

The Expanding Role of Pharmacists in a Transformed Health Care System

Executive Summary

Pharmacists practice in a variety of health care settings. Although they are most often associated with dispensing medications in retail pharmacies, their role is evolving to include providing direct care to patients as members of integrated health care provider teams.¹

The critical role that medication management plays in treating chronic diseases suggests that the integration of pharmacists into chronic-care delivery teams has the potential to improve health outcomes. Studies of pharmacists providing medication therapy management (MTM) services to improve therapeutic outcomes indicate that such services can improve outcomes and reduce costs. Pharmacists typically provide those services in interdisciplinary teams through collaborative practice agreements (CPAs). Such agreements with other health care providers allow a licensed provider to refer patients to a pharmacist and delegate the delivery of clinical services under supervision. Several key challenges and barriers, however, prevent the full integration of pharmacists into health care delivery teams: restrictive laws and regulations governing CPAs, lack of provider recognition in federal and state law governing compensation of pharmacists who provide direct patient-care services, and limitations on pharmacists' ability to access health information systems.

States seeking to integrate pharmacists more fully into the health care delivery system can examine state laws

and regulations governing the profession to address the challenges to pharmacists practicing to the full scope of their professional training.

Introduction

The health care system is undergoing a significant transformation in both the finance and delivery of health care services. States, in particular, are examining their health care systems to define policies that create efficient models of care focused on improved quality and health outcomes as well as reduced costs. Integrating pharmacists, who represent the third-largest health profession, into such systems is important for achieving intended goals.² Pharmacists have the professional expertise to address key challenges facing the health care system, including the prevalence of people who have multiple chronic conditions and the increased use of more complex medications to manage those diseases.

Pharmacists' Clinical Training and Expertise

Pharmacists undergo rigorous education focused on the composition, interaction, and use of medications. Pre-pharmacy students must complete at least two years of college to be eligible to enter pharmacy school, though most obtain a bachelor's degree. To apply to most graduate pharmacy programs, pre-pharmacy students are required to take the Pharmacy College Admissions Test, which measures general and pharmacy-specific academic knowledge.³

¹ According to the U.S. Bureau of Labor Statistics, in 2012, 43 percent of pharmacists were employed in pharmacies and drug stores, 23 percent in hospitals (state, local, and private), 8 percent in grocery stores, and 10 percent in other retail locations (see <http://www.bls.gov/ooh/healthcare/pharmacists.htm#tab-3>). This paper does not address questions related to compounding pharmacies that create and mix drugs customized to specific patient needs based on a prescription written by a physician or compounding pharmacies that distribute a high volume of compounded drugs without prescription.

² American Association of Colleges of Pharmacy, <http://www.aacp.org/ABOUT/Pages/default.aspx>.

³ Pharmacy College Admission Test, "About the PCAT: Information," <http://www.pcatweb.info/About-the-PCAT.php> (accessed November 20, 2013).

The level of education required to practice as a pharmacist has risen significantly over the past few decades, shifting from a bachelor of science (B.S.) degree to a doctor of pharmacy (PharmD) degree. Since 2004, the Accreditation Council on Pharmacy Education has required that students attending schools of pharmacy obtain a PharmD. Despite the escalating educational requirements, most pharmacists practicing today have a B.S. degree.⁴

All accredited colleges of pharmacy include the following core competencies in their curriculum: biomedicine; pharmaceutical sciences; social, behavioral, and administrative sciences; and clinical sciences.⁵ Specific coursework varies based on the institution and can include toxicology, pathophysiology, pharmaceutical chemistry, pharmacology, *disease treatments*, and laboratory training.⁶ PharmD programs also incorporate clinical training in their curricula through externships, which provide students practical experience in pharmacy settings under the supervision of licensed pharmacists.⁷

To become licensed, every state requires prospective pharmacists to pass the North American Pharmacist Licensure Examination upon completion of a PharmD program. Most states also require a separate exam (typically the Multistate Pharmacy Jurisprudence Examination) to test the pharmacy jurisprudence knowledge defined within the individual state's statutes and regulations.⁸ Once licensed, pharmacists

can voluntarily obtain certification in a specialty practice area by demonstrating field experience and passing an examination administered by one of several credentialing boards. For example, the Board of Pharmaceutical Specialties certifies pharmacists in six specialties: nutrition support pharmacy, nuclear pharmacy, pharmacotherapy, oncology pharmacy, psychiatric pharmacy, and ambulatory care.⁹

The U.S. Bureau of Labor Statistics indicates that about 286,000 pharmacists were employed in 2012 and projects that number to increase by 14 percent, to more than 325,000, by 2022. Currently, about 60 percent of pharmacists are employed in retail establishments—health and personal care stores, grocery stores, general merchandise stores, and department stores.¹⁰ Undergraduate students continue to demonstrate strong interest in the profession, and enrollment rates in pharmacy programs have risen for 13 consecutive years.¹¹

Current Scope of Practice

Pharmacists' scope of practice consists of a legal component set by state laws and board regulations and guidelines set by employers or administrators for specific practice settings. In the early 1990s, an examination of pharmacists' scope of practice identified four primary domains in which pharmacists were permitted to provide care: ensuring appropriate

⁴ The percentage of pharmacists practicing with a B.S. degree has decreased from 74 percent in 2000 to 66 percent in 2009. Midwest Pharmacy Workforce Research Consortium, "Final Report of the 2009 National Pharmacist Workforce Survey," http://www.aacp.org/resources/research/pharmacy-workforcecenter/Documents/2009_National_Pharmacist_Workforce_Survey_-_FINAL_REPORT.pdf (accessed November 1, 2013).

⁵ Melissa S. Medina et al., "Center for the Advancement of Pharmacy Education 2013 Educational Outcomes," *American Journal of Pharmaceutical Education* 77 no. 8 (October 2013): 162, doi:10.5688/ajpe778162; and National Association of Boards of Pharmacy, "PCOA Programs," <http://www.nabp.net/programs/assessment/pcoa> (accessed October 7, 2013).

⁶ "Pharmacist: Educational Requirements and Career Summary," Education Portal, http://education-portal.com/articles/Pharmacist_Educational_Requirements_and_Career_Summary.html (accessed September 15, 2014).

⁷ Ibid.

⁸ "Programs FAQ," National Association of Boards of Pharmacy, <http://www.nabp.net/programs/examination/naplex/faqs#3> (accessed November 1, 2013).

⁹ "Board of Pharmacy Specialties: Certification: Certification in the Real World," Board of Pharmacy Specialties, <http://bpsweb.org/certification/real.cfm> (accessed November 20, 2013).

¹⁰ U.S. Department of Labor, Bureau of Labor Statistics, *Occupational Outlook Handbook, 2014–15 Edition*, "Pharmacists," <http://www.bls.gov/ooh/healthcare/pharmacists.htm> (accessed September 18, 2014).

¹¹ "Academic Pharmacy's Vital Statistics," American Association of Colleges of Pharmacy, <http://www.aacp.org/about/Pages/Vitalstats.aspx> (accessed November 2, 2013).

medication therapy and outcomes, dispensing medications and devices, engaging in health promotion and disease prevention, and engaging in health systems management.¹²

In 2004, the Joint Commission of Pharmacy Practitioners began a strategic effort to standardize pharmacists' delivery of care and suggest alternatives for service reimbursement.¹³ That effort focused on creating more consistency in pharmacists' delivery of care and promoting quality outcomes for patients, regardless of the type of service provided or the care setting. The Joint Commission expects to agree on a standardized process in 2015.

Alternative Approach Through Advanced Practice Designations

California, Montana, New Mexico, and North Carolina have created the advanced practice pharmacy (APP) designation to expand pharmacists' scope of practice through CPAs. That designation allows pharmacists to provide direct patient care, including primary care. The characteristics of an APP, however, including educational requirements, provider status, service offerings, prescribing authority, and compensation, vary across those states.¹⁴

For example, in California, a pharmacist seeking recognition as an APP is required to meet two of the following three criteria: certification in a relevant area of practice, a postgraduate residency program,

or one year of experience providing clinical services to patients under a CPA or protocol with another practitioner.¹⁵ A California law passed on October 1, 2013, authorizes APP pharmacists to perform a series of expanded functions:¹⁶

- Prescribing nicotine-replacement products that support tobacco cessation if the pharmacist has completed related training and follows specified procedures;
- Initiating and administering immunizations for people three years of age and older;
- Initiating and furnishing hormonal contraception; and
- Ordering and interpreting tests to monitor drug safety.

The law also grants pharmacists provider status but does not expressly authorize Medicaid reimbursement for professional APP services.¹⁷

New Mexico's Pharmacist Prescriptive Authority Act, enacted in 1993, recognized pharmacists as midlevel practitioners who can manage primary care patients independently in written collaboration with a physician. Under that designation, pharmacists are allowed to prescribe and dispense medications in accordance with state law.

In North Carolina, the Clinical Pharmacist Practitioner (CPP) Act became effective July 1, 2000. CPPs must meet specific qualifications and receive approval by

¹² Nicole Paolini Albanese and Michael J. Rouse, *Scope of Contemporary Pharmacy Practice: Roles, Responsibilities, and Functions of Pharmacists and Pharmacy Technicians* (Washington, DC: Council on Credentialing in Pharmacy, February 2009), http://pharmacycredentialing.org/Contemporary_Pharmacy_Practice.pdf (accessed November 3, 2013).

¹³ Joint Commission of Pharmacy Practitioners, "Future Vision of Pharmacy Practice," 2004, <http://www.aacp.org/resources/education/cape/Documents/Other%20Pharmacy%20Association%20Related%20Documents/JCPP%20Vision%20for%20Pharmacy%20Practice%202004%20and%202008.pdf> (accessed February 1, 2014).

¹⁴ Scott Giberson, Sherri Yoder, and Michael Lee, *Improving Patient and Health Systems Outcomes Through Advanced Pharmacy Practice: A Report to the US Surgeon General (Office of the Chief Pharmacist, US Public Health Service)*, <http://www.usphs.gov/corpslinks/pharmacy/documents/2011AdvancedPharmacyPracticeReporttotheUSSG.pdf> (accessed September 15, 2014).

¹⁵ California Senate Committee on Business, Professions, and Economic Development, *Pharmacy Practice: Hearing on S.B. 493*, April 22, 2013, http://www.leginfo.ca.gov/pub/13-14/bill/sen/sb_0451-0500/sb_493_cfa_20130418_144405_sen_comm.html (accessed September 15, 2014).

¹⁶ Ibid.

¹⁷ Ibid.

both the medical and pharmacy boards.¹⁸ The law authorizes the CPP to implement predetermined drug therapies as outlined by a drug therapy management agreement. Those therapies include diagnosis and product selection by the patient's physician; modification of prescribed drug dosages, dosage forms, and dosage schedules by the CPP; and the CPP being allowed to order laboratory tests. A drug therapy management agreement is specific to an individual patient, physician, pharmacist, and disease.¹⁹

Despite formal laws recognizing APPs, the inability to bill and receive adequate reimbursement for their services continue to create barriers to wider adoption of APPs throughout the health care delivery system.

The Evolving Role of Pharmacists: Integration into Chronic Care Delivery Teams

Health care experts increasingly agree that including pharmacists on chronic care delivery teams can improve care and reduce the costs of treating chronic illnesses.²⁰ The prevalence of adults who have mul-

multiple chronic diseases, such as heart disease, stroke, cancer, arthritis, hepatitis, and asthma, is increasing in the United States, and almost half of U.S. adults—approximately 117 million people—have at least one chronic disease.²¹ Most people living with more than one chronic disease take multiple medications to manage their conditions and related co-morbidities but commonly receive uncoordinated and fragmented care with little follow-up.²² From 1999 to 2008, the percentage of Americans who used two or more prescription drugs increased from 25 percent to 31 percent, and the number of patients using five or more drugs increased from 6 percent to 11 percent.²³ In fact, the average number of prescriptions per capita provided to Americans has increased, from 10.1 in 1999 to 12.6 in 2009.²⁴ As the number of medications rises, many patients have trouble adhering to medication regimens.²⁵ The rate of unfilled prescriptions and prescriptions that patients fill but fail to pick up also has trended upwards.²⁶ The consequences of low or nonadherence to medication therapy can be serious, including medical complications, increased health care costs, and even death.²⁷

¹⁸ An Act Authorizing the North Carolina Medical Board and the Board of Pharmacy to Adopt Rules to Approve Clinical Pharmacist Practitioners to Practice Drug Therapy Management Pursuant to a Drug Therapy Management Agreement, General Assembly of North Carolina, Session Law 1999–290, <http://www.ncleg.net/EnactedLegislation/SessionLaws/HTML/1999-2000/SL1999-290.html> (accessed September 15, 2014).

¹⁹ “Pharmacy Laws of North Carolina,” North Carolina Board of Pharmacy, <http://www.ncbop.org/LawsRules/Statutes.pdf> (accessed September 15, 2014).

²⁰ Scott Giberson, *Improving Patient and Health Systems Outcomes*.

²¹ Brian W. Ward, Jeannine S. Schiller, and Richard A. Goodman, “Multiple Chronic Conditions Among US Adults: A 2012 Update,” *Preventing Chronic Disease* 11 (April 17, 2014), doi:10.5888/pcd11.130389.

²² U.S. Department of Health and Human Services, “The Challenge of Managing Multiple Chronic Conditions” <http://www.hhs.gov/ash/initiatives/mcc/article.html> (accessed January 8, 2014); U.S. Department of Health and Human Services, “Multiple Chronic Conditions: A Strategic Framework” (December 2010), http://www.hhs.gov/ash/initiatives/mcc/mcc_framework.pdf (accessed January 8, 2014); and Mary E. Tinetti, Sidney T. Bogardus, and Joseph V. Agostini, “Potential Pitfalls of Disease-Specific Guidelines for Patients with Multiple Conditions,” *The New England Journal of Medicine* 351 no. 27 (December 30, 2004): 2870–74.

²³ Qiuping Gu et al. NCHS Data Brief, *Prescription Drug Use Continues to Increase: U.S. Prescription Drug Data for 2007–2008*, U.S. Centers for Disease Control and Prevention, September 2010, <http://www.cdc.gov/nchs/data/databriefs/db42.htm> (accessed September 12, 2014).

²⁴ Kaiser Family Foundation, “Prescription Drug Trends” (May 2010), <http://kaiserfamilyfoundation.files.wordpress.com/2013/01/3057-08.pdf> (accessed September 15, 2014).

²⁵ Murray Aitken and Silvia Valkova, *Avoidable Costs in U.S. Healthcare: The \$200 Billion Opportunity from Using Medicines More Responsibly* (Parsippany, NJ: IMS Institute for Health Informatics, June 2013), http://www.imshealth.com/deployedfiles/imshealth/Global/Content/Corporate/IMS%20Institute/RUOM-2013/IHII_Responsible_Use_Medicines_2013.pdf (accessed September 15, 2014).

²⁶ Ibid.

²⁷ Patrick J. McDonnell and Michael R. Jacobs, “Hospital Admissions Resulting from Preventable Adverse Drug Reactions,” *Annals of Pharmacotherapy* 36 no. 9 (September 1, 2002): 1331–36, doi:10.1345/aph.1A333; Gordon D. Schiff et al., “Decompensated Heart Failure: Symptoms, Patterns of Onset, and Contributing Factors,” *The American Journal of Medicine* 114 no. 8 (June 1, 2003): 625–30, doi:10.1016/S0002-9343(03)00132-3; B.L. Senst et al., “Practical Approach to Determining Costs and Frequency of Adverse Drug Events in a Health Care Network,” *American Journal of Health-System Pharmacy* 58 no. 12 (June 1, 2001): 1126–32, <http://www.ajhp.org/content/58/12/1126> (accessed December 17, 2014); and P.T. Rodgers and D.M. Ruffin, “Medication Nonadherence: Part II—A Pilot Study in Patients with Congestive Heart Failure,” *Managed Care Interface* 11 no. 9 (September 1998): 67–69, 75, <http://europepmc.org/abstract/med/10187590> (accessed December 17, 2014).

More intensive patient care that pharmacists can provide includes MTM, health improvement and wellness counseling, disease-prevention services, and primary care.²⁸ MTM services are intended to improve therapeutic outcomes from medications for individual patients and include the following components:

- Performing or obtaining necessary assessments of the patient's health status;
- Formulating a medication treatment plan;
- Selecting, initiating, modifying, or administering medication therapy;
- Monitoring and evaluating the patient's response to therapy, including safety and effectiveness;
- Performing a comprehensive medication review to identify, resolve, and prevent medication-related problems, including adverse drug events;
- Documenting the care delivered and communicating essential information to the patient's other primary care providers;
- Providing verbal education and training designed to enhance patient understanding and appropriate use of his or her medications;
- Providing information, support services, and resources designed to enhance the patient's adherence to therapeutic regimens; and
- Coordinating and integrating services for MTM

within the broader health care management services provided to the patient.²⁹

A retrospective analysis of an MTM program in North Carolina suggests that MTM services can improve outcomes and reduce costs, but little additional outcome data are available to analyze MTM services.³⁰ In addition, the wide variation in MTM programs makes it difficult to generalize results of individual programs.³¹ A meta-analysis conducted in 2010 reviewed 298 evaluations of pharmacists' provision of some level of direct intervention, such as MTM services, disease state management, or education.³² The analysis demonstrated that pharmacists lowered risks associated with various health problems, such as low-density lipoprotein cholesterol, blood pressure, and adverse drug events.³³ In addition, a literature review of pharmacists participating in multidisciplinary teams shows that more intensive and direct care of chronically ill patients by pharmacists reduces preventable adverse drug events and prescribing errors and reduces costs.³⁴

Pharmacists play an evolving role as medication-use experts on teams of health care providers.³⁵ That role can include initiating and modifying drug therapies or performing lab tests when the collaborating health provider agrees that those services are necessary and that the pharmacist is capable of safely providing

²⁸ V.J. Willey et al., "Pharmacist Interventions Within a Community Physician Based Medical Home Practice: Diabetes Clinical Outcomes," *Value in Health* 14 no. 3 (May 2011): A51, [http://www.valueinhealthjournal.com/article/S1098-3015\(11\)00429-3/fulltext](http://www.valueinhealthjournal.com/article/S1098-3015(11)00429-3/fulltext) (accessed December 17, 2014); Elizabeth McGann, "Pharmacists as Direct-Care Providers: An Expert Interview with Vincent J. Willey, PharmD," Medscape, <http://www.medscape.com/viewarticle/756349> (accessed September 15, 2014); and Jessica Cherian et al., "Evolving Role of Pharmacists in Care Coordination: A National Survey," *Therapeutic Innovation & Regulatory Science* 48 no. 2 (March 2014): 266–71, <http://search.proquest.com/docview/1511639062> (accessed December 17, 2014).

²⁹ Benjamin M. Bluml, "Definition of Medication Therapy Management: Development of Professionwide Consensus," *Journal of the American Pharmacists Association* 45 no. 5 (October 2005): 566–72, www.ncbi.nlm.nih.gov/pubmed/16295641 (accessed December 17, 2014).

³⁰ Gretchen F. Jenkins, "Retrospective Analysis of Community Pharmacists' Recommendations in the North Carolina Medicaid Medication Therapy Management Program," *Journal of the American Pharmacists Association* 50 no. 3 (May 1, 2010): 347, doi:10.1331/JAPhA.2010.09021.

³¹ Annette N. Pellegrino et al., "Medication Therapy Management Services," *Drugs* 69 no. 4 (March 1, 2009): 393–406, doi:10.2165/00003495-200969040-00001.

³² Marie A. Chisholm-Burns et al., "US Pharmacists' Effect as Team Members on Patient Care: Systematic Review and Meta-Analyses," *Medical Care* 48 no. 10 (October 2010): 923–33, doi:10.1097/MLR.0b013e3181e57962.

³³ Ibid.

³⁴ Thomas De Rijdt, Ludo Willems, and Steven Simoens, *Economic Effects of Clinical Pharmacy Interventions: A Literature Review*, American Society of Health-Systems Pharmacists (June 15, 2008), http://www.ashp.org/s_ashp/docs/files/advocacy/policy_alert/AJHP_Economic_Effects_6_15_08.pdf (accessed October 2, 2013).

³⁵ Barbara Farrell et al., "Working in Interprofessional Primary Health Care Teams: What Do Pharmacists Do?" *Research in Social and Administrative Pharmacy* 9 no. 3 (May 2013): 288–301, doi:10.1016/j.sapharm.2012.05.005.

them.³⁶ One way to formalize an interdisciplinary role for pharmacists is through a CPA, which allows for a delegation of specified clinical services to pharmacists. Collaborative drug therapy management agreements, provided under CPAs, include written guidelines or protocols that authorize pharmacists to initiate, modify, or continue drug therapy for a specific patient.³⁷

State-Specific Models of Team-based Care Using Pharmacists

As support for integrating pharmacist-delivered services across the care continuum grows, states, payers, and health care systems are exploring different team-based models of care using targeted medication therapy management (MTM) pharmacy services for chronically ill patients or patients who are unlikely to take their medications as directed. Three examples in **Minnesota**, **Mississippi**, and **Ohio** are highlighted here.

Minnesota: MTM Through Medicaid and State Employee Plans

In 2005, Minnesota began coverage of pharmacist MTM services for patients in its Medicaid and state employee health programs.³⁸ MTM services were initially limited to patients receiving four or more prescriptions to treat two or more chronic medical conditions or patients who had received prior authorization because a drug therapy problem was identified and deemed likely to result in significant nondrug costs.³⁹

A 2007 evaluation of the first year of MTM services reviewed the work of 34 pharmacists with 259 patients.⁴⁰ Results indicate that pharmacists identified and resolved

587 drug therapy problems that included unnecessary drug treatment, the need for additional drug treatment, remediation for doses that were too high or too low, and noncompliance.⁴¹ Patients who have diabetes and were receiving MTM services were more likely to achieve performance standards for diabetes treatment (36 percent achieved the standard compared with only 6 percent statewide). The state also produced modest annual savings. Since 2007, the Medicaid program has expanded coverage to include home- and interactive video-delivered MTM. It has also expanded to include patients taking three or more medications to treat or prevent one or more chronic conditions. In 2010, Minnesota's Ryan White program began reimbursing pharmacists for MTM services using the same general structure as the Medicaid program.

To build on the success of the program and capture further savings, the state in 2013 expanded this effort for diabetic patients within the State Employee Group Insurance Plan in collaboration with the University of Minnesota College of Pharmacy. The program provides reimbursement for MTM services intended to improve outcomes.⁴² As an incentive for patients to participate, all MTM services as well as diabetes medications and supplies are made available to the patient without a copayment. Finally, patients who successfully completed the program receive a \$250 deposit to their health reimbursement account.

Mississippi: The Delta Pharmacy Patient Care Management Project

In 1998, Mississippi was the first state to receive Medicaid waiver approval to reimburse pharmacists for patient care.⁴³ The resulting program was a

³⁶ Krystalyn Weaver, "Collaborative Practice Agreements Vary Among the States," American Pharmacists Association, <http://www.pharmacist.com/collaborative-practice-agreements-vary-among-states> (accessed September 15, 2014).

³⁷ Ibid.

³⁸ Brian Isetts, *Evaluating Effectiveness of the Minnesota Medication Therapy Management Care Program. Final Report*, December 14, 2007.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Diana Yap, "MTM in Minnesota: Plan Pays Pharmacists for Performance," American Pharmacists Association, <http://www.pharmacist.com/mtm-minnesota-plan-pays-pharmacists-performance> (accessed October 5, 2013).

⁴³ Lisa Daigle and David Chen, "Pharmacist Provider Status in 11 State Health Programs," American Society of Health-Systems Pharmacists, September 2008, <http://www.ashp.org/DocLibrary/Advocacy/ProviderStatusPrograms.aspx> (accessed September 12, 2014); and "Delta Pharmacy Patient Care Management," Delta Health Alliance, <http://www.deltahealthalliance.org/project/delta-pharmacy-patient-care-management> (accessed September 29, 2013).

collaborative effort between the University of Mississippi School of Pharmacy and community pharmacists. The program provided MTM services in rural areas across the state. Populations that the project served had high rates of poverty and chronic illness (particularly diabetes) and access to few health care providers.

During the first year of the program, the community pharmacists were given training, an MTM toolkit, and assistance with outreach to nonpharmacy providers. The College of Pharmacy also installed health information technology (IT) systems at community pharmacies and worked with large providers to link patient records with the pharmacies' health IT systems.

An evaluation of the program after the third year found that it had provided cost-effective health benefits to participants. The program identified more than 1,000 drug therapy problems.

Ohio: MTM Services for Medicaid-Eligible Patients

In 2012, CareSource, a Medicaid managed care plan, began a comprehensive MTM program for eligible Medicaid enrollees. CareSource, in turn, contracted with OutcomesMTM, a company that designs, delivers, and administers MTM programs.⁴⁴ All plan members were eligible for face-to-face MTM services from specially trained local pharmacists. The efforts are intended to improve health outcomes and reduce costs. Through the program, participating local pharmacists received alerts and information regarding patterns of medication use and evidence-based guidance for working with patients and physicians to close therapy gaps.

In the first year of the MTM program, pharmacists provided 106,239 MTM services, and CareSource reported a \$4.40-to-\$1 return on investment (ROI) for total health care expenditures.⁴⁵

Challenges and Barriers to Maximizing the Effectiveness of Pharmacists Within the Health Care System

Several challenges and barriers prevent the full integration of pharmacists into health care delivery systems. Those challenges fall into three broad categories:⁴⁶

- Laws and regulations governing CPAs;
- Provider recognition in state laws and regulations that enable compensation for pharmacists' direct patient care services; and
- Access to health IT systems.

Variation in State Laws Governing Collaborative Practice Agreements

Although 48 states grant pharmacists the ability to practice collaboratively in some capacity with other health care providers, administrative barriers and lack of flexibility limit pharmacists from practicing to the top of their professional training and education.⁴⁷ For example, state laws and regulations governing CPAs place limitations on practice settings, authority to initiate or modify drug therapy, and the number of patients permitted within a CPA. Some states impose extra requirements for education and training before pharmacists can be eligible to participate in a CPA, while still other states require pharmacy and medical board approval for each CPA.⁴⁸

In most states, pharmacists can modify prescriptions

⁴⁴ OutcomesMTM, "About Us," <http://www.outcomesmtm.com/about-us.aspx> (accessed September 15, 2014).

⁴⁵ Jessica Frank and Jim Gartner, "MTM Services for Managed Medicaid: Results, ROI, and Lessons Learned from One Large MCO" (paper presented at the PBMI Drug Benefit Conference, Las Vegas, Nevada, February 4, 2014).

⁴⁶ Lucinda L. Maine, Katherine K. Knapp, and Douglas J. Scheckelhoff, "Pharmacists and Technicians Can Enhance Patient Care Even More Once National Policies, Practices, and Priorities Are Aligned," *Health Affairs* 32 no. 11 (November 1, 2013): 1956–62, doi:10.1377/hlthaff.2013.0529; and US Surgeon General, *Letter to Scott Giberson [Internet]*. Rockville (MD): Office of the Surgeon General; December 14, 2011, <http://www.usphs.gov/corpslinks/pharmacy/documents/2011SupportLetterFromUSSG.pdf> (accessed September 15, 2014).

⁴⁷ Krystalyn Weaver, "Policy 101: Collaborative Practice Empowers Pharmacists to Practice as Providers," American Pharmacists Association, October 1, 2014, <http://www.pharmacist.com/policy-101-collaborative-practice-empowers-pharmacists-practice-providers> (accessed October 8, 2014).

⁴⁸ Interview with the National Alliance for State Pharmacy Associations, National Governors Association, February 6, 2014.

under a collaborative agreement that allows pharmacists to address drug-related side effects and improve therapeutic outcomes for patients.⁴⁹ Thirty-eight states allow pharmacists to initiate new therapy under a collaborative agreement (see Table 1), but in cases where pharmacists can initiate or modify prescriptions; the extent of the authority is highly variable. For example, some states impose restrictions on which drugs pharmacists can prescribe. In other instances, pharmacists are not permitted to prescribe or modify drug therapy to treat certain diseases. In most states, however, the authorizing physicians with whom a pharmacist works under a CPA may determine those details. Some provider groups argue that the ability to initiate new drug therapy can jeopardize patient safety, although no research is available to support that assertion.⁵⁰

Another challenge comes from the administrative processes required under state laws for pharmacists' participation in CPAs. For example, some states require a separate CPA for each patient a pharmacist and prescriber treat, which limits the ability of physicians and pharmacists to create more efficient agreements at the practice level.⁵¹ In addition, a number of states require that decisions about the structure and contents of CPAs be set in statute or included in CPA rules that the state board of medicine or the state board of pharmacy create. In states with the most restrictive laws, both the pharmacy and medical boards must approve all CPAs.⁵²

To assess the appropriateness of current CPA standards, states can evaluate existing board approval processes as well as practice settings and drug therapy

restrictions to determine whether unnecessary barriers exist for pharmacists and other providers to engage in collaborative arrangements. In addition, states that allow pharmacists to engage in CPAs can analyze existing data sources or administer surveys to measure provider participation in CPA arrangements.

Table 1. Summary of State Variations in CPA Agreements⁵³

CPA Requirements	Total States with Language in Statute
Ability to modify drug therapy	45
Ability to initiate new drug therapy	38

Recognition of Professional Services and Related Payment Issues

The formal recognition of pharmacists as providers in state laws and regulations is a key step toward ensuring that adequate payment is available to support the services they provide. Product-based reimbursement (for example, payment for drug products and the act of dispensing the drug products) drive current payment policies for pharmacy services rather than the direct-care services that pharmacists provide patients. In a 2007 survey, 45 percent of community (retail) pharmacists who reported providing direct care to patients received no compensation for those services.⁵⁴ Medicare and Medicaid compensation policies also limit pharmacists' ability to practice, particularly within integrated care teams. For example, under Medicare Part B, pharmacists are not included

⁴⁹ National Center for Chronic Disease Prevention and Health Promotion, *A Program Guide for Public Health: Partnership with Pharmacists in the Prevention and Control of Chronic Diseases*, Centers for Disease Control and Prevention, August 2012, http://www.cdc.gov/dhdsp/programs/nhdsp-program/docs/pharmacist_guide.pdf (accessed December 17, 2014); and Raymond Hammond et al., "ACCP Position Statement: Collaborative Drug Therapy Management by Pharmacists," American College of Clinical Pharmacy, 2001, <http://www.accp.com/docs/positions/positionstatements/pos2309.pdf> (accessed September 8, 2014).

⁵⁰ "Pharmacists (Position Paper)," American Academy of Family Physicians, <http://www.aafp.org/about/policies/all/pharmacists.html> (accessed September 11, 2014).

⁵¹ Scott Giberson, *Improving Patient and Health Systems Outcomes*; and Raymond Hammond, "ACCP Position Statement."

⁵² Raymond Hammond, "ACCP Position Statement."

⁵³ Krystalyn Weaver, "Policy 101." <https://www.pharmacist.com/policy-101-collaborative-practice-empowers-pharmacists-practice-providers>.

⁵⁴ Jody L. Lounsbury et al., "Evaluation of Pharmacists' Barriers to the Implementation of Medication Therapy Management Services," *Journal of the American Pharmacists Association* 49 no. 1 (January 1, 2009): 51–58, doi:10.1331/JAPhA.2009.017158.

in the statutory definition of *providers* and, therefore, cannot directly bill for patient care services.⁵⁵ Many state and private health plans align their payment policies with Medicare policies and, as a result, do not allow pharmacists to bill directly for patient care services. Moreover, pharmacists’ inability to bill Medicare and others for direct patient care services prevents pharmacists from serving as providers within accountable care organizations (ACOs) and other emerging models of team-based health care built on Medicare systems that charge on a fee-for-service basis.⁵⁶

In contrast, Medicare Part D does reimburse for MTM services when provided under contract with the sponsor of a prescription drug plan. MTM services under Medicare Part D, however, are defined narrowly to include medication review but not services such as chronic disease management, care coordination, or other followup care.⁵⁷

Payment for pharmacy services within state Medicaid or employee programs varies state to state. Within the 15 states that provide Medicaid compensation for direct patient care by pharmacists (see Table 2), the most commonly reimbursed services include smoking cessation, counseling, and other types of preventative services.⁵⁸ As of February 2014, nine states provide Medicaid compensation for MTM services: **Colorado, Iowa, Minnesota, Mississippi, Missouri, New Mexico, Oregon, Texas, and Wisconsin** (see Table 2 below and Table 4 on page 12).⁵⁹ Although the **Ohio** Medicaid

program does not directly reimburse MTM services, Ohio’s largest Medicaid managed care organization, CareSource, covers MTM for all of its members (for more information, see state-specific models on page 6). In addition, **Kentucky, Maryland, Minnesota, North Dakota, and Virginia** provide compensation for MTM services under their state employee health programs.⁶⁰

Table 2. Summary of Pharmacist State Payment Variation⁶¹

Compensation	Total States with Language in Statute
Medicaid payment for professional services	15
Medicaid MTM benefit	9
State employee MTM benefit	5

Access to Health IT Systems

Finally, pharmacists’ adoption, integration, and use of health IT improves their efficiency in daily tasks and increases their access to important information such as patients’ complete drug records.⁶² The rise of health IT in team-based models of delivering integrated care to patients has the potential to improve patient safety and outcomes and lower costs; however, pharmacists have difficulty accessing health IT systems.⁶³ Two national workgroups focused on health IT suggest the adoption of health IT between pharmacists and other provider groups

⁵⁵ Lisa Daigle, “Pharmacist Provider Status in 11 State Health Programs.”

⁵⁶ Social Security Administration, *Title XVIII—Health Insurance for the Aged and Disabled*, “Compilation of the Social Security Laws,” http://www.ssa.gov/OP_Home/ssact/title18/1800.htm (accessed December 9, 2013); and interview with Stacie Maass, American Pharmacists Association, National Governors Association, January 24, 2014.

⁵⁷ Interview with Stacie Maass.

⁵⁸ Interview with the National Alliance for State Pharmacy Associations, National Governors Association, February 6, 2014.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Interview with the National Alliance of State Pharmacy Associations, National Governors Association, February 7, 2014; and Krystalyn Weaver, “NASPA Finds State-Level Provider Status Is Widespread, but Not Necessarily Linked to Payment,” American Pharmacists Association, February 1, 2014, <http://www.pharmacist.com/naspa-finds-state-level-provider-status-widespread-not-necessarily-linked-payment> (accessed June 2, 2014).

⁶² Jacob Holler, “The Role of Information Technology in Advancing Pharmacy Practice Models to Improve Patient Safety,” Pharmacy Times Blog, entry posted January 14, 2013, <http://www.pharmacytimes.com/publications/health-system-edition/2013/January2013/The-Role-of-Information-Technology-in-Advancing-Pharmacy-Practice-Models-to-Improve-Patient-Safety> (accessed January 8, 2014).

⁶³ Jeff Hull, Anthony J. Schueth, and William Hein, “Health Information Technology: Supporting Pharmacy Trends in 2014,” Pharmacy Times Blog, entry posted December 16, 2013, <http://www.pharmacytimes.com/publications/Directions-in-Pharmacy/2013/December2013/Health-Information-Technology-Supporting-Pharmacy-Trends-in-2014> (accessed January 26, 2014).

could improve pharmacists' ability to monitor patient adherence, identify drug interactions, modify medication regimens, and provide care coordination.⁶⁴

The Health Information Technology for Economic and Clinical Health Act of 2009 provided incentives to promote widespread adoption in the meaningful use of health IT across provider groups.⁶⁵ As a result, formal groups have formed at the state and regional levels to coordinate and expand health IT across organizations and health care systems. In many instances, however, those groups have not fully incorporated pharmacists into their efforts, often because state laws do not recognize pharmacists as providers.⁶⁶

To promote increased access to health IT, states are exploring a number of options, including health information exchanges (HIEs).⁶⁷ Pharmacist participation and access to HIEs, however, has been limited. To address operational and readiness challenges, states could increase pharmacist participation in cross-state collaboration with the Medicaid agency, professional boards, health IT vendors, and health systems as well as ensuring full integration of pharmacists into health IT strategies.⁶⁸ Finally, as providers increase their adoption of health IT systems in response to federal initiatives, states could adjust their Medicaid reimbursements to provide incentives for the increased adoption and

⁶⁴ Pharmacy E-Health Information Technology Collaborative, "The Roadmap for Pharmacy Health Information Technology Integration in US Health Care," http://www.pharmacyhit.org/pdfs/11-392_RoadMapFinal_singlepages.pdf (accessed September 8, 2014); and Health Information Technology Workgroup, "Improving Transitions of Care with Health Information Technology: Position Paper," National Transitions of Care Coalition, December 10, 2010, <http://www.ntocc.org/Portals/0/PDF/Resources/HITPaper.pdf> (accessed September 8, 2014).

⁶⁵ Internal Revenue Service, "The American Recovery and Reinvestment Act of 2009: Information Center," <http://www.irs.gov/uac/The-American-Recovery-and-Reinvestment-Act-of-2009:-Information-Center> (accessed July 11, 2014).

⁶⁶ Pharmacy E-Health Information Technology Collaborative, "The Roadmap for Pharmacy Health Information Technology."

⁶⁷ HIEs have been implemented across states as a platform for facilitating interoperability across data systems and provide the infrastructure for information exchange. Lynn Dierker, "The State Connection: State-Level Efforts in Health Information Exchanges," *Journal of AHIMA* 79 no. 5 (May 2008): 40–43, http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_038086.hcsp?dDocName=bok1_038086 (accessed December 17, 2014); and State-Level Health Information Exchange Consensus Project, <http://www.ahimafoundation.org/PolicyResearch/SLHIE.aspx> (accessed September 15, 2014).

⁶⁸ Lynn Dierker, "The State Connection"; Nikki Highsmith and Julia Berenson, "Driving Value in Medicaid Primary Care: The Role of Shared Support Networks for Physician Practices," Commonwealth Fund, 2011, http://hsc.unm.edu/community/toolkit/docs1/1484_Highsmith_driving_value_Medicaid_primary_care.pdf (December 17, 2014); and Pharmacy E-Health Information Technology Collaborative, "The Roadmap for Pharmacy Health Information Technology."

⁶⁹ Ibid.

integration of health IT across all providers, including pharmacists.⁶⁹

Conclusion

The integration of pharmacists into team-based models of care could potentially lead to improved health outcomes. To realize that prospect, states should consider engaging in coordinated efforts to address the greatest challenges

pharmacists face: restrictions in CPAs, recognition of pharmacists as health care providers to ensure compensation for direct patient care services, and access to health IT systems. Examining state-specific challenges and promising practices from other states will allow states to develop policies that permit pharmacists to practice within the full scope of their professional training across the health care continuum.

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Table 3. Summary of State Policy Considerations

Challenges	Policy Considerations	State Example
Collaborative practice provisions	<ul style="list-style-type: none"> • Enact broad collaborative practice provisions that allow for specific provider functions to be determined at the provider level rather than set in state statute or through regulation. • Evaluate practice setting and drug therapy restrictions to determine whether pharmacists and providers face disincentives that unnecessarily discourage collaborative arrangements. • Examine whether CPAs unnecessarily dictate disease or patient specificity. 	<p>Virginia: In 2013, Virginia’s House Bill 1501 amended the collaborative practice provisions to allow pharmacists to enter into an agreement with multiple providers within a single practice.⁷⁰ Previously, a pharmacist could enter into an agreement only with a provider of medicine, osteopathy, or podiatry and their designated alternate practitioners.</p>
Provider recognition and compensation for pharmacist-delivered care services	<ul style="list-style-type: none"> • Recognize pharmacists as providers within the state insurance code, Medicaid, Medicaid managed care, HIEs, and state employee plans, and encourage private insurers to do the same. • Include authorizing language that recognizes pharmacist-delivered services under a certified patient-centered medical home model, ACO, or equivalent. • Conduct stakeholder meetings with private organizations, health systems, and provider groups to assess existing payment methodologies and incentive structures. • Examine Medicaid policies, Medicaid managed care contracts, and state employee policies around payment for pharmacists’ services to ensure that beneficiaries have access to pharmacy services 	<p>Nebraska: As proposed, Legislative Bill 858 would allow insurance companies to recognize pharmacists as health care providers who have the authority to provide health care services that include MTM services, chronic disease management services, comprehensive medication review, and other professional services.⁷¹</p> <p>New Jersey: As proposed, Senate Bill 2568 would require coverage of MTM in Medicaid and NJ FamilyCare.⁷²</p>
Access to health IT systems	<ul style="list-style-type: none"> • Work with state HIEs to ensure that pharmacists have the ability to access health IT and electronic patient records within collaborative and team-based models of care. • Encourage the adoption of interoperable health IT systems across care settings. 	<p>Minnesota: By January 1, 2015, all hospitals and health care providers, including pharmacists in Minnesota, must have an interoperable electronic health records (EHR) system within their hospital system or clinical practice setting.⁷³</p>

⁷⁰ LIS: Virginia’s Legislative Information System, 2013 session, HB 1501 Pharmacy; Collaborative Agreements, <http://lis.virginia.gov/131/sum/HB1501.HTM> (accessed February 10, 2014).

⁷¹ Nebraska Legislature, LB 858: Provide Requirements Relating to Pharmacists and Health Care Services in Health Insurance, http://www.legislature.ne.gov/bills/view_bill.php?DocumentID=21926 (accessed February 8, 2014).

⁷² An Act Concerning Medicaid and NJ FamilyCare and Supplementing Title 30 of the Revised Statutes, 215th New Jersey Legislature, http://www.njleg.state.nj.us/2012/Bills/S3000/2568_11.HTM accessed (September 15, 2014).

⁷³ Minnesota Department of Health, Division of Health Policy, Office of Health Information Technology, “Guidance for Understanding the Minnesota 2015 Interoperable EHR Mandate,” <http://www.health.state.mn.us/e-health/hitimp/2015mandateguidance.pdf> (accessed January 22, 2014).

Table 4. Summary of State Scope of Practice Rules Governing Pharmacists

State	Medicaid Compensation			CPAs	
	Professional Services	MTM or Another Comprehensive Service	Allowed (Some Restrictions)	Allowed but Restrictive	Not Allowed
Alabama					X
Alaska	X		X		
Arizona			X		
Arkansas			X		
California			X		
Colorado	X	X	X		
Connecticut			X		
Delaware					X
Florida				X ⁷⁴	
Georgia			X		
Hawaii			X		
Idaho			X		
Illinois			X		
Indiana	X		X		
Iowa	X	X	X		
Kansas			X		
Kentucky			X		
Louisiana			X		
Maine			X		
Maryland			X		
Massachusetts			X		
Michigan			X		
Minnesota	X	X	X		
Mississippi	X	X	X		
Missouri	X	X	X		
Montana	X		X		
Nebraska	X		X		
Nevada			X		
New Hampshire				X ⁷⁵	
New Jersey			X		
New Mexico	X	X	X		
New York				X ⁷⁶	
North Carolina			X		

⁷⁴ Cannot initiate or modify.

⁷⁵ Limited to institutional settings.

⁷⁶ Limited to teaching hospitals.

State	Medicaid Compensation			CPAs	
	Professional Services	MTM or Another Comprehensive Service	Allowed (Some Restrictions)	Allowed but Restrictive	Not Allowed
North Dakota	X			X ⁷⁷	
Ohio				X ⁷⁸	
Oklahoma				X ⁷⁹	
Oregon	X	X	X		
Pennsylvania				X ⁸⁰	
Rhode Island			X		
South Carolina			X		
South Dakota			X		
Tennessee			X		
Texas	X	X		X ⁸¹	
Utah	X		X		
Vermont			X		
Virginia			X		
Washington			X		
West Virginia			X		
Wisconsin	X	X	X		
Wyoming			X		
TOTALS	15	9	40	8	2

Notes

- The National Governors Association worked in collaboration with and cited information from state boards of pharmacy, the National Alliance of State Pharmacy Associations, and the American Pharmacist Association. Information for the summary of state scope of practice rules was updated as of October 2014.
- Data represented in the chart does not include the District of Columbia or U.S. territories.
- Professional services provided by a pharmacist, although not exhaustive, includes MTM, smoking cessation, counseling, and administration of immunizations.
- Medicaid recognition and payment vary depending on the state and are determined based on which pharmacist-administered services are classified as covered services.
- The CPA requirement categories were primarily determined based on analysis of state regulatory classifications and trends.
- The column Allowed but Restrictive primarily includes restrictions relating to practice setting, board approval, and additional educational requirements.
- For more information, visit <http://www.naspa.us> and <http://www.pharmacist.com>.

⁷⁷ Limited to institutional settings.

⁷⁸ Agreement needed for each disease state.

⁷⁹ Limited to vaccines and injectable medications.

⁸⁰ Limited to institutional settings.

⁸¹ Limited to institutional settings.