

Exclusionary Practices in the Mail Order Pharmacy Market

By
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This paper replaces two earlier working papers:

**“The Monopolization of the Mail Order Pharmacy Market”
“Formulary Compliance and the Monopolization of the Mail Order Pharmacy Market”**

Abstract

Pharmacy benefit managers (PBMs) engage in exclusionary practices favoring their own captive mail order pharmacies. They justify this practice by pointing to mail order's price superiority to retail pharmacy outlets. We will present evidence from two sources indicating that the second largest independent PBM, Medco Health Solutions, has been pricing brand drugs dispensed from its mail order pharmacy at, or near, acquisition costs. While these prices are significantly below retail levels, they cannot be said to be competitive until the possibility of recoupment elsewhere is investigated.

The true value of captive mail order to PBMs is not as a source of dispensing and procurement efficiencies, but as source of cost containment achieved by through retrospective therapeutic interchange and enhanced power to extract rebates from brand name drug manufacturers. By recasting Medco's margins by revenue "driver" rather than by revenue source, we demonstrate that mail order gross profit margins are in the competitive range of 7% -- neither too high nor too low. This means that Medco is within the "rule of reason" of anti-trust law.

Still, market forces are at work to counter Medco's pricing strategy. Customers are demanding a more transparent business model with 100% pass-through of rebates. This will require Medco to raise mail order prices to compensate for these losses, thus undermining the justification for exclusionary practices such as mandatory mail order and mail order only 90-day prescriptions. Furthermore, the trend toward transparency will provide new opportunities for independent mail order pharmacies that heretofore have been relegated to niche markets.

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

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Introduction

Outpatient prescription drugs have become the fastest rising component of health care costs. Specialists in managing drug benefits called pharmacy benefits managers (PBMs) have become the main line of defense against rising drug costs. PBMs use a variety of techniques to contain costs. These techniques are generally grouped into the following categories: (1) retail network management, (2) mail order pharmacy, (3) formulary and rebate management, (4) claims processing, and (5) drug utilization review. The purpose of this paper is to evaluate exclusionary practices that PBMs employ in managing mail order pharmacies.

Retail network management consists of negotiating discounts with retail pharmacies in exchange for being designated as a preferred provider and eligible for reimbursement. The inclination of PBMs is to favor expansive networks at higher average reimbursement costs as opposed to smaller networks with lower average costs. The national retail network of large independent PBMs contain over 55,000 pharmacies, or more than 90% of all chain and community pharmacies in the United States.

The opposite is the case with mail order pharmacies. Mail order pharmacy networks are limited to a single source of supply -- PBMs own internal mail order operations. PBMs will refuse reimbursement if a prescription is filled by any other mail order pharmacy. But, PBMs do not stop at sole sourcing when it comes to favoring their own captive mail order operations. They have also created a variety of techniques to steer prescriptions away from retail pharmacies. This includes mandatory mail order for maintenance drugs used to treat chronic illnesses like high cholesterol and arthritis. It includes limiting 90-day prescriptions to mail order. It may even include not squeezing the highest discounts from retail pharmacies in order to enhance the price competitiveness of their own mail order operations.

These practices are exclusionary, "self-dealing" and represent a potential conflict of interest. But, the courts have made it clear that such practices are not *per se* a violation of antitrust laws.

Because the “rule of reason” applies, exclusionary practices must be evaluated on the basis of both benefits and costs. PBMs argue that practices favoring their own captive operations produce substantial savings that are passed on to consumers. They argue that considerable economies of scale and integration efficiencies can be obtained if mail order is limited to a single captive source. PBMs point to a number of credible studies conducted by such independent organizations as the General Accounting Office (GAO), the Federal Trade Commission (FTC) and the American Association of Retired Persons (AARP) that show that brand drug prescriptions filled by captive mail order pharmacies are priced an average of 9% to 10% less than the same prescriptions filled by retail outlets.^{1 2 3}

But, the price savings of mail order might not be due to operational efficiencies. They may be due to a deceptive strategy of pricing mail order low while recouping margin deficiencies through secretive rebate retention. Based on two sets of data, we will demonstrate that Medco Health Solutions, the second largest independent PBM, has been pricing its mail order operations at, or near, costs of sale. This aggressive pricing of mail order is part of an overall strategy to divert demand away from retail to captive mail order.

We present the case that captive mail order is a key contributing factor in PBMs’ ability to secure rebates from brand name drug manufacturers. By recasting Medco’s margins by revenue “driver” rather than by revenue source, we demonstrate that mail order gross profit margins are in the competitive range of 7% -- neither too high nor too low. PBMs are currently under pressure to move toward a more transparent business model in which the prices of individual services are proportional to costs and rebates are completely passed through to clients. We conclude the paper with some observations about the effect that the trend toward transparency might have on the mail order pharmacy market.

Mail order prescriptions covered by insurance are almost exclusively filled by CMOPs. Demand factors have been a necessary condition for the success of mail order operations. But growth in demand has not translated into success for IMOPs. None of the three prominent IMOPs of the dot.com era – drugstore.com, Planet Rx, and rx.com – have had any success. Drugstore.com is a survivor, but has never made a profit. Planet Rx has ceased operations.

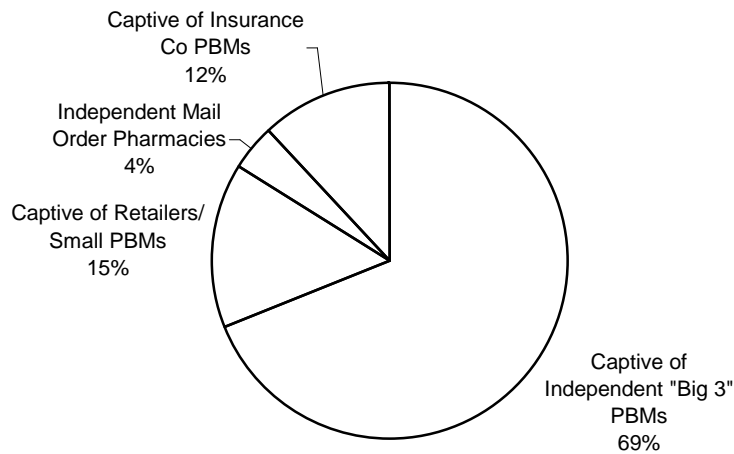
Despite these failures, mail order operations are still being coveted by PBMs. Before Eckerd Drugs was sold to the drugstore chain CVS, it sold its mail order operations to the insurer Aetna. We believe that the recent merger of two of the largest PBMs – Caremark Rx and AdvancePCS – was motivated primarily by mail order considerations. The primary reason for the merger was to leverage Caremark's extensive mail order operations by extending it to AdvancePCS's customer base whose mail order utilization rate was below average. Recently, the Big 3 have bought up a number of independent pharmacies specializing in the home delivery of biotech drugs. Express Scripts has bought CuraScript and Priority Healthcare. Medco has bought out Accredo. The Big 3, combined with Walgreen and CVS, now dominate the specialty pharmacy business.

There are few notable exceptions to CMOP dominance of the mail order pharmacy business. MedImpact, the largest mid-major independent PBM, has no captive operations. It contracts with Walgreen Health Initiatives for mail order services. Walgreen's mail order operation is both a CMOP and an IMOP. It services clients of Walgreen's PBM operations as well as outside PBMs such as MedImpact. Argus, who primarily services Medicaid FFS plans, contracts out mail order to drugstore.com. Aetna and Pacificare also allow their captive mail order operations to service outside health care plans.

The only place where true IMOPs have been able to secure business is with Medicaid FFS plans and 340B plans. Wellpartner, an Oregon start-up IMOP, has managed to capture the business of

the state's two Medicaid fee for service plans covering approximately 240,000 lives.⁶ Envision Pharmaceutical Services, a start-up PBM has won the contract to service the Ohio Best Rx plan covering 1.4 Million lives and has subcontracted the mail order business to drugstore.com.⁷ Coordinated Care and Rx Strategies have begun to provide safety-net community health care clinics with on-site and mail order pharmacy programs designed to take advantage of 340B drug discounts.⁸ The explanation of why IMOPs are relegated to this niche market is a corollary to our theory of the true value of CMOPs to PBMs.

Estimated Share of Mail Order Pharmacy Market -- 2003



The above chart presents our estimate of share of mail order pharmacy business by IMOPs and various types of CMOPs based on statistics of the number of covered lives of parent PBMs. We estimate that IMOPs represent less than 5% of mail order pharmacy market. Even though the Big 3 PBMs control an estimated 50% of the PBM market, we estimate that they control an even greater share of the mail order market – 69%. This is evidence that mail order is much more

central to the business model of the Big 3 PBMs than PBMs of insurance companies or retailers such as Walgreen and CVS. Again, this is consistent with our theory of the true value of CMOPs.

Growth of the Mail Order Pharmacy Market

According to a Kaiser Family Foundation report, mail order captured 14% of the outpatient prescriptions drug market in 2004.⁹ Mail order's share equaled the share held by community pharmacies, and was second only to chain drugstore's share of 18%. Furthermore, mail order is the fastest growing segment of this market – 18% growth for mail order versus 12% growth rate overall. Exhibit 2 below indicates that the growth rates and channel share of the Big 3 are even higher.

Exhibit 2: Mail Order Statistics for Big 3 PBMs						
Company	2004	2003	Sales Growth (%)	Mail Order Rx	Network Rx	Mail Order
	Mail Order Sales (Millions \$s)	Mail Order Sales (Millions \$s)		(Millions #)	(Millions #)	Adj .Share (%)
Caremark Rx	8,015	5,413	48%	43	441	23%
Medco Health Solutions	13,392	11,252	19%	88	415	39%
Express Scripts, Inc	5,391	3,988	35%	39	399	23%

Sources:
 Adj Share is calculated with mail order # multiplied by 3
 Securities and Exchange Commission, 10-K Report for Caremark, Rx for Year Ending December 31, 2004
 Securities and Exchange Commission, 10-K Report for Medco Health Solutions Inc. for Year Ending December 31, 2004
 Securities and Exchange Commission, 10-K Report for Express Scripts, Inc. for Year Ending December 31, 2004

Much of the growth of mail order relative to retail can be traced to the growth rates of drugs for chronic illness. This is because drugs for chronic illnesses such as high cholesterol and arthritis

allow for delayed and distanced fulfillment whereas drugs for acute illnesses such as infections require fulfillment immediately. However, some of the growth of mail order relative to retail should be attributed to the exclusionary practices of PBMs that include predatory mail order pricing, mandatory mail order, and mail order only 90-day prescriptions.

The Organization and Technology of CMOPs

The purpose of this section is to take a closer look at the organization and technology of CMOPs with special attention to disclosures by Medco Health Solutions of its CMOP structure. In the next several sections, we will present the case that true value of CMOPs does not stem from dispensing and procurement efficiencies achieved through economies of scale. It stems from the ability of call centers to make cost-saving retrospective therapeutic interchange and the power that ability confers on PBMs when they negotiate rebates with brand name drug manufacturers.

A CMOP is organized into four functional units: (1) large automated dispensing pharmacies; (2) regional specialty pharmacies that supply biotech drugs requiring refrigeration and disposable needles or other infusion technology; (3) regional mail order processing centers and (4) regional call centers. Call centers can further be segmented into two functions: (a) receiving inquiries from patients about medications; (b) making calls out to physicians to persuade them to change prescriptions in order to comply with the formulary design of plan sponsors.

Exhibit 3 is a listing taken from a recent Securities and Exchange Commission (SEC) 10-K Report by Medco disclosing CMOP-related properties it leases or owns.¹⁰ It gives some favor to Medco's CMOP structure:

Exhibit 3: The Organizational Structure of Medco's CMOP

	Unit Location	Sq. Ft.
1	Automated Dispensing Pharmacies	
	Willingboro, NJ	271,000
	Las Vegas, NV	215,000
2	Specialty Pharmacies	
	Columbus, OH	135,000
	regional pharmacies of recently acquired Accredo Healthcare	
3	Mail Order Processing Centers	
	Tampa, FL	143,000
	Fairfield, OH	100,000
	Ft. Worth, TX	83,000
	N. Versailles, PA	39,000
	Liberty Lake, WA.	25,000
	Richmond, VA.	3,000
4	Call Centers	
	Tampa, FL	124,000
	Dublin, OH	92,000
	Irving, TX	62,000
	Columbus, OH	48,000
	Henderson, NV	41,000

Source: SEC 10-K Medco Health Solutions for Year Ending 12-31-05

The structure of Medco's CMOP operation is interesting in that it suggests that different segments operate best at different scales. Medco's dispensing pharmacies in Willingboro and Las Vegas are among the largest, if not the two largest in the United States. It links these national dispensing pharmacies to a string of smaller, regionally dispersed order processing centers and call centers. Exhibit 4 presents data on the weekly prescriptions dispensed from different types of pharmacies including several Medco units:¹¹

Exhibit 4: Rx Volumes Through Various Facilities

Operation	Rx Dispensed Per Week
"Busy" Retail Pharmacy	3,000-5,000
Wellpartner IMOP Serving Oregon Medicaid with 240,000 Lives	estimated 10,000
Medco's Dispensing Pharmacy Willingboro, NJ. and Las Vegas, NV.	900,000
	Rx Processed Per Week
Medco's Order Processing Center North Versailles, PA.	117,000

Source:
Pittsburg Tribune-Review, October 16, 2003

The following quote from Medco describes how its call centers function both as patient inquiry in-call operations and as out-call operations trying to persuade physicians to change prescriptions.¹²

Call Center Pharmacies . We operate five call center pharmacies, each of which is licensed as a pharmacy in the state in which it is located and is staffed by service representatives and pharmacists. Personnel at our call center pharmacies are available to answer questions and provide information and support to members 24 hours a day, seven days a week, for members using either our mail order service or our retail pharmacy network. Our call center pharmacies also provide information and services to physicians and pharmacists who service our clients' members. Service representatives and pharmacists at our call center pharmacies use advanced imaging technology and other Internet capabilities to access prescription and health information when providing service to members and assist physicians in reducing costs through dose optimization, generic substitution and the interchange from non-formulary compliant drugs to clinically equivalent formulary compliant drugs.

We will present data later from a recent FTC study that indicates that PBMs rarely make changes to prescriptions while an order is being processed. One of the functions of call centers is to change physicians' decisions when prescriptions are renewed for drugs treating chronic illnesses such as high cholesterol or arthritis. They are not designed to change pending orders of current prescriptions whether they are for drugs treating chronic illnesses or drug treating acute illnesses like infections.

The core technology that gives CMOPs their “captiveness” is not automated dispensing equipment or state-of-the-art Internet order processing websites. It is the information technology that give call center employees complete history of patients prescriptions and database technology that relates dispensing histories of plan members by prescribing physician. It is information technology that gives call center personnel on-line access to direct phone numbers and email addresses of physicians. It is information retrieval technology with the capability of emailing physicians soft-copies of pharmacoeconomic studies supporting any proposed therapeutic interchange.

The Source of CMOPs’ Price Advantage

The Big 3 independent PBMs have touted their CMOPs as a lower price alternative to retail pharmacies. They generally attribute this price competitiveness to three sources: (1) dispensing efficiencies, (2) volume purchasing discounts, and (3) greater formulary compliance. For example, the following are statements by Express Scripts, Inc and Medco Health Solutions explaining why they can offer such competitive pricing for mail order prescriptions:^{13 14}

These pharmacies provide members with convenient access to maintenance medications and enable our clients and us to manage drug costs through operating efficiencies and economies of scale. In addition, through our mail service pharmacies we are directly involved with the procriber and member, and are generally able to achieve a higher level of generic substitutions and therapeutic interventions than can be achieved through the retail pharmacy networks.

Express Scripts, Form 10-K ending December 31, 2002

Our clients benefit in the form of lower drug costs as a result of operating efficiencies yielded by our significant level of automation technology, the value from our scale in purchasing drugs at competitive discounts, and our ability to offer up to a 90-day supply of drugs as compared to a 30-day supply for most retail programs.

Medco Health Solutions, Form 10-K for the Year Ending December 25, 2004

In this section, we take a critical look at the source of captive mail order price superiority. Using two data sets, we demonstrate that Medco Health Solutions, the second largest independent PBM, has been pricing its CMOP at, or near, cost of sale. This means that mail order price

superiority to retail is not due so much to lower costs, but due to an acceptance of lower gross profit margins.

The most often cited study of the relative cost-savings provided by CMOPs is a study conducted by the General Accounting Office (GAO) in 2001 of contracts to manage the mail order portion of the Federal Employees Health Benefits Plan (FEHBP).¹⁵ The PBM trade association has cited this GAO study as representative of the benefits that can be delivered by CMOPs. The way the government handled the contract was somewhat unique in that it split the bidding into two parts. Advance PCS (now merged into Caremark Rx) won the contract to manage the retail network including managing all rebates derived from retail transactions. Medco won the mail order contract including managing all rebates derived from such transactions. Exhibit 5 summarizes the results of that study. The key finding was that Medco mail order pharmacy prices averaged \$.78 / Rx lower than retail for generics and \$ 8.41/ Rx lower for brand name drugs. In percentage terms, the prices of generic and brand name drug prescriptions were 5.3% and 9.5% lower, respectively.

In the case of generic drug prescriptions, dispensing efficiencies alone can explain mail order price superiority. There is no question that mail order facilities, packed with machinery, are more efficient than retail pharmacies at dispensing prescriptions. But that advantage is not unique to CMOPs. The same efficiencies can be found in IMOP facilities owned by government agencies like the Veterans Administration (VA). An Arthur Anderson study has estimated that the labor cost of dispensing a prescription by a retail pharmacy to be \$4.27.¹⁶ The VA has estimated that the dispensing cost per prescription at its automated mail order facilities was approximately \$2 in fiscal 2000.¹⁷ When approximately \$1.00 in postage per prescription is added, then the cost-saving achieved by filling a prescription by mail order runs about \$1.27 per prescription, more than the \$.78 / Rx price difference found for generics in the GAO study.

Exhibit 5: Rx Discounts Obtained by PBMs Managing the FEHBP, 2001

Channel	Generic Rx	Brand Rx
Price - Cash Only Customer	\$ 14.90	\$ 88.59
<hr/>		
PBM-Negotiated Retail		
Discount %	47.2%	17.8%
Discount \$	\$ 7.04	\$ 15.74
Net Retail Price	\$ 7.86	\$ 72.85
<hr/>		
PBM- Negotiated Mail Order		
Discount %	52.5%	27.3%
Discount \$	\$ 7.82	\$ 24.15
Net Mail Order Price	\$ 7.08	\$ 64.44
<hr/>		
Mail Order Advantage		
Additional Discount %	5.3%	9.5%
Additional Discount \$	\$ 0.78	\$ 8.41

Source: Pub. No. GAO-03-196 ,January 2003, p.10

In the case of brand name drug prescriptions, dispensing efficiencies can only explain only about 15% of the \$8.41 channel price differential. Can purchase volume discounts explain the rest? Purchasing volume is an extremely important source of bargaining power for pharmacies – retail or mail order -- when they negotiate generic prices with suppliers. There are often five or more manufacturers producing any given generic drug. The pharmacy has total discretion as to what manufacturer’s product it wants to use. The discounts come in the form of charge-back credits posted by the distributor to the buyer’s receivable account and offset by debits to the manufacturers’ payable account. Exhibit 6 below indicates that large chain drugstores procure two to four times the volume of drugs as CMOPs. It is doubtful that any CMOP receives higher generic discounts than a Walgreen or a CVS.

Exhibit 6: Number of Rx Purchased Through Supply Chain, 2004		
Institution	Type	Millions of Adj Rx
Walgreen	Retail	443
CVS	Retail	366
Medco Health Solutions	PBM Mail Order	263
Caremark Rx	PBM Mail Order	129
Express Scripts, Inc	PBM Mail Order	117
Adj Rx: mail order Rx multiplied by 3		
Source SEC Form 10-K for 2004 Fiscal Year for each company		

In the case of brand name drugs, pharmaceutical manufacturers channel all discounts to PBM operations rather than pharmacy operations because it is PBMs who have discretionary authority over demand. Despite their size, the retail pharmacy operations of Walgreen and CVS receive no rebates from brand name drug manufacturers. The same is true for their mail order pharmacies. On the other hand, the PBM operations of chain drugstores receive rebates. The same is true with Big 3 independents PBMs like Medco. Brand name drug companies enter into contracts with the PBM side, not the mail order side, of the business because it is the PBM operation that has discretionary authority over demand.

The GAO reported that PBMs negotiated discounts with retail pharmacies that left them an average of 8% mark-up over wholesale acquisition costs for brand name drug ingredients.¹⁸ Based on the expectation that Medco paid about the same as large retailers for brand drugs, the additional 9.5% discount Medco gave to the FEHBP for mail order prescriptions means that Medco was selling brand ingredients at or below cost. They may have been making a decent margin on the dispensing component of mail order prescriptions, but the overall mail order margin had to be at or near zero.

There is antidotal evidence that support our analysis of the FEHBP contract. Quoting from a U.S. Bancorp Piper Jaffray research paper on the PBM industry in 2001:¹⁹

The first contract that raised concerns was the mail-order component of the Federal Employees Program (FEP) – a 2.5 million-member contract with roughly \$1 billion in annual drug-spend that Medco was awarded earlier this year. Although all the major industry participants were bidding on this contract, Medco won the contract (which it has managed since 1986) after a series of last-minute negotiations, in which Medco appears to have lowered the cost of the contract to the government and made other price/cost concessions....Although Medco has a reputation for being the low-cost provider (especially in mail order), most member of the channel (i.e. consultants, benefit managers) believe that Medco priced the FEP contract very near or below profitability levels in order to retain the business.

As a final note, Medco lost the FEHBP mail order contract to Caremark Rx in 2004, ending the experiment of having one PBM manage the retail pharmacy network and another manage mail order.

We have conducted another study that corroborates the above analysis of Medco's bid on the FEHBP mail order contract.²⁰ Based on recent disclosures by Medco of its rebate retention rates, we have been able to disaggregate its gross profit by line of business with a degree of certainty. On October 28, 2004, Medco's Chief Financial Officer, Jo Ann Reed, announced in a conference call to investors that Medco retained 40.5% of \$754 Million in gross rebates received from pharmaceutical manufacturers during the 3rd quarter of 2004.²¹ She stated that this disclosure was initiated in an effort to make Medco's business model more transparent to the public and that it would become a standard feature of all future quarterly statements. Based on that disclosure, it is possible to derive with certainty that 71.7% of Medco's gross profits in 3rd quarter of 2004 came from retained rebates.

While we cannot at this time say with certainty what Medco's retail network "spread" margin is or what its mail order gross profit margin is, we can establish some upper limits on both. Assuming no spread, then Medco's mail order gross profit margin can be no greater than 2.1%. Similarly, Medco's spread margin can be no greater than 1.8%, assuming no margin on mail order. The full margin analysis for the 3rd quarter of 2004 is presented in the Appendix. Margins are broken down by revenue type – reimbursements from clients for retail and mail order, data and claims fees, and rebates from drug manufacturers. This analysis represents additional evidence that

Medco is incurring low margins on its mail order operations as well as its claims processing services. It makes up low margins for these services by retaining a substantial portion of rebates received by brand name drug manufacturers.

This result calls attention to the need for further analysis before concluding that Medco's pricing of its CMOP is competitive. If it can be determined that Medco makes up for low mail order margins with excessive rebate retention, then the competitiveness of Medco's pricing must be questioned. Instead of breaking down Medco's margins by revenue source, we will present the case in the next section that margins should be broken down by revenue "driver". Rebates are "driven" by discretionary, retrospective therapeutic interchange and are a function of transactions flowing through both the retail and mail order channel. This is the rationale behind reallocating rebates to retail and mail order lines in financial statements.

The True Value of CMOPs

It is rare in the health care industry for payers to own providers. CMOPs represent that rare corporate structure where a health care payer, PBMs, own a health care provider. Why, then, do the Big 3 PBMs and large insurance companies such as Aetna, CIGNA, and Wellpoint find it economic to have CMOPs? There must be some special economic advantages provided by CMOPs that goes beyond dispensing efficiencies.

In this section, we present the case that the true value of CMOPs stems from a special ability to facilitate changes in prescriptions from one drug to another. Specifically, we will present the case CMOPs have special value because they facilitate retrospective therapeutic interchange (TI), as opposed to concurrent switches – either generic substitution or TI. CMOPs also have value in enhancing PBMs ability to negotiate rebates. We have discussed in detail elsewhere our contention that rebates are received as much for agreeing not to make switches as making switches.²² Thus, CMOPs aid in controlling drug cost both through switching of generics for

brands and through enhancing PBMs ability to extract rebates from brand name drug manufacturers.

The fact that both independent PBMs and captives of insurance companies find CMOPs economic suggests that the value created by CMOPs transcends the corporate structure of PBMs. There is something about the corporate structure of CMOPs – their “captiveness” -- that is the key to their value. While CMOPs might occasionally make it easier for PBMs to engage in cost increasing switches, or make it easier for PBMs to ignore cost decreasing switches, that activity is not at the center of CMOP value creation. If this were the major source of CMOPs’ value, then insurance companies such as Aetna and CIGNA would not own CMOPs, but would use IMOPs.

The fact that PBAs such as Argus do not own their own mail operations is an important counter-indicator of the value of CMOPs. The government gave up considerable rights in the area of discretionary formulary compliance when they negotiated the Medicaid formula with Big Pharma in 1990. Because PBAs are not involved in Medicaid rebate negotiations and because the Medicaid deal with Big Pharma bans TI for all drugs in exchange for rebates paid to Medicaid, PBAs place no special value on owning their own mail order operation either as a facilitator of TI or as a bargaining chip.

CMOPs and Generic Substitution

CMOPs have no special role or value in promoting generic substitution – a concurrent switch of a generic for its higher cost off-patent brand. The generic substitution rate is the ratio of the number of generic drug prescriptions dispensed divided by the sum of generic and off-patent brand prescriptions that are bio-equivalents. Usually, state laws permit pharmacists to make such a switch with out prior physician approval because they are near perfect substitutes. In addition, with minimum acceptable cost (MAC) pricing, pharmacies have great incentives to take

the lead in generic substitution because they will only be reimbursed at the generic price even if they dispense a more costly off-patent brand.

The Big 3 contend that CMOPs are better at promoting generic substitution than retail outlets.

Consider the following quote from Express Scripts touting the speed at which it CMOPs moves to replace a brand name drug prescription once the brand loses its patent and a generic become available.²³

For example four-fifths of Express Scripts' mail Prozac prescriptions were converted to generic fluoxetine by September, while 63 percent were converted in retail. Similarly 80 percent of Express Scripts' mail Glucophage prescriptions were converted to generic metformin by February and 53 percent in retail.

But, the situation described above only has a short-term impact on drug spending. More important financially are on going efforts to switch generics for off-patent brands.

The FTC has conducted a recent study of the possibility of business model bias on PBM behavior. As part of that study, they compared generic substitution rates by channel and corporate structure.²⁴ The FTC study found that the CMOPs of large independent PBMs had a generic substitution rate of 92.5% and 93.3% for 2002 and 2003, respectively. The generic substitution rates were about the same – 91.9% and 93.1% for 2002 and 2003, respectively, for retail networks controlled by the same PBMs.²⁵

But this result proves nothing about PBM management or CMOP performance for two reasons. As we have said earlier, pharmacies do not have to be prompted by PBMs to pursue generic substitution. Retailers usually do not have to get approval from the patient or the physician before making generic substitution. MAC pricing provides plenty of incentives to make the switch. Another reason why the FTC generic substitution test proves nothing about potential bias in the PBM business model is that brand manufacturers do not pay rebates once a drug loses its patent.

CMOPs and Retrospective Therapeutic Interchange

The main value of CMOPs stems from PBMs discretionary ability to make retrospective TI rather than any concurrent changes in orders being filled. At one time, we believed that mail order's ability to delay fulfillment for up to 48 hours after order placement was key to understanding CMOPs' role. But, recent data provided by the FTC study of PBMs indicate otherwise. The FTC received detailed data from 2 large independent PBMs indicating that concurrent TI – brand to brand and brand to generic – composed on average only .5% of all orders.²⁶ This figure was the virtually the same for CMOPs as for the retail networks managed by independent PBMs. The FTC was unable to obtain data on retrospective TI. Especially valuable would have been data on the proportion of retrospective TI were brand-to-brand TI versus brand-to-generic TI by PBM group. They only had listings of the paired drugs chosen for TI programs and found that the list of switches generally were cost saving even before rebates.

Because call centers work retrospectively, they rarely get involved with drugs for acute illnesses such as infections because these prescriptions never call for refills. On the other hand, prescriptions for chronic illnesses such as high cholesterol are refilled continually. Because PBMs have little influence on demand for drugs used to treat acute illnesses, only manufacturers of brand name drugs for chronic illnesses seek to negotiate rebate contracts with PBMs.

The FTC data has helped narrow our prediction of domain of rebate payments. In another paper, we presented the case that rebates are only paid by brand name drug manufacturers in oligopolistic therapeutic classes.²⁷ Based on FTC data of the lack of concurrent TI, this expectation can be refined even further. Because manufacturers can only hope to influence retrospective TI, we expect that rebates are drug manufacturers pay rebates only on drug in oligopolistic therapeutic classes of chronic drugs. The top 4 such classes includes statins, proton pump inhibitors, COX-2 inhibitors, and 2nd generation antihistamines. It does not include any therapeutic classes of central nervous system drugs such as anti-depressants and

anticonvulsants. Because there is such a wide range of reactions among individuals for these classes of drugs, both PBMs and plan sponsors agree that overriding decisions of physicians is problematic.

CMOPs and Generic Dispensing Rates

PBMs claim that the tight integration of call center control operations with mail order operations make CMOPs a better organizational form for TI than IMOPs. As a result of this tight integration, they claim that their CMOPs produce higher generic dispensing rates. The generic dispensing rate is the ratio of the number of generic drugs dispensed divided by the number of all drugs dispensed – generics, off-patent brands, and on-patent brands. However, critics of PBMs claim that their business models are not aligned with making cost-saving, brand-to-generic TI. Critics believe that the Big 3 bias would show up in relatively low generic dispensing rates across all channels that they manage.

A study by Wosinska and Huckman found no significant differences in generic dispensing rates between the retail and the mail order channel.²⁸ Their test was flawed for two reasons. The biggest flaw was the expectation that channel could be a proxy for business model bias. Again, based on data from the FTC study, TI is almost exclusively retrospective. The time delay between order and shipment in mail order is of no value if TI is retrospective. PBM call centers work on changing the decisions of physicians. They do not segment physicians by channel in their quest for retrospective TI. If a PBM were biased in favor of brands over generics, this bias would affect demand uniformly across channel. The second big flaw in the Wosinska and Huckman study was that their sample included PBMs with different business models – the Big 3 plus Pacificare, an insurance company with a captive PBM and CMOP. Test for the effect of channel on generic dispensing rates should segment the test by PBM business model.

Unfortunately, several fatal design errors can be found in what was supposed to be the definitive study of PBM conflict of interest by the FTC. The FTC found no significant differences in generic dispensing rates for two groups of PBMs. But, no conclusions are warranted because of flaws in the test design. The FTC study used mail order corporate structure to distinguish groups. One group was composed of PBMs with CMOPs. The other group allegedly contained PBMs with IMOPs. Although the later group was unified by mail order corporate structure, it was a mixed bag of PBM corporate structures. It included captive PBMs of insurance companies such as Aetna and Cigna as well as small independent PBMs such as INSTAT and National Medical Health Card.

The problem with this grouping is that mail order operations do not exercise discretion in retrospective TI. PBM units operating through call centers possess that power. It is the business model of the PBM unit that creates potential for misalignment of interests, not the business model of a mail order unit. A biased PBM is just as likely to cause bias in its CMOP as in its IMOP. Until a study properly segments groups by PBM business model and looks at generic dispensing rates one channel at a time, nothing definitive can be said about the abilities of CMOPs of independent PBMs to deliver superior generic dispensing rates.

Mail Order Margins Considering Rebate Recoupment

Generally accepted accounting principles dictate that, to the extent possible, sources of revenue should be “matched” with the costs that “drive” that revenue. This matching should be done when accounting by time period and by line of business. The major weakness of the margin analysis of Medco’s financials presented earlier is that it fails to fully align revenue with cost drivers. The primary reason why PBMs choose to assume the role of principal, rather than agent, in managing network providers, is to claim ownership of the transaction. This gives them the right to receive rebates and data fees. It is ownership of the transaction that distinguishes PBMs from pharmacy benefit administrators (PBAs). Rebates and data fees are driven by retail and mail order transactions. In the spirit of the matching principle, these revenue sources should not stand alone

in a financial statement. It might be argued that rebate management is a separate business driver deserving a separate line on a financial statement. But, rebate management without concurrent ownership of transactions would only merit management fees from clients. It is the coupling of rebate management with ownership of the transaction that causes brand name drug companies to deal directly with PBMs.

Exhibit 7: Summary of Margin Analysis of Medco Health Solutions, Inc 3Q2004			
Medco Gross Profit By Revenue Source, 3Q2004	Billions \$	% of	Gross
		Gross Profit	Profit Margin
Retail Network ("The Spread")	0.020	4.7%	0.5%
Rebate Retention ("Rebate Retention Rate")	0.305	71.7%	40.5%
Mail Order Pharmacy	0.050	11.8%	1.5%
Claims and Data Service	0.050	11.7%	62.5%
Total Gross Profits	0.426	100.00%	4.9%
Portioning Out of Rebates, Claims, and Fees	Retail Network	Mail Order	Total
Reimbursements By Channel (Billions \$s)	4.013	3.400	7.413
1 Proportion of Reimbursements by Channel	54.1%	45.9%	
2 Estimate of Proportion of Brand Reimbursement	51.0%	49.0%	
3 Estimate of Proportion of (Brand) Rebates	45.0%	55.0%	
taking into Account Formulary Compliance Synergy			
Rebates Gross Profits Portioned by Driver	0.137	0.168	0.305
Claims and Data Gross Profits Portion by Driver	0.023	0.028	0.050
Total Portioning Out of Rebates, Claims, and Fees	0.160	0.195	0.355
Medco Gross Profit By Driver, 3Q2004		% of	Gross
		Gross Profit	Profit Margin
Retail Network	0.020		
Retail-Drive Rebates, Claim, and Fees	0.160		
Total Retail-Driven Gross Profits	0.180	42.3%	4.5%
Mail Order Pharmacy	0.050		
Mail-Drive Rebates, Claim, and Fees	0.195		
Total Mail Order-Driven Gross Profits	0.245	57.7%	7.2%
Total Gross Profits	0.426	1.000	4.9%
Sources: 3Q2004 10-K SEC Report Available at http://www.medco.com/medco/corporate/home.jsp 3Q2004 Medco Conference Call -- replay at 800-642-1687 Conference ID: 178047			

The lower portion of Exhibit 7 above divides Medco's gross profits into two basic business drivers: (1) retail transactions, and (2) mail order transactions. We derive estimates of gross profit margins by driver by starting out with the distribution #1, which is the distribution of total reimbursements by channel as reported by Medco. It has been documented that a disproportionate share of brand name drugs flow through the mail order channel. Sales of drugs used to treat chronic illnesses such as high cholesterol and arthritis tend to be dominated by on-patent brand name drugs. Furthermore, patients with chronic illnesses can be served well by mail order pharmacies because immediate availability is rarely an issue. Therefore, distribution #2, distribution of brand name drug reimbursements by channel is a more appropriate starting point for apportioning rebates by channel. We revise this distribution to take into account an estimate of the true value to CMOPs to rebate negotiations. We believe that brand name manufacturers place a value on CMOPs' superior ability to execute retrospective TI. PBMs receive rebates for favorable retrospective TI and for abstaining from unfavorable retrospective TI. We subjectively believe that CMOPs should be credited as much as a 6-percentage points swing in rebates into the mail order driver column.

Even though only 45.9% of Medco's reimbursements come from captive mail order pharmacy operations, we have estimated that 55% of its gross rebate receipts are attributable to that revenue driver. The key result is that Medco's mail order driver margin—mail order margin adjusted by rebates driven by this business is 7.2%. This is neither too high nor too low. When recoupment is taken into account, Medco's pricing of mail order is not predatory and anti-competitive. Medco's mail order pricing strategy may be deceptive, but it is pro-competitive and not a violation of anti-trust laws.

The Effect of the Transparency Trend on the Mail Order Pharmacy Market

In less than a year since we first quantified Medco's business model, the company has allowed its rebate retention rate to drop from 40.5% to 28.1%. This translates into a precipitous drop in the share of Medco's gross profits derived from retained rebates from 71.7% to 48.0%. Yet, Medco was able to maintain its overall gross profit margin in the face of this loss. We have followed up our initial analysis with another disaggregation for 2Q2005.²⁹ A comparison of key statistics for the two periods is presented in Exhibit 8. The full disaggregation of 2Q2005 is presented in the Appendix.

Exhibit 8: Summary of Medco's Business Model in Transition		
Statistics	3Q2004	2Q2005
Gross rebates received	\$754 M.	\$779 M.
Rebate retention rate	40.5%	28.1%
Net rebates retained as gross profits	\$ 305 M.	\$ 219 M.
Retained rebates share gross profits	71.0%	48.5%
Mail order gross profits	\$ 50 M	\$ 148 M
Mail order gross profit margin	< 2%	< 5%
Mail order share of gross profits	11.8%	32.4%
Claims and data fees gross profits	\$50 M.	\$ 67 M.
Claims and data fees gross profit margin	62.5%	72.8%
Claims and data fees share of gross profits	11.7%	14.7%
Aggregate gross profits	\$ 426 M.	\$ 456 M.
Aggregate gross profit margin	4.9%	5.1%
Generic drug utilization rate	46.8%	51.0%
Mail order share of Rx fulfillment	45.7%	36.1%

Exhibit 8 indicates that despite a drop in retained rebates of \$86 Million, Medco was largely able to recoup these losses through greater gross profits from its captive mail order business. The increase in mail order gross profits was achieved totally through an increase in margins as opposed to a growth in top line revenue. Top line revenue actually fell during this period as Medco's mail order business has been hurt by the loss of the contract from the Federal Employees Health Benefit Plan (FEHBP). We have estimated that Medco's mail order margins have tripled from 1.5% to 4.6% over a nine-month period. Improved margins in data management and claims processing also have helped to compensate for rebate losses.

The movement toward transparency – greater pass-through of rebates and less rebate retention – has meant that Medco has moved toward cost-based pricing for mail order and claims processing. In the past, Medco has used its competitive advantage in rebate negotiations, coupled with secrecy surrounding its rebate retention rate, to win contracts through low bids on mail order and claims processing while recouping service margin deficiencies through rebate retention. The epitome of Medco's strategy was its bid on the mail order only contract for the FEHBP, which we demonstrated earlier, was a case of predatory pricing.

As we stated earlier, there have been several credible studies of pricing differentials between retail pharmacy networks and captive mail order operations of the Big 3 PBMs. Those studies indicate that brand name drug prescriptions average 9% to 10% lower if delivered via mail than if filled by retail outlets. The analysis here suggests that Medco's mail order operations has lost about one-third of its price superiority – 3 percentage points – in less than a year. If Medco hopes to maintain overall gross profit margins in the face of future rebate losses, it will surely have to increase mail order prices to the point that its price superiority would be virtually eliminated. This increase will eliminate Medco's justification for exclusionary practices in the mail order pharmacy market.

Opportunities for IMOPs

The movement toward a transparent PBM business model will provide opportunities for IMOPs to break out of their niche serving Medicaid FFS and 340B plans. The true value of CMOPs is their abilities to make cost-saving retrospective TI, and to use that potential as a bargaining chip in rebate negotiations. We have shown that it is the physician out-call unit of CMOP call centers that creates special value, not the automated dispensing pharmacies or order processing centers. Insurance companies and Medicaid MCOs dissatisfied with the performance of their current independent PBMs do not have to make an “all or nothing” decision involving a complete “carve in” of all PBM functions requiring heavy investment in dispensing and information technology.

A less costly, but as effective, alternative would to carve in only PBM control functions like formulary design, rebate negotiations, and the physician out-call center. Claims processing and rebate data collection could be handled by a PBA like Argus or an application service provider (ASP) like Systems Xcellence. Mail order processing and dispensing and the patient in-call center could be handled by an IMOP such as drugstore.com or a regional start-up like Wellpartner. We believe that there are no significant economies of scale in either mail order processing or dispensing beyond 30,000 prescriptions a week, or about client base totaling 700,000 lives. Certainly, it does not take the size of Medco’s Las Vegas or Willingboro operations --- 900,000 prescriptions dispensed per week – to reach maximum efficiency. Exhibit 9 diagrams the roles that IMOPs and PBAs could play as an alternative to contracting out all PBM functions to an independent PBM with its own CMOP.

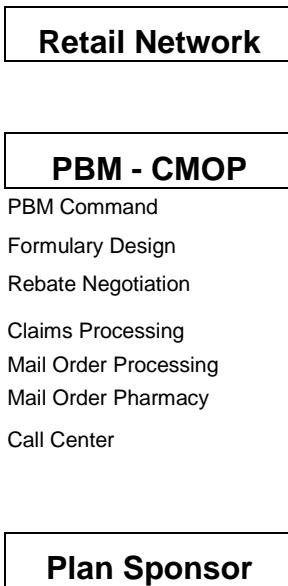
Two large benefits consulting companies --Hewitt Associates and Towers Perrin -- have team up with a number of self-insured, Fortune 500 companies to form a different structure as a way around potential PBM business model bias.^{30 31} They have offered themselves to clients as a pure rebate negotiating agent without also taking control of formulary design and physician out-call centers. We have made the case here that the key to effective rebate negotiations with brand name drug manufacturers is the discretionary power to design formularies and make, or not

make, retrospective TI. We predict that these plans will not effective if it leaves important PBM control functions in the hands of others.

Exhibit 9: An Alternative to Contracting Out to PBMs-CMOPs

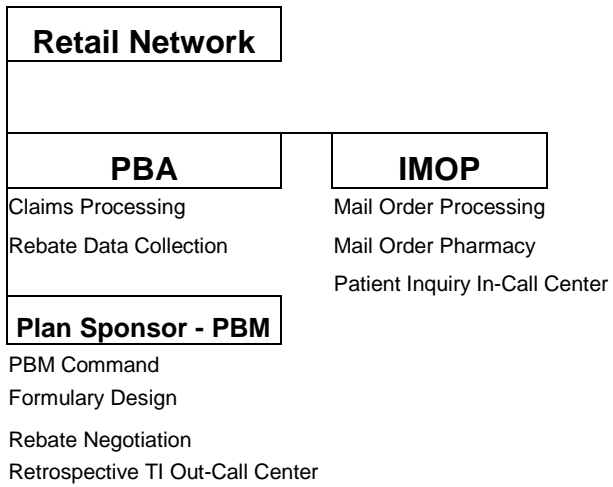
PBMs-CMOPs

Independent PBM
with CMOP



PBAs-IMOPs

Independent PBA
with IMOP
and Limited "Carve In" of PBM Functions



Notes:

- (1). U.S. General Accounting Office, Federal Employee Health Benefits: **Effects of Using Pharmacy Benefit Managers on Health Plans, Enrollees, and Pharmacies**. Pub. No. GAO-03-196. (January 2003). P. 10 Available at <http://www.gao.gov/new.items/d03196.pdf>
- (2) Keith D. Lind, "Medicare Drug Discount Card Program," AARP Public Policy Institute, November 2004, No 2004-16
- (3) The Federal Trade Commission "Pharmacy Benefit Managers: Ownership of Mail Order Pharmacies," September 2005, Available at <http://www.ftc.gov/os/2005/09/index.htm#6>
- (4) Kaiser Family Foundation, "Follow the Pill: Understanding the US Commercial Pharmaceutical Supply Chain," March 2005, available at <http://www.kff.org/rxdrugs/upload/Follow-The-Pill-Understanding-the-U-S-Commercial-Pharmaceutical-Supply-Chain-Report.pdf>
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- (6) "Wellpartner Get CareOregon Contract", Portland Business Journal, August 11, 2004. Available at <http://www.bizjournals.com/portland/stories/2004/08/09/daily31.html>
- (7) "Envisions Subcontract Mail Order Pharmacy to drugstore.com." Available at http://www.findarticles.com/p/articles/mi_hb3007/is_200409/ai_n7651767
- (8) Coordinated Care Network on-site and mail order to 340B eligible clinics. <http://www.coordinatedcarenetwork.org/CCN/pdmo.html>
- (9) Kaiser Family Foundation, "Follow the Pill: Understanding the US Commercial Pharmaceutical Supply Chain," March 2005, Available at <http://www.kff.org/rxdrugs/upload/Follow-The-Pill-Understanding-the-U-S-Commercial-Pharmaceutical-Supply-Chain-Report.pdf>
- (10) Securities and Exchange Commission, Medco Health Solutions, Inc. 10-K SEC Fiscal year ending Dec 25, 2005
- (11) Pittsburg Tribune-Review, "Medco's Facilities Fill Hundreds of Thousands of Prescriptions Weekly," October 16, 2003 Available at http://www.pittsburghlive.com/x/tribune-review/business/s_160150.html
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- (13) Express Scripts, Form 10-K ending December 31, 2002
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- (16) Arthur Anderson LLP, "Pharmacy Activity Cost and Productivity Study," November 1999.
- (17) U.S. General Accounting Office, VA and DOD Health Care, Pub. No. GAO-02-969t. (July 2002). P.6.

- (18) U.S. General Accounting Office, Federal Employee Health Benefits: **Effects of Using Pharmacy Benefit Managers on Health Plans, Enrollees, and Pharmacies**. Pub. No. GAO-03-196. (January 2003). P. 21 Available at <http://www.gao.gov/new.items/d03196.pdf>
- (19) U.S. Bankcorp Piper Jaffray Analyst Presentation, 2001 p. 35. Available at <http://www.gotoanalyst.com/piperpublic/goto/assets/pdfs/features/pbms.pdf>
- (20) LW Abrams, "Quantifying Medco's Business Model," Working Paper, April 2005. Available at www.nu-retail.com/quantifying_Medco_business_model.pdf
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- (23) Express Scripts, 2001 Drug Trend Report, p. 6. Available at <http://www.express-scripts.com/ourcompany/news/industryreports/drugtrendreport/2001/Actions.pdf>
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Appendix

Margin Analysis
Medco Health Solutions, Inc
Income Statement for the Third Quarter Ending September 30, 2004

Column A	Column B	Column C	Column D	Column E	Column F
Row	Source of Column D	Line Item Description	Billions \$s	% of Revenue	
1	Conference Call	Rebate-retention rate	40.5%		
		Revenue:			
2	D6-sum(D3:D5) 10-Q Data	Rx Reimbursement From Clients	4.034	46.4%	
3	(100%-D1)* D8	Member Co-payments	1.631	18.8%	mail order share
4	Conference Call	Less: Rebates Remitted	-0.449	-5.2%	45.7%
5	10-Q Data	Mail Order Revenue	3.400	39.1%	
6	10-Q Data	Claims and Data Service Revenue	0.080	0.9%	
6	10-Q Data	Total Revenue	8.696	100.0%	
		Costs and expenses:			
7	D11-sum(D8:D10) 10-Q Data	Rx Reimbursement to Retailers	4.013		
8	Conference Call	Member Co-Payments	1.631		
9	D4-D15	Less: Rebates Received	-0.754		
10	10-Q Data	Mail Order Costs	3.350		
11	10-Q Data	Claims and Data Service Costs	0.030		
11	10-Q Data	Total Cost of Sales	8.270	95.1%	
12	10-Q Data	Gross Profit	0.426	4.9%	6.0% GP Without Co-Pay
		Gross Profit		% of Gross Profit	Gross Profit Margin
13	Estimate: .05%	Retail Network	0.020	4.7%	0.5% "The Spread"
14	-D3-D8	Rebate Retention	0.305	71.7%	40.5% "RebateRetentionRate"
15	D17-D13-D14-D16	Mail Order	0.050	11.8%	1.5%
16	D5-D10	Claims and Data Service	0.050	11.7%	62.5%
17	10-Q Data	Total Gross Profits	0.426	100.00%	4.9%

Sources: 3Q2004 10-K SEC Report Available at <http://www.medco.com/medco/corporate/home.jsp>
3Q2004 Medco Conference Call -- replay at 800-642-1687 Conference ID: 178047

Margin Analysis:
Medco Health Solutions, Inc
Income Statement for the Second Quarter Ending June 31, 2005

Column A	Column B	Column C	Column D	Column E	Column F
Row	Source of Column D	Line Item Description	Billions \$s	% of Revenue	
1	Conference Call	Rebate-retention rate	28.0%		
		Revenue:			
2	D6-sum(D3:D5) 10-Q Data	Rx Reimbursement From Clients	4.493	49.9%	
3	(100%-D1)* D8	Member Co-payments	1.796	20.0%	mail order share
4	Conference Call	Less: Rebates Remitted	-0.560	-6.2%	36.1%
5	10-Q Data	Mail Order Revenue	3.178	35.3%	
		Claims and Data Service Revenue	0.092	1.0%	
6	10-Q Data	Total Revenue	8.999	100.0%	
		Costs and expenses:			
		Rx Reimbursement to Retail Pharm	4.471		
7	D11-sum(D8:D10) 10-Q Data	Member Co-Payments	1.796		
8	Conference Call	Less: Rebates Received	-0.779		
9	D4-D15	Mail Order Costs	3.030		
10	10-Q Data	Claims and Data Service Costs	0.025		
11	10-Q Data	Total Cost of Sales	8.543	94.9%	
12	10-Q Data	Gross Profit	0.456	5.1%	6.3% GP Without Co-Pay
		Gross Profit		% of Gross Profit	Gross Profit Margin
13	Estimate: .05%	Retail Network	0.022	4.9%	0.5%
14	-D3-D8	Rebate Retention	0.219	48.0%	28.1%
15	D17-D13-D14-D16	Mail Order	0.148	32.4%	4.6%
16	D5-D10	Claims and Data Service	0.067	14.7%	72.8%
17	10-Q Data	Total Gross Profits	0.456	100.00%	5.1%

Sources: Medco Health Solutions, 10-Q Report to the SEC for the Quarter Ending June 30, 2005