties of the TOC pharmacist in a primary care-based ACO include identifying which patients are currently in and out of the hospital and communicating directly with the hospital or outpatient providers, including other pharmacists. At discharge, TOC pharmacists are able to perform a thorough medication reconciliation and communicate this, as well as a summary of a patient's hospital course, to the respective ACO providers. A TOC pharmacist can provide a follow-up phone call or an at-home visit within 72 hours of discharge, which has been proven to reduce readmissions.⁵¹ Many of these services are eligible for Medicare reimbursement, with higher reimbursement for high complexity patients, which, perhaps, justifies a pharmacist's salary within an ACO.⁵²

Observations

Barriers and Limitations to Pharmacist Integration in ACOs

Integration of pharmacists into interdisciplinary accountable care models have several challenges and barriers that prevent the full integration of pharmacists into these health systems. Some challenges include lack of awareness of pharmacist roles in primary care; complex laws and regulations surrounding clinical protocols, such as CPAs; provider status that allows compensation for pharmacist services; and limited access to medical records.⁵³ Coordinated electronic medical records between pharmacies and inpatient or outpatient facilities may eliminate the inability to obtain complete medication information. Lack of reimbursement has continued to be an ongoing limitation for the pharmacy profession; however, opportunities for billing is steadily rising. For instance, the ability to bill for MTM and AWV services has reduced this barrier.

Implications/Recommendations

Accountable care is becoming a cornerstone of health care delivery in the United States, but drug-related costs continue to increase. One limitation of this study is the absence of a cost benefit analysis. The study investigators plan to conduct a prospective study to analyze cost savings within an ACO in a follow-up investigation. Of note, cost savings via the described pharmacist integration strategies in non-ACO settings have been reported in the current literature.^{11-17,20-24,28-32}

ACOs seek to ensure that optimization of every patient's medication therapy is a core element of our future health care system. However, few ACOs engage pharmacists to provide medication management services as a primary focus of the organization's effort. There are several traditional pharmacist-led services, such as MTM, AWV, CDSM, CCM, and TOC, that can facilitate the integration of pharmacists into accountable care. Although these services themselves are not novel, it would be innovative to adapt these well-established opportunities within an ACO model to further enhance patient care and meet quality measures, including CDSM, CCM, and TOC, that have yet to be included in this setting. ACOs and pharmacists can choose all or some of these strategies based on their unique patient population in order to become better positioned to improve patient experience and reduce the costs of care. As more organizations realize benefits and overcome barriers to the integration of pharmacists into patient care, programs involving pharmacists will become an increasingly common approach to improving outcomes and reducing the total cost of care.

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DISCLOSURES

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