PHARMACY DESERTS AND ANTITRUST LAW

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ABSTRACT

Pharmacies play a critical role in the healthcare system. In addition to dispensing medications, pharmacies increase vaccination rates, improve drug adherence, and reduce adverse drug interactions. When a neighborhood pharmacy closes, many patients are unable to acquire their medication regularly, causing them to dilute their medicine or go without necessary medication altogether. Increasing the distance between people and their closest pharmacy worsens health outcomes.

Unfortunately, pharmacy closures have become epidemic across the country. In the first 18 years of the twenty-first century, 18,000 pharmacies shut down. Pharmacy closures often result in pharmacy deserts—communities without pharmacies. Pharmacy deserts exist in every region of the country. Over forty million Americans reside in pharmacy deserts. Denied easy access to pharmacists, residents of pharmacy deserts—who are more likely to be nonwhite, rural, and/or low income—suffer elevated rates of disease and mortality.

Pharmacy deserts are not the inevitable result of market forces. Many represent a failure of antitrust law. Antitrust enforcement agencies permitted large retail pharmacies to acquire and close down hundreds of local pharmacies, often creating pharmacy deserts. Antitrust officials allowed pharmacy benefit managers (PBMs)—which serve as intermediaries among drug manufacturers, insurance companies, and pharmacies—to merge until the top three PBMs controlled 85% of the market. Officials then allowed the three biggest retail pharmacy chains to acquire the three biggest PBMs, which provided those chain-owned PBMs with a strong incentive to destroy independent pharmacies. PBMs have exploited their market power over independent pharmacies to inflict low reimbursement rates, retroactive clawbacks, and predatory audits—all with the purpose and effect of making local pharmacies unprofitable and forcing them out of the market. Surprisingly, instead of condemning this conduct, in the past, the Federal Trade Commission has interfered with state efforts to rein in anticompetitive conduct by PBMs.

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Pharmacy deserts serve as a cautionary tale of what happens when antitrust laws are not enforced with sufficient vigor. Antitrust policy, especially stronger merger enforcement, can help prevent future pharmacy deserts. Unraveling the vertical integration between large pharmacy chains and PBMs should diminish their incentive to destroy independent pharmacies. Antitrust responses can complement non-antitrust policies, such as direct regulation of PBM conduct. Properly implemented, antitrust enforcement can help restore pharmacies to pharmacy deserts.

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INTRODUCTION

Runaway drug prices contribute to significant disparities in health outcomes, as measured in mortality, disease, and disability rates, as well as quality of life.[1] Although much of this inequality is driven by exorbitant drug prices,[2] unequal access to pharmacies is another major cause that receives less attention.[3] In 2017, Americans spent $333.4 billion on prescription drugs,[4] and 90% of these expenditures were for drugs that address chronic conditions, meaning the patients required consistent access to refill their supplies.[5] This requires pharmacies. Yet in the world's wealthiest capitalist economy, millions of individuals do not have meaningful access to lifesaving and life-enhancing drugs and services because they live in pharmacy deserts—communities without pharmacies.[6]

For some people, the closure of a local pharmacy is, at most, a mere inconvenience because they can easily drive to pick up a prescription at another pharmacy. But for the poor, the elderly, and people without cars, pharmacy closures can put one's health at risk. When their neighborhood pharmacy closes, some people may be unable to acquire their medication regularly, causing them

[1] Elizabeth A. Hall-Lipsy & Marie A. Chisholm-Burns, *Pharmacotherapeutic Disparities: Racial, Ethnic, and Sex Variations in Medication Treatment*, 67 AM. J. HEALTH-SYS. PHARMACY 462, 462 (2010) ("In addition to perpetuating social and historical inequities, health disparities are often reflected in negative health outcomes, including higher mortality rates, greater burdens of disease and disability, and a reduced quality of life for those populations that experience disparate medical care and treatment.").

[2] ARIELLE BOSWORTH, STEVEN SHEINGOLD, KENNETH FINEGOLD, NANCY DE LEW & BENJAMIN D. SOMMERS, U.S. DEP'T OF HEALTH & HUM. SERVS., PRICE INCREASES FOR PRESCRIPTION DRUGS, 2016-2022, at 1, 7 (2022), https://aspe.hhs.gov/sites/default/files/documents/e9d5bb190056eb94483b774b53d512b4/price-tracking-brief.pdf [https://perma.cc/AUV5-6ZZF] (noting from July 2021 to July 2022, price increases for over 1,200 drugs exceeded the rate of inflation, with average price increase greater than 31% and some increases greater than 500%).

[3] *See* Hall-Lipsy & Chisholm-Burns, *supra* note 1, at 463 (noting "little research or attention" has been given to pharmacotherapeutic disparities, despite their contribution to overall health disparities).

[4] Press Release, Ctrs. for Medicare & Medicaid Servs., CMS Office of the Actuary Releases 2017 National Health Expenditures (Dec. 6, 2018), https://www.cms.gov/newsroom/press-releases/cms-office-actuary-releases-2017-national-health-expenditures [https://perma.cc/ER3Z-NTT9].

[5] Cheryl Wisseh et al., *Social Determinants of Pharmacy Deserts in Los Angeles County*, 8 J. RACIAL & ETHNIC HEALTH DISPARITIES 1424, 1424 (2021) (reporting "critical need for accessible pharmacies" to serve individuals with chronic conditions).

[6] *See* Ese Olumhense & Nausheen Husain, *'Pharmacy Deserts' a Growing Health Concern in Chicago, Experts, Residents Say*, CHI. TRIB., https://www.chicagotribune.com/2018/01/22/pharmacy-deserts-a-growing-health-concern-in-chicago-experts-residents-say/ [https://perma.cc/F3ML-MJUD] (last updated May 31, 2019, 9:07 PM) (noting concern over growing "pharmacy deserts," where residents do not have practical access to pharmacies).

to dilute their medicine or go without necessary medication altogether. Others—including people for whom prescription medicine is literally lifesaving—must invest additional hours every month to fill their prescriptions, get vaccinated, or receive other pharmacy-based medical services. When the Shopko Pharmacy in Greenfield, North Carolina, closed, it sold its pharmacy patient records to a Walgreens located fifty miles away, converting picking up a prescription from a simple errand into a half-day excursion for Greenfield residents.[7] Increasing the distance between people and their closest pharmacy worsens health outcomes.[8]

Every year in America, hundreds of pharmacies permanently close their doors, often leaving pharmacy deserts in their wakes.[9] No single accepted definition of "pharmacy desert" exists.[10] Much research builds on definitions and conceptual work from food desert scholarship.[11] Some pharmacy desert

[7] Markian Hawryluk, *As Parts of Rural America Become Drugstore Deserts, Some Towns Fill the Gap*, WASH. POST, Dec. 19, 2021, at G3 ("For the residents of Greenfield, Shopko's decision meant they had to scramble. Shopko had sold the pharmacy records to a Walgreens 50 miles away.").

[8] Priti Pednekar, Andrew Peterson & Debra Heller, *Comparing Medication Adherence Rates Between Pharmacy Desert and Non-Desert Areas Among Elderly in Pennsylvania*, 19 VALUE HEALTH A205, A205-A206 (2016) (concluding pharmacy deserts impact medication adherence).

[9] Tom Murphy & Kasturi Pananjady, *As Pharmacies Shutter, Some Western States, Black and Latino Communities Are Left Behind*, ASSOCIATED PRESS, https://apnews.com/article/pharmacy-closure-drugstore-cvs-walgreens-rite-aid-91967f18c0c059415b98fcf67ad0f84e [https://perma.cc/3STZ-G3EP] (last updated June 3, 2024, 12:16 PM) (describing thousands of pharmacy closures between 2019 and 2024).

[10] Definitions of "pharmacy desert" generally exclude hospital inpatient pharmacies because they serve only hospitalized patients, not the community. Olumhense & Husain, *supra* note 6; Wisseh et al., *supra* note 5, at 1426 ("Hospital and ambulatory clinic pharmacies were excluded as such pharmacies are often closed to the public."). Thus, patients on long-term medications do not fill their prescriptions at hospitals. Some patients may be able to refill their prescriptions at pharmacies located in nursing homes, physicians' offices, and long-term care facilities. Priti Pednekar & Andrew Peterson, *Mapping Pharmacy Deserts and Determining Accessibility to Community Pharmacy Services for Elderly Enrolled in a State Pharmaceutical Assistance Program*, PLOS ONE 15 (June 4, 2018), https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0198173&type=printable [https://perma.cc/N6PV-U5WX]. But these are not generally accessible to most patients. Also, independent pharmacies generally charge less than doctors' offices and hospitals. Stacy Mitchell, *The View from the Shop—Antitrust and the Decline of America's Independent Businesses*, 61 ANTITRUST BULL. 498, 500-01 (2016).

[11] *See, e.g.*, Xiaohan Ying, Peter Kahn & Walter S. Mathis, *Pharmacy Deserts: More than Where Pharmacies Are*, 62 J. AM. PHARMACISTS ASS'N 1875, 1876 (2022); Philippe Amstislavski, Ariel Matthews, Sarah Sheffield, Andrew R. Maroko & Jeremy Weedon, *Medication Deserts: Survey of Neighborhood Disparities in Availability of Prescription Medications*, INT'L J. HEALTH GEOGRAPHICS 2 (Nov. 9, 2012), http://www.ij-healthgeographics.com/content/11/1/48 [https://perma.cc/7A7A-ALGD] ("The term 'medication

studies, for example, use one of the U.S. Department of Agriculture's definitions of a food desert, involving pharmacies farther than one mile away in urban neighborhoods and ten miles away in rural settings.[12] Although pharmacy deserts are defined by distance to the nearest pharmacy, one size does not fit all. Establishing one measure of distance would be inappropriate, given the differences across various urban, rural, and suburban landscapes.[13] The definition of pharmacy deserts should also take into account access to transportation.[14] For patients who are elderly, immobile, or very ill, three miles may as well be three hundred if the patients lack access to a car or convenient, reliable public transportation.[15]

Pharmacy closures have become epidemic across the country. In the first eighteen years of the twenty-first century, approximately 18,000 pharmacies shut down.[16] Between 2011 and 2016 alone, 6.1% of the nation's pharmacies closed.[17] Independent pharmacies comprise a disproportionately high number of these pharmacy closures.[18] Between 2009 and 2015, one out of eight American pharmacies closed their doors, and a lopsided portion of those were independent pharmacies.[19] But the "Big Three" retail pharmacies—Walgreens, CVS, and

deserts' we introduce in this paper draws from the concept of food deserts, which is defined as low availability of nutritious food in underserved communities.").

[12] *See* Ying et al., *supra* note 11, at 1876.

[13] Wisseh et al., *supra* note 5, at 1425.

[14] Dima M. Qato et al., *'Pharmacy Deserts' Are Prevalent in Chicago's Predominantly Minority Communities, Raising Medication Access Concerns*, 33 HEALTH AFFS. 1958, 1960 (2014) (noting that access to pharmacies greatly varies depending on whether one is relying on private vehicles or public transportation, even when traveling equal distances).

[15] *See* Olumhense & Husain, *supra* note 6 (noting need for flexible definitions of pharmacy deserts, due to drastically reduced ability of elderly and ill to travel by foot).

[16] John Gitta, *The Impact of Merger & Acquisitions on Smaller Pharmacy Market Participants and Consumers*, 27 ANNALS HEALTH L. ADVANCE DIRECTIVE 163, 163 (2018).

[17] Dima M. Qato, G. Caleb Alexander, Apurba Chakraborty, Jenny S. Guadamuz & John W. Jackson, *Association Between Pharmacy Closures and Adherence to Cardiovascular Medications Among Older US Adults*, 2 JAMA NETWORK OPEN 7 (Apr. 19, 2019), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2730785 [https://perma.cc/9EBH-JCLX] (stating 3,622 out of 59,375 retail pharmacies were assumed to have closed based on sudden halt in reporting).

[18] Onyinye Oyeka, Fred Ullrich & Keith J. Mueller, *Medicare Beneficiary Access to Prescription Drugs in Rural Areas*, RUPRI CTR. FOR RURAL HEALTH POL'Y ANALYSIS 5 (Aug. 2022), https://rupri.public-health.uiowa.edu/publications/policybriefs/2022/Access%20to%20Prescription%20Drugs.pdf [https://perma.cc/5KEE-ELJC].

[19] Jenny S. Guadamuz, G. Caleb Alexander, Shannon N. Zenk & Dima M. Qato, *Assessment of Pharmacy Closures in the United States from 2009 Through 2015*, 180 JAMA INTERNAL MED. 157, 157 (2020) (finding independent pharmacies more likely to close than others in both urban and nonurban areas).

Rite Aid—are also on course to shut down hundreds of their pharmacy locations,[20] as more and more communities are losing their pharmacies.[21]

Pharmacy closures often result in pharmacy deserts.[22] Pharmacy deserts exist in every region of the country, in major cities and rural areas alike.[23] Pharmacy closures disproportionately hit rural areas, where between 2003 and 2018, the number of independent pharmacies fell by over 16%.[24] These closures left 630 rural communities with no retail drugstore whatsoever.[25] The residents of these pharmacy deserts often must travel great distances to use a community pharmacy, if they can get to a pharmacy at all.[26]

Although pharmacy closures disproportionately hit rural areas, pharmacy deserts also abound in urban areas, especially low-income neighborhoods.[27] Almost one-third of the over 10,000 neighborhoods in the country's thirty most

[20] Bailey Schulz, *Pharmacies Are Cutting Hours and Closing Stores. What It Means for Customers.*, USA TODAY, https://www.usatoday.com/story/money/2022/12/15/pharmacies-trimming-hours-and-stores-what-means-patients/10855274002/ [https://perma.cc/9TSH-J7MY] (last updated Dec. 19, 2022, 3:53 PM) (reporting planned closings of 900 CVS stores, 200 Walgreens stores, and 150 Rite Aid stores).

[21] Dima Mazen Qato et al., *The Availability of Pharmacies in the United States: 2007–2015*, PLOS ONE 9 (Aug. 16, 2017), https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0183172&type=printable [https://perma.cc/E7MK-UL3Z]; Donald G. Klepser, Liyan Xu, Fred Ullrich & Keith J. Mueller, *Trends in Community Pharmacy Counts and Closures Before and After the Implementation of Medicare Part D*, 27 J. RURAL HEALTH 168, 172 (2010).

[22] Abiodun Salako, Fred Ullrich & Keith J. Mueller, *Update: Independently Owned Pharmacy Closures in Rural America, 2003-2018*, RUPRI CTR. FOR RURAL HEALTH POL'Y ANALYSIS 4 (July 2018) ("Between January 2014 and March 2018, an additional 140 communities went from having one or more retail pharmacies to having no retail pharmacy.").

[23] *See* Wisseh et al., *supra* note 5, at 1425 ("[P]harmacy deserts have been identified in various locales such as Chicago, New York City, Shelby County Tennessee, and the state of Pennsylvania . . . .").

[24] Salako et al., *supra* note 22, at 2; *see also* OFF. OF POL'Y PLAN., U.S. FED. TRADE COMM'N, PHARMACY BENEFIT MANAGERS: THE POWERFUL MIDDLEMEN INFLATING DRUG COSTS AND SQUEEZING MAIN STREET PHARMACIES INTERIM STAFF REPORT 1 (2024) [hereinafter FTC INTERIM STAFF REPORT] ("Between 2013 and 2022, about ten percent of independent retail pharmacies in rural America closed.").

[25] Markian Hawryluk, *Rural Americans in Pharmacy Deserts Hurting for Covid Vaccines*, KFF HEALTH NEWS (Mar. 3, 2021), https://kffhealthnews.org/news/article/rural-america-pharmacy-deserts-hurting-for-covid-vaccine-access/ [https://perma.cc/X7R9-BTYU].

[26] Oyeka et al., *supra* note 18, at 3 ("We also found that [Medicare] beneficiaries residing in counties with no retail pharmacy traveled two to four times as far to use a community pharmacy than did beneficiaries residing in counties with some type of pharmacy presence.").

[27] Qato et al., *supra* note 17, at 2 ("Such closures, which disproportionately influence independent pharmacies located in low-income urban and rural neighborhoods, have increased significantly since the implementation of Medicare Part D.").

populous cities are pharmacy deserts.[28] Indeed, over 60% of the neighborhoods in Indianapolis, Indiana; San Antonio, Texas; and Charlotte, North Carolina, lack pharmacies.[29] Ultimately, as of 2015, nearly fifteen million people in these thirty cities were affected by pharmacy deserts.[30]

Pharmacy deserts affect millions of households. Some studies estimate that forty-one million Americans reside in pharmacy deserts.[31] In Chicago alone, approximately one million individuals live without ready access to a pharmacy.[32] Although no single definition of "pharmacy desert" exists,[33] the most common measures likely undercount their incidence.[34]

Moreover, hundreds of communities are vulnerable to becoming pharmacy deserts. For example, over 660 rural communities rely on a solitary independent pharmacy.[35] That single pharmacy stands between a healthy community and desertification.[36] One survey found that for 84% of rural pharmacies, the next nearest retail pharmacy was over ten miles away, and for over half of those pharmacies, the distance rises to at least twenty miles away.[37] Financial pressures have put many more rural pharmacies on the verge of closure,

[28] *See* Jenny S. Guadamuz et al., *Fewer Pharmacies in Black and Hispanic/Latino Neighborhoods Compared with White or Diverse Neighborhoods, 2007–15*, 40 HEALTH AFFS. 802, 806 (2021).

[29] *Id.* at 807-08.

[30] *Id.* at 807.

[31] Markian Hawryluk, *How Rural Communities Are Losing Their Pharmacies*, KFF HEALTH NEWS (Nov. 15, 2021), https://khn.org/news/article/last-drugstore-how-rural-communities-lose-independent-pharmacies [https://perma.cc/UU5P-GBRK].

[32] Qato et al., *supra* note 14, at 1962.

[33] Many definitions of "pharmacy desert" include an income component, such as communities where a certain percentage of households live near or below the federal poverty level. *See, e.g.*, Qato et al., *supra* note 14, at 1959. Other definitions include multiple measurements of social determinants of health, such as poverty and vehicle ownership. Wisseh et al., *supra* note 5, at 1425. Still others include variables relating to race, ethnicity, and residential segregation. *Id.* Some literature defines different types of pharmacy deserts based on variables such as travel distance, access to vehicles, and income. *See id.* at 1431. Using travel time instead of distance may be a more valid measure of access to pharmacies. Ying et al., *supra* note 11, at 1876. However, this data is harder to acquire and verify, and it may require monitoring because travel times are less stable than physical distance, which is static. While having a precise definition of pharmacy deserts is important for certain types of quantitative research, it is less relevant for this project, which seeks to document the consequences of reduced access to local pharmacies and analyze how weak antitrust enforcement contributes to the problem.

[34] *See* Wisseh et al., *supra* note 5, at 1426.

[35] Abiodun Salako, Fred Ullrich & Keith Mueller, *Financial Issues Challenging Sustainability of Rural Pharmacies*, 4 AM. J. MED. RSCH. 147, 149 (2017).

[36] *Id.*

[37] *Id.* at 150.

increasing the risk of more pharmacy deserts.[38] Millions of rural residents live at risk of losing their community's last pharmacy.[39]

Pharmacy deserts are multifaceted problems that implicate a range of public policy topics. This Article argues that pharmacy deserts can be viewed as an antitrust issue—a problem caused partly by weak antitrust enforcement and a problem that can be partially remedied through more aggressive antitrust enforcement in the future. Part I reviews the critical role of pharmacies in the healthcare system. Among other advantages, pharmacies increase vaccination rates, improve drug adherence, and reduce adverse drug interactions. Independent pharmacies, uncontrolled by large retail chains, are particularly important in preserving the health of their communities because they are more responsive to patients' needs and provide superior service at lower prices. Denied easy access to pharmacists, residents of pharmacy deserts experience worse health outcomes. Given the demographics of pharmacy deserts, these consequences are disproportionately visited upon populations that are nonwhite, rural, low income, or a combination thereof. Part I concludes by showing that mail-order pharmacies and telepharmacies are imperfect substitutes for physical pharmacies.

Part II explains how unconstrained market concentration has led to pharmacy closures and pharmacy deserts. Horizontal mergers among major pharmacy chains have proceeded unchecked; the major national retail pharmacies acquire smaller regional chains and individual independent pharmacies, often closing locations soon after purchasing them, resulting in the Big Three controlling a dominant share of the retail pharmacy market. This market concentration extends beyond pharmacies themselves. Pharmacy benefit managers ("PBMs")—which serve as intermediaries between drug manufacturers, insurance companies, and pharmacies—have merged to a point where the top three PBMs control between 75% and 85% of the market.[40] The horizontal concentration of the PBM market was followed by vertical integration: each of these PBMs was in turn acquired by one of the Big Three retail pharmacies. Consequently, the major PBMs now have a strong economic incentive to drive independent pharmacies out of the market and force patients to use the large retail chain that owns the PBM. PBMs have exploited their market power over independent pharmacies to inflict low reimbursement rates, retroactive clawbacks, and predatory audits—all with the purpose and effect of making local pharmacies unprofitable. These actions cause independent pharmacies to go out of business or to sell out to large retail chains, which acquire the location and often close it down. Ultimately, the combination of horizontal mergers and

[38] *Id.* at 154.

[39] *Id.* at 155 ("Looming closures without replacement of rural pharmacies suggest that an estimated 3 million rural residents are at risk of losing the only pharmacy in their community.").

[40] *See infra* note 295 and accompanying text.

vertical integration has caused prices to rise, services to decline, and many communities to lose their last pharmacy and become a desert.

Part III explains how pharmacy deserts are a consequence of antitrust failures. Antitrust enforcement agencies have permitted large retail pharmacies to acquire their competitors and close down hundreds of local pharmacies. Officials turned a blind eye as PBMs merged with each other until the biggest three PBMs controlled most of the market. And they allowed the three biggest retail pharmacies to acquire the three biggest PBMs, which provided those PBMs with a strong incentive to destroy independent pharmacies. Moreover, in the past, the Federal Trade Commission interfered with state efforts to rein in anticompetitive conduct by PBMs. Pharmacy deserts serve as a cautionary tale of what happens when antitrust laws are not enforced with sufficient vigor.

Part IV discusses potential avenues for addressing the problem of pharmacy closures creating pharmacy deserts. Stronger merger enforcement—especially blocking further acquisitions by large retail pharmacies—represents a necessary first step. But antitrust officials should also consider steps to restore competition in retail pharmacy markets. This may include unraveling the vertical integration between large pharmacy chains and PBMs. Antitrust remedies that take PBMs out of the retail pharmacy business should diminish their incentive to destroy independent pharmacies. Finally, Part IV acknowledges that the challenge of pharmacy deserts is too great to be solved by antitrust law alone, and it reviews non-antitrust responses to alleviate the harms of pharmacy deserts.

I. PHARMACY DESERTS: CONSEQUENCES, CONTEXT, CHARACTERISTICS, AND CONCOCTED CURES

This Part reviews the vital role that local pharmacies play in the healthcare system and the corresponding harms of pharmacy deserts. Proximity to a pharmacy improves health outcomes. The demographics of pharmacy deserts—whose residents are more likely to be Black or Hispanic, rural, low income, or a combination thereof—suggest that some of the nation's health disparities can be attributed to greater distances from pharmacies. Unfortunately, alternatives to physical pharmacies, such as mail-order prescriptions and telepharmacies, are unlikely to remedy the damages caused by pharmacy deserts.

A. *The Value of Pharmacies and the Consequences of Closures*

A patient's ability to obtain necessary medications depends on several factors, including income, cost, and health insurance coverage. In addition to overcoming financial barriers, patients require physical access to pharmacies. Accessibility is as important as affordability in addressing the problem of disparities in medication use and health outcomes.[41] Local pharmacies are

[41] *See* Qato et al., *supra* note 14, at 1959 ("[D]isparities in medication use and health outcomes may worsen if future policies continue to focus exclusively on the expansion of insurance coverage and fail to ensure the availability and geographic accessibility of pharmacies in minority communities.").

critical,[42] particularly in disadvantaged communities, whose residents often lack meaningful healthcare resources.[43] Neighborhood pharmacies are often the most accessible healthcare providers for many people.[44] Pharmacies usually don't require appointments, allowing individuals to receive immediate advice from a medical professional.[45] Local pharmacists can coordinate various drug therapies prescribed by multiple doctors, educate patients about drug safety, and monitor patients.[46]

Of course, local pharmacies ensure access to medicines, both prescription and over the counter.[47] But neighborhood pharmacies provide a range of services beyond merely filling prescriptions and selling medications and treatments.[48] For example, pharmacists can conduct wellness screenings and provide monitoring services.[49] This Section reviews several valuable services, including vaccinations, education regarding drug adherence, interventions to reduce adverse drug interactions, and emergency services.

[42] Pednekar & Peterson, *supra* note 10, at 2 ("[T]he accessibility to community pharmacies is critical to ensure proper utilization of medications and adequate delivery of healthcare services.").

[43] Amstislavski et al., *supra* note 11, at 3 ("[P]harmacies are uniquely positioned to improve health outcomes in underserved communities and access to them is especially critical in disadvantaged communities, where access to other health resources is poor.").

[44] Pednekar & Peterson, *supra* note 10, at 2; Steven R. Erickson & Paul Workman, *Services Provided by Community Pharmacies in Wayne County, Michigan: A Comparison by ZIP Code Characteristics*, 54 J. AM. PHARMACISTS ASS'N 618, 619 (2014) ("Pharmacists practicing in the community setting are typically described as the most accessible of health care providers.").

[45] Alexander Domnich et al., *Assessing Spatial Inequalities in Accessing Community Pharmacies: A Mixed Geographically Weighted Approach*, 11 GEOSPATIAL HEALTH 240, 240 (2016).

[46] William R. Doucette, John M. Brooks, Bernard A. Sorofman & Herbert Wong, *Market Factors and the Availability of Community Pharmacies*, 21 CLINICAL THERAPEUTICS 1267, 1268 (1999).

[47] Qato et al., *supra* note 14, at 1962.

[48] Pednekar & Peterson, *supra* note 10, at 2 ("In addition to dispensing medications, the community pharmacies offer a wide spectrum of services including patient counselling, screening tests, immunization services, wellness programs, and education programs."); Amstislavski et al., *supra* note 11, at 3 ("In addition to dispensing prescribed medications, the community pharmacies provide a range of important health information and services to the local residents.").

[49] *E.g.*, Yifei Liu, Kendall D. Guthrie, Justin R. May & Kristen L. DiDonato, *Community Pharmacist-Provided Wellness and Monitoring Services in an Employee Wellness Program: A Four-Year Summary*, 7 PHARMACY 2 (July 2, 2019), https://www.mdpi.com/2226-4787/7/3/80/pdf?version=1562064911 [https://perma.cc/6V2B-HP39].

Pharmacies provide critical vaccination services. Although immunization services prevent infectious diseases and increase life expectancy,[50] vaccination rates for the elderly, who are most susceptible to infections, remain stubbornly low for such ailments as shingles and pneumonia.[51] One reason is the lack of opportunities to be immunized.[52] But with pharmacists in every state authorized to administer vaccines and over 280,000 pharmacists in community pharmacies nationwide, pharmacy-based vaccinations provide a ready-made solution to the problem of low vaccination rates.[53] Greater access to pharmacists increases vaccination rates against diseases such as influenza, pneumonia, and shingles.[54] The vast majority of studies have concluded that local pharmacists increase older adults' access to vaccines without creating any negative impacts.[55] Beyond simply inserting the needle, pharmacists also educate patients about vaccines, screen patients for vaccination eligibility, and document patients' vaccination status.[56]

Pharmacy deserts, of course, lack pharmacies that can provide vaccination services.[57] Pharmacy deserts have transformed some communities into vaccine deserts.[58] While always a concern, pharmacy deserts took on particular salience

[50] Edward M. Drozd, Laura Miller & Michael Johnsrud, *Impact of Pharmacist Immunization Authority on Seasonal Influenza Immunization Rates Across States*, 39 CLINICAL THERAPEUTICS 1563, 1563 (2017) (celebrating the "public health achievement" of immunization in reducing disease incidence and increasing life expectancy).

[51] Jenny L. Newlon, Nira N. Kadakia, Jason B. Reed & Kimberly S. Illingworth Plake, *Pharmacists' Impact on Older Adults' Access to Vaccines in the United States*, 38 VACCINE 2456, 2457 (2020) (characterizing low vaccination rates among elderly as important public health issue).

[52] *Id.* (Most "older adults seek care directly from specialists rather than primary care physicians, with 95% of older adults seeking care from a specialist[] every year and <66% seeking care from a primary care physician within the same time period. Specialists rarely address preventive care, such as vaccinations . . . ." (citations omitted)).

[53] *See id.* (reporting that all fifty states and the District of Columbia permit pharmacists to administer vaccines).

[54] *Id.*; Drozd et al., *supra* note 50, at 1564.

[55] Newlon et al., *supra* note 51, at 2463 (concluding 84% of studies examined found pharmacists positively impact older adults' access to vaccines and none found negative impact); Wisseh et al., *supra* note 5, at 1432 ("For example, a recent systematic review of pharmacists' effect on older adults' access to vaccines in the USA revealed that pharmacists positively impacted older adults' access to pneumococcal and influenza vaccinations.").

[56] Newlon et al., *supra* note 51, at 2463.

[57] Whitney E. Zahnd et al., *Availability of Pharmacies in Minoritized Racial/Ethnic Areas*, RURAL & MINORITY HEALTH RSCH. CTR. 2 (Aug. 2022), https://sc.edu/study/colleges_schools/public_health/research/research_centers/sc_rural_health_research_center/documents/mrgrxbriefforhp81922.pdf [https://perma.cc/2QJT-NTNM].

[58] Tori Marsh, *'Vaccine Deserts' Threaten to Prolong COVID-19 Vaccine Rollout and Widen Disparities*, GOODRX HEALTH (Jan. 14, 2021), https://www.goodrx.com/blog/covid-19-vaccine-deserts-threaten-rollout/ [https://perma.cc/Q5NA-TDGX] ("These pharmacy

at the beginning of the global COVID-19 pandemic. Once vaccines became available, prior pharmacy closures led to inequitable allocations of those life-saving vaccines: residents of pharmacy deserts had less access to COVID vaccines during the early months of the pandemic.[59] Even the Center for Disease Control and Prevention ("CDC") relied on pharmacies to administer COVID vaccines.[60] The lack of pharmacies made it significantly harder to deliver COVID vaccinations in some areas.[61] During the height of the COVID pandemic, pharmacies were better equipped to administer vaccines.[62] For example, "a pharmacist in Kiowa County, Colorado . . . pulled a list of all his customers age 70 and up and called each of them to schedule their covid vaccinations."[63] Ultimately, pharmacy deserts reinforced vaccine inequality at a time when low- and moderate-income ("LMI") communities were particularly vulnerable.[64] Residents of some pharmacy deserts had to choose between "driving hundreds of miles to access a [COVID] vaccine, or foregoing one altogether."[65] Prohibitive distances meant that residents of pharmacy deserts were less able to secure COVID vaccinations.[66] Even seemingly short distances can be prohibitive when one lacks a car and access to public transportation.

Local pharmacies also reduce the problem of low drug adherence. Only half of patients with chronic conditions consistently take their medications as prescribed, which increases the nonadherent patients' risk of hospitalization, progression of disease, and mortality.[67] Local pharmacies, however, can help

deserts could in turn create 'vaccine deserts' — where the rate of vaccination is slower simply because there aren't enough vaccination appointments available due to limited pharmacy capacity.").

[59] Rob Bonta et al., Comment Letter on January 18 Request for Information on Merger Enforcement 16 (Apr. 21, 2022) [hereinafter State Attorneys General], https://downloads.regulations.gov/FTC-2022-0003-0817/attachment_1.pdf [https://perma.cc/5FS5-Q9Z3] (noting pharmacy closures impaired "states' rollout of essential public health services, including COVID-19 vaccinations").

[60] Marsh, *supra* note 58 (reporting CDC "placed much of the onus" on pharmacies to distribute COVID vaccines to the general public).

[61] State Attorneys General, *supra* note 59, at 16; Erin Bunch, *How 'Pharmacy Deserts' Hinder Widespread COVID-19 Vaccination*, WELL+GOOD (Jan. 15, 2021), https://www.wellandgood.com/pharmacy-deserts-covid-19-vaccine/ [https://perma.cc/8S45-7EY5].

[62] Hawryluk, *supra* note 25 ("Pharmacies offer distinct advantages as vaccine providers. Hospitals, which didn't traditionally vaccinate the general public, have had to create programs to distribute their allocated doses.").

[63] *Id.*

[64] *See id.*; Marsh, *supra* note 58.

[65] Marsh, *supra* note 58.

[66] Bunch, *supra* note 61.

[67] Osayi E. Akinbosoye, Michael S. Taitel, James Grana, Jerrold Hill & Rolin L. Wade, *Improving Medication Adherence and Health Care Outcomes in a Commercial Population Through a Community Pharmacy*, 19 POPULATION HEALTH MGMT. 454, 454 (2016).

address the problem. While prescribing physicians generally have a limited ability to monitor their patients' drug adherence, "[c]ommunity pharmacists are uniquely positioned to help mitigate the high risk of medication discontinuation and improve adherence for patients initiating therapy because of their access to prescription refill information and frequent interactions with patients."[68] For example, local pharmacies can increase adherence to statin therapy.[69] Research shows that pharmacists can increase adherence in ways that improve patient outcomes as measured by blood pressure, blood glucose, blood lipids, and cardiovascular risk factors.[70]

Pharmacy closures increase the risk of reduced medication adherence, especially in LMI communities.[71] For example, pharmacy closures reduce adherence rates among elderly patients prescribed cardiovascular medications, which increases death and hospitalization.[72] One study of over three million Americans revealed that for older adults taking statins, beta-blockers, or oral anticoagulants—which they had previously purchased at recently closed pharmacies—pharmacy closures led to "an immediate statistically and clinically significant decline in adherence during the first 3 months after closure compared with their counterparts."[73] The difference in adherence between members of this cohort and their counterparts (whose local pharmacies did not close) "persisted over 12 months and was greater among older adults living in neighborhoods with fewer pharmacies."[74] Pharmacy closures also lead many patients (elderly or not) to discontinue taking their medications.[75] For example, research conducted at the University of Illinois at Chicago demonstrated that "when pharmacies close, people stop taking widely used heart medications—like statins, beta-blockers and oral anticoagulants—that have known cardiovascular and survival

[68] *Id.* at 454-55 (footnote omitted).

[69] Andrew M. Davis et al., *A National Assessment of Medication Adherence to Statins by the Racial Composition of Neighborhoods*, 4 J. RACIAL & ETHNIC HEALTH DISPARITIES 462, 468 (2017) ("Patients who have participated in brief face-to-face counseling sessions with a community pharmacist at the beginning of statin therapy demonstrate greater medication adherence . . . .").

[70] Akinbosoye et al., *supra* note 67, at 454-55.

[71] Wisseh et al., *supra* note 5, at 1425 ("Moreover, the risk of pharmacy closure is associated with reduced medication adherence and is greater for pharmacies that serve disproportionately low-income and uninsured populations.").

[72] State Attorneys General, *supra* note 59, at 15.

[73] Qato et al., *supra* note 17, at 1.

[74] *Id.*

[75] Jonathan Jacob, *Pharmacy Closures Put Heart Patients at Risk*, CHAIN DRUG REV. (June 3, 2019, 7:21 AM), https://chaindrugreview.com/pharmacy-closures-put-heart-patients-at-risk/ [https://perma.cc/PVA7-YSRT] ("A decline in compliance also was observed among people who had complied with their prescription medications the year prior to the closure. Among those who were fully adherent at baseline, 15.3% in the closure cohort discontinued their statins, compared with only 3.5% in the non-closure cohort.").

benefits."[76] Similarly, another study found that pharmacy closures led to an "immediate and significant" decline of statin adherence, as almost one-quarter of the patients affected by a pharmacy closure did not refill their statin prescriptions, indicating complete discontinuation of medication.[77] When pharmacies close, drug adherence declines, and patients lose the health benefits of those medicines.[78]

Even when patients take their medication as prescribed, local pharmacists can recognize and reduce the risk of harmful drug interactions. Morbidity related to prescription drug intake stems from several sources, including "incorrect dosing, therapeutic duplication, incorrect duration of therapy, unnecessary pharmacotherapy, and drug interactions."[79] Greater interactions with healthcare providers, such as pharmacists, can reduce these risks, particularly among the elderly. The elderly need access to pharmacies more than do younger generations, as 90% of Medicare beneficiaries have "at least one chronic condition and 10% [have] more than five."[80] Taking multiple medications increases the risk of dangerous drug interactions. Studies have shown that pharmacists can "significantly reduce both the rate of inappropriate prescribing and the adverse drug effect associated with the inappropriate prescribing."[81] For communities that have pharmacies, professional pharmacists can recognize and prevent adverse drug interactions.[82]

In addition to diagnostic and preventative care, many pharmacies offer emergency services.[83] The timeliness of these services can be vital when patients need information or medication right away. For example, pharmacies can supply lifesaving opioid rescue drugs.[84] When pharmacies close, the risk of opioid

[76] *Id.*

[77] Qato et al., *supra* note 17, at 8.

[78] Guadamuz et al., *supra* note 19, at 159 ("[P]harmacy closures are associated with nonadherence to prescription medications, and declines in adherence are worse in patients using independent pharmacies that subsequently closed.").

[79] Doucette et al., *supra* note 46, at 1268.

[80] Swu-Jane Lin, *Access to Community Pharmacies by the Elderly in Illinois: A Geographic Information Systems Analysis*, 28 J. MED. SYS. 301, 305 (2004).

[81] *Id.* at 306.

[82] Diana Marszalek, *New Rx for Independent Drugstores*, N.Y. TIMES, Sept. 8, 2002, at WE3.

[83] Guadamuz et al., *supra* note 28, at 802 ("[Pharmacies] not only dispense prescription medications but also offer diagnostic, preventive, and emergency services, including in response to the COVID-19 pandemic." (footnotes omitted)).

[84] Anthony W. Olson, Jon C. Schommer & Ronald S. Hadsall, *A 15 Year Ecological Comparison for the Market Dynamics of Minnesota Community Pharmacies from 2002 to 2017*, PHARMACY 2 (June 2, 2018), https://www.mdpi.com/2226-4787/6/2/50/pdf?version=1527933158 [https://perma.cc/TXK8-MMFU]; Olumhense & Husain, *supra* note 6 (noting CVS and Walgreens stock naloxone in Illinois stores to prevent opioid overdoses); Ying et al., *supra* note 11, at 1875 ("Pharmacies have long played an

overdose and death increases.[85] Beyond emergency situations, pharmacy deserts make it harder for individuals facing substance use disorders to monitor and address their illness.[86] The wealthy go to rehab in Malibu; residents of pharmacy deserts go without.

In sum, pharmacies provide a unique bundle of services that are essential to maintaining a community's health.[87] The advice and consultation that pharmacists provide operate as primary care services, which can be critical in communities lacking significant healthcare infrastructure.[88] For many towns with no hospital, no urgent care center, and no intown doctors, "those pharmacies represented the last bastion of health care in their communities."[89] Local pharmacies are uniquely suited to provide a range of healthcare services to their communities.[90] When properly utilized, local pharmacies can improve patients taking their medications correctly and reduce hospital admissions and emergency room visits.[91]

Given all the ways that pharmacies are necessary for community health, the consequences of pharmacy deserts are dire. Residents of pharmacy deserts have less access to medications.[92] They also have fewer interactions with pharmacists and, thus, fewer opportunities to receive information and have their questions answered.[93] They are less likely to receive pre- and post-exposure prophylaxis for HIV (human immunodeficiency virus), as well as assistance with tobacco cessation, immunizations, and contraception.[94] And because pharmacy deserts

integral role in delivering quality and timely care for patients by dispensing critical medications such as naloxone and offering preventative care and vaccinations.").

[85] Olumhense & Husain, *supra* note 6 ("But in some areas where there is demonstrable need for access to naloxone, pharmacy closures can frustrate treatment, experts said.").

[86] *Id.*

[87] Oyeka et al., *supra* note 18, at 1.

[88] Cindrel Tharumia Jagadeesan & Veronika J. Wirtz, *Geographical Accessibility of Medicines: A Systematic Literature Review of Pharmacy Mapping*, 14 J. PHARM. POL'Y & PRAC. 1 (Mar. 4, 2021), https://joppp.biomedcentral.com/counter/pdf/10.1186/s40545-020-00291-7.pdf [https://perma.cc/885X-RAPA].

[89] Hawryluk, *supra* note 25.

[90] Erickson & Workman, *supra* note 44, at 621 ("Community pharmacists are ideally situated in neighborhoods to influence the health of people living within a reasonable distance from the pharmacy.").

[91] Pednekar & Peterson, *supra* note 10, at 2 (reporting patients who received services from community pharmacy exhibited greater medication adherence and fewer hospital admissions and visits compared to patients who did not receive services from community pharmacy).

[92] Wisseh et al., *supra* note 5, at 1425.

[93] *See* Oyeka et al., *supra* note 18, at 3.

[94] Wisseh et al., *supra* note 5, at 1432.

are sometimes also healthcare deserts,[95] when some communities lose their last pharmacy, they are left with no healthcare providers at all.[96]

B. *The Importance of Independent Pharmacies*

While all pharmacies provide vital services to their customers, independent pharmacies are uniquely valuable. Though closing at a disproportionate rate, independent pharmacies remain a core supplier of medications to Americans.[97] While chain and independent pharmacies offer important healthcare services to their clientele,[98] researchers report that independent pharmacies "provide more innovative services than large retail chain pharmacies."[99] For example, most independent pharmacies provide wellness checks and free screenings.[100] Independent pharmacies are far more likely than chain pharmacies to offer home delivery to sick patients and to employ multilingual staff who can more effectively communicate with customers.[101] Independent pharmacies also provide a better customer experience, including service that is faster, more accurate, more engaged, and friendlier.[102] Because of the more regular interactions, some patients have better relationships with their local pharmacist than with their doctors and, consequently, are more comfortable sharing personal health information with the former, which can improve healthcare delivery.[103] Many patients prefer independent pharmacies, with most respondents in a 2018 *Consumer Reports* survey reporting that the independent pharmacist knew them by name, compared to fewer than one in six reporting such familiarity from chain

[95] *See* Stacy Mitchell & Charlie Thaxton, *Ending Pharmacy Deserts*, AM. CONSERVATIVE, Nov./Dec. 2019, at 28, 29 (discussing rural Maine as both pharmacy desert and healthcare desert "as hospitals and medical practices close or merge").

[96] Hawryluk, *supra* note 25.

[97] NAT'L CMTY. PHARMACISTS ASS'N, 2021 NCPA DIGEST 9 (Leon Michos & Erin Holmes eds., 2021) [hereinafter NCPA] ("Independent community pharmacies continue to lead the way in promoting lower-cost generic drugs over their higher-cost branded counterparts.").

[98] Qato et al., *supra* note 14, at 1963.

[99] Doucette et al., *supra* note 46, at 1269.

[100] Mitchell & Thaxton, *supra* note 95, at 29.

[101] Qato et al., *supra* note 21, at 5 ("Chain pharmacies, however, were significantly less likely than independent pharmacies to report offering home-delivery (6.2% vs. 64.2%) or multilingual staff (1.8% vs. 30.6%). All of these differences were statistically significant ($p<0.001$).").

[102] Mitchell, *supra* note 10, at 499; *see also* Doucette et al., supra *note* 46, at 1269 ("[C]onsumers report a higher level of satisfaction with service at independently owned pharmacies than at retail chain pharmacies.").

[103] Gitta, *supra* note 16, at 166 ("Pharmacists' personal knowledge of communities and their residents help with healthcare administration as patients are more comfortable with sharing health information that they may withhold from their doctors.").

pharmacies.[104] Independent pharmacies often have professional relationships with local doctors and can work in tandem with them.[105] And this superior service does not come with a steeper price tag. Indeed, independent pharmacies often charge significantly less than chain pharmacies. Another *Consumer Reports* study found that for a month's supply of a set of five commonly prescribed generic drugs, independents had an average retail price of $107, while Walgreens charged $752, Rite Aid charged $866, and CVS charged $928.[106] For many communities, independent pharmacies provide the optimal mix of service and low price.[107]

Independent pharmacies are particularly important in traditionally underserved areas. A majority—57%—of independent pharmacies "serve communities that rank high or very high on the Centers for Disease Control and Prevention's Social Vulnerability Index."[108] Independent pharmacies are more likely to serve rural areas, small towns, and urban Black and Hispanic neighborhoods.[109] Indeed, independent pharmacies "are more likely to be the sole source of pharmaceutical services in rural and other areas facing poor access to care."[110] Because independent pharmacies are disproportionately located in Black and Hispanic neighborhoods,[111] the closure of independent pharmacies

[104] Lisa L. Gill, *Consumers Still Prefer Independent Pharmacies, CR's Ratings Show*, CONSUMER REPS. (Dec. 7, 2018), https://www.consumerreports.org/pharmacies/consumers-still-prefer-independent-pharmacies-consumer-reports-ratings-show/ [https://perma.cc/GQ4E-6449].

[105] *See* Marszalek, *supra* note 82, at WE3.

[106] Lisa L. Gill, *Shop Around for Lower Drug Prices*, CONSUMER REPS. (Apr. 5, 2018), https://www.consumerreports.org/drug-prices/shop-around-for-better-drug-prices/ [https://perma.cc/AP9T-FGRY]; *see also* Stacy Mitchell & Zach Freed, *How the FTC Protected the Market Power of Pharmacy Benefit Managers*, PROMARKET (Feb. 19, 2021), https://www.promarket.org/2021/02/19/ftc-market-power-pharmacy-benefit-managers/ [https://perma.cc/2NDZ-E47V] ("Independent pharmacies offer significantly lower drug prices than chain pharmacies and spend more time explaining medicines to their patients and answering questions.").

[107] Of course, chain stores may offer some advantages. But while some chain pharmacy stores may offer larger stocks and a wider range of prescription medications or longer hours, Amstislavski et al., *supra* note 11, at 10, studies have found that independent pharmacies have fewer out-of-stock drugs. Mitchell, *supra* note 10, at 499.

[108] NCPA, *supra* note 97, at 1.

[109] Mitchell & Thaxton, *supra* note 95, at 29.

[110] Salako et al., *supra* note 22, at 1; *see* FTC INTERIM STAFF REPORT, *supra* note 24, at 16 ("In rural and medically underserved communities, independent pharmacies are often the sole provider of medication counseling and management as well as the main source for immunizations and rescue medications like EpiPens for allergic reactions.").

[111] Guadamuz et al., *supra* note 28, at 806 ("Specifically, independent stores accounted for 34.8 percent of all pharmacies in White neighborhoods and 53.1 percent and 57.4 percent of pharmacies in Black and Hispanic/Latino neighborhoods, respectively ($p<0.05$)."). Almost half of independent pharmacies—47%—report serving communities with a "significant minority population." NCPA, *supra* note 97, at 1.

may often have disparate racial impacts. Too often, when an independent pharmacy closes, it creates a desert.[112]

C. *Proximity to the Apothecary*

People face two separate barriers to acquiring prescribed medications: economic and geographic.[113] These barriers are related but distinct. They are related in that increasing the distance to the nearest pharmacy entails higher costs in fuel, fares, and travel time, which may require taking hours off from work or hiring a babysitter.[114] But they are distinct because reducing the price of prescription drugs alone cannot overcome the geographic barrier for many people in pharmacy deserts—accessibility is as great a challenge as affordability.[115]

Geography is critical because physical proximity to a pharmacy is necessary to access pharmacy services.[116] Greater distances translate into inaccessibility for many people.[117] Residents of pharmacy deserts must travel farther to have their prescriptions filled and to receive other pharmacy services.[118] When it comes to health care, ease of access correlates with utilization.[119] A shorter distance allows patients to receive medications and related medical advice more easily.[120] Closer distance to a pharmacy is associated with medication adherence, with urban residents who live more than one mile from the nearest pharmacy less likely to appropriately use their prescription medications.[121] When the

[112] *See* Mitchell & Thaxton, *supra* note 95, at 29.

[113] Amstislavski et al., *supra* note 11, at 2.

[114] Kaitlin Strauss, Charles MacLean, Austin Troy & Benjamin Littenberg, *Driving Distance as a Barrier to Glycemic Control in Diabetes*, 21 J. GEN. INTERNAL MED. 378, 378 (2006) (discussing distance as aspect of travel burdens for rural cancer patients using urban hospitals).

[115] Amstislavski et al., *supra* note 11, at 2 ("Residents that live in communities without a pharmacy or require lengthy travel to the closest pharmacy may face geographic barriers to accessing prescription medications regardless of their economic access."); Olumhense & Husain, *supra* note 6.

[116] Pednekar & Peterson, *supra* note 10, at 2 ("In addition to economic factors, geographic accessibility to a community pharmacy is also an essential determinant of the access to prescription medications as it may affect the older individual's ability to fill prescriptions even in the absence of economic barriers.").

[117] Amstislavski et al., *supra* note 11, at 2.

[118] Qato et al., *supra* note 14, at 1961-62 (examining effect of geographic accessibility on use of pharmacy services).

[119] Domnich et al., *supra* note 45, at 240; *see also* Thomas A. Arcury, John S. Preisser, Wilbert M. Gesler & James M. Powers, *Access to Transportation and Health Care Utilization in a Rural Region*, 21 J. RURAL HEALTH 31, 31 (2005) ("Without transportation, even a short distance to care can become an insurmountable problem.").

[120] Doucette et al., *supra* note 46, at 1268.

[121] Wisseh et al., *supra* note 5, at 1425.

nearest pharmacy is several bus rides away, taking medications as consistently as required can become extremely difficult.

Traversing such distances would be inconvenient for healthy, able-bodied adults, but these distances are prohibitive for patients whose underlying conditions reduce their ability to travel. For an able-bodied person, a round trip that entails four bus rides spread over one hour is already a challenge. For a single mother with mobility issues, that distance is an ocean. Even when it is possible to make the journey occasionally, some people may find it impossible to make the trip regularly. This may mean not keeping up on one's medications, cutting pills in half, or taking daily medication every other day.

Proximity to the nearest pharmacy is significant for the most vulnerable patients in pharmacy deserts: lower-income households, rural residents, and the elderly. First, in part because pharmacy deserts are often in low-income areas, many residents of pharmacy deserts neither own nor have access to a car.[122] For many poor families without access to a private car or public transportation, the distance to the nearest pharmacy prevents them from securing their prescription medications.[123] Second, in rural areas, over 1.6 million people live farther than twenty miles from the nearest pharmacy, which creates an everyday barrier that is significantly magnified during times of inclement weather, adverse road conditions, and elevated fuel costs.[124]

Third, distance is a particularly salient barrier for elderly patients who can no longer drive.[125] Reasonable travel distances for younger people may be prohibitive for elderly patients.[126] Yet the elderly, as a group, have a relatively greater need for pharmacy services.[127] Because immune system function and resilience decline in older adults, making them more susceptible to infections,

[122] *Id.* at 1428 ("Residents who lived in deserts tended to not own their own vehicle or home and lived below the federal poverty line.").

[123] Amstislavski et al., *supra* note 11, at 10; *see also* Ying et al., *supra* note 11, at 1878 ("Disparities in accessing pharmacies are not only because of the geographic location of neighborhoods but are also a product of lack of access to transportation, both for private vehicles and public transportation.").

[124] Hawryluk, *supra* note 25.

[125] Pednekar & Peterson, *supra* note 10, at 3 (noting that driving distance to pharmacy may not be best measure of access because many elderly patients cannot drive).

[126] Lin, *supra* note 80, at 306 ("A travel distance of 10 miles to a pharmacy may be considered a short ride to a younger population, but it could be challenging for elderly residents living in rural areas."); Salako et al., *supra* note 35, at 155 (noting steep geographical barrier is exacerbated for low-income and elderly people).

[127] *See* Elizabeth D. Kantor, Colin D. Rehm, Jennifer S. Haas, Andrew T. Chan & Edward L. Giovannucci, *Trends in Prescription Drug Use Among Adults in the United States from 1999-2012*, 314 JAMA 1818, 1820 (2015) (showing number of prescriptions adults in United States have, by age group); Pednekar & Peterson, *supra* note 10, at 2 ("Elderly use prescription medications more than any other age groups as they are more likely to have multiple and/or severe chronic conditions and more frequent seasonal illnesses.").

vaccinations are particularly important for the older population.[128] Not surprisingly, the elderly consume a disproportionate share of prescription medications, particularly cardiovascular, analgesic, and central nervous system drugs.[129] The elderly have more prescriptions for different medications that need to be filled and consistently refilled.[130] Residing in a pharmacy desert reduces medication adherence rates for elderly patients.[131] The elderly not only require and consume more medications, but are also the most likely to suffer adverse consequences, including adverse drug reactions (often from drug interactions) and medication mistakes.[132] With greater access to community pharmacies—and their knowledgeable pharmacists—elderly patients are less likely to experience adverse responses to drugs, including drug interactions and mistakes in dosage.[133] Conversely, less access increases the likelihood of certain medical issues in the elderly; for example, driving distances exacerbate problems of glycemic control in older diabetes patients.[134] Overall, elderly residents are particularly harmed by living in pharmacy deserts, as the greater distance—with its attendant costs and travel time and difficulties—may make elderly patients less likely to seek the counsel of a pharmacist.[135] And even if driving to pick up a prescription can be avoided because drugs can be mailed, pharmacies provide necessary services that cannot be delivered by post.[136]

[128] Newlon et al., *supra* note 51, at 2457 (noting that despite greater need, many older adults remain undervaccinated). For example, flu vaccines are vital for those 65 years and older, who comprise over three-quarters of those hospitalized for influenza and suffer a flu-related death rate "six times higher than all other age groups combined." *Id.*

[129] Joseph T. Hanlon et al., *Use of Inappropriate Prescription Drugs by Older People*, 50 J. AM. GERIATRICS SOC'Y 26, 26 (2002) ("Older people, who constitute approximately 13% of the population, consume 35% of all prescription medications in the United States.").

[130] Pednekar & Peterson, *supra* note 10, at 2 ("An elderly patient takes, on average, four or five prescription drugs and two over-the-counter (OTC) medications.").

[131] Pednekar et al., *supra* note 8, at A205-A206 ("Pharmacy deserts affect medication adherence rates among elderly patients. This suggests that by making greater efforts to increase access to pharmacy services, medication adherence may be increased.").

[132] Lisa E. Hines & John E. Murphy, *Potentially Harmful Drug-Drug Interactions in the Elderly: A Review*, 9 AM. J. GERIATRIC PHARMACOTHERAPY 364, 365 (2011); Richard W. Pretorius, Gordana Gataric, Steven K. Swedlund & John R. Miller, *Reducing the Risk of Adverse Drug Events in Older Adults*, 87 AM. FAM. PHYSICIAN 331, 332 (2013); Pednekar & Peterson, *supra* note 10, at 2 ("Elderly people are also more likely to have adverse drug reactions, drug-drug interactions and medication errors.").

[133] *See* Lin, *supra* note 80, at 302 (showing elderly are likely to experience more morbidities compared to other age groups and benefit significantly from access to community pharmacies).

[134] *See* Strauss et al., *supra* note 114, at 379 ("Driving distance was significantly associated with glycemic control in this population of older, rural subjects.").

[135] *See* Doucette et al., *supra* note 46, at 1275.

[136] *See* Liu et al., *supra* note 49, at 2.

D. *The Demographics of Deserts*

Pharmacy deserts reflect and reinforce disparities in healthcare access. Pharmacy deserts can be found in areas in which all populations live, but residents of pharmacy deserts are more likely to have one or more of the following three demographic characteristics: Black or Hispanic, rural, and/or low income. This has important implications for healthcare equity.

1. Racial Composition

Pharmacy deserts mirror and buttress underlying racial inequities. Pharmacy closure rates are significantly higher in Black and Hispanic/Latino neighborhoods, compared to majority-white neighborhoods.[137] For example, one major study of the 10,074 neighborhoods in the thirty most populous American cities found that between 2007 and 2015, in San Antonio, Texas, 1.9% of white neighborhoods had a pharmacy close its doors, while 15.9% of Hispanic/Latino neighborhoods did.[138] In that time period in San Jose, California, while 2.5% of white neighborhoods experienced pharmacy closures, 37.5% of Hispanic/Latino neighborhoods lost their pharmacy.[139] The study concluded that pharmacy closures were significantly more likely in Black and Hispanic/Latino neighborhoods than majority-white neighborhoods.[140] Overall, the study found metropolitan neighborhoods with higher proportions of Black or Hispanic residents were more likely to witness pharmacy closures and be transformed into a pharmacy desert.[141]

Even when new pharmacies open, they are significantly less likely to open in Black or Hispanic neighborhoods that lack any pharmacies at all.[142] For example, between 2000 and 2012, "the number of pharmacies in segregated white communities increased by 30 percent (to a mean of 0.86 per census tract), while the number of pharmacies declined by 17 percent and 11 percent in segregated Hispanic and segregated black communities, respectively."[143] Ultimately, Black and Hispanic/Latino neighborhoods are more likely to lack a pharmacy, more likely to have their pharmacies close, and less likely to have a new pharmacy open.[144]

These disparate closure rates mean that many pharmacy deserts are a racial phenomenon.[145] One study of the thirty largest cities in the United States

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[137] Guadamuz et al., *supra* note 28, at 805-06.

[138] *Id.* at 804-06.

[139] *Id.* at 806.

[140] *Id.* at 804-05.

[141] *Id.*

[142] *Id.* at 805.

[143] Qato et al., *supra* note 14, at 1961.

[144] Guadamuz et al., *supra* note 28, at 807.

[145] *Id.* at 806 (reporting lower percentages of pharmacy deserts in white and diverse neighborhoods as compared to Black and Hispanic/Latino neighborhoods). Some pharmacy

documented that across all cities, "pharmacy deserts were significantly more common in Black neighborhoods than White neighborhoods."[146] For example, in Chicago, while 5% of segregated white communities were pharmacy deserts, 54% of the city's 287 segregated Black communities lacked a single pharmacy.[147] In New York City, studies have found that "white residents had substantially greater geographical access to pharmacies than black residents."[148] These racial disparities extend to rural communities, as well. While rural Hispanic zip codes suffered "the lowest density of pharmacies,"[149] rural zip codes with high Black populations are also particularly likely to "lack a pharmacy despite the higher prevalence of chronic conditions in this population."[150] Ultimately, many case studies report fewer pharmacies in Black neighborhoods, both in major cities and in more rural areas.[151] In contrast, in zip codes with relatively large white populations, residents enjoyed "greater access to pharmacy services, including discount generic drug programs and immunizations."[152] Whether measured by distance or travel time, "predominantly white neighborhoods are less likely to be in a pharmacy desert compared with predominantly Black and Latino neighborhoods."[153] And the problem of Black and Hispanic/Latino neighborhoods becoming pharmacy deserts is likely to worsen in the future,[154] as more of these communities are at greater risk of losing their last pharmacy and becoming pharmacy deserts.[155]

deserts have largely white populations. Pednekar & Peterson, *supra* note 10, at 1 (highlighting Pennsylvania study finding pharmacy deserts with "fewer blacks and Hispanics compared to pharmacy non-deserts"). However, minority communities are disproportionately affected overall. Zahnd et al., *supra* note 57, at 2.

146 Guadamuz et al., *supra* note 28, at 806.

147 Qato et al., *supra* note 14, at 1962.

148 Pednekar & Peterson, *supra* note 10, at 3.

149 Zahnd et al., *supra* note 57, at 5.

150 *Id.* at 8.

151 Marie A. Chisholm-Burns et al., *Evaluation of Racial and Socioeconomic Disparities in Medication Pricing and Pharmacy Access and Services*, 74 AM. J. HEALTH-SYS. PHARMACY 653, 654, 667 (2017) (reporting studies from Wayne County, Michigan, and Shelby County, Tennessee).

152 *Id.* at 654; *see* Qato et al., *supra* note 14, at 1960 ("Throughout the study period, the availability of pharmacies was significantly greater in segregated white communities and integrated communities, compared to segregated minority communities.").

153 Ying et al., *supra* note 11, at 1878.

154 Guadamuz et al., *supra* note 28, at 810 ("As pharmacies located in Black and Hispanic/Latino neighborhoods were more likely to close than those elsewhere, disparities in pharmacy deserts will likely worsen."); Qato et al., *supra* note 14, at 1962 ("Despite a limited change in the number of pharmacies in Chicago during the study period, we found that disparities in the availability of pharmacies have worsened, especially for segregated black communities.").

155 Ying et al., *supra* note 11, at 1878.

Although most studies measure pharmacy deserts by distance to the nearest pharmacy, considering travel times magnifies the racial disparities in pharmacy access even further. Because residents in non-white neighborhoods have less access to both cars and adequate public transportation, their travel times to the nearest pharmacy are even greater, which presents another barrier to pharmacy access.[156] The absence of pharmacies forces many Black patients to travel significantly farther to access a pharmacy,[157] which means that residents in low-income minority communities have less access to drive-through or on-site clinics, as well as to 24-hour availability of medications and advice.[158]

These racial disparities in pharmacy access are not a simple reflection of wealth effects. Even controlling for income, Black or Hispanic neighborhoods are more likely than others to be pharmacy deserts.[159] Holding income constant, pharmacy deserts are disproportionately present in Black communities.[160]

The racialization of pharmacy deserts increases racial disparities in access to medications and consequently health outcomes.[161] Low-income minority communities are hit hardest by the closure of both chain and independent pharmacies.[162] As pharmacies provide more healthcare services—including physicals, immunizations, and health counseling—the closure of pharmacies in communities of color will lead to even greater disparities in health outcomes,[163] especially because these communities already have less geographic access to primary care providers than residents in majority-white neighborhoods.[164] Thus, racial minorities are more likely to be disadvantaged by chronic diseases because they have less access to pharmacies.[165] For example, pharmacies correlate with higher drug adherence rates,[166] while lower adherence rates for cardiovascular medications among Black and Hispanic patients, compared to white patients,

[156] *Id.* at 1879.

[157] Qato et al., *supra* note 14, at 1961.

[158] Wisseh et al., *supra* note 5, at 1432.

[159] Qato et al., *supra* note 14, at 1963 ("[P]harmacy accessibility appears to be associated with race instead of income.").

[160] Guadamuz et al., *supra* note 28, at 806 ("We found that pharmacy deserts were more prevalent in low-income Black versus low-income White neighborhoods (47.7 percent versus 40.3 percent; $p<0.05$).").

[161] Qato et al., *supra* note 14, at 1958 ("[M]edications are frequently underused, and there are persistent racial and ethnic disparities in their use. Such disparities in the use of prescription medications may be an overlooked contributor to disparities in health outcomes." (footnotes omitted)).

[162] Gitta, *supra* note 16, at 164.

[163] *See* Olumhense & Husain, *supra* note 6.

[164] Qato et al., *supra* note 14, at 1959.

[165] *See* Wisseh et al., *supra* note 5, at 1425 ("As medications are commonly used to prevent and mitigate chronic diseases and their associated complications and outcomes, limited geographic access to medications in communities that are already plagued with health inequity is a growing concern.").

[166] *See supra* text accompanying notes 67-78.

"likely contribute[] to a persistent 7-year lower overall life expectancy in blacks relative to whites."[167] Minority populations with higher rates of chronic diseases such as hypertension and diabetes often have less access to pharmacies that offer the necessary medications for those conditions, which, in turn, could explain some racial disparities in health outcomes.[168]

In sum, populations that would benefit most from local pharmacies are also most likely to be denied access because they live in pharmacy deserts. Local pharmacies can play an important role in reducing race-based health disparities.[169] But only if every community has access to pharmacies.

2. Rural

Rural residents have less access to pharmacies than urban dwellers overall.[170] In particular, pharmacy deserts are more likely in rural counties with older populations,[171] who require more prescription medications, have less access to transportation, and generally have more limited financial resources.[172] And America's rural regions are losing their pharmacies at a disproportionate rate.[173] Independent pharmacies are at particular risk, as between 2003 and 2018, over 1,200 independently owned rural pharmacies closed permanently, representing a decline of over 16% over all such pharmacies and leaving another 630 rural zip codes with no retail pharmacy whatsoever.[174] Hundreds of rural communities are vulnerable to pharmacy desertification. Nationally, over 300 rural areas have lost pharmacies between 2003 and 2018, leaving them with only one remaining.[175] Overall, at least 600 rural communities have only a single

[167] Davis, *supra* note 69, at 462 (citation omitted).

[168] *See* Chisholm-Burns et al., *supra* note 151, at 658-59 ("As medication therapy is the typical treatment modality for most chronic conditions, limited community pharmacy access and, in turn, limited medication access jeopardize treatment efforts and may result in poorer health outcomes in minority groups."); Wisseh et al., *supra* note 5, at 1433.

[169] Davis, *supra* note 69, at 462-63, 469 (stating geospatial analysis and attention to local retail pharmacies in minority neighborhoods may help reduce health disparities).

[170] Zahnd et al., *supra* note 57, at 2 ("Studies consistently show that rural communities have less access to pharmacies than do urban communities.").

[171] Oyeka et al., *supra* note 18, at 4 (finding rural counties that had no access to local retail pharmacies were less populated and had predominantly older populations).

[172] Michelle M. Casey, Jill Klingner & Ira Moscovice, *Pharmacy Services in Rural Areas: Is the Problem Geographic Access or Financial Access?*, 18 J. RURAL HEALTH 467, 468 (2002).

[173] *See* Marty Schladen, *Antitrust Regulator Takes Aim at Drug Middlemen*, OHIO CAP. J. (Sept. 30, 2022, 5:00 AM), https://ohiocapitaljournal.com/2022/09/30/antitrust-regulator-takes-aim-at-drug-middlemen/ [https://perma.cc/47VG-ZMZ5] (noting during recent fifteen-year period, thirty rural zip codes in Minnesota lost their last pharmacy).

[174] Salako et al., *supra* note 22, at 1.

[175] *Id.* at 4.

pharmacy and therefore remain at risk of becoming a desert:[176] an estimated three million rural residents live at risk of losing local pharmacy access.[177]

Rural pharmacies are especially critical for several reasons. Rural residents in minority groups often have "a higher prevalence of chronic conditions necessitating maintenance medications."[178] Rural pharmacists help their customers treat mild illnesses by recommending appropriate over-the-counter medications,[179] a particularly valuable service in towns without a doctor. Most rural pharmacies also provide drug interaction screening services, which can reduce the probability of adverse drug reactions.[180] In many rural areas, local pharmacies operate as de facto healthcare clinics and pharmacists are the frontline providers of myriad "clinical services such as medication counseling, blood pressure and glucose monitoring, immunizations, patient consultation, treatment of mild illnesses amenable to over-the-counter medications, and other counselling and educational services (including chronic disease and medication therapy management)."[181] In many rural areas, community pharmacies are more likely to be "the most accessible health resources to the general population."[182] Rural pharmacists are "in the best position to monitor the effects of pharmacotherapy to prevent adverse drug reactions, and to coordinate drug therapy prescribed by multiple healthcare providers."[183] Rural pharmacies also support other local healthcare providers, which may include hospitals, skilled nursing facilities, and hospices.[184] But when these other providers do not exist, local pharmacists are even more important.[185] Pharmacies can help compensate for the overall lack of healthcare services in many rural areas.[186]

The closure of rural pharmacies increases the distance between patients and pharmacy services,[187] putting pharmacies out of practical reach for people without reliable transportation. Research shows that for 84% of rural

[176] Salako et al., *supra* note 35, at 149 ("The dramatic increase in closures of rural independent pharmacies has slowed in recent years, but the financial viability of such pharmacies remains a concern particularly in the over 660 rural communities that are served by a single independent pharmacy.") .

[177] *Id.* at 155.

[178] Zahnd et al., *supra* note 57, at 8.

[179] Salako et al., *supra* note 35 at 148-49.

[180] Casey et al., *supra* note 172, at 471.

[181] Salako et al., *supra* note 22, at 1.

[182] Lin, *supra* note 80, at 301.

[183] *Id.* at 302.

[184] Salako et al., *supra* note 35, at 148-49.

[185] *See* Casey et al., *supra* note 172, at 474; Oyeka et al., *supra* note 18, at 5.

[186] Salako et al., *supra* note 22, at 1 ("Thus, rural pharmacies play an important role in alleviating the poor access to health services prevalent in many rural communities.").

[187] Oyeka et al., *supra* note 18, at 1 ("Beneficiaries residing in rural counties with no retail pharmacy traveled an average of 28.5 miles to use a community pharmacy compared to an average range of 6.5 - 13.1 miles for beneficiaries residing in rural counties with some type of pharmacy presence.").

pharmacies, "the next closest retail pharmacy was over 10 miles away [and] [f]or a little over half of those pharmacies, the closest retail pharmacy was over 20 miles away."[188] Pharmacy closures exacerbate the access-to-health care crisis in rural areas.[189] Reduced "access to pharmacy services may cause rural consumers to delay or forego essential treatment with prescription medications."[190] When rural independent pharmacies close, the entire local healthcare delivery system falters as the community loses access to the medical professionals best positioned to advise patients how to take prescription and over-the-counter medications and how to manage their chronic diseases.[191] Ultimately, losing the local pharmacist worsens health outcomes in rural communities.[192]

3. Low Income

Low-income communities have fewer pharmacies than wealthier enclaves.[193] They are also more vulnerable to losing their remaining pharmacies.[194] Particularly in urban areas, independent pharmacies in low-income communities are more likely to shutter their doors than pharmacies in wealthier neighborhoods.[195] Consequently, low-income communities are more likely to be pharmacy deserts.[196]

Pharmacy closures exacerbate socioeconomic and racial disparities in health outcomes. Income-associated healthcare disparities already make residents of disadvantaged communities more likely to suffer chronic diseases, which could be managed by prescription medications.[197] Poverty is positively correlated with

[188] Salako et al., *supra* note 35, at 150; *see* FTC INTERIM STAFF REPORT, *supra* note 24, at 16 ("According to one study, in over eight percent of U.S. counties in 2022, a majority of residents lived more than ten miles from the nearest pharmacy.") (citing Lucas A. Berenbrok et al., *Access to Community Pharmacies: A Nationwide Geographic Information Systems Cross-Sectional Analysis*, 62 J. AM. PHARMACISTS ASS'N 1816, 1816 (2022)).

[189] Oyeka et al., *supra* note 18, at 5.

[190] Casey et al., *supra* note 172, at 468.

[191] Salako et al., *supra* note 35, at 155.

[192] Oyeka et al., *supra* note 18, at 1 (stating "pharmacy closures threaten access to health care services and may negatively impact health outcomes," especially in rural communities); Klepser et al., *supra* note 21, at 169 ("When the sole [rural] pharmacy in a community closes, access to health care will be reduced, and patients may see negative health consequences due to an inability to obtain their prescriptions.").

[193] *See supra* text accompanying notes 27 and 122; Jagadeesan & Wirtz, *supra* note 88, at 10 (reporting wealthier communities have higher density of pharmacies).

[194] Guadamuz et al., *supra* note 19, at 157 ("Although efforts to promote pharmacy access have focused on addressing pharmacy closures in rural areas, we found that pharmacies located in low-income, urban areas are at greater risk of closing." (footnote omitted)).

[195] Guadamuz et al., *supra* note 28, at 805.

[196] *Id.* at 807.

[197] Amstislavski et al., *supra* note 11, at 2 ("[D]isadvantaged communities often have excess morbidity and mortality from chronic diseases, which require prescription medications for disease prevention and management.").

several chronic health conditions—including asthma, type 2 diabetes, hypercholesterolemia, hypertension, and heart disease—as well as the risk of stroke,[198] all of which are managed with commonly prescribed medications.[199] Yet poor households face greater difficulties accessing appropriate medications.[200] Ultimately, pharmacy deserts mean that those populations with the greatest need for medications have the least access.

E. *The Promise and Perils of Mail-Order Telepharmacies*

Some companies and commentators champion home delivery as the solution to pharmacy deserts.[201] For example, one commentator suggested that "[b]y providing a way for patients to get medication directly from manufacturers while simultaneously cutting out the retail pharmacy middleman, e-pharmacies will empower the consumer while also increasing access to healthcare."[202] Large pharmacy chains, like CVS, are closing hundreds of retail locations as part of their strategy to shift patients from in-person services to mail-order dependence.[203] It is tempting to hope that delivering prescription medicines by mail can overcome the problem of distant pharmacies.[204]

Mail-order pharmacies, however, are not the panacea they might seem to be. For starters, home delivery is not practically available for everyone.[205] Residents of pharmacy deserts, paradoxically, have less access to delivery services.[206] In part because of the risk of theft, pharmacies in some low-income or high-crime areas are less likely to provide home delivery.[207]

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[198] *Id.* at 10-11.

[199] *Id.*

[200] *Id.* at 10.

[201] Rebecca Torrence, *CVS Health Plans 900 Store Closures, Lowers Guidance as Retail Strategy Shifts Digital*, FIERCE HEALTHCARE (Nov. 18, 2021, 11:25 AM), https://www.fiercehealthcare.com/practices/cvs-health-plans-900-store-closures-lowers-guidance-as-retail-strategy-shifts-digital ("Companies across the country are confronting the digital wave in healthcare as consumers increasingly turn to their phones and computers over brick-and-mortar clinics and stores.").

[202] Gitta, *supra* note 16, at 176-77.

[203] Torrence, *supra* note 201.

[204] Jon C. Schommer, Akeem A. Yusuf & Ronald S. Hadsall, *Market Dynamics of Community Pharmacies in Minnesota, U.S. from 1992 Through 2012*, 10 RSCH. SOC. & ADMIN. PHARMACY 217, 227 (2014) (noting "[i]t is tempting to place confidence in the growth of internet, communications, and mail-order delivery services as ways to overcome geographic access concerns," but concluding that in-person access to community pharmacies and pharmacists is necessary).

[205] Qato et al., *supra* note 21, at 2, 9.

[206] Pednekar & Peterson, *supra* note 10, at 1-2 ("Pharmacy deserts had significantly fewer chain and independent pharmacies and less delivery and 24-hour services in pharmacies than pharmacy non-deserts.").

[207] Chisholm-Burns et al., *supra* note 151, at 666-67 (speculating that pharmacies in areas with higher crime risk may not offer delivery services due to concerns about employee safety).

Even when available, home delivery is not the prescription that most patients need or desire.[208] In-person pharmacies offer their customers something that mail-order pharmacies do not: pharmacists. Mail-order pharmacies cannot provide the panoply of services that community pharmacists can.[209] Pharmacists serve a critical role in preserving and improving the health of their customers far beyond simply dispensing prescription medications. The value of the personal relationships that a neighborhood pharmacist has with their customers is critical, beneficial, and cannot be replicated by mail-order companies. For example, mail-order services cannot adequately replace pharmacies because mail delivery cannot provide clinical services.[210] Delivered prescription drugs do not come with face-to-face advice. No individual pharmacist screens for the risk of adverse drug interactions. In short, neighborhood pharmacies do not just sell products; they provide services.

Appreciative of these services and relationships, many patients do not want to use mail-order pharmacies. Even if some tech-savvy people are comfortable forsaking their pharmacist, many patients—including the poor and the elderly—benefit from having access to a physical pharmacy.[211] In particular, patients from low-income or minority neighborhoods, "still overwhelmingly prefer to fill medications at a brick-and-mortar location."[212] Many rural patients prefer in-person consultations with their pharmacist, who can answer questions about dosages, side effects, and risks.[213] Fewer than one-fifth of Medicare beneficiaries in rural areas with limited or no retail pharmacy access use a mail-order pharmacy.[214] Patients report that mail-order pharmacies create confusion by severing the link between the medication and a professional who can answer their questions.[215] Furthermore, through their practice of auto-refilling prescriptions, mail-order pharmacies are more likely to ship inappropriate

[208] Notably, mail-order medications sometimes lose their efficacy when delivered in vehicles without adequate temperature control because federal rules regulating drug storage do not apply to mail-order delivery trucks. Emily Baumgaertner, *Hot Summer Threatens Efficacy of Mail-Order Medications*, N.Y. TIMES (Aug. 13, 2024), https://www.nytimes.com/2024/08/13/health/heat-mail-order-drugs.html.

[209] Oyeka et al., *supra* note 18, at 5 (noting that mail-order pharmacies do "not replace the host of other pharmacy services that rural residents need and find useful").

[210] Salako et al., *supra* note 22, at 1.

[211] Amstislavski et al., *supra* note 11, at 2 ("[P]harmacies are especially critical in socioeconomically disadvantaged communities, where access to prescription medications via online pharmacies and to health information and resources is often impaired.").

[212] Benjamin Y. Urick, Jessica K. Adams & Maimuna R. Bruce, *State Telepharmacy Policies and Pharmacy Deserts*, 6 JAMA NETWORK OPEN 7 (Aug. 14, 2023), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2808246 [https://perma.cc/R4FP-QUUN].

[213] *See* Oyeka et al., *supra* note 18, at 4.

[214] *Id.*

[215] Salako et al., *supra* note 35, at 152, 155.

medications after a patient's prescription has been changed or discontinued.[216] Finally, relying on mail-order pharmacies sometimes entails weeks-long delays that can be harmful to patient health.[217]

Telepharmacies, too, are a potential mechanism to bridge the gap between pharmacists and patients.[218] While promising, telepharmacies cannot solve the problem of pharmacy deserts. Common telepharmacy models require patients to travel to a physical pharmacy to interact with non-pharmacist staff who have video/audio links to a remote pharmacist.[219] This version of a telepharmacy is essentially a pharmacy without an in-person pharmacist.[220] This approach cannot work in a pharmacy desert, which has no pharmacies. This system also does not cultivate the types of pharmacist-patient relationships associated with better drug adherence and reduced drug interactions.[221] The other common model involves self-service kiosks with live communication links to a remote pharmacist who can label and dispense prescriptions for medications stored in the kiosk.[222] This approach, too, fails to facilitate the casual pharmacist-patient interactions that build trust and improve health outcomes. Moreover, it does not enable pharmacists to administer vaccines, dispense unstocked medications, or provide other in-person services. Telepharmacies also raise privacy and security concerns.[223] Finally, telemedicine is less likely to be used by the elderly, racial

[216] *Id.* at 152; *see also* David Dayen, *The Hidden Monopolies That Raise Drug Prices*, AM. PROSPECT, Spring 2017, at 92, https://prospect.org/health/hidden-monopolies-raise-drug-prices [https://perma.cc/5L9J-V54F] ("[M]ail-order pharmacies often auto-ship drug shipments before patients run out, and on a chronic prescription, the drugs pile up. The NCPA has documented dozens of examples of pill waste, disposed after a patients' death or when their doctor discontinues the treatment.").

[217] Schladen, *supra* note 173.

[218] Arjun Poudel & Lisa M. Nissen, *Telepharmacy: A Pharmacist's Perspective on the Clinical Benefits and Challenges*, 5 INTEGRATED PHARMACY RSCH. & PRAC. 75, 76 (2016); Urick et al., *supra* note 212, at 8.

[219] Libby Baney & Larissa Morgan, *DEA Seeks Public Input as It Explores Regulating Telepharmacy*, NAT'L ASS'N OF BDS. OF PHARMACY (Feb. 18, 2022), https://nabp.pharmacy/news/blog/dea-seeks-public-input-as-it-explores-regulating-telepharmacy/ [https://perma.cc/T5GW-MUCH].

[220] *Welcome to Telepharmacy*, N.D. ST. UNIV., https://www.ndsu.edu/telepharmacy/ [https://perma.cc/HY39-PP6D] (last updated Nov. 21, 2023, 3:14 PM) ("Telepharmacy sites in North Dakota are full service pharmacies that have complete drug inventories, including over-the-counter and prescription drugs as well as health and beauty aids and other general store merchandise.").

[221] *See* Lucas A. Berenbrok, Nico Gabriel, Kim C. Coley & Inmaculada Hernandez, *Evaluation of Frequency of Encounters with Primary Care Physicians vs Visits to Community Pharmacies Among Medicare Beneficiaries*, 3 JAMA NETWORK OPEN 2, 6 (July 15, 2020), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2768247 [https://perma.cc/KX8L-4HQN].

[222] Baney & Morgan, *supra* note 219.

[223] Shilpa N. Gajarawala & Jessica N. Pelkowski, *Telehealth Benefits and Barriers*, 17 J. FOR NURSE PRACS. 218, 219 (2021).

minorities, and low-income patients[224]—the precise demographics most likely to live in a pharmacy desert. For these reasons, telepharmacies are promising but deficient.[225]

II. THE CAUSES OF PHARMACY DESERTS

Given the benefits of retail pharmacies and the harsh consequences of living without access to them, it is important to understand what causes pharmacy deserts in order to prevent them and to alleviate them. Not surprisingly, pharmacy closures cause pharmacy deserts.[226] But what causes pharmacy closures? No single explanation exists. Multiple causes and catalysts interact, and different pharmacy deserts may have different origins. This Part examines several causes of pharmacy closures and, hence, pharmacy deserts.

A. *Primer on Drug Distribution Chain*

Pharmacy deserts are, in part, a product of America's byzantine healthcare system. In a traditional market, manufacturers sell products to retailers at a wholesale price, and retailers exercise their discretion to charge their customers a higher retail price, which guarantees the retailers a modest level of profits. The retail price cannot be too high, lest consumers purchase the product from another retailer or decide to forego that product altogether. Consumers in this model are price sensitive and exercise their autonomy by deciding which products they want to purchase and from whom.

But the market for prescription medications in America is not a traditional market. Independent pharmacies do not operate like typical retailers. Consumers lack their traditional autonomy to decide which products they would like to purchase because they must have a prescription from a doctor for the particular medicine they need. Pharmacies do not set their products' resale prices, and many customers do not pay them. Instead, customers with insurance typically pay the pharmacy a co-payment that does not cover the cost of the drug, and the pharmacy receives an additional reimbursement from the insurer. Beyond a modest co-payment, consumers with health insurance usually do not pay for their medications. The fact that neither the prescribing doctors nor the insured consumers are price sensitive has given drug manufacturers latitude to charge exorbitant prices. And they have.[227]

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[224] William Barbosa, Kina Zhou, Emma Waddell, Taylor Myers & E. Ray Dorsey, *Improving Access to Care: Telemedicine Across Medical Domains*, 42 ANN. REV. PUB. HEALTH 463, 474 (2021).

[225] For an excellent explanation and overview of the promise and problems of telehealth, see generally Theodosia Stavroulaki, *The Healing Power of Antitrust*, 119 NW. U. L. REV. (forthcoming 2025).

[226] *See* Guadamuz et al., *supra* note 28, at 807 ("Neighborhoods that we found to be pharmacy deserts in 2015 also had higher closure rates in prior years when compared with other neighborhoods.").

[227] *See generally* BOSWORTH ET AL., *supra* note 2.

To control the price of prescription medications, health insurers turned to pharmacy benefit managers ("PBMs"). Originally, PBMs were third-party companies that acted as intermediaries between health insurance providers and pharmaceutical manufacturers.[228] Insurers contracted with PBMs to negotiate lower prices with manufacturers, usually in the form of discounts or rebates off the manufacturers' list price for their drugs.[229]

PBMs create formularies, which are lists of drugs for which the health insurance company will reimburse patients.[230] When multiple medicines exist to treat a certain condition, PBMs decide which drugs are on the formulary and which are excluded from insurance coverage entirely.[231] If a drug manufacturer's medication is not on the formulary, the insurer will not pay for it. Exclusion from the formulary forces patients to pay for their prescribed medication entirely out of their own pocket (unless they can successfully navigate a complex and uncertain appeals process), but prices are often prohibitively high.[232]

PBMs also construct pharmacy networks, which are essentially lists of approved pharmacies from whom insured patients are allowed to purchase their prescription medications.[233] PBMs steer insurers and patients to use in-network "pharmacies by offering lower cost sharing for, or restricting coverage to, prescriptions filled at certain sites."[234] Independent pharmacies negotiate to join these pharmacy networks so that patients will purchase from them.[235]

PBMs have significant leverage over the other businesses in the drug distribution chain. PBMs do not physically distribute prescription drugs, but they control who gets paid for that distribution and how much.[236] PBMs exercise this control to extract a pound of flesh from each of the firms that actually produce, distribute, and pay for prescription medications.

First, health insurance companies pay PBMs to negotiate lower drug prices. PBMs charge administrative fees to the insurance companies that they represent. Insurers also pay PBMs in part based on how large a discount the PBM

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[228] *Pharmacy Benefit Managers*, NAIC, https://content.naic.org/cipr-topics/pharmacy-benefit-managers [https://perma.cc/FK2V-XXZ5] (last updated June 1, 2023).

[229] *Id.*

[230] *Id.*

[231] PBM ACCOUNTABILITY PROJECT, UNDERSTANDING THE EVOLVING BUSINESS MODELS AND REVENUE OF PHARMACY BENEFIT MANAGERS 5 (2021), https://www.pbmaccountability.org/_files/ugd/b11210_264612f6b98e47b3a8502054f66bb2a1.pdf [https://perma.cc/537T-7DY5].

[232] *See id.* at 7.

[233] FTC INTERIM STAFF REPORT, *supra* note 24, at 11.

[234] PBM ACCOUNTABILITY PROJECT, *supra* note 231, at 6.

[235] FTC INTERIM STAFF REPORT, *supra* note 24, at 48 ("A pharmacy may be reimbursed for filling prescriptions for a health plan's beneficiaries only by first entering a network contract with the PBM serving that plan.").

[236] *Pharmacy Benefit Managers*, *supra* note 228.

negotiated from the drug manufacturers.[237] In essence, manufacturer rebates are shared between the PBM and the insurance company that it represents.

Second, drug manufacturers pay PBMs rebates to have their drugs put on PBM-created formularies. Drug manufacturers need their drugs to be on PBM formularies because exclusion reduces purchases of the manufacturer's product.[238] Because drug manufacturers need their products to be on these formularies, PBMs have significant leverage over drug manufacturers.[239] A 2021 Senate Finance Committee Staff Report observed that "[p]harmaceutical companies are sensitive to the sheer size of PBMs and the resulting product volumes they can affect, which allows the middlemen to extract higher rebates from manufacturers through the use of formulary exclusion tactics."[240]

Third, pharmacies pay PBMs to be in their networks and to be approved distributors. Because independent pharmacies need to be in-network to fill patients' prescriptions using insurance coverage, PBMs have almost unfettered latitude to impose onerous terms and conditions on pharmacy sales as a requirement for being in the network.[241] PBMs exercise this power to hobble independent pharmacies.[242]

In essence, patients purchase their prescribed drugs off a PBM-created formulary from a PBM-approved pharmacy. The patient pays a co-payment determined by their health insurer, who pays the drug manufacturer the PBM-negotiated price. The pharmacy gets reimbursed an amount set by the PBM. The insurer's and patient's payments for prescription drugs are divided among the manufacturer, pharmacy, and PBM. But as the middleman with the most market power, the PBM takes the lion's share of the profits, pocketing higher gross margins than distributors, insurers, and pharmacies, even though PBMs play no role in actually making or distributing medications or providing insurance coverage.[243] In theory, PBMs were supposed to use their leverage to compel

[237] *See id.*

[238] STAFF OF S. COMM. ON FIN., 116TH CONG., 2D SESS., INSULIN: EXAMINING THE FACTORS DRIVING THE RISING COST OF A CENTURY OLD DRUG 29 (Comm. Print 2021), https://www.finance.senate.gov/imo/media/doc/Insulin%20Committee%20Print.pdf [https://perma.cc/EXV2-VJBQ].

[239] PBM ACCOUNTABILITY PROJECT, *supra* note 231, at 8.

[240] STAFF OF S. COMM. ON FIN., 116TH CONG., 2D SESS., *supra* note 238, at 60.

[241] *See infra* Section II.D.

[242] *See infra* Section II.D.

[243] Consumer Action, Consumer Fed'n of Am., Consumer Reps., NETWORK Lobby for Catholic Soc. Just. & U.S. Pub. Int. Rsch. Grp., Comment Letter on Proposed Rule to Remove Safe Harbor Protection for Rebates in Medicare Part D Plans 3 (Apr. 8, 2019) [hereinafter Consumer Action], https://downloads.regulations.gov/HHSIG-2019-0001-19975 /attachment_1.pdf [https://perma.cc/52G4-Y9YV] (citing Charley Grant, *Hidden Profits in the Prescription Drug Supply Chain*, WALL ST. J. (Feb. 24, 2018, 10:00 AM), https://www.wsj.com/articles/hidden-profits-in-the-prescription-drug-supply-chain-1519484401); David Balto, *PBMs: The Middlemen Who Drive Up Drug Costs*, CPI

manufacturers to lower their prices. But in practice, PBMs used their power to line their own pockets at the expense of insurers, consumers, and independent pharmacies.[244] This byzantine system inflates healthcare costs and reduces patient access to necessary medications.

PBMs occupy the center of a complex web of manufacturers, insurers, pharmacists, doctors, and patients.[245] The following Sections explain how mergers and acquisitions have changed the nature of these relationships in ways that reduce patient access to pharmacies.

B. *Retail Pharmacy Mergers*

Retail pharmacy mergers have fueled the problem of pharmacy deserts. In 2020, through growth by acquisition, seven national pharmacy chains controlled a collective 72% share of the market for dispensing prescription drugs.[246] The Big Three pharmacy chains—Walgreens, CVS, and Rite Aid—collectively control over 40% of the retail pharmacy market[247] and almost 70% of the specialty drug market.[248] Some mergers have been megamergers between relatively large retail pharmacy chains,[249] while others have been acquisitions in which a large national pharmacy buys out an independent pharmacy or small

ANTITRUST CHRON. 3 (May 31, 2022), https://www.competitionpolicyinternational.com/wp-content/uploads/2022/05/2-PBMs-THE-MIDDLEMEN-WHO-DRIVE-UP-DRUG-COSTS-David-A-Balto.pdf [https://perma.cc/4QUH-8CCV] ("In 2020 alone, PBMs took $9,535,197,775 from independent pharmacies who serve Medicare Part D participants.").

[244] *See infra* Section II.D.

[245] FTC INTERIM STAFF REPORT, *supra* note 24, at 14 ("Given the current level of consolidation, pharmacists, health insurers, and drug manufacturers often have little choice but to interact with the large, dominant PBMs when distributing certain drugs.").

[246] Letter from Senator Ron Wyden, Chairman, Comm. on Fin., to Lina Khan, Chair, Fed. Trade Comm'n (Dec. 6, 2021) [hereinafter Wyden], http://www.wyden.senate.gov/imo/media/doc/Pharmacy%20DIR%20Letter%20to%20FTC.pdf [https://perma.cc/5PRY-LGJM] (revealing market share based on revenue).

[247] Drug Channels Inst., *Top U.S. Pharmacies Ranked by Prescription Drugs Market Share in 2023*, STATISTA (Mar. 21, 2024), https://www.statista.com/statistics/734171/pharmacies-ranked-by-rx-market-share-in-us [https://perma.cc/LX3L-3DWT] (listing market share of top U.S. pharmacies with CVS, Walgreens, and Rite Aid comprising 42.6% of market in 2023).

[248] FTC INTERIM STAFF REPORT, *supra* note 24, at 2.

[249] *See, e.g.*, Ellen Jean Hirst, *Walgreen-Alliance Boots Deal Is Complete*, CHI. TRIB., https://www.chicagotribune.com/2014/12/31/walgreen-alliance-boots-deal-is-complete [https://perma.cc/7V6N-GR5S] (last updated June 18, 2018, 7:11 AM) (describing Alliance Boots acquisition, which combined largest drugstore in United States with large European chain).

regional chain.[250] Both types of mergers have contributed to the creation of pharmacy deserts.[251]

Retail pharmacy megamergers often lead to closures that leave patients without easy access to pharmacies. In 2017, for example, Walgreens agreed to acquire almost half of Rite Aid's stores for $5.2 billion.[252] As part of the acquisition, Walgreens planned to shutter 600 of the pharmacies that it was purchasing, without saying where those closings would occur.[253] After the acquisition, Walgreens closed some newly acquired pharmacies in neighborhoods with only one drugstore. For example, Walgreens closed the Rite Aid branded pharmacy in Albany's South End to force consumers to use Walgreens' existing pharmacy a mile away.[254] But a mile is not always just a mile. The South End neighborhood's elderly population and people with disabilities relied on that now-closed Rite Aid location for prescriptions, over-the-counter medications, groceries, and "just about everything."[255] The distance to the Walgreens is "a very hard mile" up a long hill that is covered in ice during winter.[256] With their newly assigned pharmacy inaccessible, Walgreens's acquisition functionally transformed this Albany neighborhood into a pharmacy desert.

This strategy is neither unique to Walgreens nor a historic relic of the 2010s. In 2020, CVS announced plans to acquire ninety-nine pharmacy locations from Schnucks Markets while acquiring and closing an additional eleven Schnucks

[250] *See, e.g.*, Katie Thomas & Andrew Pollack, *Specialty Pharmacies Proliferate, Along with Questions*, N.Y. TIMES (July 15, 2015), https://www.nytimes.com/2015/07/16/business/specialty-pharmacies-proliferate-along-with-questions.html (noting that retail drugstores "are scrambling to start or acquire specialty pharmacies").

[251] *See infra* notes 252-85 and accompanying text.

[252] David Goldman, *A Drug Store Deal Gone Bad: Walgreens Merger with Rite Aid Falls Apart*, CNN BUS. (June 29, 2017, 10:19 AM), https://money.cnn.com/2017/06/29/news/companies/walgreens-rite-aid/index.html [https://perma.cc/2L39-ZC94].

[253] *Walgreens to Shutter 600 Stores as Part of Rite Aid Deal*, USA TODAY, https://www.usatoday.com/story/money/business/2017/10/25/walgreens-shutter-600-stores-part-rite-aid-deal/799242001/ [https://perma.cc/CG45-SVVT] (last updated Oct. 25, 2017, 1:34 PM).

[254] Emily DeFeciani, *Albany Residents Protest Rite Aid's Closure on South Pearl St.*, WRGB ALBANY, https://cbs6albany.com/news/local/albany-residents-protest-rite-aids-closure-on-south-pearl-st [https://perma.cc/8SS3-UB2V] (last updated Sept. 1, 2018, 12:32 AM).

[255] *Id.*

[256] Dave Lucas, *Albany Residents Trying to Save South End Drug Store from Closure*, WAMC (Aug. 31, 2018, 4:05 PM), https://www.wamc.org/capital-region-news/2018-08-31/albany-residents-trying-to-save-south-end-drug-store-from-closure [https://perma.cc/NE9X-T5ND]; *see* DeFeciani, *supra* note 254.

pharmacies, transferring those patient files to an existing CVS location.[257] In the summer of 2023, Walgreens announced plans to acquire 120 Brookshire pharmacies in Arkansas, Louisiana, and Texas, closing an undisclosed number of these pharmacies and transferring the patient files.[258] While file transfers might seem to protect patient continuity, the acquiring pharmacy company sometimes sends patient files to pharmacy locations that are several miles away.[259] When retail pharmacies merge and close locations, it reduces patient access while increasing profit margins.[260]

Large chain pharmacies also routinely buy and eliminate independent community pharmacies.[261] In some rural, suburban, and urban markets, large chains have employed "aggressive tactics" to acquire and sometimes shut down independent pharmacies as part of a strategy to force patients to use the chains' high-volume locations in large cities by leaving the abandoned regions without a pharmacy.[262] For example, CVS "for years has pursued a strategy of buying up independent pharmacies, shutting them down and transferring the prescription files to one of their existing outlets."[263] Large chain pharmacies frequently close city locations, transferring their customers' prescriptions to another pharmacy within their brand, putting patients miles away, out of walking distance for many patients.[264] These tactics create pharmacy deserts. For

[257] Jeff Wells, *CVS to Acquire Schnucks' Pharmacy Business*, RETAIL DIVE (Mar. 10, 2020), https://www.retaildive.com/news/cvs-to-acquire-schnucks-pharmacy-business/573830/ [https://perma.cc/S96D-N22E].

[258] *Brookshires Grocery Sells 120 Pharmacies to Walgreens, Including Arkansas Operations*, TALK BUS. & POL. (July 13, 2023, 4:35 PM), https://talkbusiness.net/2023/07/brookshires-grocery-sells-120-pharmacies-to-walgreens-including-arkansas-operations/ [https://perma.cc/MP6Z-Z4XH].

[259] *See* Olumhense & Husain, *supra* note 6 (discussing CVS transfer of patient files to location two miles from closed pharmacy).

[260] *See* Gitta, *supra* note 16, at 168-70 (noting that when pharmacies consolidate due to profit motive, they reduce pharmacy availability disproportionately in minority communities).

[261] *See* Muhammed El-Hasan, *Seaside Pharmacy, San Pedro's Oldest Business, to Close Next Week*, DAILY BREEZE, https://www.dailybreeze.com/2014/02/20/seaside-pharmacy-san-pedros-oldest-business-to-close-next-week/ [https://perma.cc/D7WZ-PL6C] (last updated Sept. 6, 2017, 6:39 AM) (lamenting number of independent pharmacies declined from 40,000 to 23,000 nationwide since 1980 "as large chain pharmacies bought out many smaller competitors").

[262] *See* Mitchell & Thaxton, *supra* note 95, at 28 ("The aggressive tactics that Rite Aid and two other chains—Walgreens and CVS—used to consolidate the market had shuttered locally owned pharmacies across northern and eastern Maine. The closings funneled more patients into the chains' high-volume locations in cities like Bangor, while leaving entire regions bereft of a critical service."); Steven Pearlstein, *A Prescription for Antitrust Violations*, WASH. POST, Nov. 24, 2004, at E1 (highlighting CVS's anticompetitive strategies).

[263] Pearlstein, *supra* note 262, at E1.

[264] *See* Olumhense & Husain, *supra* note 6 ("[CVS] has transferred customer prescriptions to a location on West Chicago Avenue, 2 miles from the closed one . . . roughly 40 minutes away on foot.").

decades, the residents of Eastport, Maine, enjoyed the benefits of a competitive market in which two local independent pharmacies served their community.[265] But the town became a pharmacy desert after Rite Aid bought out both independent pharmacies and closed them both down.[266] For over a decade, Eastport's residents had to drive an eighty-minute round trip to pick up a prescription.[267]

A vicious cycle exists where large retail pharmacies use mergers and acquisitions ("M&A") to increase their market power and then use that market power to force more independent pharmacies to sell out.[268] Horizontal mergers between large retail chains create buyer-side market power that allows large chains to negotiate lower wholesale prices from manufacturers, which gives these large chains higher profit margins than smaller pharmacies.[269] This diminishes the ability of independent pharmacies to compete on the merits, which puts greater pressure on them to sell out before they are driven from the market.[270] As discussed below, large retail chains leverage their PBMs to engage in bad acts to render independent pharmacies unprofitable.[271] When they cannot easily purchase an independent pharmacy, large chains exercise their (merger-enhanced) market power to drive independent pharmacies out of business.[272] And when large retail pharmacies do acquire local pharmacies, they often close them, forcing patients to use the chain's nearest location, which may be miles away.[273] Patients suffer, but the large pharmacy chain profits, and it uses those profits to fund even more future aggression and acquisitions.

Pharmacy mergers also make markets less resilient to shocks that lead to future pharmacy closures. For example, in the fall of 2023, after reporting $307 million in losses for its first-quarter earnings, Rite Aid filed for bankruptcy.[274] As part of this process, Rite Aid announced the closure of hundreds of its

[265] Mitchell & Thaxton, *supra* note 95, at 29.

[266] *Id.*

[267] *Id.* An independent pharmacy eventually opened in Eastport, more than a decade after Rite Aid had made it a desert. *Id.*

[268] Gitta, *supra* note 16, at 165 ("[L]arge pharmacies have used M&A growth strategies to dominate the highly lucrative retail pharmacy market by either buying or squeezing out smaller independent pharmacies.").

[269] *See id.* at 167-68.

[270] *See id.* at 168 ("[T]he high degree of consolidation, especially in the form of horizontal mergers, destroys smaller participants' ability to compete, a factor evidenced by the acquisition or closure of smaller independent pharmacies.").

[271] *See infra* Section II.D (discussing anticompetitive conduct by PBMs).

[272] *See* Hawryluk, *supra* note 7, at G3.

[273] *Id.* ("For the residents of Greenfield, Shopko's decision meant they had to scramble. Shopko had sold the pharmacy records to a Walgreens 50 miles away.").

[274] Kevin George, *Rite Aid Files for Bankruptcy, Will Close Underperforming Stores*, INVESTOPEDIA (Oct. 16, 2023, 10:33 AM), https://www.investopedia.com/rite-aid-files-for-bankruptcy-will-close-underperforming-stores-8358340 [https://perma.cc/K48H-D5RV].

stores.[275] Rite Aid's prior M&A activity played a large role in putting the chain in its precarious position.[276] Rite Aid did not become one of the Big Three retail pharmacies through internal growth. Rather, it bought out smaller retail chains and independent pharmacies. Increased size did not create efficiency, however. The chain reached a size that was not sustainable.[277] Among the causes of Rite Aid's woes were its $3.3 billion debt load and its legal liability for its conduct fueling the opioid crisis.[278] Ironically, much of its debt—which forced Rite Aid to close hundreds of locations—was incurred to finance its earlier acquisitions of other retail pharmacies. In 2006, Rite Aid—then the third largest retail pharmacy chain—sought to get bigger by paying the equivalent of $3.4 billion to acquire the Eckerd and Brooks drugstore chains from their Canadian parent company in a deal that required Rite Aid to assume $850 million of the parent company's debt.[279] In the 2020s, analysts pinned Rite Aid's troubles on overborrowing and the debt it assumed to purchase the Brooks and Eckerd chains fifteen years earlier.[280] Rite Aid's "series of debt-laden acquisitions" rendered Rite Aid cash-strapped and vulnerable in an era of rising interest rates, which escalated the firm's losses.[281] Consequently, Rite Aid's prior mergers and acquisitions undermined the company's financial stability, leading it to eventually close hundreds of pharmacies.[282]

[275] Mark Hamstra, *Rite Aid Plans Additional Store Closures*, SUPERMARKET NEWS (Apr. 10, 2024), https://www.supermarketnews.com/retail-financial/rite-aid-plans-additional-store-closures [https://perma.cc/S8ZZ-8BN3] (reporting new wave of closures in 2024 after Rite Aid announced initial 154 closures in 2023).

[276] Todd Campbell, *The Alarming Reason Why This Popular Retailer Is on the Brink of Bankruptcy*, THESTREET (Sept. 12, 2023, 6:19 PM), https://www.thestreet.com/retail/the-alarming-reason-why-this-popular-retailer-is-on-the-brink-of-bankruptcy (reporting that Rite Aid's financial woes stemmed from series of debt-financed acquisitions).

[277] *See* Marley Jay, *Rite Aid Bankruptcy Means Pharmacies Will Keep Dwindling*, NBC NEWS (Oct. 16, 2023, 9:27 PM), https://www.nbcnews.com/business/consumer/rite-aid-bankruptcy-means-pharmacies-will-keep-dwindling-rcna120637 [https://perma.cc/93HH-ZAWA] (explaining that due to debt, Rite Aid was unable to invest in stores it owned).

[278] *Id.* (remarking that Rite Aid's $1 billion charge related to opioid crisis in addition to being $3.3 billion in debt).

[279] *Rite Aid Makes Move for Eckerd, Brooks*, CNN MONEY (Aug. 24, 2006, 6:32 PM), https://money.cnn.com/2006/08/24/news/companies/riteaid/ [https://perma.cc/HVP9-X7NQ].

[280] Jay, *supra* note 277.

[281] Campbell, *supra* note 276.

[282] The opioid crisis, which seems exogenous, is not completely unrelated to retail pharmacy mergers. Independent pharmacists know and serve their local communities. They are not operated solely to maximize shareholder value for distant, absent owners, like big retail pharmacy chains. Because independent pharmacies provide more individualized care than chain pharmacies, they are more likely to recognize and respond to patients abusing medications, such as opioids. *See* Ellen Gabler, *How Chaos at Chain Pharmacies Is Putting*

In sum, although retail pharmacy markets used to be deconcentrated and competitive, excessive mergers have allowed large pharmacy chains to dominate the industry.[283] M&A activity results in pharmacy closures, which often creates new pharmacy deserts.[284] This loss of pharmacies—especially independent pharmacies—undoubtedly worsens health outcomes for affected consumers.[285]

C. *PBMs Acquiring Market Power Through Mergers*

Different types of mergers have different competitive effects. The retail pharmacy mergers discussed above were horizontal mergers. Horizontal mergers, which involve firms that compete against each other, necessarily lessen the number of competitors in a market. In contrast, vertical mergers are combinations of firms at different levels of the supply chain, such as between a manufacturer and a distributor. This Section explores how PBMs have engaged in both horizontal and vertical mergers to increase their market power, which PBMs have exercised to eliminate independent pharmacies.

1. Horizontal Mergers

In the not-too-distant past, thirty-nine different PBMs vied for business, and local pharmacies and health insurers benefitted from a competitive market among PBMs.[286] But just as horizontal mergers and acquisitions among large pharmacy chains created the Big Three retail pharmacies, merger after merger and acquisition after acquisition among PBMs concentrated the market and led to today's oligopoly of the Big Three PBMs—Express Scripts, CVS Caremark, and OptumRx (a division of large insurer UnitedHealth Group).[287] Megamergers in PBMs markets have proceeded largely unimpeded by the Federal Trade

Patients at Risk, N.Y. TIMES, https://www.nytimes.com/2020/01/31/health/pharmacists-medication-errors.html (last updated Oct. 13, 2021); Ephrem A. Aboneh, Jamie A. Stone, Corey A. Lester & Michelle A. Chui, *Evaluation of Patient Safety Culture in Community Pharmacies*, J. PATIENT SAFETY e18, e20 (Mar. 2020), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7809706/pdf/nihms-1656223.pdf [https://perma.cc/65VA-NQTW].

[283] Gitta, *supra* note 16, at 163-64 (citing PengCheng Zhu & Peter E. Hilsenrath, *Mergers and Acquisitions in U.S. Retail Pharmacy*, 41 J. HEALTH CARE FIN. 2-20 (2014), https://healthfinancejournal.com/index.php/johcf/article/download/20/22 [https://perma.cc/8FJV-7WGJ]).

[284] *Id.* at 173-74 ("Pharmacy closures due to horizontal consolidation has resulted in a detrimental effect on patients' access to care, especially in socio-economically disadvantaged areas where an independent pharmacy may have been the only one accessible to patients without the means to travel to a pharmacy further away.").

[285] *See supra* Section I.A.

[286] Schladen, *supra* note 173.

[287] *Id.* ("Bedoya said that the three corporations that now own the big PBMs are the products of mergers of what used to be 39 companies.").

Commission ("FTC").[288] For example, in 2012, Express Scripts and Medco announced their plans to merge in a $29 billion deal.[289] When FTC Commissioner Julie Brill questioned why two of the three largest PBMs needed to merge, the firms conceded that they were "not making the argument that this merger is necessary to allow [them] to gain efficiencies of scale."[290] The FTC approved the deal nonetheless.[291] The FTC's explicit approval of the merger between Express Scripts and Medco seemed to open the floodgates "as the major PBMs devoured their smaller rivals and specialty pharmacies."[292] Former FTC attorney David Balto observed, "None of these transactions were challenged by the FTC, yet the underlying structural factors were far worse."[293] Then, in 2015, Optum acquired Catamaran, merging two of the largest PBMs and creating an oligopoly.[294] PBMs have now concentrated market power, with the Big Three PBMs controlling 75% to 85% of the PBM market.[295] These national numbers mask even greater concentrations at some state levels where an individual PBM can control over 80% of the market.[296] Moreover, nationwide, the three PBMs

[288] FTC INTERIM STAFF REPORT, *supra* note 24, at 14 ("Notably, the Big 3 PBMs gained share in the provision of PBM services in part through mergers and acquisitions during the 2010s, none of which were challenged by the antitrust enforcement agencies.").

[289] Dayen, *supra* note 216.

[290] *Id.*

[291] *Id.* ("[D]espite the lack of justification for the consolidation, the danger of higher prices, and the unusually large congressional opposition, the FTC approved the merger.").

[292] Balto, *supra* note 243, at 6.

[293] *Id.*

[294] Dayen, *supra* note 216.

[295] *See* JONATHAN TEPPER & DENISE HEARN, THE MYTH OF CAPITALISM: MONOPOLIES AND THE DEATH OF COMPETITION 132 (2019); *Ensuring Fairness and Transparency in the Markets of Prescription Drugs: Hearing Before the Subcomm. on Consumer Prot., Prod. Safety, & Data Sec. of the Comm. on Com., Sci., & Transp.*, 117th Cong. 36 (2022) [hereinafter Testimony of Robin Feldman] (statement of Robin Feldman, Professor of Law, University of California Hastings Law) ("Finally, the PBM industry is highly concentrated. Just three PBMs control 80 percent–85 percent of the market. They tend to offer the same terms to health plans. Thus, if health plans want something different, they are out of luck.") (footnote omitted). *See also* NEERAJ SOOD, TIFFANY SHIH, KAREN VAN NUYS & DANA GOLDMAN, THE FLOW OF MONEY THROUGH THE PHARMACEUTICAL DISTRIBUTION SYSTEM 7 (2017).

[296] FTC INTERIM STAFF REPORT, *supra* note 24, at 13 ("[A] study by the American Medical Association found that OptumRx managed 83 percent of retail pharmacy network management services for commercial health plans in South Carolina in 2021, while Prime managed 85 percent of these services in Alabama—shares far exceeding their nationwide shares."); *see also id.* at 49 ("In twenty U.S. states, the single top PBM held at least 50 percent market share for retail pharmacy network management services for commercial health plans; in 35 states, the top PBM had market share of at least 40 percent.").

processed almost 80% of the approximately 6.6 billion prescriptions filled in 2023.[297] The six largest PBMs control 94% of that market.[298]

Unrestrained horizontal mergers among PBMs hurt local pharmacies. With greater market concentration,[299] PBMs extracted greater rebates from drug manufacturers for themselves[300] while forcing worse terms upon independent pharmacies,[301] a dynamic that has forced many community pharmacies to close.[302] But the horizontal mergers merely set the stage for subsequent vertical mergers, which ultimately hurt independent pharmacies far more, as the following discussion explains.

2. Vertical Mergers

In addition to merging horizontally, major PBMs engaged in vertical mergers that transformed the economics of prescription drug distribution in the United States. In the 1990s, every major PBM merged with a major drug manufacturer, as Merck, Eli Lilly, and SmithKline Beecham each acquired a PBM and, thus, leverage further down the distribution chain.[303] Because drug manufacturers owned PBMs, they could see what other manufacturers were charging for competing medications. More importantly, when setting their formularies, vertically-integrated PBMs could favor their own drugs to the disadvantage or exclusion of rival drug manufacturers' competing drugs.[304] PBMs also vertically-integrated with health insurance companies,[305] which gave the merged entities greater market power.

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[297] *Id.* at 2.

[298] *Id.* at 13.

[299] *Id.* at 48 ("Because the Big 6 PBMs control over 90 percent of dispensing volume and the Big 3 cover approximately 270 million people, pharmacies often have little choice but to contract with the dominant PBMs to serve patients.") (footnote omitted).

[300] STAFF OF S. COMM. ON FIN., 116TH CONG., 2D SESS., *supra* note 238, at 60 ("Rebates have increased for several reasons. Just three PBMs (CVS Caremark, Express Scripts, and OptumRx) now manage 80% of drug benefits for more than 220 million Americans, resulting in manufacturers facing high stakes when negotiating for formulary placement.").

[301] FTC INTERIM STAFF REPORT, *supra* note 24, at 48 ("[N]umerous independent pharmacies and a large PSAO have commented that they are generally forced to enter into one-sided, non-negotiable contracts with the leading PBMs.").

[302] *See infra* Part II.D.

[303] Dayen, *supra* note 216.

[304] *Id.* (recounting how, after mergers between drug manufacturers and PBMs, "drug companies could then view competitors' pricing information and place their own drugs over their rivals' on PBM formularies"). These inherent conflicts of interest led to both private lawsuits and FTC litigation, which resulted in some constraints and subsequent restructurings. *Id.*

[305] STAFF OF S. COMM. ON FIN., 116TH CONG., 2D SESS., *supra* note 238, at 25-26. In addition to being the largest PBMs in the country, these companies are also vertically integrated with health insurance companies and operate specialty pharmacies through

More importantly, in addition to merging up the distribution chain with drug manufacturers, PBMs integrated downstream as large retail pharmacy chains acquired the largest PBMs.[306] In the early twenty-first century, every major PBM merged with a large pharmacy chain.[307] The George W. Bush-era FTC did not challenge the vertical integration of PBMs and retail pharmacies.[308]

These vertical mergers converted independent pharmacies from the PBMs' partners into their rivals, competing for filling patient prescriptions. Former FTC official David Balto has argued that because PBMs own and operate their own mail-order and retail pharmacies, "[i]n a PBM's perfect world, there would be no independent pharmacy and no local pharmacist advocating to make sure patients do not overpay for drugs."[309] Vertical integration bestowed PBMs with market power that was targeted against independent pharmacies.[310] With vertically integrated operations, PBMs treated independent pharmacies as rivals to be vanquished, and the PBMs undertook several anticompetitive actions to hobble independent pharmacies and drive them from the market, as the following Section discusses.

D. *Anticompetitive Conduct by PBMs*

Through the combination of horizontal and vertical mergers, PBMs have the power and motive to steer patients away from independent pharmacies to a pharmacy controlled by the PBM. Oftentimes, PBMs direct patients to forego independent pharmacies in favor of the chain pharmacy that owns the PBM or a

acquisitions and mergers. For example, OptumRx is a subsidiary of UnitedHealth Group, CVS Caremark is a subsidiary of CVS Health, which acquired the health insurer Aetna in a $69 billion deal in 2018, and Express Scripts merged with health insurer Cigna in 2018. *Id.*

[306] FTC INTERIM STAFF REPORT, *supra* note 24, at 2 ("All of the top six PBMs are vertically integrated downstream, operating their own mail order and specialty pharmacies, while one PBM owns and operates the largest chain of retail pharmacies in the nation."); Dayen, *supra* note 216 (describing CVS merger with Caremark as "first unholy union" between retail pharmacy chain and PBM).

[307] Dayen, *supra* note 216 (explaining mergers of CVS and Caremark, Express Scripts and Medco, and Optum and Catamaran); *see also* FTC INTERIM STAFF REPORT, *supra* note 24, at 24 ("Five of the Big 6 PBMs are vertically integrated with some of the largest health insurers in the country").

[308] Dayen, *supra* note 216.

[309] David Balto, *How PBMs Make the Drug Price Problem Worse*, HILL (Aug. 31, 2016, 5:51 PM), https://thehill.com/blogs/pundits-blog/healthcare/294025-how-pbms-make-the-drug-price-problem-worse/.

[310] Hawryluk, *supra* note 31 ("Independent pharmacies are struggling due to the vertical integration among drugstore chains, insurance companies and pharmaceutical benefit managers, which gives those companies market power that community drugstores can't match.").

mail-order operation owned by or affiliated with the PBM.[311] Because they are vertically integrated, PBMs can access independent pharmacies' patient data and use that to steer customers to the PBMs' affiliated pharmacies.[312] When the carrots of lower co-payments or larger supplies per order fail, PBMs use the stick of refusing to cover payments for medications not purchased through the PBMs' mail-order pharmacies.[313] PBMs steer consumers away from independent pharmacies by reducing prescription benefits to patients who do not use the PBM's pharmacy services.[314] PBMs steer customers away from independent pharmacies that may offer better pricing or terms.[315]

PBMs also exert power over independent pharmacies when structuring their networks. Being outside of PBM networks increases the likelihood that an independent pharmacy will be forced to close because patients with insurance must fill their prescriptions at in-network pharmacies or face higher costs.[316] In the wake of vertical integration, PBMs have structured their networks to disfavor or exclude some independent pharmacies, including rural ones, which suffer financially.[317] As PBMs narrow their networks to favor their own pharmacies, independent pharmacies lose sales and are pushed closer to closure.[318]

Even when an independent pharmacy remains in network, PBMs use their market power to impose onerous terms on independent pharmacies, which must submit or risk exclusion from the pharmacy network.[319] PBMs tender "take it or

[311] *Id.* ("PBMs . . . steer customers away from independent pharmacies to affiliated chain, mail-order or specialty pharmacies with lower out-of-pockets costs."); Balto, *supra* note 243, at 6 (describing PBMs' financial incentives and market power to direct patients to their affiliated services); NCPA, *supra* note 97, at 17.

[312] Balto, *supra* note 243, at 6-7 ("Since PBMs have their own pharmacies (indeed the largest pharmacy chain, CVS, owns the second largest PBM) PBMs frequently access rival pharmacy patient data and provide it to their pharmacy affiliate in an effort to steer patients away from rivals.").

[313] *See* Dayen, *supra* note 216.

[314] Balto, *supra* note 243, at 5 ("All three PBMs own their own specialty pharmacies, which they favor, discriminating against rival pharmacies. These PBMs steer patients to their own pharmacies as a requirement for patients to access their full prescription benefit."); FTC INTERIM STAFF REPORT, *supra* note 24, at 36 (describing adding drugs to specialty drug lists as strategy PBMs use "to steer prescriptions to their affiliated pharmacies").

[315] FTC INTERIM STAFF REPORT, *supra* note 24, at 12 ("PBMs may also use network design, such as narrow networks, to steer patients to their own vertically integrated affiliated pharmacies—even if a rival unaffiliated pharmacy may provide the same or better pricing and terms to the PBM for its pharmacy services.").

[316] *See* Guadamuz et al., *supra* note 19, at 159.

[317] Salako et al., *supra* note 35, at 152-53.

[318] *See* NCPA, *supra* note 97, at 6.

[319] FTC INTERIM STAFF REPORT, *supra* note 24, at 3 ("Independent pharmacies generally lack the leverage to negotiate terms and rates when enrolling in PBMs' pharmacy networks, and subsequently may face effectively unilateral changes in contract terms without meaningful choice and alternatives.").

leave it" offers with terms that do not adequately compensate independent pharmacies for their costs.[320] PBMs determine how much they will reimburse each individual pharmacy, and they lower their reimbursement rates for independent pharmacies.[321] PBMs pay their own affiliated pharmacies higher reimbursements.[322] For some medications, national chain pharmacies are reimbursed at twice the rate of independent pharmacies.[323] Because pharmacists don't know how much they'll be reimbursed for each transaction, filling a prescription is gambling.[324] As one independent pharmacist in Salt Lake City put it:

> Filling a generic prescription, from a financial standpoint, is like pulling the slots at a casino . . . . Sometimes you lose a quarter, sometimes you lose a buck, and sometimes you make $500. But you have to have those prescriptions that you make $500 on to make up for the losses on the rest of your meds.[325]

Testimonials suggest that half of PBM reimbursements do not cover the pharmacy's costs of acquiring and dispensing the medication.[326]

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[320] Salako et al., *supra* note 35, at 153; FTC INTERIM STAFF REPORT, *supra* note 24, at 48 (noting that their market power "can give these largest PBMs both enormous leverage over unaffiliated, independent pharmacies and the ability and incentive to act in ways that are detrimental to those pharmacies with limited recourse over unfavorable terms offered by the PBM"); Balto, *supra* note 243, at 7. PBMs 'offer' independent pharmacies 'take it or leave it' contracts, where a pharmacy must choose between accepting unfavorable reimbursement terms, or exclusion from the PBM's network (and patient population). In some cases, pharmacies are coerced into agreeing to below-cost reimbursement. This unsustainable choice has forced many pharmacies to close their doors. *Id.*

[321] *See* Schladen, *supra* note 173.

[322] FTC INTERIM STAFF REPORT, *supra* note 24, at 40 ("Pharmacies affiliated with the Big 3 PBMs are often paid 20- to 40-times [National Average Drug Acquisition Cost], and significantly more than unaffiliated pharmacies, for the two case study specialty generic drugs[.]").

[323] Sander Gusinow, *Lack of OHA Oversight Allowed Prescription Drug Intermediaries to Overcharge Medicaid, Audit Finds*, OR. BUS. (Aug. 21, 2023), https://oregonbusiness.com/lack-of-oha-oversight-allowed-prescription-drug-intermediaries-to-overcharge-medicaid-audit-finds/ [https://perma.cc/VW7A-VD5H] ("The OAD report was unable to estimate exactly how much [Oregon] has overpaid PBMs for prescription drugs, but noted national chains, some of which are owned by PBMs or PBM parent companies, were reimbursed twice the amount independent pharmacies were for selected drugs.").

[324] FTC INTERIM STAFF REPORT, *supra* note 24, at 56 ("[A] 2016 survey of 600 community pharmacies found that two thirds reported having no detail on how and when direct and indirect remuneration was assessed. Rather, the claims adjudication engine and resulting calculations are essentially a black box.") (footnote omitted).

[325] Hawryluk, *supra* note 31 (quoting independent pharmacist Ben Jolley).

[326] *Id.* ("Multiple pharmacists said that about half of drug plan reimbursements fail to cover the costs of drugs and their overhead.").

PBMs also use direct and indirect remuneration ("DIR") fees to take money back from pharmacies.[327] PBMs require independent pharmacies to pay money back to the PBM—a payment called a "clawback."[328] These clawbacks can happen weeks or months after the sale, meaning the pharmacist won't know whether they gained or lost money on a transaction until long after the transaction occurred (and sometimes after the medication itself is long gone).[329] A seemingly profitable sale can be retroactively rendered unprofitable months later by the PBM.[330]

PBMs charge higher DIR fees to so-called lower-performing pharmacies.[331] PBMs claim to base the amount of DIR fees on quality-related criteria, but PBMs do not share their metrics with pharmacies,[332] and much evidence suggests PBMs manipulate DIR fees to reward quantity of sales rather than quality of service.[333] This penalizes high-quality, high-service local pharmacies that fill fewer prescriptions than large chain storefronts. Yet independent pharmacies cannot adapt their business models to avoid high DIR fees because pharmacies do not know how they are scored.[334]

These all-but-unavoidable[335] DIR fees are crushing local pharmacies. While PBMs conceal their DIR fees—both individually and in aggregate—anecdotal evidence suggests that PBMs are hiking these fees considerably. One pharmacy owner in rural Iowa noted that even though his annual revenues did not change

[327] Salako et al., *supra* note 35, at 148.

[328] True N. Pol. Sols., *White Paper: DIR Fees Simply Explained*, PHARMACY TIMES (Oct. 25, 2017), https://www.pharmacytimes.com/view/white-paper-dir-fees-simply-explained [https://perma.cc/5NGK-P9D4] (noting that clawbacks are often percentage of total prescription cost).

[329] *Id.*

[330] Hawryluk, *supra* note 31.

[331] Dayen, *supra* note 216.

[332] FTC INTERIM STAFF REPORT, *supra* note 24, at 62-63 ("Industry-wide criticism exists over the construction and execution of DIR metrics and programs, with comments stating that DIR fees are 'unexplainable,' create 'needless uncertainty for pharmacies,' and are 'a charade.'"); True N. Pol. Sols., *supra* note 328 ("PBMs do not explain how they calculate performance-based DIR fees."); *See* Celine Castronuovo, *Pharmacies Rail Against Survey Penalty in House Spending Bill (1)*, BLOOMBERG L., https://news.bloomberglaw.com/health-law-and-business/pharmacies-rail-against-survey-penalty-in-house-spending-bill (last updated Nov. 17, 2021, 1:28 PM); Dayen, *supra* note 216 ("PBMs secured a key loophole keeping their disclosures to the federal government confidential, while arguing that DIRs also legally apply to pharmacies.").

[333] Hawryluk, *supra* note 31.

[334] *See* Bob Herman, *How Drug Middlemen Take Back Money from Pharmacists*, AXIOS (July 25, 2019), https://www.axios.com/2019/07/25/express-scripts-pharmacies-quality-clawbacks-contract ("There's little transparency into how pharmacies are scored, pharmacies don't have any control over the terms, and even high-quality pharmacies are penalized.").

[335] *See id.* (noting only "top 1% of pharmacies incur no penalties" under Express Scripts contract). Thus, even most of the highest quality pharmacies are charged DIR fees. *See id.*

from 2015 to 2020, his PBM increased their annual retroactive DIR fees from $52,000 to $225,000 in that same time period.[336] The Center for Medicare and Medicaid Services reported that, compared to 2010, PBMs charged retroactive DIR fees that were 915 times higher in 2019.[337] One report showed retroactive DIR fees increased by 107,400% between 2010 and 2020.[338]

PBMs also limit reimbursements by setting maximum allowable costs ("MACs") that may be too low to cover a pharmacy's actual costs.[339] MAC lists are idiosyncratic because PBMs are granted free rein to manipulate the MACs for each drug.[340] Local pharmacies are contractually obligated to abide by the MAC even though they do not know what the MAC will be when they fill the prescription.[341] MAC restrictions may make it harder for community pharmacies to stock certain drugs.[342] PBMs manipulate MAC lists to create a price spread through which they maximize their profits by inflicting losses on community pharmacies.[343]

When PBMs lower reimbursements, impose DIR fees, and enforce MAC lists, they threaten the financial viability of community pharmacies.[344] Because PBMs do not say when DIR fees will be assessed or how high they will be, local pharmacies cannot engage in appropriate financial planning.[345] These retroactive fees make it harder for rural pharmacies to make payroll and to provide services to their customers.[346] PBM fees have forced independent pharmacies to scale

[336] Hawryluk, *supra* note 31.

[337] *Id.*

[338] *CMS Eliminates Retroactive DIR Fees*, AM. PHARMACISTS ASS'N, https://www.pharmacist.com/Advocacy/Issues/CMS-Eliminates-Retroactive-DIR-Fees [https://perma.cc/S3AL-39AQ] (last visited Sept. 9, 2024).

[339] Salako et al., *supra* note 35, at 153.

[340] NAT'L CMTY. PHARMACISTS ASS'N, *The Need for Legislation Regarding "Maximum Allowable Cost" (MAC) Reimbursement* 1 [hereinafter NCPA MAC], https://www.ncpa.co/pdf/leg/mac-one-pager.pdf [https://perma.cc/6YES-B724] (last visited Sept. 9, 2024) (noting lack of standardization regarding which drugs are included on MAC lists).

[341] *Id.*

[342] Thomas A. Hemphill, *The "Troubles" with Pharmacy Benefit Managers*, REGUL., Spring 2017, at 14, 17 (noting that PBM manipulation of MACs "may also be placing patients in a position where they may not be able to get access to their medications if the pharmacies are not able to stock them at the price point determined by the PBM").

[343] NCPA MAC, *supra* note 340, at 1 ("Because of this lack of clarity, many PBMs use their MAC lists to generate significant revenue. Typically, they utilize an aggressively low MAC price list to reimburse their contracted pharmacies and a different, higher list of prices when they sell to their clients or plan sponsors.").

[344] Salako et al., *supra* note 35, at 148.

[345] Dayen, *supra* note 216 ("By charging the plan sponsor more than they pay the pharmacy in a reimbursement, PBMs can make anywhere from $5 to $200 per prescription, without either player in the chain knowing.").

[346] Hawryluk, *supra* note 31.

back services, and the consequent reduced margins make it difficult to pay staff.[347] For example, these fees caused Olson's pharmacy in St. Charles, Iowa, to limit its live pharmacist to only one day per week, meaning for six days a week, the townsfolk have no available healthcare provider at all for in-person visits, consultations, testing, or vaccinations.[348] The size and unpredictability of the DIR fees, coupled with the complete lack of transparency, represent a direct attack on the financial stability of independent pharmacies.[349] DIR fees can spell the difference between a pharmacy's profitability and insolvency.[350]

In addition to low reimbursements, large pharmacy chains and their PBMs inflict unnecessary costs on targeted independent pharmacies. Because independent pharmacies are compelled to contract with PBMs and join their networks, PBMs use their leverage to demand a contractual right to audit pharmacies in their networks.[351] Vertically-integrated pharmacies then use their PBM divisions to harass independent pharmacies through unnecessary and expensive predatory audits.[352] For example, Joe Craft, who owns an Ohio chain of pharmacies called the Happy Druggist, noted that "he regularly receives letters seeking to buy his business from the same companies that cause him to lose an average of $6,000 in payments with every audit, about a week's worth of revenue for a single drugstore."[353] Because excessive audits can render local pharmacies unprofitable, large chains use the hassle and expense of predatory audits to pressure independent pharmacies to sell out.[354]

These unprofitable reimbursements and predatory audits are designed to coerce independent pharmacies to accept a large retailer's offer to acquire them.[355] Independent pharmacies rely on sales of prescription drugs to remain solvent. Because community pharmacies derive 93% of their sales from

[347] Salako et al., *supra* note 35, at 153-54.

[348] Hawryluk, *supra* note 31.

[349] Salako et al., *supra* note 35, at 153-54.

[350] Dayen, *supra* note 216 ("A recent report from the Community Oncology Alliance estimates that DIR fees can amount to as high as a 9 percent tax on gross revenues, which cuts pharmacy profits by up to 50 percent on a single prescription.").

[351] Markian Hawryluk, *Pharmacies Face Extra Audit Burdens That Threaten Their Existence*, KFF HEALTH NEWS (Aug. 6, 2021), https://kffhealthnews.org/news/article/rural-pharmacies-audit-burdens-threaten-their-existence-the-last-drugstore/ [https://perma.cc/ACL4-5MU3] (noting PBMs may "potentially deny" more claims with frequent audits).

[352] *See id.* (defining predatory audits as "ways to deny legitimate payments for prescriptions").

[353] *Id.*

[354] *Id.*; Balto, *supra* note 243, at 7 ("PBMs may engage in egregious auditing practices to harm rival pharmacies.").

[355] Hawryluk, *supra* note 351 ("Many independent pharmacies report having received buyout offers from the large drugstore chains that own the PBMs, which pharmacists see as the primary reason for their financial struggles.").

prescription drugs,[356] PBM actions to deny sales of prescription drugs or to reimburse below cost can render the entire pharmacy unprofitable, increasing the likelihood that it will be forced to exit the market. In 2018, when CVS slashed its PBM's reimbursement rates to community pharmacies across New York state and then proposed these targeted independent pharmacies sell out to CVS, its regional director of acquisitions noted with faux empathy, "I know what independents are experiencing right now: declining reimbursements, increasing costs, a more complex regulatory environment."[357] More recently in Ohio, CVS's PBM slashed reimbursements to independent pharmacists and then offered to buy their (now-suffering) businesses.[358]

These coerced sales lead to pharmacy closures, which hurt patients. For example, Walgreens apparently used the pressures of increasing costs and decreasing reimbursement to compel Bi-Mart, a major regional retailer in the Pacific Northwest, to sell out.[359] In 2021, Walgreens announced that it was acquiring Bi-Mart's pharmacy business, including "pharmacy patient prescription files and related pharmacy inventory of 56 Bi-Mart pharmacies located across Oregon, Idaho and Washington."[360] As a result, Bi-Mart would stop filling prescriptions.[361] Many patient files were transferred over 2 miles away and some almost five miles away.[362] Oregon Senator Ron Wyden noted that the acquisition was driven by Bi-Mart's concerns over "increasing costs and ongoing reimbursement pressure."[363] Reports showed that some transferred

[356] NCPA, *supra* note 97, at 5.

[357] Mitchell & Freed, *supra* note 106.

[358] Schladen, *supra* note 173. The retailer offers the carrot while its PBM delivers the stick.

[359] *See* Wyden, *supra* note 246 (highlighting local government's concerns of "a larger national trend in which a few powerful companies have gained the market power to drive competitors out of business and monopolize the market").

[360] Press Release, Walgreens, Employee-Owned Bi Mart to Exit Pharmacy Business and Transition Pharmacy Services to Walgreens (Sept. 30, 2021), https://www.walgreensbootsalliance.com/news-media/press-releases/2021/employee-owned-bi-mart-to-exit-pharmacy-business-and-transition-pharmacy-services-to-walgreens [https://perma.cc/YN2M-P7S8].

[361] Jamie Goldberg, *Bi-Mart Will Close Most In-Store Pharmacies, Transfer Customers' Prescription Files to Walgreens*, UNION-BULL. (Oct. 1, 2021), https://www.union-bulletin.com/news/northwest/bi-mart-will-close-most-in-store-pharmacies-transfer-customers-prescription-files-to-walgreens/article_f07376df-67c0-5c28-876a-9b475cf64b4c.html [https://perma.cc/8CT2-7CHR] (restating company's assertion that "[i]n select rural areas where Walgreens does not have a nearby store, the company said Walgreens will operate pharmacies inside existing Bi-Mart locations").

[362] Here is a list where patient files were transferred: BI-MART, https://www.bimart.com/rxchange [https://perma.cc/TM37-JPC8] (last visited Sept. 9, 2024) (showing files transferred as of November 2021).

[363] Wyden, *supra* note 246.

patients had to wait a week to have their prescriptions filled at their new pharmacies.[364]

In sum, PBMs have repeatedly drastically cut reimbursements to independent pharmacies, hoping to drive them from the market.[365] Noting how PBMs have forced independent pharmacies out of business, Iowa Representative John Forbes, who runs an independent pharmacy, observed that "[i]f your local small town pharmacy is shut down, this is probably a big reason why."[366] Large pharmacy chains generally force independent pharmacies to sell out to the chain, which then quickly shuts down that location and transfers the patient files to another (farther away) outpost of the chain pharmacy.[367] And a pharmacy desert is born.

E. *Restrictive Covenants*

When pharmacies acquire and shut down smaller competitors, they don't necessarily just close the previous pharmacy and move on. Large retailers sometimes utilize covenants not to compete, which reduces the likelihood of any pharmacist entering the pharmacy desert and serving the local community. First, when large pharmacy chains buy out independent pharmacists, they sometimes include contract provisions that legally preclude the seller from working as a pharmacist in the area, generally within ten miles of the sold location, for several years.[368] This is designed to prevent the selling pharmacist from competing against the new owner.[369] But when the new owner shutters the old location, these covenants block the prior pharmacist from serving her former patients in their own community, even if these patients—with whom she has a professional relationship—lack any in-person pharmacist.

Second, landowners sometimes put covenants on their land that prevent subsequent owners or lessees from building or operating a drugstore on the

[364] *Id.* ("My constituents tell me they are already feeling the strain of Bi-Mart's closures and consolidation. For example, in Sutherland, former Bi-Mart customers attempting to fill prescriptions at other pharmacies must now wait up to a week to receive them.").

[365] Mitchell & Freed, *supra* note 106.

[366] AMY KLOBUCHAR, ANTITRUST: TAKING ON MONOPOLY POWER FROM THE GILDED AGE TO THE DIGITAL AGE 213 (2021) (quoting Rep. Forbes).

[367] *See* Hawryluk, *supra* note 351.

[368] *See, e.g.*, Kreisler Drug Co. v. Mo. CVS Pharmacy, LLC, No. 14-01050-CV-W, 2016 WL 5844145, at *1, *6 (W.D. Mo. Oct. 4, 2016) (noting restrictive covenant between CVS and three acquired independent pharmacies prevents sellers of independent pharmacies from acquiring, owning, or assisting any pharmacy within ten miles of sold pharmacies); Canaan Apothecary, LLC v. Salisbury Pharmacy Grp., No. 12-cv-1571, 2014 WL 788944, at *1, *3 (D. Conn. Feb. 25, 2014) (noting restrictive covenant preventing seller of pharmacy from acquiring, investing, or operating any retail pharmacy within ten miles of sold pharmacy for five years).

[369] *See, e.g.*, *Canaan Apothecary*, 2014 WL 788944, at *3 (noting that any negotiations or transactions require the buying party's written consent).

premises.[370] Large retailers have inserted these "scorched-earth covenants" into their property deeds to ensure that no pharmacy can occupy their former location for decades to come. Wal-Mart, for example, has imposed anti-pharmacy covenants on some of its properties.[371] These covenants are consequential. In some communities, such as San Antonio, independent pharmacies seeking to enter underserved neighborhoods have been blocked because of such anti-pharmacy deed restrictions.[372] Yet courts seemed inclined to uphold such restrictions. In one case from 2000, a Florida court granted an injunction to enforce a 50-year restrictive covenant providing that "[n]o part of the property shall be used as a pharmacy or drug store or for the sale or offer for sale of any pharmaceutical products requiring the services of a registered pharmacist."[373] Such covenants provide no exception for pharmacy deserts.

Indeed, large retailers who use these covenants may intend to create pharmacy deserts. Why would a large retail pharmacy chain that is closing a location affirmatively prevent another pharmacy from serving that neighborhood for decades to come? Because this strategy, while inconveniencing or harming patients, helps the chain's bottom line. Some residents of pharmacy deserts have cars and will drive to the large retailer's nearest pharmacy location miles away, and the large pharmacy profits. In urban settings, some former customers of the closed pharmacy location may take two buses and spend over an hour in transit to access the pharmacy chain's closest—but farther—location. The patient is inconvenienced, but the large pharmacy profits. Some patients may turn to an inferior mail-order pharmacy owned by the large chain, and again it profits. Finally, some patients may reduce their medication or simply go without. The large pharmacy does not profit from this, but neither does it internalize the harm. Overall, the pharmacy chain maximizes its profits by imposing scorched-earth covenants because it incurs none of the costs. Patients do.

It is unclear how often large pharmacies scorch the earth by putting an anti-pharmacy covenant in their property deeds because there has been no systematic study of the phenomenon yet. But we know it happens. Our ignorance about the

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[370] *See, e.g.*, *In re* Marsh Supermarkets Holding, LLC, No. 17-11066, 2017 WL 5464368, at *1, *15 (Bankr. D. Del. June 21, 2017) (approving sale of property in bankruptcy while retaining "restrictive covenants . . . prohibiting the operation of a pharmacy or drugstore" on property); *see also* Retail Site Processing II, Inc. v. Sandler, No. 09-P-2136, 2011 WL 2183867, at *1 (Mass. App. Ct. June 7, 2011) (describing "a thirty-year restrictive covenant on the property preventing the property's use as a pharmacy other than one owned by CVS").

[371] Al Norman, *Wal-Mart Store Sits Empty'Thanks to Wal-Mart*, SPRAWL-BUSTERS (Feb. 21, 2010), https://sprawl-busters.com/uncategorized/wal-mart-store-sits-emptythanks-to-wal-mart/ [https://perma.cc/S3VG-84XZ] (reporting covenant preventing use of land for "grocery store, pharmacy, or discount department store").

[372] John Tedesco, *How Deed Restrictions Block the Competition*, MYSA, https://www.mysanantonio.com/news/local_news/article/How-deed-restrictions-block-the-competition-1408578.php (last updated June 3, 2011, 7:17 PM).

[373] Eckerd Corp. v. Corners Grp., Inc., 786 So. 2d 588, 589-90 (Fla. Dist. Ct. App. 2000) (noting covenant also prevents land from being used as parking lot for pharmacy).

scope of the problem should not prevent government officials from regulating or banning scorched-earth covenants in pharmacy markets. If unconstrained, these covenants allow large pharmacy chains to create and profit from pharmacy deserts.

F. *Consequences*

Integrated pharmacies and their PBMs engage in anticompetitive conduct that inflicts myriad injuries. This Section reviews several, including higher prices, inferior service, and reduced access as more pharmacy deserts are created.

Although PBMs' raison d'être is to lower drug prices, in reality, they often increase drug prices while reducing access to important medications. PBMs have an incentive to manipulate formularies to favor higher-priced drugs because each PBM wants to maximize the rebate it pockets, which is higher for drugs with high list prices.[374] Because PBMs retain a proportion of the rebates that they negotiate, they have an incentive to encourage drug manufacturers to simultaneously raise their list prices and "negotiate" a larger discount off the list price.[375] This allows the PBM to receive higher payments from health insurers.[376] Drug manufacturers play along to curry favor with PBMs.[377] By raising their list prices while negotiating a higher discount, the manufacturer receives the same net price, and to show its appreciation, the PBM "will exclude the company's cheaper competitors or make it harder for patients to get the competitor's medicine."[378] Given these unusual dynamics, PBMs have convinced drug manufacturers to raise their list prices.[379]

These higher-list-priced drugs directly injure the most vulnerable consumers. Patients without health insurance must often pay the full list price that has been artificially inflated through the machinations of the PBM.[380] Even patients with coverage may have to pay the full list price until they meet their insurance plan's

[374] Consumer Action, *supra* note 243, at 2.

[375] Robin Feldman, *Why Prescription Drug Prices Have Skyrocketed*, WASH. POST (Nov. 26, 2018, 6:00 AM), https://www.washingtonpost.com/outlook/2018/11/26/why-prescription-drug-prices-have-skyrocketed/ ("Drug companies raised their prices so they could give a greater discount. This increases how much of a 'discount' the PBM can claim to have negotiated, and the payout to the PBM."); PBM ACCOUNTABILITY PROJECT, *supra* note 231, at 3.

[376] PBM ACCOUNTABILITY PROJECT, *supra* note 231, at 3 ("When the list price of a medicine goes up, the PBM collects more revenue. These misaligned incentives can drive up costs for plans and patients.").

[377] Testimony of Robin Feldman, *supra* note 295, at 35 (noting powerful PBMs are "at the center of the system").

[378] *Id.*

[379] *See* Balto, *supra* note 243, at 3 ("The PBM rebate system turns competition on its head with PBMs seeking higher, not lower, drug prices to maximize rebates and profits. In the past decade, PBM profits have more than doubled and increased to $28 billion annually.").

[380] Feldman, *supra* note 375 (highlighting how detrimental high list prices are to patients).

deductible,[381] which means they pay more than the discounted price that their insurance company is paying for that drug.[382] The higher list price also hurts insured consumers whose co-payment is based on the list price of their prescribed medications, not the lower negotiated price paid by their insurer.[383] And some health insurance plans do not provide full coverage for prescription drugs.[384] These patients may have to pay the full list price, which has been inflated at the PBM's insistence.[385]

In addition to price effects, PBMs game the system in ways that can undermine patient health. PBMs sometimes design their formularies based on rebate amounts, not the efficacy and safety of competing drugs.[386] By steering patients away from the most efficacious drugs, the PBM's "financial incentives interfere with doctor-patient relationships, and harm patients' health when they can't get the drugs they need."[387] PBM steering can block patients access to life-saving drugs. In their interim 2024 report on PBMs, the FTC referenced an incident in which a patient could not afford the $2,000 for breast cancer medication, but her doctor found a pharmacy with grant funding that would eliminate her co-payment.[388] Her PBM required that she fill her prescription at CVS, rendering her unable "to afford her lifesaving/prolonging medication."[389]

PBMs often require patients to fill their prescriptions through mail-order services owned by the PBM.[390] Forcing patients to rely exclusively on mail-order prescriptions deprives patients of in-person consultative pharmacy services, which are particularly important in areas with limited doctor coverage, such as many rural areas.[391] One consequence of PBM-forced transitions to their mail-order pharmacies is reduced drug adherence as patients are denied interactions with their pharmacists.[392] PBM self-preferencing policies limit the ability of patients to use their local pharmacies where they have relationships

[381] *Id.*

[382] SOOD ET AL., *supra* note 295, at 8.

[383] PBM ACCOUNTABILITY PROJECT, *supra* note 231, at 15 (noting that insured patients pay more when list prices rise "even absent a net price increase or increased revenue to the manufacturer").

[384] Feldman, *supra* note 375.

[385] Testimony of Robin Feldman, *supra* note 295, at 35 ("And many Americans still do not have coverage for prescription drugs, even if they have health insurance. Thus, people are often forced to pay the high list price.").

[386] Consumer Action, *supra* note 243, at 8.

[387] *Id.*

[388] FTC INTERIM STAFF REPORT, *supra* note 24, at 31.

[389] *Id.* (quoting Cathy Spencer).

[390] Schladen, *supra* note 173.

[391] Oyeka et al., *supra* note 18, at 1.

[392] Dayen, *supra* note 216 ("Though PBMs challenge pharmacies to maintain customer compliance with prescription drugs, steering customers to mail-order pharmacies where they get no direction or personal contact can produce the opposite result.").

and can receive appropriate medical advice.[393] PBMs are effectively trying to sever the personal bonds between patients and pharmacists, bonds that improve health care.

Limiting prescription filling to mail-order pharmacies can also delay critical medications. For example, PBMs have refused to pay for prescriptions for cancer medications dispensed through local pharmacies, forcing families to wait for weeks to receive necessary medicine through the mail.[394] Even as oncologists criticize the inefficiency and harm of the delay, families cannot afford the list prices upward of $30,000 a month and cannot purchase the drug even if it is in stock at their local pharmacy.[395] Overall, by forcing patients to use mail-order pharmacies instead of superior in-person local pharmacists, vertical mergers have reduced the quality of healthcare delivery.[396]

Besides injuring consumers directly by raising prices, PBMs use their market power to inflict long-term harms by damaging the nation's pharmacy landscape.[397] Large pharmacy chains and their PBMs have sought to squeeze independent pharmacists out of business by reducing reimbursements, imposing retroactive fees, engaging in predatory audits, and forcing consumers to use inferior mail-in pharmacies. PBMs have manipulated the system such that they control the community pharmacy's costs and revenues, ensuring that it cannot survive.[398] And when local pharmacies don't survive, PBMs do not replace the closed pharmacies.[399] Independent pharmacies are driven from the market, pharmacy deserts are created, and the distance to the nearest pharmacy increases for millions of people.

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[393] *See id.* (noting how long-term patient-provider relationships are severed though PBM mail-order programs).

[394] Schladen, *supra* note 173.

[395] *Id.*

[396] State Attorneys General, *supra* note 59, at 17 ("In addition to the high barriers to entry raised by vertical mergers, mail-order pharmacies cannot confer the benefits of in-person consultation, nor can they provide the same clinical services as a local pharmacy."); Balto, *supra* note 243, at 7 ("Patients may be forced into PBM-owned mail order or 1-800 specialty pharmacy operations that provide an inferior level of service to competing community pharmacies . . . .").

[397] FTC INTERIM STAFF REPORT, *supra* note 24, at 54 ("To the extent that the PBMs have engaged in conduct to harm competition in the market for pharmacy services, such as by pushing smaller pharmacies out of the market, such conduct could ultimately lead to higher costs and lower quality services for people around the country.").

[398] Balto, *supra* note 243, at 3 ("PBMs create endless schemes to reduce reimbursement, claw back funds, restrict networks, and effectively force pharmacies to provide drugs below cost.").

[399] *Id.* at 7 ("PBMs do not put new pharmacies in these locations and instead they steer patients to mail order or long distance driving.").

III. PHARMACY DESERTS AS AN ANTITRUST FAILURE

The creation of pharmacy deserts is not inevitable. Pharmacy closures have been facilitated by a series of antitrust failures: permissive attitudes and policies toward mergers, both horizontal and vertical, and insufficient oversight of anticompetitive conduct by PBMs. Many pharmacy deserts are a consequence of weak antitrust enforcement by the FTC and Department of Justice ("DOJ") Antitrust Division, the federal agencies charged with blocking anticompetitive mergers.

Although horizontal mergers carry the most anticompetitive risks and receive the brunt of antitrust attention, the agencies have historically been relatively deferential to such mergers involving retail pharmacies. Despite the overconcentration in the market for retail pharmacies, mergers continue. For example, in the summer of 2023, Walgreens announced an agreement to acquire 120 pharmacies in Texas, Louisiana, and Arkansas from Brookshire Grocery Co.[400] While Walgreens is planning to operate some Walgreens-branded pharmacies within Brookshire stores, other locations will close their pharmacies permanently.[401] More ominously—and regrettably, more typically—Walgreens also announced plans in 2023 to acquire all twenty-two of Colorado-based Pharmaca's chain of retail pharmacies and to close them all down.[402] These mergers went unchallenged. When antitrust officials do challenge pharmacy mergers, their approach is still sometimes overly lenient. For example, when Walgreens attempted to acquire Rite Aid in the late 2010s, the Department of Justice challenged the deal but approved Walgreens purchasing half of Rite Aid's stores.[403]

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[400] *See* Press Release, Brookshire Grocery Co., Our In-Store Pharmacies Are Becoming Walgreens (July 11, 2023), https://www.brookshires.com/sm/pickup/rsid/1928/bgcsellspharmacytowalgreens [https://perma.cc/5WD4-58GL] (announcing acquisition including pharmacy customer prescription files and related pharmacy inventory).

[401] *Id.*; *Walgreens to Acquire Brookshire Pharmacies, Weatherford Location to Close Aug. 1*, WEATHERFORD DEMOCRAT (July 14, 2023), https://www.weatherforddemocrat.com/news/walgreens-to-acquire-brookshire-pharmacies-weatherford-location-to-close-aug-1/article_29d783fe-20e9-11ee-b161-930aa061eb96.html [https://perma.cc/W3U2-L384].

[402] Teya Vitu, *Walgreens Acquires Pharmaca and Will Close All Pharmacies, Including Santa Fe*, SANTA FE NEW MEXICAN, https://www.santafenewmexican.com/news/business/walgreens-acquires-pharmaca-and-will-close-all-pharmacies-including-santa-fe/article_6fa8be54-a987-11ed-95ff-bbb2587cd052.html [https://perma.cc/E7GX-4Y47] (last updated Mar. 17, 2024) ("Walgreens reached an agreement to acquire the 22-store, Boulder, Colo.,-based chain, with intentions of closing all stores . . . ."); Joanne Furio, *Pharmaca Closing All Its Stores After Walgreens Buys Pharmacy Chain*, OAKLANDSIDE (Feb. 9, 2023, 5:07 PM), https://oaklandside.org/2023/02/09/pharmaca-closing-all-its-stores-after-walgreens-buys-pharmacy-chain/ [https://perma.cc/TA6K-56TK].

[403] TEPPER & HEARN, *supra* note 295, at 115-16.

Federal officials' permissive attitude toward horizontal mergers of PBMs has been even more problematic. For example, in 2004, the FTC approved the merger between Caremark and AdvancePCS, which combined two of the nation's largest PBMs.[404] More significantly, as noted above, in 2012, the FTC approved a merger between the largest and third largest PBMs in the country, Express Scripts and Medco Health Solutions, in a $29 billion deal that created significant concentration in the market for the provision of PBM services to large private employers and other plan sponsors.[405] The FTC conceded that "the merger could be viewed as presumptively anticompetitive because the PBM industry is concentrated and the market share of the merged entity would be more than 40%, even using the broadest market definition."[406] And it registered concern that the PBM merger would harm local pharmacies because PBMs would underpay them.[407]

But, counterintuitively, the FTC turned the merging parties' acquisition of market power into a benefit. The majority stated that it "considered whether the proposed acquisition would confer monopsony power on the merged company when it negotiates dispensing fees with retail pharmacies,"[408] and it suggested that reducing compensation to pharmacies would benefit consumers by lowering prices. The FTC converted the merger's concentration of market power against community pharmacies into a reason to support the merger between two of the three largest PBMs, asserting that "even if the transaction enables the merged firm to reduce the reimbursement it offers to network pharmacies, there is no evidence that this would result in reduced output or curtailment of pharmacy services generally."[409] But, of course, that's the precise effect of PBMs' low-reimbursement policies, targeted against local pharmacies. The Commission also asserted that "for contractual and competitive reasons, it is likely that a large portion of any of these cost savings obtained by the merged company would be passed through to the PBM's customers."[410] That turned out to be untrue, as PBMs have increased drug prices for consumers. The FTC conducted an eight-month investigation but ultimately approved the merger.[411]

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[404] Mitchell & Freed, *supra* note 106.

[405] U.S. FED. TRADE COMM'N, STATEMENT OF THE FEDERAL TRADE COMMISSION CONCERNING THE PROPOSED ACQUISITION OF MEDCO HEALTH SOLUTIONS BY EXPRESS SCRIPTS, INC. 1 (2012), https://www.ftc.gov/sites/default/files/documents/public_statements/statement-commission-concerning-proposed-acquisition-medco-health-solutions-express-scripts-inc./120402expressmedcostatement.pdf [https://perma.cc/552A-8BTD].

[406] *Id.*

[407] *Id.* at 1-2 ("Another question, raised by retail pharmacies and consumer groups, was whether the combined firm could exercise monopsony power, driving drug dispensing fees so low that that they would threaten the important services offered by local pharmacies.").

[408] *Id.* at 7.

[409] *Id.* at 8.

[410] *Id.*

[411] *Id.* at 1.

The FTC incorrectly assumed the presence of a competitive market. The Commission harkened back to its earlier approval of the PBM merger between Caremark Rx, Inc. and AdvancePCS, and it repeated its assertion that monopsony power is not an issue in the market for the retail dispensing of prescription drugs because "dispensing fees are negotiated individually between each PBM and each pharmacy."[412] This assertion ignores the fact that when PBMs negotiate from a position of market power, they can—and do—force money-losing contracts on independent pharmacies.[413]

The agencies have also taken a hands-off approach toward vertical mergers involving PBMs. In 2007, the FTC allowed CVS (a major pharmacy) to acquire Caremark (a major PBM) and facilitated the dynamic in which PBMs use their power against independent pharmacies.[414] In 2015, the FTC, undeterred by the effects of such vertical consolidation, allowed CVS to purchase another major PBM, Omnicare, which further concentrated the PBM industry and reinforced CVS as a vertical juggernaut.[415]

Beyond an overly permissive policy toward mergers, for years, the FTC and the DOJ Antitrust Division turned a blind eye to the anticompetitive conduct of PBMs, despite numerous complaints.[416] Historically, the FTC has not merely declined to challenge PBM conduct. It has actively opposed state efforts to regulate PBMs, including "legislation designed to make PBMs more transparent and prevent conflicts of interest in how they manage benefits."[417] Indeed, the Commission has issued comment letters urging rejection of state bills designed to rein in PBM misconduct.[418] For example, the FTC staff opposed a "New York bill [that] would mandate that the pharmacy benefit manager make certain disclosures relating to the cost of its services, its contracts with manufacturers, and actual and potential conflicts of interest,"[419] arguing that it would raise

[412] *Id.* at 8 n.15 (citing U.S. FED. TRADE COMM'N, STATEMENT OF THE FEDERAL TRADE COMMISSION IN THE MATTER OF CAREMARK RX, INC./ADVANCEPCS 3 n.4 (2004), https://www.ftc.gov/sites/default/files/documents/cases/2004/02/040211ftcstatement0310239.pdf [https://perma.cc/43KK-44SZ]).

[413] Balto, *supra* note 243, at 5; *see supra* notes 320-54.

[414] Mitchell & Freed, *supra* note 106.

[415] *Id.*

[416] Balto, *supra* note 243, at 5 (stating U.S. antitrust agencies have placed PBMs in "a regulatory free zone" and "have failed to take any meaningful enforcement actions, while permitting massive consolidation and anti-consumer practices"); Mitchell, *supra* note 10, at 501 (criticizing FTC for declining to bring enforcement actions despite numerous complaints).

[417] Mitchell, *supra* note 10, at 501.

[418] *Id.* at 501 nn.19-20 (citing FTC opposition to PBM regulation bills in Mississippi, New York, and Virginia).

[419] Press Release, Fed. Trade Comm'n, FTC Staff Comment Says New York Bill to Regulate Pharmacy Benefit Managers May Increase Pharmaceutical Prices for New York Consumers; Commission Approves Final Consent Order in Matter of Dow Chemical

prices. On multiple occasions, the FTC composed and transmitted letters opposing proposed regulations of PBMs to state lawmakers considering such legislation.[420] When some states considered legislation that would allow independent pharmacies to create their own pharmacy network that would serve as a counterweight to PBMs' unchecked market power, the FTC lobbied against it.[421] By allowing PBMs to become so powerful and entrenched in a complex distribution chain, weak antitrust enforcement has made it significantly more difficult to monitor and regulate PBMs despite the damage they inflict.[422] David Balto argues that the FTC's "lax approach" toward PBMs "has led to tremendous concentration, significantly higher prices, restricted consumer access, and a variety of abusive practices."[423] The FTC has then added insult to injury by lobbying to stop other government entities' efforts to regulate PBMs to address those problems.

The current FTC is more engaged and is undertaking new investigations into PBMs.[424] But even these early efforts proved difficult to undertake, as Republican-appointed FTC commissioners did not want to investigate PBMs, and the mission had to wait until a third Democrat, Alvaro Bedoya, became a commissioner and broke the earlier (partisan) tie among commissioners.[425] But more troubling, even now that the FTC has turned its attention to the problem of PBMs, opponents of oversight have invoked the agency's prior inaction to justify states declining to regulate PBMs, recirculating its old permissive pronouncements in today's state legislatures.[426]

Ultimately, weak antitrust enforcement has facilitated market concentration that has led to pharmacy closures, making health care less accessible to

Company and Rohm & Haas Company (Apr. 3, 2009), https://www.ftc.gov/news-events/press-releases/2009/04/ftc-staff-comment-says-new-york-bill-regulate-pharmacy-benefit [https://perma.cc/ATJ5-EQYV].

[420] Mitchell & Freed, *supra* note 106 (detailing FTC's opposition to state attempts to regulate PBMs).

[421] Dayen, *supra* note 216.

[422] David Balto, *Congress Must Protect Consumers from Predatory Drug Middlemen*, DC J. (Mar. 14, 2023), https://dcjournal.com/congress-must-protect-consumers-from-predatory-drug-middlemen/ [https://perma.cc/53PH-DFM7] ("Through mergers and acquisitions, though, including vertical integration with insurance companies and pharmacies, they have become mammoth, complex entities — so complex, in fact, that they have become almost impervious to government oversight and legislative guardrails.").

[423] Balto, *supra* note 243, at 3.

[424] Press Release, Fed. Trade Comm'n, FTC Launches Inquiry into Prescription Drug Middlemen Industry (June 7, 2022), https://www.ftc.gov/news-events/news/press-releases/2022/06/ftc-launches-inquiry-prescription-drug-middlemen-industry [https://perma.cc/CEQ9-5VPD].

[425] *See* Schladen, *supra* note 173.

[426] Mitchell & Freed, *supra* note 106 ("Though the FTC no longer seems to be actively discouraging states from regulating PBMs, its decade-plus record of opposition to such measures is still used as a weapon by the PBM lobby.").

vulnerable communities. Pharmacy deserts are a cautionary tale of the harms that can follow when firms are allowed to acquire and exercise market power with insufficient oversight. Inattention to antitrust has consequences: higher prices, curtailed access, inferior services, and worsened health outcomes. Antitrust was intended and designed to prevent these harms. That is why antitrust law is properly viewed as public interest law.[427]

IV. SOLUTIONS

Pharmacy deserts are not accidents. They are not the inevitable result of market forces. In many communities, pharmacy deserts are the direct result of conscious decisions made by firms with market power to deprive certain neighborhoods of independent pharmacies or of pharmacies altogether. Because pharmacy deserts are not the product of market forces, the market alone cannot fix the problem. Intervention is necessary. Fortunately, this intervention can take the form of reasonable enforcement of already existing antitrust laws, as well as new industry-specific regulation. The goal of policy interventions should be to minimize the two main barriers to medication: price and access.

A. *Antitrust Approaches*

Just as weak merger enforcement helped fuel the concentrated markets and conflict-of-interest dynamics that have increased pharmacy closures, proactive merger enforcement should provide the foundation of an antitrust-based response to the problem of pharmacy deserts. Despite the overconcentration in retail pharmacy markets, horizontal mergers continue, seemingly unabated and unaffected by antitrust law. Antitrust authorities can—and should—put a pause on the major retailers' M&A activity in these markets.

Merger analysis should reflect the inherently local nature of pharmacy services. Although the Big Three pharmacies have a national presence, they can possess monopoly power in local markets.[428] Antitrust challenges against major pharmacies should consider anticompetitive effects in local geographic markets.[429] Mergers that remove pharmacies from neighborhoods reduce access to medicine and services in ways that sound antitrust policy should address. Beyond the traditional consumer welfare standard, antitrust authorities should consider whether a neighborhood welfare standard would be appropriate when analyzing mergers involving inherently localized services, like pharmacies.

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[427] *See generally* Christopher R. Leslie, *Antitrust Law as Public Interest Law*, 2 U.C. IRVINE L. REV. 885 (2012) (explaining how antitrust law helps make food and medicine more accessible to public).

[428] *See* Sentry Data Sys., Inc. v. CVS Health, 379 F. Supp. 3d 1320, 1328-29 (S.D. Fla. 2019) (finding sufficient allegations of both national and local markets in Sherman Act case against CVS alleging unlawful tying).

[429] *See* RxStrategies, Inc. v. CVS Pharmacy, Inc., 390 F. Supp. 3d 1341, 1349 (M.D. Fla. 2019) (finding "local relevant geographic markets" met geographic market requirement).

Neighborhoods with competitive markets are best situated to supply food, medication, and other necessary goods and services to local residents.

Courts, however, define geographic markets too broadly. In defining geographic markets for retail pharmacies, courts have rejected neighborhood markets, instead suggesting that major metropolitan areas—such as Chicago and its suburbs—are as small a geographic market as they are willing to recognize.[430] This geographic market, however, is still too broad. Chicago has over a million residents living in pharmacy deserts—patients who cannot easily access a retail pharmacy that can fill their prescriptions and provide other pharmacy services. The fact that a wealthy household in Chicago's suburbs has a choice of which pharmacy to drive to should neither inform nor distort the geographic market analysis for families living in Chicago's South Side who lack access to cars and pharmacies.

Treating neighborhoods as relevant geographic markets should inform how merger analysis is performed and provide guidance for appropriate merger conditions.

National and multinational corporations are not invested in the success of neighborhoods, certainly not in the same way that locally owned independent pharmacies are. Large drug stores have an incentive to transform a zip code with twenty-four small neighborhood pharmacies into a zip code with one or two large chain drug stores. Antitrust defendants may use sterile terminology like "post-merger consolidations"[431] to gloss over corporate decisions to abandon entire neighborhoods. As implemented, consolidation is not a neutral concept; it has winners and losers. And consolidation is neither efficient nor beneficial if it creates pharmacy deserts. Efficiency means using the most cost-effective way to serve *all* consumers, not maximizing corporate profits by declining to serve wide swaths of consumers in low-income neighborhoods.

In addition to blocking further consolidation, antitrust authorities could attempt to remedy some of the consequences of their prior passivity. The vertical integration between large retail pharmacies and PBMs led to the exodus of independent pharmacies from the market, as well as higher prices and inferior services—classic forms of antitrust injury. Antitrust authorities could address these harms directly by seeking divestitures. For example, the FTC could use its rulemaking authority to preclude PBMs from owning retail pharmacies and vice versa.[432]

Short of blocking all pharmacy mergers outright, antitrust authorities could negotiate appropriate merger conditions to any such merger. When pharmacies

[430] Sharif Pharmacy, Inc. v. Prime Therapeutics, LLC, 950 F.3d 911, 917 (7th Cir. 2020) ("[Plaintiff's] assertion that the five-block radius around its location is a relevant market is not plausible. . . . Where geographic convenience is important to consumers, retail markets can be small . . . but not this small.") (citation omitted).

[431] *See, e.g.*, Fed. Trade Comm'n v. Cardinal Health, Inc., 12 F. Supp. 2d 34, 56 (D.D.C. 1998).

[432] Mitchell & Thaxton, *supra* note 95, at 31; Dayen, *supra* note 216.

merge—or when a large national chain acquires a smaller regional chain or an independent pharmacy—antitrust officials have an opportunity to intervene and preserve the market. The FTC, the DOJ Antitrust Division, and state Attorney General offices can threaten to challenge the merger unless the parties agree to certain conditions.[433] Merger conditions often take the form of divestitures.[434] But they can also be behavioral, such as enforceable commitments to license intellectual property or not to share certain information across business units in the merged company.[435] When it does challenge pharmacy mergers, the FTC has sought divestitures as opposed to conduct restrictions.[436]

Antitrust authorities can negotiate conduct conditions designed to reduce pharmacy closures and pharmacy deserts, such as promises not to enact or enforce restrictive covenants that prevent pharmacies opening up in underserved areas.[437] Officials can also draft merger conditions that preclude the acquiring firm from closing down any acquired pharmacies for a negotiated period of time.[438] Merger conditions allow appropriately tailored structural relief that replicates the advantages of regulation with greater efficiency.[439] Merger conditions are voluntarily agreed to and legally enforceable. This approach eliminates the need to define the geographic market with legal precision while increasing the likelihood of each neighborhood being treated as worthy of having a pharmacy.

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[433] 15 U.S.C. § 18a; *Premerger Notification and the Merger Review Process*, U.S. FED. TRADE COMM'N, https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws /mergers/premerger-notification-merger-review-process [https://perma.cc/YWJ8-VV5J] (last visited Sept. 9, 2024).

[434] ANTITRUST DIV., U.S. DOJ, ANTITRUST DIVISION POLICY GUIDE TO MERGER REMEDIES 8-9, 23-25 (2011), http://www.justice.gov/atr/public/guidelines/272350.pdf [https://perma.cc/4TAA-ZC42] (discussing structural and behavioral conditions in merger enforcement).

[435] Mark A. Lemley & Christopher R. Leslie, *Antitrust Arbitration and Merger Approval*, 110 NW. U. L. REV. 1, 51 (2015).

[436] *See, e.g.*, Press Release, Fed. Trade Comm'n, FTC Challenges Rite Aid's Proposed $3.5 Billion Acquisition of Brooks and Eckerd Pharmacies from Canadas Jean Coutu Group, Inc. (June 4, 2007), https://www.ftc.gov/news-events/news/press-releases/2007/06/ftc-challenges-rite-aids-proposed-35-billion-acquisition-brooks-eckerd-pharmacies-canadas-jean-coutu [https://perma.cc/X3EF-FZED] (noting that as part of Rite Aid's $3.5 billion acquisition of Brooks and Eckerd pharmacies, the FTC negotiated a consent agreement requiring the parties "to sell 23 pharmacies to Commission-approved buyers").

[437] *See generally* Christopher R. Leslie, *Food Deserts, Racism, and Antitrust Law*, 110 CALIF. L. REV. 1717 (2022) (advocating blocking anti-grocery covenants as a merger condition).

[438] Christopher R. Leslie, *Banking Deserts, Structural Racism, and Merger Law*, 108 MINN. L. REV. 695, 781 (2023) (noting that when banks attempt mergers or acquisitions, antitrust officials can negotiate merger conditions that preclude branch closures).

[439] Leslie, *supra* note 437, at 1772 ("Merger conditions are a way to solve the underlying problem without requiring regulation.").

On the litigation front, antitrust officials and private plaintiffs should challenge anticompetitive PBM policies as unreasonable restraints of trade that violate Section One of the Sherman Act. When PBM-imposed contract terms have anticompetitive effects—including driving the last pharmacy from a neighborhood—that implicates antitrust law. Antitrust plaintiffs should also challenge covenants that block new pharmacies from entering the market as Section One violations.[440]

B. *Non-Antitrust Approaches*

Treating pharmacy deserts as an antitrust issue provides a partial solution. But more possibilities exist for non-antitrust policies to address the problems of pharmacy closures and pharmacy deserts. For example, pharmacy access could be improved by building and maintaining better public transportation systems.[441] This Section, however, will focus more on traditional regulatory tactics.

One focus of such regulation is PBM conduct. The most direct way to address retroactive DIR fees and clawbacks would be to ban them by statute.[442] But pharmacy reimbursement rates could also be regulated to prevent undercompensation of independent pharmacies. Price regulation would be inherently complex as different circumstances warrant different reimbursement rates. States could increase their Medicaid reimbursement rates for community pharmacies at risk of closure, especially those in underserved areas at risk of becoming pharmacy deserts.[443] To the extent that low reimbursement rates are one of the chief causes of pharmacy closures, this approach could improve the market dynamics.[444]

Policies to increase PBM transparency should also be pursued. Evidence suggests that some PBMs are bilking health plans and lining their pockets at the expense of consumers.[445] But the extent of the problem is largely unknown because PBMs are not required to disclose their rebates, profits per prescription, or other details that would facilitate oversight.[446] And independent pharmacies should know the costs and reimbursement rates before making sales, not months later. Greater transparency is necessary for these markets to operate efficiently

[440] *Id.* at 1743-46 (making Section One argument in context of covenants to block grocery stores).

[441] Ying et al., *supra* note 11, at 1879.

[442] Dayen, *supra* note 216 (noting bills in House and Senate could prohibit retroactive DIR fees on Medicare and stop clawbacks on pharmacy reimbursements).

[443] Guadamuz et al., *supra* note 28, at 809.

[444] *Id.* ("Increasing Medicaid pharmacy reimbursement rates for prescription medications may encourage pharmacies to locate in pharmacy deserts and may also prevent closures and ameliorate disparities in pharmacy access in urban areas.").

[445] Mitchell & Freed, *supra* note 106.

[446] *Id.*

and for rational regulation to happen.[447] It is exceedingly difficult to diagnose and remedy a problem whose contours are largely hidden. PBMs have systematically driven up healthcare costs while taking home billions in annual profits, all while obscuring the details of their activities.

States could also preclude drugstores from operating unless they are owned by a pharmacist.[448] This would effectively prevent chain pharmacies from controlling the retail market, and it gives independent pharmacies necessary leverage over PBMs during their negotiations.[449] It also ensures that pharmacies have a commitment to their local communities, not shareholders in another state.[450] North Dakota adopted this model in the 1960s and a half century later, it has more pharmacies per capita than any other state and lower prescription drug prices than other states, including neighboring South Dakota with its large retail pharmacies and big-box stores containing pharmacy units.[451] With lower prices and better access, North Dakota's pharmacies help the state deliver better health outcomes.[452] As expected, large pharmacy chains and their PBMs have opposed the spread of this model.[453] But the data tells a story and supports a particular policy: PBMs should neither own nor be owned by pharmacies.

As laboratories of democracy and regulation, states should be encouraged to experiment with policies designed to rein in the power of PBMs. Evidence that the pharmacist-owned pharmacy model works exists precisely because North Dakota has effectively performed a multi-decade pilot study. In recent years, states have enacted several statutes to "reduc[e] PBMs' self-dealing behavior, prohibit[] 'gag' clauses that limit pharmacies from providing pricing information to consumers, and limit[] below cost reimbursements to pharmacies."[454] Successful state laws should be replicated on the federal level.[455]

Ultimately, antitrust and non-antitrust policy responses are complementary. Challenging mergers and reducing concentration in pharmacy markets lessens the market power (and political power) of large retail pharmacies and their

[447] Castronuovo, *supra* note 332 ("The Biden administration has also called for more transparency from PBMs, which are often blamed for adding fees and other costs during drug spending negotiations that ultimately drive up the amount patients spend at the pharmacy counter.").

[448] While rare in the United States, several European countries follow this model. Onorevole Giacomo Leopardi, *Monopoly in the Pharmaceutical Sector*, 12 PHARMS. POL'Y & L. 297, 300 (2010) ("In some EU countries the ownership of pharmacies is exclusive to the licensed pharmacist or to companies constituted by associated pharmacists.").

[449] Mitchell, *supra* note 10, at 500 (noting that in North Dakota, independent pharmacists have leverage to negotiate fairer terms because they are "the only pharmacies in the state").

[450] *Id.* at 499.

[451] *Id.* at 499-500.

[452] Dayen, *supra* note 216.

[453] *Id.*

[454] State Attorneys General, *supra* note 59, at 16.

[455] Dayen, *supra* note 216 (discussing proposed federal MAC Transparency Act, which is similar to over twenty state laws).

PBMs. This should make it easier to design and implement non-antitrust regulatory responses to the problems of pharmacy closures and pharmacy deserts.

CONCLUSION

Access to medication and health care is a hallmark of a civilized society. Independent pharmacies maximize access. They serve their neighborhoods as stewards. Local pharmacists know their patients by name and by ailment. These personal relationships facilitate healthcare delivery. Drugstore chains take a wildly different view of their pharmacy locations. When major chains began acquiring an empire of pharmacies, each location was but a pawn that could be sacrificed to increase the profitability of the overall network. Independent pharmacies, on the other hand, do not shut down as a business strategy because the pharmacies themselves are the business asset.

Although chain pharmacy stores provide many advantages, when they use their PBMs to drive independent pharmacists out of business, patients suffer. Individuals pay higher prices, receive worse service, and must travel greater distances—if they can access a pharmacy at all. Viewing pharmacy deserts through an antitrust lens may help reverse the current trend of pharmacy closures in vulnerable neighborhoods. Greater access to pharmacies should help address disparities in health outcomes.[456]

[456] Qato et al., *supra* note 14, at 1964 ("Disparities across communities in access to prescription medications and, potentially, in population health may worsen if disparities in pharmacy accessibility are ignored.").