

ASHP Statement on the Community Pharmacist's Role in the Care Continuum

Position

The American Society of Health-System Pharmacists (ASHP) believes that community pharmacists are skilled clinicians who play an important role in the care continuum as equal, essential, and valued members of the healthcare team. Community pharmacists provide direct patient care, advance team-based care, manage patient-centered clinical services, and serve as leaders within their communities and health systems. Community pharmacists optimize care by providing educational consultations, medication safety and optimization services, chronic condition management, patient empowerment, wellness services, care coordination, and other services.

Community pharmacists lead teams that support patient access and safety through clinical care, medication preparation and dispensing services, regulatory compliance, operational efficiency, and integration services across settings of care. Further, community pharmacists lead, manage, and contribute to innovative practices and operations that advance pharmacy practice and contribute to financial sustainability.

The purpose of this statement is to recognize the patient-centered care services provided by community pharmacists and encourage healthcare leaders to utilize community pharmacists to the full extent of their expertise by continuing to integrate them across the continuum of care. This statement will describe current practice of health-system-based community pharmacy and identify future opportunities for practice advancement, though the patient-centered core responsibilities described are generalizable to all community pharmacy practice settings.

Community pharmacists should be recognized as medication experts and accountable partners for optimal health outcomes. ASHP urges community pharmacists and leaders to advocate for the value of community pharmacists to internal and external stakeholders so their outcomes-oriented clinical and business expertise is recognized.

Background

Community pharmacies are found across an array of practice areas, including health systems, traditional retail sites, clinics, independent pharmacies, and integrated within ambulatory care settings. Community pharmacy ranks among the most frequent patient touch points in healthcare. More than 90% of Americans live within 5 miles of a pharmacy,¹ and patients visit their community pharmacist 12 times more frequently than their primary care provider.²

Patients can benefit from convenient access to healthcare services, and community pharmacy practitioners are uniquely positioned to take an active role in improving therapeutic outcomes and providing comprehensive and longitudinal patient-centered care. According to the Centers for Disease Control and Prevention, nearly half of Americans use at least one prescription medication each month,³ and 40% of U.S. adults are managing two or more chronic conditions.⁴ Innovative community pharmacy practices have the potential to significantly impact outcomes, such as reducing hospital readmission rates, preventing drug-induced harm, and increasing medication access and adherence.⁵⁻⁷ Studies have also shown that community pharmacist-led interventions have a positive impact on a wide range of chronic diseases, including diabetes, cardiovascular disease, hyperlipidemia, and HIV/AIDS, and have



demonstrated a decrease in medical and healthcare costs.⁸⁻¹⁰ As the healthcare landscape shifts toward a value-based framework, there is general agreement on the favorable impact of community pharmacists in increasing access to care and providing preventive health services.¹¹⁻¹⁶

Core responsibilities

Patient care. Pharmacists practicing in community settings can both integrate into specific patient care teams and act as health and wellness advocates in their practice setting. Health-system-based community pharmacists have uniquely integrated tools, including electronic health record (EHR) access and communication methods, that facilitate these patient care activities. Community pharmacists are critical in ensuring that patients in the outpatient setting receive the medications they need through patient-centered dispensing, while also providing clinical services that optimize patient care and outcomes. The following encompasses many of the core clinical responsibilities of community pharmacists.

- 1. Medication utilization reviews:** Patients may routinely seek care from many different sources and may or may not choose to use a single pharmacy for prescriptions. Community pharmacists are well positioned to utilize the information from their own system as well as information obtained from the patient and other pharmacy locations to compile a comprehensive medication list. Community pharmacists can then use this information to optimize the patient's medication therapies. Optimization includes, but is not limited to, utilizing this list to ensure that each medication is an appropriate agent, prescribed at an appropriate dose and for an appropriate duration. Information elucidated in this broad-spectrum patient care approach can then be communicated to the patient's entire healthcare team, reducing the risk for adverse outcomes related to incomplete understanding of the patient's medication regimen.
- 2. Medication access:** Community pharmacists identify and help resolve medication access barriers. No other care setting offers the opportunity to routinely identify and overcome barriers to medication access and appropriate use such as cost, availability, harm reduction (e.g., providing naloxone), and dosage form modifications. During dispensing and at the point of sale, community pharmacists have the opportunity to engage the patient in a discussion regarding affordability of and access to their medications. These discussions often incorporate a variety of resources, including manufacturer discount programs, therapeutic interchanges, and use of charitable resources. In some settings, community pharmacists assist with the prior authorization process as well. Programs offered by community pharmacies (e.g., medication bedside delivery in acute care settings and home delivery in ambulatory care settings) can overcome transportation-related access barriers. These services are part of a broader effort to improve health equity.
- 3. Comprehensive medication management:** Community pharmacists are trained to assess and improve medication regimens. Community pharmacists provide cognitive services to patients that go beyond the dispensing-focused prospective drug utilization reviews, including comprehensive medication reviews, medication reconciliation, and chronic disease management. These services can be especially impactful for patients

experiencing transitions between acute and ambulatory care with a significant change in health status. In addition, community pharmacists integrate targeted services such as medication adherence support, therapeutic optimization, reversal agent access, and duplicative therapy adjustments into their daily workflow.

- 4. *Point-of-care testing and treatment:*** Advances in technology have increased the availability of testing that can be done outside laboratories, increasing access and convenience for patients. The advent of direct-to-consumer testing, in addition to CLIA-waived testing, has spurred a need for healthcare professionals to assist in providing and/or interpreting test results, formulating next steps, and in some cases initiating appropriate treatment. Community pharmacists perform and/or interpret point-of-care testing, including patient-initiated pharmacogenomics testing, and assist patients in understanding their test results. This service may lead to provision of targeted treatment for acute infections or recommendations to modify medication regimens that can be shared with the patient's other healthcare providers. Recognizing that not all patients with healthcare needs may be able to come to a pharmacy, community health screening events offer a mechanism for community pharmacists to identify patients in need of additional assessment and treatment for previously undiagnosed conditions (e.g., high blood pressure, hyperlipidemia, diabetes, chronic kidney disease).
- 5. *Preventive care provision:*** Community pharmacists support patient wellness, both in a usual or daily setting and when patients can be exposed to new or potentially hazardous conditions. Wellness care involves preventive interventions (e.g., Medicare Wellness Visits, health screenings) or travel consultations to prepare travelers for pathogens and adverse conditions they may encounter abroad. Other preventive and wellness services may include provision of pre- or post-exposure prophylaxis against HIV infection or oral contraceptives. In addition, access to many different vaccines with different payer models is a unique aspect of community pharmacy that has increased patient access to vaccines. The COVID-19 pandemic highlighted the value of community pharmacists in ensuring that patients could easily receive recommended vaccines, and rates of routine immunizations have increased as community pharmacists have expanded vaccination services.^{17,18}
- 6. *Patient and community education:*** Community pharmacists have chosen to practice in a setting that enables them to be a resource for patient education on many different levels. This role includes not only patient education and counseling regarding specific medications, over-the-counter products, and complementary and alternative medicines, but also more comprehensive medication education (e.g., storage, appropriate administration, safe combinations with other medications or supplements, recommended disposal). Many community pharmacists and pharmacies offer programs that provide education and support for specific conditions, such as the Diabetes Self-Management Education and Support (DSMES) program.¹⁹ Community pharmacists may be involved in identifying patients who struggle with substance use disorders and can offer resources and referrals to additional care providers. Pharmacists in this setting can also serve as educational resources for the broader community during health screenings, drug take-back events, and community wellness and outreach events. The

community pharmacist provides this education in a manner that is tailored to each patient's educational needs, including language and health-literacy barriers.

- 7. Medication safety:** Community pharmacists serve as advocates for the safe use of medications in many ways. The interventions of community pharmacists are highly impactful on patient safety, whether this is in implementation of the Institute for Safe Medication Practices Community Pharmacy Action Agenda items,²⁰ recognition and mitigation of dangerous drug-drug or drug-disease interactions, or ensuring a patient's understanding of their medication regimen. Community pharmacists also support safe use of medications by working on a broader scale within their organizations or locations to perform continuous quality improvement processes and providing medication safety resources for other healthcare disciplines. Outreach to the community can raise awareness of the risks associated with medication misuse and can prevent harm.

Operations. In addition to core patient care responsibilities, community pharmacists are responsible for day-to-day operations of the pharmacy and ensuring compliance with state and federal laws and regulations, as well as accreditation standards. The following encompasses the core operations of the community pharmacy that the pharmacist manages or supports.

- 1. Team supervision:** Community pharmacists oversee daily operations, including day-to-day staffing levels and maintaining appropriate pharmacist-to-technician staffing ratios, developing workstation and workflow expectations and optimizations, and supervising learners.
- 2. Regulatory compliance:** Community pharmacists ensure compliance with all regulations, including all state and federal laws, Drug Enforcement Administration regulations, applicable United States Pharmacopeia (USP) standards (e.g., USP 795), 340B program compliance as applicable, and additional requirements of accreditation and governing bodies.
- 3. Record-keeping:** Community pharmacists maintain all records (e.g., inventory, dispensing) in compliance with the Health Insurance Portability and Accountability Act of 1996, state, and federal regulations.
- 4. Inventory management:** Community pharmacists manage the pharmacy's inventory to ensure the needs of the patients are served while preventing a surplus of inventory. Inventory management includes examination of inventory turns, proper security and storage of medications, and proper inventory management practices as it relates to the 340B program. Additionally, community pharmacists navigate drug shortages.
- 5. Fiscal management:** Community pharmacists manage billing, revenue cycles, inventory costs, labor, and operational expenses in a fiscally responsible way. Pharmacy leaders also develop annual budgets and create volume projections for the pharmacy.
- 6. Compounding:** Compounding services can be offered to patients when individualized pharmaceutical products are not commercially available. If the community pharmacy is part of a health system, compounded nonsterile preparations available to patients when admitted to the hospital can be made available in the community pharmacy for continuation of therapy. Many community pharmacists are able to refer patients to sterile compounding facilities if needed.

- 7. **Program and protocol development:** Community pharmacies offer relevant services such as vaccination and meds-to-beds services as applicable. Additional clinical services may also be provided, such as medication synchronization, medication adherence packaging, and medication delivery programs. Clinical services such as hormonal contraception prescribing, smoking cessation, COVID therapeutics, and immunizations may be provided through standing orders or collaborative practice agreements as allowed by state and federal laws.
- 8. **Customer service:** Community pharmacists provide excellent customer service not only to patients and customers but also to internal providers and stakeholders in the organization. Pharmacists can connect with the patient’s providers to determine alternatives in the event of a drug shortage, to navigate insurance restrictions as needed, and to accommodate financial restrictions limiting patient access.
- 9. **Access to health data:** Community pharmacists utilize the patient’s EHR to ensure comprehensive care for patients. Where EHR access is not available, community pharmacists may pursue access to health information exchange platforms. Similarly, community pharmacies may integrate their dispensing records into the patient’s EHR.
- 10. **Health literacy:** Community pharmacists promote health equity by recognizing and accommodating the health literacy of their patients. Community pharmacists can provide prescription labels and care notes in the patient’s preferred language or in the preferred modality for visually or hearing-impaired patients, at an appropriate reading level, and utilizing the patient’s preferred name.
- 11. **Drug disposal:** With the rise of the opioid epidemic and overdoses, some community pharmacies serve as drug disposal sites, allowing patients to safely dispose of unwanted medications.

Expanded roles

While the clinical and operational functions described above are fundamental in today’s practice for community pharmacists, there are many opportunities to expand how community pharmacists demonstrate value in providing direct patient care. Community pharmacists are poised to expand their roles due to their accessibility, in-depth knowledge of the medication-use process, and ability to quickly pivot and adapt to the changing healthcare landscape (Table 1).

Table 1. Domains of opportunity for expanded community pharmacist roles.

<p>Impacting Health Outcomes</p>	<ul style="list-style-type: none"> • Expand the use of and design new collaborative practice agreements. • Provide access to point-of-care testing for a variety of disease states (e.g., influenza, group A <i>Streptococcus</i>, human immunodeficiency virus, hepatitis C, coronaviruses, oral contraceptives, and chronic diseases). • Engage patients in health and wellness initiatives (e.g., smoking cessation, weight management, asthma, chronic heart failure,
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	<p>chronic obstructive pulmonary disease, diabetes, hyperlipidemia, hypertension, anticoagulation, medication adherence).</p> <ul style="list-style-type: none"> • Promote preventive care such as establishing a primary provider and health screenings.
Education	<ul style="list-style-type: none"> • Incorporate learners at all levels by expanding opportunities for clinical rotation experiences and residency programs. • Continue to support technician education and advancement initiatives. • Encourage practitioners to meet the needs of evolving patient populations through gaining advanced clinical knowledge.
Health Equity	<ul style="list-style-type: none"> • Overcome barriers that cause health inequities in patient care.
Technology	<ul style="list-style-type: none"> • Identify how technology can be leveraged to create operational efficiencies in practice. • Expand or partner in developing precision medicine and pharmacogenomics opportunities. • Develop and evaluate artificial intelligence and cognitive support tools. • Support patients in their wellness journey by use of technology such as health apps, wearable devices, and other tools.
Patient-centric Models	<ul style="list-style-type: none"> • Perform ongoing evaluations of the patient-centered medical home model or hospital-at-home services. • Leverage technology to offer clinical services through in-person care, health applications, patient portals, and telehealth options.
Innovation	<ul style="list-style-type: none"> • Collaborate with clinicians to increase pharmacy-offered clinical services to alleviate provider burnout. • Enhance the patient experience by offering a team-based approach to the continuum of care. • Identify opportunities that not only advance patient care but also increase the pharmacy department's financial contribution to the organization. • Continue to advocate for billing avenues and recognition of services by payers.
Public Health	<ul style="list-style-type: none"> • Evaluate and investigate community health issues. • Educate the community about public health. • Engage in organizational efforts to prepare and respond to emergencies which may include leadership roles on emergency managements teams. • Develop and implement programs related to medication and vaccine access. • Offer wellness, disease prevention, and treatment services (e.g. immunizations, antimicrobial stewardship, HIV prevention,

	<p>diabetes prevention programs, hormonal contraception education, substance abuse prevention/treatment).</p> <ul style="list-style-type: none"> • Support disease surveillance and monitoring initiatives (e.g. antiviral dispensing rates for infectious disease data trending, asthma inhaler use and environmental or air quality concerns)
Population Health	<ul style="list-style-type: none"> • Participate in the development of metrics to identify and care for specific patient populations. • Promote vaccine confidence within communities. • Extend services to virtual care and video visits. • Partner with clinicians, health plans, and health system leaders to understand value-based payment models and associated metrics. • Ensure effective chronic disease management that includes evidence-based medication optimization and monitoring. • Identify associated quality measures and develop initiatives to support or address open care gaps (e.g., order routine lab testing, ensure appropriate statin usage, and encourage eye exams for patients with diabetes). • Promote medication adherence and support initiatives to improve medication access. • Promote health equity by identifying and addressing Social Determinants of Health (SDOH) to reduce health care disparities. • Participate in transition of care services to reduce readmissions in target patient populations. • Support and promote cost-effective medication usage to control cost of healthcare
Research	<ul style="list-style-type: none"> • Pursue opportunities to participate in investigational drug research, including dispensing and counseling for commercial and investigational drugs within clinical trials. • Contribute to the body of literature by sharing results of outcomes-based research. • Encourage patient and clinician participation in research. • Contribute to research through data collection.

To be successful in the development of expanded roles for community pharmacy practitioners, all pharmacy team members must be trailblazers, early adopters of practice change, and actively advocating for pharmacy practice advancement.

Practice challenges

Although community pharmacists are well equipped to improve therapeutic outcomes and patient care, practice challenges exist. Declining reimbursements to pharmacies by insurance plans have become increasingly problematic. Since the establishment of performance-based pharmacy contracts by Medicare Part D plans in 2012, price concessions charged to pharmacies

by insurance plans and pharmacy benefit managers increased 170%.²¹ Further, limited payment of pharmacists for clinical services has led to serious financial strains on community pharmacies, forcing closures, and has resulted in lack of access to community pharmacy services in rural settings. Studies showed that 1 in 8 pharmacies closed between 2009 and 2015, a statistic that disproportionately affected independent pharmacies and low-income neighborhoods.²²

The lack of ready access to a pharmacy, a phenomenon labeled “pharmacy deserts,” is a persistent practice challenge. In rural areas, travel time to the nearest pharmacy may hinder access. And although more than 90% of Americans live within 5 miles of a pharmacy, proximity does not guarantee access.²³ Patients may still be stymied by lack of public transportation, limited pharmacy hours, or mobility issues. To promote health equity, patients should be provided easy access to community pharmacy services. Telepharmacy is one option that has been shown to increase patient access to pharmacy services.²⁴

Limited revenue for community pharmacies has further been aggravated by a changing economy and workforce. In a recent report by the National Community Pharmacy Association, 93% of community pharmacists noted their business was affected by inflation. Concurrently, 80% of respondents indicated being affected by supply chain shortages, and more than three quarters of community pharmacists have experienced staffing shortages recently.²⁵

Access to patients' health information also presents a challenge to optimal care, as community pharmacies often do not have access to the patient's complete electronic medical record. To combat this, community pharmacies should pursue access to health information exchange platforms. Similarly, community pharmacy dispensing records should be accessible in the EHR.

Staffing shortages in the community pharmacy and financial strains impact care. Despite increasing evidence favoring community pharmacist involvement in advanced clinical services, uptake is slow. The 2019 National Pharmacist Workforce Study²⁶ found that services such as vaccinations, medication assistance programs, medication therapy management, and medication synchronization are offered in most community pharmacy sites. However, only 43% of community pharmacy respondents indicated that they provide comprehensive medication management, 25%, opioid deprescribing; 24%, disease state management; 20%, point-of-care testing; 19%, injection administration; and 4%, pharmacogenomics testing. The study also identified high workload and inadequate staffing as the top two stressors for pharmacists.

The public perception of the range of roles of pharmacists may also pose a challenge. Though pharmacists provide a myriad of clinical and operational services, patients are often unaware of the extent of the role of the pharmacist in the medication-use process.²⁷ Patients visiting their local community pharmacy may not see the clinical decisions that pharmacists make daily and may not be aware that pharmacists act as a part of their interprofessional care team.

Leveraging pharmacy technicians

As community pharmacists face increased workload demands and limited time, advanced pharmacy technicians can be utilized as pharmacist extenders, furthering pharmacy practice and patient care.²⁸⁻³⁰

Traditional community pharmacy technician roles include entering prescriptions into the pharmacy dispensing system, counting medications, compounding, managing inventory, dealing with billing issues and insurance, and providing customer service at the point of sale. Limiting pharmacy technicians to only these roles does not utilize their full potential.²⁹ An advanced pharmacy technician is an individual who has responsibilities and tasks that go beyond the traditional duties of a standard pharmacy technician and requires a higher level of training, expertise, and often additional certifications. Nontraditional and advanced roles for pharmacy technicians can contribute to the overall impact of community pharmacy practice in patient care.^{28,31-34} Some of these advanced pharmacy technician responsibilities are listed in Table 2. The role of pharmacy technicians is variable depending on the laws of each state and responsibilities highlighted may not encompass all technicians.

Table 2. Advanced pharmacy technician responsibilities in community pharmacy.

Patient care responsibilities	Operational responsibilities
<ul style="list-style-type: none"> • Administer immunizations and promote vaccine confidence. • Collect medication history. • Conduct point-of-care tests. • Identify and resolve barriers to medication access or care. • Enroll patients in patient assistance programs. • Serve as patient advocate. • Assist with patient adherence efforts. • Leverage patient relationships to promote preventive and essential health services. • Obtain additional training (e.g., as a community health worker). 	<ul style="list-style-type: none"> • Engage in technician product verification and tech-check-tech programs. • Coordinate 340B activities. • Manage billing, prior authorizations, and financial affairs. • Manage pharmacist schedules and consultations. • Supervise ancillary staff. • Provide peer education and training. • Gather data and generate metrics and reports. • Oversee medication inventory and surveillance. • Assist in pharmacy workflow optimization. • Contribute to continuous quality improvement and patient safety efforts.

By redesigning the pharmacy workflow and using pharmacy technicians as pharmacist extenders, community pharmacies can optimize the pharmacists’ accessibility and provide quality healthcare to their communities. Community pharmacists and leaders should support advanced community pharmacy technician training opportunities, which will allow pharmacy technicians to elevate their practice and contribute to advanced roles.

Professional obligations of community pharmacists

Community pharmacists have a long-standing commitment to make a tremendous, positive impact in patient care and the communities they serve. To overcome the financial and

workforce challenges currently impacting care, community pharmacists have a professional obligation to be advocates for the pharmacy profession and their practice in the following ways.

Community pharmacists should

- Engage in advocacy efforts, through state and national partners, to advance and protect the interests of patient care and the pharmacy profession.
- Continue to pursue educational and training opportunities that further their clinical and professional skills.
- Seek opportunities to engage in advanced roles that optimize patient outcomes, patient safety, operational efficiencies, and fiscal health for their patients and organizations.
- Commit to being innovators, who adapt to and lead contemporary models of care.
- Act as positive and ethical role models for their patients, colleagues, and the community.
- Serve as mentors and educators for student pharmacists and pharmacy residents, contributing to succession planning for a diverse and healthy workforce.
- Encourage the advancement and recognition of pharmacy technician partners.
- Participate in research evaluating the services that they provide.

Conclusion

The role of community pharmacists has evolved significantly. Pharmacists in community-based settings are operational leaders for the financial sustainability of healthcare institutions as well as valuable clinicians in providing comprehensive management of patient's medication therapy in collaboration with other healthcare colleagues.

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Additional information

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References

1. Berenbrok LA, Tang S, Gabriel N et al. Access to community pharmacies: A nationwide geographic information systems cross-sectional analysis. *J Am Pharm Assoc.* 2022; 62:1816-1822.
2. Haddock R. The expanding role of today's community pharmacists. <https://www.fdsrx.com/expanding-role-community-pharmacists> (accessed 2023 Jan 31).
3. Centers for Disease Control and Prevention. FASTSTATS - therapeutic drug use (December 2022). <http://www.cdc.gov/nchs/fastats/drug-use-therapeutic.htm> (accessed 2023 Jan 31).
4. Centers for Disease Control and Prevention. Chronic Diseases in America (December 2022). <https://www.cdc.gov/chronicdisease/resources/infographic/chronic-diseases.htm> (accessed 2023 Jan 31).
5. Rajiah K, Sivarasa S, Maharajan MK. Impact of pharmacists' interventions and patients' decision on health outcomes in terms of medication adherence and quality use of

- medicines among patients attending community pharmacies: a systematic review. *Int J Environ Res Public Health*. 2021; 18(9):4392.
6. Shaver A, Morano M, Pogodzinski J et al. Impact of a community pharmacy transitions-of-care program on 30-day readmission. *J Am Pharm Assoc*. 2019; 59(2):202-209.
 7. Armour CL, Smith L, Krass I. Community pharmacy, disease state management, and adherence to medication: a review. *Dis Manag Health Out*. 2008; 16(4):245-54.
 8. Newman TV, San-Juan-Rodriguez A, Parekh N et al. Impact of community pharmacist-led interventions in chronic disease management on clinical, utilization, and economic outcomes: an umbrella review. *Res Social Adm Pharm*. 2020; 16(9):1155-1165.
 9. Armor BL, Britton ML, Dennis VC et al. A review of pharmacist contributions to diabetes care in the United States. *J Pharm Pract*. 2010; 23(3):250-64.
 10. Hemberg N, Huggins D, Michaels N et al. Innovative community pharmacy practice models in North Carolina. *NC Med J*. 2017; 78(3):198-201.
 11. Ayorinde AA, Porteous T, Sharma P. Screening for major diseases in community pharmacies: a systematic review. *Int J Pharm Pract*. 2013; 21(6):349-61.
 12. Brown TJ, Todd A, O'Malley C et al. Community pharmacy delivered interventions for public health priorities: a systematic review of interventions for alcohol reduction, smoking cessation and weight management, including meta-analysis for smoking cessation. *BMJ Open*. 2016; 6(2):e009828.
 13. Blalock SJ, Roberts AW, Lauffenburger JC et al. The effect of community pharmacy-based interventions on patient health outcomes: a systematic review. *Med Care Res Rev*. 2013; 70(3):235-66.
 14. Ifeanyi Chiazor E, Evans M, van Woerden H et al. A systematic review of community pharmacists' interventions in reducing major risk factors for cardiovascular disease. *Value Health Reg Issues*. 2015; 7:9-21.
 15. San-Juan-Rodriguez A, Newman TV, Hernandez I et al. Impact of community pharmacist-provided preventive services on clinical, utilization, and economic outcomes: an umbrella review. *Prev Med*. 2018; 115:145-55.
 16. Altowaijri A, Phillips CJ, Fitzsimmons D. A systematic review of the clinical and economic effectiveness of clinical pharmacist intervention in secondary prevention of cardiovascular disease. *J Manag Care Pharm*. 2013;19(5):408-16.
 17. Isenor JE, Edwards NT, Alia TA et al. Impact of pharmacists as immunizers on vaccination rates: a systematic review and meta-analysis. *Vaccine*. 2016; 34:5708-5723. doi: 10.1016/j.vaccine.2016.08.085.
 18. Grabenstein JD. Essential services: quantifying the contributions of America's pharmacists in COVID-19 clinical interventions. *J Am Pharm Assoc*. 2022; 62:1929-1945.
 19. Centers for Disease Control and Prevention. Diabetes Self-Management Education and Support (DSMES) Toolkit. <https://www.cdc.gov/diabetes/dsmes-toolkit/index.html> (accessed 2024 Jan 17).
 20. Institute for Safe Medication Practices (ISMP). ISMP List of High-Alert Medications in Community/Ambulatory Care Settings. ISMP; 2021. <https://www.ismp.org/recommendations/high-alert-medications-community-ambulatory-list> (accessed 2023 May 11)

21. Medicare Program; Contract Year 2023 Policy and Technical Changes to the Medicare Advantage and Medicare Prescription Drug Benefit Programs; Policy and Regulatory Revisions in Response to the COVID-19 Public Health Emergency; Additional Policy and Regulatory Revisions in Response to the COVID-19 Public Health Emergency. 87 Fed. Reg. 27704 (May 9, 2022). <https://www.federalregister.gov/d/2022-09375> (accessed 2023 May 11).
22. Guadamuz JS, Alexander GC, Zenk SN et al. Assessment of Pharmacy Closures in the United States From 2009 Through 2015. *JAMA Intern Med.* 2020;1;180(1):157-160.
23. Ying X, Kahn P, Mathis WS. Pharmacy deserts: more than where pharmacies are. *J Am Pharm Assoc.* 2022; 62:1875-9.
24. Urick BY, Adams JK, Bruce MR. State Telepharmacy Policies and Pharmacy Deserts. *JAMA Netw Open.* 2023; 6:e2328810. doi:10.1001/jamanetworkopen.2023.28810.
25. National Community Pharmacists Association. Survey of community pharmacy economic pressures 2022 report. <https://ncpa.org/sites/default/files/2022-08/Pharmacy%20economic%20health%20survey%20AUG%2022.pdf> (accessed 2023 Jan 31).
26. Doucette WR, Mott DA, Kreling DH et al. National Pharmacist Workforce Study 2019. https://www.aacp.org/sites/default/files/2020-03/2019_NPWS_Final_Report.pdf (accessed 2023 May 11).
27. Schommer JC and Gaither CA. A segmentation analysis for pharmacists' and patients' views of pharmacist roles. *Res Soc Admin Pharm.* 2014;10(3):508-528.
28. Hohmeier KC. Pharmacy technicians: how advanced skills are moving the industry forward. <https://www.pharmacytimes.com/view/pharmacy-technicians-how-advanced-skills-are-moving-the-industry-forward> (accessed 2022 Oct 13).
29. Koehler T, Velthuis F, Helmich E et al. Implementing the pharmacy technician role in existing pharmacy settings: stakeholders views of barriers and facilitators. *Res Soc Admin Pharm.* 2022; 18(10):3814-3820.
30. National Association of Chain Drug Stores. Pitt Pharmacy: Pharmacy technician role expansion: an evidence-based position paper (2018). <https://www.nacds.org/pdfs/pharmacy/2020/Pharmacy-Technician-Expansion-Position-Paper.pdf> (accessed 2022 October 13).
31. Taylor B, Mehta B. The community pharmacy technician's role in the changing pharmacy practice space. *Innov Pharm.* 2020; 11(2):11.
32. Mattingly AN, Mattingly II TJ. Advancing the role of the pharmacy technician: a systematic review. *J Am Pharm Assoc.* 2018; 58:94-108.
33. PowerPak. The Expanding Role of the Pharmacy Technician-MTM and Vaccination Support. <https://www.powerpak.com/course/content/114117> (accessed 2022 October 13).
34. McKeirnan KC, McDonough RP. Transforming pharmacy practice: advancing the role of technicians. *Pharmacy Today.* June 2018. Available at: <https://www.pharmacytoday.org/action/showPdf?pii=S1042-0991%2818%2930793-X> (accessed 2022 October 13).