THE REAL PRICE OF MEDICATIONS

A survey of variations in prescription drug prices

PIRGIM
Education Fund

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EXECUTIVE SUMMARY

PEOPLE LIVING IN THE UNITED STATES have access to some of the best medical care in the world, from life-saving drugs to cutting-edge surgical techniques. But our system is deeply flawed, with spiraling costs forcing many Americans to spend more on care and often receiving poor quality care for all the extra money spent.[1] [2]

Retail prescription drug costs represent about 10% of the total national healthcare expenditure in America, but represent a growing cost for many Americans.[3,4] In fact, nearly 1 in 4 Americans on medication struggle to afford their prescription drugs—and that rises to more than 4 in 10 for individuals in worse health.[5] Research on these high health care expenses (including prescription drug expenses) in comparison to other countries show that this difficult cost burden is driven primarily by inflated prices: not differences in the drugs used, our aging population, nor the amount of drugs prescribed.[6,7]

These high prices decimate the delivered value we get from medications. The main problem is this: a patient may pay more for a life saving medicine, but doesn't get any healthier for the added expense.

High prices do not only impact consumer finances, they worsen health outcomes. Research shows that high prices lead patients to engage in risky behaviors, including medication rationing or altering dosages

without doctor's consent.[8,9] Nearly 17% of older adults exhibit this non-adherence behavior, the highest among 11 comparably wealthy countries.[10] Physician treatment plans don't work when patients can't follow them, and research shows that medical treatment deviations account for major proportions of treatment failures and many hospital and nursing home admissions.[11]

Our report found medication prices vary greatly within cities, states and regions of the United States, further undermining the quality of patients' care. Doctors may prescribe more expensive medication that is just as effec-

tive as other options, or patients may decide to forgo treatment, when more affordable options could be available at the pharmacy around the corner. Sometimes, the best treatment may be what the patient can consistently afford, but with providers and patients unsure about prescription drug prices, the process of finding the right medication—for the right price—becomes even more daunting.

We surveyed the cash prices on 12 common drugs in a manner intended to approximate patient experiences—calling more than 250 pharmacies across 33 census-designated areas in 11 states. We found consumers face a dizzying array of pharmacy options as well as significant price differences:

- We found patients could save between $102 - $5,400 a year between minimum and median prices of the selected medications by shopping around.

- Prescription drug prices are disconnected from clear factors; the median price for the surveyed brand and generic drugs varied an average of 892 percent from the cheapest available price.

- Switching from brand name drugs to generic alternatives can help save money. For example, switching from the brand acid reflux medication Nexium to its generic could save a patient an estimated $756 annually.

- Brand name drugs did not adjust to competition from generic drugs, even years after they entered the market. For instance, patients who switch from branded Lipitor to its generic could save an estimated $3,927 annually.

- Large chain pharmacies tend to have higher prices than their small chain or independent counterparts, despite having more leverage in the marketplace. Eight of the 12 drugs in the survey had higher median prices of 8.8 percent to 840 percent at large chains compared to small or independent pharmacies.

These wide variations in prescription drug pricing are a sign of a broken market, further evidenced by price spikes in prescription drug prices.[12] The consequences can be severe, as Americans are often unable to navigate prescription drug pricing, nor can they afford to say no to life-saving medicines.

Our drug supply system is a complex web of agreements, middlemen, and failures of competition that often leaves patients at the mercy of high prescription drug prices that don't deliver the health return those prices imply.[13] Manufacturers set high list prices and further complicate the picture with a maze of coupons and rebates to supposedly offset those costs. A broken patent system grants exclusive control to drugs for far too long, leading to further abuse. Middlemen, known as Pharmacy Benefit Managers (PBMs), handle drug coverage for most insurers, but sometimes pocket the savings instead of passing them on to patients or the public and private insurers. Moreover, they practice "spread pricing," adding cost but no value to health care treatments. Wholesalers pay multiple prices without disclosure to the public, while pharmacists set ludicrous retail prices to increase their negotiating leverage with PBMs. In the end, insurers foot the bill for all of these expenses, which then get passed down to vulnerable patients via high premiums, or as our report highlights, through higher direct cash prices.

It is clear that if we don't make meaningful reforms, patients will continue to see their health care lose value and become harder to access. Fortunately, practical

policy solutions will help reduce costs and drive patients and providers to use more high value and affordable drugs that deliver care at lower prices. We can do this through:

- ***Addressing Monopolization & Lack of Competition***
  - End patent abuses that delay generic drugs.
  - Reform the patent system to ensure it's driving innovation.
  - Allow importation of prescription drugs with FDA approved versions sold in the United States.
  - Study the impact of vertical and horizontal mergers across the drug supply chain.
- ***Comprehensive Transparency***
  - Require public disclosure of prescription drug prices at each step of the drug supply chain, including input costs like research and advertising and patient assistance programs; and reimbursements provided to the government, insurers, pharmacies and patients. This information could serve as a foundation from which policy-makers can base further prescription price reforms, and as a way to help patients understand their costs.
  - Disclose prices for prescriptions online.
  - Enable providers to share clinical efficacy and useable prescription drug pricing for their patients in an integrated database system.
- ***Price Gouging Protection***
  - Create state boards of experts to examine prescription drug pricing (based on above transparency) and evaluate what are the best steps to reform the broken market.
  - Enact laws that require notification of price increases above inflation, require justification for that increase, and empower the state and federal governments to reject indefensible increases.
  - Incorporate value-based pricing and comparative effectiveness into price setting on prescription drugs.
- ***Fixing Healthcare System Incentives***
  - Set responsible limits on pharmaceutical companies' physician-targeted sales tactics.

U.S. Health Care is Expensive, Doesn't Deliver Value

AMERICAN INNOVATION in prescription drugs and health care has led to huge gains in health over the past century. We've created life-saving drugs and procedures for deadly diseases like cancer and heart disease, while also helping people with chronic diseases like arthritis and diabetes live healthier lives. We spend more money on health care than any other country in the world – a level of spending that should be enough to provide top-quality health care for every American.[14]

But flaws in our system mean we are spending far too much for the health outcomes we are getting. In 2017, the United States spent $10,224 per person on healthcare - 28% more per capita than the next highest spending country, and nearly twice as much as the average for similarly wealthy countries.[15] What is more, this spending increased 3.9% between 2016 and 2017, a concerning growth rate faster than general economic inflation, continuing a decades-long trend. [16,17]

Despite all of the money spent and all of our scientific advances, we are not getting healthier. In fact, life expectancy in the United States is the lowest of the twelve other high-income countries examined by the United Health Foundation, at 78.8 years compared to the OECD average (a group of industrialized nations) of 82 years.[18] The United States has higher death rates than Canada, France, Germany, Greece, Japan and the United Kingdom for several chronic diseases, even after adjusting for age.[19] The United States also fares poorly on other benchmark health measures, such as the rates of low birthweight babies, and is only average in the percentage of children who receive immunizations, one of the highest value treatments towards a healthy life.[20]

Prescription Drug Costs Are a Significant Part of Overall Healthcare Costs

Retail prescription drugs make up 10% of overall health care expenditure - not including drug expenses in hospitals and other care facilities.[21] When spending on drugs administered in hospitals and other care facilities is included, this figure jumps to 14%.[22] However, that overall figure downplays the importance of prescription drug spending in healthcare, particularly for the 49% of Americans who use employer-sponsored insurance.[23] For employer-sponsored insurance, retail prescription drug spending is about 19% of total spending, even after accounting for rebates.[24]

The Centers for Medicare and Medicaid Services (CMS) projects that retail prescription drug spending will represent a larger portion of overall national health expenditure over time, growing faster than any other large sector at 6.3% per year from 2017 - 2026.[25] In early 2019, three dozen pharmaceutical companies signaled they plan to raise prices on more than 250 prescription drugs an average of 6%, with some drugs with increases as high as 10%.[26] Patients will feel these price hikes, as these same list prices are referenced when determining patients' cost sharing.[27]

High Unit Prices are Driving Overall Costs

The high spending on prescription drugs is not primarily related to strange or unique characteristics of the American population, the types of medication, or how we use medication. Instead, studies show high unit prices are the main driver of the overall cost.

For instance, one analysis found that the United States spends 203% more per individual on primary care medications, such as hypertension or cholesterol lowering medications, compared to ten other high-income countries.[28] This stark difference persisted even though we receive fewer days of prescription treatment than those other countries. The authors concluded that high unit prices for the medicines were one of the main contributors to this difference.

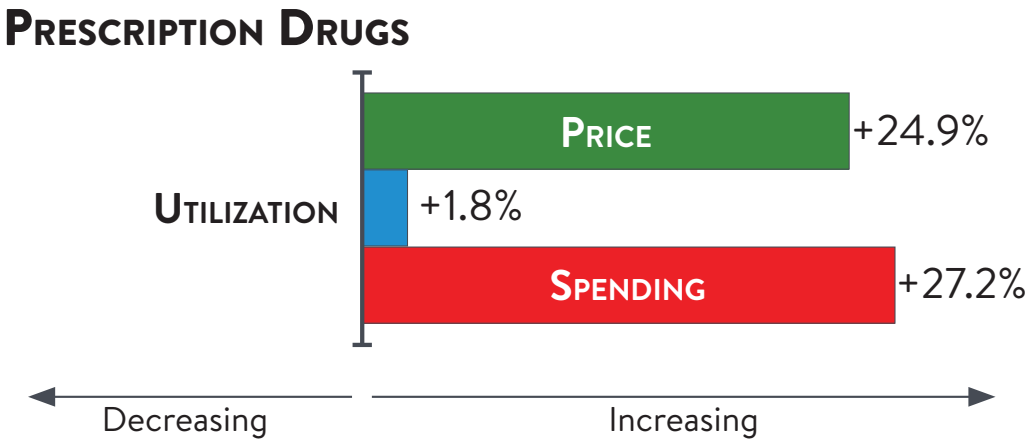
A different report found similar results by analyzing claims from employer sponsored insurance for those under 65: increases in spending for prescription drugs were almost entirely caused by increases in price, not substantive increase in use of prescription drugs.[29] Despite only a small increase of 1.8% in the rate of medications being prescribed, the total amount of spending increased by 27.2%, That is similar to the increase in prescription drug prices of 24.9%. Simply put, the increases in the price of prescription drugs accounted for much more spending than any increase in the use of those medications.

High Drug Prices Impact Health Outcomes

A fundamental impact of high drug prices is the decrease in health value patients receive from their prescriptions. While there are high priced medications that do add value, there is simply no additional health benefit to paying $500 for a pill from one pharmacy versus $20 for the same exact pill from another: the medication is, and will work, the same.

These problems compound when high prices drive patients to decide how they should use their medication, irrespective of doctor orders. In a 2018 survey of nearly 1,200 adults in the United States taking prescription drugs, Consumer Reports found 30% did not even fill their prescription; 16% did not take the medicine as scheduled; and 15% cut the medication in half without a doctor's approval.[30] These kinds of price-sensitive behaviors have been well documented in medical literature and have also been associated with patients experiencing worse health outcomes.[31,32,33] In fact, deviations from medical treatment pro-

PRICES DRIVE OVERALL SPENDING: CHANGE IN PRICE, UTILIZATION AND SPENDING (2012-2016)



Designed by Altarum Health Value Hub based on previously cited data.

tocols (both drug and non-drug) account for a significant proportion of treatment failures and hospital and nursing home admissions.[34] Cost-related medication non -adherence has been estimated to be about 17% in the United States in adults over 55 years of age, higher than any of the eleven comparably wealthy nations examined.[35] In another survey in the United States, two-thirds of respondents who did not fill their prescription did so due to cost, and 12% of all respondents said that cost drove them to purchase prescription medication outside the United States.[36] Given the magnitude of this problem, the case is clear: addressing the cost-related part of medical treatment deviations would likely improve treatment failure rates and reduce hospital and nursing home admissions.

The damage done by high prices to our health outcomes is stark, but when considered in the larger context of household budgets triggered by unaffordable drugs, the picture becomes even grimmer. Consumer Reports found that high drug prices are causing households to spend less on groceries and using credit cards more often, or otherwise making hard financial tradeoffs.[37] Spending on healthcare does not happen in a vacuum, and the lack of value delivered in our prescription drug pricing affects the quality of other aspects of patients' lives. People are being forced to dip into savings in exchange for their long-term health: this is not a prescription drug system that is delivering for Americans.

High Drug Prices Affect Us All

About six in ten Americans report taking at least one prescription medication and one in four say they take at least four prescription medications.[38] Clearly, high drug prices affect us all, from the twenty-seven million uninsured Americans to those whose existing insurance—whether high deductible or limited in drug coverage - is not providing enough protection from high costs.[39]

For the uninsured or those whose insurance does not cover the medicines, the effect of high drug prices is clear: but high prescription drug prices can also drive up the premiums of those who have insurance. In 2017, the California Department of Managed Care reported that prescription drug spending drove up costs for the insurer and the consumers. In the twenty-five health plans examined by the state, prescription drug spending accounted for 13% of overall health plan premiums, premiums which had to increase significantly, in part due to prescription drug price hikes. [40] While manufacturer rebates for drugs purchased did help limit some of the rise in overall health premiums, they were not enough to stop the increased prescription costs being passed along via insurance premiums.

Prescription Drug Prices Vary Greatly

DURING THE FALL OF 2018, our staff and volunteers called more than 250 pharmacies in 11 states to determine cash prices on a typical 30-day supply or single treatment course of some of the most commonly prescribed branded and generic medications in the United States. To ensure a good regional mix, we included two urban areas and one rural area based on census designations in a diverse sample of states across the country.

Unfortunately, we found wide variation in the cash prices for these drugs, meaning consumers could be saving hundreds or even thousands of dollars every year by shopping around. Moreover, this variation reveals the illogical nature of prescription drug prices in our current system. Unless otherwise noted, all prices referred to in our findings are national median prices.

RESULTS OF SURVEY ON MEDICATION PRICING

Drug (Quantity)	Minimum Price	Median Price	Maximum Price	Expected Price Difference[b]	Annual Savings[a]
10mg Lisinopril (30)	$3.99	$12.49	$59.02	213%	$102.00
50mg Sertraline (30)	$2.99	$33.99	$110.69	1036%	$372.00
500mg Amoxicillin (21)	$3.99	$12.99	$30.00	225%	*
40mg Lipitor[c] (30)	$193.00	$520.32	$865.00	169%	$3,927.78
40mg Atorvastatin (30)	$6.99	$112.99	$393.00	1516%	$1,272.00
90 mcg Ventolin HFA[c] (1)	$11.99	$71.59	$137.99	497%	**
250/50 Advair Diskus[c] (1)	$11.99	$462.00	$1,136.00	3753%	$5,400.12
40mg Nexium[c] (30)	$54.94	$287.99	$950.45	424%	$2,796.60
40mg Esomeprazole (30)	$10.00	$224.99	$338.40	2149%	$2,579.88
50 mcg Synthroid[c] (30)	$26.64	$50.99	$127.00	91%	$292.20
50 mcg Levothyroxine (30)	$4.00	$14.99	$43.71	274%	$131.88
Lantus Solostar Insulin Injector Pen[c] (5)	$96.00	$444.79	$1,759.19	363%	$4,185.48

**Annual estimates for Amoxicillin were not calculated as antibiotics are not usually prescribed monthly. To reflect that we collected Amoxicillin prices for a week's worth of antibiotics (a short course of 3 doses a day for 7 days).*

***Annual estimates for Ventolin were not calculated, rescue inhalers are used at a variable rate, and the inhaler surveyed had two hundred puffs in it, making it difficult to estimate frequency of purchase.*

[a]Annual savings were calculated by taking the difference in median and minimum pricing for a 30-day supply and multiplying by 12.

[b]Expected price differences calculated from the difference between the median and minimum price, represented as a percentage of the minimum price.

[c]Marked drugs are branded medications and are displayed above their generic alternative. Ventolin HFA, Advair Diskus and Lantus did not have any generic or biosimilar alternatives at the time of data collection.

The Drugs We Surveyed and What They Treat[41]

- Lisinopril: Treats high blood pressure, heart failure and often given after a heart attack.
- Sertraline: Treats depression and other mental health illnesses like panic attacks, obsessive compulsive disorder and PTSD.
- Amoxicillin: Treats a wide variety of bacterial infections. As antibiotics are rarely prescribed monthly, we surveyed a quantity of twenty-one pills, a common short-course therapy.
- Lipitor and Atorvastatin: Brand and generic drugs, respectively, that treat high cholesterol and fats in the blood, decreasing the risk of heart disease and helping to prevent strokes and heart attacks.
- Ventolin HFA Inhaler: Short-acting drug that treats wheezing and shortness of breath from respiratory illnesses like asthma. The common inhaler purchased is two hundred puffs, which may be more than a month's supply.
- Advair Diskus Inhaler: Long acting drug that controls and prevents wheezing and shortness of breath from asthma or other respiratory diseases.
- Nexium and Esomeprazole: Brand and generic drugs, respectively, that treat problems related to the stomach and esophagus, like acid reflux and ulcers.
- Synthroid and Levothyroxine: Brand and generic drugs, respectively, that treats an underactive thyroid, an important regulatory organ important for maintaining mental and physical activity levels.
- Lantus Solostar Insulin: Long-acting drug that controls blood sugar for type 1 and type 2 diabetics.

Prices Are Broken In Our Health System

We found the minimum and median prices for each drug differed an average of 892% for all surveyed drugs. In the case of Lisinopril, the median price was 91.4% higher than the minimum cash price. And, in the case of Advair Diskus, we found an astounding $450 difference between the minimum and median price—or $5,400 for a year supply.

This massive price variation reveals a seemingly arbitrary system of drug pricing, where pharmacists selling the exact same medication and dosage were unable to give a consistent price for identical products.

Although some may argue that most do not pay these cash prices, that argument misses the point. These prices are reflective of price gouging at multiple levels of the system that are absorbed either directly by patients who lack coverage for that drug or add to the overall cost of the healthcare system as some of those costs, even at discounted rates, are absorbed by insurance systems and ultimately passed on to consumers in the form of premiums.

Consumers Could Save By Shopping Around

Until further reform of drug pricing occurs, patients could find real savings if they actively shop around at different pharmacies. For example, a customer who buys Lisinopril at the lowest surveyed price could spend $47.88 a year. A patient who buys Lisinopril at the median price, how-

ever, could spend $149.88 – $102 more over the course of a year. These savings also apply to more expensive drugs like Lantus Solostar insulin. A patient who buys Lantus Solostar Insulin injector pens at the lowest surveyed price could spend $1,152 a year. A customer who buys the same medication at the median price could spend $5,337.48. That is more than $4,185.00 over the course of a year.

These cost savings become more extreme if you are the unfortunate customer who goes to one of the surveyed pharmacies that had the maximum price.

Generics Offer Better Value Even Years After Entering the Market

While theoretically brand name versions of drugs should approximate lower priced generics after they enter the market, our research found that is not happening in the examined cases. In the case of Lipitor, the blockbuster Pfizer cholesterol medication, the branded version's median price was still 360% higher than the generic version atorvastatin seven years after the generic became available.[42] In another example, Nexium is still 28% more expensive than its generic esomeprazole, despite the latter becoming available for sale in 2015.[43] The implication for patients is that they could save an estimated $4,887 and $756.00 annually (based on the median prices) on Lipitor and Nexium respectively, if they switched to their generic alternatives.

Patents are intended to encourage companies to develop new medicines by granting them the rights to exclusively sell the drug for a certain number of years. After that period, it's expected that generic alternatives will enter the market at a lower cost to patients, and that the brand version of the drug will similarly drop in cost, provided there are enough competing generic manufacturers.[44] Unfortunately, our research found the brand name version of the drug remained significantly more expensive, even years after a generic drug arrived. [45] This indicates that more generic competition is needed to sufficiently drive costs down.

You Can Even Save Money on Generic Drugs

When patients hear about high drug costs, the first solution they may think of is to use generic drugs. And while it is true that these prices are often lower, our survey revealed significant differences in cost for generic alternatives as well. Price differences for the relatively cheap generic Lisinopril could generate savings of around $100 a year. For more expensive generic medications like atorvastatin, shopping around could generate an annual savings of $1,272.

Large Chain Pharmacies Are Often More Expensive

For most drugs surveyed, large pharmacy chains, including chains such as CVS and Big Y Grocery pharmacies, had higher median prices compared to small-chain or independent pharmacies. This observed pricing difference is particularly surprising given that we would expect large chain pharmacies to offer the best prices, based on their larger negotiating leverage with PBMs, wholesalers and drug manufacturers. Chains that had 12 or more outlets in the surveyed state were designated as large chains, with all other pharmacies (excluding hospital or clinic pharmacies) being grouped as either independent or small chain pharmacies. We found the median prices of generic drugs treating acid reflux/heartburn and cholesterol (esomeprazole and atorvastatin), were more than 500% higher at large-chain outlets than at smaller outlets. This price variation can also be seen in some of the branded medications we surveyed, such as one Advair Diskus inhaler costing $37 more at large chain pharmacies than at small and independent pharmacies.

Lack of Competition, Clarity and Choice Hurt Consumers

The Retail Pharmacy Drug Supply System

TO UNDERSTAND HOW REFORMING the prescription drug system could improve health outcomes, we first need to understand the complex path medications take to reach patients. The ultimate price is determined by numerous players who can affect the price along the way: pharmaceutical companies, wholesalers, pharmacy benefit managers, insurers, pharmacies, and, of course, patients.[46]

Each of these players can add to the price of a prescription drug.[47]

1. **Manufacturers** start the process by setting a price. Factors considered include research and development costs, existing competition in the marketplace, the number of patients that would potentially use the drug and its impact on patients' lives. But ultimately, a drug's price is based upon what will net the highest profit possible.

2. **Wholesalers** purchase the prescription drug product in bulk, directly from manufacturers. They in turn sell to pharmacies and other direct purchasers.

3. **Pharmacy benefit managers** (PBMs) handle the prescription drug benefit of most insurance plans (employer or government). They negotiate prices from the manufacturer, and also set prices for what they are willing to pay pharmacies and what they will charge insurers or employers.

4. **Insurers** hire PBMs to negotiate with pharmacies and reimburse prescription drug costs.

5. **Pharmacies** pay for the drugs patients actually receive, either paying themselves or obtaining the drugs for PBM's clients, at a price the PBM negotiates.

6. **Patients** may pay for the drug directly or partially through their insurance. They will either pay a percentage determined by their insurer and PBM, a flat rate based on type of prescription, or they will pay the retail price. Patients have hardly any idea if they are paying a fair price that delivers true value, or if their pocketbooks are being gouged. This is because, unlike most marketplaces, the prescription drug marketplace lacks competition, clarity and choice - all of which conspire to hold patients hostage.

Lack of Competition

There are three clear places in the drug supply chain where monopolization impacts the price: pharmaceutical manufacturers, middlemen like PBMs and wholesalers, and the types of pharmacies available.

First, when a pharmaceutical company develops a new drug, they apply for and often win a patent that gives brand name drugs a monopoly in the marketplace for twenty years from when the patent was filed.[48] Pharmaceutical companies then often use their market power to avoid the downward price pressure that competition exerts.

While this system was designed to provide a mechanism for companies to recoup research and development costs, calculations are usually based upon the need for the medication with its clinical benefits and risks; potential competing drugs; medical provider opinions of the drug as described and an assessment of how health plans would react.[49] This, and the strong desire to extend patent life by companies for as long as possible, may in fact, have created a perverse disincentive to develop new life-saving medications.

There are numerous strategies pharmaceutical manufacturers use to extend their drug monopolies for as long as possible.

- *A patent estate* describes when a company will file dozens of patent applications that cover every aspect of the drug's life, from origin to manufacturing to treatment uses.[50] This was the case with AbbVie's blockbuster medicine Humira, which included over one-hundred patents, many of which were filed the year prior to the expiration of the patent. So far this effort has deterred any generic alternative.

- Another strategy is to take steps to avoid patent challenges. For example, the drug manufacturer Allergan tried to evade FDA review of the patents on its blockbuster drug Restasis, by transferring them to a Native American tribe. They then claimed that the tribe's sovereign immunity protected the patents from challenge. [51]

- *Evergreening patents* such as when AstraZeneca changed a single molecule in Prilosec (Omeprazole) to become Nexium (Esomeprazole).[52] This enabled the company to issue a new patent for the barely modified medication, effectively extending the company's monopoly on this type of drug well beyond the period granted by the original patent and without new innovation to improve health outcomes.[53]

- *Product hopping* occurs when patients are forced onto new, patented medication even though there is little therapeutic difference.[54]

- *Citizen petition abuse*, where the manufacturer actually uses citizen petitions, originally intended to help ensure drug safety and effectiveness, to jam up the Food and Drug Administration's review of generic approvals through regulatory gridlock.[55]

- *Pay for Delay* describes when branded drug manufacturers pay a competitor to delay a generic version of the drug entering the market. The Federal Trade Commission has estimated this tactic costs Americans $3.5 billion a year in higher annual health care costs.[56]

- Lastly, companies sometimes deny a sample product to generic drug companies, which is necessary to prove to the FDA that the generic version is similar.[57]

Patents significantly contribute to manufacturers' ability to keep drug prices and profits high, but marketing practices also play a role. Comparable drugs with differing formulations that treat the same diagnoses can cause some downward price pressure. However, detailing, (in which pharmaceutical sales representatives target medical providers to promote their branded drug) and direct-to-consumer (DTC) advertising counteract downward pressures and convince both providers and patients that new means better, even if there is little therapeutic evidence to back the claim.[58] In addition, many brand name drugs simply don't have competition.

Wholesalers and PBMs further contribute to the problem through their market consolidation and their lack of competitors to carve out significant leverage in the marketplace. Three wholesalers and three PBMs control 85% and 78% of their markets, respectively.[59] They use little of that market power to drive down costs. Instead, their increasing influence is used to cut deals where they often keep large percentages of rebates without passing on those benefits to consumers, insurance companies or government insurance programs, hiking costs of healthcare at all levels. Because of a lack of transparency, it is hard to pierce secretive contracts that hide these deals and their consequences for patients, for policy makers, and for the drug supply chain actors who they contract with.

Additionally, large chain pharmacies continue to expand their footprint. The five largest pharmacy chains control over 50.3% of the marketplace.[60] These chain pharmacies are often the only option for patients to get medication, leaving them little other alternatives to purchase their drugs locally. While it is true that reputable and less expensive online purchasers are addressing some of these problems, they are not enough to drive prices down in the brick-and-mortar retail market.

Lastly, corporate mergers are letting companies assume multiple roles in the drug supply chain.[61] CVS Health owns Caremark (a PBM), and this combined entity recently bought the health insurance company Aetna.[62] UnitedHealth Group has owned the PBM Optum for years. Cigna Health Insurance recently bought the PBM Express Scripts.[63] While these mergers are often described as a way to streamline operations and direct more cost savings to customers, the opposite seems true.

Thomas Greaney, a health law professor at the University of California-Hastings College of Law, has pointed out that insufficient competition in a number of the health-care industry sectors is a big reason for medical inflation because it enables already-big stakeholders to garner even-higher prices. “It really is high prices that drive high costs, and high prices correlate very strongly with high concentration, and concentration is just another way of saying leverage — the ability to demand more for your goods and services”.[64]

While we must solve these issues that are contributing to high and unreasonable prescription drug prices, consumers can save money in the meantime by shopping around. Unfortunately, market concentration undermines consumers abilities to shop around for more affordable drugs.

Opaque Pricing Throughout

A lack of transparency throughout the entire drug supply chain further disincentivizes patients from seeking out alternatives that may ultimately create more value. Moreover, it makes it harder for large purchasers like insurance companies, government agencies, and pharmacies to deliver affordable, high quality prescription drugs for their patients—or identify potential savings.

Manufacturers are the starting point for high prescription drug prices. They set a price known as the wholesale acquisition cost (WAC), which is the estimated cost of their product but can also include profit.[65] Supposedly, this price is based on how much money has gone into research and their marketing plans, including direct-to-consumer advertising and detailing.[66] A separate price is then set, known as the average manufacturer’s price (AMP), which includes potential rebates and discounts. This is the price that wholesalers or direct

purchasers pay after negotiating with the manufacturer. To understand the difference between WAC and AMP, think of how automobile dealers worked before "no haggling" came into vogue.[67] A customer would negotiate the price and perks before signing on the dotted line--it's the same between drug manufacturers and direct purchasers.

Regrettably, we do not know how these costs factor into actually setting the price of the drug. Moreover, none of this factors in the effectiveness of the drug. A new drug may work just as well on a disease as the old one--but because it is supposedly innovative and is aggressively marketed, it will be sold at a higher price and may become a popular treatment for patients.

Wholesalers are the first markup on the list price. In theory, the average wholesale price (AWP) would indicate what pharmacies pay wholesalers for their product. However, wholesalers play the discount game as well. Wholesalers, like manufacturers, raise their AWP in order to then provide "discounts" to retailers.[68] To determine what a pharmacy has paid, you need to know the actual acquisition cost (AAC) which is the final cost a pharmacy paid to wholesalers including discounts. This number is determined by actual audits of pharmacy invoices, though not all pharmacies participate.

Pharmacy benefit managers (PBMs) are the second markup in this pricing scheme. These organizations help determine the cash and insured price of the drugs sold at many pharmacies. Because they control a large proportion of the market, they use their power to incentivize and disincentivize the use of certain drugs, by determining how they are placed within pricing tiers on their drug list (also known as a formulary). At times, PBMs pocket rebates offered by manufacturers while passing on high list prices to health system payers and eventually consumers. This can cause the out-of-pocket spending for patients to increase when those copayments are set as a proportion of the list price or the cash price increases.[69]

In addition to administrative fees and the rebates they negotiate, PBMs also make money on something called spread pricing. Spread pricing is the difference, or spread, between what the insurer will pay the PBM for the drugs purchased by the patient at the pharmacy and what the PBM has negotiated it will pay the pharmacy to supply that drug, and generally has been a larger issue with generic medications.[70]

Insurers are sometimes the next markup on the price. They end up distributing the costs of prescriptions between the patient and the insurer (often through the use of a PBM to do the work). In our health system, multiple insurers can mean multiple prices for a product (meaning more confusion for the consumer), as different insurers or players have varying levels of leverage in negotiation. If a patient has insurance options to choose from, it is important for the patient to determine the prices, co-pays and deductibles that an insurer is offering for specific drugs, in order to get the best value for the medications they will be taking. While insured patients may seem to be insulated from much of the out of pocket costs of medications, all insured patients face the danger of higher premiums. And with insurers such as United and Aetna joining with PBMs in an effort to have more cost control, it also opens another avenue for insurers to create more profit margin through the more unregulated PBM space.[71]

Pharmacies are the last markup in this process. They pay the actual acquisition cost (AAC) and then charge a "usual and

customary" price (U&C) otherwise known as the cash price, and also add a "dispensing fee", which was $10.55 on average per script according to one report.[72] The U&C is a markup based on a number of factors; setting the U&C price at or above the most profitable network pharmacy rate; setting generic prices as a percentage below the brand price, not a percentage above the acquisition cost; and setting a segment of drug prices in direct competition to local competitors to create an appearance of price competition.[73] All of this means that retail prices are determined by the best way to game the payments that would be made to pharmacies by PBMs and insurers, not what delivers value to consumers. And with so many steps, rebates, discounts and other pieces of this maze, there are numerous opportunities to raise the price.

Patient Choice

Unlike buying a pair of blue jeans, picking out a restaurant or movie, or determining which car to buy, patients face a marketplace that completely ignores their demands. Due to few therapeutic alternatives to choose from and large pharmacy chains squeezing out their smaller competitors, patients don't really have the choice that these other markets provide. The lack of price setting transparency by the myriad of stakeholders makes it difficult to determine a fair price for a drug. And those same stakeholders are finding ways to join together, not compete, in the pricing of products. Due to the lack of transparency and clinical comparative effectiveness research, it is difficult for providers and patients to have a value discussion. All of this leaves patients - and providers - armed with little knowledge to make appropriately informed choices. Furthermore, the information they do have can be skewed: providers and patients are inundated with pharmaceutical manufacturer's targeted advertising in their offices and homes.

Consumer Demand and Uses for Transparency

A Consumer Reports nationally representative survey found that 24% of prescription drug users are not at all confident they can access affordable medications in the future, and that 25% pay more for drugs than they did 12 months ago, with 74% reporting that they did not get any advance notice of the increase in prices.[74] When consumers knew of the increased drug cost, 35 percent asked their pharmacist for a less expensive drug and 22% for a cheaper price on that same drug.

There is a demand for usable, patient level price transparency in our healthcare system. If patients and providers were equipped to find the best value prescription drug plan for them, we could gain even more value out our current healthcare system. As complex as the prescription drug supply chain is, no silver bullet exists to address the lack of transparency in prescription drug pricing. However, there are numerous policy pursuits that, if implemented, could arm and empower patients to tackle the system and achieve value in their pharmaceutical purchases.

Policies to Return Value to Healthcare

Addressing Monopolization and Lack of Competition

PATENT EXCLUSIVITY FOR drug manufacturers should deliver high quality medication that improves patient lives at reasonable costs. Key actions can quicken the deployment of generic alternatives by:

- Ending patent system abuses that delay the introduction of generic prescription drugs including; evergreening patents, product hopping, pay-for delay and other patent avoidance strategies.

- Reforming the patent system to ensure it's driving innovation by ending the delay of generic drugs through illegitimate citizen petitions, development of non-innovative patent estates, or denying sample drugs to generic drug manufacturers.

- Allowing the importation of prescription drugs to domestic pharmacies, wholesalers, and patients, if the FDA has approved a version of the same drug for use in the U.S.

- Considering the impact of both horizontal and vertical mergers among PBMs, pharmacies, wholesalers and insurers have on prescription drug pricing.

Prescription Drug Price Transparency

Transparency will grant greater clarity on how high prices are happening, will reveal whether they are delivering better health outcomes, and will allow consumers to better shop around for affordable options in their area. This should also help provide further insight on how to reduce prices and boost value for patients. To that end we should:

- Require public disclosure of prescription drug price information throughout the entire drug supply chain, from manufacturers to retail pharmacies, including spending on research, development and marketing. Disclosures should include; the price and any additional cost at each step in the process; who receives coupons and rebates; and, reimbursement levels provided to government, insurers, pharmacies and patients.

- Disclose prices for prescription drugs online, to make it easier for consumers to shop around for affordable prescription drugs.

- Give medical providers access to prescription drug pricing for their patient, including what and how their insurance and local pharmacy will price it, so they can deliver the best health care value to their patients.

End Price Gouging

Between drug manufacturing and patient treatment, medication prices are often hiked, whether through middlemen costs or raising initial prices. This sort of price gouging is at the core of high prescription drug prices and returns little value to patients. We should implement the following solutions:

- Enact laws that require notification of price increases above inflation, require justification for that increase based on the value provided to patients, and empower the state and federal governments to reject indefensible increases.

- Create state boards of experts to examine prescription drug pricing (based on above transparency) and evaluate what are the best steps to reform the broken market.

- Infuse value-based pricing and comparative effectiveness into price setting on prescription drugs so patients are not paying more for medication that does not work better than other options. Allowing Medicare and Medicaid to use these tools could create downward pressures on prices.

Fixing Healthcare System Incentives

- Set responsible limits on pharmaceutical companies' physician-targeted sales tactics and implement academic detailing programs that educate providers on which medicines provide the highest value care to their patients.

Methodology

THE SURVEY METHODOLOGY was based on U.S. PIRG's previous Pay the Price Report, and all calling occurred between 11/01--12/31.[75] Over the course of three months in the fall of 2018, our staff surveyed more than 250 pharmacies in 11 states for the cash prices of commonly prescribed medications. In each state we picked three regions based on census information, two urban and one rural, to help ensure a good cross sampling of the state.

Pharmacy Selection:

Lists of active, licensed pharmacies within each selected state were collected from the licensing boards of each state, from publicly available data. After uploading these datasets into Stata 14, we randomly selected pharmacies, by assigning a number to each pharmacy based on the random numbering software within Stata. Pharmacies were omitted if they were based out of state. Pharmacy phone numbers were retrieved, if not included in the state dataset, from the pharmacy websites and/or google search results. If calls could not be completed to the pharmacy, or if pharmacy did not have time to speak with us, the next pharmacy on the randomized list was selected. We omitted specialty pharmacies, health systems that only accepted their own patients as customers, and mail-order pharmacies.

Site Selection

Our survey was conducted by selecting 3 cities each in 11 states, with two urban and one rural city in each state Study states were selected partly off past report sites, with changes made for states that were considering price transparency measures. Rural cities were selected from county seats of rural counties as defined by the 2010 U.S. Census Bureau data in their county lookup tables.[76] Urban sites were selected based criteria of population centers and geographic representation. All site selection was taken with state geographic representation in mind. The locales chosen are as follows;

- Arizona: Phoenix, Tucson, Holbrook,
- Florida: Miami, Orlando, Quincy
- North Carolina: Raleigh, Charlotte, Clinton
- Massachusetts: Boston, Worcester, Greenfield
- Michigan: Detroit, Lansing, Gaylord
- New Jersey: Trenton, Newark, Flemington*
    - Flemington is the county seat of the most rural county in NJ, according to 2010 census data.
- Ohio: Columbus, Cleveland, Ashland
- Pennsylvania: Philadelphia, Pittsburgh, Gettysburg
- Texas: Dallas, El Paso, Gainesville
- Washington: Seattle, Chehalis, Spokane
- Wisconsin: Milwaukee, Green Bay, Neillsville

Drug Selection

Drugs were selected by cross-referencing the top ten prescribed therapeutic classes of drugs with the top ten most prescribed medicine in IQVIA's annual report on prescription drug price spending.[77] Recog-

nizing that the top prescribed medications tend to overly represent the needs of an elderly population we used a study on drug prescription trends to identify the commonly prescribed classes of drugs across a range of ages.[78] We then added drugs surveyed by a similar report in New York, which based its drug selection on the most commonly prescribed medications from 2015[79]. The drugs selected are as follows:

- 10mg Lisinopril (30): Generic medication that treats high blood pressure and heart failure.
- 50mg Sertraline (30): Generic Zoloft, used to treat depression among other mental health illnesses.
- 500mg Amoxicillin (21): Generic antibiotic, the quantity used here indicates a short course of antibiotics (3 times daily, for one week).
- 18g 90 mcg Ventolin HFA inhaler (1): A branded inhaler used to treat wheezing and bronchospasms.
- 250mcg/50mcg Advair Diskus inhaler (1): A branded inhaler used to treat asthma and chronic obstructive pulmonary disorder.
- 40 mg Lipitor and its generic Atorvastatin (30): Medication used to bring down blood cholesterol and triglycerides.
- 40mg Nexium and its generic esomeprazole (30): Medication commonly used to treat gastroesophageal reflux disease and to treat and prevent ulcers.
- 50mcg Synthroid and its generic alternative Levothyroxine (30): Thyroid medication for hyperthyroidism and may also be used to treat enlarged thyroids or thyroid cancer.
- 100 units/mL 3mL Lantus Solostar Insulin Injector Pens (1 carton, 5 pens): A long-acting type of insulin used to maintain blood sugar levels in type 1 and type 2 diabetics.

Pharmacy Survey

Staff called pharmacies asking for the retail price of 12 commonly prescribed medications across age ranges, covering conditions such as depression, heart issues and diabetes. Pharmacy staff were asked for the non-discounted, cash prices on the medications surveyed, the results indicate what pricing information was available in the system.

Limitations of our report's data include that it relies on self-reported data from pharmacy staff, reliant on local pricing systems that may not exclude manufacturer rebates from the listed price, and also may change week to week. These prices may not be what every consumer would pay at these sites, but do represent the variation in pricing currently available in the U.S. Market.

Pharmacy Type Designation

Pharmacies were stratified based on the Ohio Board of Pharmacy's classification structure in the data they sent. Pharmacies with 12 or more outlets within the state were classified as large chain, pharmacies with 2-11 outlets within the state were classified as small chain and pharmacies with 1 outlet were classified as independent. We then separately defined pharmacies that were a part of clinics or a hospital health system as a separate category called "Health System". We chose Ohio's pharmacy classification system because it was the only state that had quantified classification thresholds within the data set. While other states had pharmacy type classifications, the systems varied over the datasets and did not have an obvious quantified criterion like Ohio did.

Appendix

NATIONAL DIFFERENCES IN LARGE CHAIN VS SMALL & INDEPENDENT PHARMACY PRICES

Drug (quantity)	Independent[a] Small Chain Pharmacies' Price	Large Chain Pharmacies' Price	Price Difference (%)[b]	Annual Savings If Smaller Outlets Used[c]
10mg Lisinopril (30)	$10.00	$12.49	24.90%	$29.88
50mg Sertraline (30)	$13.58	$35.99	165.02%	$268.92
500mg Amoxicillin (21)	$10.56	$12.99	23.01%	*
40mg Lipitor[d] (30)	$490.00	$533.24	8.82%	$518.88
40mg Atorvastatin (30)	$16.24	$112.99	595.75%	$1,161.00
90 mcg Ventolin HFA[d] (1)	$65.00	$71.59	10.14%	**
250/50 Advair Diskus[d] (1)	$425.00	$462.99	8.94%	$455.88
40mg Nexium[d] (30)	$294.00	$287.99	-2.04%	-$72.12
40mg Esomeprazole (30)	$25.00	$235.44	841.76%	$2,525.28
50 mcg Synthroid[d] (30)	$51.41	$51.00	-0.80%	-$4.92
50 mcg Levothyroxine (30)	$18.31	$13.99	-23.59%	-$51.84
Lantus Solostar Insulin Injector Pen[d] (5)	$446.50	$444.79	-0.38%	-$20.52

[a]Independent and small chain pharmacies' prices were combined to calculate the median price, displayed above.
[b]Price difference represents the increase in price compared to the small and independent pharmacies' median price.
[c]Annual savings calculated by taking the difference between small chain and independent pharmacies and large chain pharmacies pricing for a 30-day supply and multiplying by 12.
[d]Marked drugs are branded medications and are displayed above their generic alternative. Ventolin HFA, Advair Diskus and Lantus did not have any generic or biosimilar alternatives at the time of data collection.
**Annual estimates for Amoxicillin were not calculated as antibiotics are not usually prescribed monthly. To reflect that we collected Amoxicillin prices for a week's worth of antibiotics (a short course of 3 doses a day for 7 days).*
***Annual estimates for Ventolin were not calculated, rescue inhalers are used at a variable rate, and the inhaler surveyed had 200 puffs in it, making it difficult to estimate frequency of purchase.*

NATIONAL & STATE PRESCRIPTION DRUG PRICE VARIATION & PROJECTED SAVINGS

ARIZONA	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$3.99	$3.99	$3.99	$193.00	$9.00	$36.27	$62.99	$265.00	$28.30	$40.92	$4.00	$442.99
Median Price	$12.49	$35.49	$14.44	$505.99	$112.99	$71.59	$459.99	$289.99	$236.99	$47.11	$14.74	$447.95
Maximum Price	$36.73	$86.50	$18.69	$692.99	$235.99	$76.99	$812.10	$369.69	$279.00	$66.99	$23.39	$530.69
Expected Price Difference	213.03%	789.47%	261.90%	162.17%	1155.44%	97.38%	630.26%	9.43%	737.42%	15.13%	268.38%	1.12%
Estimated Annual Savings	$102.00	$378.00	*	$3,755.88	$1,247.88	*	$4,764.00	$299.88	$2,504.28	$74.28	$128.82	$59.52
FLORIDA	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$4.00	$2.99	$4.00	$402.91	$9.00	$13.00	$17.00	$237.76	$20.00	$35.69	$4.00	$96.00
Median Price	$12.49	$32.99	$12.99	$506.00	$112.99	$71.59	$459.50	$283.00	$219.99	$56.42	$13.99	$442.99
Maximum Price	$24.65	$63.57	$18.59	$644.99	$225.99	$77.99	$518.95	$338.95	$266.99	$62.99	$33.80	$513.99
Expected Price Difference	212.25%	1003.34%	224.75%	25.59%	1155.44%	450.69%	2602.91%	19.03%	999.95%	58.08%	249.75%	361.45%
Estimated Annual Savings	$101.88	$360.00	*	$1,237.08	$1,247.88	*	$5,309.94	$542.88	$2,399.88	$248.76	$119.88	$4,163.88
MASSACHUSETTS	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$4.00	$9.99	$6.99	$219.69	$9.00	$50.00	$380.00	$229.99	$15.00	$29.49	$4.00	$150.00
Median Price	$12.49	$35.99	$13.59	$518.00	$112.99	$71.59	$462.99	$291.99	$224.99	$51.89	$12.99	$444.79
Maximum Price	$39.92	$109.81	$29.69	$692.99	$235.99	$83.62	$600.00	$400.00	$322.00	$127.00	$43.71	$609.00
Expected Price Difference	212.25%	260.26%	94.42%	135.79%	1155.44%	43.18%	21.84%	26.96%	1399.93%	75.94%	224.75%	196.53%
Estimated Annual Savings	$101.88	$312.00	*	$3,579.72	$1,247.88	*	$995.88	$744.00	$2,519.88	$268.74	$107.88	$3,537.48
MICHIGAN	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$4.00	$4.00	$4.00	$480.24	$8.00	$55.00	$380.00	$276.99	$10.00	$40.92	$4.00	$390.00
Median Price	$7.00	$15.49	$10.49	$505.99	$99.44	$71.59	$456.00	$300.00	$224.50	$50.00	$11.99	$442.99
Maximum Price	$29.53	$85.54	$18.99	$589.29	$206.39	$98.95	$556.95	$376.00	$315.00	$60.00	$32.00	$567.50
Expected Price Difference	75.00%	287.25%	162.25%	5.36%	1143.00%	30.16%	20.00%	8.31%	2144.95%	22.19%	199.75%	13.59%
Estimated Annual Savings	$36.00	$137.88	*	$309.00	$1,097.28	*	$912.00	$276.12	$2,573.94	$108.96	$95.88	$635.88
NORTH CAROLINA	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$4.99	$6.95	$6.67	$225.99	$7.00	$55.00	$162.09	$254.04	$11.90	$42.06	$11.99	$96.99
Median Price	$12.49	$34.99	$12.99	$539.00	$112.99	$71.59	$456.99	$283.99	$224.99	$46.09	$13.99	$442.99
Maximum Price	$29.00	$35.99	$26.00	$664.00	$393.00	$87.49	$497.49	$368.00	$299.00	$62.99	$33.50	$622.69
Expected Price Difference	150.30%	403.45%	94.75%	138.51%	1514.14%	30.16%	181.94%	11.79%	1790.67%	9.58%	16.68%	356.74%
Estimated Annual Savings	$90.00	$336.48	*	$3,756.12	$1,271.88	*	$3,538.80	$359.40	$2,557.08	$48.36	$24.00	$4,152.00
NEW JERSEY	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$4.00	$7.00	$6.99	$450.28	$9.00	$59.00	$398.00	$224.99	$10.00	$39.00	$11.99	$420.00
Median Price	$11.99	$30.00	$12.99	$528.80	$33.54	$71.59	$462.99	$287.99	$224.99	$49.69	$15.00	$444.95
Maximum Price	$35.99	$86.19	$30.00	$663.99	$225.99	$89.00	$550.00	$361.00	$276.99	$62.99	$40.00	$519.99
Expected Price Difference	199.75%	328.57%	85.84%	17.44%	272.67%	21.34%	16.33%	28.00%	2149.90%	27.41%	25.10%	5.94%
Estimated Annual Savings	$95.88	$276.00	*	$942.18	$294.48	*	$779.88	$756.00	$2,579.88	$128.28	$36.12	$299.40

Yearly estimates for Amoxicillin and Ventolin HFA were omitted as those medications were surveyed for supplies that are not standard. Expected Price Difference refers to the difference between the minimum price and the median price, expressed as a percentage of the minimum price. The Estimated Annual Savings were calculated by taking the difference between the minimum and median prices and multiplying that by twelve (each price, with the exception of Amoxicillin and Ventolin, refer to monthly amounts of the drug).

NATIONAL & STATE PRESCRIPTION DRUG PRICE VARIATION & PROJECTED SAVINGS

OHIO	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$4.00	$4.00	$4.00	$505.99	$6.99	$11.99	$11.99	$276.99	$17.93	$35.00	$9.99	$366.34
Median Price	$9.99	$15.49	$10.49	$539.49	$36.49	$71.59	$456.99	$316.99	$224.99	$46.29	$11.99	$467.50
Maximum Price	$16.39	$64.99	$23.99	$865.00	$235.99	$137.99	$1,136.00	$668.00	$282.99	$66.99	$25.00	$1,165.00
Expected Price Difference	149.75%	287.25%	162.25%	6.62%	422.03%	497.08%	3711.43%	14.44%	1154.82%	32.26%	20.02%	27.61%
Estimated Annual Savings	$71.88	$137.88	*	$402.00	$354.00	*	$5,340.00	$480.00	$2,484.72	$135.48	$24.00	$1,213.86
PENNSYLVANIA	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$3.99	$6.99	$6.99	$447.00	$9.00	$64.29	$55.99	$270.00	$15.00	$28.99	$4.00	$366.00
Median Price	$15.79	$50.49	$12.99	$551.50	$112.99	$78.20	$460.00	$327.99	$257.00	$55.99	$17.89	$506.95
Maximum Price	$41.99	$106.64	$24.00	$664.00	$226.00	$88.49	$548.39	$423.99	$310.80	$64.00	$30.00	$586.18
Expected Price Difference	295.74%	622.32%	85.84%	23.38%	1155.44%	21.64%	721.57%	21.48%	1613.30%	93.14%	347.25%	38.51%
Estimated Annual Savings	$141.60	$522.00	*	$1,253.94	$1,247.88	*	$4,848.06	$695.88	$2,903.94	$324.00	$166.68	$1,691.34
TEXAS	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$4.00	$4.00	$4.00	$219.00	$9.00	$60.00	$216.99	$270.00	$20.00	$40.92	$4.00	$394.18
Median Price	$15.69	$24.99	$13.69	$510.41	$39.99	$74.99	$462.99	$297.00	$236.99	$53.69	$15.00	$454.00
Maximum Price	$39.08	$106.92	$28.59	$663.99	$299.29	$127.10	$732.85	$379.35	$338.40	$66.99	$32.29	$606.44
Expected Price Difference	292.25%	524.75%	242.25%	133.06%	344.33%	24.98%	113.37%	10.00%	1084.95%	31.21%	275.00%	15.18%
Estimated Annual Savings	$140.28	$251.88	*	$3,496.92	$371.88	*	$2,952.00	$324.00	$2,603.88	$153.24	$132.00	$717.84
WASHINGTON	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$4.00	$8.00	$8.00	$219.69	$8.10	$33.99	$329.10	$176.60	$20.00	$26.64	$4.00	$99.52
Median Price	$14.25	$29.24	$12.99	$505.99	$39.69	$71.59	$466.99	$293.71	$230.99	$52.45	$17.65	$458.01
Maximum Price	$41.99	$110.69	$23.99	$613.99	$225.99	$90.27	$577.25	$950.45	$298.00	$63.00	$40.99	$1,759.19
Expected Price Difference	256.25%	265.50%	62.38%	130.32%	390.00%	110.62%	41.90%	66.31%	1054.95%	96.87%	341.13%	360.21%
Estimated Annual Savings	$123.00	$254.88	*	$3,435.60	$379.08	*	$1,654.68	$1,405.32	$2,531.88	$309.66	$163.74	$4,301.82
WISCONSIN	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$5.81	$8.23	$6.36	$376.99	$9.32	$11.99	$11.99	$54.94	$22.75	$41.22	$11.99	$148.99
Median Price	$15.69	$35.99	$13.69	$542.49	$225.99	$71.79	$462.99	$287.99	$236.99	$62.99	$14.99	$444.79
Maximum Price	$59.02	$94.93	$20.00	$663.99	$225.99	$117.99	$547.90	$349.59	$280.22	$62.99	$24.38	$1,006.99
Expected Price Difference	170.05%	337.30%	115.25%	43.90%	2324.79%	498.75%	3761.47%	424.19%	941.71%	52.81%	25.02%	198.54%
Estimated Annual Savings	$118.56	$333.12	*	$1,986.00	$2,600.04	*	$5,412.00	$2,796.60	$2,570.88	$261.24	$36.00	$3,549.60
NATIONAL	Lisinopril	Sertraline	Amoxicillin	Lipitor	Atorvastatin	Ventolin HFA	Advair Diskus	Nexium	Esomeprazole	Synthroid	Levothyroxine	Lantus Solostar Insulin
Minimum	$3.99	$2.99	$3.99	$193.00	$6.99	$11.99	$11.99	$54.94	$10.00	$26.64	$4.00	$96.00
Median Price	$12.49	$33.99	$12.99	$520.32	$112.99	$71.59	$462.00	$287.99	$224.99	$50.99	$14.99	$444.79
Maximum Price	$59.02	$110.69	$30.00	$865.00	$393.00	$137.99	$1,136.00	$950.45	$338.40	$127.00	$43.71	$1,759.19
Expected Price Difference	213.03%	1036.79%	225.56%	169.59%	1516.45%	497.08%	3753.21%	424.19%	2149.90%	91.40%	274.75%	363.32%
Estimated Annual Savings	$102.00	$372.00	*	$3,927.78	$1,272.00	*	$5,400.12	$2,796.60	$2,579.88	$292.20	$131.88	$4,185.48

Yearly estimates for Amoxicillin and Ventolin HFA were omitted as those medications were surveyed for supplies that are not standard. Expected Price Difference refers to the difference between the minimum price and the median price, expressed as a percentage of the minimum price. The Estimated Annual Savings were calculated by taking the difference between the minimum and median prices and multiplying that by twelve (each price, with the exception of Amoxicillin and Ventolin, refer to monthly amounts of the drug).

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