List Price Increases for Medications Lead to Higher Costs for Consumers

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According to research from GoodRx, the list price for all drugs has increased about 32% since 2014. Our research echoes news reports and academic research that also show that medication prices are increasing.

However, analyzing drug pricing by using the list price, which is the price a manufacturer sets for a drug, has not been without controversy. Some researchers have argued that using drug list prices is flawed, and that these prices do not accurately represent the revenue that drug manufacturers collect for each drug sold.

But in the confusing world of drug pricing, where prices are shrouded in mystery through the changing of hands of middlemen, the list price remains one of the most comprehensive public sources of information that we have. List prices represent the first benchmark price of a medication, and increases can hurt the wallets of the more than 30 million uninsured and 40 million underinsured patients in the U.S.

In an effort to observe the impact of list prices on consumers, GoodRx Research used information on available drug prices, including the list price, National Average Drug Acquisition Cost (NADAC), and cash price (also known as the usual and customary price or U&C price). The NADAC and cash prices are what retail pharmacies and consumers pay for prescription medications, respectively.

Overall, our research shows that list price increases *do,* in fact, lead to price increases on brand drugs for consumers. Specifically, we found that:

- List prices for all drugs have increased by 32% since 2014.
- Over 90% of the most popular brand drugs have increased in list price at least once since 2014.
- Since 2014, 89% and 47% of list price increases trickled down to NADAC and cash price increases that were as high or higher in magnitude, respectively.

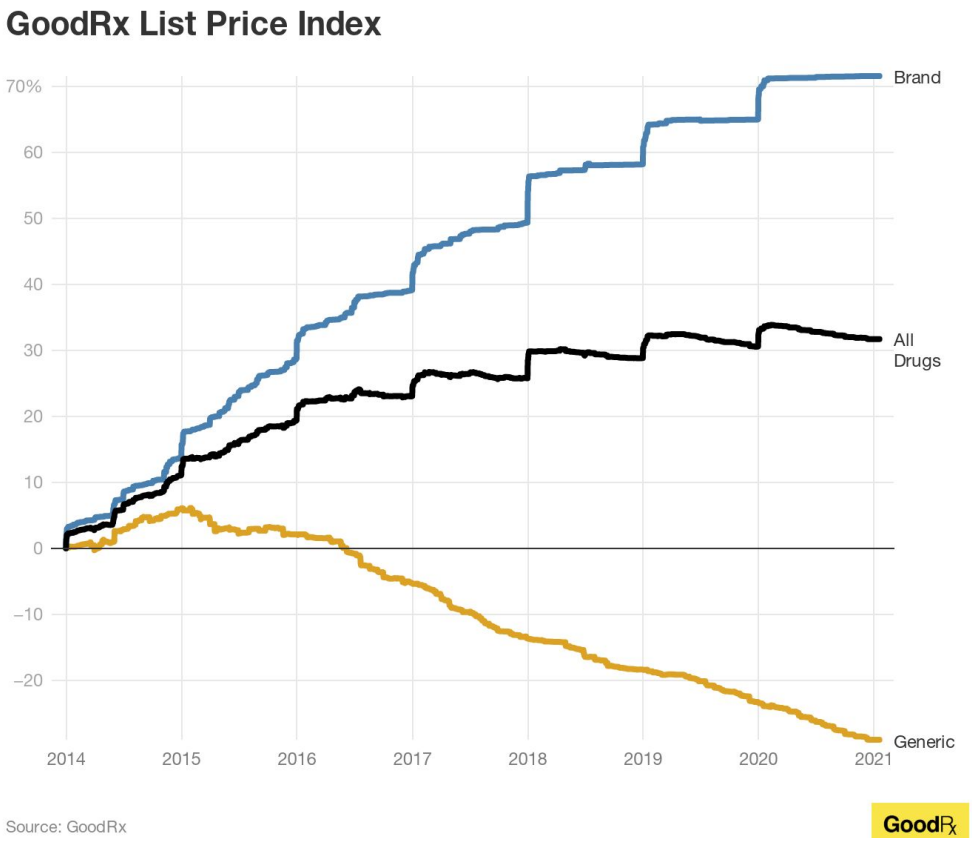
This report walks through the arguments for and against using list prices. It then shows that despite the debate over list prices, it's clear that increases in these prices can cause a ripple effect that ends up costing consumers more at the pharmacy counter.

List price, a controversial topic

When reports state that drug prices are rising, they are often referring to the list price of a drug (also known as the wholesale acquisition cost or WAC). The list price is the price that a manufacturer sets for a drug.

GoodRx Research developed a list price index to track prices for all drugs over time. Overall, we found that the list price has increased 32% since 2014, mostly driven by the price increases in

brand drugs. In fact, it is almost customary for drug manufacturers to raise list prices in both January and July of each year.



Get detailed information on the prices in this chart here.

Echoing findings from the GoodRx List Price Index, academic research has also shown that list prices for brand drugs have been increasing. For example, a study in Health Affairs reported that list prices for branded oral drugs grew 9.2% annually from 2008 to 2016 and that the rising cost of brand drugs was due to existing drug inflation.

However, some researchers discredit list prices as a useful measure of drug pricing. Their argument? List prices fail to account for discounts, rebates, and fees that the manufacturers dish out. Therefore, list prices don't reflect the revenue that manufacturers actually receive for their drugs.

Those who are against using list price often argue that using net prices, which account for all the rebates that are given out, more accurately depicts the price of a drug. In fact, research on net prices does show a lower price increase — a recent IQVIA report showed that while the brand drugs list price grew 6.9% in 2017, net prices actually only grew 1.9%. Another study

concluded that from 2007 to 2018, list prices for select brand drugs grew 159% and net prices grew 60%, but that manufacturer discounts did not completely offset increases in list prices.

Perhaps one of the most compelling arguments against using list price to track price increases is the fact that the list price may not be what a patient pays at the pharmacy counter, especially if insurance shields them from paying the actual retail price of the drug. Even still, a 2020 study published in JAMA found that list price increases for certain brand medications were associated with large increases in patient-out-of-pocket costs and insurer payments.

The reality is that the *real* price of a drug can be tough to pinpoint. Drug manufacturers remain closed-lipped about the rebates that they give out, leaving researchers with limited and conflicting information on the patterns of drug pricing. List price still remains one of the most widely accessible sources of information to describe drug pricing patterns in the United States.

But do these prices trickle down to consumers? In short, yes, but in the opaque world of drug pricing, nothing is simple. Let's review the research tracking exactly how list prices affect consumers.

Almost all list price increases for brand drugs can trickle down to consumers

In addition to list prices, GoodRx also tracks the National Average Drug Acquisition Cost (NADAC) and cash prices (also known as usual and customary prices or U&C prices). These prices are what we call downstream prices, or the prices of drugs that occur down the supply chain after the list price is set. Theoretically, changes in list prices could have a domino effect on these prices.

The Centers for Medicare & Medicaid Services (CMS) collects NADAC data, and it is reflective of the invoice prices retail community pharmacies pay to acquire drugs. Cash price is the full retail price of a prescription medication, or what you would pay for a drug at the pharmacy counter without insurance. It's the baseline price that a pharmacy will sell a drug for.

In order to see how much list prices impact these downstream drug prices, GoodRx Research observed the relationship between list price changes and NADAC or cash price changes for brand drugs. First, we selected popular brand drugs (the top 100) and identified all list change events since 2014. For each list change event, we observed the price change of the NADAC and cash price 1 month after.

We found that 92% of the top 100 brand drugs had a list price change event since 2014. In total, we identified 1,973 price change events, almost all of which (1,962) were price increases rather than price decreases.

We also found that these price changes saw corresponding changes to NADAC and cash prices in the following ways:

- When focusing specifically on the price increase events, we found 96% and 95% of list price increases resulted in price increases for the drug's NADAC and cash price 1 month later, respectively.
- We found that downstream price increases are just as substantial as the list price increases themselves. Turns out that 89% and 47% of list price increases trickled down to NADAC and cash price increases 1 month later that were as high or higher in magnitude, respectively.
- The average list price increase was 8.4%, with a corresponding average NADAC price increase of 8.1% and a corresponding average cash price increase of 7.4%.

To further illustrate some of our findings, the table below displays some selected list price increases on January 1, 2020, their corresponding NADAC and cash price changes, and their coverage information for both commercial insurance and Medicare. As shown, the brand drugs can be well covered by insurance, but it can vary.

For example, Pristiq, a drug with a cash price of $354 that is used to treat depression, saw a list price increase of 3%. It's covered for a majority of commercial insurance users but is only covered for 2% of Medicare enrollees. On the other hand, Eliquis, a drug with a cash price of $565 that is used to lower the chance of stroke, saw price increases of 6% across the board, but is very well covered by insurance.

It is also important to remember that while insurance may cover a drug, some plans place restrictions on coverage like prior authorization, quantity limits or step therapy that can limit access. And if your drug is covered under coinsurance, you will likely be more exposed to the price increases of that drug.

Select List Price Changes on January 1, 2020

Drug name	Cash price	List price change	NADAC price change	Cash price change	Commercial insurance coverage	Medicare coverage
Anoro Ellipta (60 blisters inhaler)	$507	3%	3%	3%	91.5%	98.8%
Atrovent HFA (12.9g inhaler)	$519	6%	6%	6%	94.6%	80.8%
Breo Ellipta (60 blisters inhaler)	$436	3%	3%	4%	91.1%	92.9%
Brilinta (90mg tablet)	$463	3%	3%	3%	97.9%	100.0%
Bydureon (4 pens kit)	$866	3%	3%	3%	79.8%	93.1%
Celebrex (200mg capsule)	$483	5%	5%	3%	60.6%	0.3%
Combivent (120 doses respimat inhaler)	$517	6%	6%	6%	93.3%	99.5%
Creon (24000 units capsule)	$725	7%	7%	8%	97.3%	97.9%
Eliquis (5mg tablet)	$565	6%	6%	6%	92.6%	96.1%
Farxiga (10mg tablet)	$611	3%	3%	3%	67.0%	64.2%
Flovent (110mcg hfa inhaler)	$309	3%	3%	3%	98.6%	92.2%
Jardiance (25mg tablet)	$630	6%	6%	6%	96.4%	98.1%
Latuda (40mg tablet)	$1,546	5%	5%	4%	86.0%	100.0%
Lyrica (150mg capsule)	$601	5%	5%	2%	75.5%	27.3%
Oxycontin (10mg tablet)	$327	5%	5%	4%	60.8%	22.6%
Pradaxa (150mg capsule)	$550	6%	6%	6%	87.0%	80.3%
Premarin (0.625mg tablet)	$223	5%	5%	4%	92.8%	69.6%
Prempro (28 tablets package)	$253	5%	5%	4%	91.0%	50.1%
Pristiq (100mg tablet)	$354	3%	3%	4%	60.2%	2.2%
Proair (8.5g hfa inhaler)	$91	3%	3%	2%	85.0%	34.9%
Qvar (10.6g redihaler)	$307	6%	6%	6%	95.3%	14.1%
Spiriva (30 capsules handihaler)	$544	6%	6%	6%	85.2%	61.4%
Suboxone film (8mg/2mg film)	$159	5%	5%	6%	66.7%	41.3%
Symbicort (120 doses inhaler)	$432	3%	3%	3%	91.1%	84.5%
Synthroid (100mcg tablet)	$56	5%	5%	6%	88.7%	92.1%
Tradjenta (5mg tablet)	$558	6%	6%	6%	77.0%	93.9%
Truvada (200mg/300mg tablet)	$2,204	5%	5%	5%	100.0%	100.0%
Vimpat (200mg tablet)	$1,142	3%	3%	3%	90.4%	100.0%

The cash price shown for a drug is for a commonly filled quantity and is the average for the month of January. Commercial Insurance coverage represents the share of people with unrestricted access to the drug as of January 2020. Medicare Coverage represents the share of enrollees with access to the drug as of 2020 Q1.

Source: GoodRx | CMS Prescription Drug Plan Formulary, Pharmacy Network, and Pricing Information Files

GoodRx

Get detailed information on the prices in this chart here.

Overall, we found that there is a statistically significant, positive correlation between a list price change and a corresponding NADAC and cash price change 1 month later. See our technical note below for more details.

Summing it up: Brand drug list price increases hurt consumers

Irrespective of the points and counterpoints of using list prices to describe drug pricing changes, one thing remains clear: List price increases for brand drugs are highly correlated with NADAC and cash price increases. This means that pharmacies are buying popular brand medications at increasingly higher prices and selling them at increasingly higher prices.

And while net price increases are lower than list prices increases due to the rebates that manufacturers give out, it is important to remember that the discounts that manufacturers provide are often not directly given to the consumer. Instead, the discounts are passed to other players such as insurance companies or pharmacy benefit managers.

The bottom line: Those who are not shielded by insurance are paying increasingly higher prices for drugs — either the list price or a price directly tied to the list price. This means many Americans are exposed to list price increases, including the roughly 30 million uninsured and 40 million underinsured people, the growing share of people on high-deductible plans, the Medicare beneficiaries who are exposed to the donut hole, and those who lack coverage or are covered for a brand drug on coinsurance tier

So regardless of the arguments over list prices, at the end of the day, patients are the ones losing out.

Methodology

The GoodRx List Price Index

The GoodRx List Price Index is used to track the evolution of the prices of prescription drugs in the United States. This index is based on published list prices as set by the manufacturers of prescription drugs, and the prescription drug mix as dispensed by community retail pharmacies.

The list price index is calculated daily, taking into account day-to-day changes in list prices and quarterly changes in the prescription drug mix. The index is based on the prescription drug mix as dispensed, so price changes in high-volume and high-cost drugs will have more impact on the index than low-volume and low-cost drugs.

The GoodRx List Price Index uses a nationally representative sample of prescriptions from each quarter to estimate the drug mix across all community retail pharmacies (not fills using GoodRx) for that time period. The drug mix is used to calculate the average price change of all drugs and is updated every quarter. All drugs are identified using an internal drug mapping database and defined as either brand or generic.

Ranking the most popular brand drugs (top 100) for cohort inclusion

To rank the top 100 brand drugs, we used a representative sample of U.S. prescription fills at community retail pharmacies (not fills using GoodRx). We excluded fills for specialty or HCP-administered drugs and fills for any medical supplies/devices or vaccinations. We used all fills since 2014 and ranked the top 100 brand drug names. For the top 100 brand drug names, we included all formulations of a drug. For example, Vimpat is included as a top-ranked drug, and we subsequently included all formulations including the tablets and bottle of oral solution. All drugs are identified using an internal drug mapping database and defined as either brand or generic.

Prices

1) ***List price:*** *We used the same data source as mentioned in the GoodRx List Price Index section. To identify list price change events, we generated a list price index for an individual drug. To do so, we took into account day-to-day changes in list prices. We tracked list prices from December 31, 2013 until the current day.*

2) ***NADAC price:*** *The NADAC price is obtained from the Centers of Medicare & Medicaid Services (CMS). CMS conducts monthly nationwide surveys of retail community pharmacies to provide information on the invoice prices of all covered outpatient drugs by retail community pharmacies. To track NADAC prices for drugs, we generated a NADAC price index for an individual drug, taking into account monthly changes in*

NADAC prices. We tracked NADAC prices from December 31, 2013 until the current day.

3) ***Cash price:*** *We obtained the cash price of a drug from our representative sample of U.S. prescription fills at community retail pharmacies. To track cash prices for drugs, we generated a cash price index for an individual drug, taking into account monthly changes in cash prices. We tracked cash prices from December 31, 2013 until the current day.*

Identifying list price change events and their corresponding NADAC or cash price change (downstream price change)

We identified all list price change events for top brand drugs by observing a drug's individual list price index and identifying the days where the absolute percent change in the list price index was greater than 1% when compared to the day prior. A list price increase event is then defined as a positive percent change in list price index compared to the day before. We included all price change events from 2014 until the present day. For each list price change event, we assigned a percent change in price for both the NADAC and cash price. We did this by observing the percent change in an NADAC and cash price index from 1 month before the list price change to 1 month after the list price change. For example, if the list price change for a drug happened on July 1, 2019, we observed the percent change of the NADAC and cash price index from June 1, 2019 to August 1, 2019.

Analysis

1) ***Defining a list price increase that saw a corresponding downstream price increase:*** *For each list price increase event, we conservatively counted that the increase was passed down to a NADAC or cash price increase if the percent change in price 1 month later was greater than 1%.*

2) ***Defining a list price increase that saw a corresponding downstream price increase that was as high or higher in magnitude:*** *We defined a list price percent increase event with a corresponding NADAC or cash price increase as high or higher in magnitude if the percent change was within 0.1 percentage points of the list price percent change or greater than the list price percent change.*

3) ***Average list price increase and its corresponding average NADAC or cash price increase:*** *We only looked at the list price increase observations and its corresponding NADAC or cash price changes. We then took an average across all observations for the list price increase, NADAC price change, and cash price change.*

Insurance coverage information

1) ***Commercial insurance data:*** *GoodRx licensed data on commercial insurance. The data is a representative sample of copay and coverage information for 406 commercial insurance plans. We obtained the extract from January 2020.*

2) ***Medicare coverage data:*** *All Medicare analyses used the Centers for Medicare & Medicaid Services (CMS) Prescription Drug Plan Formulary, Pharmacy Network, and Pricing Information Files (2020Q1 files). In addition, information about plans' enrollment was obtained from the CMS website. We assigned the number of enrollees to each plan and determined what drugs were covered under a plan's formulary. We then summed across all plans by drug to determine what share of enrollees were covered for a specific drug.*

Technical note

To test the association between list price change events and the corresponding NADAC or cash price change, we regressed NADAC percent price change and cash percent price change, individually, on list percent price change. For sensitivity, we tested two other models with different inclusion criteria. The models we tested are outlined below:

1) ***NADAC and cash price change regressed on list price change (base model):*** *For the base model, we regressed NADAC and cash price change, individually, on list price change.*

$$Downstream\ Price\ Change_{b,d+30} = \alpha + \beta_1(List\ Price\ Change_{bd}) + \varepsilon_{bd}$$

$$where\ brand\ drug\ b \in \{abilify, ...zetia\}\ and\ date\ d \in \{02/14/2014, ...07/01/2020\}$$

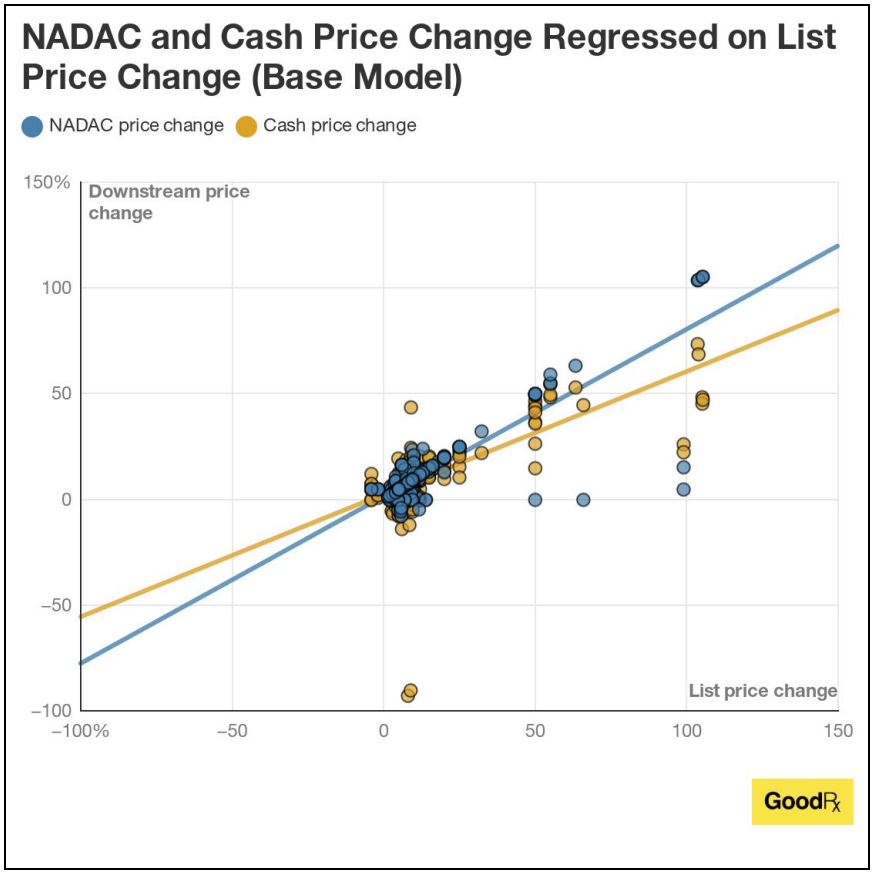
2) ***NADAC and cash price change regressed on list price change (claim count threshold):*** *For our first sensitivity, we regressed NADAC and cash price change, individually, on list price change. However, we set a claim count threshold for inclusion of observations. Specifically, we set the cutoff at the 10th percentile of claim count for all observations. The claim count is the monthly claim count for a specific drug obtained using our representative sample of U.S. prescription fills at community retail pharmacies.*

3) ***NADAC and cash price change regressed on list price change (claim count threshold and limited to list price change events less than 20%):*** *For our second sensitivity, we regressed NADAC and cash percent price change individually on list price change. However, we used the same claim count threshold outlined above, and only included list price change events that were less than 20%.*

In total, we ran six models — three models with NADAC price change as the outcome and three models with cash price change as the outcome. As outlined in our methodology above, we looked at NADAC and cash price changes 1 month after the list price change event. However, we also looked at the model results using NADAC and cash price 3 months after the list price change event. The aforementioned models are not reported in this document because the results were very similar.

All six models show a positive, statistically significant (at the 0.05 level) relationship between list price change events and NADAC and cash price change events. When limiting the data to higher claim count drugs and a list price change less than 20% (Model 3), we see that list price changes are almost completely passed down into NADAC and cash price changes. The specific model outputs are displayed below.

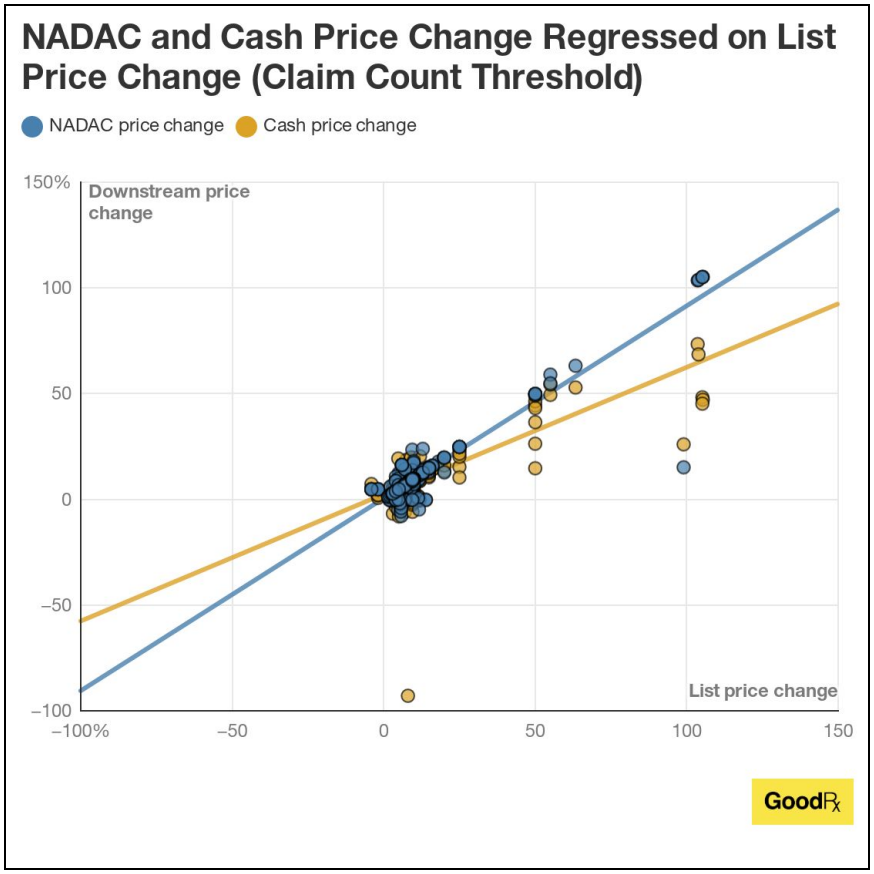
1) NADAC and cash price change regressed on list price change (base model)



Get detailed information on the prices in this chart here.

	NADAC			Cash		
	Coefficient	Std. error	p-value	Coefficient	Std. error	p-value
Intercept	1.51	0.12	0.00	2.55	0.15	0.00
List price change	0.79	0.01	0.00	0.58	0.01	0.00
Sample size	1,973			1,973		
R-squared	0.72			0.48		

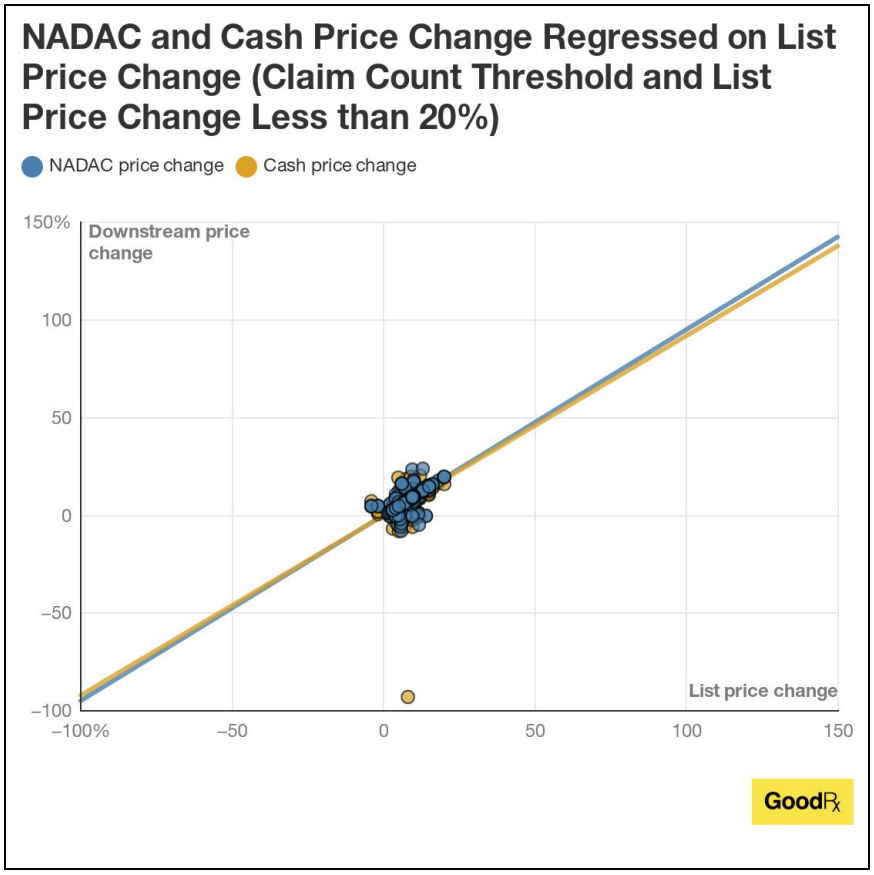
2) NADAC and cash price change regressed on list price change (claim count threshold)



Get detailed information on the prices in this chart here.

	NADAC			Cash		
	Coefficient	Std. error	p-value	Coefficient	Std. error	p-value
Intercept	0.55	0.10	0.00	2.51	0.13	0.00
List price change	0.91	0.01	0.00	0.60	0.01	0.00
Sample size	1,774			1,774		
R-squared	0.85			0.58		

3) NADAC and cash price change regressed on list price change (claim count threshold and limited to list price changes less than 20%)



Get detailed information on the prices in this chart here.

	NADAC			Cash		
	Coefficient	Std. error	p-value	Coefficient	Std. error	p-value
Intercept	0.22	0.13	0.09	0.03	0.22	0.89
List price change	0.95	0.02	0.00	0.92	0.03	0.00
Sample size	1,753			1,753		
R-squared	0.65			0.39		