

A Need for Government Intervention? Prescription Drug Prices and Retail Mark-Ups

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Abstract

The high cost of prescription drugs has been an issue that numerous federal agencies have examined for years. In 2003, Congress passed the Medicare Prescription Drug, Improvement, and Modernization Act, better known as Medicare Part D, in an effort to ease the burden of skyrocketing prescription prices for citizens 65 and older. While much of the discussion has focused on the impact on Medicare and Medicaid, the search for the source of high prescription drug prices has possible benefits for all patients. Unfortunately, the vast majority of research into this topic focuses only on the manufacturers of prescription drugs. This thesis examined the relationship between wholesale and retail prices of prescription drugs to discover whether this is another possible source of high prescription drug costs that policy makers need to consider. The findings suggest that more research is warranted. Many of the pharmacies surveyed reported unexpected *negative* mark-ups. Moreover, the Average Wholesale Price evidently is not an accurate basis for comparison with actual retail prices. The findings suggest that more research is warranted, including studies by federal legislative and executive branch actors with investigatory authority.

*Dedicated to the memory of
Faye Burkhalter*

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Chapter 1

Introduction

The high cost of prescription medications is an issue that recently has received a great deal of attention. Newspapers are littered with references to patients, particularly elderly patients, choosing between buying groceries or paying for their monthly prescription drug bill. The Associated Press conducted a poll in February of 2004 in which it found that one out of every three respondents claimed that paying for their prescriptions was a problem, and of those, “three out of four said they had to put off filling their prescriptions or cut back on the doses because of the cost.”¹ Most believe that the problem will only get worse: NC MedAssist, which is a program that provides free pharmaceuticals to underprivileged patients in North Carolina, expects demand for their services to increase 60% in 2011 in response to the rising cost of medications.²

High prescription drug costs have preoccupied those in the United States government, with many wondering how the skyrocketing costs will affect government-funded programs such as Medicare and Medicaid. Unfortunately, the Congress and federal agencies that investigate the source of high prescription medication cost have failed to produce any significant proposals to address the problem,³ arguably in large part because no one is taking the entire pricing process into consideration. By focusing only on drug manufacturers and their role in pricing, federal officials may be overlooking other factors that contribute to the high

¹ “The High Cost of Medications: A bitter Pill to Swallow” *Institute for Safe Medication Practices* (May 20 2004), <http://www.ismp.org/newsletters/acutecare/articles/20040520.asp>.

² “NC MedAssist Eliminates the Choice Between Food or Medicine for Low-Income Uninsured in NC,” *Marketwire* (November 16, 2010), <http://www.marketwire.com/press-release/NC-MedAssist-Eliminates-Choice-Between-Food-Medicine-Low-Income-Uninsured-NC-1354543.htm>.

³ Medicare Part D has been marginally successful in easing the financial burden placed upon seniors by high drug prices, and Medicaid helps some recipients offset prescription costs, but has stringent guidelines, varies by state, and does not provide coverage for all poor persons. Currently, no federally funded program exists to provide prescription drug coverage for average-income persons and families.

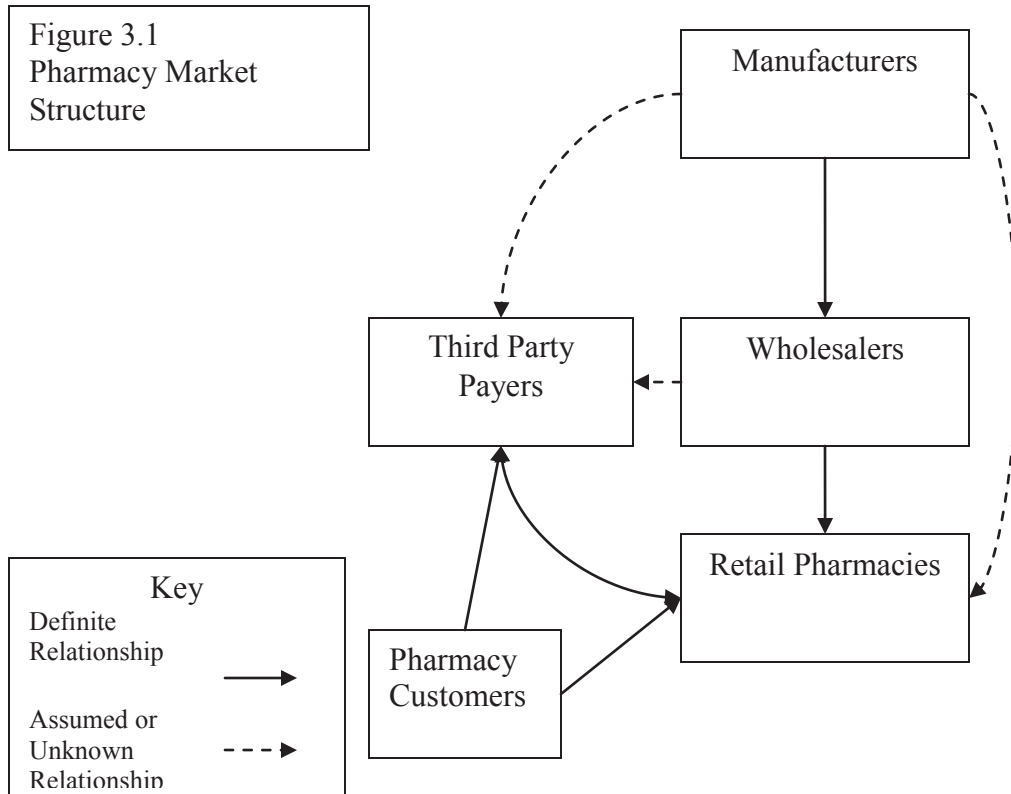
prices of drugs. Pharmacies, which act as retail outlets for prescription drugs, play a part in determining the final price of a particular drug. This study seeks to examine the relationship between wholesale and retail prices of prescription drugs to discover whether this is another possible source of high prescription drug costs that policy makers need to consider.

There is reason to suspect a significant difference between the wholesale and retail price of a specific drug due to the complexity of the retail market for prescription drugs. Many different third-party payers, such as Medicare and private insurance companies, are able to negotiate lower prices for drugs in efforts to control their own costs. Thus, pharmacies may have a higher retail price for consumers without private insurance or Medicare in order to cover overhead costs and increase profits.

This chapter is organized into four sections. It begins with a short overview of data on pricing, which details my original hypothesis. Next, I discuss the significance of this study to political and policy discourse in the United States. This is followed by a discussion of the limitations inherent in a study of this nature, and then the chapter concludes with a brief overview of the organization of the thesis.

1.1 Price data

The pharmaceutical industry is structured in an unusual manner; it is not completely hierarchical, with manufacturers at the top, wholesalers in the middle, and retailers at the bottom. Instead, the industry also has third party payers, which often are outside of the hierarchy. Third party payers include Health Maintenance Organizations (HMOs) and Pharmacy Benefit Managers (PBMs) as well as insurance companies. The industry's structure is similar to Figure 3.1.



Exactly where the wholesalers and third party payers fit is not fully clear. The wholesale sector of the industry is cloaked in shadow, so we are not sure exactly who buys from whom and how much they pay. It is quite possible that third party payers purchase some drugs from the manufacturer, while buying others from wholesalers. Pharmacies often purchase from wholesalers, but they also may buy directly from manufacturers in certain cases.

This research compared wholesale prices (the prices at which wholesalers sell prescription drugs to pharmacies) and retail prices (prices that pharmacies charge consumers for drugs). The difference between the two prices is also known as the "mark-up."⁴ I focused on two drugs from each of three major pharmaceutical companies in the United States: Pfizer, Merck, and GlaxoSmithKline. The prices were taken from a sampling of different pharmacies from three categories: national discount department retailer, large chain, and independent

⁴ A markup is a percentage or amount that is added to the wholesale price to get the retail price.

pharmacies.

I expected to find a significant difference between the wholesale and the retail prices of each drug, since markups are generally more than 50%.⁵ Specifically, I anticipated that the large national discount retailer pharmacy would have the lowest mark-up of the three types chosen; the independent pharmacies would have the highest, and large chain pharmacies would have a mark-up that fell somewhere in between. This is because independents usually have higher operational costs⁶ and lower turnover due to smaller stores than the larger pharmacies. When I examined the data, however, it became evident that this is not the case, or at least not entirely. Additionally, I found surprising results in the form of negative markups, which raised several questions about how pharmacies formulate markups for their prescription drugs. Unfortunately, answering these questions is not easy, as finding out the actual wholesale price of a medication, and not the average, is nearly impossible.

1.2 Significance

The rising cost of prescription drugs has been a political issue for years, with much of the focus centering on Medicare, the federal health program for the elderly, and Medicaid, a joint federal-state health program for people who meet particular income requirements. The particular concern surrounding those programs is how governments, both state and national, will be able to continue to provide these services as more people utilize them and as prescription costs go up. There is even greater concern since the advent of Medicare Part D, which helps cover prescription drug costs for the elderly.⁷

⁵ A significant difference was indicated by a higher markup on a prescription drug than for other retail items in the store. A further discussion of markups can be found in the limitations section of this chapter.

⁶ John M. Brooks, William Doucette, and Bernard Sorofman, "Factors Affecting Bargaining Outcomes Between Pharmacies and Insurers," *Health Services Research*, (April 1999), 448.

⁷ United States Senate Committee on Aging, *The High Cost of Prescription* Hearing, 27 August 2001. Washington: Government Printing Office, 2001: 1.

The rising cost of drugs also affects those who do not utilize these programs, especially moderate income Americans. Although numerous Americans have health insurance, many policies cover only a portion of a prescription's price, while others do not cover specific drugs. A significant number of Americans do not have health insurance at all⁸, and therefore must pay full price for their prescriptions. As prices continue to rise⁹, policy makers feel pressured by their constituents to find ways to control those prices. Researching the reasons behind high drug costs may help legislators to be better able to determine what routes to take, if any, when considering legislation or regulation that deals with the rising prices.

1.3 Limitations

As with any research project, this one has limitations. One major limitation is that it does not include a fully representative sampling of individual pharmacies due to their sheer number, with many reporting different prices for the same drug. To report and to average so many different prices would alone be a massive undertaking. Since my primary purpose was to explore the possibility of an overlooked connection between wholesale and retail prices, I contented myself with looking at a smaller, purposive sample.

Markups also provide another limitation, since there is no industry-wide standard for retail markups. One source, however, considers 50% to be the benchmark, or “keystone” for retail markups, and is determined by doubling the cost of the product.¹⁰ Thus, my look at

⁸ In 2009, the number of uninsured persons rose to 50.7 million.

⁹ According to the U.S. Bureau of Labor Statistics, prescription drug prices have been rising steadily over the last seven years. At the advent of this research in 2007, drug prices had a percent change of +4.2, which was the lowest it had been in three years. In 2008, drug prices had a percent change +7.2 and in 2009 a percent change of +7.1. [“Producer Price Index –Commodities,” U.S. Bureau of Labor Statistics http://data.bls.gov/PDQ/servlet/SurveyOutputServlet?series_id=WPUSI07003 (accessed November 10, 2010).]

¹⁰ Ronald L. Bond, “Finding the Right Price for your retail products,” *Entrepreneur.com*, (May 25, 2008) <http://www.entrepreneur.com/management/operations/article193986.html> (accessed December 12, 2010).

markups will utilize 50% as the standard when examining the percentages, though I have provided the markups in both dollar and percent amounts. The dollar amounts are presented because there are numerous ways of calculating markup percentages, each yielding a different result.¹¹

Another limitation is that some pharmacists did not agree to give me their retail prices. This created numerous obstacles, including having to pick new stores to replace those that declined to participate in order to obtain enough responses from the varying types of pharmacies. Unfortunately, I was not able to reach my goal of having responses from every category of pharmacy in each city, thus making my final results systematic, but incomplete. Another limitation is that some pharmacists did not cooperate and refused to give me their retail prices, which made the research more difficult. I had hoped to avoid this limitation by assuring them complete anonymity, but that did not work in many instances.

An unforeseen limitation was that the corporate headquarters for my original Large National Discount Retailer Pharmacy opted out of all research. This information was not immediately available on its store or corporate websites. Thus, I picked another Large National Discount Retailer Pharmacy, and was able to continue.

The biggest limitation is the Average Wholesale Price (AWP). As its name suggests, the AWP is an average¹² of wholesale prices for pharmaceuticals, meaning that it is not the actual wholesale price for the drugs chosen for this study. Unfortunately, prior research highlighted in the previous chapter as well as various articles uncovered during this study indicated that actual wholesale prices are elusive, making the AWP the best starting point for finding

¹¹ For this study, I used the formula to calculate percentage based on cost, in which I took the markup and divided by the cost, which in this case is the wholesale price. This is the simplest method of calculating mark up percentage.

¹² It is not fully explained how the AWP is calculated – many independent researchers seem to think the number is arbitrary, much like the sticker price on a car, or the “Suggested Retail Price” of many retail goods.

markups.

1.4 Overview of Study

This thesis is divided into five chapters, each detailing one aspect of the research. I begin in Chapter 2 with a look at the existing research that covers prescription drug prices. Unfortunately, very little current research exists on wholesale and retail prices of drugs. Instead, I briefly examine what has been focused on: various aspects of manufacturing that have contributed to the high cost of prescription drugs.

In Chapter 3, I review the methodology I used to gather the data for the study. This included choosing pharmacies and developing a way to collect price data from retailers. This chapter also details how I overcame numerous challenges that arose during the duration of the study. Chapter 4, then, examines the results of the study. Finally, in Chapter 5, I discuss the new questions the data raised as well as explore possible answers to those questions. I also examine possible next steps to help determine the actual sources of the high costs of prescription medications.

Chapter 2

Relevant Scholarship

A plethora of scholarship focuses on high prescription drug prices. The vast majority of this work examines the actions of the pharmaceutical companies that influence pricing. Chief among these disputed actions are marketing practices utilized by the pharmaceutical industry to sell its products, not only to the public, but also to physicians and other medical professionals with the ability to prescribe medications. This chapter will review research into the high prices of pharmaceuticals. Most of the work focuses on the manufacturers rather than the entire industry, although some does look at the wholesale sector. No research to date has examined the retail sector of the pharmaceutical industry as a possible source of high drug prices, even though some have included it as part of the puzzle when examining the industry as a whole.

2.1 History of Congressional Examinations of Prescription Drug Prices

The U.S. national government has kept an eye on health care, including prescription prices for decades, though just how closely it was watching did not become apparent until 1965, with the passage of the Social Security Act of 1965, which created Medicare and Medicaid. These two programs helped ease the burden of health costs for seniors and indigent citizens, respectively.¹³ Medicaid covered prescriptions, but Medicare only covered pharmaceuticals in special cases. In 1988, the Medicare Catastrophic Coverage Act was passed, which phased in some prescription drug coverage; nonetheless, it was subject to high deductibles and was considered useful only in cases where a patient's health care and

¹³ "Centers for Medicare and Medicaid Services: History Overview," *Centers for Medicare and Medicaid Services*, September 24, 2010, <https://www.cms.gov/History/>.

prescription drug costs were extremely high.¹⁴ The legislation was repealed the following year, however, leaving seniors without prescription drug coverage until 2003, when the Medicare Prescription Drug, Improvement, and Modernization Act was signed into law.¹⁵ This act established Medicare Part D, which provided prescription drug coverage for seniors; Part D works in the same way as prescription drug coverage from private insurance companies, and it does not require a high deductible. This was an enormous boon to senior citizens, who often faced extreme financial burdens from prescription drug prices.

In addition to passing legislation to assist seniors with health care costs, Congress held numerous hearings and conducted reports on the issue. In 1985, the Subcommittee on Health and the Environment held a hearing on prescription drug price increases. From January 1981 to June 1985, the Consumer Price Index rose 23 percent; however, drug prices rose by more than double that number, jumping by 56 percent.¹⁶ This increase caught the attention of the U.S. House Subcommittee on Health and the Environment, which held a hearing on prescription drug price increases. Subcommittee chair Rep. Henry A Waxman (D-CA) in an opening statement made sure to state that the subcommittee no interest in impeding “free enterprise”: “At the outset and at the risk of belaboring the obvious, let me say we have not gathered to challenge the free enterprise system nor does anyone in this subcommittee suggest that ‘profit,’ per se is a dirty word.”¹⁷ Rep. Waxman went on to say, however, that the members of “Congress have a responsibility to investigate this situation, to criticize where there are abuses,

¹⁴ Robert L. Ecker, “The Medicare Catastrophic Coverage Act of 1988,” *The CPA Journal Online*, March 1989, <http://www.nysscpa.org/cpajournal/old/07107532.htm>.

¹⁵ “Key Milestones in Medicare and Medicaid History, Selected Years: 1965-2003,” *Health Care Financing Review* (Winter 2005-2006), 3.

¹⁶ Committee on Energy and Commerce, House of Representatives, *Prescription Drug Price Increases*, Hearing, 15 July 1985, Washington: Government Printing Office, 1986, 1.

¹⁷ *Ibid.*

and, if necessary, to legislate, to protect the public.”¹⁸ Thus, Congressman Waxman put to words the delicate balance that Congress must maintain – it must not stifle business, but it also cannot let those businesses abuse citizens in the name of profit. The hearing continued, with testimony from representatives from various interest groups, companies (including pharmaceutical companies) and senior citizens, each giving their perspectives on the price increases.

A majority staff report from the Senate’s Special Committee on Aging in 1989 queried whether or not U.S. citizens were getting their money’s worth on prescription drugs. This came after the passage of the Medicare Catastrophic Coverage Act in 1988. The report found that the American public was using approximately the same amount of prescription drugs as they had been in 1980, but the prices of those prescriptions had increased approximately 88% since that time, which was not only impacting citizens, but also Medicaid programs across the United States.¹⁹ The report also found that pharmaceutical manufacturers were charging the public “high prices for new drugs that duplicate existing, and generally less expensive, drug therapies.”²⁰

Another staff report, published in 1991, examined the profitability of pharmaceutical companies. It found that in 1990, the average Fortune 500 industry in the U.S. had an average profitability of 4.6%; the profitability of the top ten drug companies was 15.5% - nearly triple the average. Moreover, the drug companies also led all industries on the three most common profitability measures.²¹ The report also looked into the fact that neither the high drug prices

¹⁸ Ibid.

¹⁹ Special committee on Aging, United States Senate, *Prescription Drug Pricing: Are we getting Our Money’s Worth?* Majority Staff Report, August 1989, Washington: Government Printing Office, 1989, 1.

²⁰ Ibid, 3.

²¹ Special committee on Aging, United States Senate, *The Drug Manufacturing Industry: A Prescription for Profits*, Staff Report, September 1991, Washington: Government Printing Office, 1991, 3.

nor tax incentives seemed to lead to innovation. Drug prices in other countries were examined as well, showing that customers in the U.S. paid substantially more for prescription drugs than those in other countries. This report ended with several policy recommendations, such as reducing the amount of tax breaks the drug manufacturers receive, making the Secretary of the Department of Health and Human Services (HHS) a co-licensee of new drugs alongside the manufacturer, enacting more inflation protection, and imploring the HHS Secretary to conduct a study on the feasibility of forming a Pharmaceutical Products Price Review Board.²² Very few of these recommendations were followed.

Many of the congressional hearings after 1991 dealt with older Americans and the effect of high prices on their budgets. In 1993, a hearing before the Special Committee on Aging discussed how prescription drug prices were affecting the lives of senior citizens.²³ Testimony from senior citizens in this and future hearings helped to pave the way for the Medicare Prescription Drug, Improvement, and Modernization Act.

A hearing before the Senate Committee on Health, Education, Labor, and Pensions on July 18, 2000, examined the forces behind increases in prescription drug costs and "the rising costs of pharmaceuticals as a percentage of total U.S. health care spending."²⁴ Although the hearing examined factors that drove up the retail cost of prescription drugs, its primary emphasis was on factors directly related to the pharmaceutical industry such as research and development and utilization of prescription drugs. Other influences, such as the role of insurance companies and other third-party payers, received relatively little attention. The retail price of medications in relation to the average wholesale price was not considered.

²² Ibid, 17-18.

²³ Special committee on Aging, United States Senate, *Prescription Drug Prices: Out-pricing Older Americans*, Hearing, April 14, 1993, Washington: Government Printing Office, 1993, 1.

²⁴ United States Senate Committee on Health, Education, Labor, and Pensions, *Prescription Drug Costs: What Drives Increases?* Hearing, 18 July 2000, Washington: Government Printing Office, 2000, 1.

A 2001 hearing before the Special Committee on Aging of the United States Senate examined the high cost of drug prices, but only in relation to seniors. The hearing presented mostly personal testimony to support the creation of Medicare Part D.²⁵

In January 2007, the Senate Judiciary Committee held another hearing that focused on actions taken by the pharmaceutical industry that affect drug prices, particularly the practice of paying off makers of generic drugs to prevent lower-cost options from entering the market. The hearing focused on the legality of such actions, and whether outlawing them would create enough competition to lower prices. The Committee also announced a revised bill that would outlaw payoffs to generic drug manufacturers, which would replace a similar bill that did not pass in the previous Congress.²⁶

The U.S. Government Accountability Office (GAO) also examined the rising prices for prescription drugs, but as with the Senate hearing on forces behind rising costs, it chiefly focused on retail pricing trends. These are known as "usual and customary" prices, the prices that someone without health insurance or access to another third-party payer would pay.²⁷ In the report, researchers focused on 99 drugs used primarily by both Medicare enrollees and non-Medicare enrollees with health insurance.

Both the Senate and the GAO have reported on the differences in the prices of drugs in Canada compared with those in the United States. A Senate hearing in 2001 discussed proposed legislation introduced by Senators Byron L. Dorgan (D-ND), John McCain (R-AZ), and Charles Schumer (D-NY) to "allow pharmacists and licensed distributors to go to other

²⁵ *The High Cost of Prescription*, 1.

²⁶ United States Senate Committee on the Judiciary, *Paying Off Generics to Prevent Competition with Brand Name Drugs: Should it be Prohibited?* Hearing, 17 January 2007, Washington: Government Printing Office, 2007: 2.

²⁷ "Prescription Drugs: Trends in Usual and Customary Prices for Drugs Frequently Used by Medicare and Non-Medicare Enrollees," United States Government Accountability Office, October 6, 2004, 1.

countries and access a lower price prescription drug, the identical drug, the same pill put in the same bottle, produced in the same FDA-inspected plant, bring it back to this country and pass the savings along to the consumers."²⁸ The research presented simply examined on the difference in retail prices but did not discuss wholesale prices. Nor did it consider the possibility of imitating some of Canada's existing price controls in order to control the inflation of U.S. drug prices, choosing to focus instead on opening up competition to encourage the U.S. pharmaceutical industry to lower prices. This bill died when the session ended. Dorgan re-introduced similar legislation, S. 242, also called The Pharmaceutical Market Access and Drug Safety Act, on January 10th, 2007, which not only would have allowed pharmacists to access cheaper prescriptions in other countries but also called for the inspection of foreign drug manufacturing facilities²⁹ as well as the use of anti-counterfeiting technology.³⁰ This bill never made it out of legislative hearings. A similar bill, with the same title, was introduced on March 4, 2009 in both the House and the Senate³¹, and was referred to committee, where it died when the session ended.

A GAO report on this same topic is useful because it compares prices and price containment strategies in both the United States and other countries.³² This report provides several possible forms of price containment, such as price ceilings and profit limits, which the United States might consider should a large disparity be found between average wholesale prices of drugs and retail prices of drugs.³³

²⁸ United States Senate Committee on Commerce, Science and Transportation, *Comparative Pricing of Prescription Drugs Sold in the United States and Canada and the Effects on U.S. Consumers* Hearing, 5 September 2001, Washington: Government Printing Office, 2001, 1.

²⁹ *Paying Off Generics*, 50.

³⁰ *Ibid.*, 27.

³¹ H.R. 1928 and S. 525, respectively.

³² "Prescription Drugs: An Overview of Approaches to Negotiate Drug Prices used by Other Countries and U.S. Private Payers and Federal Programs," United States Government Accountability Office, January 11, 2007.

³³ *Ibid.*, 9.

In 2007, the Senate Special Committee on Aging looked at the previously mentioned issue of gifts to physicians and the effect those gifts have on the prices of prescription drugs. The committee heard testimony that suggested that these gifts were compromising doctors' medical judgment "by putting their financial interest ahead of the welfare of their patients."³⁴ This hearing was the precursor to a House bill, H.R. 5605, also known as the Physician's Payments Sunshine Act of 2008, which sought to make disclosure of gifts worth more than \$100 mandatory. This bill never made it past the committee before the Congressional session ended.

It is interesting to note that the 2010 healthcare legislation did not directly address prescription drug issues. The statute does, however, mandate insurance coverage for all U.S. citizens, beginning in 2014, which will ease some of the strain of prescription drug costs on the consumer, but does not address the underlying problem.

2.2 State Intervention

Although the federal government has examined high prescription drug prices, some state governments also have taken initiatives to combat them. The most common method chosen by the states is prescription price pooling, also called bulk buying programs. The idea behind prescription pools is that states buy prescription drugs in large quantities from wholesalers and manufacturers in order "to achieve a lower price for all those included" in the pool.³⁵ The programs focus primarily on buying drugs for Medicaid programs in each state.³⁶

In 2010, there were five multi-state bulk purchasing programs in the United States. The largest is the Minnesota Multistate Contracting Alliance for Pharmacy (MMCAP), which

³⁴ United States Special Committee on Aging, *Paid to Prescribe? Exploring the Relationship between Doctors and the Drug Industry*, Hearing, 27 June 2007, Washington: Government Printing Office, 2008, 1.

³⁵ "Pharmaceutical Bulk Purchasing: Multi-state and Inter-agency Plans," *National Conference of State Legislatures*, July 2010, <http://www.ncsl.org/default.aspx?tabid=14464>.

³⁶ Ibid.

includes 45 states and two cities.³⁷ The program, created in 1985, saves eligible governmental health care facilities approximately 23.7% below the Average Wholesale Price for brand name pharmaceuticals. Participation in MMCAP is completely voluntary, though members are encouraged to “exclusively use MMCAP contracts and contract pricing.”³⁸

The National Medicaid Pooling Initiative (NMPI), created in 2003, is another large bulk purchasing program, with eleven member states.³⁹ Unlike MMCAP, NMPI focuses exclusively on purchasing for the Medicaid program in each member state. Another similar program is the Top Dollar Program (TOP\$), which has seven participants⁴⁰, and was approved in 2005. Vendors manage both TOP\$ and NMPI, with TOP\$ managed by Provider Synergies, and NMPI managed by First Health Services Corporation.⁴¹

The fourth bulk purchasing program is called the Sovereign States Drug Consortium (SSDC), with seven members.⁴² Unlike the previous two, SSDC is owned and operated by the member states. Each state produces its own prescription drug list, with preferred drugs that the states purchase.

Finally, the smallest program is the Northwest Prescription Drug Purchasing Consortium (NPDPC). By 2011, only two states, Oregon and Washington, were members of the NPDPC, which was created in 2005. Instead of buying for Medicaid, however, the NPDPC purchases in bulk to help subsidize prescriptions for uninsured and underinsured patients.⁴³

³⁷ These states include AL, AK, AZ, AR, CA, CO, DE, FL, GA, HI, ID, IN, IA, KS, KY, LA, ME, MD, MI, MN, MS, MO, MT, NE, NV, NH, NM, NY, NC, ND, OK, OR, PA, RI, SC, SD, TN, UT, VT, VA, WA, WI, WY, and the cities of Los Angeles and Chicago.

³⁸ Ibid.

³⁹ Alaska, Kentucky, Michigan, Minnesota, Montana, Nevada, New Hampshire, New York, North Carolina, Rhode Island, South Carolina, and Washington, DC.

⁴⁰ Louisiana, Maryland, Delaware, Idaho, Nebraska, Pennsylvania, and Wisconsin.

⁴¹ “Pharmaceutical Bulk Purchasing.”

⁴² Iowa, Maine, Oregon, Utah, Vermont, West Virginia and Wyoming.

⁴³ “NW Prescription Drug Purchasing Consortium,” *Washington Prescription Drug Program*, <http://www.rx.wa.gov/consortium.html>.

In addition to multistate bulk purchasing, at least 27 states have some form of pharmaceutical assistance programs to help patients particularly Medicaid and Medicare recipients, pay for their prescriptions, depending on the state. One form of assistance available is the discount prescription program, in which a state offers prescriptions at a discount to members of the program, provided that they meet federal poverty, Medicaid, or Medicare guidelines.⁴⁴

Additionally, some states offer subsidy programs for low income and elderly patients. These programs use state funds and vary from state to state. For example, Alaska uses its subsidies to provide cash benefits to members up to the age of 65, based on income limitations. California, however, uses its subsidy program to “serve persons diagnosed as genetically handicapped.”⁴⁵

Some states, however, took measures beyond bulk purchasing or discount programs/subsidies. States like Massachusetts and New York implemented additional strategies to help ease the burden of high prescription prices. Massachusetts enacted major health reform in 2006, which mandated all Massachusetts residents obtain health insurance and provided low cost or free insurance to low income residents. Residents are eligible for “Commonwealth Care” if their pre-tax income is at or below 300% of the federal poverty level and are not eligible for insurance through an employer or other provider.⁴⁶ These policies offer prescription coverage, which takes some of the bite out of drug prices for all residents.

New York has a different method for controlling costs for its residents. The New York

⁴⁴ “State Pharmaceutical Assistance Programs,” National Conference of State Legislatures, August 2010, <http://www.ncsl.org/default.aspx?tabid=14334>.

⁴⁵ Ibid.

⁴⁶ “Commonwealth Care Program Guide” MA Health Connector, July 2010, <https://www.mahealthconnector.org/portal/binary/com.epicentric.contentmanagement.servlet.ContentDeliveryServlet/About%2520Us/CommonwealthCare/Commonwealth%2520Care%2520Program%2520Guide.pdf>.

Department of Health tracks the prices of about 150 of the most frequently prescribed drugs in the state, and in the most commonly prescribed quantities. The prices are collected from pharmacies that report their prices to the Department of Health and from pharmacies that participate in Medicaid. The Department of Health makes these prices available to the public.⁴⁷

2.3 Private examinations of pharmaceutical prices

In addition to Congressional investigations and hearings, private researchers, such as journalists and even doctors, have tried to determine how pharmaceutical drugs are priced, and also to single out specific areas where they believe the source of high prescription drug prices may lie. Some of these possible sources include marketing to medical professionals, marketing to the public, and off label uses for prescription drugs.

Price determination

Several examinations in the last 15 years have examined how pharmaceutical prices are determined. William S. Comanor and Stuart O Schweitzer examined how pharmaceuticals are bought and sold, and described some of the links in the pharmaceutical industry chain. Included was a look at pharmaceutical price data and what influences the prices of prescription drugs, such as large buyers like health maintenance organizations (HMOs) that routinely receive large discounts from manufacturers. Comanor and Schweitzer point out that since this information is rarely disclosed to the public, many discussions of influences on prescription prices simply leave out these discounts and rebates, which therefore lead to reporting higher prices.⁴⁸

These manufacturer discounts and rebates to large buyers were the subject of an earlier

⁴⁷ “Prescription Drug Prices in New York State,” *New York Department of Health*, May 2010, <http://rx.nyhealth.gov/pdpw/SearchDrugs/Home.action>.

⁴⁸ William S. Comanor and Stuart O. Schweitzer, “Determinants of Drug Prices and Expenditures,” *Managerial and Decision Economics* (2007), 362.

study, which sought to determine if the discounts had adverse effects on buyers who do not get the same discounts. Kenneth G. Elzinga and David E. Mills found that while consumers outside of hospitals and managed care companies did not receive discounts, neither did they suffer a loss. The prices they paid were not affected by the discounts received by the large buyers.⁴⁹

Researchers also have found that prescription drug prices vary greatly from store to store, sometimes even within the same town. Alan T. Sorenson examined pharmacy prices from upstate New York and found that prices varied by as much as 50% from store to store, with no obvious explanation for the differences. He did find, however, that consumers are more likely to price shop for drugs that they need to take on a regular basis, causing the price variation on those to be lower than on drugs only taken occasionally.⁵⁰

Insurance companies

Insurance companies also have been examined as a possible source of high prescription prices, particularly in their relationships with pharmacies. For instance, Brooks, Doucette, and Sorofman examined the bargaining power different types of pharmacies have in negotiating with insurance companies. Insurance companies and pharmacies routinely negotiate reimbursement amounts, and since smaller, independent pharmacies have lower merchandise turnover rates, it is thought that they have less bargaining power with the insurance companies. Brooks et al. found that independents have more bargaining power when they merge, thus reducing the number of pharmacy owners in a region. Conversely, a higher number of independent pharmacies in an area lowered bargaining power.⁵¹

⁴⁹ Kenneth G. Elzinga and David E. Mills, "The Distribution and Pricing of Prescription Drugs," *International Journal of Economic Business* (1997), 297.

⁵⁰ Alan T. Sorenson, "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs," *Journal of Political Economy* (2000), 834.

⁵¹ Brooks, Doucette, and Sorofman, 448-449.

Marketing to medical professionals

One method of advertising to medical professionals is through the use of detailers – or, as they are more commonly known, drug representatives.⁵² These representatives, many of whom are licensed pharmacists, travel to doctors' offices to inform physicians about new products, answer questions about new and existing drugs, and offer samples of new products. Although the representatives provide a valuable service, critics allege that the gifts and free products raise the overall cost of marketing to the pharmaceutical companies.⁵³ In 2004, pharmaceutical companies spent \$5 billion on drug representatives, with an average of \$8000 spent on each physician annually.⁵⁴ Critics also claim that drug representatives may have undue influence on the prescribing habits of physicians and other medical professionals.

Critics allege that part of the problem with detailers rests with the samples they provide to physicians. These samples comprise a large portion of all marketing expenditures for the pharmaceutical industry; in 2004, according to IMS,⁵⁵ pharmaceutical companies spent nearly \$7.3 billion on samples, while the total spent on all promotions was \$33.5 billion.⁵⁶ The retail value of those samples was estimated at nearly \$16 billion.⁵⁷ Doctors generally see drug samples as desirable, since they help patients who may not be able to otherwise afford the prescriptions. Indeed, on the surface, the samples seem beneficial to everyone: the patient gets to try the drug without spending any money on it, the drug company increases awareness of its

⁵² Stuart O. Schweitzer, *Pharmaceutical Economics and Policy* (Oxford: Oxford University Press, 1997), 48.

⁵³ Lewis H. Margolis, "The Ethics of Accepting from Pharmaceutical Companies," *Pediatrics* 88 (December 1991), 1233.

⁵⁴ Harvey Black, "Dealing in Drugs," *The Lancet* 364 (November 6, 2004), 1655.

⁵⁵ IMS is a firm that compiles and assesses pharmaceutical marketing expenditures <<http://www.imshealth.com>>. It is important to note that some dispute the way that IMS compiles its data, which include surveys of pharmaceutical and health services companies, leaving room for intentional under-reporting of figures.

⁵⁶ Marc-André Gagnon and Joel Lexchin, "The Cost of Pushing Pills: A New Estimate of Pharmaceutical Promotion Expenditures in the United States," *PLoS Medicine* 5 (January 3, 2008), 0031.

⁵⁷ Jennifer Tija, et al., "Medicare Beneficiaries and Free Prescription Drug Samples: A National Survey," *Journal of General Internal Medicine* 23 (June 2008), 709.

product, and the doctor strengthens his or her relationship with the patient.⁵⁸

The notion that doctors are helping needy or poor patients by giving them free samples turns out to be overstated. A recent study examined the Agency for Healthcare Research and Quality's 2003 Medical Expenditure Survey, which questions respondents from the previous year's National Health Interview Survey five times over two and a half years. Each respondent is asked to report on all filled prescriptions, and then asked whether they had received any free samples. The researchers found that poor or uninsured patients were less likely to receive samples. In 2003, approximately 12% of Americans received samples. Of those who received them, "82.1% were insured all year, only 17.9% of sample recipients were uninsured for all or part of the year."⁵⁹ Additionally, 71.9% of sample recipients had incomes 200% or more of the federal poverty line, while 28.1% had incomes less than 200% of the poverty line.⁶⁰

Another study focused on whether drug samples influence the prescribing behavior of resident physicians. The researchers examined the prescribing decisions of 29 residents at a Minneapolis inner-city primary care clinic. Utilizing random selection, they found 14 who were willing to forego using free drug samples that were available in the clinic.⁶¹ The analysis revealed that residents who used the free samples were "less likely to initiate treatment with unadvertised drugs than residents assigned to no sample access,"⁶² thus providing evidence that samples do influence prescribing habits.

Critics also claim that providing samples "lowers the threshold for prescribing and

⁵⁸ Katherine Greider, *The Big Fix: How the Pharmaceutical Industry Rips off American Consumers* (New York: Public Affairs, 2003), 75-76.

⁵⁹ Sarah Cutrona, et al., "Characteristics of Recipients of Free Prescription Drug Samples: A Nationally Representative Analysis," *American Journal of Public Health* 98 (February 2008), 285.

⁶⁰ Ibid.

⁶¹ Richard Adair and Leah R. Holmgren, "Do drug samples influence resident prescribing behavior? A randomized trial," *The American Journal of Medicine* 118 (2005), 881-882.

⁶² Ibid., 882.

taking a costly new drug.”⁶³ The new drug, through samples, is readily available without a need for a trip to the pharmacy, and it is free. Yet one study found that patients who receive those free samples had higher out-of-pocket expenses for pharmaceuticals.⁶⁴

The influence of detailers is undeniable, although it can take quite a number of visits for a detailer to convince a doctor to write one new prescription. One study by Natalie Mizik and Robert Jacobson examined detailing involving three different drugs, and found that it takes 0.16, 3.13, and 6.54 additional visits per respective drug by a detailer to convince a physician to write one extra prescription.⁶⁵ Yet that one prescription may have refills, which provides the pharmaceutical company with profit for each refill the patient receives. Some drugs, such as statins for cholesterol and anti-depressants need to be taken for long periods of time, sometimes for the rest of the patient’s life. Additionally, the representative may have discussed several other drugs with the physician on each visit, leading to an extra prescription for each of those drugs.⁶⁶

Detailers have a great deal of motivation to visit physicians and other medical officials. Dr. Jerry Avorn describes a conversation he had with a drug representative at a clinical trial consultation. The representative explained that at his regional sales meeting, the detailers were encouraged to make as many visits and move⁶⁷ as many products as they could, and the one who moved the most would be presented with a brand new BMW convertible, which they

⁶³ Ibid.

⁶⁴ G. Caleb Alexander, James Zhang, and Anirban Basu, “Characteristics of Patients Receiving Pharmaceutical Samples and Association Between Sample Receipt and Out-of-Pocket Prescription Costs,” *Medical Care* 46 (April 2008), 398-400.

⁶⁵ Natalie Mizik and Robert Jacobson, “Are Physicians “Easy Marks”? Quantifying the Effects of Detailing and Sampling on New Prescriptions,” *Management Science* 50 (December 2004), 1714.

Drugs examined in the study were not disclosed; they were only referred to as drug A, drug B, and drug C.

⁶⁶ Jacky Law, *Big Pharma: How the world’s biggest drug companies control illness* (London: Constable & Robinson, 2006), 55.

⁶⁷ In this case, “move” means to give samples, and encourage doctors and other medical professionals to prescribe the current drug that they are pushing.

would be allowed to drive for one year.⁶⁸ The representative described what he did in order to win the car:

I memorized everything they gave us about our company's drug...Its method of action, the clinical trial results, its advantages, its safety, the problems with the competitors' products, which patients the doctors should give it to, everything. Then I made sure to visit every single doctor in my district to give them each free samples, hand them the journal reprints we were supposed to distribute, review our products' advantages over older drugs, the usual.⁶⁹

The representative also reveals that one person in the doctor's office that every drug representative must befriend in order to get steady access to the physician, the receptionist.⁷⁰

Detailers use several methods to develop a relationship with the receptionist, such as providing pens, calculators, and other small items emblazoned with the product's name and company, or bringing by flowers and other small gifts.⁷¹ Once they have established the relationship, the receptionist is more likely to find times to let them see the doctors, who usually have extremely busy schedules. He or she may call the representative to let them know that the physician has a few minutes in between patients on a certain day, or has a longer lunch break on another. The representative in the narrative above maximized his time with one extremely busy doctor by offering him a ride to a weekly meeting.⁷²

Even medical students are not immune to the influence of drug representatives, as many detailers introduce themselves to future physicians in medical school. Although they are not allowed to provide large gifts, according to the rules of most medical schools, they do provide them with educational gifts, such as reference guides or informational pamphlets, as well as sponsoring student research in an effort to foster good will and establish a rapport with

⁶⁸ Jerry Avorn. *Powerful Medicines: The Benefits, Risks, and Costs of Prescription Drugs* (Alfred A. Knopf: New York, 2004), 299-300.

⁶⁹ Ibid., 301.

⁷⁰ Most representatives refer to the position as that of the "office girl," since most receptionists are women.

⁷¹ Ibid., 301.

⁷² Ibid.

medical students.⁷³ A few schools, starting with Wake Forest University, are trying to combat the possible influence drug representatives have on doctors by offering classes to medical students on how to obtain independent information on prescription medications.⁷⁴ By educating medical students about the tactics used by drug representatives, professors hope to make future doctors “less vulnerable to the influence of marketing.”⁷⁵

Perhaps the most troubling aspect of detailing is the existence of gifts; in this case, not the pens, pads of paper, and tissue boxes emblazoned with a drug’s name, but expensive dinners and resort getaways disguised as consultations or informational meetings. The American Medical Association has placed limits on extravagant, outright gifts of cruises, cars and other luxury items, but doctors are still given rewards for becoming “opinion leaders” at consultations, at which they may be flown to luxury resorts at the drug company’s expense in order to attend short informational seminars on current research; they even may be given stipends as compensation for speaking at these events.⁷⁶

It is difficult to determine how influential detailers can be, since most studies analyzing the influence rely on self-reporting as the primary source of data. Avorn, Chen, and Hartley interviewed a random sample of physicians in the Boston area concerning what influenced their decisions to prescribe certain drugs. One-fifth of the doctors interviewed rated drug representatives as an important source of information, while advertisements and patient preference were reported as minimally important.⁷⁷ In the second half of the study, Avorn and his colleagues chose a set of drugs “about which the content of information provided varied

⁷³ Schweitzer, 48.

⁷⁴ Black, 1655.

⁷⁵ Ibid.

⁷⁶ Greider, 70.

⁷⁷ Jerry Avorn, Milton Chen, and Robert Hartley, “Scientific versus Commercial Sources of Influence on the Prescribing Behavior of Physicians.” *The American Journal of Medicine* 73 (July 1982), 5.

systematically from source to source.”⁷⁸ Commercial channels, which include advertisements and information from detailers, presented the drugs as effective and reliable, whereas scientific information cast the drugs as minimally effective or completely useless.⁷⁹ The doctors were then asked how influential they viewed commercial and scientific sources. Predictably, most doctors reported that the scientific sources were “major determinants” of their prescribing habits.⁸⁰ However, nearly one-third of the doctors questioned believed that cerebral vasodilators were effective in the treatment of dementia, which is an idea that scientific journals refute. Similarly, nearly half of the physicians believed propoxyphene to be a more effective painkiller than acetaminophen, again a claim that scientific journals deny.⁸¹ Such findings cast doubt on the notion that doctors and other medical professionals are not influenced by drug representatives and advertisements.

Marketing to the public

Another method of marketing that has troubled critics is direct-to-consumer advertising. Pharmaceutical companies always have advertised directly to physicians, not only by utilizing drug representatives but also by advertising in medical journals. A common form of advertising in these journals is the multiple-page ad. Such ads are “bright, colorful, engaging, with large headlines, appealing pictures, easy-to-understand graphs, and unmistakable take-home messages” that urge physicians to prescribe the advertised drug.⁸² These ads run in the journals alongside clinical trial results and review articles and often are published in more than one journal, ensuring that medical providers will see them.⁸³

⁷⁸ Ibid., 4.

⁷⁹ Ibid.

⁸⁰ Ibid., 5

⁸¹ Ibid.

⁸² Ibid., 293.

⁸³ Ibid.

Before 1997, the U.S. Food and Drug Administration restricted the types of advertisements and ways that the drug industry could use those advertisements. The pharmaceutical companies were satisfied with this arrangement, since appealing to physicians was all that was needed to increase sales. With the advent of Health Maintenance Organizations (HMOs) and other managed care organizations, which sought to control costs by using formularies,⁸⁴ the FDA decided to relax the regulations restricting pharmaceutical companies from advertising directly to patients. Proponents of this change argued that the direct advertisements would empower patients and allow them to become aware of under-diagnosed and poorly managed conditions. Substantial evidence suggests that the U.S. health care system performs badly when it comes to the treatment and diagnosis of such chronic conditions as high cholesterol, hypertension, and diabetes, and often fails to detect or successfully treat other conditions such as depression.⁸⁵

Detractors, on the other hand, contend that the billions of dollars spent on advertising specific brands might be better spent “on messages about diet, exercise, or alcohol, drug, and tobacco use” or on “the importance of compliance with a prescribed drug regimen, regardless of which company manufactures the product.”⁸⁶ Critics argue that direct-to-consumer advertising influences prescribing practices. The patients tell the doctor that they need a specific drug that they saw advertised in either a magazine or on television, and the physician agrees for a variety of reasons, which may include short visit times or the reluctance to displease their patients and lose the rapport they have built up.⁸⁷

⁸⁴ Formularies are a list of drugs that are approved for use, or excluded from use, by an HMO or other managed care organization. These lists are compiled by Pharmacy and Therapeutics committees, which include physicians and pharmacists. Stuart O. Schweitzer, *Pharmaceutical Economics and Policy* (Oxford: Oxford University Press, 1997), 175.

⁸⁵ Avorn, 288.

⁸⁶ Ibid.

⁸⁷ Ibid.

Off-label use

Critics of the pharmaceutical industry also claim that off-label uses contribute to the problem of the high cost of prescription medications. An off-label use is when a drug that was approved by the FDA for one purpose is used for another. One example of this is the controversy surrounding the drug Avastin. Since finding that higher doses of Avastin can treat lung and breast cancer, Genentech decided to double its price.⁸⁸ The drug representatives for the company offered a very different rationale from the traditional explanation that “research is expensive.” Genentech claimed that it based its pricing on “the inherent value of life-sustaining therapies”⁸⁹ and on “the value of innovation and the value of new therapies.”⁹⁰ It is important to keep in mind that Genentech is a for-profit corporation, and it could argue “that it is entitled to charge whatever the market will bear for the products it develops; it has no specific obligations to patients to make its products available for less.”⁹¹ This is because it is a for-profit corporation's responsibility to turn a profit for its shareholders. Yet this point can be countered:

As a matter of law, patents allow drug companies to charge whatever they can command, and in practice, the major purchasers of drugs in this country have limited or no ability to bargain for lower prices. That is not, however, an ethical justification for charging whatever the market will bear. Suppose we discover that Avastin combined with a very cheap older chemotherapeutic agent that is off patent is vastly more effective in the treatment of breast and lung cancer than previously thought—instead of extending life on average for five months, it extends life for five years, twelve times as long as originally thought. On Genentech's reasoning, they would now be justified in charging twelve times the \$100,000 now proposed for the five months gain in life extension, despite no increase in the costs of developing and producing the drug. But that surely is not ethically correct.⁹²

Drug companies also pay academic authors to attach their names to pre-written journal articles,

⁸⁸ Dan Brock, “How Much is Life Worth?” *Hastings Center Report* 36, 17.

⁸⁹ *Ibid.*, 18.

⁹⁰ *Ibid.*

⁹¹ *Ibid.*

⁹² *Ibid.*, 19.

which often contain minimal research and are filled with few valid conclusions.⁹³ These articles are then marketed to doctors in the hopes that they will prescribe the medication for the off-label uses.⁹⁴

2.4 Economics of pricing

Although this research examines the cost of pharmaceuticals as a political issue, it would be a mistake to completely ignore the economic aspect. Demand is perhaps the most important factor influencing retail prices. Demand, however, is less important for prescription drugs, since health care providers influence how much and how often a drug is prescribed. In microeconomic theory, demand is primarily a function of price and is "considered a list of prices and quantities, with one quantity for each possible price."⁹⁵ According to George Stigler in *The Theory of Price*, there is one basic rule of demand: "people will not buy less, and usually buy more, of a commodity when its price falls."⁹⁶ This expectation is represented by the demand curve, which always has a negative slope, since the higher the price rises, the less consumers will buy of a certain item. This inverse relationship is also known as the "law of demand."⁹⁷ Since factors other than the price of an item influence a purchasing decision, three factors must be held constant when determining demand: the prices of other commodities, the money income of the consumer, and the preferences of the consumer.⁹⁸

An important feature of the theory of demand is the concept of elasticity. According to Milton Friedman in *Price Theory*, elasticity of demand is the "ratio of the percentage change in quantity demanded to the percentage change in price that is responsible for this change in

⁹³ Angell, 158-159.

⁹⁴ Ibid., 157-161.

⁹⁵ Mary A. Holman, "Demand," *The McGraw-Hill Encyclopedia of Economics*, ed. Douglas Greenwald (New York: McGraw-Hill, Inc, 1994), 262.

⁹⁶ George J. Stigler, *The Theory of Price* (London: The Macmillan Company, Collier-Macmillan Limited, 1966), 23. Stigler is a Nobel Prize-winning scholar of economics.

⁹⁷ Ibid., 24.

⁹⁸ Ibid., 23.

quantity demanded when 'other things' are given and when the change in price approaches zero." ⁹⁹ This is important because it "provides a very convenient method of indicating the behavior of total receipts,"¹⁰⁰ or sales. Elasticity depends on two factors: changes in price and quantity, which "must have opposite effects in total receipts."¹⁰¹ Demand is said to be elastic when the percent change in price is smaller than the change in quantity. This has the effect of causing demand to move in the opposite manner from price; for example, when the price of a service or good goes up, demand for the service or good goes down.¹⁰² On the other hand, demand is said to be inelastic when the change in price is larger than the change in quantity demanded, causing sales to move in tandem with price. When demand is elastic, if the price drops, so will demand; if inelastic, demand stays relatively stable no matter what the price does (e.g., demand for milk).

As mentioned earlier, when applied to a typical retail outlet, demand works as the primary influence on prices. When it is applied to a pharmacy, however, a problem is encountered. In a normal retail setting, a consumer will enter the establishment and purchase his or her desired goods with few restrictions.¹⁰³ In order to purchase a prescription drug at a pharmacy, however, that same customer needs a prescription from a doctor or other licensed medical practitioner. Thus, health care providers influence, and some would say manufacture, much of the demand in pharmacies.¹⁰⁴ Not only do they control the initial purchase, but they

⁹⁹ Milton Friedman, *Price Theory* (Chicago: Aldine Publishing Company, 1976), 19. Friedman, like Stigler, is also a Nobel Prize-winning economist.

¹⁰⁰ *Ibid.*, 20

¹⁰¹ *Ibid.*

¹⁰² *Ibid.*

¹⁰³ In some instances, the proprietor of a store can reserve the right to limit the amount of a particular product that a customer is able to purchase. This often happens, for instance, during a sale in which the price of an item has been drastically reduced, and the proprietor wishes to prevent one or two customers from buying all of the stock at once.

¹⁰⁴ Doctors cannot control all of the demand for various reasons, the primary one being that pharmacies do not exclusively sell prescriptions drugs. Also, the patient may choose not to fill prescriptions.

also regulate how much and how often a patient can purchase a drug before having to obtain a new prescription. Because of this extra dimension to demand, it is important to examine retail pharmacies' prices, since consumers do not solely influence demand and therefore price.

Economics and politics often intertwine, and nowhere is this more evident than in the works of such pivotal economists as Adam Smith and John Maynard Keynes, two men on opposite sides of the political-economic spectrum. Smith was the originator of the concept of *laissez-faire*, which many credit as the root of capitalism, while Keynes advocated interventionist policy on the part of the government when it came to the operation of markets.

Adam Smith's idea of *laissez-faire* was first conceived with the idea of the Invisible Hand in *The Theory of Moral Sentiments*, and later expanded upon in *The Wealth of Nations*. This "invisible hand" was said to guide a person to "promote the public interest,"¹⁰⁵ whether or not s/he knows that s/he is doing so. According to Smith, an individual only "intends his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention."¹⁰⁶ This invisible hand, though not explicitly mentioned, is thought to play a role in Smith's theory of *laissez-faire*, in which the state steps back and lets the market regulate itself. Although Smith focused primarily on international free trade, he emphasized the importance of internal free trade. Utilizing the corn trade in Great Britain as an example of the dangers of government intervention, Smith stated:

When the government, in order to remedy the inconveniences of a dearth, orders all the dealers to sell their corn at what it supposes a reasonable price, it either hinders them from bringing it to market, which may sometimes produce a famine even in the beginning of the season; or if they bring it thither, it enables the people, and thereby encourages them to consume it so fast as must necessarily produce a famine before the end of the season. The unlimited, unrestrained freedom of the corn trade, as it is the only effectual preventative of the miseries of a famine, so it is the best palliative of the

¹⁰⁵ Adam Smith, *An Inquiry into the Nature and Causes of The Wealth of Nations* (Chicago: University of Chicago Press, 1976), 477.

¹⁰⁶ Ibid.

inconveniences of a dearth; for the inconveniences of a real scarcity cannot be remedied, they can only be palliated. No trade deserves more the full protection of the law, and no trade requires it so much, because no trade is so much exposed to popular odium.¹⁰⁷

John Maynard Keynes, however, believed that letting the market work on its own would promote success and maintain a balance for only so long. During times of economic hardship, the system of free trade actually would work against balance, and thus the government's intervention would be needed to correct the market. To Keynes, the problem that upset the balance of the economy, and produced unemployment in particular, was savings, and he noted that as income increases, so too does a person's saving habits.¹⁰⁸ Savings were only useful if they were to be invested by businesses, not stored in bank accounts; thus in his view the only useful method to turn around a recession was to spend money.¹⁰⁹ He thought that if the government increased spending, it would increase consumers' demand for goods and services, such as occurred during the Great Depression of the 1930s,¹¹⁰ with one major difference. Keynes advocated any spending, including wasteful spending, to stimulate a depressed economy: "Pyramid-building, earthquakes, even wars may serve to increase wealth," though it "would, indeed, be more sensible to build houses and the like; but if there are political and practical difficulties in the way of this, the above would be better than nothing."¹¹¹

The U.S. federal government's primary policy regarding pharmaceuticals and pharmacies in general has been one based on *laissez-faire*: Congress has allowed the industry, particularly the retail sector, to regulate itself, with a few notable exceptions. Perhaps the most

¹⁰⁷ Ibid., 33-34.

¹⁰⁸ John Maynard Keynes, *The General Theory of Employment, Interest, and Money* (London: MacMillan, 1973), 97.

¹⁰⁹ Mark Skousen, *The Big Three in Economics: Adam Smith, Karl Marx, and John Maynard Keynes* (London: M.E. Sharpe, 2007), 157-59.

¹¹⁰ Ibid., 160.

¹¹¹ Keynes, 129.

well known is the addition of Medicare Part-D in 2006, which offered government-sponsored drug coverage to citizens over the age of 65.¹¹²

2.5 Conclusions

As is evident from the scholarship this chapter has examined, the pharmaceutical industry has received a great deal of scrutiny, with much of the focus on manufacturers. What is absent in the core of the research is any systematic examination of wholesalers or retailers; this study sought to fill that gap in order to judge whether further research, particularly on retailers, is warranted. Economic theories, including those of Adam Smith and John Maynard Keynes, might offer some insight into why the remainder of the industry has remained largely untouched when it comes to the search for the source of high pharmaceutical prices.

One of the challenges of having little prior research regarding wholesaling and retailing in the pharmaceutical industry is formulating an appropriate research design. The following chapter discusses the design the study used.

¹¹² The Reconciliation Act of 2010 extended prescription drug coverage for Medicare Part D, particularly by closing what was known as the “doughnut hole.” The doughnut hole referred to the gap between primary benefit coverage for prescriptions and the catastrophic coverage threshold. If a beneficiary’s pharmaceutical costs exceed the original benefit limit, he or she is responsible for 100% of the cost of prescription drugs until the catastrophic coverage threshold is reached.

Chapter 3

Research Design

Upon examining the existing research on pharmaceutical pricing, it becomes clear that previous authors have paid relatively little attention to some specific areas. Thus, I decided to take a closer look at the wholesale and retail sectors of the pharmaceutical industry. In order to gather the information needed, I had to decide how to pick the focal drugs, types of pharmacies, and geographical areas. The current chapter describes how I narrowed down my search to the chosen drugs, cities, and pharmacies. As I would soon find out, some pharmacy chains have a policy of not participating in research or surveys, prompting me to have to pick a different Large National Discount Retailer Pharmacy than the one I initially selected.

I also needed to decide how to gather the data; I determined that a mail survey would be the easiest and most straightforward method. Yet the easiest did not turn out to be the best, since I did not fully anticipate the high level of non-response. This prompted me to change tactics and switch to a telephone survey in order to obtain enough responses to continue.

3.1 Selection of drug manufacturers and prescription medications

For this study, I picked two prescription drugs from each of three pharmaceutical manufacturing companies: Pfizer, Merck, and GlaxoSmithKline. They were chosen as the sources for the examined drugs because the three are among the top grossing prescription drug manufacturers in the United States. In 2009, Pfizer occupied the top spot among the three companies, with \$50 billion in total revenue. GlaxoSmithKline and Merck followed with \$45.8 billion and \$27.4 billion, respectively.¹¹³ Merck was chosen over the other higher ranking companies, such as Astra-Zenica, Johnson and Johnson, and Novartis, because Merck had a

¹¹³ When taking all pharmaceutical companies into consideration, in 2009 Pfizer was number two, GlaxoSmithKline number four, and Merck number nine.

greater number of prescription medications that are widely advertised to consumers, thus increasing the chances that those medications would be prescribed often. As the previous chapter mentioned, direct-to-consumer advertising is thought to increase the likelihood that a patient will ask for a certain medication by name, possibly influencing the prescribing habits of physicians and other health providers. For this study, it was important to examine commonly prescribed drugs, since information about them, financial or otherwise, is usually more accessible to consumers and researchers.

I then picked two drugs from each company: one a “life-enhancing” drug, a drug that improves the quality of a patient’s life but may not necessarily affect overall health,¹¹⁴ and the second, a drug that treats a disease/disorder that is potentially life-threatening such as diabetes or high cholesterol.

Comparing “life-enhancing” to “life-saving” drugs provided a further basis for comparisons of disparities in pricing. For instance, if a 30-day supply of Viagra, a life enhancing drug, costs less than a similar amount of Lipitor, a potentially life-saving drug, this might suggest another possible disparity for the federal government to investigate. This could indicate that retail outlets are overcharging or raising prices on life-saving drugs in order to offer life enhancing drugs at lower prices that are more attractive to consumers. This also, however, could be either a by-product of the cost of materials in manufacturing drugs, which should be indicated by the wholesale price, or an indication of whether a drug is under patent protection. All drugs selected currently are FDA-approved.

¹¹⁴ I acknowledge that anti-depressants can be seen as more than merely “life-enhancing” for some patients and may indeed fall into the “life-saving” category. Yet for the majority of patients, the drug is prescribed as a way of enhancing the quality of life and increasing functionality in everyday life. Propecia is perhaps the purest “life-enhancing” drug on the list, since it has no other approved or widely known off-label medicinal benefits for patients. Even Viagra has been used to treat pulmonary hypertension, although this has not been approved by the FDA.

From Pfizer, I picked Lipitor and Viagra. According to its website, Lipitor (atorvastatin calcium) is a drug that has been shown to lower low-density lipoprotein (LDL) cholesterol, which is commonly known as the “bad” cholesterol that can build up along the walls of one’s arteries.¹¹⁵ Because lowering LDL cholesterol can prevent heart attacks, I classified Lipitor as Pfizer’s “life-saving” drug. For its life enhancing drug, I chose Viagra (sildenafil citrate), which treats erectile dysfunction, in which not enough blood flows to the penis, which can prevent a man from obtaining or maintaining an erection.¹¹⁶ Both drugs generate a great deal of sales for Pfizer. In 2009, Pfizer reported revenues of \$11.4 billion for Lipitor¹¹⁷; Viagra earned \$1.9 billion in 2009.¹¹⁸

I chose Zocor and Propecia from Merck’s available prescription drugs. Zocor (simvastatin), like Pfizer’s Lipitor, is a cholesterol-lowering drug; since both are classified as statins, they work in very similar ways.¹¹⁹ According to Zocor’s product information sheet:

ZOCOR is a prescription drug that is indicated as an addition to diet for many patients with high cholesterol. For patients at high risk of coronary heart disease (CHD) because of existing heart disease, diabetes, vascular disease, or history of stroke, ZOCOR is indicated along with diet to reduce the risk of death by reducing coronary death; reduce the risk of heart attack and stroke; and reduce the need for revascularization procedures.¹²⁰

¹¹⁵ Lipitor, “High Cholesterol and Heart Disease,” Pfizer, Inc., <http://www.lipitor.com/about-heart-disease/home.jsp?setShowOn=../about-heart-disease/home.jsp&setShowHighlightOn=../about-heart-disease/home.jsp>.

¹¹⁶ Viagra, “About Erectile Dysfunction,” Pfizer, Inc., <http://www.viagra.com/content/about-erectile-dysfunction.jsp?setShowOn=../content/about-erectile-dysfunction.jsp&setShowHighlightOn=../content/about-erectile-dysfunction.jsp>.

¹¹⁷ “Pfizer Reports Fourth-Quarter and Full-Year 2009 Results; Provides 2010 Financial Guidance and 2012 Financial Targets,” BusinessWire, February 3, 2010, <http://www.businesswire.com/news/home/20100203005875/en/Pfizer-Reports-Fourth-Quarter-Full-Year-2009-Results%3B-2010>.

¹¹⁸ Ibid.

¹¹⁹ The patent for Zocor expired in 2006. Source – Alex Berenson, “Merck Loses Protection for Patent on Zocor,” *nytimes.com*, June 23, 2006, <http://www.nytimes.com/2006/06/23/business/23statin.html> (Accessed September 30, 2009).

¹²⁰ Zocor, “Patient Information,” Drug Insert. http://www.merck.com/product/usa/pi_circulars/z/zocor/zocor_brief.pdf (accessed November 1, 2007).

For Merck's life-style drug, I selected Propecia (finasteride),¹²¹ which treats male pattern hair loss by lowering levels of DHT in the body.¹²² According to Propecia's website, DHT is "a substance found in your body that can shrink the hair follicle until it no longer produces visible hair."¹²³ Zocor generated over \$139 million in sales in 2009,¹²⁴ while Propecia garnered \$123 million.¹²⁵

Finally, for GlaxoSmithKline, I chose Coreg CR and Paxil CR. Coreg CR¹²⁶ (carvedilol phosphate) is a beta-blocker that helps to reduce the risk of a second heart attack in patients who have had previous heart attacks that reduced how well their hearts pumps.¹²⁷ Coreg CR also helps to manage high blood pressure¹²⁸ and to increase the survival rate of patients with mild to severe heart failure.¹²⁹ Coreg reached sales of \$253 million in 2009.¹³⁰

For GlaxoSmithKline's life-enhancing drug, I selected Paxil (Paroxetine HCL), which also comes in a controlled release formula, known as Paxil CR.¹³¹ For this study, I used Paxil CR, since the controlled release formula is newer, making information easier to find. Paxil

¹²¹ Merck's patent for Propecia expired in 2006. "10/2006 Primary Patent expiration for selected high revenue drugs," *Prescription Solutions*, https://www.prescriptionsolutions.com/c/rxnews/rxnews_view.asp?Article=674&type=19 (Accessed September 30, 2009).

¹²² Propecia, "How Propecia Works," Merck & Co, http://www.propecia.com/finasteride/propecia/consumer/facts/how_propecia_works.jsp?mtc=3BODY.

¹²³ Propecia, "FAQ – What Causes Male Pattern Hair Loss?" *Merck & Co*, <http://www.propecia.com/finasteride/propecia/consumer/facts/faq.jsp>.

¹²⁴ "Merck Announces Fourth-Quarter and Full-Year 2009 Financial Results," BusinessWire, February 16, 2010, <http://www.businesswire.com/news/home/20100216006139/en/Merck-Announces-Fourth-Quarter-Full-Year-2009-Financial-Results>

¹²⁵ Ibid.

¹²⁶ CR stands for "controlled release," meaning the drug is continuously released into the bloodstream with only one dose per day.

¹²⁷ Coreg CR, "Coreg CR for a Heart Attack that Reduced How Well Your Heart Pumps" GlaxoSmithKline, http://www.coregcr.com/coregcr_and_heartattack/coregcr_and_heart_attack.html.

¹²⁸ Coreg CR, "Coreg CR for High Blood Pressure," GlaxoSmithKline, http://www.coregcr.com/coregcr_and_highbp/coreg_cr_and_high_blood_pressure.html.

¹²⁹ Coreg CR, "Coreg CR for Heart Failure," GlaxoSmithKline, http://www.coregcr.com/coregcr_and_heartfailure/coregcr_and_heartfailure.html.

¹³⁰ "Coreg CR" *Drug Patent Watch*, <http://www.drugpatentwatch.com/ultimate/preview/tradename/index.php?query=COREG%20CR>.

¹³¹ Patent protection for Paxil CR is still in dispute, but GlaxoSmithKline agreed to allow Mylan Pharmaceuticals to release a generic version of the drug on October 1, 2008. Lewis Krauskopf, "Update 1 - Mylan, Glaxo settle Paxil CR patent fight," *Reuters*, <http://www.reuters.com/article/health-SP/idUSN2325020220071024>.

treats social anxiety disorders as well as depression, panic disorders, and premenstrual dysphoric disorder (PMDD).¹³² The Food and Drug Administration has issued two warnings concerning the use of Paxil. In 2003, the FDA issued a warning that the drug should not be used by adolescents under the age of eighteen due to an increased risk of suicidal thoughts and/or attempts. There is no evidence that the same occurs in adults over the age of eighteen.¹³³ The second warning came in 2006, when studies found that Paxil increased "the risk of birth defects, particularly heart defects, when women take it during the first three months of pregnancy."¹³⁴ Both warnings came as a result of studies stemming from lawsuits brought against GlaxoSmithKline. Paxil also came under fire after a link between birth defects and the drug was discovered; GlaxoSmithKline agreed to pay over \$1 billion to families of affected children in 2009 after a lawsuit was brought against the company. Despite these warnings and the recent lawsuit, Paxil CR earned \$793 million in 2009.¹³⁵

3.2 Non-prescription drugs

In order to determine what constitutes a significant difference between wholesale and retail prices of prescription drugs, I also examined the markups of two nonprescription drugs.¹³⁶ Nonprescription drugs usually are sold in the front of the pharmacy with the rest of the merchandise, and their prices may be good indicators of the overall markup for nonprescription items and other items unrelated to pharmaceuticals in the rest of the store or

¹³² Paxil CR, "Treatment with Paxil CR," GlaxoSmithKline, http://www.paxilcr.com/treatment_with_paxilcr/treatment_with_paxil_cr.html.

¹³³ Gwendolyn Hall, "Paroxetine may increase suicide risk in children: discontinue gradually," Family Practice News 33, (July 15, 2003): 10. General OneFile, via Gale. Virginia Tech. 20 Jan. 2008, <<http://find.galegroup.com/itx/start.do?prodId=ITOF>>.

¹³⁴ "Paxil and the risk of birth defects," FDA Consumer 40. (March-April 2006): NA. General OneFile via Gale. Virginia Tech. 21 Jan. 2008 <<http://find.galegroup.com/itx/start.do?prodId=ITOF>>.

¹³⁵ "Glaxo Said to Have Paid \$1 Billion Over Paxil Suits," Bloomberg Businessweek, July 20 2010, <http://www.businessweek.com/news/2010-07-20/glaxo-said-to-have-paid-1-billion-over-paxil-suits.html>.

¹³⁶ These also are called "over-the-counter," or OTC, drugs.

pharmacy.¹³⁷

For consistency, I picked an OTC lifesaving drug and an OTC life enhancing drug. Very few lifesaving drugs are available in nonprescription form, but several come close. Prilosec is a nonprescription proton pump inhibitor that reduces acid production in the stomach, which reduces the frequency of heartburn.¹³⁸ Heartburn usually is a symptom of gastroesophageal reflux, which can lead to more serious complications such as erosions in the esophagus and bleeding ulcers.¹³⁹ Prilosec is marketed by Procter and Gamble, a company that primarily is known for household and beauty products, but does produce several prescription and nonprescription medications.¹⁴⁰ Prilosec was given over-the-counter status by the Food and Drug Administration in 2003.¹⁴¹

For a nonprescription life enhancing drug, I selected regular strength Tylenol, which is the brand name for acetaminophen. I chose acetaminophen as a life enhancing drug because it is a painkiller and fever reducer used to treat mild to moderate pain,¹⁴² thus increasing the user's quality of life without any further lifesaving benefits.¹⁴³ It is produced by McNeil – PPC, Inc., which specializes in nonprescription medications.

¹³⁷ Mark-ups vary from item to item, but this still will give a general idea of the overall markup for the different stores.

¹³⁸ Prilosec, "About Prilosec OTC," Procter and Gamble, Inc., <http://www.prilosecotc.com/about.jsp>.

¹³⁹ American Gastroenterological Association Institute, "Heartburn," American Gastroenterological Association, <http://www.gastro.org/wmspage.cfm?parm1=848>.

There is also a link to cancer through a condition known as Barrett's esophagus, which can occur if reflux is left untreated for long periods of time.

¹⁴⁰ Procter and Gamble, "Explore Our Family of Products," Procter and Gamble, Inc., http://www.pg.com/en_US/products/all_products/index.jhtml.

¹⁴¹ "The 20 mg dosage strength of omeprazole (Prilosec) is now available over-the-counter (OTC) through a collaboration between AstraZeneca and Procter & Gamble," Formulary 38.7 (July 2003): 407. Health Reference Center Academic. Gale. Virginia Tech. 5 May 2008
<<http://find.galegroup.com/itx/start.do?prodId=HRCA>>.

¹⁴² Tylenol, "Overview and Uses," McNeil Consumer Healthcare, http://www.tylenol.com/product_detail.jhtml?id=tylenol/headbody/prod_reg.inc&prod=subpreg#.

¹⁴³ Unlike aspirin, acetaminophen does not show any protective benefit for the heart during a myocardial infarction. Sharon L. Hale, and Robert A. Kloner. "Acetaminophen and Experimental Acute Myocardial Infarction." Cardiovascular Drugs and Therapy 18.2 (March 2004), 125.

3.3 Selection of regions and pharmacy categories

To acquire the prices of each of the selected drugs, I picked three categories of pharmacies: large national discount pharmacies, such as those found in Target, WalMart, and supermarkets such as Kroger; large chain pharmacies, like Walgreens, Rite-Aid, and CVS; and independent pharmacies. I chose one large national discount store pharmacy, one large chain pharmacy, and a sampling of independent pharmacies from a selection of cities in four states in the southeastern region of the United States.

For the purposes of this study, the exact names and locations of the pharmacies are kept anonymous, and they will be referred to by an individual pharmacy's category and by the city in which the pharmacy is located. The cities I chose for this study are Virginia Beach, Virginia; Charlotte, North Carolina, Columbia, South Carolina; and Atlanta, Georgia. These are the largest cities in the four states, and they have roughly similar costs of living.¹⁴⁴

I opted to study only one large national discount pharmacy and one large chain pharmacy in each city to ensure that an entirely random selection was possible, since there usually are fewer of the larger pharmacies in a given area than there are independent pharmacies.¹⁴⁵ For independent pharmacies, I selected two from the largest city in each of four states. In each city, I chose two independent pharmacies: one network pharmacy and one single-store independent pharmacy. A network pharmacy is a pharmacy that is owned by an independent pharmacist, but has access to resources provided by a central headquarters that helps reduce operation costs. A pharmacy network works similarly to a franchise, and member pharmacies often are referred to

¹⁴⁴ The cost of living varied no more than 5% - 10% overall between the cities, according to the cost of living calculator at Salary.com <http://swz.salary.com/costoflivingwizard/layoutscripts/coll_start.asp>. The lone exception was a comparison between Atlanta and Columbia, which yielded a 14.2% difference.

¹⁴⁵ National Community Pharmacists Association, "Number of Independent Pharmacies on the Rise," *ncpanet.org*. http://www.ncpanet.org/media/releases/2006/number_of_independent_pharmacies_on_the_04-28-2006.php.

as franchise pharmacies. In contrast, a single-store independent pharmacy is a pharmacy that has no affiliation with a network.

I selected each pharmacy using an online directory. For the large national discount pharmacies and the large chain pharmacies, I utilized the “find a store” option and searched for a list of pharmacies in each of the chosen cities. For the independents, I used the online directory, yellowbook.com, to find a listing of all independent and network pharmacies in the cities. Interestingly, it was nearly impossible to tell if a pharmacy was simply independent or a member of a network based on the directory listing alone; even an examination of the websites, if the pharmacy had provided one, sometimes revealed no clues as to membership status. Thus, all independent pharmacies were placed in the same pool, and two were chosen randomly in each city.

Once the lists of pharmacies were completed, I used a simple random sampling procedure to pick the individual pharmacies from the pool of possibilities. Due to the small number¹⁴⁶ of pharmacies in the sampling pool, I determined that using a table of random numbers would be the best and easiest method to randomly select the pharmacies in each city. Using a table of random numbers, I assigned each pharmacy a number in order to select the initial set of possible participants to which to send questionnaires. The four large national discount pharmacies, four large chain pharmacies, and eight independent stores selected clearly are not representative of all pharmacies in the United States¹⁴⁷; rather they serve as examples of whether and how price can fluctuate from store to store, and even state to state in a particular region.

¹⁴⁶ There were no more than thirty in each list – the longest lists, unsurprisingly, were the independents.

¹⁴⁷ They are, arguably, representative of the types of pharmacies in the four cities chosen.

3.4 First round of questionnaires and responses

Once the specific drugs and the pharmacies were chosen, I selected the data collection method. I decided to use mail surveys, which contained questions about the retail prices of the selected drugs. I specified that I needed the prices of the drugs, including the chosen non-prescription drugs, with no discounts, coupons, or other incentives; in other words, I asked for the prices that a person without insurance would pay.¹⁴⁸ Pharmacies were informed that they could choose not to participate via a consent form that was included in the questionnaire packet. If they chose to participate, respondents were instructed to sign the consent form and return it with the completed questionnaire.

My initial plan was to mail the packets that contained the questionnaire and consent form to the pharmacies, wait two weeks to see which ones responded, and then mail a short follow-up two weeks later, which consisted of an additional page that allowed the pharmacies to mark whether they planned to participate but had not yet or that they did not wish to participate at all. The follow-up also contained another copy of the questionnaire.

Before I could send the surveys, I needed to gain approval of the Virginia Tech Institutional Review Board. Since the information I sought is considered public knowledge, I was granted Exempt Research Review Status. Although I was not required to send consent forms with the survey, I sent them as an added precaution.

The first round of packets was mailed to pharmacies in June 2009. I decided that since it was summer, when many people traditionally take vacations, I would wait four weeks before sending a reminder. I had not anticipated receiving responses from every pharmacy, but unfortunately I received far fewer than I had expected. Of the initial 16 surveys sent, only three were returned, with one answered, one stating that the recipient did not consent, and one

¹⁴⁸ See the questionnaire and consent form in Appendix B. IRB materials are included in Appendix A.

informing me that the pharmacy did not carry the prescriptions required.¹⁴⁹

Four weeks later, I sent the follow-up packet to those who had not responded, hoping that I would receive at least a few more answers. I did, but as before, far fewer than I had hoped – only three responded, and all declined to participate in the study.

3.5 Second round of questionnaires and responses

At this point I chose another group of pharmacies. I excluded the ones that had been included in the last round from the pool of possible respondents and again used the random number table. This time I picked 10 pharmacies, instead of 16, to take into account those who had already completed the questionnaire. Once the new group was picked and approximately four weeks after the follow-up packets were sent to the initial group of non-respondents, in late August/early September 2009 I mailed the new pharmacies the same questionnaires and consent forms that the first group received. As before, I allowed four weeks for the respondents to send back the completed packets before following up. This time, only three returned completed surveys. All of the large national discount pharmacies in both rounds had either returned the questionnaires marked “Do not consent” or did not return them at all. I received only a few responses from large chain pharmacies and independents.

With the second round of pharmacies, I decided to follow-up by telephone with each non-respondent pharmacy instead of sending another questionnaire. I called each one that had not responded to the initial packet and got verbal consent before administering the questionnaire. In the second group, two of the large chain pharmacies and one of the independents responded to the phone calls, which took place in mid-October and early

¹⁴⁹ This is because the pharmacy was a “compounding pharmacy,” which often mixes medications for patients by doctors’ orders.

November 2009.¹⁵⁰ Representatives of two large chain pharmacies and three independents did not consent to participate in the study.

When I called the large national discount retailer pharmacies, however, I was told that the chain had a policy of not participating in surveys. This was information that I had not found on the websites during my initial research into the company before sending the questionnaires, and explained why I had not received any responses from the pharmacies affiliated with this chain. A phone call to the corporate headquarters confirmed the policy, which presented me with the challenge of picking another pharmacy chain from the same category. Unfortunately, the first tentative replacement had no stores in the Charlotte area, so I was forced to turn to a third option, which had stores nationwide and had at least two in each city included in the study.

Rather than send out new surveys to the new large national discount retailer pharmacies, I decided to call them instead. By this point I had begun to expect a fair amount of non-response, or in the case of the phone calls, refusal. Surprisingly, all four pharmacies affiliated with the replacement national discount retailer answered my questions, making it the only one to do so out of the three categories of pharmacies.

At this time, I decided to stop calling and mailing questionnaires and to analyze the responses I had, while noting the refusal/non-response of some of the pharmacies. The last step was to collect the wholesale prices of the medications included in the study. In early January 2010, I consulted the newest edition of the *Drug Topics Red Book*, which contains the wholesale prices of each of the prescription and the over-the-counter drugs that I chose

¹⁵⁰ Two additional telephone interviews with independent pharmacies were conducted in mid-February 2010, due to a mix up in communication and having incorrect phone numbers.

3.6 Conclusions

Creating a system for acquiring the needed information was simple, although the aforementioned limitations did make the research more difficult. By utilizing simple random number tables, I was able to select an appropriate sample of pharmacies from which to collect information. By selecting drugs that have been around for several years from pharmaceutical companies with wide name recognition, I was able to find more information about those drugs in order to minimize the chance that one would be taken off the market before the conclusion of the study.

Regardless of the obstacles that uncooperative pharmacists and non-responses created, I was able to navigate in order to get workable, albeit incomplete, data. The following chapter will discuss the results in detail.

Chapter 4

Findings

This chapter will discuss the price data that I received from the pharmacies. First, I give an overview of the responses, followed by a summary of the data. From there, I break down the data by pharmacy type and by drug brand, and then round out the discussion with a look at the over-the-counter drugs.

4.1 Responses

Representatives of nine pharmacies responded to the surveys, including two Independent Pharmacies, three Large Chain Pharmacies, and four Large National Discount Retailer Pharmacies. Before turning to the reports from individual pharmacies, a close examination of the published “Average Wholesale Prices” (AWP) is needed. As mentioned before, researchers who seek to determine the sources of the high cost of prescription drugs often joke that AWP actually stands for “Ain’t What’s Paid.” Nevertheless, the AWP is one of the only published numbers that allows one to find out approximately what retailers pay for their supplies of prescription and non-prescription drugs. Even the *Drug Topics Red Book*, which annually publishes the Average Wholesale Price for all drugs, prescription and over-the-counter, states:

The prices contained in the Red Book are based on data *reported* by manufacturers. The publisher has not performed any independent analysis of the *actual* prices paid by wholesalers and providers in the marketplaces. Thus *actual* prices paid by wholesalers and providers may well vary from the prices contained in this publication and all prices are subject to change without notice.¹⁵¹ (Emphasis mine)

As this disclaimer indicates, only the prices reported by the manufacturers are published in this volume, one of a few published references of average wholesale prices available, this suggests that it is possible that what retailers, and even wholesalers, pay for their drugs is not known *at*

¹⁵¹ *Drug Topics Red Book: Pharmacies fundamental reference*, (Montvale, NJ: Thomson Reuters, 2009), 173.

all. Thus, a completely accurate estimation of the retail markups for pharmaceuticals is impossible to obtain without asking for the invoice prices that pharmacies pay for those drugs, which most pharmacies are either unwilling or contractually bound not to disclose.¹⁵²

4.2 An overview of the data

Despite the controversy surrounding them, comparing the average wholesale prices still may offer useful insight into pharmaceutical pricing. I obtained wholesale price information from the *Drug Topics Red Book*. Most prices are reported in pill increments, such as for bottles of 30, 100, 1000, or 5000 pills, but not every drug is sold in the same increments.¹⁵³ Thus it became necessary to disaggregate both retail and wholesale prices into prices per-pill. (See table 4.1.)

Table 4.1¹⁵⁴ Price-per-pill by Pharmacy and Drug

Per pill price	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Ind. Atl	3.00	16.50	n/a	n/a	3.00	3.66	n/a	1.39
Mid. Atl	3.36	16.40	2.73	2.65	4.83	4.17	0.20	1.07
Lrg Atl	3.28	16.36	2.28	2.50	4.51	3.88	0.14	0.70
Ind Col	3.00	14.33	2.39	2.40	4.29	3.70	n/a	n/a
Mid Col	3.37	16.40	2.80	2.65	4.83	4.17	0.20	1.07
Lrg Col	3.49	17.84	2.43	2.50	4.51	3.88	0.14	0.70
Lrg Cha	3.46	17.83	3.25	2.68	4.50	3.88	0.14	0.70
Mid VAB	3.10	16.33	3.07	2.65	4.83	4.47	0.20	1.07
Lrg VAB	3.13	17.84	n/a	2.68	4.51	3.88	0.14	0.70
Whole-sale	3.37	16.65	2.24	2.39	4.16	3.65	0.07	.86

Source: responses to mail and telephone surveys and the *Drug Topics Red Book*. All prices are expressed in 2009 U.S. dollars.

¹⁵² John Pletz, “Bulldozing Pharmacy Benefit Managers, Caterpillar Engineers Drug Cost Savings,” *Workforce.com*, December 1, 2009, <http://www.workforce.com/section/news/article/bulldozing-pharmacy-benefit-managers-caterpillar-engineers.php>.

¹⁵³ For instance, Lipitor is sold wholesale in bottles of 100 or 5000 pills, while the rest of the chosen prescriptions were sold in smaller doses. Wholesale prices in this chapter are for 30 count bottles, with the exception of Lipitor, and the two control drugs. Tylenol and Prilosec are priced wholesale in 100 count and 14 count amounts, respectively.

¹⁵⁴ “Ind” refers to an independent or network pharmacy, “Mid” to a Large Chain Pharmacy, and “Lrg” to a Large National Discount Retailer Pharmacy. Additionally, “Atl” = Atlanta, “Col” = Columbia, “Cha” = Charlotte, and “VAB” = Virginia Beach.

It is important to note that there are full price comparisons from all three types of pharmacy in Atlanta and Columbia, but only two in Virginia Beach and one in Charlotte. Thus, the full picture is available for only two of the four cities in the study.

When compared side by side, the numbers reveal at least one unexpected result. The per-pill prices show few differences between the retail and the wholesale prices. Additionally, with the exception of Viagra, the prices of the individual drugs do not vary greatly, by no more than two dollars in some cases. When the retail and wholesale prices are compared, however, one frequently sees no more than a one dollar difference in per-pill prices. In some instances, there is even a *negative* mark up: the pharmacy is actually *losing* money with the sale of each pill when compared to the AWP. (See Tables 4.2 and 4.3.)

Table 4.2 Markup per-pill by type of pharmacy and drug

Markup (in USD)	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Ind. Atl	-0.37	-0.15	n/a	n/a	-1.16	0.10	n/a	0.53
Mid. Atl	-0.01	-0.25	0.49	0.26	0.67	0.52	0.14	0.21
Lrg Atl	-0.09	-0.29	0.02	0.11	0.35	0.23	0.07	-0.16
Ind Col	-0.37	-2.32	0.15	0.01	0.13	0.05	n/a	n/a
Mid Col	0.00	-2.50	0.56	0.26	0.67	.52	0.14	0.21
Lrg Col	0.12	1.19	0.19	0.11	0.35	0.23	0.07	-0.16
Lrg Cha	0.09	1.18	1.01	0.29	0.34	0.23	0.07	-0.16
Mid VAB	-0.27	-0.32	0.83	0.26	0.67	0.83	0.14	0.21
Lrg VAB	-0.24	1.19	n/a	0.29	0.35	0.83	0.07	-0.16

Source: responses to mail and telephone surveys.

Table 4.3 Percent markups per-pill by type of pharmacy and drug

Markup Percentages ¹⁵⁵	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Ind. Atl	-12.3	-.9	n/a	n/a	38.6	2.7	n/a	49.5
Mid. Atl	-.2	-1.5	17.9	9.8	13.8	12.4	70	19.6
Lrg Atl	-2.7	-1.7	.87	4.4	7.7	5.9	50	-22.8
Ind Col	-12.3	-16.1	6.2	4.1	3	1.3	n/a	n/a
Mid Col	0	-1.5	20	9.8	13.8	12.4	70	19.6
Lrg Col	3.4	6.6	7.8	4.4	7.7	5.9	50	-22.8
Lrg Cha	2.6	6.6	31	10.8	7.5	5.9	50	-22.8
Mid VAB	-8.7	-1.9	2.7	9.8	13.8	18.5	70	19.6
Lrg VAB	-7.6	6.6	n/a	10.8	7.7	2.1	50	-22.8

Source: responses to mail and telephone surveys.

The picture changes only slightly when one compares the markups and price differences for 30 pills.¹⁵⁶ The positive markups are larger when one factors in multiple pill purchases, but the negative markups become that much starker, showing that some pharmacies lose as much as \$35 per bottle sold for a one month supply.

Table 4.4 Prices per-30 pill supply by type of pharmacy and wholesale price and drug.

30 pills (in USD)	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Ind. Atl	90	495	n/a	n/a	90	110	n/a	19.5
Mid. Atl	100.8	492	81.9	79.5	144.9	125.1	8.99	12.99
Lrg Atl	98.32	490.88	68.36	74.88	135.36	116.46	7.69	9.87
Ind Col	90	429	71.7	72	128.7	111	n/a	n/a
Mid Col	101.1	492	84	79.5	144.9	125.1	8.99	12.99
Lrg Col	104.84	535.36	72.84	74.88	135.36	116.46	7.96	9.87
Lrg Cha	104	535	97.72	80.32	135	116.46	7.96	9.87
Mid VAB	93	489.9	92.1	79.5	144.9	134.1	8.99	12.99
Lrg VAB	93.98	535.36	n/a	80.32	135.32	116.46	7.96	9.87
Whole-sale	101.1	499.5	67.2	71.7	124.8	109.5	7	12.04

Source: responses to mail and telephone surveys and the *Drug Topics Red Book*

¹⁵⁵ These percentages were figured from prices. There are two ways of figuring markup percentages – one from cost and one from price. Retailers generally use percentages calculated from price.

¹⁵⁶ To find the wholesale price for 30 pills, I simply multiplied the per pill price by 30. The over-the-counter price is calculated for 100 pills for Tylenol and 14 pills for Prilosec.

Table 4.5 Price markups per 30 pill supply by type of pharmacy and drug

30 pills (in USD)	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Ind. Atl	-11.1	-4.5	n/a	n/a	-34.8	0.5	n/a	7.46
Mid. Atl	-0.3	-7.5	14.7	7.8	20.1	15.6	5.49	0.95
Lrg Atl	-2.78	-8.62	1.16	3.18	10.56	6.96	4.46	-2.17
Ind Col	-11.1	-70.5	4.5	0.3	3.9	1.5	n/a	n/a
Mid Col	0	-7.5	16.8	7.8	20.1	15.6	5.49	0.95
Lrg Col	3.74	35.86	5.64	3.18	10.56	6.96	4.46	-2.17
Lrg Cha	2.9	35.5	30.12	8.62	10.2	6.96	4.46	-2.17
Mid VAB	-8.1	-9.6	24.9	7.8	20.1	24.6	5.49	0.95
Lrg VAB	-7.12	35.86	n/a	3.18	10.56	6.96	4.46	-2.17

Source: responses to mail and telephone surveys.

Table 4.6 Percent markups per 30 pill supply by type of pharmacy and drug

30 pills price	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Ind. Atl	-12	-3.8	n/a	n/a	25	4	n/a	38.2
Mid. Atl	-2.9	-1.4	17.9	9.8	13.8	12.4	61	7.3
Lrg Atl	-2.8	-1.7	-1.6	4.2	7.8	5.9	57.9	-21.9
Ind Col	-12.3	-16	6.2	0.4	3	1.3	n/a	n/a
Mid Col	0	-1.4	20	9.8	13.8	12.4	61	7.3
Lrg Col	3.5	6.6	7.7	4.2	7.8	5.9	57.9	-21.9
Lrg Cha	2.7	6.6	30.8	10.7	7.5	5.9	57.9	-21.9
Mid VAB	-8.7	-1.9	27	9.8	13.8	18.3	61	7.3
Lrg VAB	-7.5	6.6	n/a	3.9	7.8	5.9	57.9	-21.9

Source: responses to mail and telephone surveys.

The existence of negative markups suggests that unpublished wholesale prices may indeed exist. Although that can be seen as positive for consumers, businesses typically consider negative markups to be undesirable, leading one to wonder just how the pharmacies are turning a profit. Thus, the possibility that *all* pharmacies are negotiating or paying prices that are significantly lower than the AWP seems more likely. Additionally, the positive markups vary greatly, with the largest being 30.8%, though the vast majority fall below 10%. Even when one multiplies the retail and wholesale prices by 30 (for a monthly supply of pills), the percentages are still rather small. The OTC drugs seem to be a little different; the markups here seem to fall within the normal range at 70%.¹⁵⁷

¹⁵⁷ As Chapter 3 mentioned, there is no industry-wide standard for determining markups for stores, and indeed

This could mean several things. First, it could suggest that pharmacies depend on non-pharmaceutical purchases, such as groceries and gifts, to produce profits. Secondly, pharmacies might be selling in high enough volume to justify such low markups on their drugs. Neither of these explanations, however, accounts for negative markups, unless the pharmacies involved in the study are using these particular prescriptions as “loss leaders.”¹⁵⁸ Lastly, the results could indicate that the pharmacies have negotiated lower wholesale prices with manufacturers and wholesalers, despite statements to the contrary by independents and network stores.

4. 3 Data by pharmacy type

When one begins to compare markups from the different types of pharmacies to one another, the data become even more interesting. I originally hypothesized that Independent Pharmacies would have the highest markups, Large National Discount Retailer Pharmacies would have the lowest, and the Large Chain Pharmacies would fall somewhere in between. When examining the markups from the Independent Pharmacies, I found that this category contained both the highest *and* the lowest markups: Atlanta had the highest, with 38.6% for Coreg CR, and Columbia the lowest, with -16.1% for Viagra.¹⁵⁹ (See Table 4.7)

Markups between the two Independent Pharmacies also varied greatly on the same drugs. For instance, the lowest markup was for Viagra at -16.1 at a Columbia pharmacy, but the same drug at the Atlanta pharmacy was marked up -.9, which is a notable difference, despite both being negative markups.

markup may vary from item to item within a single store.

¹⁵⁸ A loss leader is an item that is strategically priced at a low or negative markup, as an incentive for consumers to come to the store. It is thought that once people are inside, they will make other, more profitable purchases.

¹⁵⁹ Unfortunately, the picture is not wholly complete, since independents from Charlotte and Virginia Beach declined to answer.

Table 4.7 Percent markups per-pill by responding independent pharmacy and drug.

Markup Percentages ¹⁶⁰	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Ind. Atl	-12.3	-.9	n/a	n/a	38.6	2.7	n/a	49.5
Ind Col	-12.3	-16.1	6.2	4.1	3	1.3	n/a	n/a

Source: responses to mail and telephone surveys.

The Large Chain Pharmacies reported somewhat less varied prices, with two prescription drugs having the same markup in each city; the same occurred with the OTC drugs.¹⁶¹ Interestingly, the data for this type do not seem to fall completely in the middle, as will be most evident when compared to the information from the Large National Discount Retailer Pharmacies. Again, the picture is incomplete, as the large chain pharmacy in Charlotte declined to answer the survey.

Table 4.8 Percent markups per pill by responding large chain pharmacy and drug

Markup Percentages ¹⁶²	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Mid. Atl	-.2	-1.5	17.9	9.8	13.8	12.4	70	19.6
Mid Col	0	-1.5	20	9.8	13.8	12.4	70	19.6
Mid VAB	-8.7	-1.9	2.7	9.8	13.8	18.5	70	19.6

Source: responses to mail and telephone surveys.

A complete comparison is available for the Large National Discount Retailer pharmacies.¹⁶³ The markups here also are close between the cities, with some variation, most notably for the drug Zocor. (See figure 4.9.) When compared to the Large Chain Pharmacies, these results are not fully consistent with my original hypothesis, for generally the markups at the Large National Discount Retailer Pharmacies actually appear to be higher than those of the Large Chain Pharmacies. Even more interesting is that they appear to be higher overall than even the Independents, turning the hypothesis on its head: the Independent Pharmacies have the lowest markups, the Large Chain Pharmacies intermediate ones, and the Large National

¹⁶⁰ Again, these percentages were figured from price.

¹⁶¹ Over-the-counter drugs and other front of store merchandise are usually standard in chain stores, as I was informed by the pharmacist at two of the Large Chain Pharmacies and the Large National Discount Retailer Pharmacies.

¹⁶² These percentages were figured from price.

¹⁶³ The sole exception is Zocor, as the pharmacy from Virginia Beach claimed it only had generic supplies in stock at the time of the survey.

Discount Retailer Pharmacies the highest. Not until one examines the averages of the markups from the different types of pharmacy does a clearer picture emerge.¹⁶⁴ The Independents do have the lowest average markup, at 1.43%; the Large National Discount Retailer Pharmacies hold the middle with 5.83%; and Large Chain Pharmacies have the highest with 7.82 %. (See Figure 4.1.)

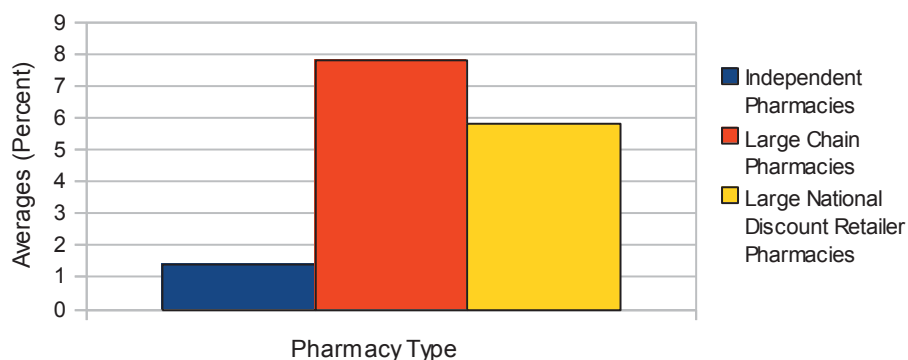
Table 4.9 Percent markups per-pill by responding large national discount retailer pharmacy and drug

Markup Percentages ¹⁶⁵	Lipitor	Viagra	Zocor	Propecia	Coreg CR	Paxil CR	Tylenol	Prilosec
Lrg Atl	-2.7	-1.7	.87	4.4	7.7	5.9	50	-22.8
Lrg Col	3.4	6.6	7.8	4.4	7.7	5.9	50	-22.8
Lrg Cha	2.6	6.6	31	10.8	7.5	5.9	50	-22.8
Lrg VAB	-7.6	6.6	n/a	10.8	7.7	2.1	50	-22.8

Source: responses to mail and telephone surveys.

Figure 4.1 Average Mark-up by Pharmacy Type

Source: responses to mail and telephone surveys.



4.4 Data by drug

An examination of the data broken down by drug reveals another interesting pattern of markups, especially when one compares the markups of “life-saving” to

¹⁶⁴ It is important to remember that one does not have a complete picture for two types of pharmacies, so the averages are calculated from different numbers of drugs and pharmacies— 10 for the Independents, 18 for the Large Chain Pharmacies, and 23 for the Large National Discount Retailer Pharmacies. Standard deviations are as follows –

Price per Pill:- Independent: 2.51; Large Chain: 4.97; Large National Discount: 5.49

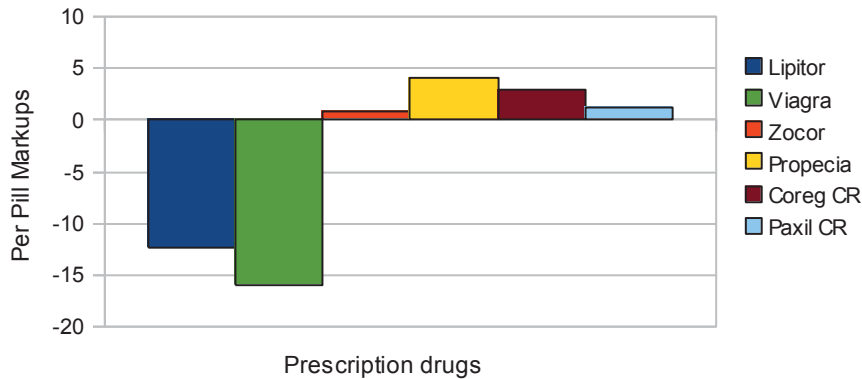
Price per Pill Markup: Independent: .78; Large Chain: .76; Large National Discount: .48

Percent Markup: Independent: 15.3; Large Chain: 8.5; Large National Discount: 7

¹⁶⁵ These percentages were figured from price.

Figure 4.2 Lowest mark-ups by prescription drug

Source: responses to mail and telephone surveys.

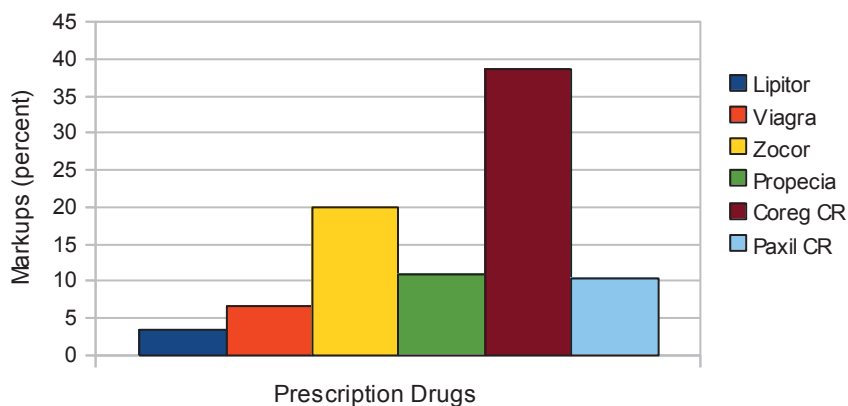


“life-enhancing” drugs. Figure 4.2 shows the lowest markups for each prescription drug. Initially, I was concerned that “life-saving” drugs would have higher markups than “life-enhancing” drugs, but an initial look at the lowest markups of each drug shows a fairly balanced mix. The lowest markup is for Viagra, a “life-enhancing” drug, at -16.1%, but it is closely followed by Lipitor, a “life-saving” drug (with a - 12.3% markup).

An examination of the highest markups shows a slightly different picture (See Figure 4.3). The highest markup was for Coreg CR, at 38.6%, followed by Zocor, at 20%. Both of these are in the “life-saving” category. Indeed Lipitor is the only “life-saving” drug to have its

Figure 4.3 Highest mark-up per prescription drug

Source: responses to mail and telephone surveys.

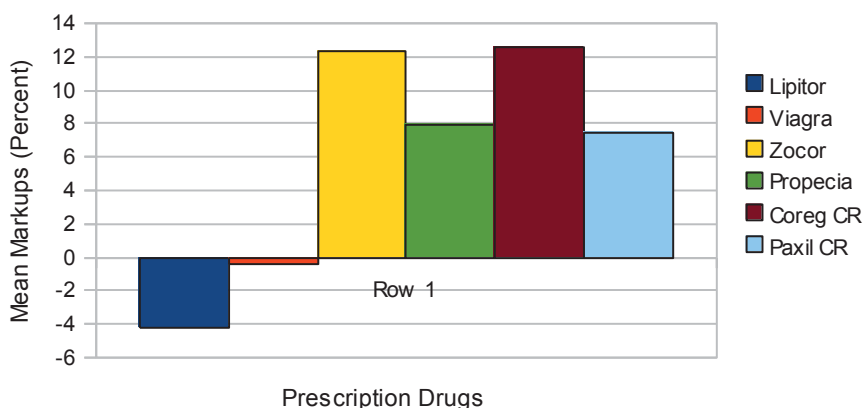


highest markup fall under 20%; it also has the lowest of the high-end markups, 3.4%. The fact that the “life-saving” drugs hold the two top positions in this category is disconcerting, despite the reasonable balance displayed in Figure 4.2.

Yet this still tells us only part of the story; to find out the rest, we must examine the average markup for all of the prescriptions. Examining the mean percentage markup for each drug confirms the initial concern that “life-enhancing” drugs would have lower markups than “life-saving” drugs (see Figure 4.4). Lipitor still has the lowest average markup at -4.2%, but it is followed by Viagra at -.42%. The highest mean markup belongs to Coreg CR (12.62%), closely followed by Zocor (12.35%). Both of these drugs are in the “life-saving” category, leaving only “life-enhancing” drugs in the middle. Although the lowest reported markup is for a life saving drug, the highest and second highest are as well. It is difficult, of course, to draw conclusions from such a small sample, but it might be worth further examination using a larger sampling of drugs.

Figure 4.4 Mean mark-ups by prescription drug

Source: responses to mail and telephone surveys.



4.5 The control drugs

When one looks at the control drugs, Tylenol and Prilosec, Tylenol’s markups come very close to hitting the 100% markup standard, at least at the Large Chain Pharmacies. The

markups at the Large National Discount Retailers are, predictably, considerably lower. Unfortunately, the two independents that responded to the survey declined to provide the prices for Tylenol, making it difficult to know if those pharmacies had a 100% markup. Prilosec, on the other hand, seemed to be treated in much the same manner as the prescription drugs when it came to markups, with the Large National Discount Retailer having a negative markup, when its price was compared to the AWP. The only independent pharmacy to provide information on Prilosec reported a 49.5% markup, which was the highest. This suggests that both wholesalers and retailers perhaps treat the wholesale price for Prilosec similarly, despite its over-the-counter status, possibly because of its previous availability as a prescription.

4.6 Conclusions

The findings on markups are striking, particularly with the revelation of negative markups on four different drugs: Lipitor, Viagra, Zocor, and Coreg CR. The presence of negative markups is certainly unusual and unexpected, considering that it is widely accepted as poor business practice to *lose* money on each sale.

Another intriguing result was that the two Independent Pharmacies were the ones that had the lowest average markups, which contradicts my original hypothesis.¹⁶⁶ In fact, the hypothesis as a whole can be rejected. Large Chain Pharmacies had the highest markups rather than being squarely in the middle; a spot that belonged to the Large National Discount Retailer Pharmacies, which I had predicted would have the lowest markups.

Finally, a comparison of the individual drugs' markups displayed a discrepancy between "life-saving" and "life-enhancing" prescriptions. The average markups of "life-saving" drugs were higher than those for "life-enhancing" drugs, which could suggest that

¹⁶⁶ It is important to note that the Independent Pharmacies had the fewest respondents. Had more responded, the results might have been different.

different categories of drugs are treated differently when deciding prices. The next chapter evaluates these results and explores their possible implications.

Chapter 5

Conclusions

The previous chapter reported evidence that shed light on retail markups for pharmaceutical drugs. Yet in addition to providing some answers, the results raised numerous questions. Why were there negative markups in a for-profit industry? Why did several pharmacists/pharmacies refuse to reveal their prices, which usually are considered public information? What is the significance of the finding that “life-saving drugs” may have higher overall markups than “life-enhancing” drugs? Perhaps most importantly, the results lead one to ask why any of this is important. This chapter seeks not only to provide possible answers to these questions but also to argue that the questions themselves are significant topics for further research and for federal government examination of the pharmaceutical industry as a whole.

5.1 Negotiating wholesale prices

One possible explanation for the negative and low markups is that pharmacies negotiate wholesale prices that are far lower than those published in the *Drug Topics Red Book*. It is a well-known “secret” that larger pharmacies, particularly those in the Large National Discount Retailers category, have the ability to negotiate with wholesalers on a variety of products because of their ability to purchase in high volumes. It is uncertain whether the retailers, and the pharmacies within them, do this with pharmaceuticals, as pharmacies are very secretive about the prices they pay to the wholesalers. Yet the data here suggest that some negotiating may occur behind the scenes, since the low markups can scarcely be considered profitable by any standard.

If these pharmacies do negotiate much lower wholesale prices, the data point to another possibility: the small independent and network pharmacies also may be negotiating prices.

Independent pharmacists long have complained publicly that they simply do not have the purchasing power to keep up with the “big box stores.” This in turn leads one to think that they would not be able to take advantage of any of the discounts that might be offered to larger stores with higher volume purchases; nor would they be able to negotiate lower prices. Yet a look at the urban independent pharmacies in this study shows that their markups and prices are comparable to those of the larger pharmacies, the most notable exception being for over-the-counter drugs, which had a much higher, albeit expected, markup.

One now must question not the validity of the independent pharmacists’ concerns, but rather the veracity of some of their claims. Although most independent stores have fewer customers than larger ones and therefore have less turnover in their inventories, this need not imply a lack of purchasing power. Perhaps independent pharmacies do not purchase as much or as often. Yet the last chapter's data suggest that all stores – large national discount retailer pharmacies, large chain pharmacies *and* independent pharmacies – may well have negotiated lower wholesale prices. Even if the purchasing power of independent pharmacies is not as *great* as other types of pharmacies, it may nonetheless allow them to negotiate. It is also possible that the recent federal healthcare legislation and the scrutiny of the healthcare system leading up to passage of the new law may have pushed manufacturers to work more closely with all retailers to avoid either further scrutiny or new regulation.

5.2 Standard markups?

Another possible explanation of the lower than expected markups might be found in the assumptions that the AWP¹⁶⁷ reflects the correct average and that markups are standard in the

¹⁶⁷ It is interesting to note that in 2008, WalMart negotiated a deal with Caterpillar, the manufacturer of construction equipment, which did not use the AWP as the basis for determining the company's cost for its employees' copayments for prescription drugs. Instead, WalMart used what it termed “Price-plus,” its actual invoice price plus any extra needed to cover overhead and other expenses. (See “End of AWP? WalMart and

pharmaceutical market. Perhaps the lower markups reflect that prescriptions are not being used to garner profit for the stores, which instead rely on what is termed “front of store” merchandise. Such merchandise includes toiletries, gift items, and greeting cards. In large chain and national discount retailer pharmacies, front of store merchandise may include grocery items, clothing, and film development.¹⁶⁸ If these items produce enough revenue to support stores and keep shareholders satisfied, then the low markups on the pharmaceuticals could be justified.

Yet two factors can be considered inconsistent with this view. First, numerous stores reported negative markups on prescription drugs. As mentioned previously, demand for prescription drugs is not completely consumer-driven; access to them is at least in part controlled by doctors and other health care providers able to write prescriptions. It is unlikely that a drug like Viagra or Zocor would ever be considered a “loss leader,”¹⁶⁹ since prescription prices are rarely advertised and consumers cannot go to a pharmacy to get certain drugs on a whim. Thus, making a prescription drug the loss leader for a pharmacy makes little apparent sense, as those coming into the pharmacy are there to buy what was prescribed and not what they want at that immediate moment. That said, pharmaceutical patrons could be considered something of a “captive audience,” in that they are in the store for a specific item that they *need*, so they may be more likely to pick up other goods while they are in the pharmacy as a

Caterpillar bid AWP good-bye,” *Wellsphere.com*, November 4, 2008, <http://www.wellsphere.com/healthcare-industry-policy-article/the-end-of-awp-wal-mart-and-caterpillar-bid-awp-goodbye/468069>.)

¹⁶⁸ Pharmacy counters generally are located in the back of pharmacies. There are two possible reasons for this. The first has to do with product placement – when a customer enters the store, they must pass by all of the merchandise available in the pharmacy, which may lead to more impulse buys. Another reason relates to security. With the pharmacy counter in the back of the store, it makes it harder for thieves to dash in and out with valuable prescriptions. For example, a *New York Times* article detailed pharmacists’ encounters with addicted thieves, which has led pharmacists to increase security measures in their pharmacies. Abby Goodnough, “Pharmacies Besieged by Addicted Thieves,” *nytimes.com*, February 6, 2011, http://www.nytimes.com/2011/02/07/us/07pharmacies.html?_r=1&emc=eta1

¹⁶⁹ A “loss leader” is an item intentionally marked lower than wholesale price in an effort to bring consumers into the store, hoping that once there, they will make other purchases.

matter of convenience. In some ways, this serves the same purpose as goods as loss-leaders. It also may serve as a method to keep customers coming back to buy front of store items over time.

Second, the over-the-counter medications included in the study often are considered front of store merchandise, as they do not require a prescription to obtain. Yet these drugs have markups that, although higher than the prescription drugs, were unexpectedly low. This finding needs more follow-up, possibly comparing non-medicinal merchandise markups to the markups of OTC drugs, before any direct conclusions can be reached

Finally, one must contemplate the role of insurance companies. For if insurance companies and pharmacy benefit managers negotiate lower prices for their companies and clients, then it makes the negative markups reported here, which have no apparent discounts or incentives, even more problematic. If the reported prices reflect the highest markups from a more or less accurate AWP, then one might wonder just how much lower the prices are for insurance companies and corporations with pharmacy benefit managers. This then leads back to the question – how is any of this profitable at all? Even if the front of store markups cover the overhead costs of a pharmacy or even turn a profit, losing money over the longer term on any item in a store is hardly economically desirable.

5.3 The pharmacists' responses

Another concern that the study raises was that several pharmacies declined to give out prices of their drugs, which are usually public information. If one were to come in off the street and ask for these prices, they likely would receive them with no question¹⁷⁰; however, once the pharmacists were alerted that this was for research, several became tight-lipped. I thought

¹⁷⁰ Although they do not often publish the prices, many pharmacies will tell customers to call for pricing. The Walgreens pharmacy website, for example, tells customers to call their local store for prices.

perhaps that this had something to do with the ongoing battle over health care reform in Washington, but I could not be sure, since most of the pharmacists were vague when declining. Some responded simply that they did not participate in research, like my original pick for Large National Discount Retailer Pharmacy, while others hung up or merely checked “do not consent” on the paper survey. One, however, went so far as to ask me if I was “one of those socialists” trying to push universal health care. This was the response that indicated that my initial expectation might be correct.

It also was intriguing to note that most of the pharmacists who declined to answer were independent pharmacists. This could be because independent pharmacists believe they have the most to lose in health care reform, since they do not have the product turnover that larger chain pharmacies have. They also have been going out of business and seeing their customers dwindle for many years with the advent of new, larger competitors. Additionally, those independent pharmacies might not have responded because of store policies, like the initial Large National Discount Retail Pharmacy I picked, which declined to answer because it was company policy not to participate in research. Public perceptions might also be another cause of nonresponse from Independent pharmacists, since they often are in the limelight when discussions of the negative effects of large chain pharmacies and large national discount retailer pharmacies arise.

5.4 Life-saving vs. life-enhancing drugs

What about the finding that “life-saving” drugs had higher markups than “life-enhancing drugs”? This deserves attention, since if the pharmacies are indeed giving higher markups to “life-saving” drugs, which I have classified as drugs that are needed to prevent a life-threatening condition or to prevent death due to such a condition, it would mean that they

are making higher profits from a “captive audience.” Patients with life-threatening conditions risk death or further complications if they do not take the medications as prescribed, thus making the higher markups on those drugs especially worthy of examination.¹⁷¹

Yet the higher markups might be an anomaly, when one considers that this study only examined six drugs, and one of the “life-saving” medications, Lipitor, had the lowest average mark-up. More drugs and more pharmacies would need to be studied to confirm this finding. Also, although it might be ethically questionable, some shareholders might consider charging higher markups for life-saving drugs to be economically sound, since patients for whom such medications are prescribed might be less likely to discontinue the prescriptions.

5.5 Future research

After examining the results, one thing appears certain: more research is needed. The findings suggest rather starkly that there is much more to the puzzle of high prescription drug prices than meets the eye, and certainly more seems to be at work than what has been observed about drug manufacturers. Many independent researchers have noted that the manufacturers could not be wholly responsible for high prices and have looked at wholesalers as being part of the problem. This study adds that the retail sector needs to be considered as well when examining possible contributions to the high cost of prescription drugs. This does not mean that the pharmacies are implicated as the source of high costs, merely that an investigation into concerns about “high” prices is incomplete without considering the entire chain from producer to public outlet.

This might lead one to wonder, *well, then, what next?* This study sought to explore whether further examination of pharmaceutical pricing was needed. The findings clearly

¹⁷¹ There are worries that poorer and uninsured patients, particularly those with chronic and life-threatening conditions may reduce how much medication they take or forego their prescriptions completely in an effort to save money for other necessities, such as food and housing.

suggest that more research is warranted, particularly to determine the influences producing low and negative markups. An in-depth study of markups is needed, with a larger sampling of prescription drugs and pharmacies in more states in order to see if perhaps the markups found here are confined to the urban southeast, or if they are prevalent in other parts of the United States. This will be a difficult undertaking, if the reluctance of many of the Independent and Large Chain pharmacies is any indication.

Perhaps the most important next step is to investigate the pharmaceutical wholesalers, whose operations are largely shielded from the outside world, save for the pharmacies they deal with directly. As previous research indicates, independent researchers' efforts to gain access to data from wholesalers have borne little fruit; thus it falls to the federal government to open the door. There has rarely, if ever, been talk in Congress, or evidently in any federal agency, of taking such a step,¹⁷² but it is clear that it is needed in order to gain a clearer picture of the sources of the costs of prescription drugs. U.S. governmental actors may employ *laissez-faire* as a justification for their reluctance to interfere in the market of the pharmaceutical industry. Yet, in my view, action must be taken to find out what the pharmacies are being asked to pay, for it is the wholesale prices that play a part in determining the retail price¹⁷³ of a particular drug. Without knowing what the pharmacies are paying or if there is even a formula that wholesalers use in determining which pharmacies pay what price, it will be impossible to get the complete picture, making it difficult to pinpoint and begin to address the exact cause of the high cost of prescription drugs. The entire chain, from manufacturer to the retailer, must be made visible to the federal government, as it is evident that nearly ten years of near-exclusive

¹⁷² This is with the exception, as mentioned before, of examinations of Medicare policies and procedures regarding drug prices.

¹⁷³ Several other factors help determine the retail price, such as the basic operating costs of the pharmacy (e.g., rent/mortgage, electricity, water) and the wholesale costs of the front of store merchandise.

investigation into the manufacturing end has yielded few results and no solutions.

There are several obvious places to start investigating wholesale prices for prescription drugs. The first is to go to the wholesalers themselves, who would be able to provide the actual wholesale prices at which they sell the drugs to the pharmacies and the third party payers. Other sources are the pharmacies and the third party payers. Pharmacies keep meticulous records on not only what is sold in the store, but also what they buy and what they pay for those items. They would be able to report exactly what they paid wholesale for those prescription drugs, including discounts, and be able to say whether they bought them from a wholesaler or directly from the manufacturer.

Another possible source of understanding would be the U.S. Departments of Defense and of Veterans Affairs. While they buy for a specific part of the population – veterans, soldiers, and their families – these two agencies purchase a great deal of prescription drugs. They also keep detailed records, and should be able to report the prices they are charged and any discounts they receive from wholesalers/manufacturers. Additionally, they would provide a good basis for comparison with the prices that private pharmacies pay for the same drugs.

In order to find the relevant information needed, an agency with investigative authority may be needed. The U.S. Government Accountability Office (GAO) is often called the “congressional watchdog,” since it investigates how federal tax dollars are spent and supports legislative oversight by “performing policy analyses and outlining options for congressional consideration.”¹⁷⁴ Congressional committees are also routes that can be utilized, and they too have the appropriate investigative authority needed to coax sensitive information about wholesale prices and markups. Not only do such entities have the authority to investigate wholesale prices, they also are equipped to do widespread research involving a nationwide

¹⁷⁴ “About GAO,” *gao.gov*, <http://www.gao.gov/about/> (Accessed Feb 10, 2011).

examination of pharmaceutical prices from a much larger sampling of pharmacies.

5.6 Concluding statements

The study set out to discover if an element in the federal government's search for a solution to the apparent problem of high prescription drug prices was missing. Extensive research has been conducted at the national level into the ethical and financial practices of pharmaceutical manufacturers, and investigators have tried to examine the wholesale portion of the industry. Yet very few have performed an in-depth examination of the retail end of it. By examining six different drugs at three types of pharmacies in four southeastern United States cities, I had hoped to find out whether there was a need to delve further into research involving retail outlets for pharmaceuticals.

My hypotheses centered on the pharmacies themselves and the markups of the individual drugs. I had expected to find average markups, with Large National Discount Pharmacies having the lowest and those of Independent and Network Pharmacies being higher. Not only were my hypotheses not supported, but the data I collected also revealed something I did not anticipate: negative markups on some of the drugs and low markups on the rest.

Since negative markups indicate a loss of income on each sale, it is reasonable to conclude that more research is needed to determine *why* these losses exist. Perhaps they reflect marketing strategies by the pharmacies after profits from front-of-store merchandise are taken into consideration or that pharmacies of all sizes are negotiating lower wholesale prices with wholesale companies and manufacturers. In my opinion, the latter is perhaps the most important possibility to confirm/disprove, since the wholesale sector for pharmaceuticals is highly secretive about its operating practices and pricing procedures.

In sum, more research indeed is needed to discover the reasons behind the baffling

markups this study found on both life-saving and life-enhancing drugs. Congress and federal agencies may need to re-evaluate their silence about the roles of retail pharmacies and wholesalers in the pharmaceutical industry.

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Appendix A
IRB Materials




VirginiaTech

Office of Research Compliance
Carmen T. Green, IRB Administrator
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24061
540/231-4358 Fax 540/231-0959
e-mail ctgreen@vt.edu
www.irb.vt.edu
FWA00000572 (expires 1/20/2010)
IRB # is IRB00000067

DATE: May 21, 2009

MEMORANDUM

TO: Karen M. Hult
Susan Pearson

FROM: Carmen Green 

SUBJECT: **IRB Exempt Approval:** "The High Cost of Prescription Drugs: A Comparison of Wholesale and Retail Prices", IRB # 09-503

I have reviewed your request to the IRB for exemption for the above referenced project. The research falls within the exempt status. Approval is granted effective as of May 21, 2009.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in the research protocol. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File

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A-1. Initial approval marking this study as exempt.




Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24061
540/231-4991 Fax 540/231-0959
e-mail moored@vt.edu
www.irb.vt.edu
FWA00000572(expires 1/20/2010)
IRB # is IRB00000667

DATE: September 15, 2009

MEMORANDUM

TO: Karen M. Hult
Susan Pearson

FROM: Carmen Green 

SUBJECT: **IRB Amendment 1 Approval:** "The High Cost of Prescription Drugs: A Comparison of Wholesale and Retail Prices", IRB # 09-503

This memo is regarding the above referenced protocol which was previously granted approval by the IRB on May 21, 2009. You subsequently requested permission to amend your IRB application. Approval has been granted for the requested protocol amendment, effective as of September 15, 2009.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in the research proposal. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

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A-2 Second amendment for addition of new Large National Discount Retailer Pharmacy.



Office of Research Compliance
Institutional Review Board
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www.irb.vt.edu
FWA00000572(expires 1/20/2010)
IRB # is IRB00000667

DATE: October 29, 2009

MEMORANDUM

TO: Karen M. Hult
Susan Pearson

FROM: Carmen Green

SUBJECT: **IRB Amendment 2 Approval:** "The High Cost of Prescription Drugs: A Comparison of Wholesale and Retail Prices", IRB # 09-503

This memo is regarding the above referenced protocol which was previously granted approval by the IRB on May 21, 2009. You subsequently requested permission to amend your IRB application. Approval has been granted for the requested protocol amendment, effective as of October 29, 2009.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in the research proposal. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File

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A-3 Final amendment for the addition of telephone questionnaires.

Appendix B

Supporting Study Documents

B.1 Consent form

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants in Research Projects Involving Human Subjects

The High Cost of Prescription Drugs: A Comparison of Wholesale and Retail Prices

Investigator(s)

Karen Hult

Susan Pearson

I. Purpose of this Research/Project

The purpose of this proposed study is to examine the relationship between wholesale and retail prices of prescription drugs to determine if there is another possible source of high prescription drug costs for the United States government to examine. Specifically, research will compare wholesale prices, the prices at which wholesalers sell prescription drugs to pharmacies, and retail prices, prices that pharmacies charge the public for drugs. Such a difference is also known as the "mark-up." One large national discount store pharmacy, one large chain pharmacy, and two independent or network pharmacies will be randomly chosen out of each of four cities. The four cities are Atlanta, Georgia; Columbia, South Carolina; Charlotte, North Carolina; and Virginia Beach, Virginia.

II. Procedures

Participants will be asked to complete a one-time questionnaire mailed to the pharmacies and to return it in an enclosed addressed stamped envelope. Participants will be asked a series of questions (see Attachment) regarding retail prices of six prescription drugs and two over-the-counter drugs. Participants are allowed to request that the answers be submitted by telephone. Two follow up mailings are planned for those who have not responded within two and four weeks.

III. Risks

Personal risk to participants in this study is minimal, and there is no direct monetary risk to the pharmacies that participate in the study.

IV. Benefits

Subjects will see no direct benefits from participating in the study, however there are possible societal benefits that may arise from the research. The results of the study may help the federal government design a solution to the high cost of prescription drugs that is beneficial to both the consumer and pharmacies.

V. Extent of Anonymity and Confidentiality

Information identifying the individual who completed the survey and the pharmacy where they work will be treated as confidential. Participants can identify themselves, but the researchers will not divulge such information. Neither the respondents nor the pharmacies they represent will be identified in the thesis.

Data will be kept no longer than one year, and will be secured in a locked filing cabinet in investigator's residence.

VI. Compensation

Participants will not be compensated for their participation.

VII. Freedom to Withdraw

Subjects are free to withdraw from a study at any time without penalty. They may also refuse to answer one or more of the questions.

VIII. Subject's Responsibilities

Answer questions and return the questionnaire in the envelope provided.

IX. Subject's Permission

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

Chair, Virginia Tech Institutional Review
Board for the Protection of Human Subjects
Office of Research Compliance
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, VA 24060

Subject signature

Date _____

Witness (Optional except for certain classes of subjects)

Date _____

Should I have any pertinent questions about this research or its conduct, and research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

Investigator(s) Telephone/e-mail:

Susan Pearson 912-536-3163/spear06@vt.edu

Faculty Advisor Telephone/e-mail:

Karen Hult 540-231-5351/khult@vt.edu

Departmental Reviewer/Department Head Telephone/e-mail

David M. Moore 540-231-4991/moored@vt.edu

B.2 Questionnaire

My name is Susan Pearson, and I am a graduate student at Virginia Polytechnic and State University (Virginia Tech). I am conducting research for my master's thesis, and I need your assistance in answering several questions about retail prices of certain prescription and over-the-counter medications in your store. You may refuse to answer any or all of the questions. If you choose to answer, however, I will treat your responses as anonymous. Neither you, nor your store will be directly identified within the thesis. Additionally, if you would prefer, I can telephone you and get the answers over the phone.

Also attached is a consent form. Please review and sign, and return along with the questionnaire in the addressed, stamped envelope provided. If you have any questions or concerns, please contact David Moore, Karen Hult, or me through the contact information provided:

David Moore
Asst. Vice President for Research Compliance

2000 Kraft Drive (0497)
Suite 2000
CRC Bldg. VIII
Blacksburg, VA 24061
540-231-4991

Karen Hult
Professor, Political Science
Thesis Committee Chair

Political Science
537 Major Williams Hall
Blacksburg, VA 24061
540-231-5351

Susan Pearson
Graduate student, researcher

630 Lee Street
Blacksburg, VA 24060
912-536-3163

Thank you,

Susan Pearson
Please answer each of the following by placing your response in the spaces provided.

- 1) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 10mg of Lipitor? _____
- 2) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 25 mg of Viagra? _____
- 3) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 5mg of Zocor? _____
- 4) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 1mg of Propecia? _____
- 5) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 10mg of Coreg CR? _____
- 6) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 12.5mg of Paxil CR? _____
- 7) What is the retail price, with no discounts, coupons, or other incentives for a 50 count of regular strength of Tylenol?

- 8) What is the retail price, with no discounts, coupons, or other incentives, for a 14 day supply (or comparable count) of Prilosec OTC?

B.3 Telephone questionnaire

Hello, my name is Susan Pearson and I am doing research for my master's thesis at Virginia Tech. I would like to ask a few questions regarding retail prices of certain prescription and over-the-counter medications in your store. You may refuse to answer any of all of them. If you choose to answer, however, be aware that I will treat the responses as confidential. Neither you nor your store will be directly identified within the thesis.

When answering these questions, bear in mind that I need the prices of the brand name only. I cannot accept prices of generic or store brand drugs.

- 1) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 10mg of Lipitor?
- 2) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 25mg of Viagra?
- 3) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 5mg of Zocor?
- 4) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 1mg of Propecia?
- 5) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 10mg of Coreg CR?
- 6) What is the retail price, with no discounts, coupons, or other incentives, for a 30 day supply of 12.5mg of Paxil CR?
- 7) What is the retail price, with no discounts, coupons, or other incentives for a 50 count of regular strength Tylenol?
- 8) What is the retail price, with no discounts, coupons or other incentives, for a 14 day supply of Prilosec?

Thank you for your responses and your time.

B.4 Follow-up letter

Dear _____

This letter is to remind you of the packet that was sent to you recently regarding my research at Virginia Tech. Your assistance in answering several questions about retail prices of certain prescription and over-the-counter medications in your store would be appreciated. Should you choose to answer the questions, please return the previous questionnaire with the attached consent form in the stamped envelope provided. As always, you may choose to answer all, some, or none of the questions. Additionally, you may choose to refuse consent or request a new consent form and questionnaire by checking the appropriate box and returning this letter in the stamped envelope provided.

If you have any additional questions, you may contact David M. Moore, Karen Hult, or me.

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912-536-3163

Thank you,

Susan Pearson

☐ I do not consent to participate in this study

☐ Please send another copy of the consent form and the questionnaire.

B.5 Verbal consent speech for telephone interviews

Hello,

My name is Susan Pearson and I am working on my Masters thesis at Virginia Tech. Your pharmacy has been randomly selected to have a chance to participate in my study. I was wondering if I could have a few moments of your time to tell you about my thesis and possibly ask you some questions.

(If Yes)

I am doing research on prescription drug prices. The purpose of this study is to examine the relationship between wholesale and retail prices of prescription drugs to determine if there is another possible source for the high cost of medications for the United States government to examine. In order to examine this relationship, I am collecting data on the prices of six different prescription medications, and two over-the-counter medications through a brief questionnaire. The identity of both you and your store will be held in strict confidentiality, and will not be revealed in the thesis. You will be allowed not only to refuse to participate in the study, but if you do not choose to continue, you are allowed to stop at any time, and refuse to answer anymore questions.

Do I have your consent to ask the questions on the six prescription and two OTC medications?