Show Me The Display!

A Review of an ESI Study of Consumer-Directed Pharmacy Benefits

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Introduction

Recently, Express Scripts, Inc. (ESI) published a study entitled **"What Happens to Prescription Drug Use after Consumer Directed Health Plan Enrollment?**"[1] What happened was that there was no significant move by enrollees to replace costly brands with cheaper generic drugs and no significant move to switch from retail to cheaper mail order delivery. Significant cost-saving was achieved, but it was via of lower overall drug usage and higher member out-of-pocket costs, both problematic results.

The problem with this study is not in its design, the results, or conclusion that "…enrollees do not appear to be taking advantage of all the savings opportunities available to them". The problem is that it is impossible to evaluate the conclusion unless the ESI researchers give us detail on just information was presented to enrollees.

There is little doubt that enrollees are presented with information about generic substitution. But, to what extent were they presented with information about therapeutic interchange – the choice to use of a generic drug that is a therapeutic, but not bioequivalent, to a more costly brand drug? omeprazole for Nexium? simvastatin for Lipitor? ibuprofen for Celebrex?

Also, it seems obvious that ESI presented information about the savings possible from switching to mail order delivery. But, were enrollees presented with real market prices of various retail and independent mail order pharmacies as opposed to ESI reimbursement rates at their own captive mail order operations?

If it turns out that enrollees were not presented with the types of savings opportunities suggested above, then we would conclude that there was a failure in plan design rather than in enrollee decision-making.

Is Consumer-Directed Healthcare a Threat to the Big 3 PBMs and Chain Drugstores?

We believe that that the information issue is even greater when the plan is managed by one of the Big 3 PBMs – Medco Health Solutions, Express Scripts, and CVS-Caremark. This is due to the conflicted nature of their business model, summarized in our paper "Pharmacy Benefit Managers as Conflicted Countervailing Powers" .[2]

The Big 3 PBMs receive rebates from Pharma for abstaining from therapeutic interchange of generics that are therapeutically equivalent to more expensive blockbuster "me too" drugs like Lipitor and Nexium. The power to switch prescriptions by PBMs is greatly reduced in consumer-directed plans. They can no longer threaten Pharma with adverse switches unless paid rebates to abstain.

But, PBMs do have discretion over the information presented to enrollees of consumer-directed plans. They still could threaten to display damaging information about therapeutic equivalents to such drugs as Lipitor or Nexium unless paid rebates to withhold information. Because of Big 3 PBM bias against brand-to-generic therapeutic interchange, the conclusions coming from any study of a consumer-directed health plan (CDHP) involving one of the Big 3 can only be critically evaluated after examining just what information the PBM saw fit to present to enrollees.

The Big 3 PBMs now generate a substantial portion of their gross profits from mail order generics. Their business model is full of cross subsidies where high margins on rebates and mail order generics subsidize low to nil margins on claims processing, disease management, and mail order

brands. We have presented the case elsewhere that the price superiority of the captive mail order operations of the Big 3 PBMs is not due to dispensing and procurement scale economies relative to chain drugstores like Walgreen. PBMs "hold up" retail pharmacy reimbursements because this allows them to offer lower mail order prices without suffering margin erosion.[3]

In turn, the hold-up of retail prescription reimbursements has enabled chain drugstores like Walgreen to engage in "competition by convenience" characterized by aggressive store growth. This aggressive store growth has outpaced the growth of front stores sales, depressing the net profitability of the front store.[4] The chains can live with this because the lack of front store profitability is covered by the high net profitability of the pharmacy in the back.

Both large chain drugstores and the Big 3 PBMs are now locked into business models that rely on high margin generics subsidizing other businesses. As long as the bulk of prescriptions are covered by traditional insurance plans managed by the Big 3 PBMs, generic prescriptions filled at retail or mail order are protected from price competition. Otherwise, the chain drugstores and the Big 3 PBMs might be forced to abandon their reliance on high margins generics to subsidize other businesses and would be forced to raise prices elsewhere.

In the case of the chains, they would be forced to raise prices on convenience goods sold in the front store, making them vulnerable to competition from mass merchants like Wal-Mart. In the case of the Big 3 PBMs, they would be forced to raise prices on claims processing, disease management, and mail order brand drugs, make them vulnerable to competition from other smaller PBMs or cause clients to "disintegrate" PBM functions. Formulary design and network management would be brought in-house. Claims processing and mail order would be outsourced to application service providers and independent mail order pharmacies.

Consumer-directed plans are a threat to chain drugstores and the Big 3 PBMs if enrollees are presented with a wide array of real market prices, instead of artificial PBM reimbursement rates.

Mass merchants such as Costco and Wal-Mart do not depend on their pharmacies subsidizing other lines of business. Independent mail order pharmacies such as Wellpartner and drugstore.com do not depend on generics to subsidize other products. As a result, one might expect that mass merchants and independent mail order pharmacies to be competitive with drugstore chains and captive mail order pharmacies despite having a smaller scale of operations. Later in this paper, we will present real market prices available online that supports this contention.

The extent to which enrollees of a CDHP are presented with real market prices, rather than PBM reimbursement rates, is critical in evaluating any study of the effect of such plans. This is especially true for plans managed by one of the Big 3 PBMs. We expect the Big 3 to limit the variety of pharmacy options and prices due to absolute necessity of protecting their own captive mail order operations from price competition. To allow CDHP enrollees the chance to order generics from independent mail order pharmacies at market prices would be detrimental to the current business model of the Big 3 PBMs.

The Express Scripts Study

Express Scripts, Inc. (ESI) has published a study called **"What Happens to Prescription Drug Use after Consumer Directed Health Plan Enrollment?**" The design of the study adhered to the highest scientific standards. There were careful controls to make sure that the only significant change over time to the sample was a switch to a CDHP. There was also an effort to measure the effect of the consumer-direct plan against a baseline – a sample from the same population that continued with the traditional plan throughout the time frame of the study. The results, summarized in the following table, were statistically significant at the 99% level.

Company A	Pre-CDHP Jan-Sept 2005	Post-CDHP Jan-Sept 2006	Change	%
Total Rx Claims	7.47	7.14	-0.33 *	-4.4%
Brand Claims	4.18	3.16	-0.57 *	-13.7%
Generic Claims	3.28	3.53	0.25 *	7.5%
* significant at 99%				

Company A	Pre-CDHP Jan-Sept 2005	Post-CDHP Jan-Sept 2006	Change	%
Home Delivery Use Rate	49.40%	47.40%	-2.2	-4.4%

Based on these results, the ESI researchers were quite justified in concluding that "CDHP enrollees do not appear to be taking advantage of all the savings opportunities available to them. CDHP enrollees did not consistently increase their use of Home Delivery for chronic medications. Finally they curtailed medication use instead of consistently substituting generic for brand medications "(p.11)

The problem with the ESI study is not its design, the significance of the results, or the conclusions drawn. The problem is that the ESI researchers utterly failed to disclose just what treatment options were presented to enrollees.

We would ask the ESI researchers the following questions:

Were enrollees presented with prices comparisons of generics that are generally accepted therapeutic equivalents to such drugs as Lipitor and Nexium?

Were enrollees presented with price comparisons that included over-the counter drugs such as omeprazole, loratadine, narproxen, and ibuprofen?

Were enrollees presented with price comparisons that included herbal drugs like valerian and Estroven?

Were enrollees presented with market prices of generic prescriptions dispensed by mass merchants like Costco and Wal-Mart?

Were enrollees presented with market prices of generic prescriptions dispensed by independent mail order pharmacies like Wellpartner or drugstore.com?

It is impossible to evaluate the ESI results and conclusion without answers to these questions.

Show Me the Display!

Ideally, we would want the ESI researchers to present details about the savings opportunities in key therapeutic classes characterized by blockbuster brand drugs facing competition from generics generally accepted to be therapeutic equivalents.

As it turns out, these classes also happen to be most of same classes the ESI researchers focused on anyway: statins, proton pump inhibitors and ACE/ARBs. We would have added 2nd generation anti-histamines, but would not have included anti-depressants because of the problematic nature of making any generalizations about the therapeutic equivalency of anti-depressants.

Also, we would have liked information about the managed care techniques applied to the baseline sample. Other than co-payments by tiers, the ESI researchers presented no information about the types of techniques used to generate saving in the traditional plan. Specifically, what brands in the above mentioned classes were subject to step therapy, quantity limits, and prior authorization requirements? If it turn out that controls were extensive, it becomes easier to understand why the CDHP in this study failed to make a difference.

Unless a physician indicates that a prescription be “dispensed as written”, it is legal for pharmacists in many states to substitute automatically a generic of an off-patent brand. Most traditional pharmacy benefit plans reinforce this switch by making it a requirement. We assume that all savings opportunities via generic substitution were mandated as well in the CDHP, rather than left up to enrollee discretion. Nevertheless, it would have nice if the ESI researchers confirmed this.

Presented below a series of displays that highlight the types of saving opportunities we would expect a PBM, or any other plan manager, to present enrollees of a CDHP. For the displays of generic substitution and therapeutic interchange involving only prescription drugs, we used actual on-line prices of Costco, a mass-merchant that does not depend on its pharmacy to subsidize other operations. For the displays of therapeutic interchange involving over-the-counter and herbal drugs, we used actual on-line prices of Walgreens.

The display below is typical of the cost-saving opportunities of generic substitution. But, as we said before, it is likely that generic substitution is not left to enrollee discretion in a CDHP. This display itself is unlikely to affect choices of enrollees.

Therapeutic Class: Statins	package size		
Name (manufacturer)	30	50	100
ZOCOR 20 MG TABLET (MSD)	$141.38	$233.12	$465.46
Generic Substitution			
simvastatin 20 MG TABLET (AUR)	$10.66	$14.38	$23.14
Source:Costco.com 3/30/07			

Therapeutic Class: SSRIs	package size		
Name (manufacturer)	30	50	100
PROZAC 10 MG PULVULE (DIS)	$139.16	$229.30	$457.51
Generic Substitution			
fluoxetine 10 MG CAPSULE (SAN)	$5.00	$5.74	$10.00
Source:www.costco.com 3/30/07			

Source: www.costco.com, 3-30-07

The real potential for consumer-directed plans relative to tradition plans is through therapeutic interchange. Consider the following display of therapeutic interchange using Costco prices. The cost savings are enormous. If we knew that enrollees in the ESI study were presented with such information, and could actually make purchase at these prices, then would have concurred with the pessimistic conclusions of the ESI researchers. But, if enrollees were not give information about the cost-saving potential of the switches suggested in the display below, then we must conclude that ESI study was a investigation of a plan not given a fair chance to succeed.

Hypothetical Displays of Savings From Therapeutic Interchange

Therapeutic Class: Cox-II NSAIDs		package size	
Name (manufacturer)	30	50	100
CELEBREX 400 MG CAPSULE (SEA)	$276.01	$545.10	$810.17
Consult with You Physician about this Therapeutic Interchange			
ibuprofen 400 MG TABLET (PAR)	$6.12	$7.03	$8.84
narproxen 500 MG TABLET (TEV)	$5.00	$6.10	$10.00

Therapeutic Class: Statins		package size	
Name (manufacturer)	30	50	100
LIPITOR 20 MG TABLET (P-D)	$110.54	$182.04	$360.60
Consult with You Physician about this Therapeutic Interchange			
simvastatin 20 MG TABLET (AUR)	$10.66	$14.38	$23.14

Therapeutic Class : Proton Pump Inhibitors		package size	
Name (manufacturer)	30	60	90
NEXIUM 20 MG CAPSULE (AST)	$138.44	$273.49	$408.54
Consult with You Physician about this Therapeutic Interchange			
omeprazole 20 MG CAPSULE DR(KRE)	$21.33	$37.85	$54.56

Source: www.costco.com, 3-30-07

Therapeutic Interchange Involving OTC Drugs

Most statistics of drug usage takes into account only *prescription* drugs. If a technique like raising co-payments or moving to a CDHP causes usage to decline, the result is deemed problematic by researchers.

But, recently there have been two prominent instances of drugs in top 10 selling therapeutic classes that have become available over-the-counter (OTC) after losing patent protection. One instance occurred in the anti-ulcer therapeutic class where Prilosec become available as Prilosec OTC and various OTC versions of omeprazole, the generic version of Prilosec. The other instance was in the 2nd generation anti-histamine class where Claritin became available as OTC Claritin and various OTC versions of loratadine, the generic version of Claritin.

There is one additional therapeutic class that should be mentioned. That is anti-arthritis COX II inhibitor class dominated by brand Celebrex. While there are no other COX II inhibitors that have lost patent protection, there are OTC generics that are generally accepted therapeutic equivalents – ibuprofen and naproxen.

A broader measure of usage is needed in studies where switches to OTC drugs might be significant. We believe this is the case in any study of a CDHP. The ESI researchers were aware of potential flaws in their measures of usage.

> ” The utilization-rate differences between the CDHP and traditional insurance enrollees were particularly marked in the anti-ulcer class, probably reflecting the availability of over-the-counter alternatives for this class” (p.7)

The following table is a hypothetical display of cost saving potential of therapeutic interchange involving non-prescription OTC drugs. It is doubtful that anything like this was made available to enrollees in the ESI study. But, to give consumer-directed plans a fair chance to succeed, such a display should be offered.

Hypothetical Displays of Non-Prescription Therapeutic Interchange

Therapeutic Class: PPIs	Count
Name Brand Prescription	30
NEXIUM 20 MG CAPSULE	$156.99
Consult with Your Physician about this Non-prescription pharmaceutical alternative	
Prilosec OTC (omeprazole) 20 mg TAB	$21.99

Therapeutic class: 2nd generation antihistamines	Count
Name Brand Prescription	90
CLARINEX 5 mg TAB	$274.59
Consult with Your Physician about this Non-prescription pharmaceutical alternative	
Loratadine OTC 10 mg TAB	$29.99

Therapeutic Class: Anti-arthritis	Count
Name Brand Prescription	90
CELEBREX 200 MG CAPSULE	$274.69
Consult with You Physician about this Non-prescription pharmaceutical alternative	
ibuprofen 200 MG TAB	$6.99
Aleve (narproxen sodium) 220 MG TAB	$9.99

Source: www.walgreens.com/library/finddrug/druginfosearch.jsp?cf=ln, 5-3-07

Therapeutic Interchange Involving Herbal Alternatives

Enrollees in CDHPs are highly motivated to seek out alternatives to costly prescription brand drugs. Managers of CDHPs should consider presenting enrollees with price comparisons

involving herbal alternatives to brand drugs. While this might understandably not be something that an existing PBM might consider, nevertheless well-respected health experts like the Mayo Clinic and Harvard Medical School do discuss herbal alternatives to traditional drugs on their websites.

In the future, we expect that there will be a branch of consumer-directed healthcare where treatment options are not chosen by experts, but by Web 2.0 social networks that rank treatment options.[5] This "wisdom of crowds" approach will almost assuredly rank herbal drugs as a viable treatment options. Below is a hypothetical display of savings opportunities available through therapeutic interchange involving herbal drugs. As in the case of OTC drugs, a decline in usage by CDHP enrollees might not be so problematic if it involves switches displayed below.

Hypothetical Displays of Herbal Therapeutic Interchange

Therapeutic Class: Insomnia	Count
Name Brand Prescription	90
AMBIEN 5 MG TAB	$399.49
LUNESTA 3 MG TAB	$401.89
SONATA 5 MG CAP	$359.89
ROZEREM 8 MG TAB	$332.89
Consult with Your Physician about this Herbal alternative	
valerian 400 MG TAB	$4.99

Therapeutic class: menopause	Count
Name Brand Prescription	30
PREMARIN .3 MG TAB	$46.99
Consult with Your Physician about this Herbal alternative	
Estroven (soy and black cohosh)	$12.99

Source: www.walgreens.com/library/finddrug/druginfosearch.jsp?cf=ln, 5-3-07

The Display of Pharmacy Options

The ESI researchers disclosed nothing about the pharmacy options and related prices offered to enrollees. Presumably, the prices were proportional to reimbursement rates Express Scripts paid to its retail network and captive mail order pharmacy. Presumably, enrollees were presented with the cost-saving opportunities of switching to mail order. But, nothing was disclosed about the percentages. As with utilization and usage, the results were significant, and the conclusion was disappointing. Enrollees fail to avail themselves of lower cost mail order prescriptions.

But, were "cash-paying "enrollees allowed to purchase drugs from any pharmacy, especially from independent mail order pharmacies? And if so, were they presented with displays that compared market prices across a wide spectrum of pharmacy options? If not, then we believe that the ESI study was a study of a CDHP not give a fair chance to succeed.

In a traditional plan, coverage is limited to prescriptions filled by pharmacies in the plan network. PBMs generally create a very expansive network of retail pharmacies, comprising around 90% of the all pharmacies in the area. This includes chain drugstores, mass merchants, chain grocery stores, and small independents. PBMs argue that their size allows them to get better rates from retailers than "cash-paying" individuals paying market prices. They also argue that they can achieve the best results for clients, via scale economies, by funneling all mail order prescriptions to a single entity – their own captive operations.

We believe this is not the case as summarized in our paper "Pharmacy Benefit Managers as Conflicted Countervailing Powers". [1] One of the major concerns with consumer-directed healthcare is that the purchasing power of managed care payers would be squandered through the disintermediation of purchases. While this might be the case in the medical market, we believe it not to be the case in the pharmacy market due to the conflicted business model of the Big 3 PBMs. We believe that "cash-paying" individuals have the potential to buy prescriptions,

especially generics, at lower prices than the reimbursement rates PBMs present to clients. But, this potential can only be realized if CDHP enrollees are presents with a full array of pharmacy options and related market prices.

The following display demonstrates the cost-saving potential of giving consumers a wider array of pharmacy options. The prices are actual prices taken from five online pharmacies on 3-30-07. It includes the following companies:

Costco – a large mass merchant

RxSolutions – the captive PBM of PacifiCare that is chartered to go after outside business.

Wellpartner – an independent mail order pharmacy

Drugstore.com - an independent mail order pharmacy

Walgreen – a very large retail drugstore chain with mail order capability.

List of URLs of Online Pharmacy Survey:

Costco: http://www.costco.com/

RxSolutions: http://rxsolutions.com/a/discountrx/discountrx.asp

Wellpartner: http://www.wellpartner.com/

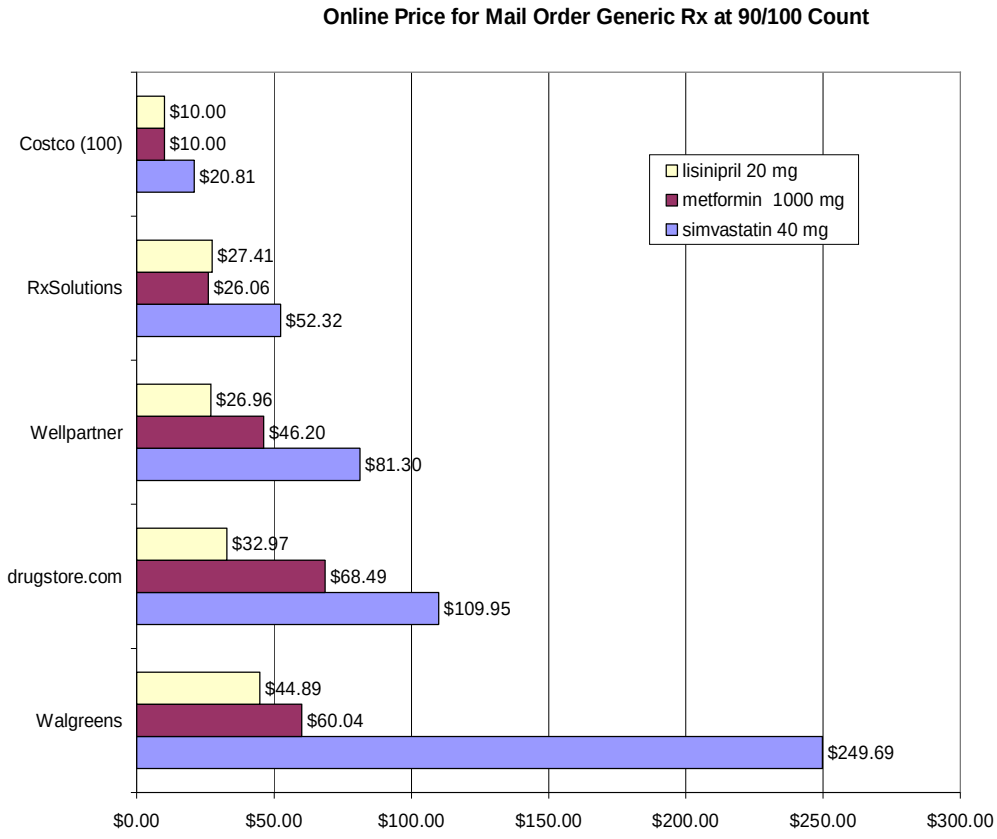
Drugstore.com: http://www.drugstore.com/default.asp?aid=9225

Walgreens: http://www.walgreens.com/library/finddrug/druginfosearch.jsp?cf=ln

Judged by sheer purchasing power, one might expect that Walgreen would offer the lowest on-line market prices. But, their business model is based on a very profitable pharmacy business subsidizing a front store that has low to nil net profitability. The other companies, while smaller, do not depend on high margin generics subsidizing other lines. The results are a dramatic confounding of the adage that consumers are best served by purchasing drugs through large intermediaries.

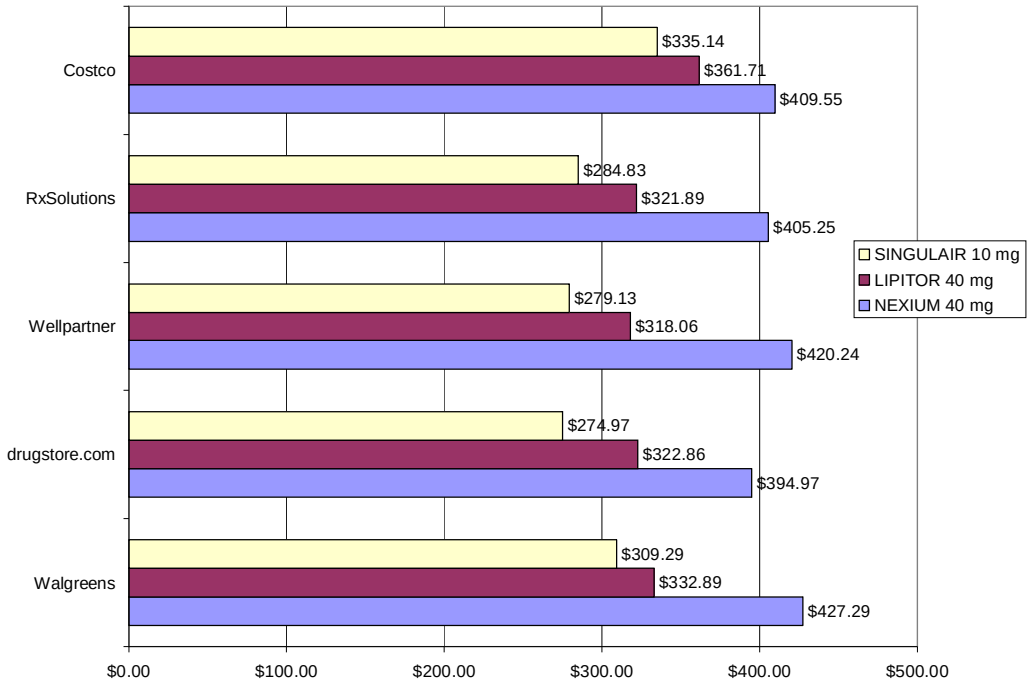
The results also suggest that large drugstore chains like Walgreen and CVS are threatened by the consumer-directed healthcare movement. Price transparency, so much a part of this

movement, exposes the high prices drugstore chains have to charge for generic prescriptions to make up for deficiencies in their front store. Such is not the case for mass merchants like Costco or even small independent mail order pharmacies like Wellpartner. CDHPs bring the retail pharmacy business a step closer to real price competition and this has the potential to blow apart the cross-subsidies that have been built into the drugstore business model over the last fifteen years.



Survey Date: 3-30-07

Online Price for Mail Order Brand Rx at 90 Count



Survey Date: 3-30-07

Notes:

(1) Fairman, et. al. What Happens to Prescription Drug Use after Consumer Directed Health Plan Enrollment?" Express Scripts, Inc. April 2007. Available at http://www.express-scripts.com/ourcompany/news/outcomesresearch/onlinepublications/study/afterCDHCEnrollment.pdf

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(5) LW Abrams, "The Future of Consumer-Directed Pharmacy Benefits." Available at www.nu-retail.com

Disclosures:

I have not received any remuneration for this paper nor have I any financial interest in any company cited in this paper.

I have a Ph.D. in Economics from Washington University in St. Louis and a B.A. in Economics from Amherst College. Other papers on drugstores and PBMs can be accessed at www.nu-retail.com