

# Navigating the Evolving Pharmacy Landscape in 2025: Challenges, Opportunities and Innovations

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As we stride further into 2025, the pharmacy industry faces a landscape teeming with challenges and opportunities. From tackling drug price transparency to juggling implementation of artificial intelligence, the industry is being transformed before our eyes. The journey ahead is anything but straightforward, with solutions ranging from bold, large-scale changes to more nuanced, focused innovations. Let's delve into the high-level, dynamic trends shaping the pharmacy world today.

## **Medication Accessibility Challenges**

Imagine living in a community where accessing essential medications has become a Herculean task. Increasingly, this is the reality for patients who live in areas hit hard by the closure of pharmacies. A study in Health Affairs found that more than 29% of the nearly 89,000 retail U.S. pharmacies that operated between 2010 and 2020 had closed by 2021, with the rate of closures increasing between 2018 and 2021 (during which time the number of pharmacies declined in 41 states).[1] That amounts to more than 26,000 store closures.[2] According to one of the study's authors, Dima Qato, a University of Southern California pharmacy professor, closures are occurring at a higher rate at pharmacies that serve a greater percentage of Medicaid and Medicare patients.[3]

Closures have impacted stores owned by large chains as well as independent pharmacies. Store closures make it more difficult for patients to access to medications and to adhere to medication regimes, which puts patients at a greater risk, deepening health disparities. But there is hope. There are opportunities to enhance reliability for a mail-order pharmacy model and user-friendliness for remote pharmacy services. These have the potential to bridge existing gaps in healthcare access, ensuring patients conveniently and timely receive medications and expert guidance from pharmacists.

## **Shoring Up Supply Chains**

At the same time as the number of pharmacies has decreased, pharmacies have faced challenges

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accessing product through the pharmaceutical supply chain. Drug shortages in the U.S. healthcare system are driven by several systemic and operational factors, including a vulnerable supply chain that relies heavily on foreign manufacturing of active pharmaceutical ingredients from countries like China and India.[4] This reliance exposes the supply chain to disruptions from geopolitical tensions, pandemics, and natural disasters.[5]

However, these challenges have highlighted opportunities for improvement and growth. Solving drug shortages will require policy innovation, strategic investments, and professional advocacy. Strengthening domestic production of active pharmaceutical ingredients can reduce reliance on foreign suppliers and enhance resilience. Legislative efforts, such as California's CalRx initiative, focus on drug affordability by producing and distributing generic medications at low costs with transparent pricing, targeting markets lacking competition,[6] while federal proposals like the Affordable Drug Manufacturing Act advocate for government-backed production of essential generics.[7] Pharmacist advocacy is crucial, as they can engage with policymakers to highlight operational challenges and push for reforms like improved communication and streamlined FDA processes during shortages, creating a sustainable framework for drug manufacturing and encouraging fair pricing and access.[8]

## **Drug Price Transparency Reform**

Drug price transparency is under renewed focus, with reforms aiming to increase clarity and reduce the control exerted by pharmacy benefit managers. President Trump's Executive Order, issued on February 25, 2025, mandates agencies to enhance enforcement of existing health plan transparency regulations and to propose new guidelines for further standardizing and comparing pricing data.[9] The order provides a 90-day timeline for agencies to publish new policies, leaving the extent of change uncertain.[10] Despite this uncertainty, pharmacies have a significant role to play in driving these reforms. By emphasizing transparency in negotiated drug prices, pharmacies can foster more competitive dynamics and potentially improve rebate terms.[11]

## **Artificial Intelligence Caution**

Artificial intelligence (AI) has the potential to revolutionize pharmacy by enhancing medication management, patient care, and healthcare efficiency. It can assist pharmacists in selecting drugs and dosages, identifying interactions, and reducing errors, while allowing personalized treatment plans based on patient data, which can improve outcomes and minimize adverse events.[12] AI also has the potential to streamline workflows by automating tasks like dispensing and inventory management, allowing pharmacists to focus on patient care, and can enhance communication through pharmacy applications offering 24/7 support.[13]

Despite its benefits, AI integration in pharmacy faces challenges such as high implementation costs, potential lack of empathy and personal touch that human pharmacists provide, and dependence on the quality of data inputs; incorrect or biased data can lead to flawed outcomes.[14] Ethical concerns like data privacy and informed consent are significant, as AI systems handle sensitive patient information.[15] Moreover, the need for substantial computing resources and technical expertise poses hurdles, particularly for smaller pharmacies.[16]

The pharmacy industry has opportunities to address these risks by investing in training to build trust and proficiency, collaborating with developers to ensure accuracy and to construct error protection measures, and to prioritize data privacy and ethical considerations.[17] By using AI to augment human expertise rather than replace it, pharmacies can maintain personal patient interactions while

leveraging AI's capabilities to enhance care.[18] Through collaborative efforts and innovative solutions, the pharmacy industry has possibilities to enhance health outcomes and access to care for all communities, paving the way for a healthier future.

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## FOOTNOTES

[1] Jenny S. Guadamuz et al., *More US Pharmacies Closed Than Opened In 2018–21; Independent Pharmacies, Those In Black, Latinx Communities Most At Risk*, 43 Health Affairs 1703 (2024); see Tom Murphy, *Nearly 30% of US Drugstores Closed in One Decade, Study Shows*, The Associated Press (Dec. 3, 2024, at 5:10 PM CDT), <https://apnews.com/article/drugstore-closings-cvs-walgreens-independent-pharmacies-6b54d4bd1564b2bff7a55a624da61c19>.

[2] See Murphy, *supra* note 1.

[3] See Guadamuz et al., *supra* note 1; *Decline in Number of Pharmacies in Most States Since 2018*, U.S. Pharmacist (Dec. 5, 2024), <https://www.uspharmacist.com/article/decline-in-number-of-pharmacies-in-most-states-since-2018>.

[4] See Joseph L. Fink & Kelli A. Boyden, *Addressing Drug Shortages: A Call to Action for Pharmacists and Policymakers*, 91 Pharmacy Times 38 (2025).

[5] *Id.*

[6] *Fact Sheet: Making Prescription Drugs More Affordable For Californians*, The State of California (updated Mar. 17, 2023), <https://calrx.ca.gov/uploads/2023/03/CalRx-Fact-Sheet.pdf>.

[7] Fink & Boyden, *supra* note 4.

[8] *Id.*

[9] Donald J. Trump, *Making America Healthy Again by Empowering Patients with Clear, Accurate, and Actionable Healthcare Pricing Information*, The White House (Feb. 25, 2025), <https://www.whitehouse.gov/presidential-actions/2025/02/making-america-healthy-again-by-empowering-patients-with-clear-accurate-and-actionable-healthcare-pricing-information/>.

[10] *Id.*

[11] See Ed Schoonveld, *US Drug Price Negotiations and Transparency*, Pharmaceutical Commerce, Pharmaceutical Commerce (Apr. 9, 2025), <https://www.pharmaceuticalcommerce.com/view/us-drug-price-negotiations-and-transparency>.

[12] See Rayn Oswalt, *The Role of Artificial Intelligence in Pharmacy Practice*, Pharmacy Times (Sept. 5, 2023), <https://www.pharmacytimes.com/view/the-role-of-artificial-intelligence-in-pharmacy-practice>; Osama Khan et al., *The Future of Pharmacy: How AI is Revolutionizing the Industry*, 1 Intelligent Pharmacy 32-40 (2023).

[13] *Id.*

[14] *Id.*

[15] *Id.*

[16] *Id.*

[17] *Id.*

[18] *Id.*

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