

PROFILE OF THE PRESCRIPTION DRUG WHOLESALING INDUSTRY

EXAMINATION OF ENTITIES DEFINING SUPPLY AND DEMAND IN DRUG DISTRIBUTION

FINAL REPORT

SECTION TWO

ORGANIZATIONS PURCHASING WHOLESALE DRUGS PRODUCTS— THE DEMAND FOR WHOLESALE DRUGS

To further characterize drug distribution and drug pricing influences, this section profiles some of the organizations that purchase or are involved indirectly in the purchase of drugs. Separate discussions are provided below on health care institutions and integrated delivery networks (IDNs), pharmacy benefit management companies (PBMs), and retailers. The final section briefly addresses the influence of health maintenance organizations (HMOs) and PBMs on prescription drug prices.

2.1 Health Care Institutions and Integrated Delivery Networks (IDNs)

Health care institutions, including, hospitals, clinics, nursing homes, home health care providers, managed care providers (i.e., HMOs), government agencies, and various alternate care providers, collectively purchased around \$25.0 billion in prescription drugs in 1998 (NWDA, 1999). Over 75 percent of these purchases were from wholesalers and the remaining volume from drug manufacturers (NWDA, 1999). Health care facilities generally demand a greater quantity of prescription drugs per location and a narrower range of items than retail stores.

Over the years, health care institutions have consolidated to form integrated delivery networks (IDNs), which are organized to provide efficient and cost-effective medical services to a community. According to data compiled by the SMG Marketing Group, Inc., there are a total of 604 IDNs in the United States as of April 1999 (NWDA, 1999). Some health care institutions, including individual hospitals, chains, and IDNs, have combined to form group purchasing organizations (GPOs). While the GPOs do not purchase the drugs themselves or provide drug distribution services, they use the aggregated purchasing power of their members to negotiate favorable contracts with manufacturers and wholesalers on behalf of their members (U.S. District Court for the District of Columbia, 1998).

SMG Marketing Group, Inc., estimates that as of April 2000, there were a total of 701 hospital GPOs in the United States. Further, of these 701 GPOs, 416 are multi-hospital systems that own, manage, or lease two or more hospitals (SMG Marketing Group, Inc., 2000).

2.2 Pharmacy Benefit Management Companies (PBMs)

Pharmacy benefit management companies (PBMs) administer the prescription drug part of health insurance plans on behalf of plan sponsors such as self-insured employers, insurance companies, and health maintenance organizations (HMOs). The objective of these companies is to provide high-quality drug care at the lowest possible cost (GAO, 1995). The development of PBMs in the U.S. coincides with

the emergence of prescription drug benefits in health care plans in the 1970s and 1980s. The precursors of PBMs include pharmacy claims processors and mail-order pharmacies. While PBMs continue to provide pharmacy claims processing and mail-order pharmacy services to their customers, many now provide additional services, including

- Rebate negotiations with drug manufacturers,
- Development of pharmacy networks,
- Formulary management,
- Prospective and retrospective drug utilization reviews (DURs),
- Generic drug substitution, and
- Disease management programs (Levy, 1999).

Rebate Negotiations with Drug Manufacturers. PBMs represent health plans and their enrollees in dealing with drug manufacturers and pharmacies in the prescription drug market. For example, a PBM negotiates with drug manufacturers to obtain rebates for a plan sponsor in return for inclusion and low-cost designation of the manufacturers' drugs on the plan's formulary (GAO, 1997). These rebates usually take the form of a direct payment from the manufacturer to the PBM. For example, in a simple rebate arrangement, the PBM may periodically report to the drug manufacturer the number of prescriptions for a given drug filled by the PBM's enrollees; the manufacturer then pays the PBM an agreed-upon amount for each prescription. Alternatively, the PBM and the drug manufacturer may negotiate an agreement where the PBM is reimbursed for moving market share (i.e., significant increases in the number of prescriptions for the manufacturer's drug) (DHHS, 2000). Although there are no published data available on the magnitude of manufacturers' rebates, they are estimated to range from 2 to 21 percent of acquisition price and can be as high as 35 percent for selected drugs (DHHS, 2000).

PBMs generally pass on the rebates they negotiate with drug manufacturers to their customers. Consequently, the insurer or the self-employed insurer typically receives 70 to 90 percent of the rebates (DHHS, 2000).

Development of Pharmacy Networks. In addition to drug manufacturers, PBMs also negotiate with retail pharmacies to obtain various discounts on prescription drug prices. Additionally, PBMs try to assure adequate sites for patients enrolled in the various health plans to obtain their prescription drugs. Thus, PBMs try to optimize their position by obtaining the widest geographic pharmacy coverage while keeping costs at their lowest. Figure 2-1 shows a typical network in which a PBM operates.

As part of their management functions, PBMs provide pharmacists information on a variety of issues before drugs are dispensed to the patients. The type of information provided includes (1) data on applicable co-payments, co-insurance, or deductibles; (2) details relevant to any online claims adjudication; (3) concurrent drug utilization review (DUR) data on basic eligibility requirements, drug interactions, and adverse drug reactions; (4) details about any formulary restrictions; (5) data about any generic substitution requirements; and (6) information on brand-name and generic drug dispensing fees (Levy, 1999).

Formulary Management. Formulary management involves the development of a drug formulary, which is a list of drugs that an insurance plan uses to make reimbursement decisions. Formularies help control drug costs by (1) encouraging the use of formulary drugs through compliance programs that inform

physicians and enrollees about which drugs are on the formularies; (2) limiting the number of drugs a plan will cover; or (3) developing financial incentives to encourage the use of formulary products. PBMs rely on pharmacy and therapeutic (P & T) committees, consisting of pharmacists and physicians, to determine the number of drugs to include on the formulary (GAO, 1995).



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Formularies can be open, incentive-based, or closed. An open formulary usually implies that the plan will cover all drugs except those listed as exclusions to the drug reimbursement policy. An incentive-based formulary provides enrollees with financial benefits if their physicians prescribe formulary drugs. Under the arrangement, the health plan still reimburses enrollees for non-formulary drugs but requires them to make higher co-payments than for formulary drugs. A closed formulary details the specific drugs that meet the plan's reimbursement policy. Under a closed formulary, enrollees generally pay the full cost of non-formulary drugs prescribed (GAO, 1995 and DHHS, 2000).

Drug Utilization Reviews (DURs). PBMs conduct prospective DURs to control drug use before physicians write prescriptions. Under prospective DUR, PBMs use a computer link with network pharmacists to review each prescription before it is dispensed. Prospective DURs are designed to help PBMs to identify whether there is a generic or formulary alternative to the prescribed drug and whether the drug will duplicate an existing prescription or will adversely interact with other drugs the patient is using. For retrospective DURs, PBMs analyze the drug utilization statistics of a customer's enrollees to identify any instances in which physicians prescribed potentially inappropriate medications. If PBMs detect inappropriate patterns of prescribing or consumption, they then contact and educate physicians about more appropriate and potentially cost-effective treatments (GAO, 1995).

Generic Drug Substitution. Many PBMs offer incentives to their enrollees to select generic instead of brand-name drugs as these are less costly than their brand-name counterparts. PBMs facilitate these therapeutic substitution programs through the mail-order pharmacies they operate (Levy, 1999).

Disease State Management (DSM) Programs. PBMs also initiate disease state management (DSM) programs to contain spending for chronic conditions such as asthma, cystic fibrosis, hemophilia, and multiple sclerosis. In developing these programs, PBMs evaluate various treatment options, or therapies to identify those that are associated with better therapy management and low overall spending. PBMs then attempt to educate both health plan enrollees and their physicians about these more cost effective treatments and monitor the degree of their compliance with the related protocols over time (GAO, 1995).

There are an estimated 76 PBMs in the United States (SMG Marketing Group, Inc., 1999). The top five PBMs by number of covered lives include PCS Health Systems with 56.0 million, Merck-Medco Managed Care with 51.0 million, Diversified Pharmaceutical Services with 23.9 million, Express Scripts ValueR/X with 22.7 million, and WellPoint Pharmacy Management with 15.5 million (NWDA, 1999). SMG Marketing, Inc., reports that on average, 6.2 prescriptions are written per year for each covered life of which 55.7 percent are branded and 44.3 percent are generic drugs.

Some PBMs are privately owned companies whereas others are either owned by or affiliated with pharmaceutical manufacturers, health maintenance organizations, or pharmacy chains. Table 2-1 presents available data on selected PBMs in the United States as gathered from various sources.

The various purchasing methods (PBMs, IDNs, GPOs) affect the destination of drug products (i.e., they help determine eventual purchasers), but in general they do not affect the physical logistics of drug distribution. ERG did not investigate the extent to which purchasing organizations might indirectly affect the logistics of drug distribution by influencing purchasing patterns.

2.3 Retailers

The retailers, which include independent drug stores, retail chains pharmacies, and mail-order pharmacies, are the major customers of wholesalers with total prescription purchases of \$76.4 billion in 1998 (NWDA, 1999).

Independent drug stores are defined as companies having three or fewer stores. There are currently an estimated 22,000 independent drug stores in the United States (ERG, 2000). Independent drug stores purchased \$19 billion in prescription drug products in 1998, with the majority (96 percent) purchased from wholesalers (NWDA, 1999). Over the years, independent drug stores have joined group purchasing organizations (GPOs) in increasing numbers to gain greater leveraging power with wholesalers and manufacturers.

Company	Ownership	Lives Covered (1999)	Sales (\$ millions) (2000)	Employment (2000)	SICs Reported	Additional Information
PCS Health Systems	Rite Aid Corp.	56.0 million	\$14,500	77,258	5912	Operates retail drug stores which sell health and beauty aids, proprietary drugs, housewares, tobacco products, sundries, and prescription medicines
Merck-Medco Managed Care	Merck & Co.	51.0 million	\$35,500	62,300	2834, 2833, 2836, 2835	Develops, produces, and markets human health care products, including therapeutic and preventive agents generally sold by prescription; produces animal health products; provides pharmaceutical benefit services
Diversified Pharmaceutical Services	SmithKline Beecham	23.9 million	\$12,300	47,200	2834, 2844, 8071	Researches, develops, manufactures, and markets a wide range of health and personal care products, including pharmaceuticals; provides disease management and pharmaceutical benefit management services;

						performs clinical laboratory testing services
Express Scripts Value R/X	Express Scripts	22.7 million	\$5,520	4,606	5912, 8099, 8093	Provides broad range of pharmacy benefit management services to health benefit plan sponsors including pharmacy network administration, drug utilization review, and mail pharmacy service; and offers infusion therapy services and managed vision care programs
WellPoint Pharmacy Management	WellPoint Health Networks	15.5 million	\$8,290	10,600	6324, 6719	Holding company with subsidiaries that offer managed healthcare plans through health maintenance and preferred provider organizations
Integrated Pharmaceutical Services	Foundation Health Pharm.	14.0 million	\$8,790	12,000	6324, 6719	Holding company with subsidiaries that operate health maintenance organizations and offer managed health care product coordination for multi-region employers and administrative services for medical groups and self-funded benefits programs
scope="row" Advance Paradigm	Advance Paradigm, Inc.	13.0 million	\$2,150	1,370	8099	Provides pharmacy benefit management services including clinical and benefit design consultation services to health plan sponsors
Caremark - Prescription Service Div.	Caremark Rx Inc.	10.0 million	\$3,860	4,373	6324, 8099	Develops, organizes and manages integrated health care delivery systems that provide primary and specialty health care services to prepaid managed care enrollees and fee-for-service patients; performs prescription benefit management and therapeutic pharmaceutical services
First Health Services	First Health	8.0 million	\$0.474	3,600	6324, 8742, 8099	Develops and manages payer-based PPO networks that incorporate both group health and

					workers' compensation medical providers; provides prescription drug benefit plan administration, drug utilization review, and a nationwide network of nearly 50,000 pharmacies; provides centralized clinical management programs and other medical consulting services
Source: Yahoo Business, 2000, Disclosure, 2000, and NWDA, 1999					

Retail chains, defined as having four or more stores, include chain drug stores, mass merchandisers, and food stores. In 1998, retail chains purchased around \$46 billion in prescription drugs (NWDA, 1999). While retail chains rely on wholesalers to deliver a certain percentage of their drug needs, the largest retail chains also maintain their own internal distribution system. Like wholesalers, self-warehousing chains receive the drugs from manufacturers in large quantities, store the drugs in their own warehouses, and deliver the drugs to their retail outlets through their own distribution systems. Retail chains are the only dispensers of prescription drugs that self-warehouse to any significant extent. Large chains, such as Rite-Aid and Eckerd, have the capacity to self-warehouse up to 90 percent or so of the prescription drugs that are sold in their stores. Over the years, retail chains have steadily decreased their reliance on wholesalers. At the same time, drug manufacturers, that used to sell exclusively or principally to wholesalers, sell increasing shares of their production directly to the chains. In 1998, over 63.3 percent of purchases by retail chains were for self-warehousing (NWDA, 1999).

Mail-order pharmacies are a hybrid between the distribution and retail ends of the pharmaceutical industry. Mail-order pharmacies receive prescriptions by fax or through the mail and dispense the drugs directly to consumers anywhere in the United States. Mail-order is often used to dispense "maintenance" drugs regularly used by patients over an extended period of time. Mail-order pharmacies often use the services of a wholesaler to buy their prescription drug inventories. They then store their inventories in one or more of their warehouses. There are approximately 63 mail-order pharmacies and 32 retail companies with mail-order pharmacy operations in the U.S. (NWDA, 1999).

2.4 The Influence of Pharmacy Benefit Management Companies (PBMs) and Health Maintenance Organizations (HMOs) on Prescription Drug Prices

Department of Health and Human Services conducted a major study, published in April 2000, assessing prescription drug pricing (DHHS, 2000). This section summarizes one set of findings of the study's profile of price setting.

Most drug purchasers, almost regardless of their health care coverage or insurance plan, eventually receive their prescription products at a pharmacy. Table 2-2 describes how the groups discussed above, including PBMs and HMOs, influence the prices set. The table provides an illustrative hypothetical example of how prices are set under different schemes for a brand name prescription product using a relatively simple set of wholesale transactions.

Table 2-2 An Illustrative Example of Pricing for a Brand Name Prescription Drug					
	Cash Customers (No				Federal

Data Element	3rd Party Payment at Point of Sale)	Insurers and PBMs	HMOs [a]	Medicaid	Supply Schedule
List Price (AWP)	\$50	\$50	\$50	\$50	\$50
Manufacturer's price (<i>Manufacturer to wholesaler other entity</i>)	\$40 (AWP - 20%)	\$40 [b] (AWP - 20%)	\$34 (AWP - 33%)	\$40 [b]	\$24 (AWP - 52%)
Acquisition price (<i>Wholesaler to pharmacy</i>)	\$41	\$41	NA	\$41	NA
Retail price at pharmacy (<i>Total of amounts paid by customer and reimbursed by 3rd party payer</i>)	\$52 (AWP + 4%)	\$46 [b] (AWP - 13% + \$2.50)	NA	\$43.50 (\$41 + \$2.50)	NA
Retail price, less typical manufacturer rebate	NA	\$30 to \$44 (5% to 35% rebate)	NA	\$30 to \$37 (15.1% to 30% rebate)	NA
Ultimate (net) amount paid by final purchaser and/or consumer	\$52	\$30 to \$44	\$30 to \$37	\$30 to \$37	\$24

Source: DHHS, 2000
"NA" = Not applicable
[a] The column refers only to those HMOs that buy directly from manufacturers.
[b] Without rebates
Notes:
[1] Prices are based on a composite of several commonly prescribed brand-name drugs for a typical quantity of pills. For some cells in the table, the relative relationships have been calculated based on relationships reported in the literature and on other relationships widely reported by industry sources.
[2] The prices are used for illustrative purposes only and do not represent and type of overall average.
[3] Prices reported in the table include both amounts paid by third-party payers and amounts paid by the consumer as cost sharing.

The table shows that the first transaction, that from manufacturer to wholesaler, occurs at a discount from the average wholesale price (AWP). The AWP serves as a list price for drugs, but most sales occur well below this list price. DHHS reports that average sales occur at a 20 percent discount from AWP as indicated by various industry sources. In the illustration provided in Table 2-2, the HMO has bought the drug directly from the manufacturer and negotiated a steeper discount than that received by insurers or PBMs. This deeper discount would be representative of some of the largest HMOs such as Kaiser Permanente that are running their own pharmacies. Other HMOs use PBMs to manage their clients' drug purchases.

The wholesaler's markup to the manufacturer's price is modest, generally at 2 to 4 percent. In this case, the wholesaler's markup is shown to increase prices from \$40 to \$41 dollars, where it is applicable.

Next, the price is marked up by the pharmacy by a percentage amount and, in some cases, by a fixed charge for the dispensing function. The study indicates that the pharmacy will commonly add 20 to 25 percent to the drug cost, or in this case \$11 on a \$41 drug, for a total \$52 purchase for a cash customer. Where insurers or PBMs are involved, they will negotiate discounts from pharmacists (as well as from drug manufacturers), thereby lowering the price paid by consumers and/or insurers. The DHHS authors note that little is known about the average extent of such discounts offered by pharmacies though a \$5 markup on the \$41 drug is assumed in their example.

Insurers and PBMs generally negotiate manufacturer rebates on their drug purchases. DHHS estimates the possible range of such rebates as 5 to 35 percent, reducing the \$46 drug cost to \$30 to \$44. PBMs that use restricted formularies are best able to negotiate rebates with manufacturers.

Federal programs pay for drugs according to the Federal Supply Schedule. As a very large purchaser of drugs, the Federal government can negotiate steep discounts from retail prices.

GLOSSARY

Authorized distributor (or authorized distributor of record). Any distributor of a prescription drug that has a written agreement with the manufacturer of the prescription drug and conducts at least two transactions with the manufacturer of the prescription drug within any 24-month period.

Average wholesale price (AWP). The AWP is a published wholesale price or "list price" suggested by the manufacturer of the drug. Although the AWP does not capture the actual transaction prices, it serves as a reference for pricing, negotiations, and reimbursements.

Brokerage. The combination of drop-ship and dock-to-dock delivery services provided by wholesalers. In brokerage services, wholesalers do not bring the products into their warehouses.

Buy-side margin. The term refers to the early payment discounts and other earned or negotiated rebates and discounts received by wholesalers from drug manufacturers. Further, increases in the value of wholesalers' inventories as manufacturers' prices rise are also considered buy-side margins.

Chain drug store. A company that owns and operates four or more pharmacies. Food store and mass merchandiser pharmacies are also considered chain drug stores. Examples include Shaw's, Wal-Mart, Rite-Aid, and CVS.

Dock-to-dock delivery. In dock-to-dock delivery, a wholesaler obtains the drugs from the manufacturer and delivers them to a dispenser's own warehouse without taking the drugs into its own inventory. Thus, dock-to-dock sales are also referred to as non-stock sales.

Drop shipment. In drop shipments, a drug manufacturer directly delivers the drugs to a dispenser, but the order and payment is made through a wholesaler.

Drug formulary. A list of drugs compiled by a government body, third-party insurer or health plan, or another institution that may or may not be dispensed or reimbursed. Some institutions or health plans develop closed (i.e., restricted) formularies where only those drug products listed can be dispensed in that institution or reimbursed by the health plan. Other formularies may have no restrictions (open formularies) or may have limited restrictions such as higher patient co-payments for non-formulary drugs.

Float. The time differential between when a wholesaler receives payment from its customer (i.e., retail dispenser, health care organization, etc.) and when the payment is due to its supplier (i.e., pharmaceutical manufacturer or other wholesaler).

Group purchasing organization (GPO). An entity consisting of two or more hospitals or other health care entities that is formed to offer its members access to purchasing contracts for health supplies (i.e., pharmaceuticals, biologics, medical/surgical equipment, laboratory supplies, and other capital equipment). GPOs actively negotiate contracts with manufacturers on behalf of their members, provide their members access to the purchasing contracts of other GPOs, and/or have central purchasing supply sites which are utilized by their members.

In-state wholesaler. A wholesaler that distributes drug products in a given state and is physically

located in that state.

Independent drug store. A company that owns and operates three or fewer pharmacies. These are also referred to as community or neighborhood pharmacies.

Integrated delivery network (IDN). Also known as integrated healthcare delivery network (IHDN), integrated delivery system (IDS), or integrated health/healthcare system (IHS). A financial and management structure that unites hospitals, physicians, ambulatory care sites, and managed care plans through ownership or exclusive formal agreements to provide a system to deliver a continuum of healthcare services. The IDN appears totally integrated to the patient, provider, and payer throughout the healthcare system. Increasingly, a shared financial information system and optimization of resources connect the structural components of the IDN.

Mail-order pharmacy. A pharmacy that dispenses prescriptions to patients who submit their prescriptions by mail or fax. The pharmacy then mails the filled prescription to the patient. Mail-order pharmacies generally serve patients on long-term drug therapies and those without immediate drug needs. The average size of prescriptions (i.e., the number of capsules or tablets) dispensed by mail-order pharmacies is usually 3 times larger than those dispensed by retail pharmacies (NACDS, 2000).

Manufacturer-direct sale. The type of sale that bypasses the need for any intermediary distributor. The product is sold and shipped directly by the manufacturer to the dispenser.

Mass merchandiser. An establishment, also known as a department store, that is primarily engaged in retailing a wide range of merchandise, including apparel, furniture, appliances, paint, hardware, toiletries, cosmetics, and prescription drugs. Prescription drugs are dispensed through an on-site pharmacy. Examples of mass merchandisers include Wal-Mart, K-Mart, and ShopKo.

National Wholesale Druggists' Association (NWDA). The national trade association that represents pharmaceutical and related healthcare product distributors throughout North America.

Non-stock sales. Brokerage sales, dock-to-dock delivery sales, drop shipments, and any other form of sales not placed in inventory. These generally have a significantly lower margin than stock sales.

Out-of-state wholesaler. A wholesaler that distributes drug products in a given state but is physically located in another state.

Pharmaceutical Distributors Association (PDA). An industry trade association that represents secondary and smaller wholesalers. The association's membership includes Supreme-Purity Distributors Company, Quality King Distributors, Inc., and Victory Wholesale Grocers Company.

Pharmacy benefit management company (PBM). An entity that administers the prescription drug part of health insurance plans on behalf of plan sponsors, such as self-insured employers, insurance companies, and health maintenance organizations (HMOs). PBMs provide pharmacy claims processing and mail-order pharmacy services in addition to other services, such as rebate negotiations with pharmaceutical manufacturers, development of pharmacy networks, formulary management, drug utilization reviews, generic drug substitution, and disease management programs.

Rebate. The amount that the manufacturer of the drug pays to an insurer or health plan for each unit of drug dispensed. Rebate arrangements exist between drug manufacturers and Medicaid agencies, HMOs, and other insurers or drug plans, and generally bypass the pharmacy. Rebates are also referred to as

"after market" arrangements because they do not affect the prices paid at the time of service, but are implemented later, ultimately reducing the payer's expenditures or program costs (Kaiser Family Foundation, 1999)

Self-warehousing. A type of distribution system where the retail or the institutional dispenser take on the task of distribution itself. Instead of relying on an outside distributor, the retailer or the institutional dispenser buys direct from the manufacturer, stores the drugs in one or more of its own warehouses, and then delivers them to its retail stores or hospitals as needed. Self-warehousing is most prominent among the chain drug stores.

Sell-side margin. Wholesaler revenues that are generated from fees and other charges obtained from dispensers. During the 1980 to 1998 period, sell-side margins have declined from 5.5 percent to 0.35 percent (U.S. District Court for the District of Columbia, 1998).

Upcharge. The percentage fee that is paid by the dispenser to the wholesaler for the cost of distribution.

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1. Based on the context of the discussion in the source, this estimate of the division of the average prescription dollar among manufacturers, wholesalers, and dispensers, reflects all rebates and markups applicable to the industry.
2. A small drug store's contract with a distributor might require that they purchase all pharmaceuticals or a specified range of pharmaceuticals from that distributor.
3. Data provided in Robert Morris Associates Annual Statement Studies is compiled from bank loan requests of companies and includes ratios and common size financial statement percentages segregated by sales size and quartile.
4. Defined in terms of the total dollar volume of pharmaceuticals purchased.

[<<Back](#) [Table of Contents](#)