GoodRx

The GoodRx Effect

How GoodRx Is Changing the Economics of Healthcare

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The GoodRx Teams

RESEARCH

Written by Amanda Nguyen, PhD
Diane Li, BA
Jeroen van Meijgaard, PhD
Lauren Chase, BS
Sasha Guttentag, PhD
Tori Marsh, MPH
Trinidad Cisneros, PhD

Edited by Dan Wagener, MA

CREATIVE

Creative Direction by Dennis Huynh

Designed by Chelsea Pyne

Infographics by Catalina Perez

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Overview

In 2021, we published our first report on the GoodRx Effect. In it, we outlined the ways in which GoodRx had improved social welfare by helping people access affordable medication.

Since then, legislators and industry leaders have recognized the need for change in the prescription medication space. Policies like the Inflation Reduction Act and the Hospital Price Transparency Rule aimed to make prices easier to understand and reduce out-of-pocket costs. But these initiatives have faced challenges in making a meaningful impact on out-of-pocket costs, and affordable healthcare is still out of reach for many people.

Meanwhile, companies have seen the cost of their health insurance plans rise, with projected increases of 8.5% in 2024 — a rate set to outpace wage growth. The end of the COVID-19 public health emergency also made healthcare more expensive for some of the most vulnerable, including the 11 million and counting who have been disenrolled from Medicaid.

In addition, 41% of people with or without insurance who were taking medication for an ongoing condition reported an increase in their prescription medication costs in 2023. And nearly 36% reported some difficulty affording their medications.

Since 2011, GoodRx has worked to reduce these high healthcare costs. To date, we have helped consumers save **over $65 billion** on brand-name and generic prescription medications, relative to pharmacies' usual and customary (or retail) prices. We've been able to accomplish this through our relationships with healthcare providers, pharmacies, pharmacy benefit managers, and drug manufacturers.

But GoodRx's impact goes beyond consumers' pocketbooks. By saving people money, GoodRx also benefits people's health, helping users stick to their medication regimens and achieve better health outcomes. We're building a bridge to healthcare for our users, by making it more efficient, easier to use, and easier to understand.

In this paper, we dive into **THE GOODRX EFFECT** and how it's continued to evolve since our founding to positively shape healthcare and well-being.

Our six main impacts

Below, we walk through the six main impacts GoodRx has had on healthcare and well-being.

1

HELPING AMERICANS, WITH OR WITHOUT INSURANCE, SAVE ON THEIR GENERIC AND BRAND PRESCRIPTION MEDICATIONS

Last year, GoodRx users saved an average of **82%** on retail prices for prescription medications.* To date, we have helped consumers save over **$65 billion** off retail prices on their prescriptions.** Through partnerships with drug manufacturers, GoodRx also helps users access the lowest price for their brand medications. For example, GoodRx has helped people save up to **88%** off the average commercial insurance copay for popular brand medications treating diabetes.

2

IMPROVING MEDICATION ADHERENCE

By lowering out-of-pocket costs for generic and brand medications, GoodRx has helped users obtain at least **184 million** prescriptions they otherwise may not have been able to afford. And, in a survey of people who used GoodRx to save on their brand medications, we found that **61%** would have had to skip or delay filling their prescription without GoodRx.

3

IMPROVING HEALTH OUTCOMES

Better medication adherence thanks to GoodRx also means better health outcomes. By helping users afford their prescriptions, GoodRx has directly contributed to the prevention of at least **590,000** emergency room visits and **336,000** hospitalizations for chronic obstructive pulmonary disease (COPD), depression, diabetes, and major adverse cardiovascular events like heart attack and stroke.

* All estimates referencing last year and 2023 are calculated for the 12-month period ending September 30, 2023.

** All estimates to date and since GoodRx's founding are calculated as of September 30, 2023.

4

HELPING FREE UP FUNDS FOR OTHER NECESSITIES

By reducing the burden of medication expenses, GoodRx helps people invest in other aspects of their life, like their health, housing, education, and overall well-being.

5

IMPROVING EFFICIENCY IN THE HEALTHCARE SYSTEM

By improving medication adherence, GoodRx has helped save the healthcare system over **$5 billion** in preventable ER visits and hospitalizations, translating to at least **$145 million** in out-of-pocket savings for our users. GoodRx has also pioneered two new solutions to improve efficiency across the healthcare system and reduce administrative burden: integrated GoodRx savings with insurance and real-time benefit check for healthcare providers.

6

MAKING HEALTHCARE EASIER TO USE AND UNDERSTAND

By providing people with transparent prices, streamlined and accessible savings, and relevant, high-quality health information, GoodRx helps make it easier for everyone to use and understand healthcare.

GoodRx helps Americans, with or without insurance, save on their generic and brand prescription medications

Patients are increasingly exposed to rising healthcare costs, including higher prices for their prescription medications. Inflation, increased demand for new treatments, and healthcare plan cost-containment measures have all contributed to the shift in more healthcare costs being put onto patients.

In the face of these price pressures, GoodRx helps people with or without insurance access savings for over **4,000** generic and brand-name prescription medications.

The problem

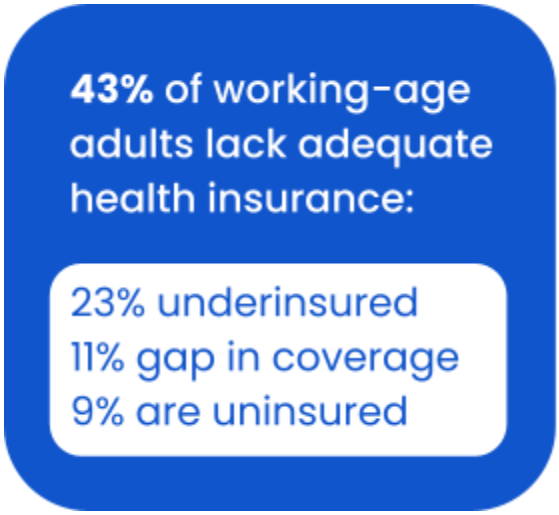
According to a 2022 survey, 43% of working-age adults are inadequately insured — specifically, 23% are "underinsured," 11% have a gap in health insurance coverage, and 9% don't have any health insurance at all.

A growing segment of the population, underinsured patients have health insurance, but their out-of-pocket costs are still too expensive based on their household income. That means that nearly 1 in 4 working-age adults have trouble accessing affordable healthcare, despite having health insurance. Underinsurance is a problem for Medicare patients as well: 19% of adults age 65 and older are underinsured even with Medicare.

What's driving the underinsurance problem? It's simple: Insured patients are responsible for more and more of their healthcare costs. In 2023, 90% of people with health insurance through their employer had an annual deductible, with the average individual plan requiring a $1,735 deductible. Even after accounting for employer contributions, 57% of covered workers had a deductible over $1,000 per year and 24% had a deductible over $2,000 per year.

Separate deductibles for prescription medications are becoming more common, too. About 44% of commercial plans have a pharmacy deductible, while the standard

deductible for Medicare Part D prescription drug plans — applying to roughly 45% of all Part D enrollees — increased to $505 in 2023.



Even after meeting their deductibles, insured patients face increasing out-of-pocket costs, with more strings attached to their coverage. To pick one example: Prescription medication plans increasingly have more tiers on their formulary, meaning more drugs requiring higher copays or coinsurance.

In 2023, 59% of workers were enrolled in a prescription medication plan with four formulary tiers, with an average copay of $125 per prescription and an average coinsurance rate of 28% for medications covered on the fourth tier. Similarly, for the average Medicare Part D plan, the share of medications covered on the highest tier increased to nearly 20% in 2021, up from 10% in 2010.

At the same time, formularies are decreasing the share of medications covered and increasing the use of coverage restrictions such as quantity limits and prior authorization. The average Medicare Part D plan in 2024 covered less than 55% of medications compared to the best Medicare plan and restricted coverage for 49% of those covered medications.

As a result, insured patient out-of-pocket costs for prescription medications have steadily increased over time, putting further financial strain on people who are already dealing with rising premiums and deductibles.

This trend isn't going away anytime soon, either. As spending on medications like specialty drugs balloons and plan sponsors struggle to manage expenses, patients will increasingly bear the burden of healthcare costs.

Gaps in insurance coverage — which affect 11% of working-age adults — also expose patients to high healthcare costs. Many faced disruptions in health insurance coverage during the pandemic due to unemployment and insurance loss, leading to declines in prescription fills. As pandemic policies have started to unwind, many people previously on Medicaid are now facing substantially higher out-of-pocket costs on a new insurance plan or are without insurance altogether.

Factoring in the 9% of people who don't have health insurance the entire year, that means 1 in 5 working-age adults are fully responsible for all of their healthcare costs at some point in the year.

The solution

GoodRx offers consumers a way to save on high out-of-pocket healthcare costs.

Patients who lack insurance, or find that their medication is not covered by their plan, will pay the retail price of the drug (also referred to as the cash price), which is the price paid without insurance or discounts. In many cases, retail prices are prohibitively expensive, even for typically "affordable" generic medications.

However, patients can save up to 80% off the retail price of most prescription medications with a GoodRx discount. In the last year, GoodRx users saved an average of **82%** on retail prices for prescription medications.

These savings add up: GoodRx has helped about **10 million** users save over $200 off retail prices for their prescriptions in the last year. To date, we have helped consumers save over **$65 billion** on their prescription drugs, relative to the pharmacies' retail prices.

These savings have helped millions of people, such as:

- People who are uninsured
- People who are underinsured
- People who are still paying their insurance deductible
- People who don't meet their insurance plan's coverage requirements for the medication they need
- People who have insurance but had an unexpected diagnosis that required a medication that isn't covered by their current plan

10 million people

SAVED MORE THAN $200 OFF RETAIL PRICES LAST YEAR USING GOODRX

$65 billion

SAVINGS RELATIVE TO RETAIL PRICES SINCE GOODRX WAS FOUNDED

Based on our internal analysis of industry data for the 200 most commonly filled drugs last year, commercially insured patients pay full price on average **51%** of the time, and Medicare patients pay full price on average **21%** of the time. This is due to deductibles, lack of insurance coverage, and instances where the copay is higher than the medication cost. GoodRx can help these insured patients save substantially on their medications.

Even when insurance kicks in, GoodRx offers significant savings over insurance copays in many cases. In the last year, approximately **50%** of the 100 most purchased prescriptions filled using GoodRx (including our membership savings programs) were cheaper than the average commercial insurance stated copays, based on industry data. When GoodRx users paid less than the average commercial insurance copays for these most commonly purchased medications, they saved on average about **50%** off average commercial insurance copays.

People with Medicare can save using GoodRx, too. Last year, GoodRx users (including those in our membership savings programs) on average paid less than the average Medicare copay for the 100 most purchased prescriptions during the initial coverage phase **8%** of the time, with average savings of **24%** off the average Medicare initial coverage copay.

Of note, the actual prescription costs for individuals with insurance may be even higher than the average insurance copays we used for this analysis. For example, a prescription may not be covered or a person may be in the deductible phase of their plan, during which they pay the retail price for a prescription.

50% off average commercial copays

AVERAGE SAVINGS WHEN GOODRX IS CHEAPER THAN COMMERCIAL INSURANCE

(for the 100 most purchased medications)

24% off average Medicare copays

AVERAGE SAVINGS WHEN GOODRX IS CHEAPER THAN MEDICARE INITIAL COVERAGE

(for the 100 most purchased medications)

What's more, for the 100 most purchased medications, the lowest GoodRx discount price available nationwide beats the average commercial insurance stated copay for the same subset of medications about **80%** of the time, and the average Medicare initial coverage copay over **20%** of the time, based on industry data. This price includes our membership savings programs and is the lowest price regardless of geographic proximity or convenience.

While many of the most commonly filled medications are generic, brand-name medications can offer access to some of the newest — and costliest — treatments on the market. In the last 2 years, GoodRx has expanded its discount offerings to increase savings for users who take brand medications. Today, GoodRx offers free coupons for over **2,500** brand drugs.

Through partnerships with drug manufacturers, GoodRx also helps connect users to the lowest available price for their brand medications. We integrate manufacturer savings programs into our ecosystem and offer additional discounts for GoodRx users, at no additional cost. For example, through our integrated copay cards, GoodRx can help people treating diabetes save up to **88%** on average off the average commercial insurance copay for brand diabetes medications.

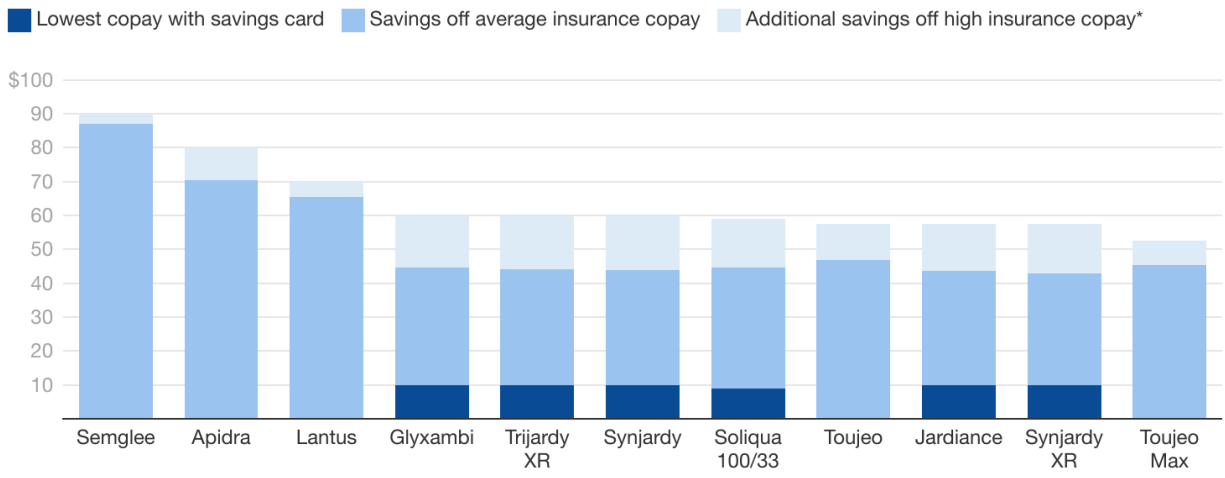
These discounts can turn into big savings over time, especially for first-line treatments for chronic conditions such as diabetes. People who need insulin and SGLT2 inhibitors can save hundreds of dollars a year through GoodRx's integrated copay savings cards.

88% off average commercial copays

AVERAGE SAVINGS WITH GOODRX INTEGRATED COPAY CARD

(for 11 brand diabetes medications)

Maximum GoodRx Savings Off Insurance Copay With Integrated Copay Card (Diabetes Medications, 2023)



*High insurance copay is the 75th percentile of commercial insurance plans in the data.

Copays are for a 30-day supply. Data includes SoloStar pen forms. Lowest copay with savings card reflect data as of September 2023.

GoodRx also helps people without commercial insurance save on their brand medications. In addition to connecting our users to eligible manufacturer savings programs, GoodRx offers extra discounts on a number of brand drugs through collaborations with pharmaceutical manufacturers.

For example, GoodRx has helped qualifying diabetes patients save an average of **57%** off the retail price of Dexcom G7, a continuous glucose monitoring system. Qualifying diabetes patients can also use GoodRx to get Lantus, a long-acting insulin, for only **$35** per 30-day supply.

With or without insurance coverage, GoodRx helps users with chronic conditions save on essential medications. In the last year, GoodRx discounts helped people save an average of **36%** off the average retail price of medications that primarily treat Type 2 diabetes. And the average GoodRx price for Type 2 diabetes medications was cheaper than the average commercial insurance copay **54%** of the time, with average savings of nearly **60%**.

Similarly, GoodRx discounts saved users **78%** off the average retail price of medications that primarily treat high blood pressure. And, in the last year, GoodRx discounts for medications treating high blood pressure beat the average commercial insurance copay **48%** of the time, with average savings of **49%**.

Average GoodRx Savings in 2023 for Medications Used Primarily to Treat Chronic Conditions

Savings are calculated from October 1, 2022 through September 30, 2023. Medications filled with GoodRx over this time period are mapped to the most probable chronic condition based on claims data. Average savings off retail price reflect the average savings off retail prices for all prescriptions filled using GoodRx. Average savings when GoodRx is cheaper than average insurance copay are calculated as the total savings off average stated commercial insurance copays (not accounting for lesser of cost-sharing amount rules) for prescriptions filled using GoodRx, including membership savings programs, where the GoodRx price is cheaper than the average insurance copay.

GoodRx

All told, over **2.1 million** users saved over $200 off retail prices in the last year by using GoodRx to fill prescriptions for these chronic conditions.

GoodRx improves medication adherence

Medication adherence involves both filling a prescription and taking the drug as recommended by a healthcare provider. Patients in the U.S. consistently report cost as one of the top barriers to accessing and adhering to their prescribed medication.

GoodRx helps people find and obtain more affordable prices for their prescription drugs. And for many GoodRx users, that means the difference between adhering to their prescribed regimen or skipping treatment altogether.

The problem

With patients increasingly exposed to high healthcare costs, it's become more difficult for them to predict and afford the cost of prescription medications. One study found that 32% of adults have been denied insurance coverage for a medication prescribed by their provider, and over 46% of those patients ended up not filling the prescription.

Unaffordable medication costs can result in patients rationing doses, skipping or delaying a prescription fill, opting for a cheaper but less effective treatment, or stopping the medication entirely. In a recent GoodRx survey, 39% of adults taking prescription drugs reported at least one change in their medication adherence over the last year due to cost. Another study found that 14% of adults age 65 and older with Medicare did not fill a prescription because it was too expensive.

This issue affects patients who are both new to a medication and who take a medication regularly. Many patients with chronic conditions still struggle to adhere to their medications. Up to 27% of working-age adults reported not filling a prescription for their chronic health problem due to cost. On top of that, research estimates that new medication users are nearly three times more likely to abandon their prescription than regular users. High costs remain a barrier for both medication adherence to a prescribed regimen and continuing to adhere to that regimen for the recommended duration of treatment.

The solution

By helping people price shop and find affordable prices for their prescriptions, GoodRx helps patients start taking and continue taking their medications, regardless of their insurance coverage.

To estimate how much savings from GoodRx have improved medication adherence, we looked at a sample of the 200 most commonly filled medications in the U.S. Using our internal data, we estimated the average savings for GoodRx users relative to either the average retail price or the average commercial insurance copay. We took into account how often people actually pay their insurance copay and how often they pay full price, due to deductibles or lack of insurance coverage. We then modeled the change in expected medication adherence (as measured by days supplied by prescription fills over a given time period, also known as the proportion of days covered when a person has access to their medication) associated with the lower prices available through GoodRx.

We estimated this change in expected medication adherence based on the results of medical studies that quantify the link between medication price and adherence. By helping GoodRx users find reduced prices for their medications, GoodRx enables many users to fill and/or refill prescriptions that they otherwise would not have been able to afford, thus increasing overall medication adherence.

For the 200 most purchased medications, averaging the estimated savings for users who would have paid cash and users who would have paid commercial insurance copays, the average GoodRx user saves approximately **$72** per prescription (not including additional savings from switching pharmacies), based on our internal data. Based on the medical literature, this translates to an increase in medication adherence from **39% to over 66%**.

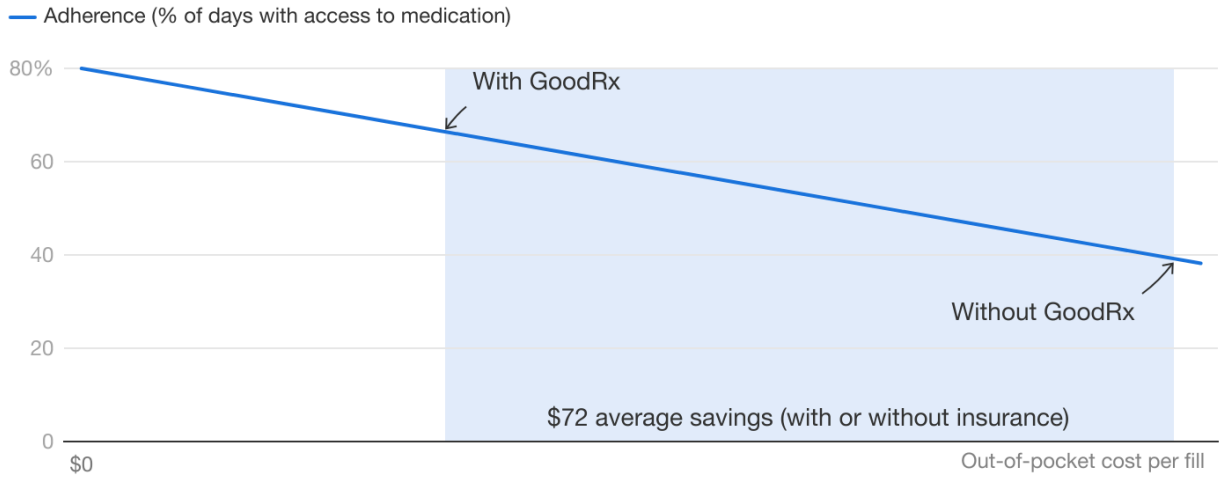
This estimate assumes that, as other research has found, even if medications were free, there would be an adherence ceiling at around 80%. This is due to the complexity of a medication regimen, socioeconomic factors, and other reasons.

$72 per prescription

AVERAGE ESTIMATED SAVINGS FOR USERS WHO WOULD HAVE PAID CASH AND USERS WHO WOULD HAVE PAID COMMERCIAL INSURANCE COPAYS

(for the 200 most purchased medications)

The GoodRx Effect on Patient Out-of-Pocket Costs and Medication Adherence



The slope of this line is based on a meta-analysis of cost-related nonadherence studies in Eaddy et al. (2012). Based on the literature, for every $10 savings, medication adherence is estimated to increase by 3.8%. Average savings are estimated for a sample of 200 of the most purchased medications from October 1, 2022 through September 30, 2023, averaging estimated savings relative to average retail prices and estimated savings relative to average commercial insurance stated copays.

GoodRx

Our analysis suggests that in the last year, **41%** of prescriptions filled using a GoodRx coupon were newly adherent, meaning they would not have been filled without GoodRx. Since the founding of GoodRx, we estimate GoodRx has helped our users fill at least **184 million** prescriptions that they otherwise would not have been able to afford.

41%

OF PRESCRIPTIONS FILLED LAST YEAR USING GOODRX WERE NEWLY ADHERENT

184 million

PRESCRIPTIONS FILLED THAT USERS OTHERWISE WOULD NOT HAVE BEEN ABLE TO AFFORD WITHOUT GOODRX

(estimated since our founding)

Adherence gains from GoodRx brand drug savings

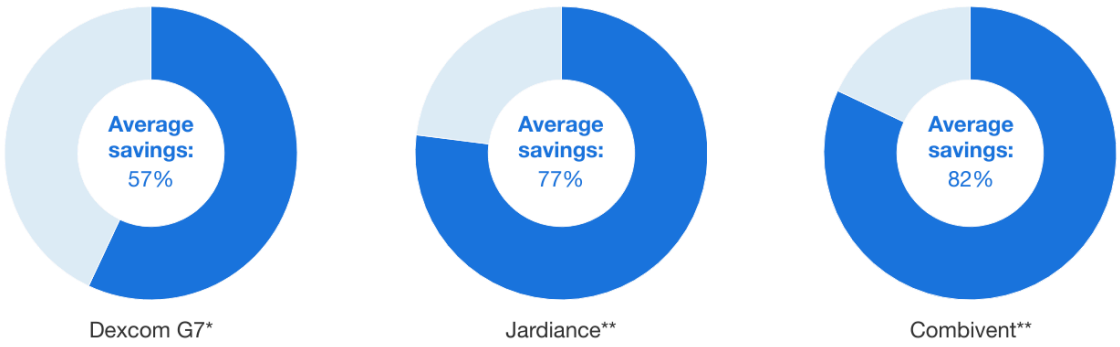
Brand drugs generally have higher retail prices and insurance copays. So cost is often a real barrier to medication adherence for patients who are prescribed a brand medication. With higher out-of-pocket costs and more restrictions on insurance coverage, many patients may not be able to afford the treatment recommended by their healthcare provider. As a result, they may ration their doses, delay refills, switch to a less effective medication, or discontinue treatment altogether.

GoodRx has expanded savings on brand drugs by working with manufacturers to integrate brand-drug savings programs into our platform. These include copay cards and cash discounts. GoodRx makes it easier for our users to access manufacturer savings for many brand medications in one place.

Some examples of these savings programs in the last year include:

- **57%** off the average retail price for Dexcom G7
- **77%** off the average commercial insurance copay for Jardiance
- **82%** off the average commercial insurance copay for Combivent

Sample GoodRx Savings on Brand-Name Medications in 2023



* Average savings for Dexcom G7 reflect cash-pay savings relative to average retail price.
**Average savings for Jardiance and Combivent reflect maximum savings using GoodRx integrated copay cards for relative-to-average commercial insurance stated copays.

GoodRx

By streamlining additional savings for patients who take brand drugs, GoodRx helps more people access and continue to adhere to their brand medications.

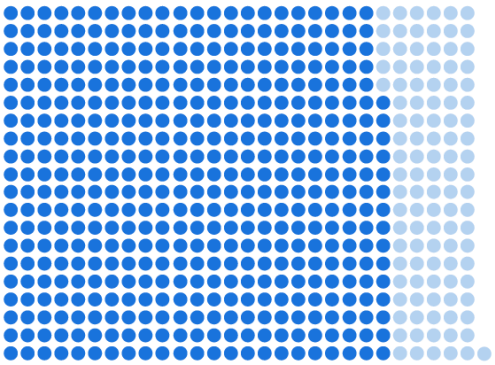
To understand how these integrated manufacturer savings programs can improve medication adherence, we surveyed 561 people who used an integrated copay card and/or cash discount on GoodRx to save on their brand medication. These users had a lot of medication needs: They filled six to seven prescriptions every month on average, and 82% were managing multiple conditions. As a result, many of those surveyed spent a great deal of their budget on healthcare, including on their brand medications.

In our user survey, we found that without GoodRx, **70%** of respondents would have had difficulty affording their brand medication, and **61%** would have had to skip or delay filling their brand prescription.

These results show how GoodRx can have an even greater impact on medication adherence for people who are prescribed brand medications.

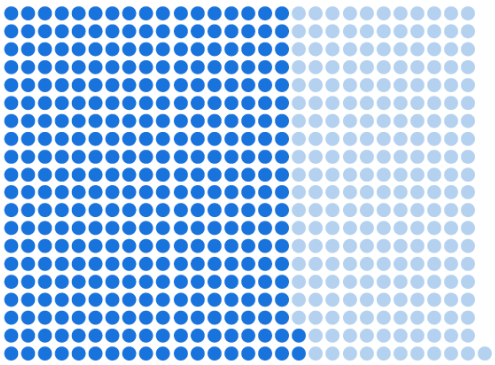
GoodRx Integrated Manufacturer Savings Help Users Afford Their Prescription Brand Medications

In a survey of 561 people who have used an integrated copay card and/or cash discount from GoodRx in the last 12 months to save on their brand medications:



69.9%

Difficult to afford prescriptions without GoodRx



61.1%

Would have to delay or skip filling their prescriptions without GoodRx

GoodRx

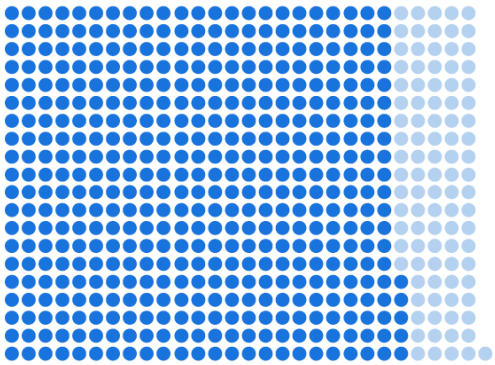
Note: Survey was administered from June through July 2023. The first figure shows responses of “somewhat” or “extremely” difficult, and the second figure shows responses of “somewhat” or “strongly” agree.

GoodRx also helps promote more equitable access to brand medications. In our user survey, over **1 in 3** respondents reported a household income below 400% of the federal poverty line, making them eligible for Affordable Care Act premium subsidies in all states. Of these respondents, **74%** said they would have had to skip or delay filling their brand prescription without GoodRx. This suggests that 3 in 4 people from a lower-income household could benefit from better medication adherence by using GoodRx to access savings on their brand medications.

GoodRx's platform makes brand-drug savings programs easier to use and understand for both patients and prescribers. Patients and their healthcare providers are navigating an increasingly complex healthcare system — facing hurdles like prior authorizations, copay card limits, accumulators, and more. According to our study, we found that **65%** of surveyed people who used GoodRx to save on their brand medication learned about manufacturer savings programs for the first time through GoodRx. And **90%** found it easy to save on their brand medications using GoodRx.

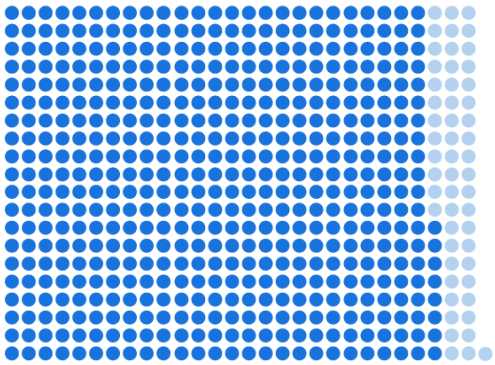
GoodRx Integrated Manufacturer Savings Make It Easier for Users to Access Brand Medications

In a survey of 561 people who have used an integrated copay card and/or cash discount from GoodRx in the last 12 months to save on their brand medications:



82.9%

Satisfied with GoodRx savings on last prescription



89.7%

Easy process to save with GoodRx on last prescription

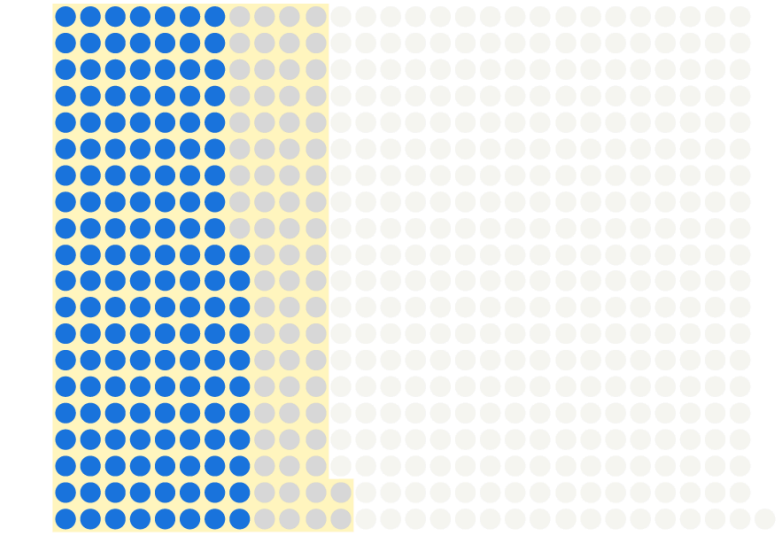
GoodRx

Note: Survey was administered from June through July 2023. The first figure shows responses of “somewhat” or “extremely” satisfied, and the second figure shows responses of “somewhat” or “strongly” agree.

GoodRx also helps healthcare providers improve brand medication access when they prescribe to their patients: Nearly **100,000** healthcare professionals have used GoodRx to view and share manufacturer savings programs with their patients in the last year. By helping providers and their staff find the best price for brand medications, GoodRx provides a useful tool for cost of medication conversations that will ultimately help patients adhere to their prescribed treatment.

By helping people access and adhere to brand medications they otherwise would not have been able to afford, GoodRx helps our users feel better, treat their chronic illnesses, and avoid harmful health complications.

GoodRx Integrated Manufacturer Savings Increase Awareness



Note: Survey was administered from June through July 2023. Figure shows responses of “somewhat” or “strongly” agree.

As discussed earlier, GoodRx's integrated access solutions have helped people with diabetes find more affordable prices for vital treatments like insulins, SGLT2 inhibitors, and continuous glucose monitoring systems. We interviewed one of our survey participants, who used GoodRx to save on a Dexcom G7 continuous glucose monitoring system while transitioning from Medicaid to employer-sponsored insurance. They said,

> **"Without GoodRx, I would not be able to buy my prescription. I would not be able to sustain my health like I need to.**

Another participant used GoodRx to access a manufacturer copay card for Jardiance, an oral medication used to treat Type 2 diabetes. The card enabled them to fill a 90-day supply and stay adherent, rather than making multiple trips to the pharmacy or rationing their doses. They said, **"It would be very difficult [to get these medications without GoodRx]. There are certain things I would probably do, such as not get a 90-day supply…or cut it [the medication] in half…so [GoodRx] has made a world of difference."**

GoodRx also offers integrated savings for brand medications that treat chronic conditions like chronic obstructive pulmonary disease (COPD), high cholesterol, heart disease, and mental health disorders. Improving access and adherence to these medications is part of GoodRx's mission to help people get the healthcare they need at a price they can afford.

GoodRx improves health outcomes

Better medication adherence can improve health outcomes by:

- Slowing the progression of disease
- Improving productivity and overall quality of life
- Preventing ER visits and hospitalizations

In some cases, medication adherence can mean the difference between life and death. By making medications more affordable and boosting adherence, GoodRx has also helped improve health outcomes for many of our users.

The problem

Medication adherence is critical to achieving and maintaining good health. Patients can face serious health consequences from not taking their prescribed medications, including:

- Missing days of work due to illness
- Lower productivity while at work
- Reduced quality of life
- Worsening of diseases and adverse health events
- Unnecessary ER visits
- Unnecessary hospitalizations
- Premature death

One study estimates that approximately $77 billion is wasted on avoidable hospitalizations and ER visits in a single year due to medication nonadherence.

Researchers estimate a **$10 increase** in the out-of-pocket cost of a prescription can result in **33% higher mortality** among newly eligible Medicare patients.

Research shows that certain medication classes can be very effective at improving health outcomes, both in clinical trials and in the real world. In particular, medications treating diabetes, COPD, depression, high blood pressure, high cholesterol, and atrial fibrillation have been shown to significantly lower the rate of ER visits, hospitalizations, and death.

For example:

- Statins have been shown to lower the risk of major adverse cardiovascular events like heart attack and stroke.
- COPD maintenance medications like long-acting beta agonists have been shown to prevent severe COPD exacerbations.
- Antidepressants have been shown to reduce ER visits and inpatient hospitalizations for patients with major depressive disorder.
- Anticoagulants like warfarin have been shown to reduce the risk of stroke.
- Oral hypoglycemic medications like metformin have been shown to reduce death from all causes for people with diabetes.

When patients face high out-of-pocket costs for these essential medications, they may ration, delay, or skip their prescription at the expense of their health. For example, one study estimates that just a $10 increase in the out-of-pocket cost of a prescription can result in 33% higher mortality among newly eligible Medicare patients.

The solution

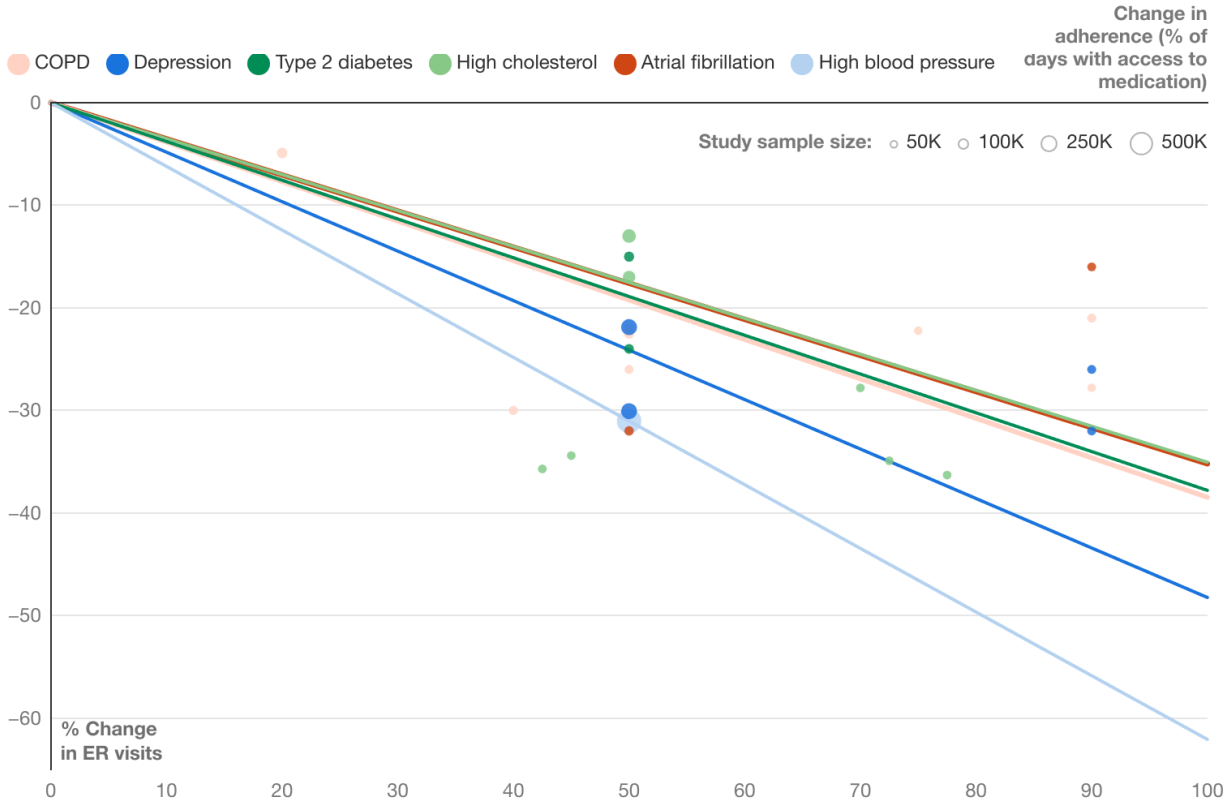
By helping make medications more affordable, GoodRx helps people access and stay adherent to their prescribed medication regimen and maintain their overall health.

To illustrate the degree to which savings through GoodRx improve patient health by increasing medication adherence, we looked at the medical literature on the impact of medication adherence on health outcomes. We focused on six key conditions where medication adherence has been shown to significantly impact health outcomes:

- High cholesterol
- High blood pressure
- Atrial fibrillation
- Type 2 diabetes
- Depression
- COPD

We studied two key health outcomes across these conditions: hospitalizations and ER visits. Applying established evaluation standards, we conducted a systematic analysis of peer-reviewed studies assessing the impact of medication adherence on hospitalizations and ER visits for these six conditions. We then estimated the average effect of a change in medication adherence on the outcome of interest for each condition, accounting for study sample size.

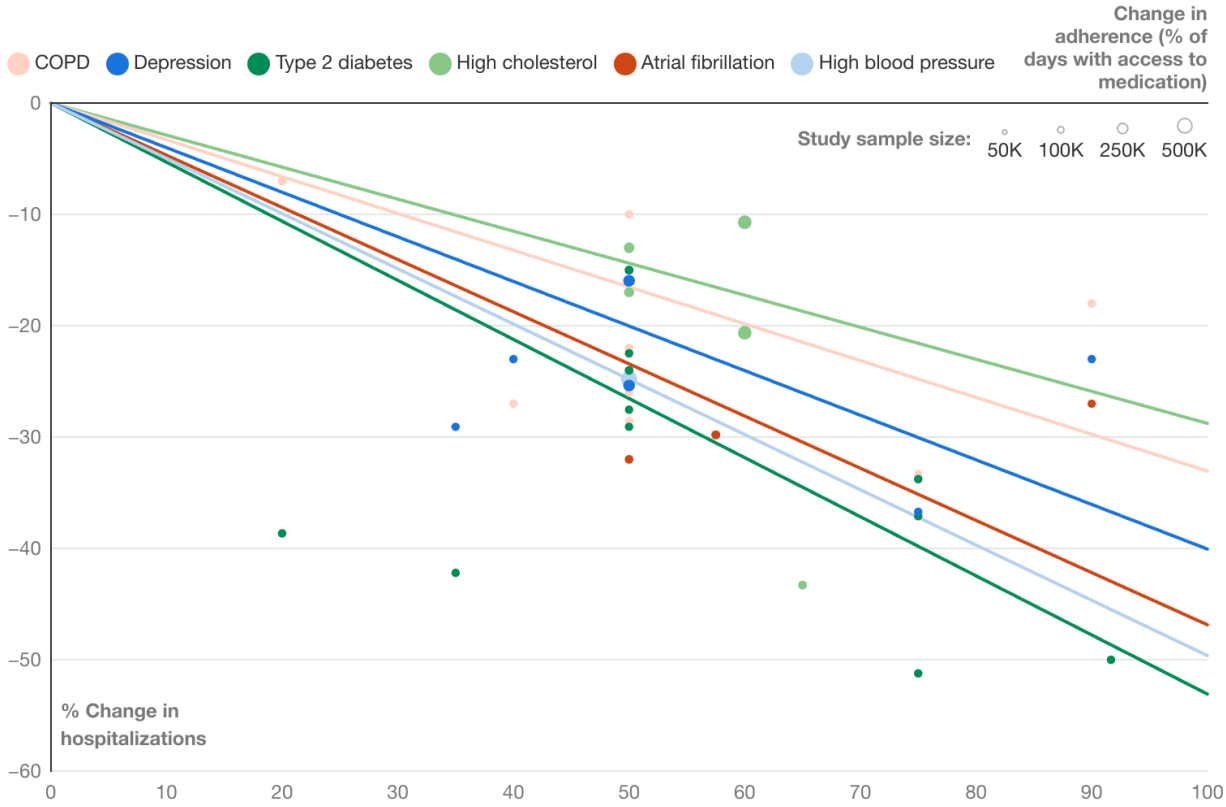
Relationship Between Changes in Medication Adherence and Changes in Emergency Room Visit Rate Based on Medical Literature



Lines show expected change in outcome for a given change in adherence, based on linear regression of articles included in meta-analysis, weighted by study sample size. For full list of studies included in meta-analysis, see methodology section.

GoodRx

Relationship Between Changes in Medication Adherence and Changes in Hospitalization Rate Based on Medical Literature



Lines show expected change in outcome for a given change in adherence, based on linear regression of articles included in meta-analysis, weighted by study sample size. For full list of studies included in meta-analysis, see methodology section.

GoodRx

As discussed earlier, we estimated that GoodRx has helped our users fill 184 million prescriptions they otherwise may not have been able to afford. Based on our internal data, this includes prescriptions for medications that treat **high cholesterol**, **high blood pressure**, **atrial fibrillation**, **Type 2 diabetes**, **depression**, and **COPD**. To measure the impact of these newly adherent prescription fills on health outcomes, we scaled the clinical health benefits from the medical literature down to reflect the annual average change in adherence for these GoodRx users.

Specifically, we calculated the average change in adherence (measured by proportion of days covered) attributable to GoodRx each year for the medications included in our systematic literature review. For example, in the last year, we estimated increases in average adherence due to GoodRx ranging from 3 percentage points for adults under 65 taking COPD medications, to over 14 percentage points for adults over 65 taking medications for high cholesterol.

Applying the average clinical effects from our systematic review to these changes in adherence, we estimated the average change in outcomes each year due to GoodRx. For example, in the last year, we estimated average reductions in hospitalization rates ranging from **-1.1%** for adults under 65 filling COPD medications with GoodRx, to **-6.8%** for adults over 65 filling hypertension medications with GoodRx. Average decreases in the ER visit rate due to GoodRx ranged from **-1.2%** for adults under 65 filling COPD medications, to **-8.5%** for adults over 65 filling blood pressure medications through GoodRx in the last year.

Applying these changes to baseline, age-adjusted ER and hospitalization rates from the medical literature, we estimate that since 2012, GoodRx savings have contributed to at least **590,000** fewer emergency room visits and **336,000** fewer hospitalizations for COPD, depression, diabetes, and major adverse cardiovascular events like heart attack and stroke.

The GoodRx Effect on Health Outcomes Due to High Cholesterol, High Blood Pressure, Atrial Fibrillation, Diabetes, Depression, and COPD (2012-2013)

Outcome	Estimated change in outcome due to GoodRx
Emergency room visits	-590.8k
Hospitalizations	-336.5k
Hours of productivity*	+163.9m

*For GoodRx users who filled antidepressants

GoodRx

927k fewer

EMERGENCY ROOM VISITS AND HOSPITALIZATIONS SINCE 2012

In addition to preventing unnecessary healthcare use, better medication adherence can also improve work productivity and quality of life for patients. For example, studies show that adherence to antidepressants can help people miss fewer hours of work due to illness.

We estimate that GoodRx savings increased average adherence to antidepressants by over 10 percentage points last year, translating to over **5%** more hours of productivity saved each week. Since 2012, we estimate that people who used GoodRx to get their antidepressant prescriptions gained over **160 million** more hours of productivity, or roughly 0.3 more hours of productivity per week per person, on average.

GoodRx's overall effect on these measures is likely even higher. That's because this analysis considers a limited set of health outcomes and medication classes for just six conditions. Given the millions of prescriptions across several thousand drugs that GoodRx has helped make more affordable, there are conceivably more people who can attribute better health to GoodRx.

160 million more

HOURS OF PRODUCTIVITY SINCE 2012

(for people who used GoodRx to get their antidepressant prescriptions)

GoodRx helps free up funds for other necessities

GoodRx savings don't just benefit the users whose medication adherence and health outcomes we've directly helped improve. Saving on prescription medications helps *all* healthcare consumers who use GoodRx by freeing up extra money in their budgets — money they can then use to enhance their well-being in other ways. This is especially important for users who struggle to afford basic necessities because of the high cost of their medications.

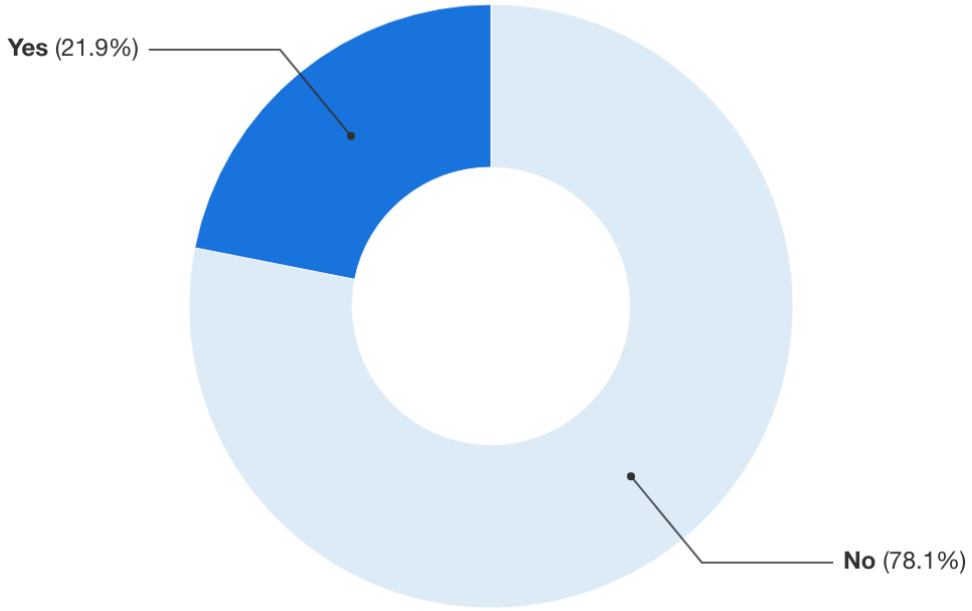
The problem

Rising healthcare costs are eating into household budgets and hurting people's quality of life. One survey reported that about 4 in 10 adults in the U.S. currently have medical debt, with 6% of adults owing over $1,000. U.S. families cite healthcare costs as a top financial worry, with 44% of people concerned about affording their health insurance deductible. Meanwhile, 37% of people don't have enough cash to cover a $400 emergency expense.

The financial burden of healthcare prevents many people from affording essentials for daily life. According to a 2023 GoodRx survey, **22%** of Americans have trouble paying for basic necessities such as food or housing due to their medication costs. That means that over 1 in 5 people face a tradeoff between their healthcare and other basic needs.

When healthcare costs start adding up, patients are sometimes forced to make difficult decisions about how to spend their money. The most commonly cited sacrifices adults have made to pay for their medical debt are cutting back spending on food or eating less, followed by cutting down on discretionary spending and changing their housing situation.

In the Past Year, Have You Had Trouble Paying for Basic Necessities Like Food and Housing Due to the Cost of Your Prescription Medications?



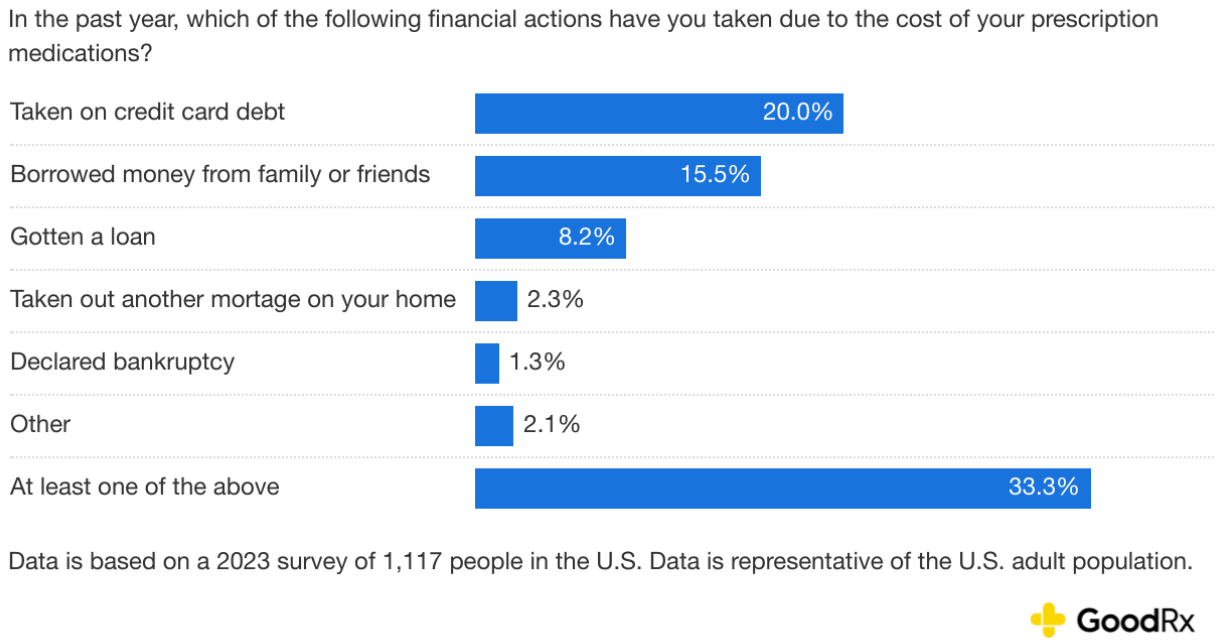
Data is based on a 2023 survey of 1,117 people in the U.S. Data is representative of the U.S. adult population.

GoodRx

These actions can lead to a downward spiral: less money invested in areas of life that benefit health like safe housing, education, and nutrition, which in turn contributes to worse health outcomes. Worse health outcomes lead to more healthcare expenses, and the cycle continues, further widening disparities.

Paying high medication costs can also have lasting consequences for a patient's credit and financial standing. In 2023, **1 in 3** people taking prescription medications took significant financial action in order to afford their medication, including going into credit card debt, borrowing money, and declaring bankruptcy.

Financial Actions to Pay for Prescription Medications



Another survey reports that 27% of people are living with debt due to medical bills that have built up over time from chronic illnesses. These ongoing illnesses mean more trips to the provider, more prescriptions, and more potential for unexpected bills. According to a GoodRx survey, over 1 in 3 people pay over $50 every month for their most expensive prescription for a chronic condition.

The financial burden of healthcare is even greater for patients with chronic conditions who take specialty medications: For some chronic conditions, the cost of a year of treatment with specialty medications can reach over $100,000.

Even those with health insurance aren't necessarily shielded from these expenses. For those with Medicare coverage, 1 in 6 people who reported medical bills or medical debt problems said they had been unable to pay for necessities like food, heat, or rent.

Retired Medicare patients can be especially vulnerable, with healthcare expenses making up a larger share of their fixed income. Most retirees spend at least 25% of their Social

Security benefits on healthcare expenses, while financial planners recommend having at least $157,500 saved to cover healthcare costs in retirement.

Many cannot afford these high medication costs without cutting back somewhere else or going into debt.

The solution

Savings from GoodRx can free up funds for other essential goods and services, which — depending on how the funds are spent — can result in an additional dividend for our users.

For example, researchers have estimated that it costs an additional $45 each month to eat healthy. For the most-filled medications in the U.S. based on third-party data, the average GoodRx user saves about **$72** off the expected cost of their prescription if they would have paid cash or used commercial insurance. This is based on internal analysis taking into account estimated cash and insurance costs (not including additional savings from switching pharmacies). Those savings could be put toward eating more nutritious meals, which in turn can help reduce the need for healthcare spending in the future.

GoodRx savings help free up funds for users who are prescribed brand medications as well. For example, patients with diabetes who need a continuous glucose monitoring system can save at least **$200** on a one-month's supply of Dexcom G7 using GoodRx. For comparison, the average person with employer-sponsored health insurance pays $117 every month in insurance premiums. The $200 in medication savings each month can pay for the cost of health insurance, which is vital for covering the high out-of-pocket costs of diabetes management, with extra money to spare.

These savings can have a multiplier effect throughout the economy. Money that would have been spent on prescriptions can now go toward other important purchases, like food, shelter, electricity, education, and transportation. Studies show that more money in people's pockets can have beneficial effects on health and lead to other positive outcomes, regardless of how it's distributed. When budgets are less constrained, people can make better choices with how they spend their money.

By helping people save on their prescriptions, GoodRx helps them invest in other aspects of their lives, like their health, housing, education, and overall well-being.

GoodRx helps improve efficiency in the healthcare system

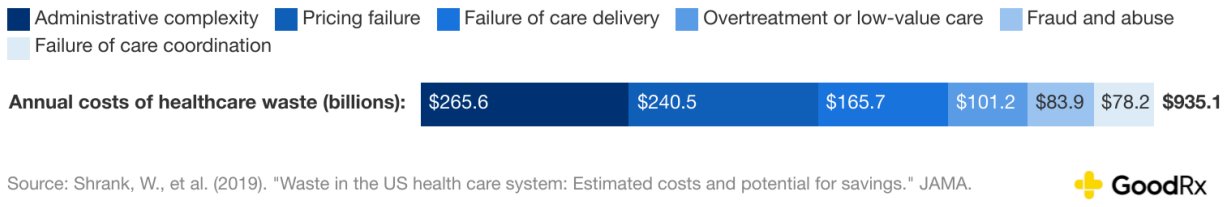
Many experts agree that the U.S. healthcare system is not only costly, but also contributes to waste and inefficiency. Avoidable healthcare use, pricing failures, and burdensome administrative procedures all increase healthcare spending without actually improving patient outcomes.

GoodRx has been working on solutions to increase efficiency across the healthcare system by reducing medication costs, avoidable healthcare spending, and administrative burdens.

The problem

The total cost of healthcare in the U.S. is becoming unsustainable, not only for patients, but also for plan sponsors like the government and employers. Researchers estimate that about 30% of healthcare spending can be considered waste that doesn't support better results. Total annual spending on healthcare waste ranges from **$760 billion to $935 billion**. "Administrative complexity" is the biggest contributor to healthcare waste, followed by "pricing failures" and "failures of care delivery."

Sources of Healthcare Waste



Source: Shrank, W., et al. (2019). "Waste in the US health care system: Estimated costs and potential for savings." JAMA.

Prescription medications play a big role in healthcare waste. One study estimates that over $105 billion is wasted each year on healthcare costs that can be avoided with better medication adherence. And the Congressional Budget Office has estimated that a 1% increase in the number of prescriptions filled by beneficiaries would decrease Medicare spending on medical services by about one-fifth of a percent. Medication nonadherence is a failure of care delivery and can result in preventable events like hospitalizations and ER visits.

Medication nonadherence is connected to pricing failures in the prescription market, which make many medications unaffordable for patients, even those with insurance. One study estimated that pricing failures in the prescription medication market contribute to over $169 billion in waste each year.

Finally, prescription cost-saving measures on the part of insurance companies can also create administrative complexity for physicians, pharmacists, and other healthcare office staff. For example, studies estimate that every prior authorization request "costs" about $15 in staff time, on average. For some offices, this can add up to over $3,400 annually just to complete prior authorization requests. However, many patients cannot afford their prescribed medications if these administrative requirements are not met.

The solution

GoodRx is working to tackle the primary sources of healthcare waste.

As shown earlier, GoodRx savings help improve medication adherence and prevent hospitalizations and ER visits. In doing so, GoodRx contributes to cost savings for the entire healthcare system, including patients, payers, and plan sponsors.

We estimated that since 2012, GoodRx has helped prevent over 590,000 ER visits and over 336,000 hospitalizations through better adherence to medications treating high cholesterol, high blood pressure, atrial fibrillation, diabetes, depression, and chronic obstructive pulmonary disease (COPD). Each of these avoided ER visits and hospitalizations would have cost both the GoodRx user and the healthcare system as a whole.

Using data from the Medical Expenditure Panel Survey, we estimated the average total spending and out-of-pocket costs associated with these healthcare visits. For example, the average ER visit for a COPD severe exacerbation cost over **$700** in 2021; the average hospitalization stay cost over **$13,800**. Hospitalizations for major adverse cardiovascular events like a heart attack are even more expensive, averaging over **$22,800** in 2021.

Applying the relevant average costs, we estimate that by preventing over 927,000 ER visits and hospitalizations, GoodRx has helped save the healthcare system over **$5 billion** since 2012. This translates to at least **$145 million** in out-of-pocket savings for our users.

The GoodRx Effect on Avoidable Healthcare Spending (2012-2023)

Outcome	Estimated change in outcome due to GoodRx	Estimated savings in total healthcare spending	Estimated savings in out-of-pocket costs
Emergency room visits	–590.8k	–629.9m	–51.2m
Hospitalizations	–336.5k	–4.7bn	–94.5m
Total	**–927.4k**	**–5.3bn**	**–145.7m**

Emergency room visits and hospitalizations were due to high cholesterol, high blood pressure, atrial fibrillation, diabetes, depression, and COPD.

GoodRx

Lower healthcare costs for patients can also lower insurance premiums overall, even for patients who are not taking prescription medications. By helping drive down healthcare costs, GoodRx improves efficiency for the whole healthcare system.

Below, we dive into two new solutions GoodRx is working on to help patients at the point of care and to make healthcare more efficient for everyone.

$5 billion

ESTIMATED SAVINGS TO THE HEALTHCARE SYSTEM SINCE 2012

(because of fewer hospitalizations and ER visits for high cholesterol, high blood pressure, atrial fibrillation, diabetes, depression, and COPD)

$145 million

ESTIMATED SAVINGS IN OUT-OF-POCKET COSTS SINCE 2012

(because of fewer hospitalizations and ER visits for high cholesterol, high blood pressure, atrial fibrillation, diabetes, depression, and COPD)

Integrating GoodRx savings with insurance

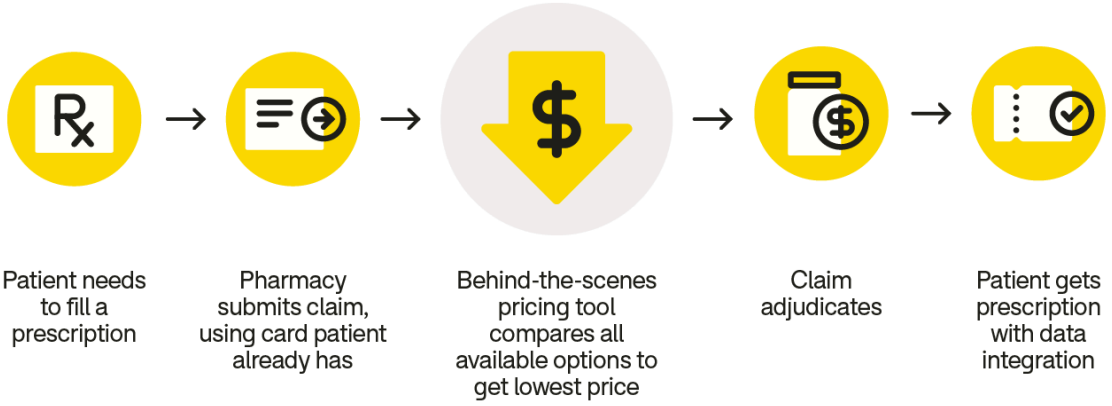
Built on price transparency, GoodRx helps address pricing failures in the prescription medication market. However, studies show that default settings still influence many people's behavior — even those who have all the information necessary to make a decision.

For example, economists have studied the impact of default options in retirement savings plans. They found that "smart" defaults can improve outcomes by making sure that people are defaulted into the best options. Researchers have suggested applying similar thinking to help people with healthcare choices, such as insurance plan selection.

As healthcare becomes increasingly complex and health literacy remains limited for the majority of patients, GoodRx has found that smart defaults can also help people access their prescription medications more efficiently.

To maximize patient savings while reducing administrative complexity, GoodRx developed an integrated savings program that automatically compares offerings and routes insured patients to whichever patient-eligible price is lower for their medication — the GoodRx price, or the insurance price. Our program assures that financial and clinical data remain integrated in the healthcare system.

By partnering with pharmacy benefit managers like Express Scripts, CVS Caremark, MedImpact, and Navitus, GoodRx is pioneering new solutions to reduce healthcare friction and enable more people to access affordable medication prices without any additional effort.



As of the date of this report, millions of people already have access to automatic savings on eligible medications through GoodRx's integrated savings program. This program has helped insured patients save on their medications, including those that treat chronic conditions like high blood pressure, hypothyroidism, depression, ADHD, and asthma.

These savings translate to lower prescription abandonment rates, increased savings at the point of care, and future cost savings from improved medication adherence. And, by collaborating with other healthcare organizations, GoodRx is helping make healthcare less fragmented and more efficient.

Real-time benefit check for healthcare professionals

Healthcare professionals are critical to GoodRx's mission of helping patients save. Medical professionals can help improve adherence by having cost of medication conversations with their patients and informing them of ways to save.

In a survey of individuals enrolled in high-deductible health plans, only 18% discussed the cost of prescription medications with a clinician. However, one survey found that nearly 90% of patients over the age of 65 were interested in using a real-time benefit check (RTBC) tool with their physician to check medication costs.

Studies have shown that equipping healthcare providers with RTBC tools makes their patients more likely to fill their prescription and pay lower out-of-pocket costs. RTBC tools have been shown to not only improve patient access, but also reduce administrative burdens on physician and pharmacy workflows.

That's why we launched GoodRx Provider Mode, which to date has over **550,000** activated healthcare providers and front office staff. We've equipped GoodRx Provider Mode with an RTBC tool to help medical professionals view comprehensive medication pricing for hundreds of brand and specialty drugs, including insurance coverage, manufacturer savings programs, and GoodRx discounts.

After healthcare professionals log into GoodRx Provider Mode, they can check a patient's insurance coverage with just a few pieces of information and seamlessly share available GoodRx savings using a QR code. GoodRx Provider Mode also makes it easy to quickly locate enrollment forms for patient assistance programs across multiple manufacturers in one place. This reduces the amount of time healthcare professionals have to spend searching for administrative paperwork.

By providing **price transparency at the point of care**, GoodRx can help providers find their patients the best treatment that they're most likely to adhere to and prevent sticker shock at the pharmacy.

GoodRx Provider Mode also helps reduce administrative complexity for healthcare professionals by compiling insurance pricing and savings opportunities all in one place. Easing administrative burdens not only reduces wasteful healthcare spending, but can also lead to more time spent on patient care and ultimately, better results for patients.

GoodRx makes healthcare easier to use and understand

Many find the American healthcare system complex and difficult to navigate. In fact, 62% of consumers feel that the healthcare system is set up to be confusing. We cannot increase access to healthcare without giving people the tools to understand and engage with their care.

By providing people with transparent prices and relevant, high-quality health information, GoodRx helps make it easier for everyone to use and understand healthcare.

The problem

Health literacy is a significant issue in the U.S. The CDC defines personal **health literacy** as "the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others." Health literacy can apply to healthcare, disease prevention, health promotion, and healthcare costs.

According to the National Assessment of Adult Literacy, only 12% of adults have proficient health literacy, while more than a third have basic or below basic health literacy. Research suggests that lower levels of health literacy can worsen existing health disparities.

Organizations like GoodRx can play a role in expanding and supporting health literacy for everyone.

One particularly neglected area of health literacy is healthcare cost literacy. It's a concept coined by GoodRx researchers to describe the degree to which people can obtain, process, and understand the costs associated with their healthcare. While there are many personal and systemic factors that influence health decisions, one of the top barriers to accessing healthcare is understanding costs.

Studies bear this out. A GoodRx survey found that 75% of adults find it difficult to know the cost of healthcare procedures. Another study found that 61% of healthcare consumers think that their medical bills are more complex than a mortgage payment. As a result, 53% of consumers have avoided seeking care because they weren't sure what the cost would be.

53% of healthcare consumers have avoided seeking care because they weren't sure what the cost would be.

The difficulty of navigating the healthcare system has real consequences for public health. In a recent survey of healthcare consumers, almost half reported they didn't seek care at some point because they didn't know where to start. With so many different options and costs to consider, it's no wonder that people become overwhelmed while attempting to manage their health.

The solution

GoodRx provides resources — both online and offline — that make it easier for people to engage with their health and access healthcare at a price they can afford. Our focus on cost transparency and simplified health information aims to improve health literacy so that healthcare is easier to use and understand.

By providing people with a place to compare prices for prescription medications, we've enabled more people to understand the way medication prices vary and how to get the best price. While healthcare cost literacy is generally low, we found that people reported the most knowledge about pharmacy-level price differences for prescription medications and found it easiest to anticipate the out-of-pocket cost of a prescription, compared to other healthcare costs like primary care visits and procedures.

But even though we started with increasing price transparency for medications, we wanted to make it easier to navigate the entire healthcare system. Improving health literacy is an important part of that.

Most importantly, GoodRx strives to meet people where they are. We make healthcare easier for everybody to comprehend, regardless of their background, means, or resources.

How GoodRx Health boosts health literacy

To help people make sense of health, we created GoodRx Health, an online tool that has provided high-quality, easy-to-understand health information to **11 million** people on average each month in the last year.

Our tool is a form of eHealth, a web system that enhances medical knowledge and care. According to multiple studies evaluating eHealth's impact on health literacy, eHealth tools can range from videos to picture-based content to smartphone applications.

Overall, research shows that eHealth holds promise for increasing health literacy. What's more, there is established literature on how health literacy can lead to better health outcomes. Higher rates of health literacy can enhance people's ability to find their way through a complex healthcare system, to communicate with providers, and to more confidently participate in their own health and well-being.

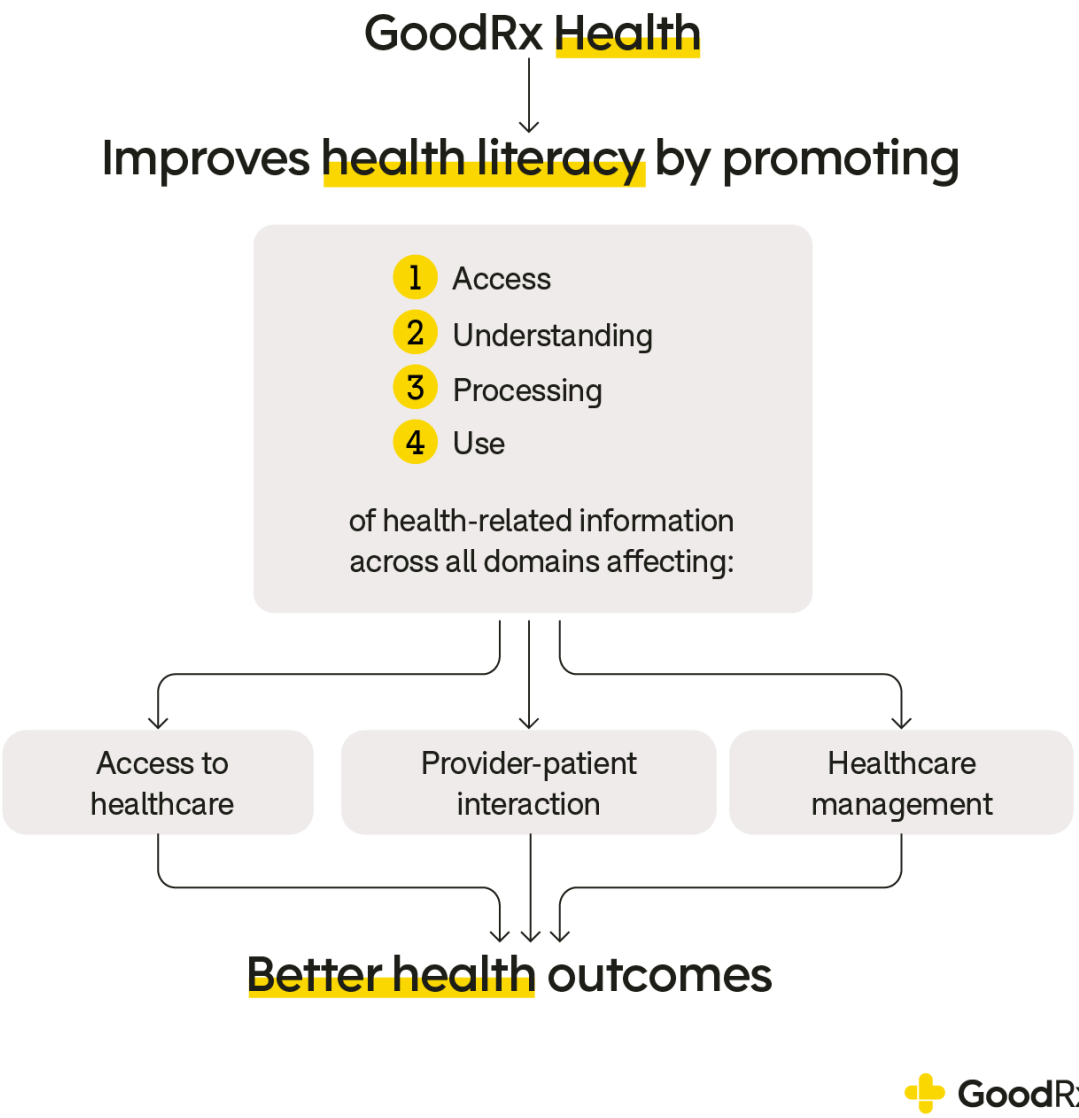
Health literacy typically encompasses three different domains: **healthcare, disease prevention, and health promotion**. GoodRx is built on price transparency, and that's why we've added a fourth domain — personal finance. Adding this domain helps incorporate **healthcare cost literacy** into the framework of health literacy, and it acknowledges how cost and affordability affect how people understand and use healthcare.

11 million

AVERAGE NUMBER OF GOODRX HEALTH VISITORS EACH MONTH IN 2023

GoodRx Health provides expert knowledge on *all* domains of health literacy by:

- Promoting **access** through free, authoritative information in different media formats, including video, and across different languages
- Pulling together complicated, difficult-to-find health information into a format that people can **understand** and **process**
- Equipping people with tools to help them **use** the information provided to navigate the healthcare system, whether on their behalf or on behalf of a loved one



Among the online health information resources currently available, GoodRx is uniquely positioned to strengthen health literacy, especially in the prescription medication space. Our high authority in healthcare information comes from our in-house team of medical experts. These people are involved in every step of the publication process, from writing, editing, reviewing, and updating articles. As a result, we have a rigorous prioritization of science in a captivating and action-oriented way.

This translates into real changes in behaviors. The GoodRx Health audience is more engaged than users of other eHealth platforms. According to our internal analyses, as of June 2023:

- People view more GoodRx Health articles in one visit to the site compared to other digital platforms (**1.5** pages per visit on average).
- People are more likely to find what they're looking for on GoodRx Health. Our average bounce rate is **74.5%**, compared to 85% to 88% for other digital platforms.
- About **8 million** people have signed up for our newsletters, and we have a **40.3%** average newsletter open rate.

Below, we dive deeper into how GoodRx Health works to improve health literacy and health outcomes.

Accessing information

Over 11 million people use GoodRx Health to access health information every month, on average. Since its inception, GoodRx Health has been read by people from all 50 states. Our audience includes users, caregivers, family members, healthcare providers, and policymakers. People aged 55 and older, who account for 56% of total healthcare spending, make up about **58%** of our readers.

Our health content supports accessibility across multiple formats and languages. The U.S. Office of Disease Prevention and Health Promotion's health literacy guidelines recommend providing information in different multimedia formats, including video, in order to engage an audience. GoodRx offers over **2,500** videos on our platform and YouTube channel. These videos provide expert-reviewed information — both visually and verbally — on topics such as personal finance and supportive care.

What's more, over **150** GoodRx Health articles have also been translated into Spanish, including a comprehensive guide to Type 2 diabetes. That means more readers can get their hands on accurate and high-quality health information.

Understanding and processing information

The 2012 Health Information National Trends Survey revealed that over 70% of U.S. adults turn to the internet for health information. While the internet has a wealth of health information, only 40% of consumers believe that online content is reliable. Another recent poll found that most American adults are unable to tell if false health claims are true or not.

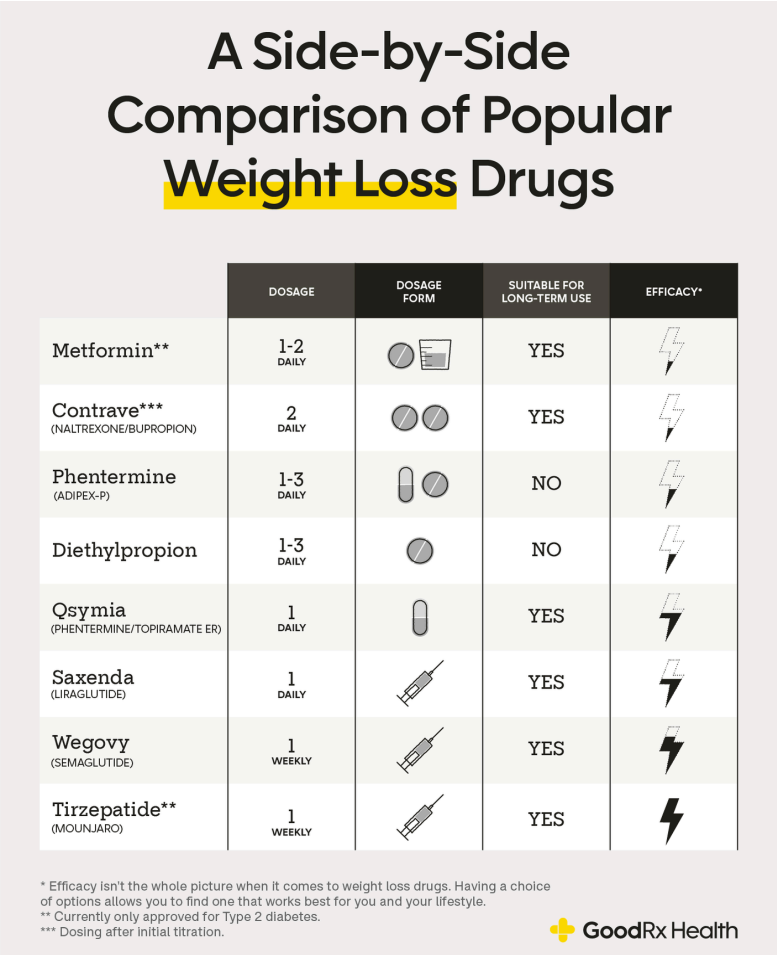
To remove doubt and equip people with the best knowledge possible, GoodRx Health focuses on quality and accuracy. All our articles are medically reviewed and fact checked. We prioritize current and reliable information that is aligned with the principles laid out by the Association of Health Care Journalists and the Society of Professional Journalists Code of Ethics. Our expert contributors include physicians, pharmacists, psychologists, public health experts, and PhDs.

Our Clinical Review Board adds another layer of expertise. The board is made up of 16 leading experts in academia, research, and clinical practice across all health conditions. They ensure that our information is in line with the latest scientific and medical developments.

GoodRx Health articles are also regularly reviewed and updated to ensure we are providing our readers with the most current information.

Our health expertise is paired with GoodRx Health's emphasis on understandability by giving readers information in a format they can understand. The content on GoodRx Health is developed using plain language principles and health literacy best practices, which are baked into our style and writer's guides. And in the editing process, we use a readability score for each article to verify that we're providing information at an accessible reading level.

To simplify complex topics, many GoodRx Health articles incorporate customized **infographics**. For example, this infographic compares the effectiveness and dosage of eight different weight loss drugs, helping people visually understand the difference between these medications.



The quality of GoodRx Health is apparent to our users. Of our surveyed readers, at least **95%** are satisfied with the content, and out of those who were satisfied, nearly **3 in 4** people find the articles easy to follow and understand.

Put simply, GoodRx Health distills complicated, messy, and inaccessible health information into terms that people can easily make sense of.

Deep dive: Understanding healthcare cost literacy

One domain of health literacy ripe for improved understanding is healthcare cost literacy. Reports show that half of Americans have trouble affording healthcare due to costs. Even the majority of those insured report difficulties using their health coverage, such as dealing with denied claims and running into problems with the provider network.

GoodRx Health's personal finance content is the first to address these issues for everyday consumers. The content's goal is to educate consumers on how to effectively manage their health costs.

In a healthcare system known to lack price transparency, this type of information is difficult to seek out and understand. In fact, it requires a high level of expertise and effort to find all this information. Our personal finance team not only puts in the legwork to find the information, but they also break it down in a way that people can actually digest and use.

GoodRx Health offers guides to some of the most pressing issues in healthcare finance, including: medication costs and savings, medical debt, health insurance, Medicare, Medicaid, and low-cost and free healthcare.

Use of information

Not only does GoodRx Health translate complicated health information, but we also help people put that knowledge to use. Many articles include steps on how someone can take action for their health. For example, we help people compare important information about medications, like side effects and prices, integrating GoodRx's cost transparency data and savings opportunities with useful health information.

We also understand that speaking with a healthcare provider can be another obstacle to accessing care. That's why we have a dedicated patient advocacy hub that provides steps on how to have conversations with your healthcare provider and actively engage in your healthcare.

In sum, GoodRx Health helps bridge the gap between health literacy and health behavior by bringing together information on a platform that motivates action.

Deep dive: A customized guide to Medicaid unwinding

In 2023, the COVID-19 public health emergency ended. And because of that, millions of people lost access to Medicaid, a program that provides free or low-cost health insurance coverage.

In response, GoodRx created an up-to-date, state-by-state guide, complete with video content, for people to understand the changes and what to do if they lost coverage. Health literacy is particularly important when it comes to Medicaid, a program that is notoriously known to be confusing for users.

The GoodRx Health guide to the Medicaid unwinding process has been seen over **140,000** times by people across 56 U.S. states and territories. The guide also provides steps that people can take if they lose Medicaid coverage.

The Medicaid unwinding guide helps people make their way through the complex system of public health insurance, improving their ability to access healthcare and, ultimately, their health outcomes.

Deep dive: Diabetes resources

Over 37 million Americans, or 11% of the U.S. population, are currently diagnosed with diabetes. Another 96 million adults have prediabetes, and 1.4 million people are diagnosed with diabetes every year.

GoodRx Health offers a guide to diabetes that provides simplified but comprehensive information on not only the condition and treatments, but also tips for saving money. It helps GoodRx users find resources where they can learn more about diabetes and diabetes care.

GoodRx Health has also created a suite of newsletters with the most up-to-date information on diabetes.

GoodRx Health makes it easier for people to become educated healthcare consumers — whether it's teaching people about health conditions and available treatments, how to improve healthcare experiences, how to boost well-being, or how to reduce healthcare costs. With GoodRx Health, anyone can get expert knowledge to keep themselves and

their loved ones healthy. Millions of people across the U.S. have used GoodRx Health to expand their health literacy.

GoodRx's offline outreach to help those in need

At GoodRx, we recognize that technology is only part of the solution to improving healthcare access. In fact, 1 in 5 households in the U.S. still don't have internet access. Research has also shown that areas with less internet access are also more likely to have less access to healthcare infrastructure, like hospitals, pharmacies, and primary care providers.

That's why GoodRx continues to prioritize and support offline outreach to ensure that people can still access affordable healthcare.

Since our founding, GoodRx has helped people save about **$3 billion** off retail prices for prescription medications with our physical coupon cards. Most of these savings have been achieved by collaborating with doctor's offices and creating an ecosystem for front office staff and healthcare providers to work together to address cost issues and educate patients.

By building relationships with the healthcare professionals who have direct impact on patient health literacy, GoodRx helps ensure *all* patients can access medication savings.

Summing it all up

From improving health outcomes, to reducing costs in the healthcare system, to helping people understand their healthcare, **THE GOODRX EFFECT** extends well beyond our users' pocketbooks. By arming people with the ability to price shop and save on their medications, GoodRx helps people become more active healthcare consumers.

Our consumer-driven marketplace creates more efficient care and improves upon a broken, opaque healthcare system. And our focus on transparency and high-quality, digestible health information help make healthcare easier to use and comprehend.

Together with the savings opportunities available on our platform, GoodRx helps people access the healthcare they need at a price they can afford.

As we continue to grow, we intend to fill more gaps in everyone's healthcare journey so that all Americans — regardless of income or insurance status — have the knowledge, choice, and care they need to stay healthy.

Methodology

Average GoodRx savings: *Average GoodRx savings relative to retail prices were calculated as the total GoodRx savings relative to retail prices for prescriptions filled using GoodRx from January 1, 2012 through September 30, 2023.*

Average GoodRx savings relative to commercial insurance copays were calculated as the total GoodRx savings relative to average stated commercial insurance copays (not accounting for the lesser of cost-sharing amount rules, when the cost of medication is lower than copay) for prescriptions filled using GoodRx (including GoodRx Gold and Kroger Savings Club membership savings programs) for the 100 most prescribed medications from October 1, 2022 through September 30, 2023, where the GoodRx price was cheaper than the average insurance copay.

Average GoodRx savings relative to Medicare initial coverage copays were calculated as the total GoodRx savings relative to average Medicare copay when covered during the initial coverage phase for prescriptions filled using GoodRx (including Gold and Kroger membership savings programs) for the 100 most prescribed medications from October 1, 2022 through September 30, 2023, where the GoodRx price was cheaper than the average Medicare initial coverage copay.

Average GoodRx savings by condition were calculated using the same methodology as above, for the subset of medications where the most probable condition, based on primary ICD-10 code and nationally representative claims, matched the condition of interest.

Maximum GoodRx savings off average commercial insurance copays were calculated using the lowest possible price available under the manufacturer copay card and the average stated commercial insurance copay (not accounting for the lesser of cost-sharing amount rules). Manufacturer copay card prices are current as of September 2023.

The share of times insured patients pay full price on their prescription is estimated from third-party claims data for the 200 most prescribed medications from October 1, 2022 through September 30, 2023. A claim was identified as a full price transaction when there was no insurance payment on the claim. The share was calculated out of retail prescription claims for a nationally representative insured population, excluding coordination of benefits claims and cash discount claims.

GoodRx effect on medication adherence: *Medication adherence with and without GoodRx was calculated based on the average amount saved per prescription for GoodRx users. Average amount saved per prescription was estimated based on median GoodRx prices, averaged across the 200 most prescribed medications and weighted by claim volume.*

The distribution of savings relative to insurance copay and retail price for each drug was estimated using a regression model of GoodRx relative fills on GoodRx discount off median retail price and the GoodRx discount off average commercial insurance copay, weighted by the proportion of claims where insured patients paid full price (either due to deductibles, restricted coverage, or no coverage for the medication, based on third-party data).

The estimated relationship between average amount saved and medication adherence was based on a meta-analysis of 160 cost-related nonadherence studies in Eaddy et al. (2012) and assumed an 80% baseline adherence at $0 out-of-pocket cost. Based on the literature, for every $10 savings, medication adherence is estimated to increase by 3.8%. The total number of newly adherent GoodRx claims since 2012 was calculated based on the estimated share of newly adherent claims in each year.

GoodRx effect on health outcomes: *To assess the effect of GoodRx savings on health outcomes, we performed a meta-analysis of peer-reviewed research articles published between 1990 and 2023 studying the effect of medication adherence on disease exacerbations, inpatient hospitalizations, ER visits, and productivity loss due to disease. We performed this systematic literature review in concordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses framework.*

We reviewed studies where the intervention consisted of pharmaceuticals to treat either COPD, Type 2 diabetes, depression, hypertension, hyperlipidemia, or stroke risk reduction. Medications listed in the studies were mapped to the GoodRx drug database based on drug class and form. We performed a search of PubMed and Google Scholar, with search terms developed using the PICO framework. At least 35 search phrases were used in this study and at least 100 results per condition were viewed. Articles with keywords that met the PICO framework for this study were reviewed for inclusion by three reviewers. Where applicable, we extracted effect measures that adjusted for covariates (for example, adjusted odds ratios). The final set of studies included in this analysis are listed in the table below and references.

List of Articles Included in Meta-Analysis

Authors	Title	Journal
Albrecht, J., et al.	Adherence and healthcare utilization among older adults with COPD and depression.	*Respiratory Medicine*
Averell, C., et al.	Impact of adherence to treatment with inhaled corticosteroids/long-acting β-agonists on asthma outcomes in the United States.	*Therapeutic Advances in Respiratory Disease*
Casciano, J., et al.	The costs of warfarin underuse and nonadherence in patients with atrial fibrillation: A commercial insurer perspective.	*Journal of Managed Care Pharmacy*
Davis, J., et al.	Impact of nonadherence to inhaled corticosteroid/LABA therapy on COPD exacerbation rates and healthcare costs in a commercially insured US population.	*American Health & Drug Benefits*
Dunner, D., et al.	Improved health-related quality of life and reduced productivity loss after treatment with bupropion sustained release: A study in patients with major depression.	*Primary Care Companion to the Journal of Clinical Psychiatry*
Gillespie, C., et al.	Medication adherence, health care utilization, and spending among privately insured adults with chronic conditions in the United States, 2010-2016.	*The American Journal of Medicine*
Ho, P., et al.	Effect of medication nonadherence on hospitalization and mortality among patients with diabetes mellitus.	*JAMA Internal Medicine*
Lo-Ciganic, W., et al.	Trajectories of diabetes medication adherence and hospitalization risk: A retrospective cohort study in a large state Medicaid program.	*Journal of General Internal Medicine*
Pittman, D., et al.	Antihypertensive medication adherence and subsequent healthcare utilization and costs.	*The American Journal of Managed Care*
Pittman, D., et al.	Adherence to statins, subsequent healthcare costs, and cardiovascular hospitalizations.	*The American Journal of Cardiology*
Simoni-Wastila, L., et al.	Association of chronic obstructive pulmonary disease maintenance medication adherence with all-cause hospitalization and spending in a Medicare population.	*The American Journal of Geriatric Pharmacotherapy*
Stewart, W., et al.	Cost of lost productive work time among US workers with depression.	*JAMA*
Ta, J., et al.	Health care resource utilization and costs associated with nonadherence and nonpersistence to antidepressants in major depressive disorder.	*Journal of Managed Care & Specialty Pharmacy*
Ye, X., et al.	Lower risk of major cardiovascular events associated with adherence to colesevelam HCl.	*Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*
Zhao, Y., et al.	Associations between statin adherence level, health care costs, and utilization.	*Journal of Managed Care & Specialty Pharmacy*

GoodRx

To create a standardized response variable, effect measures were converted to percent change in outcome due to treatment. The main explanatory variable was the change in adherence based on the study; when adherence was defined by a threshold (for example, above and below 80% adherence), the midpoint adherence for each threshold was used to calculate the change in adherence. Using this standardized dataset, we performed a linear meta-regression for each outcome and condition based on a final sample of 15 studies, weighed by study sample size. The coefficient estimates from the meta-regressions represent the expected percent change in outcome (for example,

hospitalization rate) for a 100% change in adherence (measured by proportion of days covered).

We scaled these estimated effect sizes down according to GoodRx users' observed average medication adherence for the relevant medications and the share of fills estimated to be newly adherent due to GoodRx in each 1-year period. To calculate the level change in health outcomes, we applied the expected percent change in outcome due to GoodRx to a baseline outcome rate extracted from the included studies, and applied this change in baseline outcome rate to the number of unique GoodRx users who filled one of the medications of interest in a given year. The total change in health outcomes was calculated as the sum of the change in health outcomes for each year from 2012 through 2023.

GoodRx effect on avoidable healthcare costs: *Average hospitalization and ER visit costs were estimated using healthcare expenditure data from the Medical Expenditure Panel Survey, 2012-2021. Nationally representative sampling weights were applied to all estimates. Relevant hospitalization and ER visits were identified using the following 3-digit ICD-10 codes:*

- *Major adverse cardiovascular events: I21, I48, I50, I63, G45*
- *Diabetes: E11*
- *COPD exacerbations: J43, J44, J45*
- *Depression/anxiety: F32, F41*
- *Hypertension: I10*

We note that out-of-pocket expense estimates were based on observational data and thus reflect the insurance composition of the individuals observed in the dataset. Actual out-of-pocket expenses for avoided hospitalizations and ER visits may differ based on the individual's insurance status.

Brand-drug savings survey: *The survey was administered from June to July 2023 through Qualtrics to 1,220 people who had registered with GoodRx for an integrated copay card and/or GoodRx Assist coupon. A total of 582 respondents qualified for the survey and 561 indicated that they had used an integrated copay card and/or GoodRx Assist coupon in the last 12 months. Of the 561 respondents included in the analysis, 329 users used only a GoodRx Assist coupon and 232 users used an integrated copay card. Survey results were aggregated for respondents who selected answer choices of "somewhat," "extremely," or "strongly."*

References

Agency for Healthcare Research and Quality. (2023). Medical Expenditure Panel Survey.

Albrecht, J., et al. (2017). Adherence and healthcare utilization among older adults with COPD and depression. *Respiratory Medicine*.

American Diabetes Association. (2023). Continuous glucose monitors.

American Diabetes Association. (2023). Statistics about diabetes.

Aon. (2023). U.S. employer health care costs projected to increase 8.5 percent next year.

Aronson, I. D., et al. (2012). Optimizing educational video through comparative trials in clinical environments. *Educational Technology Research and Development*.

Association of Health Care Journalists. (2023). Statement of principles of the Association of Health Care Journalists.

Averell, C. M., et al. (2022). Impact of adherence to treatment with inhaled corticosteroids/long-acting β-agonists on asthma outcomes in the United States. *Therapeutic Advances in Respiratory Disease*.

Aziz, H., et al. (2016). How payment scheme affects patients' adherence to medications? A systematic review. *Patient Preference and Adherence*.

Baron, Z., et al. (2023). A deep dive into Takings Clause challenges to the Medicare drug price negotiation program. *Health Affairs Forefront*.

Berwick, D., et al. (2012). Eliminating waste in US health care. *JAMA*.

Bhardwaj, S., et al. (2022). Impact of real-time benefit tools on patients' access to medications: A retrospective cohort study. *The American Journal of Medicine*.

Bhardwaj, S., et al. (2022). Implementation and cost validation of a real-time benefit tool. *American Journal of Managed Care*.

Bureau of Labor Statistics. (2023). Employment cost index - September 2023.

Cao, M. et al. (2022). Switched off: Why are one in five U.S. households not online? National Telecommunications and Information Administration.

Carroll, J. K., et al. (2019). Addressing medication costs during primary care visits: A before-after study of team-based training. *Annals of Internal Medicine*.

Casciano, J., et al. (2013). The costs of warfarin underuse and nonadherence in patients with atrial fibrillation: A commercial insurer perspective. *Journal of Managed Care Pharmacy*.

Centers for Disease Control and Prevention. (2023). What is health literacy?

Centers for Medicare & Medicaid Services. (2023). E-Health general information.

Centers for Medicare & Medicaid Services. (2023). Final updated Part D benefit parameters for defined standard benefit, low-income subsidy, and retiree drug subsidy.

Centers for Medicare & Medicaid Services. (2023). Hospital price transparency.

Centers for Medicare & Medicaid Services. (2023). Inflation Reduction Act and Medicare.

Chandra, A., et al. (2023). The health costs of cost-sharing. NBER.

Change Healthcare. (2021). The 2020 Healthcare Consumer Experience Index.

Choi, J. J., et al. (2003). Optimal defaults. *American Economic Review*.

Clancy, C. (2009). An overview of measures of health literacy. Institute of Medicine.

Clark, R. L., et al. (2019). Impact of defaults in retirement savings plans: Public employee plans. NBER.

Congressional Budget Office. (2012). Offsetting effects of prescription drug use on Medicare's spending for medical services.

Cramer, J. A., et al. (2008). Medication compliance and persistence: terminology and definitions. *Value Health*.

Davis, J., et al. (2017). Impact of nonadherence to inhaled corticosteroid/LABA therapy on COPD exacerbation rates and healthcare costs in a commercially insured US population. *American Health & Drug Benefits*.

Desai, S. M., et al. (2022). Effects of real-time prescription benefit recommendations on patient out-of-pocket costs: A cluster randomized clinical trial. *JAMA Internal Medicine*.

Dunner, D. L., et al. (2001). Improved health-related quality of life and reduced productivity loss after treatment with bupropion sustained release: A study in patients with major depression. *Primary Care Companion to the Journal of Clinical Psychiatry*.

Dusetzina, S. B., et al. (2023). Cost-related medication nonadherence and desire for medication cost information among adults aged 65 years and older in the US in 2022. *JAMA Network Open*.

Eaddy, M. T., et al. (2012). How patient cost-sharing trends affect adherence and outcomes. *Pharmacy and Therapeutics*.

Federal Reserve Board of Governors. (2023). Report on the economic well-being of U.S. households.

Fidelity. (2023). How to plan for rising health care costs.

Gennetian, L. A., et al. (2022). Unconditional cash and family investments in infants: Evidence from a large-scale cash transfer experiment in the U.S. NBER.

Georgetown University Health Policy Institute. (2023). Prescription drugs.

Gillespie, C., et al. (2020). Medication adherence, health care utilization, and spending among privately insured adults with chronic conditions in the United States, 2010-2016. *The American Journal of Medicine*.

Goldsmith, L. J., et al. (2017). Understanding the patient experience of cost-related non-adherence to prescription medications through typology development and application. *Social Science & Medicine*.

Guttentag, A., et al. (2023). Healthcare cost literacy: Exploration of concept and initial development of a novel tool in a representative U.S. adult population. medRxiv.

Handa, S., et al. (2020). Effectiveness of a smartphone application as a support tool for patients undergoing breast cancer chemotherapy: A randomized controlled trials. *Clinical Breast Cancer*.

Handel, B., et al. (2015). Getting the most from marketplaces: Smart policies on health insurance choice. The Hamilton Project.

Haskard Zolnierek, K. B., et al. (2009). Physician communication and patient adherence to treatment: A meta-analysis. *Medical Care*.

Health.gov. (2016). Health literacy online.

Healthcare.gov. (2023). Federal poverty level (FPL).

Hirsch, B. R., et al. (2014). The impact of specialty pharmaceuticals as drivers of health care costs. *Health Affairs*.

Ho, P., et al. (2006). Effect of medication nonadherence on hospitalization and mortality among patients with diabetes mellitus. *JAMA Internal Medicine*.

IMS Institute for Healthcare Informatics. (2013). Avoidable costs in U.S. healthcare.

Jacobs, R. J., et al. (2014). A systematic review of eHealth interventions to improve health literacy. *Health Informatics Journal*.

Jia, X., et al. (2021). Online health information seeking behavior: A systematic review. *Healthcare*.

Kennedy, J., et al. (2008). Unfilled prescriptions of Medicare beneficiaries: Prevalence, reasons, and types of medicines prescribed. *Journal of Managed Care Pharmacy*.

Kesselheim, A. S., et al. (2016). The high cost of prescription drugs in the United States: Origins and prospects for reform. *JAMA*.

KFF. (2022). Americans' challenges with health care costs.

KFF. (2022). Health care debt in the U.S.: The broad consequences of medical and dental bills.

KFF. (2023). 2023 Employer Health Benefits Survey.

KFF. (2023). Key facts about Medicare Part D enrollment and costs in 2023.

KFF. (2023). KFF survey of consumer experiences with health insurance.

KFF. (2023). Medicaid enrollment and unwinding tracker.

KFF. (2023). Poll: Most Americans encounter health misinformation, and most aren't sure whether it's true or false.

Kim, J. (2018). Medication adherence: The elephant in the room. U.S. Pharmacist.

Kullgren, J. T., et al. (2018). Consumer behaviors among individuals enrolled in high-deductible health plans in the United States. *JAMA Internal Medicine*.

Lo-Ciganic, W., et al. (2016). Trajectories of diabetes medication adherence and hospitalization risk: A retrospective cohort study in a large state Medicaid program. *Journal of General Internal Medicine*.

Loccoh, E. C., et al. (2022). Geospatial analysis of access to health care and internet services in the US. *JAMA Network Open*.

Loccoh, E. C., et al. (2023). Hospital adherence to the federal price transparency mandate: Results from a nationally representative sample. *Journal of General Internal Medicine*.

Madrian, B. C., et al. (2001). The power of suggestion: Inertia in 401(k) participation and savings behavior. *The Quarterly Journal of Economics*.

Marinescu, I. (2018). No strings attached: The behavioral effects of U.S. unconditional cash transfer programs. NBER.

Melillo, G. (2019). 2020 ADA guidelines include SGLT2 inhibitors, GLP-1 receptor agonists to treat comorbidities. *American Journal of Managed Care*.

Mercer. (2023). National Survey of Employer-Sponsored Health Plans.

Mills, E. J., et al. (2008). Primary prevention of cardiovascular mortality and events with statin treatments: A network meta-analysis involving more than 65,000 patients. *Journal of the American College of Cardiology*.

Morley, C. P., et al. (2013). The impact of prior authorization requirements on primary care physicians' offices: Report of two parallel network studies. *The Journal of the American Board of Family Medicine*.

Nguyen, A., et al. (2022). The impact of job and insurance loss on prescription drug use: A panel data approach to quantifying the health consequences of unemployment during the Covid-19 pandemic. *International Journal of Health Services*.

NPR. (2020). Life experiences and income inequality in the United States.

Ortaliza, J., et al. (2021). How do health expenditures vary across the population?. Peterson-KFF Health System Tracker.

Paasche-Orlow, M. K., et al. (2005). The prevalence of limited health literacy. *Journal of General Internal Medicine*.

Page, M.J., et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*.

Patel, M. R., et al. (2016). Social determinants of health, cost-related non-adherence, and cost-reducing behaviors among adults with diabetes: Findings from the National Health Interview Survey. *Medical Care*.

Paul, T. (2023). Medical costs can eat up a sizeable portion of your retirement savings — here's how much you should expect to spend. CNBC.

Peterson-KFF Health System Tracker. (2022). The burden of medical debt in the United States.

Pignatti, C., et al. (2023). The effects of an unconditional cash transfer on mental health in the United States. IZA.

Pittman, D., et al. (2010). Antihypertensive medication adherence and subsequent healthcare utilization and costs. *The American Journal of Managed Care*.

Pittman, D., et al. (2011). Adherence to statins, subsequent healthcare costs, and cardiovascular hospitalizations. *The American Journal of Cardiology*.

Prieto-Merino, D., et al. (2021). Estimating proportion of days covered (PDC) using real-world online medicine suppliers' datasets. *Journal of Pharmaceutical Policy and Practice*.

Rao, M., et al. (2013). Do healthier foods and diet patterns cost more than less healthy options? A systematic review and meta-analysis. *BMJ Open*.

Seitz, A., et al. (2023). 'I'm trying not to go into panic.' Review of millions of Medicaid enrollees plagued by error and confusion. Associated Press.

Shrank, W. H., et al. (2010). The epidemiology of prescriptions abandoned at the pharmacy. *Annals of Internal Medicine*.

Shrank, W. H., et al. (2019). Waste in the US health care system: Estimated costs and potential for savings. *JAMA*.

Simard, P., et al. (2018). Association between metformin adherence and all-cause mortality among new users of metformin: A nested case-control study. *Annals of Pharmacotherapy*.

Simoni-Wastila, L., et al. (2012). Association of chronic obstructive pulmonary disease maintenance medication adherence with all-cause hospitalization and spending in a Medicare population. *The American Journal of Geriatric Pharmacotherapy*.

Society of Professional Journalists. (2014). SPJ code of ethics.

Sorensen, K., et al. (2013). Measuring health literacy in populations: Illuminating the design and development process of the European Health Literacy Survey Questionnaire (HLS-EU-Q). *BMC Public Health*.

Stewart, W., et al. (2003). Cost of lost productive work time among US workers with depression. *JAMA*.

Sundaram, P., et al. (2022). Burden of prior authorization requirements on urology practice and patients. *Urology*.

Ta, J. T., et al. (2021). Health care resource utilization and costs associated with nonadherence and nonpersistence to antidepressants in major depressive disorder. *Journal of Managed Care & Specialty Pharmacy*.

Teolis, M. G. (2010). A MedlinePlus kiosk promoting health literacy. *Journal of Consumer Health on the Internet.*

The Commonwealth Fund. (2022). The state of U.S. health insurance in 2022.

The Commonwealth Fund. (2023). Medicare's affordability problem: A look at the cost burdens faced by older enrollees.

University of Michigan Library. (2023). Systematic reviews.

U.S. Department of Health and Human Services. (2023). America's health literacy: Why we need accessible health information.

U.S. Department of Health and Human Services. (2023). Fact sheet: End of the COVID-19 public health emergency.

U.S. Department of Health and Human Services. (2023). Healthy People 2030: Social determinants of health.

Walters, R., et al. (2020). Establishing the efficacy of interventions to improve health literacy and health behaviours: a systematic review. *BMC Public Health*.

Whalen, C. J., et al. (2015). The fiscal multiplier and economic policy analysis in the United States. Congressional Budget Office.

Wikle, S., et al. (2022). States can reduce Medicaid's administrative burdens to advance health and racial equity. Center on Budget and Policy Priorities.

Yao, X., et al. (2016). Effect of adherence to oral anticoagulants on risk of stroke and major bleeding among patients with atrial fibrillation. *Journal of the American Heart Association*.

Ye, X., et al. (2013). Lower risk of major cardiovascular events associated with adherence to colesevelam HCl. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*.

Yong, P. L., et al. (2010). The healthcare imperative: Lowering costs and improving outcomes. National Academies Press.

Zhao, Y., et al. (2014). Associations between statin adherence level, health care costs, and utilization. *Journal of Managed Care & Specialty Pharmacy*.